

Servo System ALPHA7S



Dramatically evolved control functions significantly increase productivity

High-tech industrial equipment continues to evolve non-stop. To gain the maximum advantage of over other equipment, a servo system with high responsiveness and high precision is essential. With its dramatically evolved control functions, Fuji Servo System ALPHA7S raises the speed and precision of drive control to the highest level in the industry. It supports a broad range of monitoring functions and has reached the next level of safety. It meets the highest level of customer requirements for productivity improvement, cost reduction, and safety.



Speed and Frequency Response

3.2 kHz

Speedy response realizes ultra-high-speed control



INC/ABS

24 bit (16777216 pulses

Fine resolution encoder further raises the precision of control





Fuji Servo System ALPHA7S

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Servo Amplifier

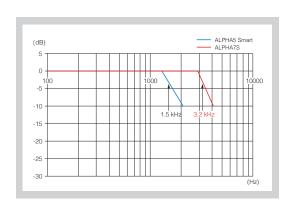


High-speed and high-precision control is realized by a basic performance that is at the highest level in the industry



Speed and frequency response at 3.2kHz realizes ultra-high-speed control

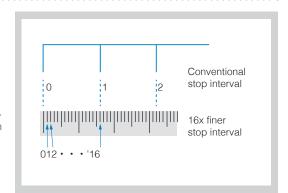
Fuji's proprietary control algorithm achieves a speed and frequency response at 3.2kHz, the highest level in the industry. This reduces the tact time, enabling high-speed control.





The 24-bit fine resolution INC/ABS encoder significantly improves the precision of control

The encoder resolution is now as high as 24 bits. This provides much higher control precision than before, enabling high-precision control.



Lineup of Products That Constitute an ALPHA7S System

Servomotor

	Model	Rated speed (Max. speed)	Power supply	Rated output				Servomotor type Protective Without brake With brake construction		Encoder	Туре
GYSmotor Ultra-low		3000 r/min /0.75 kW or less:		8 types 0.05 to 2.0 kW			IP67*1	24-bit ABS	GYS***D7-EB2(-B)		
Inertia		6000 r/min 1.0 kW or more: 5000 r/min					11 07	24-bit INC	GYS***D7-NB2(-B)		
GYB motor		3000 r/min		5 types			IP67*1	24-bit ABS	GYB***D7-EB2(-B/-C/-D)		
Medium Inertia		(6000 r/min)	200 V	0.05 to 0.75 kW			11 07	24-bit INC	GYB***D7-NB2(-B/-C/-D)		
GYE motor Medium Inertia	5	3000 r/min (6000 r/min)	series	3 types 0.2 to 0.75 kW	•		IP67*1	17bit INC*2	GYE***D6-GC2		
GYL motor		1500 r/min (3000 r/min)		5 types 0.85 to 4.4 kW			IP67*1	17bit ABS	GYL***B6-PG2(-B)		
Medium Inertia	Medium Inertia						11.07	17bit INC	GYL***B6-TG2(-B)		

^{*1} Excludes shaft through-hole. (also excludes connectors for GYS motors of 0.75kW or lower, GYB motors of lead wire type, and GYE motors).
*2 Magnetic encoder

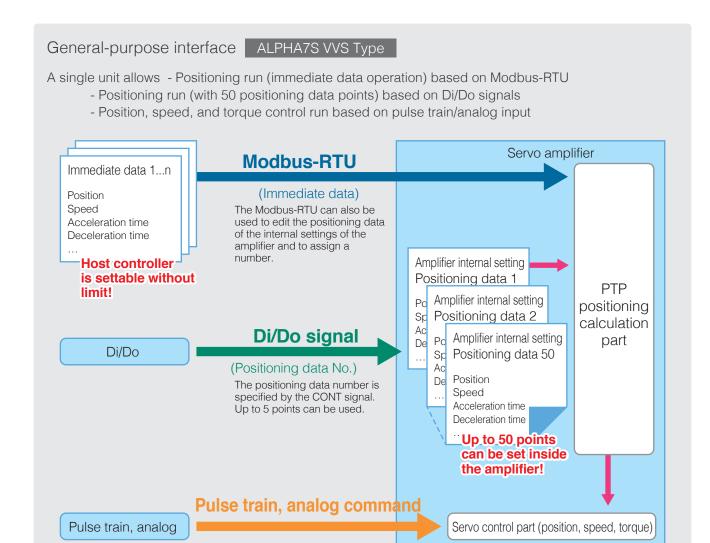
■ Servo Amplifier

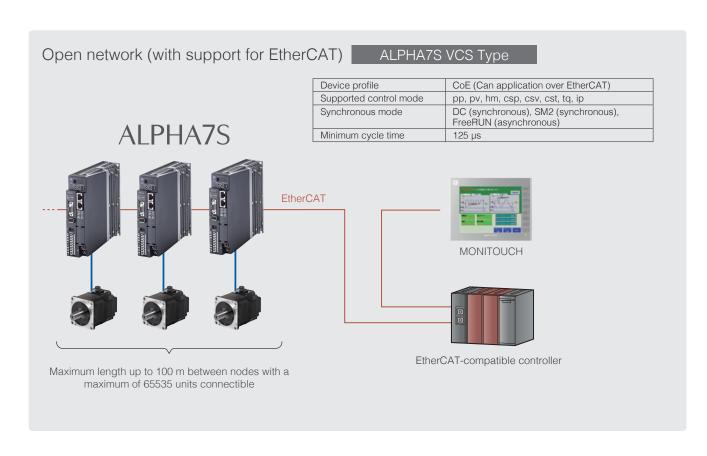
Model		Command		Contro	l mode		Power supply	Capacity	Type	Applicable
Model		interface	Positioning function	Position	Speed	Torque	rower supply	Capacity	Type	motor series
vvs		General-pur- pose	•				Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75 kW	RYT***S7-VVS2	GYS GYB
General-purpose interface	type	(Pulse/analog/ positioning/ Modbus)					3-phase 200 to 240 VAC	0.85 to 4.4 kW	1111 07-4402	GYE GYL
2 - 3 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4	VCS	EtherCAT					Single-phase or 3-phase 200 to 240 VAC	0.05 to 0.75 kW	BYT***S7-VCS2	GYS GYB
Open Network type	type						3-phase 200 to 240 VAC	0.85 to 4.4 kW	NTI 37-VC32	GYE GYL

Model List

■ ALPHA7S Combination Table (GYS, GYB, GYE, GYL)

Applicable motor Servo amplifier Frame 1 RYT10157-□□□2	Applicable motor capacity	GYS motor Ultra-low inertia 3000 [r/min] Brake: Without (with)	GYB motor Medium inertia 3000 [r/min] Brake: Without (with) 40 GYB500D7-□□2(-B)	GYE motor Medium inertia 3000 [r/min] Brake: Without	GYL motor Medium inertia 1500 [r/min] Brake: Without (with)
RYT20157-□□2	0.1 kW 0.05 kW 0.1 kW	GYS101D7-\(_2(-B) \) GYS500D7-\(_2(-B) \) GYS101D7-\(_2(-B) \) GYS201D7-\(_2(-B) \) GYS201D7-\(_2(-B) \)	GYB101D7-□□2(-B) GYB500D7-□□2(-B) GYB101D7-□□2(-B) GYB201D7-□□2(-B)	□60 GYE201D6-GC2	
RYT401S7-□□2	0.05 kW 0.1 kW 0.2 kW	GYS101D7-\(\Box\) 2(-B) GYS201D7-\(\Box\) 2(-B) GYS401D7-\(\Box\) 2(-B)	GYB101D7- 2(-B) GYB201D7- 2(-B) GYB401D7- 2(-B)	□60 GYE201D6-GC2 GYE401D6-GC2	
RYT751S7-□□2 Frame 2b RYT851S7-□□2	0.75 kW	□80 GYS751D7-□□2(-B)	□80 GYB751D7-□□2(-B)	□80 GYE751D6-GC2	□130 • GYL851B6-□□2(-B)
RYT132S7-□□2	1.0 kW 1.3 kW 1.5 kW	GYS102D7-□□2(-B) GYS152D7-□□2(-B)			GYL132B6-□□2(-B) GYL182B6-□□2(-B)
RYT182S72 RYT292S72 Frame 4	2.0 kW 2.4 kW	GYS202D7-□□2(-B)			☐180 GYL292B6-□□2(-B)
RYT442S7-□□□2	4.4 kW				GYL442B6-□□2(-B)





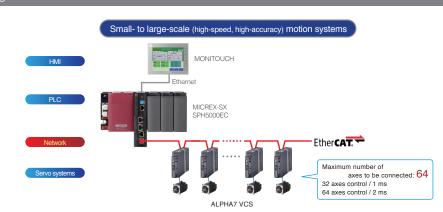
1SI

Build and tune your system more easily and speedily

■ Maximize performance by using in combination with MICREX-SX

Scalable motion systems

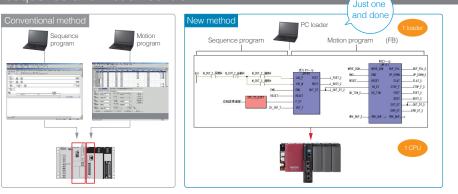
When combining the servo with the EtherCAT-compatible SPH5000EC, users can build small- to large-scale (high-speed, high-accuracy) motion systems. By combining a single SPH5000EC, a motion control system with ALPHA7S VCSs can connect up to 64 axes to perform high-speed motion control for PTP positioning and synchronous control: 32 axes at a control cycle of 1 ms and 64 axes at 2 ms.



A single CPU performs both sequence and motion control

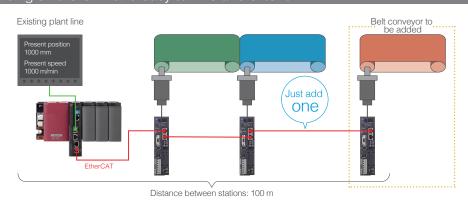
Adding a single unit of MICREX-SX eliminates the need of a module dedicated to motion control, thus significantly reducing the initial cost. Also, work efficiency is dramatically improved by supporting both sequence and motion with a single programming tool*

*SX-Programmer Expert (D300win)



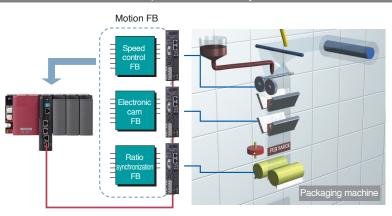
Directly connectible with a single EtherCAT and easy to wire and extend

Just a single Ethernet cable completes the connection between the controller and servo. When you add an additional control axis to allow for the extension of the machine, you can connect it in a one-touch fashion using an Ethernet cable.



Broad range of functional software "FBs" raises development efficiency

Various software parts, FBs (function blocks), are available free of charge. By appropriately combining FBs, you can build a motion program for a large-scale system in a short time. If you have trouble in developing programs, consult Fuji for support.



■ Various features that allow standalone use of ALPHA7S

PC loader tuning allows easy semi-automatic adjustment

Automatic servo adjustment in tuningless mode

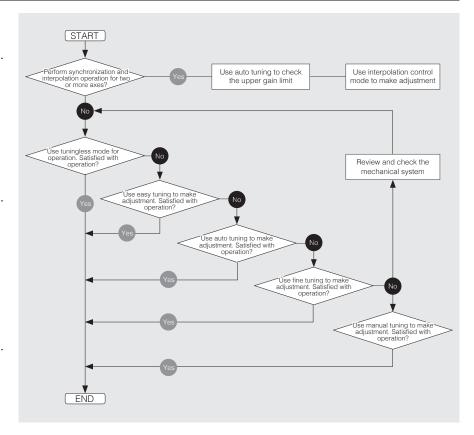
In tuningless mode, you do not have to manually adjust the responsiveness (gain) because the servo system automatically does so. You no longer spend time on tuning at start-up time.

Finer adjustment is possible in auto tuning mode

In auto tuning mode, the servo amplifier automatically adjust the responsiveness (gain). This mode allows finer control than tuningless mode.

Highest precision requirements can be achieved in manual tuning mode

This mode is intended for use with machines that require high precision. It allows you to optimize multiple parameters at once, enabling high responsiveness (gain) adjustment.



Features that reduce the time required to set up a newly introduced machine

Test-run the machine before completion of a program using the pattern run feature

You can adjust the machine and servo before completion of a program for the controller.

Test-run a program before completion of the machine using sequence mode

You can run a controller program before completion of the machine, so you can debug programs more efficiently.

Simplify your system using the built-in programmable positioning feature (applicable to the ALPHA7S VVS type only)

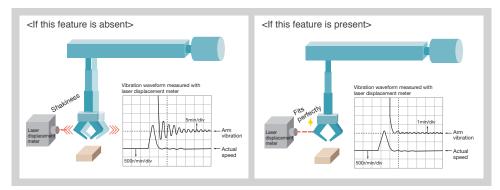
You can easily perform positioning run, using pre-registered positioning data. You can register positioning data for up to 50 points in the ALPHA7S VVS type. You can run the system by just selecting a program number and issuing a start command from the host controller. This feature is most useful for the purposes of inching and repetitive operations.

1SI

Evolved control functions contribute to streamlining of operation and stabilization of quality

New damping control suppresses the vibration at equipment edges

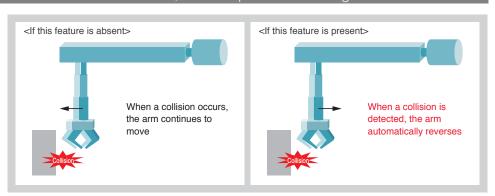
The introduction of a new control algorithm reduces the vibration at the edges of the equipment to one tenth, compared with the conventional damping control (used in our products). Support for models with three inertia systems makes it possible to control low-frequency vibrations at two points concurrently.



The interference detection feature detects a collision, etc. and prevents breakage

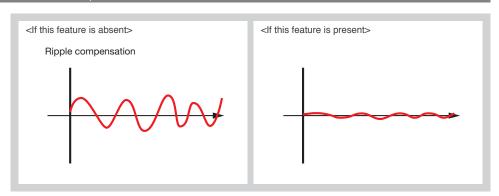
The servo amplifier detects interference on the equipment (such as a collision with an edge of the machine) and operates to mitigate the shock to the machine when a collision occurs. This feature helps prevent damage to the equipment and reduce load on it.

*Protection may not be complete depending on the operation type.



The cogging feature ensures smooth operation

Since interference due to cogging of the servomotor is detected and compensated, speed ripples due to cogging can be reduced and smooth operation can be ensured even if the equipment does not support the increase of the speed loop gain.



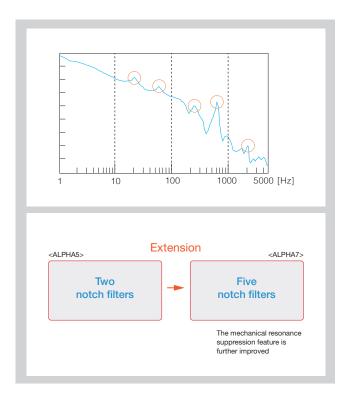
Maximum input pulse frequency of 4 MHz

The system can support input frequencies from the host controller until the maximum frequency of 4 MHz is reached. This allows a finer amount of travel per pulse, thus enabling positioning operation at a higher precision than before.

- Differential input: Max. input frequency ≤ 4.0 [MHz]
- Open collector input: Max. input frequency ≤ 200 [kHz]

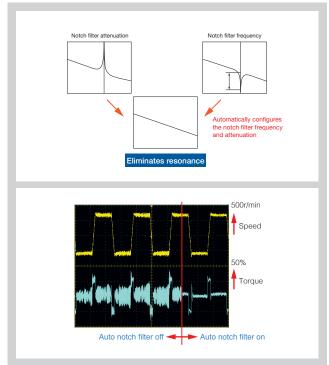
The notch filter feature suppresses the resonance of the machine

Now five notch filters are incorporated instead of two, further improving the machine resonance suppression feature.



The motor status can be monitored from the host controller

The system detects machine resonance and automatically configures the notch filters. While the auto notch filter feature is on, the system constantly performs detection and calculation, thus being able to respond even to moment-to-moment changes in resonant frequency.



One of three motor stop methods can be selected

You can select "rapid deceleration stop", "DB stop", or "coast-to-stop" when an alarm occurs, when the main power is off, or when the servo-on signal is off. Since limiting output torque at desired value is possible even if rapid deceleration stop is selected, impact shock to the machine can be reduced.*

A homing program can be easily configured

Several homing features allow simple configuration by just combining servo parameters.

Interrupt positioning feature

A fixed amount of movement is possible after detecting the mark signal, thereby enabling highly accurate mark operation. It can be used for positioning operation by detecting the mark signal of the material, or for stopping after moving a certain amount in the last stage when there is wobble or slippage in the mechanical system.

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

Design and features that reduce the labor of maintenance

Easily analyze the cause of alarm occurrence

When an alarm occurs, the system displays the content of the alarm as well as related data such as the speed and torque at the time of alarm occurrence. This allows you to accurately analyze the cause of the alarm.

Life prediction and preventive maintenance

You can check the status of the servomotor from the controller so you can perform maintenance at the appropriate time. In addition, the system predicts the life for the following consumables and sends the data to the host controller for proactive failure prevention.

Main circuit capacitor | Cooling fan

Long life design of servo amplifier parts

The design life of long-life parts has been further extended: 10 years for electrolytic capacitors and cooling fans. In addition, the design life of the battery is approximately 35,000 hours. (Retention time with the power supply shut off)

- * The use conditions are as follows.
 - Ambient temperature: 30°C (annual average)
- Load factor: Up to 80%
- Rate of operation: Up to 20 hours/day

The environmentally resistant servomotor can be used in an environment with exposure to water and dust

The servomotor is by default compliant with IP67* defined by the International Electrotechnical Commission (IEC). It has Class 6 dust resistance and Class 7 water resistance, which means that it can be used in an environment with exposure to water and dust

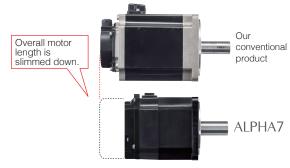
* Excludes shaft through-hole (also excludes connectors for GYS and GYB motors of lead wire type).

Space-saving design that allows installation in a small space

Most compact in the industry*

The overall length of the servomotor has been reduced by approximately 15 mm, compared with our existing products. This is the most advanced miniaturization in the industry

* As of February 2017, for the GYB motor



(Comparison with GYB motor of 0.2 kW)

Compact servo amplifier that can be mounted

The servo amplifier is reduced in width by 5 mm and in footprint area by approximately 12% when compared with our conventional model*. It can be mounted in close contact. allowing the reduction of the space required to mount it on the control panel of the machine.

- * When mounted in close contact. 80% ED rating applies. There is no restriction when installed at spacings of 5 mm or greater
- * Comparison value with frame 1.



Compatibility

Compatible with ALPHA5 motors

ALPHA7 Series servo amplifiers can also power ALPHA5 Series motors (GYS5, GYB5).

For details on ALPHA5 Series motors, refer to "ALPHA5 Catalog 24C-1-J-0037".

The parameter files used in the ALPHA5 Smart Series can be automatically converted to ALPHA7S parameters. The parameter file conversion tool is bundled with the ALPHA7 loader software. The ALPHA7 loader software is available for free and can be downloaded from the Download Documents.

Support for various standards is provided by default to allow for overseas business expansion

Compliance with overseas standards and laws

The ALPHA7S Series supports international standards.

Standards and laws		Servo Amplifier	- Servomotor		
		ALPHA7S	Servomotor		
Low voltage directive		EN61800-5-1			
CE mark	EMC directive	EN61800-3			
	Rotary electric machine	Not applicable	EN60034-1, EN60034-5		
UL standards		UL61800-5-1	UL1004		
China Compulsory Certificate (CCC) system		Not applicable			
Korea Radio Act (KC)		Compliant	Not applicable		

<Certification mark>







- CE: Compliant with EU (European Union) standards
- UL: Compliant with the U.S. safety standards
- cUL: Certifies the compliance of UL with CSA (Canada safety standards)
- KC: Korea's nationally integrated certification mark

By default compliant with RoHS

Environmentally-friendly design compliant with the 10 hazardous substances' of RoHS (EU's Restriction of Hazardous Substances) and six hazardous substances' of China RoHS (Management Methods for Controlling Pollution by Electronic Information Products).



- *1. Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE), di-2 ethylhexyl phthalate (DEHP), butyl benzyl phthalate (BBP), di-n-butyl phthalate (DBP), discobutyl phthalate (DBP)
- *2 Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE)

Harmonic suppression

All models of servo amplifiers used by specific consumers are subject to the "Japanese Guideline for Suppressing Harmonics by Customers Receiving High Voltage or Special High Voltage". All users required to apply guidelines must calculate equivalent capacity as well as harmonic outflow current based on these guidelines, and take appropriate measures if the calculated harmonic current exceeds the limit stipulated for the contracted wattage.

Circuit classification	Circuit type	Reactor	Conversion factor
		None	3.4
0	Three-phase bridge	Yes (AC side)	1.8
3	(capacitor smoothing)	Yes (DC side)	1.8
		Yes (AC side, DC side)	1.4
4	Single-phase bridge	None	2.9
4	(capacitor smoothing)	Yes (AC side)	1.3

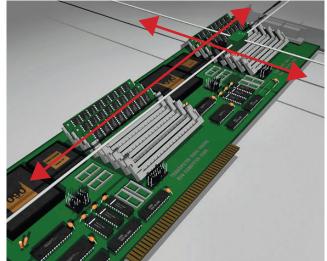
For information on how to calculate the harmonic current, use the following as a reference.

Reference material: Japan Electrical Manufacturers' Association

- Pamphlet "About Servo Amplifier Harmonic Suppression"
- JEM-TR225 "Servo Amplifier Harmonic Current Calculation Method for Specific Consumers"

Fuji offers optimum solutions according to customer needs.

Prober Inspecting instrument used in semi-conductor manufacturing equipment



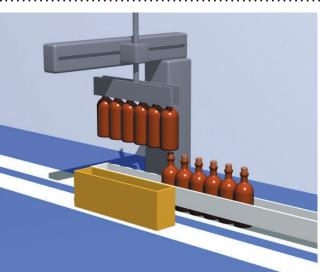
Solution 1 To improve productivity

Fine tuning and feed forward gain

Solution 2 To reduce the vibrations of the machine.

Auto damping control and anti-resonant frequency for damping

102 Takeout robot Used to take out formed products and convey workpieces



Auto damping control and anti-resonant frequency for damping

Solution 2 To suppress the resonance of the machine

Tuningless and notch filter features

Solution 3 To prevent objects from being caught in the machine

Interference detection feature

Vertical wrapping machine Used to fill or wrap food or chemical



Solution 1 To eliminate defective workpieces by synchronizing the feed, seal, and cut axes

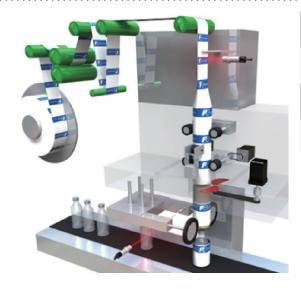
Interpolation operation mode and feed forward control

Solution 2

To cut the material at the position of the reference mark

Enable interrupt input

04 Label wrapping machine Used to wrap labels around bottles



olution 1 : To improve productivity

Fine tuning and feed forward gain

Solution 2

To cut the material at the position of the reference mark

Enable interrupt input

Model Codes (ALPHA7S)

Servo Amplifier

RYT 2 0 1 S 7 - V V S 2

Digit	Specifications	Code				
1	Basic type					
'	ALPHA Series	RYT				
	Capacity					
	$10 \times 10^{1} = 100 \text{ W}$	101				
	$20 \times 10^{1} = 200 \text{ W}$	201				
	$40 \times 10^{1} = 400 \text{ W}$	401				
2	$75 \times 10^{1} = 750 \text{ W}$	751				
۷	$85 \times 10^{1} = 850 \text{ W}$	851				
	13×10 ² = 1300 W	132				
	18×10 ² = 1800 W	182				
	29×10 ² = 2900 W	292				
	44×10 ² = 4400 W	442				
3	Series					
	ALPHA7S Series	S				
4	Development order					
4	7	7				
	Major functions					
5	EtherCAT	vcs				
	General-purpose interface (Pulse, analog, positioning)	VVS				
6	Input voltage					
0	3-phase 200 V	2				

Servomotor

GYS 5 0 0 D 7 - E B 2 - B

Digit	Specifications	Code					
	Basic type						
	Ultra-low inertia	GYS					
1	Medium inertia	GYB					
	Medium inertia	GYE					
	Medium inertia	GYL					
	Rated output						
	$50 \times 10^{\circ} = 50 \text{ W}$	500					
	$10 \times 10^{1} = 100 \text{ W}$	101					
	$20 \times 10^{1} = 200 \text{ W}$	201					
	$40 \times 10^{1} = 400 \text{ W}$	401					
	$75 \times 10^{1} = 750 \text{ W}$	751					
2	$85 \times 10^{1} = 850 \text{ W}$	851					
2	$10 \times 10^2 = 1000 \text{ W}$	102					
	13×10 ² = 1300 W	132					
	$15 \times 10^2 = 1500 \text{ W}$	152					
	18×10 ² = 1800 W	182					
	20×10 ² = 2000 W	202					
	29×10 ² = 2900 W	292					
	44×10² = 4400 W						
	Rated speed						
3	3 3000 r/min						
	1500 r/min	В					
	Development order						
4	6	6					
	7	7					
	Encoder						
	24-bit ABS	E					
5	24-bit INC	N					
5	17-bit ABS	Р					
	17-bit INC	Т					
	17-bit INC (magnetic)	G					
	Oil seal/shaft*1,*2						
	Without oil seal, straight shaft, with key	Α					
	Without oil seal, straight shaft, without key	В					
6	Without oil seal, straight shaft, with key, tapped	С					
	With oil seal, straight shaft, with key	Е					
	With oil seal, straight shaft, without key	F					
	With oil seal, straight shaft, with key, tapped	G					
7	Input voltage						
	3-phase 200 V	2					
	Brake ^{*3}						
	Without brake	No marking					
8	With brake	В					
	Without brake (GYB connector type)	С					
	With brake (GYB connector type)	D					

^{*1)} GYS motors with keys are not tapped for voltages of 01 kW or less and are tapped for voltages of 02 kW or more.

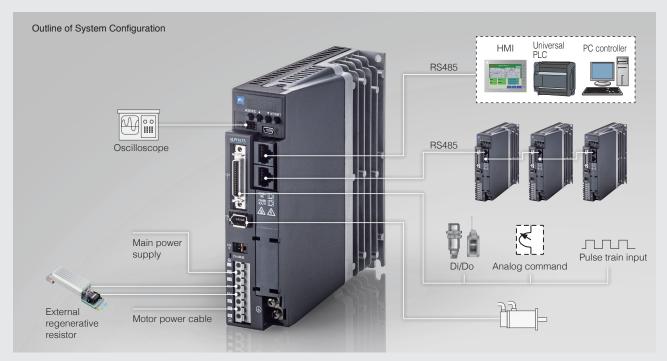
*2) Types with oil seals are made-to-order, so some specifications may differ from those of standard stock products.

*3) Select unmarked or B type for GYB lead wire types.

Specifications: Servo Amplifier (ALPHA7S)

Amplifier type RYT Outer frame nu		101	201 Frame 1	401	751 Framo 2a	851 Fram	132	182 Fran	292	442 Framo 4		
Outer frame nu Mass [kg]	miner	0.8	0.8	0.8	Frame 2a 1.8	1.5	1.5	2.5	ne 3 2.5	3.8		
Protective const	ruction/cooling			ral cooling				mechanical c				
Main	Number of phases		Single-pha	se, 3-phase				3-phase				
power	Voltage/frequency Allowable voltage	ala ustras										
Main power supply	fluctuation		3-phase: 170 to 264 VAC, Single-phase: 190 to 264 VAC									
Control Control	Number of phases											
Power	Voltage/frequency Allowable voltage					None						
	fluctuation		Fully digital aiguacidal PWM drive									
Control system Overload capa	, , , , , , , , , , , , , , , , , , , ,											
Regenerative	Built-in resistor	_	_	_	20	20	20	30	30	60		
resistor Max voltage [W]	External resistor*1	17										
Dynamic brake)	Built-in	uilt-in									
Feedback			,		cremental 24-b							
Speed	Load fluctuation Power supply				0% at rated ope		,					
fluctuation ratio*2	fluctuation	0% (power s	supply fluctuat	ion -10% to +	10% at rated o	peration spee	d) 					
ialio	Temperature fluctuation	Within ± 0.2	2% (25°C ± 10°	%°C at rated	operation speed	d when an ana	alog voltage co	ommand is iss	sued)			
Per	Speed				setting, manual	feed speed/m	naximum rotati	on speed adju	ıstment, spee	d command		
Performance	Number of position		ng, etc. by usi									
nanc	data points	1 (1		,	time, decelera	, '						
Φ VVS type	Position control		control, elect ition regulator	ronic gear, ou	ıtput pulse setti	ng, feed forwa	ard, homing, in	iterrupt positio	oning, auto sta	art, etc. by		
	Torque	0 .		ortional open-	loop control for	current and t	orque), torque	limiting, spec	ed limiting dur	ing torque		
	control	control, etc.	by using a cu	rrent regulato	or .							
	Ancillary features	Easy tuning etc.	, pattern run, s	equence test	mode, auto tur	ning, auto noto	ch filter, vibrati	on suppression	on control onli	ne learning,		
	Speed		control, acce	leration/decel	leration time set	tting, manual f	feed speed/ma	aximum rotatio	n speed adju	stment, etc.		
	control	, ,	speed regulato									
	Position control		Closed-loop control, electronic gear, output pulse setting, feed forward, homing, interrupt positioning, etc. by using a									
VCS type	Torque		position regulator Closed-loop control (proportional open-loop control for current and torque), torque limiting, speed limiting during torque									
	control		by using a cu				1 (1)					
	Ancillary features	etc.	, pattern run, s	equence test	mode, auto tur	ning, auto noto	on filter, vibrati	on suppression	on control onli	ne learning,		
Over Current (oc1, oc2), Over Speed (oS), Overvoltage (Hv), Encoder Trouble (Et1, Et2), Control Error (dE), Motor Combination Error (cE), Encoder Communication Error (Ec), CONT (Control sign (oL1, oL2, oL3), Main Power Low Voltage (LvP), Braking Resistor Overheat (rH1, rH2), Braking Trouble (rH4), Deviation Overflow (oF), Amplifier Overheat (AH), Absolute Data Lost (dL1, dL2, dL3), Multi-turn Data Over Flow (AF), Initial Error (iE), Command Pu						gnal) Error (ctl ransistor Erro), Encoder O	E), Över Loa r (rH3), Inrus verheat (EH					
Protective functions (Alarm display)	VCS type	Over Current (oc01, oc02), Over Speed (oS), Overvoltage (Hv), Encoder Trouble (Et01, Et02), Control Circuit Error (ct), Memory Error (dE), Motor Combination Error (cE), Encoder Communication Error (Ec), CONT (Control signal) Error (cont), Over Load (oL01, oL02, oL03), Main Power Low Voltage (LvPE), Braking Resistor Overheat (rH01, rH02), Braking Transistor Error (rH03), Inrush Current Suppression Circuit Trouble (rH04), Deviation Overflow (oF), Amplifier Overheat (AH), Encoder Overheat (EH), Absolute Data Lost (dL01, dL02, dL03), Multi-turn Data Over Flow (AF), Initial Error (iE), Command Pulse Frequency Error (HF), EtherCAT Communication Error (cy) * If the message is four-digit, two digits of the message alternately appear at a time on the 7-segment LED.										
	V/VS turns	5-digit alpha	anumeric displ	ay with 7-seg	ment LED) •						
Operation and display section	VVS type		switches (MOI									
of main body	VCS type	2-digit alpha Rotary switc	anumeric displ ch	ay with 7-seg	ment LED							
	Installation	Indoors at a	ltitude ≤ 1000		dust, corrosive	gases and dir	ect sunlight					
	place		ompliance with									
Use Environment	Temperature/ humidity/ Atmospheric pressure	Pollution Degree = 2 Over Voltage Category = III 0 to 55°C/10 to 90%RH (without condensation)/70 to 106 kPa										
	Vibration resistance	3 mm: < 2 to	o 9 Hz 9.8 m/s	s²: < 9 to 20 H	lz 2 m/s²: < 20	to 55 Hz 1 m/	/s²: < 55 to 200) Hz				
Shock resistance 19.6 m/s²												
	22.314.700	UL standard	d: UL61800-5-	1								
Standards CE marking Low voltage directive: EN61800-5-1 EMC directive: EN61800-3 KC												
	response	3,200 Hz										
Frequency	100001100	Auto tuning, semi-auto tuning, interpolation control mode, trace operation mode, high-tact operation mode, custom tuning										
Frequency Tuning feat		0,		ing, interpola	tion control mo	de, trace oper	alion mode, ni	gri-tact opera	lion mode, cc	istom tuning		
Tuning feat		mode, mani	ual tuning			ue, trace oper	allon mode, ni	gri-tact opera		istom tuning		
Tuning feat Automatic features	tures adjustment	mode, manu Tuningless t				de, trace oper	ation mode, ni	gii-tact opera	lion mode, cc	istom tuning		
Tuning feat	tures adjustment	mode, manu Tuningless f	ual tuning features, easy	tuning, fine tu			,		,			

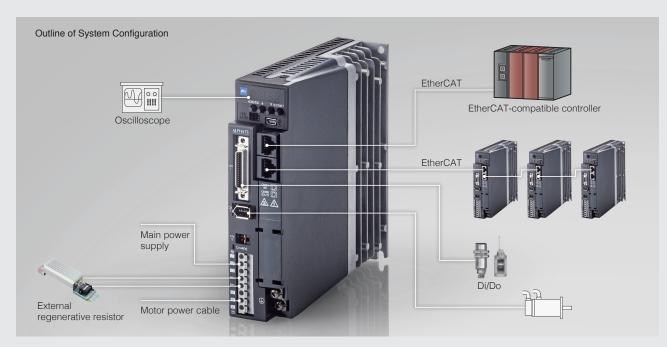
Specifications: VVS Type Servo Amplifier (ALPHA7S)



Interface specifications

Interface specifications							
Interface ty	уре	Specifications					
	Positioning function	RS-485 (Modbus-RTU), Di/Do					
Command interface	Position control	Pulse train input					
Command interrace	Speed control	Analog voltage input					
	Torque control	Analog voltage input					
		Dual RS-485 ports (for parameter editing and monitoring)					
Communication	interface	Our original protocol, Modbus-RTU					
		9600/19200/38400/115200 bps, connection of max. 31 axes					
Terminal name	Symbol	Specifications					
Pulse train input Also used for CONT signal	CA, *CA CB, *CB	Differential input: Max. input frequency ≤ 4.0 MHz Open collector input: Max. input frequency ≤ 200 kHz (In case of signals at 90° phase difference, the above relationship is true for the four-fold frequency.) Command pulse/Command direction Pulse train format Forward/Reverse pulse Two signals at 90° phase difference Two signals at 90° phase difference					
		CA,*CA: CONT CA signal, CB,*CB: CONT CB signal, compatible with both sink input and source input					
	PPI	Pull-up power input at open collector input (24 VDC ± 10%)					
Pulse train output	FFA, *FFA FFB, *FFB	Differential output: Max. output frequency ≤ 1.0 MHz Two signals at 90° phase difference Pulse output count setting (n pulses/rev): 16 ≤ n ≤ 4194304					
	FFZ, *FFZ	Differential output: 1 pulse/rev					
Also used for OUT signal	FA, FB	AB phase output (Open collector output) Maximum voltage: 30 VDC, Maximum current: 50 mA FA·FB: OUT FA·FB signal					
	FZ	Z phase (Open collector output) 1 pulse/rev, FZ: OUT FZ signal					
	M5	Reference potential (0 V)					
Analog monitor Voltage output	MON1 MON2	0 V to ±10 VDC Resolution: 14 bits / ± full scale The output data depends on the internal parameter					
Tomage compan	M5	Reference potential (0 V)					
Common for sequence	COMIN	Common for sequence input signal					
input/output signal	COMOUT	Common for sequence output signal					
Sequence input signal	CONT1 to CONT8	ON upon short circuit across contacts, OFF upon open circuit 12 VDC-10% to 24 VDC+10%					
Sequence output signal	OUT1 to OUT4	Short circuit upon ON, open circuit upon OFF 30 VDC / 50 mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods					
	VREF	Speed command input when performing speed control Valid input range: -10 V to 0 to +10 V, input impedance: 20 kΩ Resolution: 16 bits / ± full scale					
Analog voltage input	TREF	Torque command input when performing torque control Valid input range: -10 V to 0 to +10 V, input impedance: 20 k Ω Resolution: 16 bits / \pm full scale					
	M5	Reference potential (0 V)					

Specifications: VCS Type Servo Amplifier (ALPHA7S)



Interface specifications

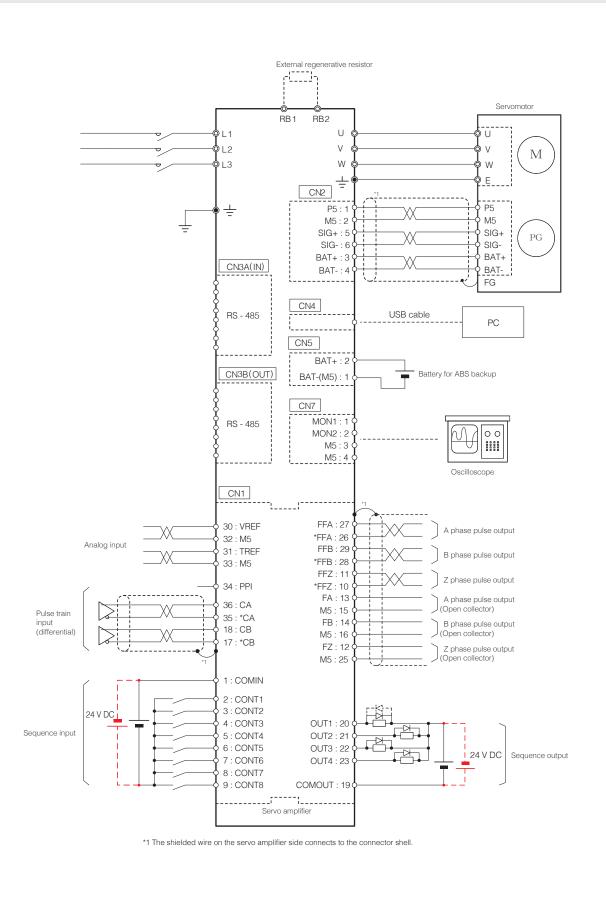
Interface type		Specifications
	Position control	
Command interface	Speed control	EtherCAT CiA402 drive profile
	Torque control	
		EtherCAT (for command interface, parameter editing, and monitoring)
Communication interface		Can application over EtherCAT
		100 Mbps

EtherCAT communication specifications

Item		Specifications
Physical lay	er	100Base-TX [IEEE802.3]
Baud rate		100 Mbps (Full duplex)
Topology		Line
Communication	cable	Twist pair cable CAT5e
Communication d	listance	Node-to-node distance: Max. 100 m
Number of sla	ives	65535 * The number of slaves that can be controlled with PDO is limited depending on the communication cycle and data length.
Communication	n port	2 ports (RJ45 connectors)
Station alias (Station	on alias)	Setting range: 0 to 65535
Device profi	le	CAN application over EtherCAT
		pp: Profile position mode
		pv: Profile velocity mode
		hm: Homing mode
Cia402 drive pr	rofilo	csp: Cyclic synchronous position mode
Cia402 drive pr	TOTILE	csv: Cyclic synchronous velocity mode
		cst: Cyclic synchronous torque mode
		tq: Torque profile mode
		ip: Interpolated position mode
Touch prob	е	Supported (two inputs)
	Synohronous mode	DC: Distribute clock
Synchronization method	Synchronous mode	SM2: Cyclic PDO communication
	Asynchronous mode	Free RUN
Communication	cycle	125 [µs], 250 [µs], 500 [µs], 1000 [µs], 2000 [µs], 4000 [µs]
Communication	form	SDO, PDO
SDO messa	ge	Normal Request, Normal Response
Free PDO Map	pping	Supported *Only the objects defined to be supportable in our specifications
Maximum PDO da	ta count	4x16 [Entry/PDO] (RxPDO) + 4x16 [Entry/PDO] (TxPDO)
Maximum PDO dat	ta length	128 [bytes] (Rx PDO) + 128 [bytes] (Tx PDO)

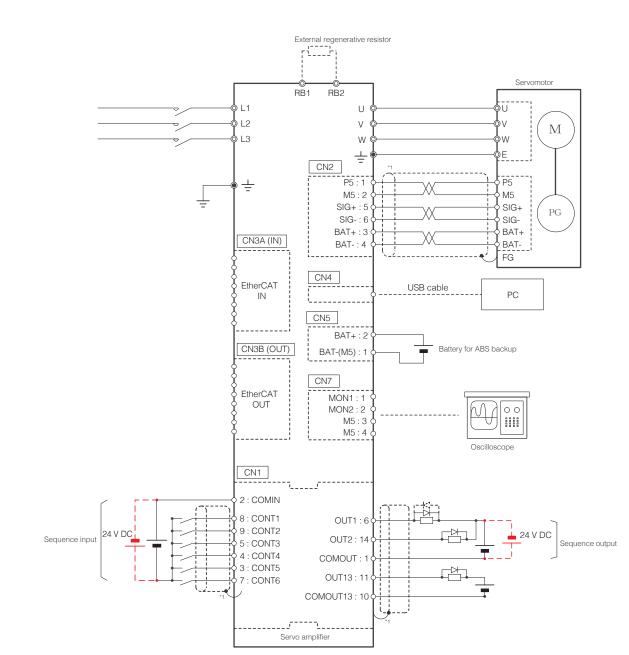
Terminal name	Symbol	Specifications
Analog monitor voltage output		0 V to ±10 VDC Resolution: 14 bits / ± full scale The output data depends on the internal parameter
	M5 COMIN	Reference potential (0 V) Common for sequence input signal
Common for sequence	COMOUT	Common for sequence output signal (OUT1 · OUT2)
input/output signal	COMOUT13	Common for sequence output signal (OUT13)
Sequence input signal	CONT1 to CONT6	ON upon short circuit across contacts, OFF upon open circuit 12 VDC-10% to 24 VDC+10% Current consumption 12 mA (per contact; used 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 2 / OUT13	Short circuit upon ON, open circuit upon OFF 30 VDC / 50 mA (max.) Function of each signal depends on parameter setting OUT1 · OUT2 : Compatible with both sink and source output methods OUT1 : Compatible with sink output methods

Connection Diagram for Reference: ALPHA7S VVS Type Servo Amplifier (Frame 1)



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

Connection Diagram for Reference: ALPHA7S VCS Type Servo Amplifier (Frame 1)



^{*1} The shielded wire on the servo amplifier side connects to the connector shell.



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

Servomotor Specifications: GYS motor

Standard specifications

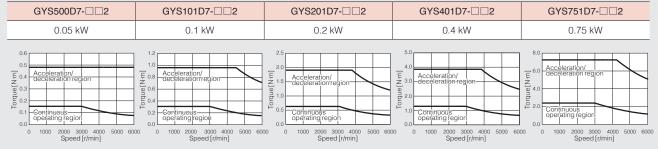
Motor type	GYS500D7-□□2	GYS101D7-□□2	GYS201D7-□□2	GYS401D7-□□2	GYS751D7-□□2		
Rated output [kW]	0.05	0.1	0.2	0.4	0.75		
Rated torque [N·m]	0.159	0.318	0.637	1.27	2.39		
Rated speed [r/min]			3000				
Max. speed [r/min]			6000				
Max. torque [N⋅m]	0.478	0.478 0.955 1.91 3.82 7.17					
Inertia [kg·m²]	0.0192×10⁻⁴	0.0371×10 ⁻⁴	0.135×10⁻⁴	0.246×10 ⁻⁴	0.853×10⁻⁴		
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		
Insulation class		Class B					
Winding insulation class	Total	y enclosed, self-cooled	, IP67 (excluding the sh	aft sealing and connect	ors)*1		
Terminals (motor)		Cable 0.3 m (with connector)					
Terminal (encoder)		Ca	ble 0.3 m (with connect	or)			
Overheat protection		Not provided (T	he servo amplifier detec	cts temperature)			
Mounting method		Flange mounti	ng IMB5 (L51), IMV1 (L5	52), IMV3 (L53)			
Encoder		24-bit seri	al encoder (absolute/ind	cremental)			
Vibration*2			V5 or below				
Installation place, environment	For indoor use (fre	e from direct sunlight), I	ocations without corrosi	ve and flammable gase	s, oil mist and dust		
Altitude	Altitude ≤ 1000 m						
Ambient temperature, humidity	-10 to +40°C (without freezing), within 90% RH max. (without condensation)						
Vibration resistance [m/s²]	49						
Mass [kg]	0.45	0.55	1.2	1.8	3.4		
Standards	l	JL/cUL (UL1004), CE m	arking (EN60034-1, EN6	60034-5), RoHS directive	9		

^{*1} When using the product under such an environment as specified in IP67, make sure that the connector for wiring is compatible with IP67.

Brake specifications (motor equipped with a brake)

Motor type	GYS500D7-□□2-B	GYS101D7-□□2-B	GYS201D7-□□2-B	GYS401D7-□□2-B	GYS751D7-□□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
Inertia [kg · m²]	0.0223×10⁻⁴	0.0402×10 ⁻⁴	0.159×10⁻⁴	0.270×10 ⁻⁴	0.949×10 ⁻⁴
Static friction torque [N·m]	0.	34	1.5	2.45	
Rated voltage [V]			24 VDC ±10%		
Attraction time [ms]	3	5	4	60	
Release time [ms]	1	0	20		25
Power consumption [W]	6.1 (at	: 20°C)	7.3 (at	20°C)	8.5 (at 20°C)
Mass [kg]	0.62	0.72	1.7	2.3	4.2

Torque characteristics diagrams (amplifier power supply voltage: at 3-phase 200 V or single-phase 230 V)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT-7 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 GYS751: 300 × 300 × 6 [mm]

 $^{^{*}2\,}$ The vibration value is the property of flange type IMV1 (L52).

Servomotor Specifications: GYS motor

Standard specifications

Motor type	GYS102D7-□□2	GYS152D7-□□2	GYS202D7-□□2			
Rated output [kW]	1.0	1.5	2.0			
Rated torque [N·m]	3.18	4.78	6.37			
Rated speed [r/min]		3000				
Max. speed [r/min]		5000				
Max. torque [N·m]	9.55	9.55 14.3 19.1				
Inertia [kg · m²]	1.73×10⁻⁴	2.37×10⁻⁴	3.01×10 ⁻⁴			
Rated current [A]	7.1	9.6	12.6			
Max. current [A]	21.3	28.8	37.8			
Insulation class		Class F				
Winding insulation class	Totally enc	Totally enclosed, self-cooled, IP67 (excluding the shaft sealing)*1				
Terminals (motor)		Cannon connector				
Terminal (encoder)		Cannon connector				
Overheating protection	Not pr	Not provided (The servo amplifier detects temperature)				
Mounting method	Flanç	Flange mounting IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Encoder		24-bit serial encoder (absolute/incremental)				
Vibration level*2	Over rate	Up to rated rotation speed: V10 or below d rotation speed and up to 5000 r/min: V15	or below			
nstallation place, environment	For indoor use (free from direct s	sunlight), locations without corrosive and flar	mmable gases, oil mist and dust			
Altitude		Altitude ≤ 1000 m				
Ambient temperature, humidity	−10 to +40°C (wi	ithout freezing), within 90% RH max. (withou	ut condensation)			
Vibration resistance [m/s²]		24.5				
Mass [kg]	4.4	4.4 5.2 6.3				
Standards	UL/cUL (UL100		RoHS directive			

^{*1} When using the product under such an environment as specified in IP67, make sure that the connector for wiring is compatible with IP67

Brake specifications (motor equipped with a brake)

Motor type	GYS102D7-□□2-B	GYS102D7-□□2-B GYS152D7-□□2-B				
Rated output [kW]	1.0	1.5	2.0			
Rated torque [N·m]	3.18	4.78	6.37			
Inertia [kg · m²]	2.03×10⁻⁴	2.67×10⁻⁴	3.31×10⁻⁴			
Static friction torque [N·m]		6.86				
Rated DC voltage [V]	24 VDC ±10%					
Attraction time [ms]		100				
Release time [ms]		40				
Power consumption [W]	17.7 (at 20°C)					
Mass [kg]	5.9	6.8	7.9			

Torque characteristics diagrams (amplifier power supply voltage: at 3-phase 200 V)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT-7 type servo amplifier.

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

⁻ Model GYS102D, 152D, 202D: 350 × 350 × 8 [mm]

Servomotor Specifications: GYB motor

Standard specifications

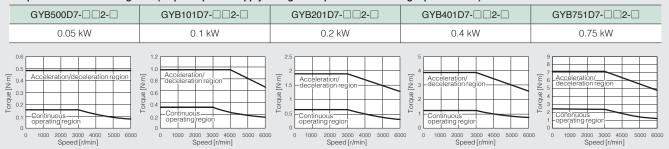
Motor type	GYB500D7-□□2-□	GYB101D7-□□2-□	GYB201D7-□□2-□	GYB401D7-□□2-□	GYB751D7-□□2-□	
Rated output [kW]	0.05	0.1	0.2	0.4	0.75	
Rated torque [N·m]	0.159	0.318	0.637	1.27	2.39	
Rated speed [r/min]			3000			
Max. speed [r/min]			6000			
Max. torque [N·m]	0.478	0.955	1.91	3.82	7.17	
Inertia [kg·m²]	0.0326×10 ⁻⁴	0.0616×10 ⁻⁴	0.33×10 ⁻⁴	0.57×10 ⁻⁴	1.53×10⁻⁴	
Rated current [A]	1.35	1.35	1.4	2.7	4.9	
Max. current [A]	5.2	5.2	6.0	12.0	18.0	
Insulation class	Class B					
Winding insulation class	Totall	Totally enclosed, self-cooled, IP67 (excluding the shaft sealing and lead wire connectors)*				
Terminals (motor)			Connector (lead wire)			
Terminal (encoder)			Connector (lead wire)			
Overheating protection		Not provided (The servo amplifier detects	s temperature)		
Mounting method		Flange moun	ting IMB5 (L51), IMV1 (L52	2), IMV3 (L53)		
Encoder		24-bit serial encode	r (absolute/incremental/abs	solute (battery-less))		
Vibration level			V5 or below			
Installation place, environment	For indoor use	For indoor use (free from direct sunlight), locations without corrosive and flammable gases, oil mist and dust				
Altitude	Altitude ≤ 1000 m					
Ambient temperature, humidity	-10 to +40°C (without freezing), within 90% RH max. (without condensation)					
Vibration resistance [m/s²]	49					
Mass [kg]	0.3	0.4	0.9	1.2	2.3	
Standards		UL/cUL (UL1004), CE r	marking (EN60034-1, EN60	0034-5), RoHS directive		

^{*} When using the product under such an environment as specified in IP67, make sure that the connector for wiring is compatible with IP67.

Brake specifications (motor equipped with a brake)

Motor type	GYB500D7-□□2-□	GYB101D7-□□2-□	GYB201D7-□□2-□	GYB401D7-□□2-□	GYB751D7-□□2-□		
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		
Inertia [kg·m²]	0.0357×10 ⁻⁴	0.0647×10 ⁻⁴	0.37×10 ⁻⁴	0.62×10 ⁻⁴	1.71×10⁻⁴		
Static friction torque [N·m]	0.:	34	1.	3.0			
Rated voltage [V]		24 VDC ±10%					
Attraction time [ms]	3	35		40			
Release time [ms]	10		20		20		
Power consumption [W]	6.1 (at 20°C)		7.2 (at 20°C)		8.5 (at 20°C)		
Mass [kg]	0.55	0.65	1.3	1.8	3.2		

Torque characteristics diagrams (amplifier power supply voltage: at 3-phase 200 V or single-phase 230 V)



These characteristics indicate typical values of each servomotor combined with the corresponding RYT-7 type servo amplifier. The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink

- Model GYB500, 101: 200 × 200 × 6 [mm]
- Model GYB201D, 401D: 250 × 250 × 6 [mm] Model GYB751D: 300 × 300 × 6 [mm]

Servomotor Specifications: GYE motor

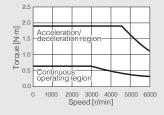
Standard specifications

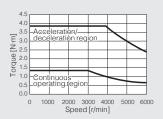
Motor type	GYE201D6-GC2	GYE401D6-GC2	GYE751D6-GC2			
Rated output [kW]	0.2	0.4	0.75			
Rated torque [N·m]	0.637	1.27	2.39			
Rated speed [r/min]		3000				
Max. speed [r/min]		6000				
Max. torque [N·m]	1.91	3.82	7.17			
Inertia [kg·m²]	0.26×10⁻⁴	0.50×10 ⁻⁴	1.53×10 ⁻⁴			
Rated current [A]	1.5	2.5	4.7			
Max. current [A]	5.2	5.2 8.5				
Insulation class		Class F				
Winding insulation class	Totally enclosed, self-c	Totally enclosed, self-cooled, IP67 (excluding the shaft sealing and lead wire connectors)*				
Terminals (motor)	Cable 0.3 m (with connector)					
Terminal (encoder)		Cable 0.3 m (with connector)				
Overheating protection	Not p	Not provided (The servo amplifier detects temperature)				
Mounting method	Flan	Flange mounting IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Encoder		17-bit serial encoder (incremental)				
Vibration level		V10 or below				
Installation place, environment	For indoor use (free from direct	sunlight), locations without corrosive and flar	mmable gases, oil mist and dust			
Altitude	Altitude ≤ 1000 m					
Ambient temperature, humidity	0 to +40°C, within 90% RH max. (without condensation)					
Vibration resistance [m/s²]	49					
Mass [kg]	0.9	1.2	2.2			
Standards	CE m	narking (EN60034-1, EN60034-5), RoHS dire	ctive			

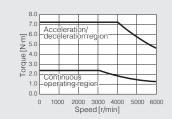
^{*} When using the product under such an environment as specified in IP67, make sure that the connector for wiring is compatible with IP67.

Torque characteristics diagrams (amplifier power supply voltage: at 3-phase 200 V or single-phase 230 V)

GYE201D6-GC2	GYE401D6-GC2	GYE751D6-GC2
0.2 kW	0.4 kW	0.75 kW







These characteristics indicate typical values of each servomotor combined with the corresponding RYT-7 type servo amplifier. The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYE201, 401: 250 × 250 × 6 [mm] Model GYE751: 400 × 400 × 12 [mm]

Servomotor Specifications: GYL motor

Standard specifications

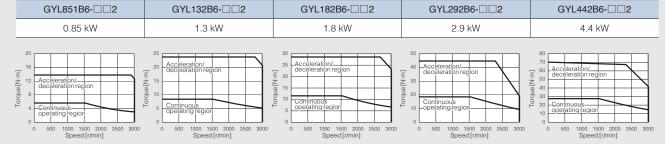
Motor type	GYL851B6-□□2	GYL132B6-□□2	GYL182B6-□□2	GYL292E	36-□□2	GYL442B6-□□2
Combination servo amplifier	RYT851S7-□□□2	RYT132S7-□□□2	RYT182S7-□□□2	RYT292S7-□□□2	□2 RYT442S7-□□2	
Rated output [kW]	0.85	1.3	1.8	2.4	2.9	4.4
Rated torque [N·m]	5.39	8.34	11.5	15.3	18.5	28.4
Rated speed [r/min]			15	00		
Max. speed [r/min]			30	00		
Max. torque [N·m]	13.8	23.3	28.7	36.7	44.3	71.1
Inertia [kg·m²]	13.34×10 ⁻⁴	20.07×10 ⁻⁴	26.66×10 ⁻⁴	45.55	×10 ⁻⁴	65.41×10 ⁻⁴
Rated current [A]	7	11.4	14.8	19.9	24	34
Max. current [A]	18.1	32.4	37.4	48	58	85
Insulation class	Class F					
Winding insulation class	To	otally enclosed, self-c	ooled, IP67 (excluding	the shaft sealing and	lead wire connectors)*
Terminals (motor)			Cannon o	connector		
Terminal (encoder)			Cannon o	connector		
Overheating protection		Not p	rovided (The servo an	nplifier detects temper	ature)	
Mounting method		Flange mounting IMB5 (L51), IMV1 (L52), IMV3 (L53)				
Encoder			17-bit serial encoder ((absolute/incremental)		
Vibration level			V15 or	below		
Installation place, environment	For indoor	For indoor use (free from direct sunlight), locations without corrosive and flammable gases, oil mist and dust				
Altitude	Altitude ≤ 1000 m					
Ambient temperature, humidity	0 to +40°C, within 90% RH max. (without condensation)					
Vibration resistance [m/s²]	19.6					
Mass [kg]	6.7	8.9	11.1	18	8	23.5
Standards		CE marking (EN	60034-1, EN60034-5)	, RoHS directive		

^{*} When using the product under such an environment as specified in IP67, make sure that the connector for wiring is compatible with IP67.

Brake specifications (motor equipped with a brake)

Motor type	GYL851B6-□□2-B	GYL132B6-□□2-B	GYL182B6-□□2-B	GYL292B6-□□2-B		GYL442B6-□□2-B	
Rated output [kW]	0.85	1.3	1.8	2.4	2.9	4.4	
Rated torque [N·m]	5.39	8.34	11.5	15.3	18.5	28.4	
Inertia [kg·m²]	14.00×10 ⁻⁴	20.73×10 ⁻⁴	27.32×10 ⁻⁴	49.85	×10 ⁻⁴	69.71×10 ⁻⁴	
Static friction torque [N·m]		17			37		
Rated voltage [V]		24 VDC ±10%			24 VDC ±5%		
Attraction time [ms]		140		200			
Release time [ms]	60				80		
Power consumption [W]	19.5				27.5		
Mass [kg]	8.3	10.5	12.7	22	2.5	28	

Torque characteristics diagrams (amplifier power supply voltage: at 3-phase 200 V or single-phase 230 V)

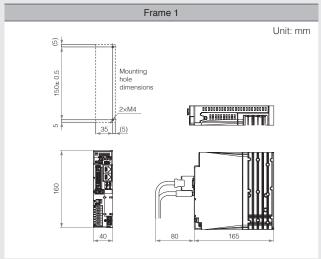


These characteristics indicate typical values of each servomotor combined with the corresponding RYT-7 type servo amplifier.

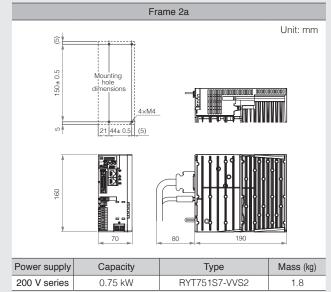
- Model GYL851, 132, 182: $400 \times 400 \times 12$ [mm] Model GYL292, 442: $600 \times 600 \times 25$ [mm]

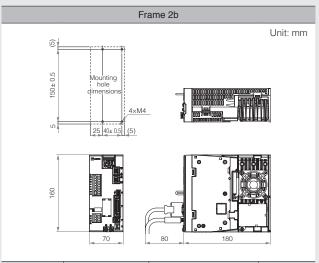
External Dimensions: Servo Amplifier (ALPHA7S)

VVS type

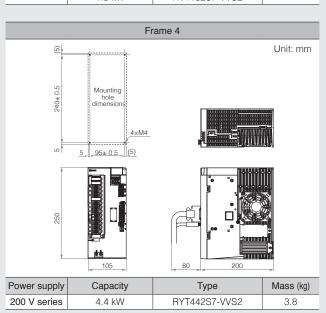


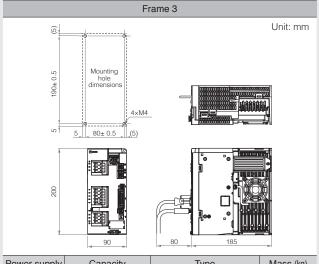
Power supply	Capacity	Туре	Mass (kg)
	0.1 kW	RYT101S7-VVS2	
200 V series	0.2 kW	RYT201S7-VVS2	0.8
	0.4 kW	RYT401S7-VVS2	





Power supply Capacity		Туре	Mass (kg)	
000 V oorioo	0.85 kW	RYT851S7-VVS2	1 5	
200 V series	1.3 kW	RYT132S7-VVS2	1.5	



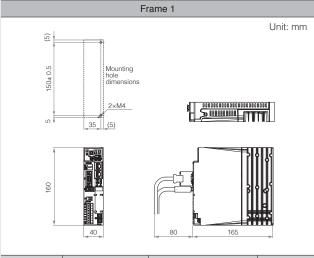


Power supply	Capacity	Type	Mass (kg)	
200 V series	1.8 kW	RYT182S7-VVS2	2.5	
	2.9 kW	RYT292S7-VVS2	2.5	

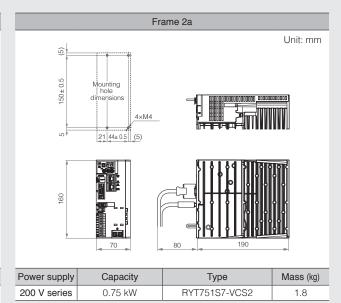
Model List

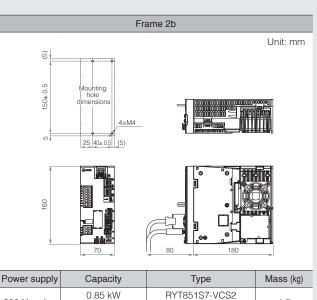
External Dimensions: Servo Amplifier (ALPHA7S)

VCS type

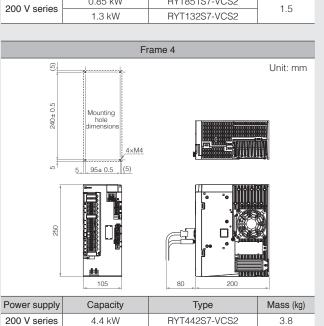


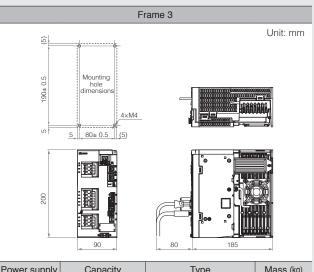
Power supply Capacity		Туре	Mass (kg)
200 V series	0.1 kW	RYT101S7-VCS2	
	0.2 kW	RYT201S7-VCS2	0.8
	0.4 kW	RYT401S7-VCS2	





	Power supply	Capacity	Туре	Mass (kg)
200 V series	0.85 kW	RYT851S7-VCS2	1 5	
	1.3 kW	RYT132S7-VCS2	1.5	

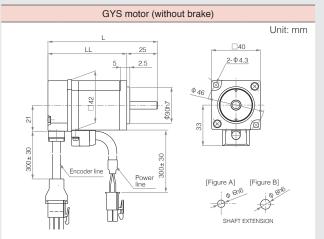




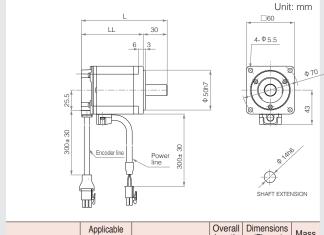
Power supply	Capacity	Туре	Mass (kg)
000 V oorioo	1.8 kW	RYT182S7-VCS2	2.5
200 V series	2.9 kW	RYT292S7-VCS2	2.5

Model List

External Dimensions: GYS Motor

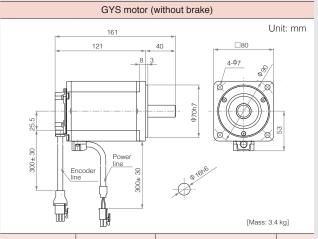


Rated speed	Applicable motor rated output	Type	Shaft shape	Overall length	Dimensions (Flange)	Mass (kg)
	Taleu oulpul			L	LL	
3000 r/min	0.05 kW	GYS500D7-□B2	Figure A	89	64	0.45
	0.1 kW	GYS101D7-□B2	Figure B	107	82	0.55

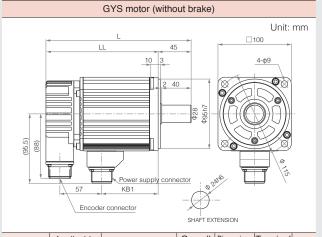


GYS motor (without brake)

Rated speed	Applicable motor rated output	Туре	Overall length	Dimensions (Flange) LL	Mass (kg)
3000 r/min	0.2 kW	GYS201D7-□B2	107.5	77.5	1.2
	0.4 kW	GYS401D7-□B2	135.5	105.5	1.8

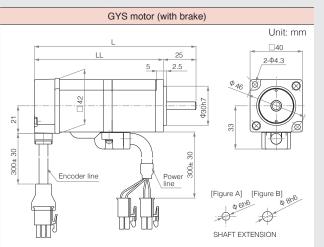


Rated speed	Applicable motor rated output	Туре	Mass (kg)	
3000 r/min	0.75 kW	GYS751D7-□B2	3.4 kg	

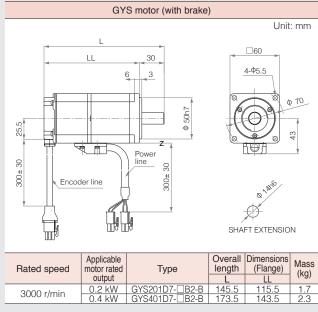


Applicable motor	rype	length	(Flange)	portion	Mass (kg)
rated output		L	LL	KB1	(9)
1.0 kW	GYS102D7-□B2	198	153	77	4.4
1.5 kW	GYS152D7-□B2	220.5	175.5	99.5	5.2
2.0 kW	GYS202D7-□B2	243	198	122	6.3
	motor rated output 1.0 kW 1.5 kW	rated output 1.0 kW GYS102D7- B2 1.5 kW GYS152D7- B2	rated output	Type larigiti (Lalige) rated output L LL 1.0 kW GYS102D7-□B2 198 153 1.5 kW GYS152D7-□B2 220.5 175.5	motor rated output Type length (Flange) portion 1.0 kW GYS102D7-B2 198 153 77 1.5 kW GYS152D7-B2 220.5 175.5 99.5

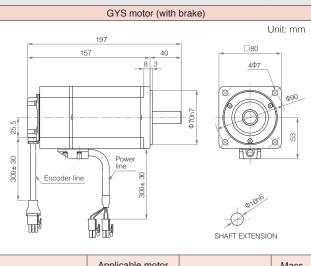
External Dimensions: GYS Motor



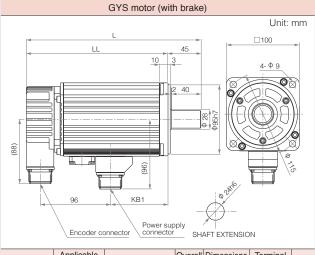
Rated speed	Applicable motor rated output	Туре	Shaft shape	Overall length	Dimensions (Flange) LL	Mass (kg)
3000 r/min	0.05 kW	GYS500D7-□B2-B	Figure A	123.5	98.5	0.62
	0.1 kW	GYS101D7-□B2-B	Figure B	141.5	116.5	0.72



3000 r/min

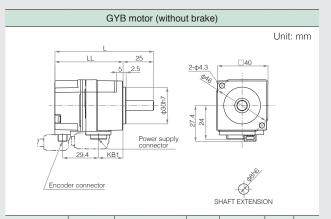


Rated speed Applicable motor rated output		Туре	Mass (kg)	
3000 r/	min min	0.75 kW	GYS751D7-□B2-B	4.2

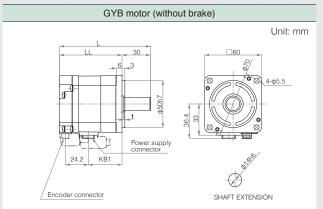


Rated speed	Applicable motor	Type	Overall length	Dimensions (Flange)	portion	Mass (kg)
эрсси	rated output		L	LL	KB1	(119)
	1.0 kW	GYS102D7-□B2-B	239	194	79	5.9
3000 r/min	1.5 kW	GYS152D7-□B2-B	261.5	216.5	101.5	6.8
	2.0 kW	GYS202D7-□B2-B	284	239	124	7.9

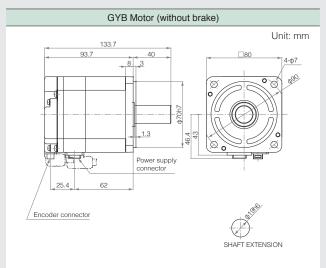
External Dimensions: GYB Motor, connector type



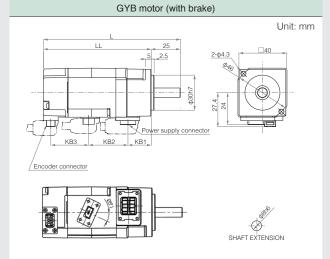
Rated speed	Applicable motor rated output	Туре	Overall length	Dimensions (Flange)	portion	Mass (kg)
	output		L	LL	KB1	
3000 r/min	0.05 kW	GYB500D7-□B2-C	80.5	55.5	19.9	0.3
	0.1 kW	GYB101D7-□B2-C	92.5	67.5	31.9	0.4



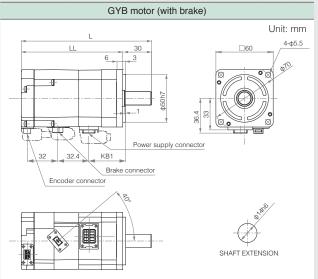
Rated speed	Applicable motor rated output	Туре	Overall length L	Dimensions (Flange) LL	Terminal portion KB1	Mass (kg)
3000 r/min	0.2 kW	GYB201D7-□B2-C	96.2	66.2	35.7	0.9
	0.4 kW	GYB401D7-□B2-C	114	84	53.5	1.2



Rated speed	Applicable motor rated output	Туре	Mass (kg)
3000 r/min	0.75 kW	GYB751D7-□B2-C	2.3

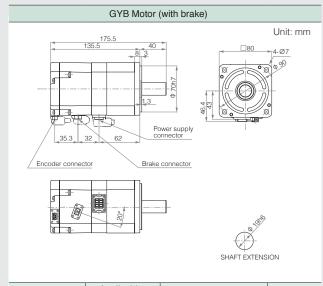


Rated speed Applicable motor		Туре	Overall length	Dimensions (Flange)		ermin portion		Mass (kg)
ороса	rated output		L	LL	KB1	KB2	KB3	(119)
3000 r/min	0.05 kW	GYB500D7-□B2-D	117.2	92.2	19.9	33.7	32.5	0.55
	0.1 kW	GYB101D7-□B2-D	129.2	104.2	31.85	33.65	32.45	0.65



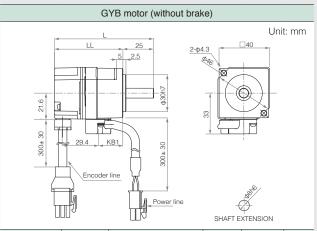
Rated speed			Overall length L	Dimensions (Flange) LL	Terminal portion KB1	Mass (kg)
3000 r/min	0.2 kW	GYB201D7-□B2-D	136.3	106.3	35.7	1.3
	0.4 kW	GYB401D7-□B2-D	154.1	124.1	53.5	1.8

*See Page 33 for the shaft extension specifications of the motor with a key.

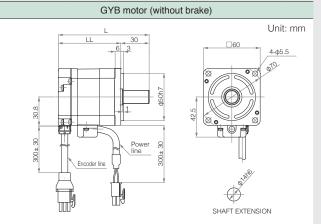


Rated speed	Applicable motor rated output	Туре	Mass (kg)
3000 r/min	0.75 kW	GYB751D7-□B2-D	3.2

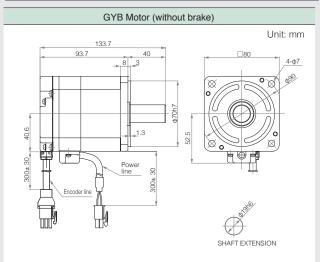
External Dimensions: GYB Motor, lead wire type



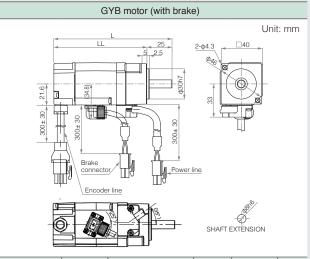
Rated speed	Applicable motor rated	rated Type		Dimensions (Flange)	Mass (kg)
	output		L	LL	(9)
3000 r/min	0.05 kW	GYB500D7-□B2	80.5	55.5	0.3
3000 1/111111	0.1 kW	GYB101D7-□B2	92.5	67.5	0.4



Rated speed	Applicable motor rated output	Туре	Overall length	Dimensions (Flange)	Mass (kg)
3000 r/min	0.2 kW	GYB201D7-□B2	96.2	66.2	0.9
3000 r/mm	0.4 kW	GYB401D7-□B2	114	84	1.2



Rated speed	Applicable motor rated output	Туре	Mass (kg)
3000 r/min	0.75 kW	GYB751D7-□B2	2.3

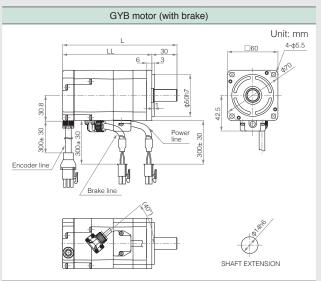


Rated speed	Applicable motor rated	Туре	Overall length	Dimensions (Flange)	Mass (kg)
·	output		L	LL	(kg)
3000 r/min	0.05 kW	GYB500D7-□B2-B	117.2	92.2	0.55
3000 1/111111	0.1 kW	GYB101D7-□B2-B	129.2	104.2	0.65

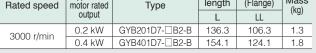
GYB Motor (with brake)

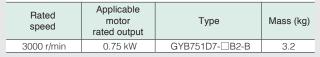
Unit: mm

4-Ø7



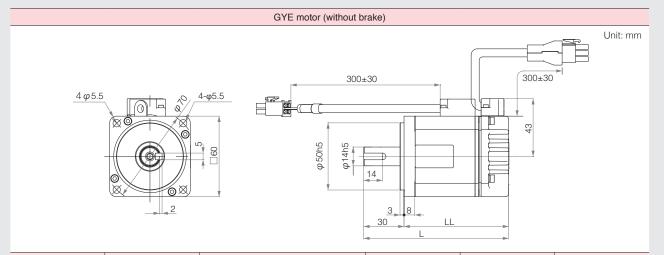
Rated speed	Applicable motor rated	Type	Overall length	Dimensions (Flange)	Mass (kg)
·	output		L	LL	(Ng)
3000 r/min	0.2 kW	GYB201D7-□B2-B	136.3	106.3	1.3
	0.4 kW	GYB401D7-□B2-B	154.1	124.1	1.8



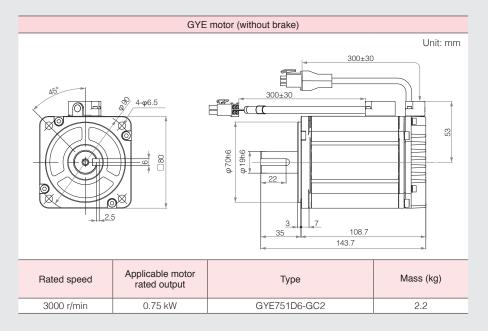


^{*1} See Page 33 for the shaft extension specifications of the motor with a key.
*2 Some dimensions may differ depending on the motor specifications.

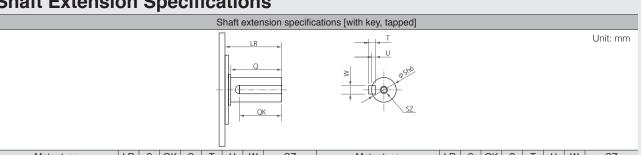
External Dimensions: GYE Motor



Rated speed	Applicable motor	Type	Overall length	Dimension (flange)	Mass (kg)	
· ·	rated output		L	LL		
3000 r/min	0.2 kW	GYE201D6-GC2	107.9	77.9	0.9	
	0.4 kW	GYE401D6-GC2	126.1	96.1	1.2	



Shaft Extension Specifications



Motor type	LR	Q	QK	S	Т	U	W	SZ	Motor type	LR	Q	QK	S	Т	U	W	SZ
GYS motor 3000 r/min									GYB motor 3000 r/min								
GYS500D7-□A2-□*	25	-	14	6	2	1.2	2	-	GYB500D7-□C2-□	25	-	14	8	3	2	3	M3 depth 6
GYS101D7-□A2-□*	25	-	14	8	3	1.8	3	-	GYB101D7-□C2-□	25	-	14	8	3	2	3	M3 depth 6
GYS201D7-□C2-□	30	-	20	14	5	3	5	M5 depth 8	GYB201D7-□C2-□	30	-	14	14	5	3	5	M5 depth 8
GYS401D7-□C2-□	30	-	20	14	5	3	5	M5 depth 8	GYB401D7-□C2-□	30	-	14	14	5	3	5	M5 depth 8
GYS751D7-□C2-□	40	-	30	16	5	3	5	M5 depth 8	GYB751D7-□C2-□	40	-	22	19	6	3.5	6	M6 depth 10
GYS102D7-□C2-□	45	40	32	24	7	4	8	M8 depth 16									
GYS152D7-□C2-□	45	40	32	24	7	4	8	M8 depth 16									
GYS202D7-□C2-□	45	40	32	24	7	4	8	M8 depth 16									

^{*} The shaft extension of the GYS motors of 0.1 kW or less is not tapped.

Model List

External Dimensions: GYL Motor

with key, tapped

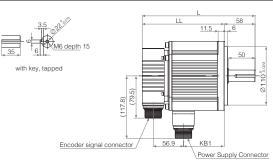
Encoder signal connector

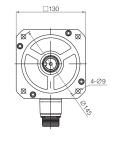
Brake connector

Electric connector/

Encoder signal connector /

GYL motor (without brake)









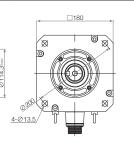
Rated speed	Applicable motor rated output	Туре	Overall length L	Dimension (flange)	Terminal portion KB1	Mass (kg)
1500 r/min	0.85 kW	GYL851B6-□G2	212.3	154.3	76.7	6.7
	1.3 kW	GYL132B6-□G2	237.3	179.3	101.7	8.9
	1.8 kW	GYL182B6-□G2	262.3	204.3	126.7	11.1

GYE motor (without brake)

23.8 3.2

Unit: mm

Unit: mm





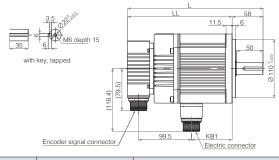


Receptacle: MS3102A22-22P (GYL292B6-□G2) MS3102A32-17P (GYL442B6-□G2)

Rated speed	Applicable motor	Type	Overall length	Dimension (flange)	Т	erminal portio	n	Mass (kg)	
nateu speeu	rated output	Туре	L	LL	KB1	KB2	H1	wass (kg)	
1500 r/min	2.9 kW	GYL292B6-□G2	280.4	201.4	109.6	71.1	141.9	18	
	4.4 kW	GYL442B6-□G2	312.4	233.4	135.5	77.2	146.7	23.5	

GYL motor (with brake)

Unit: mm



KB2 /

Electric connector







Power Supply Connector

Rated speed	Applicable motor rated output	Туре	Overall length L	Dimension (flange)	Terminal portion KB1	Mass (kg)
1500 r/min	0.85 kW	GYL851B6-□G2-B	254.9	196.9	76.7	8.3
	1.3 kW	GYL132B6-□G2-B	279.9	221.9	101.7	10.5
	1.8 kW	GYL182B6-□G2-B	304.9	246.9	126.7	12.7

GYE motor (without brake)

23.8 3.2



Unit: mm

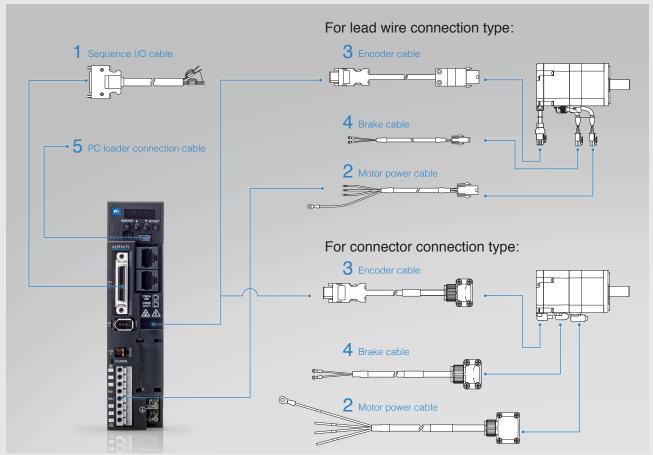






Rated speed	Applicable motor	Type	Overall length	Dimension (flange)	Т	erminal portio	n	Mass (kg)	
nateu speeu	rated output	туре	L	LL	KB1	KB2	H1	Mass (kg)	
1500 -/:-	2.9 kW	GYL292B6-□G2-B	332.6	253.6	109.6	73.1	141.9	22.5	
1500 r/min	4.4 kW	GYL442B6-□G2-B	364.6	285.6	135.5	79.2	146.7	28	

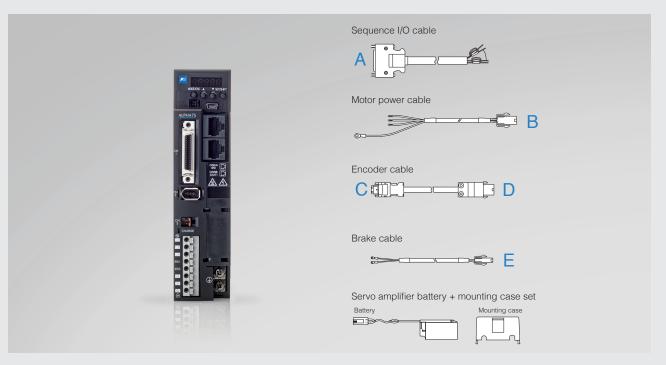
Options and Peripheral Equipment (ALPHA7S)



Basic option

Matau	Wire		Detect	1	2	3	4	5
Motor series	connection type	Brake	Rated output	Sequence I/O cable (between amplifier and motor)	Motor power cable (between amplifier and motor)	Encoder cable (between amplifier and motor)	Brake cable	PC loader cable
		No			WSC-M04P02-E	WOO BOODOO F	-	
GYS motor	Lead wire	Yes	0.05 kW to 0.75 kW		WSC-M04P05-E WSC-M04P10-E WSC-M04P20-E	WSC-P06P02-E WSC-P06P05-E WSC-P06P10-E WSC-P06P20-E	WSC-M02P02-E WSC-M02P05-E WSC-M02P10-E WSC-M02P20-E	
	Connector	No	1.0 kW to		WSK-M04P-CA is used to fabricate this (customer fabrication)	- WSC-P06P10-C WSC-P06P20-C	-	
	Connector	Yes	2.0 kW		WSK-M06P-CA is used to fabricate this (customer fabrication)		Wired to power supply connector	
	Lead wire	No				WOO DOODOO F	-	1100 M
GYB		Yes	0.05 kW to 0.75 kW	WSC-D36P03 (for VVS type) WSC-D14P03 (for VCS type)	WSC-M04P02-E WSC-M04P05-E WSC-M04P10-E WSC-M04P20-E	WSC-P06P02-E WSC-P06P05-E WSC-P06P10-E WSC-P06P20-E	WSC-M02P02-E WSC-M02P05-E WSC-M02P10-E WSC-M02P20-E	USB Mini-B cable (commercially avail- able one)
motor		No		With connector, bare wires on one side, 3 m			-	
	Connector	Yes	0.05 kW to 0.75 kW		wires on one side,	WSC-M04P02-K WSC-M04P05-K WSC-M04P10-K WSC-M04P20-K	WSC-P06P02-K WSC-P06P05-K WSC-P06P10-K WSC-P06P20-K	WSC-M02P02-K WSC-M02P05-K WSC-M02P10-K WSC-M02P20-K
GYE motor	Lead wire	No	0.2 kW to 0.75 kW		WSC-M04P02-E WSC-M04P05-E WSC-M04P10-E WSC-M04P20-E	WSC-P06P02-E WSC-P06P05-E WSC-P06P10-E WSC-P06P20-E	-	
GYL	Lead wire	No	0.85 kW to			own on Page 59 is use	d to fabricate this	
motor		Yes	4.4 kW		(customer fabrication)			

Options and Peripheral Equipment (ALPHA7S)



Options (connector kits)

Options (co		,						
Motor	Wire	Durley	Rated	Α	В	С	D	Е
series	connection type	Brake	output	Sequence I/O connector	Motor power con- nector (motor side)	Encoder connector (amplifier side)	Encoder connector (motor side)	Brake connector
	Lead wire	No	0.05 kW to	,	WSK-M04P-E		WSK-P09P-D	-
	Lead wire	Yes	0.75 kW		WSN-IVIU4P-E		W5K-P09P-D	WSK-M02P-E
GYS motor	Connector	No	1.0 kW to		WSK-M04P-CA			-
		Yes	2.0 kW		WSK-M06P-CA		WSK-P06P-C	Wired to power supply connector
	Lead wire	No	0.05 kW to 0.75 kW		WSK-M04P-E		WSK-P09P-D	-
GYB motor		Yes		WSK-D36P (for VVS type) WSK-D14P (for VCS type)			Work 1 031 B	WSK-M02P-E
G 1 D IIIO(OI	Connector	No	0.05 kW to			WSK-P06P-M		
	Connector	Yes	0.75 kW		_		_	-
GYE motor	Lead wire	No	0.2 to 0.75 kW		WSK-M04P-E		WSK-P09P-D	-
	Connector	No	0.85 kW to 4.4 kW		The connector shown below is		The connector shown below is	-
GYL motor		Yes			used to fabricate this (customer fabrication)		used to fabricate this (customer fabrication)	The connector shown below is used to fabricate this (customer fabrication)

Recommended motor power connector

[Manufactured by DDK Ltd.]

Motor tuno	Motor mounted receptacle	Products to be procured by customer					
Motor type	(For reference)	L-type plug	Straight plug	Cable clamp			
GYL851B6-□□2(B)	MS3102A20-4P	D/MS3108B20-4S	D/MS3106B20-4S				
GYL132B6-□□2(B)	(MS3102A20-4P	(D/MS3108B20-45)	(D/MS3106B20-45)	D/MS3057-12A			
GYL182B6-□□2(B)	(IVISS 102A20-131)	(D/W33106B20-133)	(D/W03100B20-133)				
GYL292B6-□□2(B)	MS3102A22-22P	D/MS3108B22-22S	D/MS3106B22-22S	D/MS3057-12A			
GYL442B6-□□2(B)	MS3102A32-17P	D/MS3108B32-17S	D/MS3106B32-17S	D/MS3057-20A			

Recommended brake power supply connector

[Manufactured by DDK Ltd.]

•	* * *			
Motor type	Motor mounted receptacle	Pro	oducts to be procured by custor	mer
wotor type	(For reference)	L-type plug	Straight plug	Cable clamp
GYL292B6-□□2-B	MS3102A10SL-3P	D/MS3108B10SL-3S	D/MS3106B10SL-3S	D/MS3057-4A
GYL442B6-□□2-B	10133 102A 103L-3F	D/WISS 100B 103L-33	D/W/33 100B 103L-33	D/W33037-4A

Wire size for wiring

Motor type	Motor power (U, V, W)	Brake		
GYL851B6-□□2(B)	1.25			
GYL132B6-□□2(B)	2			
GYL182B6-□□2(B)	2	1.25		
GYL292B6-□□2(B)	3.5			
GYL442B6-□□2(B)	3.5			

^{*}The above wire sizes are selected based on 75°C (HIV) wire. To use other wires, please refer to the user's manual.

Model List

Peripherals

Input power	Servo amplifier type	Applicable motor rated output [kW]	Power filter	AC reactor	DC reactor	Molded case circuit breaker	Earth leakage circuit breaker	Magnetic contactor	
	RYT101S7-□□S2	0.1	DNETDOC 00	ACR2-0.4A	DCR2-0.4	BW32AAG-2P003	EW32AAG-2P003		
Single-phase	RYT201S7-□□S2	0.2	RNFTD06-20	ACR2-0.75A	DCR2-0.75	BW32AAG-2P005	EW32AAG-2P005	SC-03	
200 V	RYT401S7-□□S2	0.4	RNFTD10-20	RNFTD10-20 ACR2-1.5A DCR2-1.5 BW32AAG-2P010 EW3:		EW32AAG-2P010			
	RYT751S7-□□S2	0.75	RNFTD20-20	ACR2-2.2A	DCR2-2.2	BW32AAG-2P015	EW32AAG-2P015	SC-0	
_	RYT101S7-□□S2	0.1		ACR2-0.4A	DCR2-0.2	BW32AAG-3P003	EW32AAG-3P003		
	RYT201S7-□□S2	0.2	RNFTC06-20		DCR2-0.4	DW3ZAAG-3PUU3			
	RYT401S7-□□S2	0.4		ACR2-0.75A	DCR2-0.75	BW32AAG-3P005	EW32AAG-3P005	SC-03	
0	RYT751S7-□□S2	0.75	RNFTC10-2	ACR2-1.5A	DCR2-1.5	BW32AAG-3P010	EW32AAG-3P010		
3-phase 200 V	RYT851S7-□□S2	0.85	MINETO 10-2	ACR2-2.2A	DCR2-2.2	BW32AAG-3P015	EW32AAG-3P015		
200 V	RYT132S7-□□S2	1.3	RNFTC20-20	AUNZ-Z.ZA	DUNZ-Z.Z	BW32AAG-3P020	EW32AAG-3P020	SC-4-1	
	RYT182S7-□□S2	1.8	RINF I C2U-2U	ACR2-3.7A	DCR2-3.7	BW32AAG-3P030	EW32AAG-3P030	SC-4-1	
	RYT292S7-□□S2	2.9	RNFTC30-20	ACR2-5.5A	DCR2-5.5	BW50AAG-3P040	EW50AAG-3P040	SC-N1	
	RYT442S7-□□S2	4.4	RNFTC50-20	ACR2-11A	DCR2-11	BW50AAG-3P050	EW50AAG-3P050	SC-N2	

External regenerative resistor option

The external regenerative resistor consumes regenerative power from the servomotor. Use an external regenerative resistor when the lifting load and operating frequency are high.

Servo amplifier type	Capacity [kW]	Built-in resistor*	External regenerative resistor	Applicable resistance [Ω]
RYT101S7-□□S2	0.1	-	WOD 404	39 to 160
RYT201S7-□□S2	0.2	-	WSR-401 (68 Ω, 17 W)	39 10 160
RYT401S7-□□S2	0.4	-	(00 12, 17 VV)	39 to 80
RYT751S7-□□S2	0.75		WOD 450	15 to 40
RYT851S7-□□S2	0.85	20 W/15 Ω	WSR-152 (15 Ω, 50 W)	12 to 27
RYT132S7-□□S2	1.3		(13 12, 30 VV)	12 10 27
RYT182S7-□□S2	1.8	00 M/40 O	DB11-2	7.5 to 20
RYT292S7-□□S2	2.9	30 W/12 Ω	(10 Ω, 260 W)	7.5 to 13
RYT442S7-□□S2	4.4	60 W/6 Ω	DB22-2 (5.8 Ω, 300 W)	5.2 to 8

^{*}The maximum voltage of the built-in regenerative resistor varies depending on the ambient temperature.

Model List: Servo Amplifiers (ALPHA7S)

Classifica-			Specifica	tion			Typo
tion	Model	Control mode	Directive I/F	Input voltage	Frame	Capacity (kW)	Туре
						0.1	RYT101S7-VVS2
				Single-phase or 3-phase	Frame 1	0.2	RYT201S7-VVS2
				200 to 240 V		0.4	RYT401S7-VVS2
		Position, speed and torque	General-		Frame 2a	0.75	RYT751S7-VVS2
	VVS type	control (Built-in positioning	purpose		Frame 2b	0.85	RYT851S7-VVS2
	турс	function)	interface		France 20	1.3	RYT132S7-VVS2
				3-phase 200 to 240 V	Frame 3	1.8	RYT182S7-VVS2
					Frame 3	2.9	RYT292S7-VVS2
Amplifier					Frame 4	4.4	RYT442S7-VVS2
Ampimei				Single-phase or 3-phase 200 to 240 V	Frame 1	0.1	RYT101S7-VCS2
						0.2	RYT201S7-VCS2
						0.4	RYT401S7-VCS2
					Frame 2a	0.75	RYT751S7-VCS2
	VCS type	Position, speed and torque control	EtherCAT		Frame 2b	0.85	RYT851S7-VCS2
	typo	Control			Frame 20	1.3	RYT132S7-VCS2
				3-phase 200 to 240 V	Frame 3	1.8	RYT182S7-VCS2
				200 10 240 1	riaine 3	2.9	RYT292S7-VCS2
					Frame 4	4.4	RYT442S7-VCS2

Model List

Model List: Servomotors

Classi-					Specificat	ion					
fication	Model	Voltage	Rated speed	Oil seal/Shaft	Encoder	Brake	Wire connection	Flange	Applicable motor rated output (kW)	Type	
								□40	0.05	GYS500D7-EB2	
								40	0.1	GYS101D7-EB2	
							Lead wire	□60	0.2	GYS201D7-EB2	
						Without			0.4	GYS401D7-EB2	
						brake		□80	0.75	GYS751D7-EB2	
									1.0	GYS102D7-EB2	
							Connector	□100	1.5	GYS152D7-EB2	
					24-bit				2.0	GYS202D7-EB2	
					ABS			□40	0.05	GYS500D7-EB2-B	
								40	0.1	GYS101D7-EB2-B	
							Lead wire	□60	0.2	GYS201D7-EB2-B	
						With				0.4	GYS401D7-EB2-B
						brake		□80	0.75	GYS751D7-EB2-B	
			3000						1.0	GYS102D7-EB2-B	
	GVC motor	GYS motor (Ultra-low 200 V			Without oil seal			Connector	□100	1.5	GYS152D7-EB2-B
Motor	(Ultra-low			Straight shaft					2.0	GYS202D7-EB2-B	
IVIOLOI	inertia)	200 V	r/min	Without key				□40	0.05	GYS500D7-NB2	
	illertia)			*1				40	0.1	GYS101D7-NB2	
							Lead wire	Lead wire	□60	0.2	GYS201D7-NB2
						Without			0.4	GYS401D7-NB2	
						brake		□80	0.75	GYS751D7-NB2	
									1.0	GYS102D7-NB2	
							Connector	□100	1.5	GYS152D7-NB2	
					24-bit				2.0	GYS202D7-NB2	
					INC			□40	0.05	GYS500D7-NB2-B	
								40	0.1	GYS101D7-NB2-B	
							Lead wire	□60	0.2	GYS201D7-NB2-B	
				With			0.4	GYS401D7-NB2-B			
						brake		□80	0.75	GYS751D7-NB2-B	
									1.0	GYS102D7-NB2-B	
							Connector	□100	1.5	GYS152D7-NB2-B	
									2.0	GYS202D7-NB2-B	

Model List: Servomotors

Classi				5	Specification	า											
Classi- fication	Model	Voltage	Rated speed	Oil seal/Shaft	Encoder	Brake	Wire connection	Flange	Applicable motor rated output (kW)	Type							
								□40	0.05	GYB500D7-EB2-C							
						Without			0.1	GYB101D7-EB2-C							
					24-bit	brake		□60	0.2	GYB201D7-EB2-C							
									0.4	GYB401D7-EB2-C							
						ABS		□80	0.75 0.05	GYB751D7-EB2-C GYB500D7-EB2-D							
					ADS		Connector	□40	0.1	GYB101D7-EB2-D							
						With				0.2	GYB201D7-EB2-D						
						brake				□60	0.4	GYB401D7-EB2-D					
									□80	0.75	GYB751D7-EB2-D						
							Connector	□40	0.05	GYB500D7-NB2-C							
						Without		□40	0.1	GYB101D7-NB2-C							
						brake		□60	0.2	GYB201D7-NB2-C							
						Diake			0.4	GYB401D7-NB2-C							
					24-bit			□80	0.75	GYB751D7-NB2-C							
					INC			□40	0.05	GYB500D7-NB2-D							
						With			0.1	GYB101D7-NB2-D							
	GYB			Without oil seal		brake		□60	0.2	GYB201D7-NB2-D							
	motor		3000	Straight shaft				80	0.4 0.75	GYB401D7-NB2-D GYB751D7-NB2-D							
	(Medium	200 V	r/min	Without key				□00	0.75	GYB500D7-EB2							
	inertia)		1/111111	*1				□40	0.1	GYB101D7-EB2							
	illellia)			·		Without			0.2	GYB201D7-EB2							
						brake		□60	0.4	GYB401D7-EB2							
					24-bit			□80	0.75	GYB751D7-EB2							
					ABS				0.05	GYB500D7-EB2-B							
					7.30			□40	0.1	GYB101D7-EB2-B							
								□60	0.2	GYB201D7-EB2-B							
									0.4	GYB401D7-EB2-B							
						Without brake 24-bit INC With brake		Lead wire	□80	0.75	GYB751D7-EB2-B						
								□40	0.05	GYB500D7-NB2							
Matai							Without			0.1	GYB101D7-NB2						
Motor					24-hit			□60	0.2	GYB201D7-NB2							
								□80	0.75	GYB401D7-NB2 GYB751D7-NB2							
					1				0.75	GYB500D7-NB2-B							
					IINC			□40	0.1	GYB101D7-NB2-B							
										0.2	GYB201D7-NB2-B						
								□60	0.4	GYB401D7-NB2-B							
								□80	0.75	GYB751D7-NB2-B							
			3000	Without oil seal	24-bit	Without		□60	0.2	GYE201D6-GC2							
	GYE	200 V	r/min	Straight shaft	INC	brake	Lead wire		0.4	GYE401D6-GC2							
			1/111111	With key, tapped	11.40	Diane		□80	0.75	GYE751D6-GC2							
									0.85	GYL851B6-PG2							
						Without		□130	1.3	GYL132B6-PG2							
						brake			1.8	GYL182B6-PG2							
					17-bit			□180	2.9 4.4	GYL292B6-PG2 GYL442B6-PG2							
					ABS				0.85	GYL851B6-PG2-B							
					1,700	\A (" · · ·		□130	1.3	GYL132B6-PG2-B							
						With			1.8	GYL182B6-PG2-B							
	GYL			Mith oil sool		brake			2.9	GYL292B6-PG2-B							
	motor	200 V	1500	With oil seal			Connnector	□180	4.4	GYL442B6-PG2-B							
	(Medium inertia)	200 V	r/min	Straight shaft			Commector		0.85	GYL851B6-TG2							
				With key, tapped		Without		□130	1.3	GYL132B6-TG2							
						brake			1.8	GYL182B6-TG2							
						DIANE		□180	2.9	GYL292B6-TG2							
					17-bit				4.4	GYL442B6-TG2							
					INC				0.85	GYL851B6-TG2-B							
						With	1	h	□130	1.3	GYL132B6-TG2-B						
					brake											1.8 2.9	GYL182B6-TG2-B GYL292B6-TG2-B
								□180	4.4	GYL442B6-TG2-B							
*1 The tal				<u> </u>	1	L	l		7.4	G 1 LTT2 DO-1 G 2-D							

^{*1} The table above shows representative models without an oil seal and without a key.

Model List

Model List: Options

Classification		Na	ame	Applicable	Specification	Type
		etween host		ALPHA7S VVS	3 m (bare wires on one side)	WSC-D36P03
	Sequence I/O (between host and amplifier) Sequence I/O cable Sequence I/O connecto			ALPHA7S VCS	3 m (bare wires on one side)	WSC-D14P03
	(between nost	0		ALPHA7S VVS		WSK-D36P
	and amplinor)	Seq	uence I/O connector	ALPHA7S VCS	1 set	WSK-D14P
				GYS: 0.05 to 0.75 kW	2 m (bare wires on one side)	WSC-M04P02-E
				GYB: 0.05 to 0.75 kW	5 m (bare wires on one side)	WSC-M04P05-E
				GYE: 0.2 to 0.75 kW	10 m (bare wires on one side)	WSC-M04P10-E
			E	(Lead wire type)	20 m (bare wires on one side)	WSC-M04P20-E
		_	For main power		2 m (bare wires on one side)	WSC-M04P02-K
		0		GYB: 0.05 to 0.75 kW	5 m (bare wires on one side)	WSC-M04P05-K
	Motor power cable			(Connector type)	10 m (bare wires on one side)	WSC-M04P10-K
		8			20 m (bare wires on one side)	WSC-M04P20-K
		ĕ			2 m (bare wires on one side)	WSC-M02P02-E
	r ca			GYS: 0.05 to 0.75 kW	5 m (bare wires on one side)	WSC-M02P05-E
		ab		GYB: 0.05 to 0.75 kW (Lead wire type)	10 m (bare wires on one side)	WSC-M02P10-E
		Ф	Fau bualla marria	(Lead wile type)	20 m (bare wires on one side)	WSC-M02P20-E
			For brake power		2 m (bare wires on one side)	WSC-M02P02-K
				GYB: 0.05 to 0.75 kW	5 m (bare wires on one side)	WSC-M02P05-K
				(Connector type)	10 m (bare wires on one side)	WSC-M02P10-K
0	For motor power				20 m (bare wires on one side)	WSC-M02P20-K
Options	power	For motor power:	For main power	GYS/GYB: 0.05 to 0.75 kW ⁻² GYE: 0.2 to 0.75 kW	1 set	WSK-M04P-E
S			For brake power	GYS/GYB: 0.05 to 0.75 kW ²	1 set	WSK-M02P-E
		mo:	For main power	GYS: 1.0 to 2.0 kW	1 set	WSK-M04P-CA
		7 0	For main power + brake power	GYS: 1.0 to 2.0 kW	1 set	WSK-M06P-CA
		а, П		GYB: 0.05 to 0.75 kW	10 m	WSC-P06P10-K
		ᇑ		GYE: 0.2 to 0.75 kW	20 m	WSC-P06P20-K
		말	Encoder cable		5 m	WSC-P06P05-C
		e S		GYS: 1.0 to 2.0 kW	10 m	WSC-P06P10-C
		ब ले			20 m	WSC-P06P20-C
		<u>a</u> @		All capacities	1 set	WSK-P06P-M
		For encoder (between amplifier and motor)	Encoder connector ¹	GYS/GYB: 0.05 to 0.75 kW ² GYE: 0.2 to 0.75 kW	1 set	WSK-P09P-D
				GYS: 1.0 to 2.0 kW	1 set	WSK-P06P-C
			ABS backup	Battery + mounting case set * With mounting case	1 set	WSB-SC
				Battery * Replacement battery only	1 piece	WSB-S
				ALPHA7S: 0.1 to 0.4 kW	1 piece	WSR-401
	Euterna	Lroge	andina register	ALPHA7S: 0.75 to 1.3 kW	1 piece	WSR-152
	Externa	reger	nerative resistor	ALPHA7S: 1.8 to 2.9 kW	1 piece	DB11-2
				ALPHA7S: 4.4 kW	1 piece	DB22-2

^{*1} This connector is intended for use when the customer fabricates a cable of an arbitrary length. *2 This is not necessary for GYB motors, connector type.

Replacement of other models

We have prepared documents on how to replace other models with ALPHA7S. For details, please download the following documents from Download Documents for free.

Models applicable for replacement	Document No.	Document name
ALPHA5 Smart	Jde030-00801	ALPHA5 Smart Replacement Manual

Gearhead Combination Table

Appli			Deceleration r	atio 1/5	Deceleration r	atio 1/9	Deceleration ra	atio 1/15	Deceleration r	atio 1/25
Appli- cable motor	Capacity [kW]	Compatible servomotor type	Reduction gear type	Reduction gear part number code	Reduction gear type	Reduction gear part number code	Reduction gear type	Reduction gear part number code	Reduction gear type	Reduction gear part number code
GYS GYB	0.05	GYS500D7-○□2-△	GYN500SCG-G05XD	GYN300S	GYN500SCG-G09XD	GYN320S	GYN500SCG-G15XD	GYN360S	GYN500SCG-G25XD	GYN340S
GIB	0.05	GYB500D7-○□2-△								
	0.1	GYS101D7-○□2-△	GYN101SCG-G05XD	GYN301S	GYN101SCG-G09XD	GYN321S	GYN101SCG-G15XD	GYN361S	GYN101SCG-G25XD	GYN341S
	0.1	GYB101D7-○□2-△								
	0.2	GYS201D7-○□2-△	CANISU16CG CUEAD	GYN302S	GYN201SCG-G09XD	GYN322S	GYN201SCG-G15XD	GYN362S	GYN201SCG-G25XD	GYN342S
	0.2	GYB201D7-○□2-△	GYN201SCG-G05XD	G1103023	G11/2015CG-G09AD	GTN3223	G1112013CG-G13AD	G11N3023	G1N2015CG-G25AD	
	0.4	GYS401D7-○□2-△	GYN401SCG-G05XD	GYN303S	GYN401SCG-G09XD	GYN323S	GYN401SCG-G15XD	GYN363S	GYN401SCG-G25XD	GYN343S
	0.4	GYB401D7-○□2-△	G1N4015CG-G05AD	G1103033	G1N4013CG-G09AD	G1103233	G1114015CG-G15AD	GTNS035	G1N4015CG-G25AD	
	0.75	GYS751D7-○□2-△	GYN751SCG-G05XD	GYN304S	GYN751SCG-G09XD	GYN324S	GYN751SCG-G15XD	GYN364S	GYN751SCG-G25XD	GYN344S
	0.75	GYB751D7-○□2-△	GYN751BCG-G05XD*1	GYN301B	GYN751BCG-G09XD*1	GYN302B	GYN751BCG-G15XD*1	GYN304B	GYN751BCG-G25XD*1	GYN303B
	1	GYS102D7-○□2-△	-	-					-	-
	1.5	GYS152D7-○□2-△	-	-	GYN202SCG-G09XD	GYN325S	GYN202SCG-G15XD	GYN365S	=	-
	2	GYS202D7-○□2-△	-	-					-	-

^{*1:} The hole diameter of the motor insertion part is different.

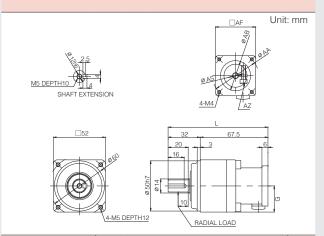
- The symbols \bigcirc , \square , \triangle in the nomenclature are explained below.

0	Encoder type	Е	24-bit ABS
		В	24-bit ABS (battery-less)
		N	24-bit INC
	Shaft extension	А	Without oil seal, straight shaft, with key
	*Motors with E, F, or G oil seals cannot be	В	Without oil seal, straight shaft, without key
	used.	С	Without oil seal, straight shaft, with key, tapped
\triangle	Connection/brake	Unmarke	d Lead wire/without brake
		В	Lead wire/with brake
		С	Connector/without brake
		D	Connector/with brake

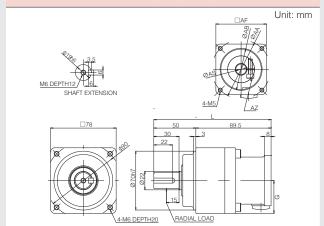
Note) By removing the key from the shaft, it can be assembled with a key-equipped motor.

(The assembly work should be done by the customer.)

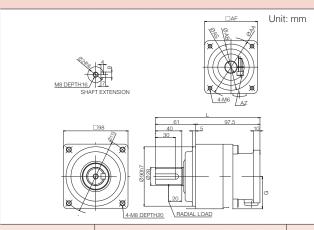
Gearhead Dimensions: For GYS and GYB Motors



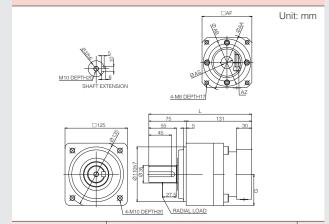
Type	Dimensions								
туре	L	AF	AA	AZ	AB	AS	G	(kg)	
GYN500SCG-G05XD	99.5							0.55	
GYN500SCG-G09XD	99.5					6		0.55	
GYN500SCG-G15XD	110		46			0		0.7	
GYN500SCG-G25XD	110	40		M4	30		23.5	0.7	
GYN101SCG-G05XD	00 F	40	46	IVI4	30		23.5	0.55	
GYN101SCG-G09XD	99.5					8		0.55	
GYN101SCG-G15XD	110					°		0.7	
GYN101SCG-G25XD	110							0.7	
GYN201SCG-G05XD	104.5	60	70	M5	50	14	33.5	0.72	



Type		Dimensions								
Туре	L	AF	AA	AZ	AB	AS	G	(kg)		
GYN201SCG-G09XD	139.5							1.7		
GYN201SCG-G15XD	150							2.1		
GYN201SCG-G25XD	150							2.1		
GYN401SCG-G05XD	139.5	90	70	M5	50	14	34.5	17		
GYN401SCG-G09XD	139.5							1.7		
GYN401SCG-G15XD	150									
GYN401SCG-G25XD	130							21		
GYN751SCG-G05XD	143.5	80	90	M6	70	16	44.5	2.1		
GYN751BCG-G05XD	143.5	00	90	IVIO	70	19	44.5			



Dimensions								
L	AF	AA	AZ	AB	AS	G	(kg)	
1505					16		3.4	
136.3		90			19	44.5	3.4	
	80		Me	70	16		3.8	
171			IVIO	///	19	44.5		
171					16			
					19			
	158.5	158.5	158.5	158.5 80 90 M6	158.5 80 90 M6 70	158.5 80 90 M6 70 16 171 80 90 M6 70 16 19 16	158.5 80 90 M6 70 16 19 16 14.5	



Type	Dimensions						Mass	
71	L	AF	AA	AZ	AB	AS	G	(kg)
GYN202SCG-G09XD	206	100	0 115	M8	95	24	E 1	7.1
GYN202SCG-G15XD	222	100	113	IVIO	95	24	31	8.4

Specification List

■ Common

Backlash	0.25° (15)
Degree of protection	IP40

■ Deceleration ratio: 1/5

Reduction gear type (GYS and GYB)	GYN500SCG-G05XD	GYN101SCG-G05XD	GVN2019CG-G05YD	GVN4019CG-G05YD	GYN751SCG-G05XD	
rieduction gear type (a 15 and a 15)	GTN30030G-G03XD	a i Nio i soci-ciosad	G11020130G-G03XD	G1114013CG-G03XD	GYN751BCG-G05XD	
Applicable motor capacity [kW]	0.05	0.1	0.2	0.4	0.75	
Output shaft rated rotation speed [min ⁻¹]		600				
Output shaft rated torque [N·m]	0.652	1.43	2.93	5.60	11.0	
Output shaft instantaneous maximum torque [N·m]	1.96	4.29	8.78	16.8	32.9	
Allowable radial load [N]	490			98	980	
Allowable thrust load [N]	245 49			90		
Motor shaft converted moment of inertia (GYS and GYB) [kg m²]	0.0604×10 ⁻⁴ 0.147×10 ⁻⁴		0.147×10 ⁻⁴	0.370×10 ⁻⁴	0.817×10 ⁻⁴	

■ Deceleration ratio: 1/9

Reduction gear type (GYS and GYB)	GYN500SCG-G09XD	GYN101SCG-G09XD	GVN10018CG G00VD	CANAUTECE COOAD	GYN751SCG-G09XD
neduction gear type (GT3 and GTB)	G1103003CG-G03XD	d I N 10 13 CG - GU 3 A D	G11020130G-G09AD	G1114013CG-G03XD	GYN751BCG-G09XD
Applicable motor capacity [kW]	0.05	0.1	0.2	0.4	0.75
Output shaft rated rotation speed [min ⁻¹]		333			
Output shaft rated torque [N·m]	1.17	2.58	4.75	10.1	19.5
Output shaft instantaneous maximum torque [N·m]	3.52	7.73	14.3	30.2	58.6
Allowable radial load [N]	5	588		1,180	
Allowable thrust load [N]	294		588		735
Motor shaft converted moment of inertia (GYS and GYB) [kg m²]	0.0497×10 ⁻⁴		0.273×10 ⁻⁴		0.755×10 ⁻⁴

Reduction gear type (GYS and GYB)	GYN202SCG-G09XD				
Applicable motor capacity [kW]	1.0	1.5	2.0		
Output shaft rated rotation speed [min ⁻¹]	333				
Output shaft rated torque [N·m]	26.3	39.9	53.8		
Output shaft instantaneous maximum torque [N·m]	79.0	120	162		
Allowable radial load [N]	1,960				
Allowable thrust load [N]	980				
Motor shaft converted moment of inertia (GYS and GYB) [kg m²]	²] 2.75×10 ⁻⁴				

■ Deceleration ratio: 1/15

Reduction gear type (GYS and GYB)	GYN500SCG-G15XD	GYN101SCG-G15XD	GYN201SCG-G15XD	GYN401SCG-G15XD	GYN751SCG-G15XD GYN751BCG-G15XD
Applicable motor capacity [kW]	0.05	0.1	0.2	0.4	0.75
Output shaft rated rotation speed [min-1]		200			
Output shaft rated torque [N·m]	1.84	4.10	8.20	17.0	31.9
Output shaft instantaneous maximum torque [N·m]	5.51	12.3	24.6	51.0	95.6
Allowable radial load [N]	784		1,470		1,760
Allowable thrust load [N]	392		735		882
Motor shaft converted moment of inertia (GYS and GYB) [kg m²]	0.0525×10 ⁻⁴		0.302×10 ⁻⁴		0.685×10 ⁻⁴

Reduction gear type (GYS and GYB)		GYN202SCG-G15XD			
Applicable motor capacity [H	(W] 1.0	1.5	2.0		
Output shaft rated rotation speed [m	in ⁻¹]	200			
Output shaft rated torque [N	l·m] 42.0	63.7	84.9		
Output shaft instantaneous maximum torque [N	l·m] 126	191	255		
Allowable radial load	[N]	2,350			
Allowable thrust load	[N]	1,180			
Motor shaft converted moment of inertia (GYS and GYB) [kg	m ² 1	2.83~10-4			

■ Deceleration ratio: 1/25

Reduction gear type (GYS and GYB)		GYN500SCG-G25XD	GYN101SCG-G25XD	GYN201SCG-G25XD	GYN401SCG-G25XD	GYN751SCG-G25XD
		a11400000a a20xB	armiologa azoxb	GTNZ0100G GZ0XB	aniviologa azonb	GYN751BCG-G25XD
Applicable motor capacity	[kW]	0.05	0.1	0.2	0.4	0.75
Output shaft rated rotation speed [[min ⁻¹]	120				
Output shaft rated torque	[N·m]	3.06	6.84	13.7	28.3	53.1
Output shaft instantaneous maximum torque	[N·m]	9.18	20.5	41.0	85.0	159
Allowable radial load	[N]	882		1,670		2,060
Allowable thrust load	[N]	441		833		1,030
Motor shaft converted moment of inertia (GYS and GYB) [k	kg m²]	0.0514×10 ⁻⁴		0.293×10 ⁻⁴		0.658×10 ⁻⁴

Product Warranty

III 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" or 24 months from the manufacturing date imprinted on the name place, whichever date is earlier.
- (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 be 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.

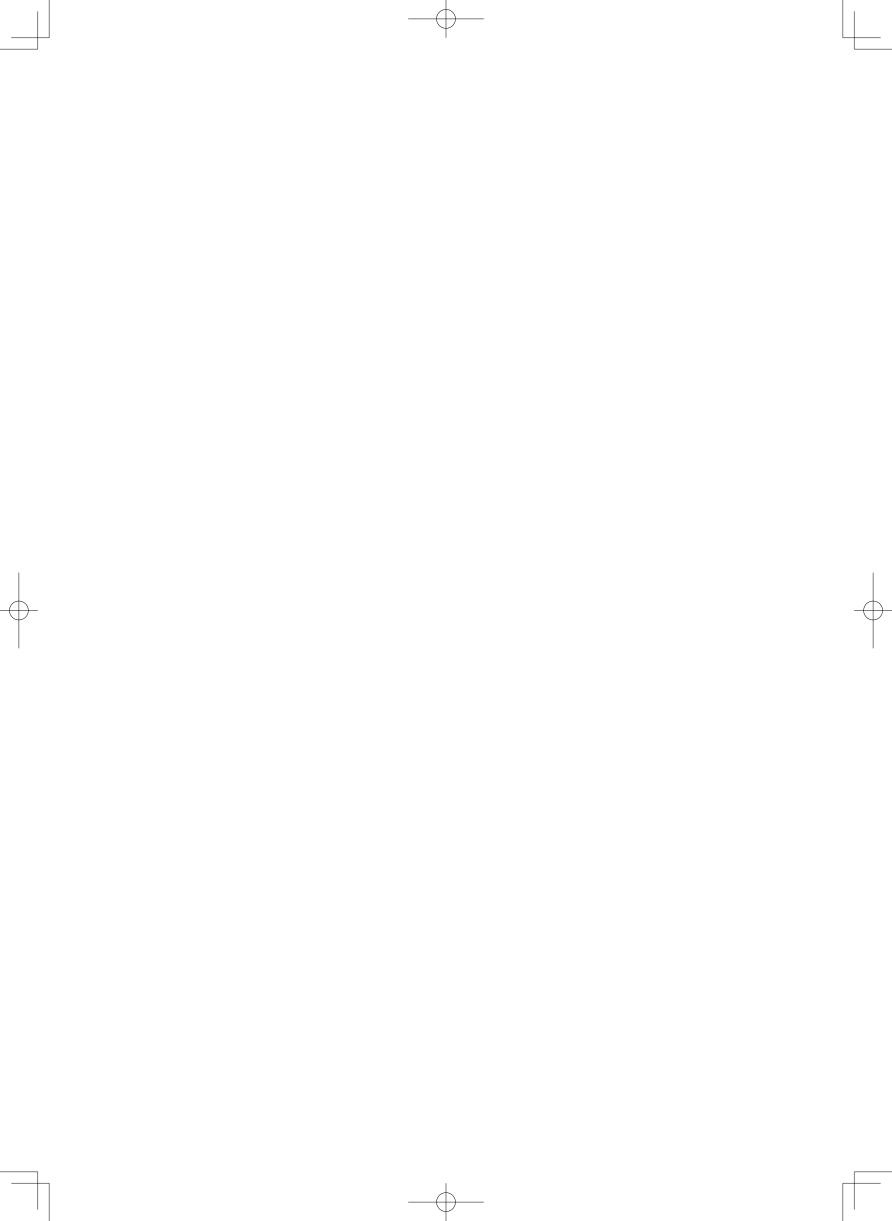
5. Service Contents

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

Please inquiry the supplier or Fuji Electric China for details of above.

MEMO





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