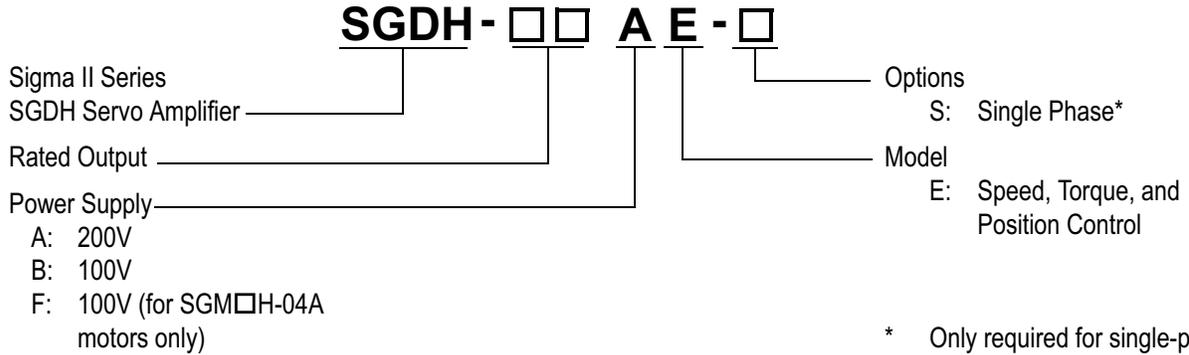


Model Number Designation



* Only required for single-phase sizes 08 and 15.

Amplifier Model	Capacity kW (HP)	AC Supply Phases
A3	0.03 (0.04)	1
A5	0.05 (0.07)	
01	0.10 (0.13)	
02	0.20 (0.27)	
04	0.40 (0.54)	
08	0.75 (1.0)	
15	1.5 (2.0)	
05	0.5 (6.7)	3
08	0.75 (1.0)	
10	1.0 (1.3)	
15	1.5 (2.0)	
20	2.0 (2.7)	
30	3.0 (4.0)	
50	5.0 (6.2)	
60	6.0 (8.0)	
75	7.5 (10)	
1A	11 (15)	
1E	15 (20)	

SGDH Amplifier Ratings and Specifications

Basic Specifications	Input Power Supply	Main Circuit*	Three-phase (or single-phase) 200 to 230V _{ac} +10% to -15%, 50/60 Hz, or single-phase 100 to 115V _{ac} +10% to -15%, 50/60 Hz		
		Control Circuit*	Single-phase 200 to 230V _{ac} (or 100 to 115V _{ac}) +10% to -15%, 50/60 Hz		
	Control Mode		Three-phase, full-wave rectification IGBT PWM (sinusoidal commutation)		
	Feedback		Serial incremental encoder, absolute encoder		
	Location	Ambient/Storage Temperature**		0 to 55°C / -20 to 85°C	
		Ambient/Storage Humidity		90% or less (no-condensing)	
		Vibration/Shock Resistance		4.9m/s ² /19.6m/s ²	
	Structure		Base mounted (duct ventilation available as option) and flat mount type		
	Speed/Torque Control Mode	Performance	Speed Control Range		1 : 5000 (The lowest speed of the speed control range is the speed at which the servomotor will not stop with a rated torque load.)
			Speed Regulation***	Load Regulation	0% to 100%: 0.01% max. (at rated speed)
Voltage Regulation				Rated voltage ±10% : 0% (at rated speed)	
Temperature Regulation				25 ± 25°C : 0.1% maximum (at rated speed)	
Frequency Characteristics		400Hz (at J _L = J _M)			
Accel/Decel Time Setting		0 to 10s (Can be set individually for acceleration and deceleration).			
Input Signal		Speed Reference	Reference Voltage****	±6V _{DC} (variable setting range: ±2 to ±10V _{DC}) at rated speed (forward rotation with positive reference); input voltage: ±12V (maximum)	
			Input Impedance	Approximately 14kΩ	
			Circuit Time Constant	—	
		Torque Reference	Reference Voltage****	±3V _{DC} (Variable setting range: ±1 to ±10V) at rated torque (forward rotation with positive reference), input voltage: ±12V _{DC} (maximum)	
	Input Impedance		Approximately 14kΩ		
	Circuit Time Constant		Approximately 47μs		
	Contact Speed Reference	Rotation Direction Selection	Uses P control signal		
		Speed Selection	Forward/reverse rotation current limit signals are used (1st to 3rd speed selection). When both signals are OFF, the motor stops or enters another control mode.		

Notes: * The power voltage must not exceed 230V +10% (253V). If it is likely that it will exceed this limit, use a step-down transformer. For types SGDh-08AE-S and SGDh-15AE-S, voltage is 200 to 230V + 10% -5%.

** Use the servo amplifier within the ambient temperature range. When enclosed, the temperatures inside the cabinet must not exceed the specified range.

*** Speed regulation is defined as follows:

$$\text{Speed regulation} = \frac{(\text{no-load motor speed} - \text{full-load motor speed})}{\text{rated motor speed}} \times 100\%$$

**** Forward is clockwise viewed from the non-load side of the servomotor, (counterclockwise viewed from the load and shaft end).

Ratings and Specifications (cont'd)

Positioning Control Mode	Performance	Bias Setting		0 to 450rpm (setting resolution: 1rpm)	
		Feed-forward Compensation		0 to 100% (setting resolution: 1%)	
		Position Complete Width Setting		0 to 250 reference units (setting resolution: 1 reference unit)	
	Input Signal	Reference Signal	Type	Sign + pulse train, 90° phase difference 2-phase pulse (phase A + phase B), or CCW + CW pulse train	
			Pulse Buffer	Line driver (+5V level), open collector (+5V or +12V level)	
			Pulse Frequency	Maximum 500/200kpps (line driver/open collector)	
Control Signal		CLEAR (input pulse form identical to reference pulse)			
Built-in Open Collector Power Supply *		+12V (With built-in 1kW resistor)			
I/O Signals	Position Output	Output Form		Phases A, B and C: Line driver output Phase S: Line driver output (Only when absolute encoder is used)	
		Frequency Dividing Ratio		Any	
	Sequence Input		Servo ON, P control (or forward/reverse rotation in contact input speed control mode), forward rotation prohibited (P-OT), reverse rotation prohibited (N-OT), alarm reset, forward rotation current limit, and reverse rotation current limit (or contact input speed control)		
	Sequence Output	—	Servo alarm, 3-bit alarm codes		
Configurable: (Any 3 of these signals)		Positioning complete (speed coincidence), servomotor rotating, servo ready, current limit, brake release, warning, and near position signals			
Built-in Functions	Dynamic Brake (DB)		Activated at main power OFF, servo alarm, servo OFF or overtravel		
	Regenerative Processing		Incorporated. For 60 to 1A types, external regenerative resistor must be mounted.		
	Overtravel (OT) Prevention		Motor decelerates or coasts to a stop, or is stopped by a dynamic brake.		
	Protection		Overcurrent, overload, regenerative error, main circuit voltage error, heat sink overheat, power open phase, overflow, overspeed, encoder error, encoder disconnected, overrun, CPU error, parameter error.		
	LED Display		POWER, CHARGE, five 7-segment LEDs (built-in digital operator functions)		
	Analog Monitor (5CN)		Built-in analog monitor connector to observe speed, torque, and other reference signals Speed:1V/1000rpm Torque:1V/rated torque Pulses remaining:0.05V/reference units or 0.05V/100 reference units		
	Communication	Interface		Digital operator (mount type or hand-held) RS422A port such as person computer (RS-232C port can be used if some conditions are met).	
		1 : N Communication		N can be up to 14 when RS-422A port is used.	
		Axis Address Setting		Set via user parameters	
		Functions		Status display, user constant setting, monitor display, alarm traceback display, jogging, autotuning, speed/torque reference signals, other graphing functions, etc.	
Others		Reverse rotation connection, home position search, automatic servomotor ID, DC reactor connection terminal for high power supply frequency control.			

Note: * The built-in open collector power supply is not electrically isolated from the control circuit in the servo amplifier.