

GK600 Series General Purpose AC Motor Drives (0.4KW-800KW)

Technical Data

1. Input voltage: 1-phase: 200-240V $\pm 10\%$ (continuous fluctuation), -15%-10% (momentary fluctuation); 3-phase: 208 - 240V $\pm 10\%$ (continuous fluctuation), -15%-10% (momentary fluctuation); 3-phase: 380-480V $\pm 10\%$ (continuous fluctuation), -15%-10% (momentary fluctuation)
2. Input frequency: 50Hz/60Hz $\pm 5\%$
3. Output voltage: 0~rated input voltage, bias $< \pm 3\%$
4. Output frequency: 0.00-600.00Hz
5. Overload capability: 150% for 60s, 180% for 10s, 200% for 2s, once per 10 minutes
6. Control method: V/f, SVC (two modes: without PG1, or without PG2)
7. Speed regulation range: 1:100 (V/f control, or vector control without PG1), 1:200 (vector control without PG2)
8. Speed accuracy: $\pm 0.5\%$ (V/f), $\pm 0.2\%$ (SVC)
9. Speed fluctuation: $\pm 0.3\%$
10. Torque response: $< 10\text{ms}$
11. Starting torque: 0.5Hz: 180% (V/f control, or without PG 1). 0.25: 180% (without PG2)
12. Starting frequency: 0.00-600.00Hz
13. Ramp-up time, Ramp-down time: 0.00-60000s
14. Carrier frequency/switching frequency: 0.7kHz-16kHz
15. Frequency command source: Digital+ Keypad \wedge/\vee ; Digital +Terminal UP/DOWN; Communication; Analog (AI1/AI2/EAI)
16. Motor started method: Started from starting frequency; DC brake then started; Speed searching/follow-up started
17. Stop method: Ramp to stop; Coast to stop; Ramp stop + DC brake
18. Dynamic brake capability: Brake action voltage: 650V-750V, service time: 0.0~100.0s
19. DC brake capability: DC brake starting frequency: 0.00~600.00Hz, DC brake current: 0.0-100.0%, DC brake time: 0.0~30.0s
20. Input terminals: DI -6 (can be extended to 7, including one high-speed pulse input, NPN, and PNP input supported), AI - 2
21. Output terminals: HDO-1(high-speed pulse output), DO-1, RO-1(can be extended to 2), AO-1(can be extended to 2)
22. Communication: Profibus-DP, CANopen, CAN, Modbus
23. Efficiency: 7.5kW and below: $\geq 93\%$, 11~45kW: $\geq 95\%$, 55kW and above: $\geq 98\%$

Environment requirement

1. Conditions: Indoors, free from direct sunlight, corrosive gases, flammable gases, oil mist, water vapor, metal particles, etc.
2. Altitude: 0~2,000m. Derating is required above 1,000m, Rated output current should be derated 1% per 100m increase above 1000m.
3. Ambient temperature: $-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$. De-rating 1% per centigrade additional for temperature $> 50^{\circ}\text{C}$
4. Vibration: Less than 5.9 m/s^2 (0.6g)
5. Storage temperature: $-40 \sim 70^{\circ}\text{C}$
6. Protection grade: IP20
7. Type of cooling: Air cooling

Applications

Fan, Oil pump, Water pump, compressor, injection molding machine, engraving machine, textile, packaging, lift, conveyor, treadmill, Printing machine, Lathe, Machine tool, hydraulic machine, Wire drawing, winder/un-winder, etc.

Technical Features of GK600 series

Power input	Rated voltage	3-phase AC220V/AC230V/AC380V/AC400V/AC415V/AC440V/AC460V/AC480V 1-phase AC220V/AC230V
	Rated input current	See Section 2.3 in user manual
	Frequency	50Hz/60Hz, acceptable fluctuation range $\pm 5\%$
	Allowable range of voltage	Continuous voltage fluctuation $\pm 10\%$, short fluctuation $-15\% \sim +10\%$, i.e. 323V~528V; Voltage out-of-balance rate $< 3\%$, distortion rate as per the requirements of IEC61800-2
Power output	Standard applicable motor (kW)	See Section 2.3 in user manual
	Rated current (A)	See Section 2.3 in user manual
	Output voltage (V)	3-phase: 0~ rated input voltage, Bias $< \pm 3\%$
	Output frequency (Hz)	0.00~ 600.00Hz; unit: 0.01Hz
	Overload capacity	150% - 1min; 180% - 10s; 200% - 0.5s once per 10 minutes
Operation characteristics	Control mode	V/f control Sensor-less vector control without PG 1 Sensor-less vector control without PG 2
	Range of speed regulation	1:100 (V/f control, sensor-less vector control without PG 1) 1:200 (sensor-less vector control without PG 2)
	Speed accuracy	$\pm 0.5\%$ (V/f control) $\pm 0.2\%$ (sensor-less vector control without PG 1 & 2)
	Speed fluctuation	$\pm 0.3\%$ (sensor-less vector control without PG 1 & 2)
	Torque response	$< 10\text{ms}$ (sensor-less vector control without PG 1 & 2)
	Starting torque	0.5Hz: 180% (V/f control, sensor-less vector control without PG 1) 0.25Hz: 180% (sensor-less vector control without PG 2)
Basic functions	Start frequency	0.00~ 600.00Hz
	Accel/decel time	0.00~60000s
	Carrier frequency	0.7kHz~16kHz
	Frequency command source	Digital command + operating panel \wedge/\vee Digital command + terminal UP/DOWN Communication Analog command (AI1/AI2/EAI) Terminal pulse command
	Motor Started method	Started from starting frequency DC braking and then started Speed search then started smoothly
	Motor Stopped	Ramp to stop

	method	Coast to stop Ramp stop + DC brake
Basic functions	Dynamic brake capacity	Brake unit action voltage: 650V~750V; service time: 0.0~100.0s; brake unit for GK600-4T45G/55L or below could be internally mounted
	DC brake capacity	DC brake start frequency: 0.00~600.00Hz DC brake current: 0.0~100.0% DC brake time: 0.0~30.00s
	Input terminals	Six digital input terminals (can be extended to 7), one of which can be used for high-speed pulse input. Compatible with active open collectors NPN, PNP and dry contact input Two analog input terminals, one of which is voltage/current programmable, and the other is voltage only (can be extended to 3; extension terminal is voltage/current programmable)
	Output terminal	One high-speed pulse output terminal, 0~50kHz square wave signal output; can output signals such as setting frequency and output frequency. etc One digital output terminal One relay output terminal (can be extended to 2) One analog output terminal (can be extended to 2), voltage/current output optional; can output signals such as setting frequency and output frequency.
Characteristics	Parameter copy, parameter backup, common DC bus, free switching between two motors' parameters, flexible function code displayed & hidden, various main & auxiliary command and switchover, speed searching, a variety of acceleration/deceleration curves optional, automatic correction of analog value, mechanical brake control, 16-step speed control programmable (2-step speed supports flexible frequency command), swing frequency control programmable, fixed-length control, counting function, three faults recorded, over excitation braking, over voltage stall prevention, under voltage stall prevention, restart upon power off, hopping frequency, frequency binding, free switching between four sections of acceleration/deceleration time, motor thermal protection, flexible fan control, process PID control, simple PLC, flexible multi-functional key setting, droop control, parameter identification, weak magnetic control, high-precision torque restraint, V/f separated control	
Protection function	Refer to Chapter VII - Fault Diagnosis and Abnormity Handling	
Environment	Place of operation	Indoors, no direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, water drip or salt content etc.
	Altitude	0~2000m Derating is required where altitude is more than 1,000m; each increase of 100m in height corresponds to a decrease in rated output current by 1%
	Ambient temperature	-10°C~50°C
	Humidity	5~95%, condensation not allowed
	Vibration	Less than 5.9m/s ² (0.6g)
	Storage temperature	-40°C~+70°C
Others	Efficiency	Rated power 7.5kW and below: ≥93% 11~ 45kW: ≥ 95% 55kW and higher: ≥98%
	Installation mode	Wall-mounted
	Protection level	IP20
	Cooling mode	Forced air cooling

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