YASKAWA

Varispeed G7 – Technical Specification

Control Characteristics	
Product	Varispeed G7
Type	General Purpose AC drive with advanced vector control
Rated Output Voltage (dependent on input)	Three Ph 200V Class : 200 to 240VAC Three Ph 400V Class : 380 to 480VAC
Motor Types	Induction Motor,
Control Methods	Sine wave PWM [Vector with PG, open loop vector 1, open loop vector 2, V/f, and V/f with PG (switched by constant setting)]
Speed Control Range	1:200 (open loop vector control 2), 1:1000 (vector control with PG)
Starting Torque	150% at 0.3 Hz (open loop vector control 2), 150% at 0 min-1 (vector control with PG)*
Frequency Range	0.01 Hz to 400 Hz
Braking Transistor	Built-in braking transistor provided for AC Drives of 15 kW or less (200/400 V)
Frequency Accuracy	Digital reference: ±0.01%, －10˚C to ＋40˚C ; Analog reference: ±0.1%, 25˚C ±10˚C
Frequency Setting Resolution	Digital reference: 0.01 Hz; Analog reference: 0.03 Hz/60 Hz (11-bit + sign)
Output Frequency Resolution	0.001 Hz
Torque Limit	Can be set by parameter: 4 steps available (only when vector control)
Accel/Decel time	0.01 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
Environmental Factors	
Ambient Temperature	－10˚C to 45˚C (Open chassis type)
Altitude	1000 m max.
Humidity	95% RH or less (no condensation)
Area of Use	Indoor (Protected from corrosive gasses and dust)

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Protection Features	
Motor Protection	Protection by electronic thermal overload relay.
Momentary Overcurrent Protection	Drive stops when output current exceeds 200% of the rated output current.
Overload Protection	150% rated output current for 1 minute, 200% rated output current for 0.5 s
Overvoltage Protection	200 V class: Stops when the DC bus voltage is more than approximately 410 V 400 V class: Stops when the DC bus voltage is more than approximately 820 V
Undervoltage Protection	200 V class: Stops when the DC bus voltage decreases to less than approximately 190 V 400 V class: Stops when the DC bus voltage decreases to less than approximately 380 V
Momentary Power Loss Ride-Thru	Stops when power loss is longer than 15 ms. Continues operation if power loss is shorter than 2 s (depending on parameter settings).
Heatsink Overheat Protection	Thermistor
Stall Prevention	Stall prevention during acceleration/deceleration and constant speed operation
Ground Fault Protection	Protection by electronic circuit
Charge LED	Charge LED illuminates when DC bus voltage is more than 50 V.
Power Specifications	
Rated input Voltage/Frequency	400V Class: Three-phase AC power supply: 380/400/415/440/460/480 V, 50/60 Hz ,DC power supply: 510 to 680 V 200V Class : Three-phase AC power supply: 200/208/220/230/240 V, 50/60 Hz, DC power supply: 270 to 340 V
Allowable Voltage Fluctuation	−15% to 10%
Allowable Frequency Fluctuation	±5%
Common Specifications	
Carrier Frequency	Derating the output current enables a maximum of 15 kHz to be set.(Based on rating)

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Multi Funcction Digital Inputs	12 Digital Inputs (NPN or PNP) .
Multi Function Digital Outputs	1 Programmable Relay M1-M2 (AC 250 V, max. 1 A DC 30 V, max. 1 A min. load DC 5 V, 10 mA), 1 fault relay MA-MB-MC, 4 photocouplers P1,P2,P3,P4 (Open Collector Output 48 VDC 50 mA or less)
Multi Function Analog Inputs	3 Multi function Analog input A1(0～＋10 V), A2(4～20 mA) & A3(0～＋10 V)
Multi Function Analog Output	2 Multi function Analog outputs FM-AC & AM-AC (－10～＋10 V 2 mA)
Pulse Train	1 Pusle Train output (0 – 32 kHz (2 kΩ)) 1 Pulse Train input (0 to 32 kHz（3 k）Hi level：3.5 to 13.2 V input)
Serial communication	MEMOBUS/Modbus (RTU mode) comm. RS-485/422, Max. 115.2 kbps
Optional communication Protocols	Mechatrolink, Profibus, CC-Link, Bacnet, Devicenet, Lonworks
Programming Interface	Serial port .
Additional Functions	Momentary power loss restart, Speed search, Overtorque detection, Torque limit, 17-step speed operation (maximum), Accel/decel time changeover, S-curve accel/decel, 3-wire sequence, Auto-tuning (rotational or stationary), DWELL, Cooling fan ON/OFF, Slip compensation, Torque compensation, Jump frequency, Frequency upper/lower limit settings, DC injection braking at start/stop, High slip braking, PID control (with sleep function), Energy-saving control, MEMOBUS communications (RS-485/422 max. 19.2 kbps), Fault retry, Constant copy, Droop control, Torque control, Speed/torque control changeover, feed forward control, Zero-servo control, etc.