

7.2 Common specifications

Control specifications	Control method		Soft-PWM control/high carrier frequency PWM control (V/F control, advanced magnetic flux vector control, general-purpose magnetic flux vector control, optimum excitation control can be selected)	
	Output frequency range		0.2 to 400Hz	
	Frequency setting resolution	Analog input	0.06Hz/60Hz (terminal2, 4: 0 to 10V/10bit) 0.12Hz/60Hz (terminal2, 4: 0 to 5V/9bit) 0.06Hz/60Hz (terminal4: 4 to 20mA/10bit)	
		Digital input	0.01Hz	
	Frequency accuracy	Analog input	Within $\pm 0.5\%$ of the max. output frequency ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)	
		Digital input	Within 0.01% of the set output frequency	
	Voltage/frequency characteristics		Base frequency can be set from 0 to 400Hz Constant torque/variable torque pattern can be selected	
	Starting torque		200% or more (at 0.5Hz)...when advanced magnetic flux vector control is set (3.7K or less)	
	Torque boost		Manual torque boost	
	Acceleration/deceleration time setting		0.01 to 360s, 0.1 to 3600s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration mode can be selected.	
DC injection brake		Operation frequency (0 to 120Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable		
Stall prevention operation level		Operation current level can be set (0 to 200% adjustable), whether to use the function or not can be selected		
Operation specifications	Frequency setting signal	Analog input	Two points Terminal 2: 0 to 10V, 0 to 5V can be selected Terminal 4: 0 to 10V, 0 to 5V, 4 to 20mA can be selected	
		Digital input	Entered from operation panel and parameter unit	
	Start signal		Forward and reverse rotation or start signal automatic self-holding input (3-wire input) can be selected.	
	Input signal		Seven points You can select from among multi-speed selection, remote setting, stop-on contact selection, second function selection, terminal 4 input selection, JOG operation selection, PID control valid terminal, brake opening completion signal, external thermal input, PU-external operation switchover, V/F switchover, output stop, start self-holding selection, forward rotation, reverse rotation command, inverter reset, PU-NET operation switchover, external-NET operation switchover, command source switchover, inverter operation enable signal, and PU operation external interlock	
	Operational functions		Maximum/minimum frequency setting, frequency jump operation, external thermal relay input selection, automatic restart after instantaneous power failure operation, forward/reverse rotation prevention, remote setting, brake sequence, second function, multi-speed operation, stop-on contact control, droop control, regeneration avoidance, slip compensation, operation mode selection, offline auto tuning function, PID control, computer link operation (RS-485)	
	Output signal	Output signal points	Open collector output	Two points
			Relay output	One point
		Operating status		You can select from among inverter operation, up-to-frequency, overload alarm, output frequency detection, regenerative brake prealarm, electronic thermal relay function prealarm, inverter operation ready, output current detection, zero current detection, PID lower limit, PID upper limit, PID forward/reverse rotation output, brake opening request, fan alarm*2, heatsink overheat pre-alarm, deceleration at an instantaneous power failure, PID control activated, during retry, life alarm, current average value monitor, remote output, alarm output, fault output, fault output 3, and maintenance timer alarm
		For meter Output points	Analog output	0 to 10VDC: one point
	For meter		You can select from among output frequency, motor current (steady), output voltage, frequency setting, motor torque, converter output voltage, regenerative brake duty, electronic thermal relay function load factor, output current peak value, converter output voltage peak value, reference voltage output, motor load factor, PID set point, PID measured value, output power 0 to 10VDC	
Indication	Operation panel	Operating status	You can select from among output frequency, motor current (steady), output voltage, frequency setting, cumulative energization time, actual operation time, motor torque, converter output voltage, regenerative brake duty, electronic thermal relay function load factor, output current peak value, converter output voltage peak value, motor load factor, PID set point, PID measured value, PID deviation, inverter I/O terminal monitor, I/O terminal option monitor, output power, cumulative power, motor thermal load factor, and inverter thermal load factor.	
			Fault definition	Fault definition is displayed when the fault occurs and the past 8 fault definitions (output voltage/current/frequency/cumulative energization time right before the fault occurs) are stored
	Additional display by the parameter unit (FR-PU04/FR-PU07) only	Operating status	Not used	
		Fault definition	Output voltage/current/frequency/cumulative energization time immediately before the fault occurs	
		Interactive guidance	Function (help) for operation guide	
Protective/warning function		<p><Protective functions> Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage during constant speed, overvoltage during deceleration, inverter protection thermal operation, motor protection thermal operation, heatsink overheat, input phase failure, output side earth (ground) fault overcurrent at start*4, output phase failure, external thermal relay operation *4, option fault, parameter error, internal board fault, PU disconnection, retry count excess *4, CPU fault, brake transistor alarm, inrush resistance overheat, communication error, analog input error, USB communication error, brake sequence error 4 to 7 *4</p> <p><Warning functions> Fan alarm*2, overcurrent stall prevention, overvoltage stall prevention, PU stop, parameter write error, regenerative brake prealarm *4, electronic thermal relay function prealarm, maintenance output *4, undervoltage</p>		
Environment	Ambient temperature		-10°C to $+50^{\circ}\text{C}$ (14°F to 122°F) (non-freezing) *3	
	Ambient humidity		90%RH maximum (non-condensing)	
	Storage temperature*1		-20°C to $+65^{\circ}\text{C}$ (-4°F to 149°F)	
	Atmosphere		Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt etc.)	
Altitude/vibration		Maximum 1000m (3280.80 feet) above sea level, 5.9m/s^2 or less		

*1 Temperatures applicable for a short time, e.g. in transit.

*2 As the FR-E720-050 or less, FR-E740-026 or less is not provided with the cooling fan, this alarm does not function.

*3 When using the inverters at the ambient temperature of 40°C (104°F) or less, the inverters can be installed closely attached (0cm clearance).

*4 This protective function does not function in the initial status.