



Features

- 16-bit Microprocessor controlled PWM output
- Output frequency 0.1~400Hz
- PID control using sensor feedback
- Keypad or Analog Setpoint setting
- Fast stop or ramp stop.
- Adjustable V/F curve. Automatic voltage regulation
- Password Protection
- Programmable torque boost & slip compensation
- 16-step speed control & 15-step preset speed
- 5 Standard and 6 multi-function digital inputs
- MODBUS communication RS-485 (Baud rate 4800-38,400)
- Auto tuning in vector control
- 3 open-collector and 1 FORM C multi-function outputs
- Analog output of selected information

230V Series 1-Phase/3-Phase

Model ZVD		007	015	022	037	055	075	110	150	185	220	300	370	450	
Output	Max. Applicable Motor Output (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
	Max. Applicable Motor Output (HP)	1	2	3	5	7.5	10	15	20	25	30	40	50	60	
	Rated Capacity (kVA)	1.9	2.7	4.2	6.5	9.5	12.5	18.6	24.7	28.6	34.3	45.7	55.0	69.3	
	Rated Current (A)	5.0	7.0	11	17	25	33	49	65	75	90	120	145	182	
	Output Frequency Range	0.1~400Hz													
	Overload Endurance	150% of rated current for 60 seconds													
	Voltage	Proportional to input voltage													
Input	Phase • Voltage • Hz	1/3-Phase • 230 Vac • 60 Hz				3-Phase • 230 Vac • 60 Hz									
	Voltage • Frequency Tolerance	180 - 264 Vac, 47 - 63 Hz													
	Input Current (A)	11.9/5.7	15.3/7.6	22/15.5	20.6	26	34	50	80	83	100	120	145	195	
Cooling System		Natural				Forced air cooling									

460V Series 3-Phase

Model ZVD		007	015	022	037	055	075	110	150	185	220	300	370	450	
Output	Max. Applicable Motor Output (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
	Max. Applicable Motor Output (HP)	1	2	3	5	7.5	10	15	20	25	30	40	50	60	
	Rated Capacity (kVA)	2.3	3.2	4.2	6.5	9.9	13.7	18.3	24.4	28.9	34.3	45.7	55.6	69.3	
	Rated Current (A)	2.7	4.2	5.5	8.5	13	18	24	32	38	45	60	73	91	
	Output Frequency Range	0.1~400Hz													
	Overload Endurance	150% of rated current for 60 seconds													
	Voltage	Proportional to input voltage													
Input	Phase • Voltage • Hz	3-Phase • 460 Vac • 60Hz													
	Voltage • Frequency Tolerance	342 - 528 Vac • 47 - 63 Hz													
	Input Current (A)	3.2	4.3	5.9	11.2	14	19	25	32	39	49	60	73	91	
Cooling System		Natural				Forced air cooling									

Standard Specifications

Control specification	Closed loop accuracy		0.1% base speed, constant load
	Turn down		20:1 constant torque, vector mode
	Control system		SPWM control
	Output freq. range		0.10~400Hz
	Freq. setting resolution		0.01Hz (keypad), 0.1Hz (analog)
	Output freq. resolution		0.01Hz
	PWM carrier frequency		Adjustable between 1 and 15 kHz
	Torque boost		Programmable torque boost and slip compensation Start torque: 150% at 1Hz
	Skip Frequency		Three zones, Settings range 0.1~400Hz
	Accel./Decel. time		0.1 to 3600 seconds (4 independent settings for accel./decel. time)
	Stall prevention level		Set current limit from 20%-250%
	DC injection braking		Operation frequency 0~400Hz, output 0~100% rated current Start time 0-25 seconds, stop time 0-25 seconds
	Braking torque		Approx. 20% (up to 125% possible with optional braking resistor or braking unit externally mounted, 1-15HP braking transistor built-in)
	V/F pattern		Adjustable V/F pattern
Operation specification	Frequency setting	Keypad	Set by ▲▼
		External	0-10VDC, 4-2mADC, communication (RS-485)
	Operation Signals	Keypad	Set by RUN STOP JOG
		External	Fwd/Stop, Rev/Stop (Run/Stop, Fwd/Rev), 3-wire control Jog Serial communication (RS-485)
	Multi-function input terminal (6 inputs, MI1 - MI6)		Multi-speed selection 1-15, first/second accel./decel. time select Accel./decel. inhibit, external baseblock, counter applications 15-step process control, disable auxiliary, Jog, up/down command, sink/source selection
	Multi-function output terminal (3 open collector outputs, M01- M03) (1 FORM C contact)		Drive operational, frequency attained signal, zero speed, setting auxiliary overtorque detection, external baseblock detection Under-voltage detection, keypad or external operation signal, alarm
	Analog output		Select output frequency or current monitor
Alarm output contact		1 Form C contact or open collector output	
Operation functions		PID control, fan & pump control, momentary power failure restart, AVR External fault, fault retry, fault reset, 2 S-curves, fault records Frequency limit, Digital frequency output, parameter lockout PG feedback control, auto tuning, Rev run inhibit, stall prevention	
Protective functions		Overvoltage, overcurrent, under-voltage, external trip, motor overload Ground fault current, overload, overheat, IGBT short-circuit	
Display keypads		8-key, 5-digit, 7-segment LED; 8 status LEDs Master frequency, output frequency, output current, custom units Parameter values for setup and review, faults Run, Stop, Reset, Fwd/Rev, Jog	
Environment	Ambient temperature		-10° to +40°C (+50°C without dust covers)
	Storage temperature		-20°C to +60°C
	Ambient humidity		90%RH or less (non-condensing)
	Installation location		Keep from corrosive gas, liquid and dust
	Vibration		9.80665m/s ² (1G) less than 20Hz, 5.88m/s ² (0.6G) at 20 to 50 Hz



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