

Delta VFD-V Series

Flux Vector Control AC Motor Drives

Sensorless Vector Control 0.5Hz 200% Torque possible



Control Characteristics:

- ▶ Sensorless vector control, control rate: 1:100
- ▶ PG closed-circuit control, speed control rate: 1:1000
- ▶ Built-in PID feedback control
- ▶ V/F, vector control and torque control
- ▶ Zero-speed that holds the torque stay at above 150%
- ▶ MODBUS communication Baud rate reaching 115200
- ▶ Soft-PWM with the carrier frequency reaching 15kHz
- ▶ Auto-Tuning motor parameter
- ▶ 4 independent S curve accel/decel step speeds
- ▶ Dual ratings
- ▶ Sleep function and energy-saving operation

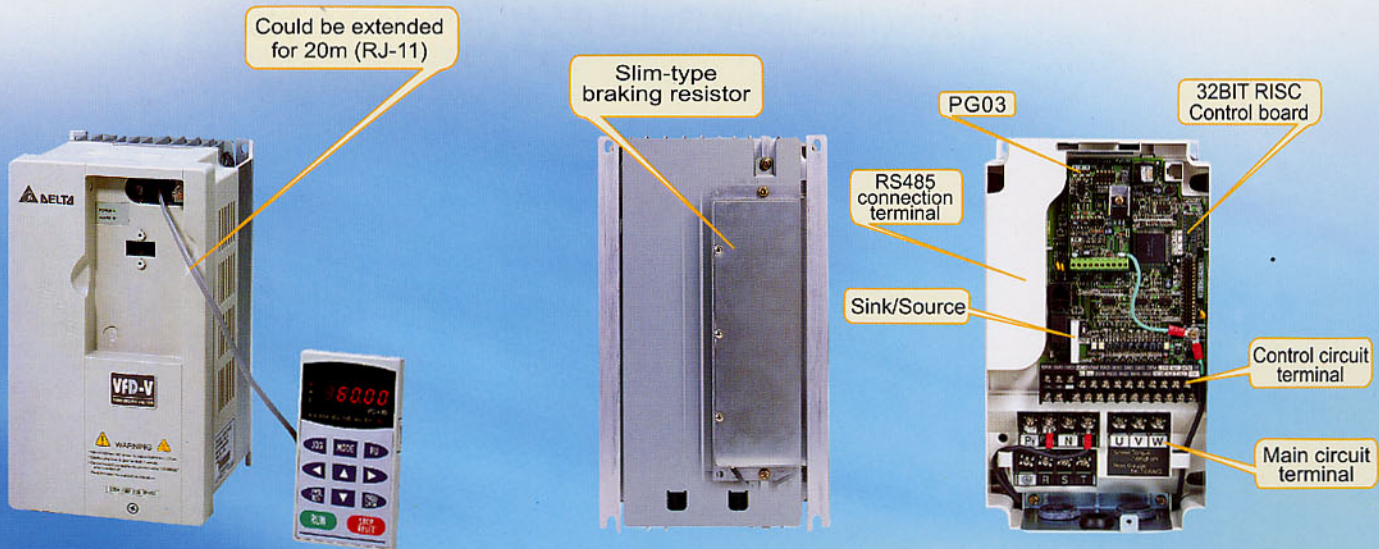
Voltage Range:

3 Phase 230V Series: 0.75~75kW
3 Phase 460V Series: 0.75~75kW

The Exterior and Characteristics of the Drive

Best with:

- ◆ Transmission devices
- ◆ Elevators
- ◆ Winches
- ◆ Planers, Millers, Grinders and etc.
- ◆ Extrusion molding
- ◆ Injection molding
- ◆ Fans & Pumps



Could be extended for 20m (RJ-11)

Slim-type braking resistor

PG03

32BIT RISC Control board

RS485 connection terminal

Sink/Source

Control circuit terminal

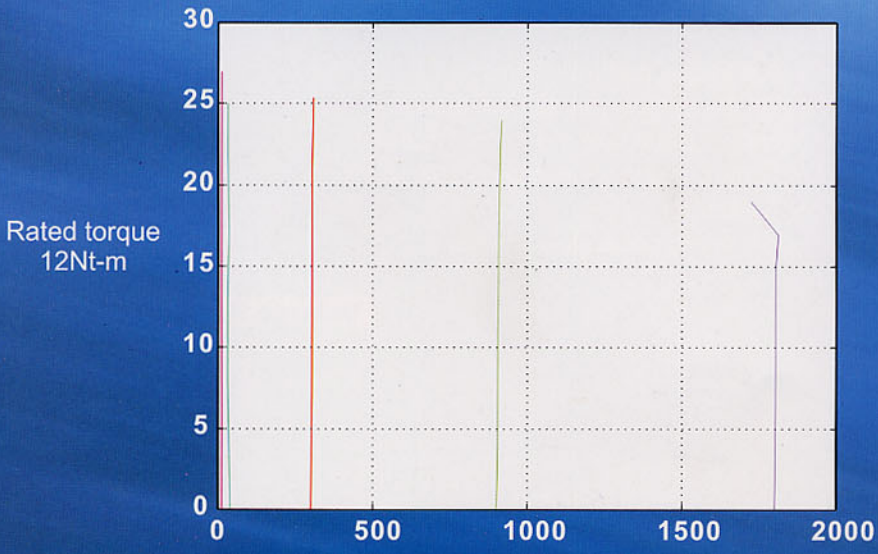
Main circuit terminal

The digital operation panel could be extended for 20 meters externally

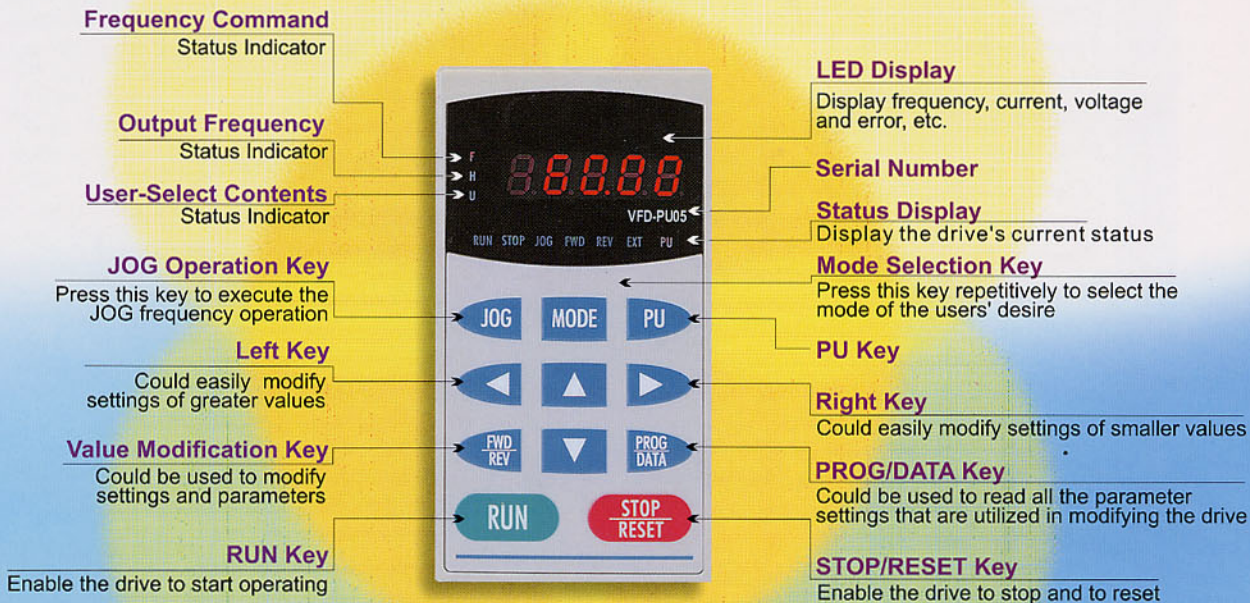
Could only be installed with model types of 5HP or below

Could connect with PG to serve as the closed-circuit speed control

T-N Curve (Sensorless Vector Control)



VFD-PU05 Digital Keypad Operation



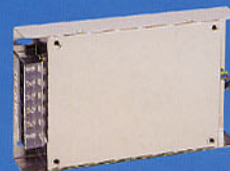
Accessories (optional)



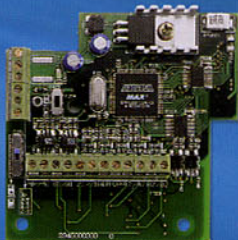
VFD-PU03
(LCD copy keypad)



VFDB Series
Braking Unit



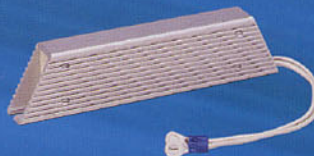
EMI FILTER



PG04 CARD



PG03 CARD



MVR-Series
Braking resistor

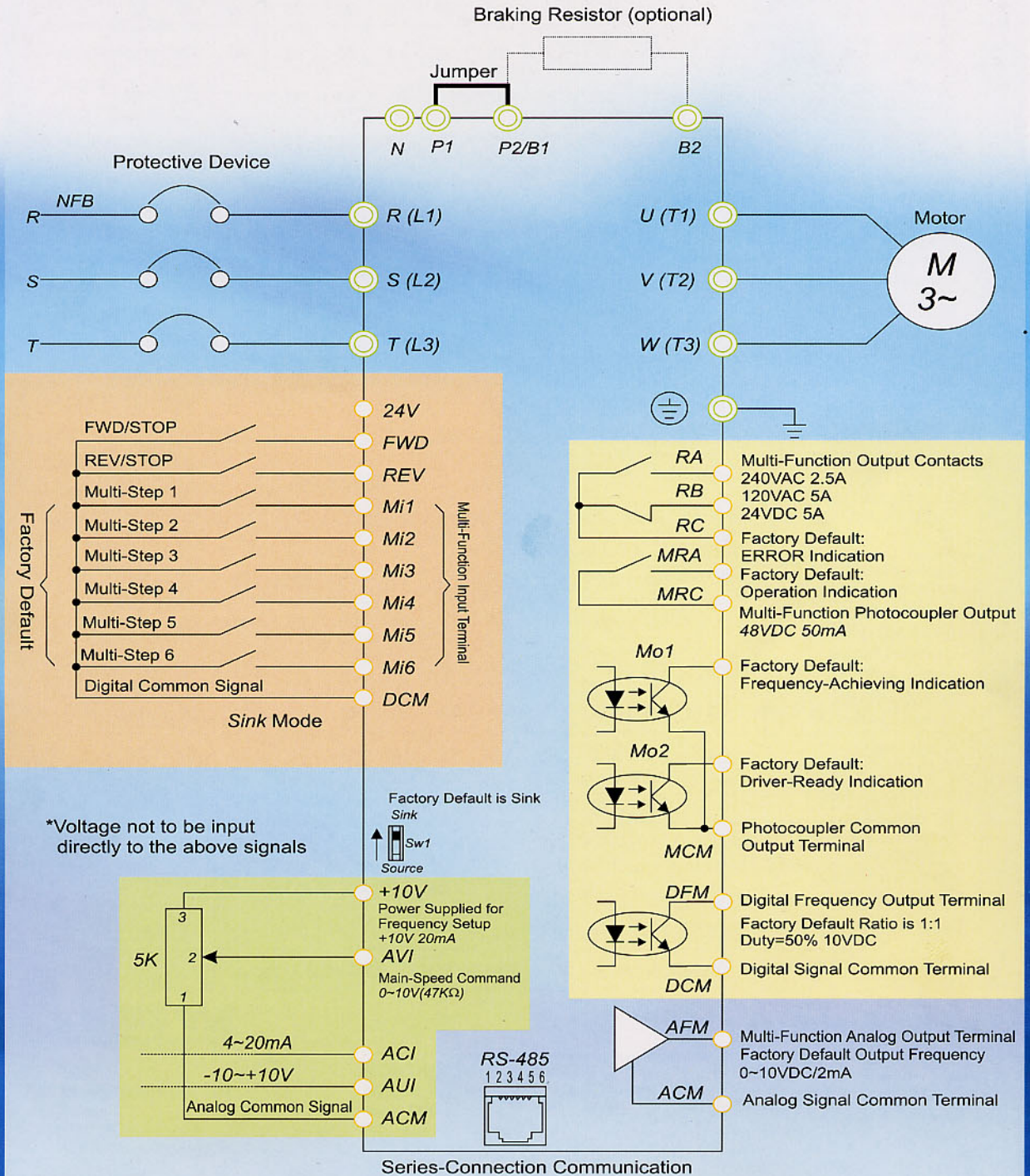


BR-Series
Braking resistor

Basic Wiring Diagram



VFD-V series have been approved by CE and UL



Common Characteristics

Control Characteristics	Control Systems	The sinusoidal wave PWM selections include: 1. vector control; 2. torque control; 3. V/F control
	Torque Start-Up	Torque start-up is above 0.5 Hz 150%
	Speed Control Range	1:100 (could reach 1:1000 if connects externally with PG)
	Speed Control Accuracy	0.5% (could reach 0.02% if connects externally with PG)
	Speed Respond Ability	5Hz (vector control reaching 30Hz)
	Maximum Output Frequency (Hz)	0.00 to 400.00 Hz
	Frequency Output Accuracy	Digital command: $\pm 0.005\%$, analog command: $\pm 0.5\%$
	Frequency Setting Resolution	Digital command: 0.01Hz, analog command: 1/1000 (10bit) of the maximum output frequency
	Torque Limits	200% torque current as the maximum
	Torque Accuracy	$\pm 5\%$
	Accel/Decel Time	0.00~600.00/0.0~6000.0 second
	V/F Curve	The 4-point desired V/F curve & the square curve
	Frequency Setting Signal	+10V, $\pm 10V$, 4~20mA, pulse wave input
	Power Braking	About 20%
Protection Characteristics	Motor Protection	Electronic thermal relay protection
	Over-Current Protection	Current control: 220% over-current protection; 300% rated current
	Grounding Current-Leakage Protection	50% rated current
	Over-Load Capability	Constant/Variable Torque: 150% for 60 seconds; 200% for 2 seconds
	Voltage Protection	Over-voltage level: $V_{dc} > 400/800 V$ Low-voltage level: $V_{dc} < 200/400 V$
	Input Power Over-Voltage Protection	Varistor (MOV)
	Over-Heat Protection	Built-in temperature sensor
	Momentary Power Loss Compensation	The setting could be as long as 5 seconds
Environment	Protection Level	NEMA 1/IP21
	Operation Temperature	-10°C~40°C for UL & -10°C~50°C for CE
	Storage Temperature	-20°C~60°C
	Humidity	Below 90% RH (non-condensing)
	Vibration	If it is below 20Hz, it is 1.0G; if between 20~60 Hz, it is then 0.6G
	Cooling System	Forced wind cooling (RUN, STOP)
	Installation Height	If under 1,000m, be advised to stay from corrosive gasses, liquid and dust

Standard Specifications

230V Series

Output Rating	Model Type VFD-xxxV23A	230V Series											
		007	015	022	037	055	075	110	150	185	220	300	370
Applicable with the 3- ϕ motor rating (KW)		0.7	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37
Applicable with the 3- ϕ motor rating (HP)		1	2	3	5	7.5	10	15	20	25	30	40	50
Constant Torque Output Current (A)		5.0	7.5	11	17	25	33	49	65	75	90	120	146
Variable Torque Output Current (A)		6.25	9.4	13	21	31	41	61	81	93	112	150	182
Rated Output Capacity kVA		1.9	2.7	4.2	6.5	9.5	13	19	25	29	34	46	55
Maximum Output Voltage (V)		3 Phase 200~230V proportional to the input voltage											
Rated Input Voltage/Frequency		200/208/220/230VAC 3 Phase, 50/60 Hz											
Operation Voltage Range/Frequency		180~265VAC, 47~63 Hz											
Input Current		6.4	9.9	15	21	25	33	52	63	68	79	106	126
Dimensions (WxHxD) Unit: mm		150x260x148.2			150x 272.1x 171.2	200x323x183.2			1250x403.8x205.4				

460V Series

Output Rating	Model Type VFD-xxxV23A	460V Series														
		007	015	022	037	055	075	110	150	185	220	300	370	450	550	750
Applicable with the 3- ϕ motor rating (KW)		0.7	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
Applicable with the 3- ϕ motor rating (HP)		1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Constant Torque Output Current (A)		3.0	4.2	6	8.5	13	18	24	32	38	45	60	73	91	110	150
Variable Torque Output Current (A)		1.3	5.3	7.5	10	16	22	30	40	47	56	75	91	113	138	188
Rated Output Capacity kVA		2.3	3.2	4.2	6.3	9.9	14	18	24	29	34	46	56	69	80	100
Maximum Output Voltage (V)		3 Phase 380~460V proportional to the input voltage														
Rated Input Voltage/Frequency		380/400/415/460 VAC 3 Phase, 50/60 Hz														
Operation Voltage Range/Frequency		340~500VAC, 47~63 Hz														
Input Current		4.0	5.8	7.4	9.9	12	17	25	27	35	42	56	67	87	101	122
Dimensions (WxHxD) Unit: mm		150x260x148.2			150x 272.1x 171.2	200x323x183.2			1250x403.8x205.4							

Model Explanation

VFD	007	V	23	A
				Version
				Input Voltage 23: 230V 3-Phase 46: 460V 3-Phase
				VFD-V Series
				Maximum Applicable Motor Capacity 007: (1HP) (0.75KW) ~ 370: (50HP) (37KW)
				Product Series