

VFD

Delta VFD-B Series Variable Speed AC Motor Drives

Features:

- ▶ 16-bit microprocessor controlled PWM output
- ▶ Automatic torque boost & slip compensation
- ▶ Output frequency 0.1~400Hz
- ▶ 16-step speed control & 15-step preset speed
- ▶ PID feedback control & PG feedback control
- ▶ 4 accel./decel. times & 2 S-curve selections
- ▶ Pump control & automatic energy-saving
- ▶ Process follower - 10~10VDC, 0~10VDC, 4~20mA
- ▶ MODBUS communication RS-485 (Baud rate 38400)
- ▶ Coast or ramp to stop
- ▶ Adjustable V/F curve & automatic voltage regulation
- ▶ Automatic adjustment of accel./decel. time
- ▶ Auto tuning & sensorless vector control
- ▶ Sleep / Revival Function
- ▶ Master / Auxiliary and 1st/2nd frequency source selectable



Voltage Range:

- 1 Phase 230V Series : 0.75~2.2KW (1~3HP)
- 3 Phase 230V Series : 0.75~37KW (1~50HP)
- 3 Phase 460V Series : 0.75~75KW (1~100HP)
- 3 Phase 575V Series : 0.75~75KW (1~100HP)



ISO-9001
REGISTERED

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VFD-B series have been approved by CE and UL



VFD-B

External Dimensions

■ Dimensions

unit: mm (inch)

Model	W	W1	H	H1	D	Fan cooled	Fig
VFD007B21A	118(4.65)	108(4.25)	185(7.28)	173(6.81)	160(6.30)	NO	A
VFD007B23A	118(4.65)				145(5.71)	NO	
VFD007B43A	118(4.65)				145(5.71)	NO	
VFD007B53A	118(4.65)				145(5.71)	NO	
VFD015B21A	118(4.65)	108(4.25)	185(7.28)	173(6.81)	160(6.30)	NO	A
VFD015B21B	118(4.65)				145(5.71)	Yes	
VFD015B23A	118(4.65)				160(6.30)	NO	
VFD015B23B	118(4.65)				145(5.71)	Yes	
VFD015B43A	118(4.65)				160(6.30)	NO	
VFD015B53A	118(4.65)				160(6.30)	NO	
VFD022B21A	150(5.91)	135(5.32)	260(10.24)	244.3(9.68)	160.2(6.31)	Yes	A
VFD022B23B	118(4.65)	108(4.25)	185(7.28)	173(6.81)	145(5.71)	Yes	
VFD022B43A	118(4.65)	108(4.25)	185(7.28)	173(6.81)	145(5.71)	Yes	
VFD022B43B	118(4.65)	108(4.25)	185(7.28)	173(6.81)	145(5.71)	Yes	
VFD037B23A	150(5.91)	135(5.32)	260(10.24)	244.3(9.68)	160.2(6.31)	Yes	A
VFD037B43A						Yes	
VFD037B53A						Yes	
VFD055B23A	200(7.88)	185.6(7.31)	323(12.72)	303(11.93)	183.2(7.22)	Yes	A
VFD055B43A						Yes	
VFD055B533						Yes	
VFD075B23A	200(7.88)	185.6(7.31)	323(12.72)	303(11.93)	183.2(7.22)	Yes	A
VFD075B43A						Yes	
VFD075B53A							
VFD110B23A	200(7.88)	185.6(7.31)	323(12.72)	303(11.93)	183.2(7.22)	Yes	A
VFD110B43A						Yes	
VFD110B53A							
VFD150B23A	250(9.84)	226(8.90)	430.8(15.90)	384(15.12)	205.4(8.08)	Yes	A
VFD150B43A						Yes	
VFD150B53A						Yes	
VFD185B23A	250(9.84)	226(8.90)	430.8(15.90)	384(15.12)	205.4(8.08)	Yes	A
VFD185B43A						Yes	
VFD185B53A						Yes	
VFD220B23A	250(9.84)	226(8.90)	430.8(15.90)	384(15.12)	205.4(8.08)	Yes	A
VFD220B43A						Yes	
VFD220B53A						Yes	
VFD300B23A	370(14.57)	335(13.19)	595(23.43)	560(22.55)	260(10.24)	Yes	B
VFD300B43A	370(14.57)	335(13.19)	589(23.19)	560(22.55)	260(10.24)	Yes	
VFD300B53A	370(14.57)	335(13.19)	589(23.19)	560(22.55)	260(10.24)	Yes	
VFD370B23A	370(14.57)	335(13.19)	595(23.43)	560(22.55)	260(10.24)	Yes	B
VFD370B43A	370(14.57)	335(13.19)	589(23.19)	560(22.55)	260(10.24)	Yes	
VFD370B53A	370(14.57)	335(13.19)	589(23.19)	560(22.55)	260(10.24)	Yes	
VFD450B43A	370(14.57)	335(13.19)	589(23.19)	560(22.55)	260(10.24)	Yes	B
VFD450B53A						Yes	
VFD550B43A	425(16.73)	385(15.16)	660(25.98)	631(24.84)	280(11.02)	Yes	C
VFD550B53A	370(14.57)	335(13.19)	595(23.43)	560(22.55)	260(10.24)	Yes	
VFD750B43A	425(16.73)	385(15.16)	660(25.98)	631(24.84)	280(11.02)	Yes	C
VFD750B53A	370(14.57)	335(13.19)	595(23.43)	560(22.55)	260(10.24)	Yes	

*We reserve the right of this catalogue contained information change without prior notice.



ASIA
DELTA ELECTRONICS, INC.
Taoyuan Plant/
 31-1, SHIEN PAN ROAD, KUEI SAN
 INDUSTRIAL ZONE, TAoyuan SHIEN,
 TAIWAN, R.O.C.
 TEL: 886-3-362-6301
 FAX: 886-3-362-7267
www.delta.com.tw/industrialautomation

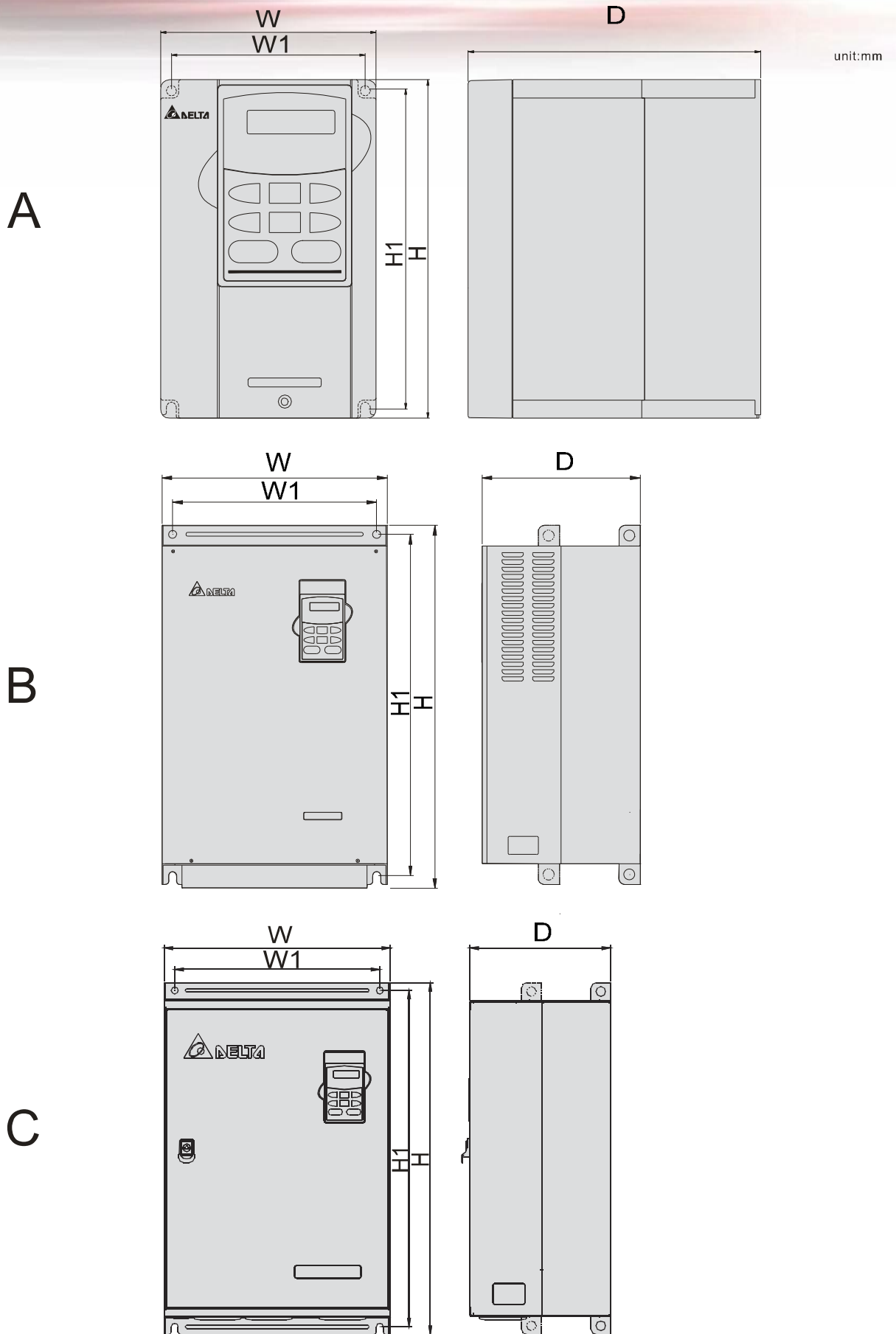
NORTH/SOUTH AMERICA
DELTA PRODUCTS CORPORATION
Sales Office/
 P.O. BOX 12173
 5101 DAVIS DRIVE
 RESEARCH TRIANGLE PARK,
 NC 27709, U.S.A.
 TEL: 1-919-767-3813
 FAX: 1-919-767-3969

EUROPE
DELTRONICS (NETHERLANDS) B.V.
 DE WITBOGT 15
 NL-5652 AG EINDHOVEN
 THE NETHERLANDS
 TEL: 31-40 259-2850
 FAX: 31-40 259-2851

DELTA ELECTRONICS (JAPAN) INC.
 DELTA SHIBADAIMON BLDG.
 2-1-14 SHIBADAIMON, MINATO-KU,
 TOKYO, 105-0012, JAPAN
 TEL: 81-3-5733-1111
 FAX: 81-3-5733-1211

VFD-B

External Dimensions



Control Characteristics	Control System	SPWM (Sinusoidal Pulse Width Modulation)control (V/F or sensorless vector control)	
	Freq. Setting Resolution	0.01Hz	
	Output Frequency Resolution	0.01Hz	
	Torque Characteristics	Including the auto-torque, auto-slip compensation; starting torque can be 150% at 1.0Hz	
	Overload Endurance	150% of rated current for 1 minute	
	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 Frequency Setting	20%-250%, Setting of Rated Current	
	DC Injection Braking	Operation frequency 0-400Hz, output 0-100% rated current Start time 0-60 seconds, stop time 0-60 seconds	
	Braking Torque	Approx. 20% (up to 125% possible with option braking resistor or braking unit externally mounted, 1-15HP braking transistor built-in)	
	V/F Pattern	Adjustable V/F pattern	
	Operating Characteristics	Frequency Setting	Keypad
External Signal			Potentiometer-5K Ω /0.5W, 0 to +10VDC; -10 to +10VDC, 4 to 20mA, RS-485 interface; Multi-Function Inputs 1 to 6 (15 steps, Jog, up/down)
Operation Setting Signal		Keypad	Set by RUN, STOP and JOG
		External Signal	2 wires / 3 wires (Fwd, Rev, EF), JOG operation, RS-485 serial interface (MODBUS)
Multi-Function Input Signal		Multi-step selection 0 to 15, Jog, accel/decel inhibit, first to forth accel/decel switches, counter, PLC operation, external Base Block (NC, NO), auxiliary motor control is invalid, ACI/AVI selections, drive reset, UP/DOWN key settings, sink/source selection	
Multi-Function Output Indication		AC Drive Operating, Frequency Attained, Non-zero, Base Block, Fault Indication, Local/Remote indication, PLC Operation indication, Auxiliary Motor Output, Driver is Ready, Overheat, Alarm, Emergency Stop	
Analog Output Signal		Analog frequency/current signal output.	
Alam Output Contaact	1Form C contact or open collector output.		
Operation Functions	AVR, S-Curve, Over-Voltage, Over-Current Stall Prevention, Fault Records, Adjustable Carrier Frequency, DC Braking, Momentary Power Loss restart, Auto Tuning, Frequency Limits, Parameter Lock/Reset, Vector Control, Counter, PID Control, Fan & Pump Control, PLC, MODBUS Communication, Reverse Inhibition, PG feedback control, abnormal reset, abnormal re-start, digital frequency output, sleep/revival function, master/auxiliary frequency, 1 st/2nd frequency source selections		
Protective Functions	Self-testing, Over Voltage, Over Current, Under Voltage, Overload, Overheating, External Fault, Electronic thermal, Ground Fault.		
Display Keypads	8-key, 5-digit, 7-segment LED, 8 status LEDs, master frequency, output frequency, Output current, custom units, parameter values for setup, review and faults, RUN, STOP, RESET, FWD/REV, JOG		
Enviromental Conditions	Protection Level	IP20 ; NEMA1	
	Pollution Degree	2	
	Installation Location	Altitude 1,000m or less, keep from corrosive gas, liquid and dust	
	Ambient Temperature	-10°C to 40°C (-10°C to 50°C without blind plate) Non-Condensing and not frozen	
	Storage / Transportation Temperature	-20°C to 60°C	
	Ambient Humidity	Below 90% RH (non-condensing)	
Vibration	9.80665m/s ² (1G) less than 20Hz, 5.88m/s ² (0.6G) at 20 to 50Hz		
Approvals	  		

VFD-B

Standard specifications

230V Series 1-Phase/3-Phase

Model Number VFD - □ □ □ B		007	015	022	037	055	075	110	150	185	220	300	370	
Max. Applicable Motor Output (kW)		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	
Max. Applicable Motor Output (HP)		1.0	2.0	3.0	5.0	7.5	10	15	20	25	30	40	50	
Output Rating	Rated Output Capacity (kVA)	1.9	2.5	4.2	6.5	9.5	12.5	18.3	24.7	28.6	34.3	45.7	55	
	Rated Output Current (A)	5.0	7.0	11	17	25	33	49	65	75	90	120	145	
	Maximum Output Voltage (V)	3-Phase Proportional to input voltage												
	Output Frequency (Hz)	0.1~400Hz												
Input Rating	Carrier frequency (kHz)	1-15									1-9			
	Rated Input Current (A)	Single/3-Phase			3-Phase									
		11.9/5.7	15.3/7.6	22/15.5	20.6	26	34	50	60	75	90	110	142	
	Single (3-phase Input Current)	7.0	9.4	14.0										
	Rated Voltage , Frequency	Single/3-phase 200-240V , 50/60Hz			3-phase 200-240V , 50/60Hz									
	Voltage Tolerance	±10%(180~264V)												
	Frequency Tolerance	±5%(47~63Hz)												
Cooling Method	Natural	Fan Cooled												
Weight (Kg)	2.7	3.2	4.5	6.8	8	10	13	13	13	13	13	36	36	

460V Series 3-Phase

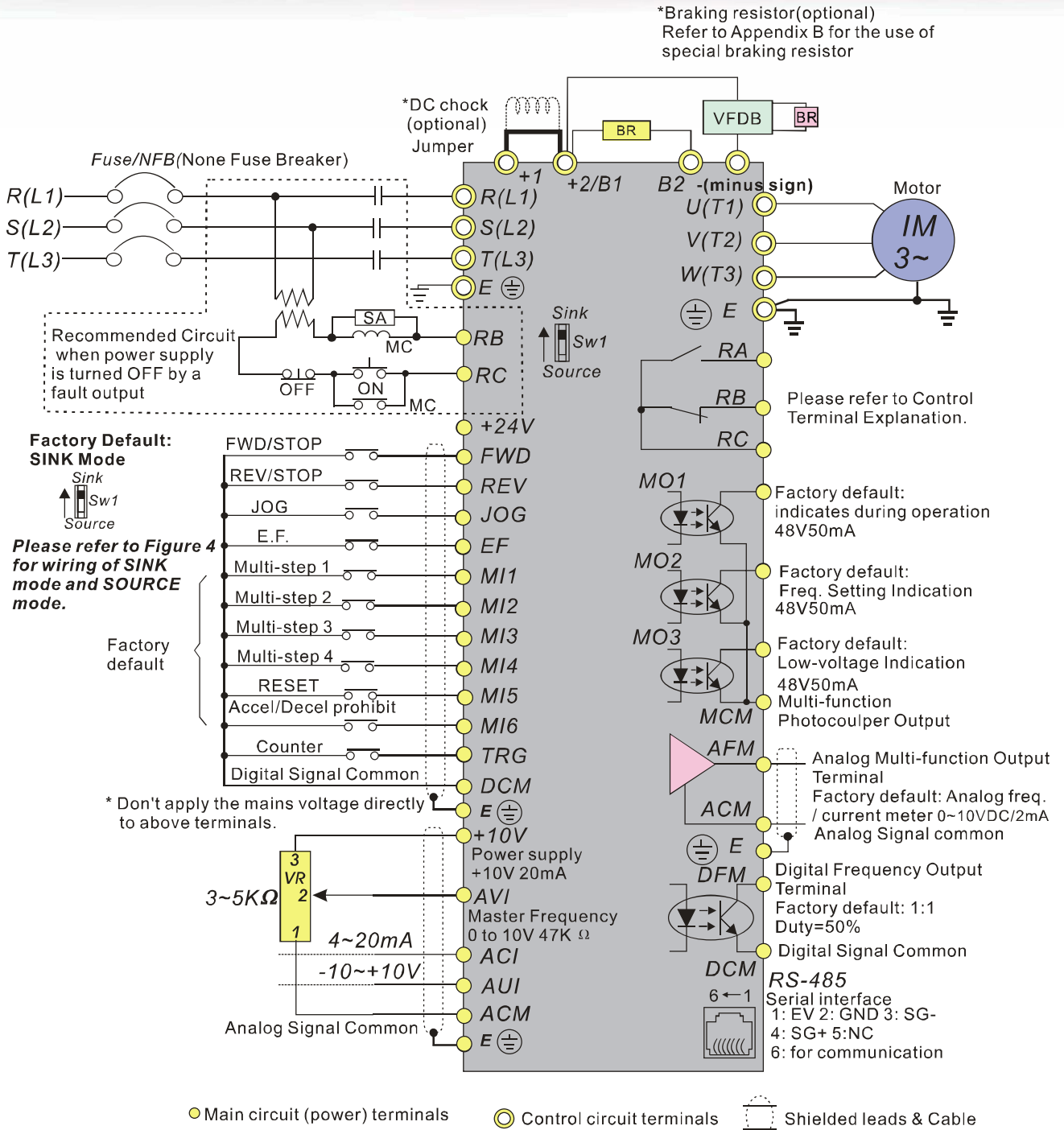
Model Number VFD - □ □ □ B		007	015	022	037	055	075	110	150	185	220	300	370	450	550	750
Max. Applicable Motor Output (kW)		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
Max. Applicable Motor Output (HP)		1.0	2.0	3.0	5.0	7.5	10	15	20	25	30	40	50	60	75	100
Output Rating	Rated Output Capacity (kVA)	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	84	114
	Rated Output Current (A)	2.7	4.2	5.5	8.5	13	18	24	32	38	45	60	73	91	110	150
	Maximum Output Voltage (V)	3-Phase Proportional to input voltage														
	Output Frequency (Hz)	0.1~400Hz														
Input Rating	Carrier frequency (kHz)	1-15						1-9					1-6			
	Rated Input Current (A)	3-Phase														
		3.2	4.3	5.9	11.2	14	19	25	32	39	49	60	63	90	130	160
	Rated Voltage , Frequency	3-phase 380-480V , 50/60Hz														
	Voltage Tolerance	±10%(342~528V)														
	Frequency Tolerance	±5%(47~63Hz)														
	Cooling Method	Natural	Fan Cooled													
Weight (Kg)	2.7	3.2	4.5	2.7	3.2	4.5	6.8	8	10	13	13	13	13	36	36	

575V Series 3-Phase

Model Number VFD - □ □ □ B		007	015	022	037	055	075	110	150	185	220	300	370	450	550	750
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	55	75
Max. Applicable Motor Output (HP)		1.0	2.0	3.0	5.0	7.5	10	15	20	25	30	40	50	60	75	100
Output Rating	Rated Output Capacity (kVA)	1.7	3.5	4.5	7.5	10	13.4	18.9	21.9	26.9	33.9	40.8	51.8	61.7	79.7	99.6
	Rated Output Current (A)	1.7	3.5	4.5	7.5	10	13.5	19	22	27	34	41	52	62	80	100
	Maximum Output Voltage (V)	3-Phase Proportional to input voltage														
	Output Frequency (Hz)	0.1~400Hz														
Input Rating	Carrier frequency (kHz)	1-10						1-8					1-6			
	Rated Input Current (A)	3-Phase														
		2.0	3.6	4.9	9.9	10.8	14.3	19.8	22	27.7	37	41	52	62	95	117
	Rated Voltage , Frequency	3-phase 500-600V , 50/60Hz														
	Voltage Tolerance	-15%+10% (425~660V)														
	Frequency Tolerance	±5%(47~63Hz)														
	Cooling Method	Natural	Fan Cooled													
Weight (Kg)	2.7	3.2	4.5	6.8	8	10	13	13	13	13	36	36	36	50	50	

VFD-B

Standard wiring diagram



* Three phase input power may apply to single phase drives

* For the single phase application, the AC input line can be connected to any two of the three input terminals R,S,T.