

# VFD-F

## External Dimensions

### Dimensions

Model	W	W1	H	H1	D	Fan cooled	Mounting
VFD007F23A VFD007F43A VFD015F23A VFD015F43A VFD022F23A VFD022F43A VFD037F23A VFD037F43A	150 (5.91)	135 (5.32)	200.0 (10.24)	244.3 (9.63)	180.2 (6.31)	Yes Yes Yes Yes Yes Yes Yes Yes	A
VFD055F23A VFD055F43B VFD075F23A VFD075F43B VFD110F23A VFD110F43A	200 (7.88)	185 (6.73)	323.0 (12.72)	303.0 (11.93)	183.2 (7.22)	Yes Yes Yes Yes Yes Yes	A
VFD150F23A	250 (9.84)	226 (8.90)	430.8 (15.90)	384.0 (15.12)	205.4 (8.08)	Yes	A
VFD150F43A	200 (7.88)	185 (6.73)	323.0 (12.72)	303.0 (11.93)	183.2 (7.22)	Yes	A
VFD180F23A VFD180F43A VFD220F23A VFD220F43A	250 (9.84)	226 (8.90)	403.8 (15.90)	384.0 (15.12)	205.4 (8.08)	Yes Yes Yes Yes	A
VFD300F23A	370.0 (14.57)	335.0 (13.19)	589.0 (23.19)	560.0 (22.05)	260.0 (10.24)	Yes	B
VFD300F43A	250 (9.84)	226 (8.90)	403.8 (15.90)	384.0 (15.12)	205.4 (8.08)	Yes	A
VFD370F23A VFD370F43A VFD400F43A VFD500F43A	370.0 (14.57)	335.0 (13.19)	589.0 (23.19)	560.0 (22.05)	260.0 (10.24)	Yes Yes Yes Yes	B
VFD750F43A VFD900F43C	370.0 (14.57)	335.0 (13.19)	595.0 (23.43)	560.0 (22.05)	260.0 (10.24)	Yes Yes	B
VFD900F43A VFD1100F43A	425.0 (16.73)	385.0 (15.16)	850.0 (33.46)	831.0 (32.84)	264.0 (10.39)	Yes Yes	C
VFD1100F43C VFD1300F43A VFD1900F43A	425.0 (16.73)	381.0 (15.00)	850.0 (33.46)	819.0 (32.26)	264.0 (10.39)	Yes Yes Yes	D
VFD1800F43A VFD2000F43A	547 (21.54)	480 (18.90)	1357.6 (53.45)	1119 (44.06)	360 (14.17)	Yes Yes	E

\*We reserve the right to change the information in this catalogue without prior notice



### ASIA

#### Delta Electronics, Inc.

Taoyuan  
31-1, Xingbang Road, Guishan Industrial Zone,  
Taoyuan County 33370, Taiwan, R.O.C.  
TEL: 886-3-362-6301 / FAX: 886-3-362-7267

#### Delta Electronics (Jiang Su) Ltd.

Wujiang Plant3  
1688 Jiangxing East Road,  
Wujiang Economy Development Zone,  
Wujiang City, Jiang Su Province,  
People's Republic of China (Post code: 215200)  
TEL: 86-512-6340-3008 / FAX: 86-769-6340-7290

#### Delta Electronics (Japan), Inc.

Tokyo Office  
Delta Shibadaimon Building, 2-1-14 Shibadaimon,  
Minato-Ku, Tokyo, 105-0012, Japan  
TEL: 81-3-5733-1111 / FAX: 81-3-5733-1211

#### Delta Electronics (Korea), Inc.

Donghwa B/D 3F, 235-6, Nonhyun-dong,  
Kangnam-gu, Seoul 135-010, Korea  
TEL: 82-2-515-5303/5 / FAX: 82-2-515-5302

#### Delta Electronics (Singapore) Pte. Ltd.

8 Kaki Bukit Road 2, #04-18 Ruby Warehouse Complex,  
Singapore 417841  
TEL: 65-747-5155 / FAX: 65-744-9228

### AMERICA

#### Delta Products Corporation (USA)

Raleigh Office  
P.O. Box 12173, 5101 Davis Drive,  
Research Triangle Park, NC 27709, U.S.A.  
TEL: 1-919-767-3813 / FAX: 1-919-767-3939

### EUROPE

#### Deltronics (The Netherlands) B.V.

Eindhoven Office  
De Witbogt 15, 5652 AG Eindhoven, The Netherlands  
TEL: 31-40-2592850 / FAX: 31-40-2592851



# VFD

## Delta VFD-F Series High Performance User-friendly Multi-function Fan & Pump AC Motor Drives

### Features

- ▶ 16-bit microprocessor controlled PWM output
- ▶ Automatic torque boost & slip compensation
- ▶ Output frequency 0.1-120Hz
- ▶ 16-step speed control & 15-step preset speed
- ▶ PID feedback control
- ▶ 2 accel./decel. times & S-curve settings
- ▶ Pump control & automatic energy-saving
- ▶ Communication interface RS-485 (Baud rate 38400)
- ▶ Free run or ramp stop. Controlled reversing
- ▶ Adjustable V/F curve. Automatic voltage regulation



### Voltage Range:

3 Phase 230V Series : 0.75~37KW (1~50HP)  
3 Phase 430V Series : 0.75~220KW (1~300HP)



VFD-F series have been approved by CE and UL

www.delta.com.tw/industrialautomation

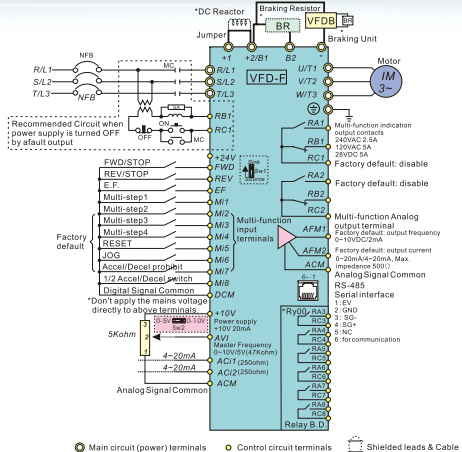
# VFD-F

## Basic wiring diagram

Users must connect wires according to the following circuit diagram shown below.

Do not plug a Modem or telephone line to the RS-485 communication port, permanent damage may result. Terminals 2 & 5 are the power sources for the optional copy keypad and should not be used while using RS-485 communication.

Note \*is optional



● Main circuit (power) terminals ● Control circuit terminals ○ Shielded leads & Cable

# VFD-F

## Standard specifications

### 460V Series 3-Phase

Model Number	VFD□□□F	007	015	022	037	055	075	110	150	185	220	300	370	450	550	750	900	1100	1320	1600	1850	2200	
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	90	110	132	160	185	220	
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	125	150	175	215	250	300	
Rated Output Capacity (kVA)		2.3	3.2	4.2	6.5	10	14	18	25	29	34	48	56	69	84	114	137	168	198	236	282	328	
Rated Output Current (A)		2.7	4.2	5.5	8.5	13	18	24	32	38	45	60	73	91	110	150	180	220	260	310	370	460	
Maximum Output Voltage (V)		3-Phase Proportional to Input Voltage																					
Output Frequency (Hz)		0.10-120Hz																					
Carrier Frequency (kHz)		4-10							3-9							2-6							
Rated Input Current (A)		3.2	4.3	5.9	11.2	14	19	25	33	46	56	70	75	95	110	150	180	200	240	300	380	400	
Rated Voltage, Frequency		3-phase 380 to 480 V, 50/60Hz																					
Voltage Tolerance		±10%(342-528V)																					
Frequency Tolerance		±5%(47-63Hz)																					
Cooling Method		Fan Cooled																					
Control System		SPWM (Sinusoidal Pulse Width Modulation/control carrier (V/F 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 Hz																					
Overload Endurance		120% of rated current for 1 minute																					
Skip Frequency		Three zones, setting range 0.1-120Hz																					
Accel./Decel. Time		1-3600/0.1-3600/0.01-360.0 seconds (3 Independent settings for Accel/Decel Time)																					
Stall Prevention Level		20 to 150%, Setting of Rated Current																					
Frequency Setting		0 to 120Hz																					
DC Injection Braking		Operation frequency 0-120Hz/output 0-100% rated current/Start time 0-40 seconds, stop time 0-40 seconds																					
Braking Torque		Approx. 20%(up to 125% possible with option braking resistor or braking unit externally mounted, 1-20HP braking transistor built-in)																					
V/F Pattern		Adjustable V/F pattern																					
Frequency Setting	Key Pad	Setting by ▲▼																					
External Signal	External Signal	Potentiometer-SA□□0.5W, 0 to +10V to +5VDC, 2sets of 4 to 20mA, RS-485 interface; Multi-Function Inputs 1 to 8(15steps, Jog, up/down)																					
Operation Setting Signal	Key Pad	Set by RUN, STOP and JOG																					
External Signal	External Signal	2 wires/3 wires (Fwd, Rev, E.F.), JOG operation, RS-485 serial interface(MODBUS), Process Logic Control																					
Multi-Function Input Signal	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, AC I/AN selections, driver reset, UP/DOWN key settings, sink/source selection																					
Multi-Function Output Indication	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 Output Signal	2 sets analog frequency/current/voltage/freq. Command/power factor signal output (0-10VDC/4-20mA)																					
Analog Output contact	Analog Output contact	2 Form C contact or open collector output																					
Other Functions	Other 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, abnormal reset, abnormal re-start, digital speed output, sleep/revival function																					
Protection Functions	Protection Functions	Self-testing, Over Voltage, Over Current, Under Voltage, Overload, Overheating, External Fault, Electronic thermal, Ground Fault																					
Display Keypads	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																					
Protection Level	Protection Level	IP 20																					
Pollution Degree	Pollution Degree	2																					
Installation Location	Installation Location	Altitude 1,000 m or lower, keep from corrosive gasses, liquid and dust																					
Ambient Temperature	Ambient Temperature	-10°C to 40°C Non-Condensing and not frozen																					
Storage/Transportation Temperature	Storage/Transportation Temperature	-20°C to 60°C																					
Ambient Humidity	Ambient Humidity	Below 90% RH (non-condensing)																					
Vibration	Vibration	9.80665m/s <sup>2</sup> (1G) less than 20Hz, 5.88m/s <sup>2</sup> (0.6G) at 20 to 50Hz																					
Approvals	Approvals	CE, UL, C																					

# VFD-F

## External Dimensions

