



Automation for a Changing World

Delta Sensorless Vector Control Compact Drive VFD-EL-W Series



www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

Sensorless Vector Control Compact Drive VFD-EL-W Series

*Simple Speed Control
Horizontal Movement
Fixed Load Applications*



Frame A1

Frame A2

Frame B

| Safety and Reliability



150% / 60s overload capability



Energy-saving



CE certification

| Easy Maintenance



Natural cooling (Frame A1):
no maintenance required



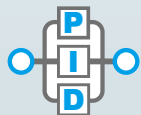
Fan cooling (Frame A2, Frame B):
easy fan installation, reliable design,
fast dust removal



| Complete Functions



Single / multi-pump control:
constant pressure mode & alternative operation



Built-in PID feedback control



Protection: overload, over voltage / over current stall prevention

Applications

Edge Banding Machine

- Communication isolation reduces the interference of HMI
- Supports one drive with two motors in parallel
- Optimized accel. / decel. improve system efficiency
- Small size, light weight, easy maintenance and installation



Logistics Conveyor

- Built-in RS485 COM port for high-speed communication
- Fast and stable tension control
- Small and compact design to save installation space



Material Handling Machine

- Multiple speed adjustment modes for different applications
- AVR function to ensure the stability and reliability
- Instantaneous power failure speed tracking function to ensure continuous power supply, especially when it is temporarily abnormal



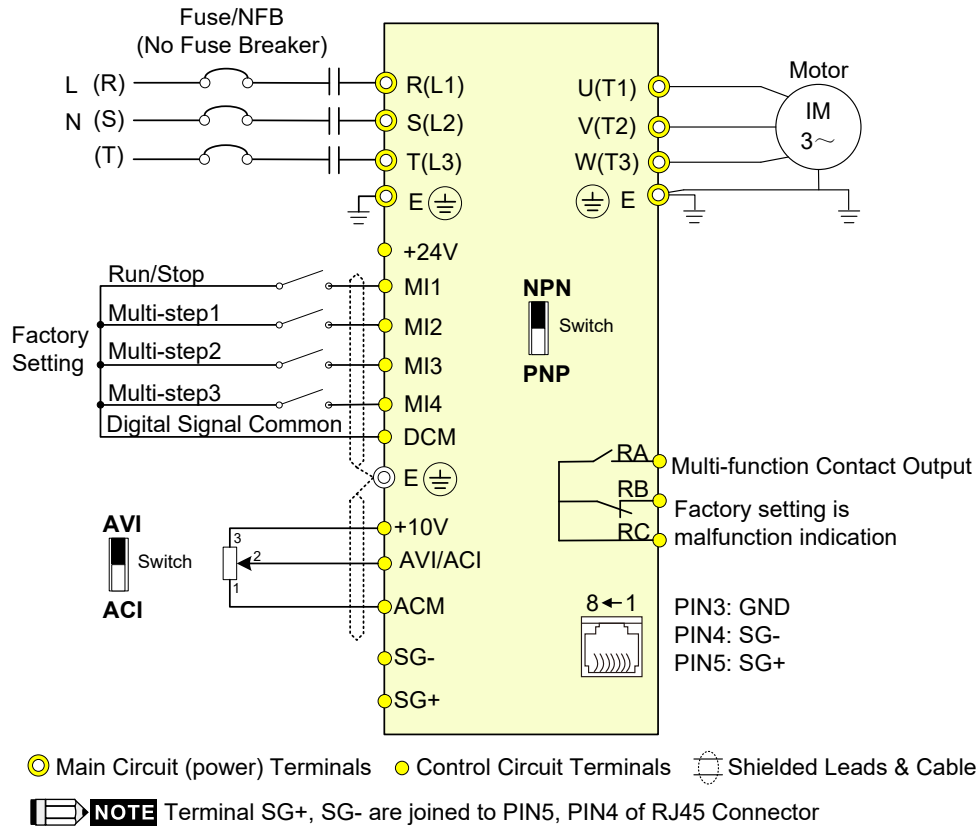
Constant Pressure Pump

- Built-in PID control, no external PID device required, saving total cost
- Built-in automatic water stop & start detection function, no external PLC needed
- Leakage detection function
- Multi-pump control: alternates pump operation in cycle (One drive supports 4 pumps maximum)

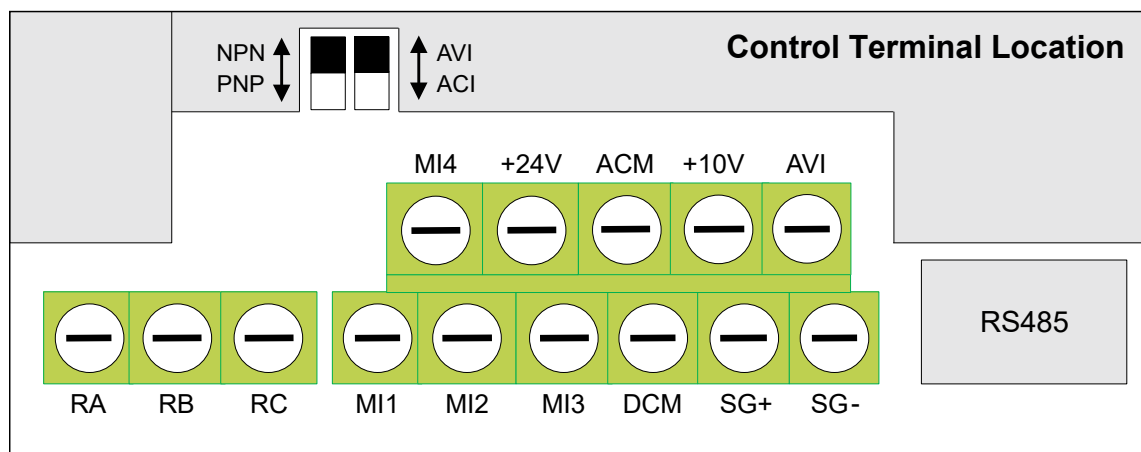


Wiring

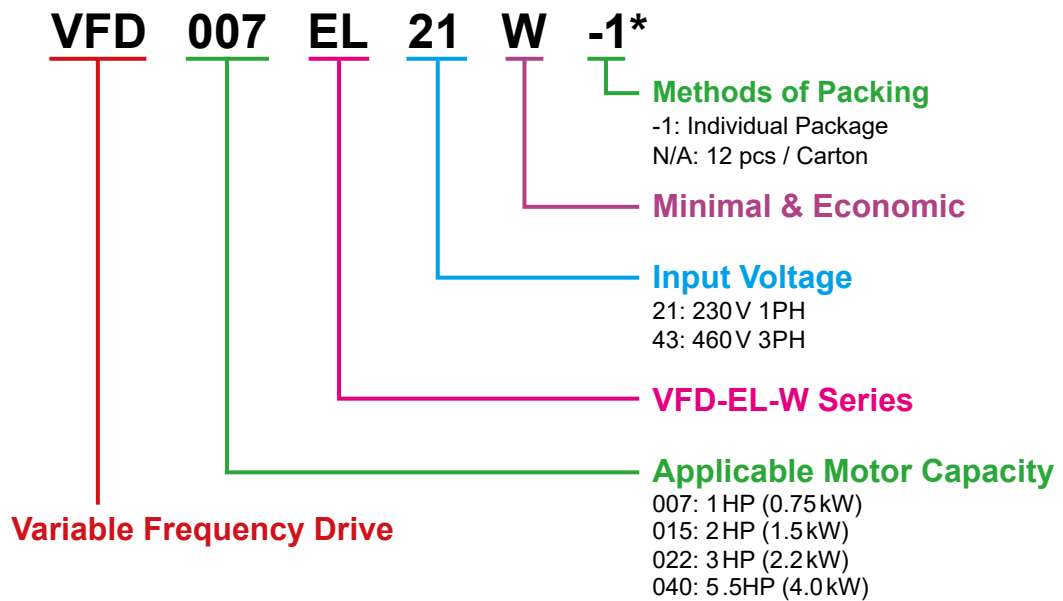
230V/460V Models



Control Terminals



Model Explanation



NOTE * The price may vary with different methods of packing.
Please contact with Delta regional office for more information.

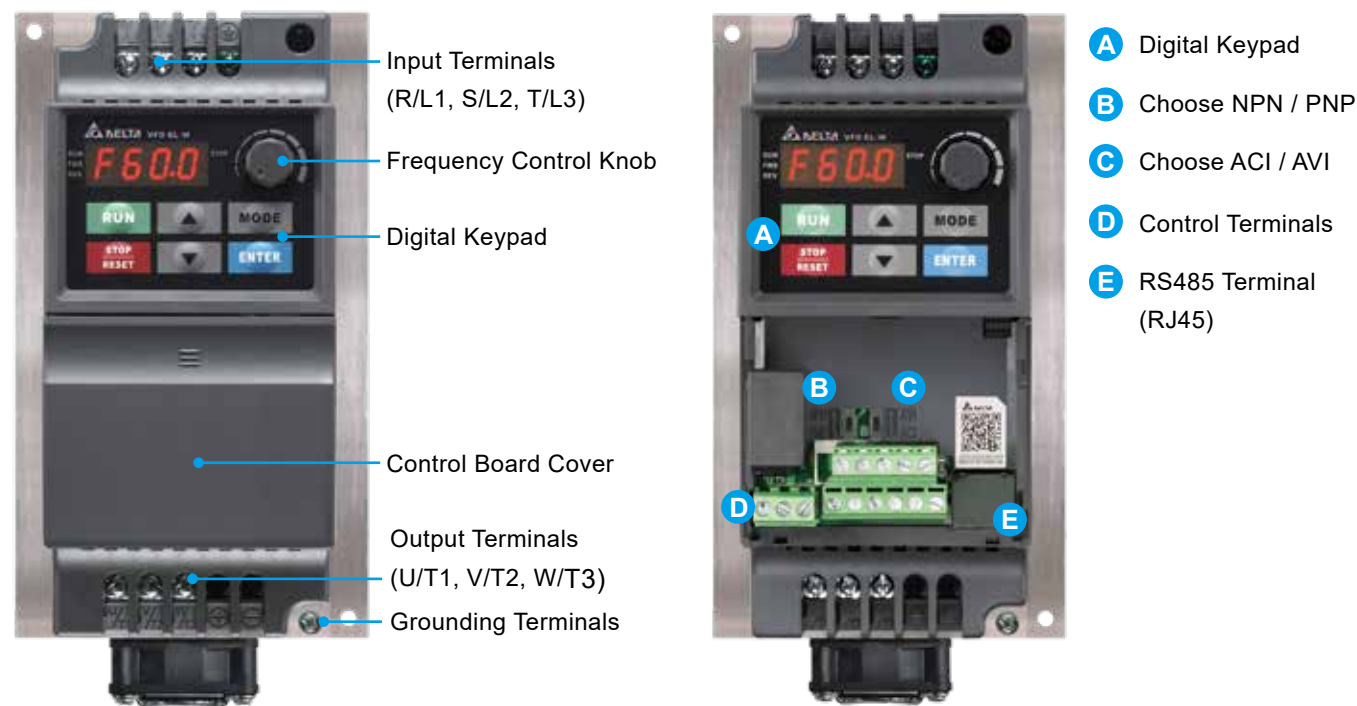
Frames and Appearances

■ Frame A1

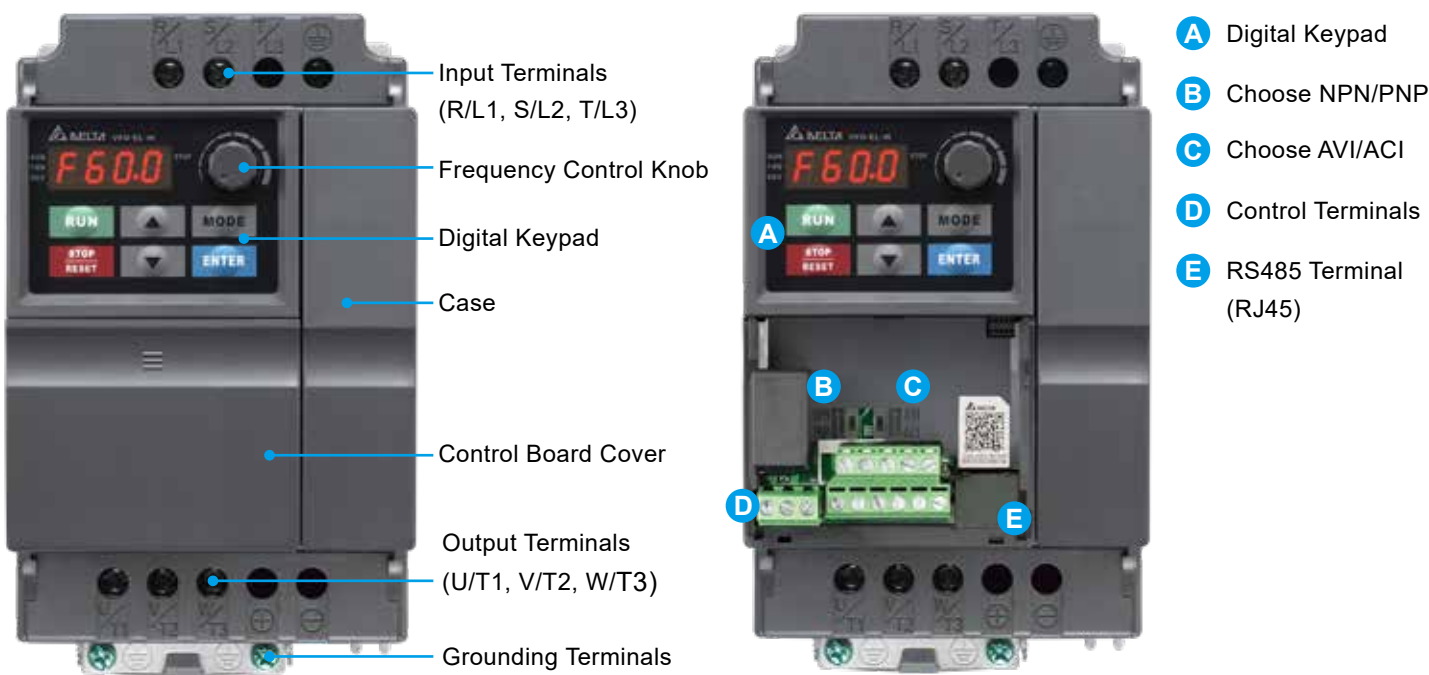


Frames and Appearances

■ Frame A2



■ Frame B



Specifications

Product Specifications

230V						
Frame		A1		B		
VFD □□□ EL21W (-1)		007		015022		
Max. Applicable Motor Output (kW)		0.75		1.52.2		
Max. Applicable Motor Output (Hp)		1.0		2.03.0		
Output Rating	Rated Output Capacity (kVA)		1.6		2.94.2	
	Rated Output Current (A)		4.2		7.511.0	
	Maximum Output Voltage (V)		3-Phase Proportional to Input Voltage			
	Output Frequency (Hz)		0.1Hz ~ 400Hz			
	Carrier Frequency (kHz)		2kHz ~ 12kHz (Defaulted 8kHz)			
Input Rating	Rated Input Current (A)		9.3		15.724.0	
	Rated Voltage / Frequency		Single Phase, AC 200V ~ 240V, 50 / 60Hz			
	Voltage Tolerance		± 10% (180V ~ 264V)			
	Frequency Tolerance		± 5% (47 Hz ~ 63Hz)			
Weight (kg)		1.0		1.41.4		
Cooling Method		Natural Cooling		Fan Cooling		
Brake Unit		N / A				
DC Choke		N / A				
EMI Filter		N / A				

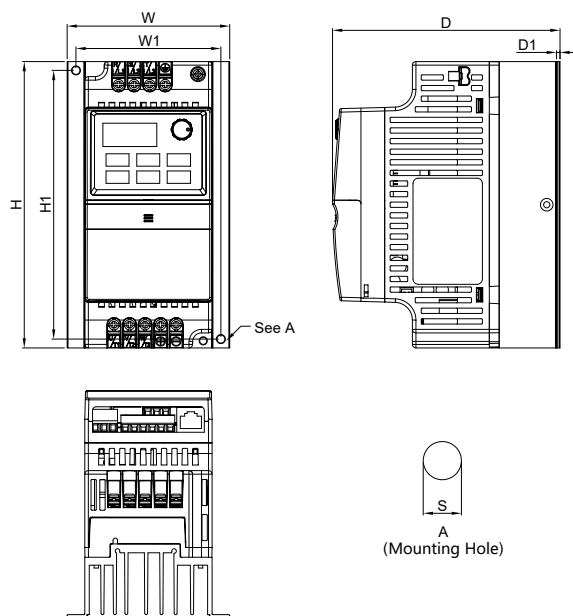
460 V					
Frame		A1	A2	B	
VFD □□□ EL43W (-1)		007	015	022	040
Max. Applicable Motor Output (kW)		0.75	1.5	2.2	4.0
Max. Applicable Motor Output (Hp)		1.0	2.0	3.0	5.5
Output Rating	Rated Output Capacity (kVA)	2.0	3.3	4.4	7.4
	Rated Output Current (A)	2.5	4.2	5.5	9.0
	Maximum Output Voltage (V)	3-Phase Proportional to Input Voltage			
	Output Frequency (Hz)	0.1Hz ~ 400Hz			
	Carrier Frequency (kHz)	2kHz ~ 12kHz (Defaulted 8kHz)			
Input Rating	Rated Input Current (A)	3.2	4.3	7.1	10.0
	Rated Voltage / Frequency	3-Phase, AC 380V ~ 480V, 50 / 60Hz			
	Voltage Tolerance	±10% (342V ~ 528V)			
	Frequency Tolerance	±5% (47 Hz ~ 63Hz)			
Weight (kg)		1.0	1.0	1.4	1.4
Cooling Method		Natural Cooling	Fan Cooling		
Brake Unit		N / A			
DC Choke		N / A			
EMI Filter		N / A			

General Specifications

Control Characteristics	Control System		SPWM (Sinusoidal Pulse Width Modulation) control (V/F control)
	Frequency Setting Resolution		0.01Hz
	Output Frequency Resolution		0.01Hz
	Torque Characteristics		Including the auto-torque, auto-slip compensation; starting torque can be 150% at 5 Hz
	Overload Endurance		150% of rated current for 1 minute
	Skip Frequency		Three zones, setting range 0.1 ~ 400 Hz
	Accel./Decel. Time		0.1 to 600 seconds (2 independent setting for accel./decel. time)
	Stall Prevention Level		Setting 20 to 250% of rated current
	DC Brake		Operation frequency 0.1~400 Hz, Output 0 ~ 100% rated current Start time 0~60 seconds, stop time 0~60 second
	V/F Pattern		Adjustable V/F pattern
Operating Characteristics	Frequency Setting	Keypad	Setting by ▲ ▼
		External Signal	Potentiometer : 5kΩ/0.5W, 0 to +10VDC, 4 to 20 mA Multi-function input MI2 ~ MI4 (8 steps : Including the main speed, jog, up/down); RS-485 serial interface
	Operating Setting Signal	Keypad	Setting by RUN and STOP
		External Signal	RUN / STOP by MI1 (default) or 2 wires / 3 wires control (MI1,MI2,MI3) , jog operation, RS485 serial interface (Modbus)
	Multi-function Input Signal		Multi-step selection 0 to 8 (including the main speed), jog, 2 accel./decel. switches, accel./decel. inhibit, counter, external base block, AVI/ACI selections, driver reset, UP/DOWN key settings, NPN/PNP input selection
	Multi-function Output Signal		AC drive operating, frequency attained, zero speed, base block, fault indication, overheat alarm, emergency stop and status selections of input terminal
Protection Functions			Over voltage, over current, under voltage, external fault, overload, overheating, electronic thermal, IGBT short circuit, multiple motor, PTC
Operation Functions			Accel./decel. S-Curve, over-voltage/over-current stall prevention, 5 fault records, reverse inhibition, momentary power loss restart, DC brake, auto torque/slip compensation, auto tuning, adjustable carrier frequency, output frequency limits, parameter lock/reset, PID control, external counter, Modbus communication, abnormal reset, power-saving, fan control (1.5~4.0 kW), sleep/wake frequency, 1 st /2 nd frequency source selections, 1 st /2 nd frequency source combination, NPN/PNP selection
Display Keypad (optional)			6-key, 7-segment LED with 4-digit, 4 status LEDs, master frequency, output frequency, output current, custom units, parameter values for setup and lock, faults, RUN, STOP, RESET
Environmental Conditions	Enclosure Rating		IP20
	Pollution Degree		2
	Installation Location		Altitude 1,000 m or lower, keeping from corrosive gas, liquid and dust
	Operating Temperature		-10°C to 50°C (except VFD007EL21W) -10°C to 40°C (VFD007EL21W)
	Storage/Transportation Temperature		-20°C to 60°C
	Ambient Humidity		Below 90% RH (non-condensing)
Vibration			1.0 mm, peak to peak 2~13.2 Hz; 0.7~1.0 G, 13.2~55 Hz; 1.0 G, 55~512 Hz; compliant with IEC 60068-2-6
Certification			 , RoHS, GB 12668.3

Dimensions

■ Frame A1



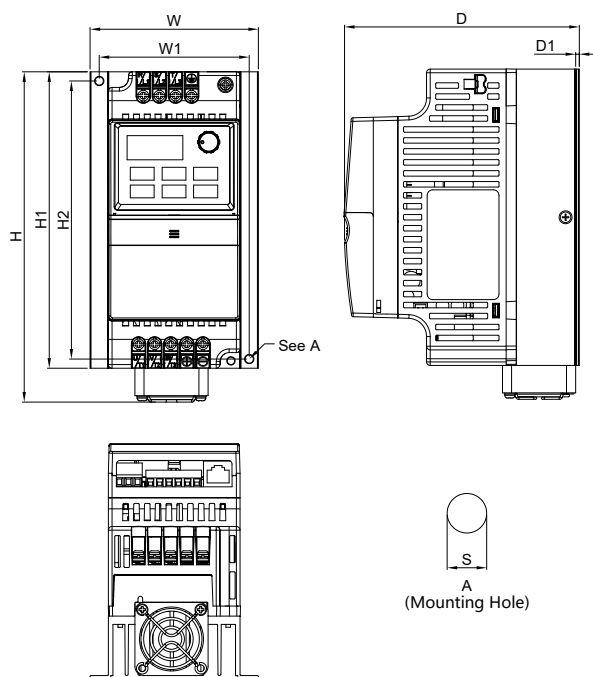
Model

VFD007EL21W(-1)
VFD007EL43W(-1)

Unit: mm[inch]

Frame		W	W1	H	H1	D	D1	S
A1	mm	92.0	82.0	162.0	152	128.7	2.00	5.4
	inch	3.62	3.23	6.38	5.98	5.07	0.08	0.21

■ Frame A2



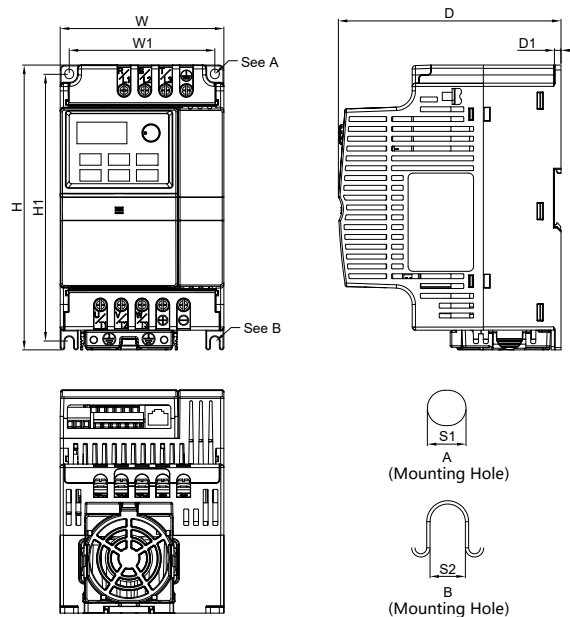
Model

VFD015EL43W(-1)

Unit: mm[inch]

Frame		W	W1	H	H1	H2	D	D1	S
A2	mm	92.0	82.0	180.5	162.0	152	128.7	2.00	5.4
	inch	3.62	3.23	7.11	6.38	5.98	5.07	0.08	0.21

■ Frame B



Model

VFD015EL21W(-1)
VFD022EL21W(-1)
VFD022EL43W(-1)
VFD040EL43W(-1)

Unit: mm[inch]

Frame		W	W1	H	H1	D	D1	S1	S2
B	mm	100.0	89.0	174.0	162.9	136.0	4.0	5.9	5.4
	inch	3.94	3.50	6.85	6.42	5.35	0.16	0.23	0.21

Accessories



■ Keypad
VFD-PU06



■ Keypad
VFD-PU08



■ Reactor
RF220X00A

Ordering Information

Frame	Cooling Method	Operating Temperature	Power Range	Models
Frame A1	Natural Cooling	-10°C~40°C	230V: 0.75 kW	VFD007EL21W(-1)
			460V: 0.75 kW	VFD007EL43W(-1)
Frame A2	Fan Cooling	-10°C~50°C	460V: 1.5 kW	VFD015EL43W(-1)
Frame B			230V: 1.5 ~ 2.2 kW 460V: 2.2 ~ 4.0 kW	VFD015EL21W(-1) VFD022EL21W(-1) VFD022EL43W(-1) VFD040EL43W(-1)

- NOTE**
1. VFDxxxELxxW-1 and VFDxxxELxxW share the same electrical specification.
 2. The price may vary with different methods of packing.
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