

**Features :**

- ▶ V/F Control
- ▶ Automatic voltage regulation
- ▶ 150% Overload capacity
- ▶ Detachable keypad
- ▶ PI Control
- ▶ Provides protection against Over voltage, Under voltage, Over temperature, Over load, Under current, and Short circuit
- ▶ RS485 Modbus communication

Technical specifications**Single Phase**

Model VFD-S-1	005	010	020
Applicable motor output (kW)	0.4	0.75	1.5
Applicable motor output (HP)	0.5	1	2

Input rating

Rated voltage / Frequency	Single Phase 230VAC, 50/60Hz		
Maximum input current	5A	10A	20A
Voltage tolerance	±15% (195~265V)		
Frequency tolerance	±5% (47~63Hz)		

Output rating

Rated output capacity (kVA)	1	1.9	2.7
Rated output current	2.5A	5A	7A
Maximum output voltage (V)	Proportional to Input voltage		
Output frequency	0.1~400 Hz		
Carrier frequency	2~10 kHz		

Three Phase

Model VFD-S- 3	010	020	030
Applicable motor output (kW)	0.75	1.5	2.2
Applicable motor output (HP)	1	2	3

Input rating

Rated voltage / Frequency	Three Phase 415VAC, 50/60Hz		
Maximum input current	3.5A	7A	10A
Voltage tolerance	±15% (353~477V)		
Frequency tolerance	±5% (47~63Hz)		

Output rating

Rated output capacity (kVA)	2.1	3.5	5
Rated output current	3A	5A	7A
Maximum output voltage (V)	Proportional to Input voltage		
Output frequency	0.1~400Hz		
Carrier frequency	2~10kHz		

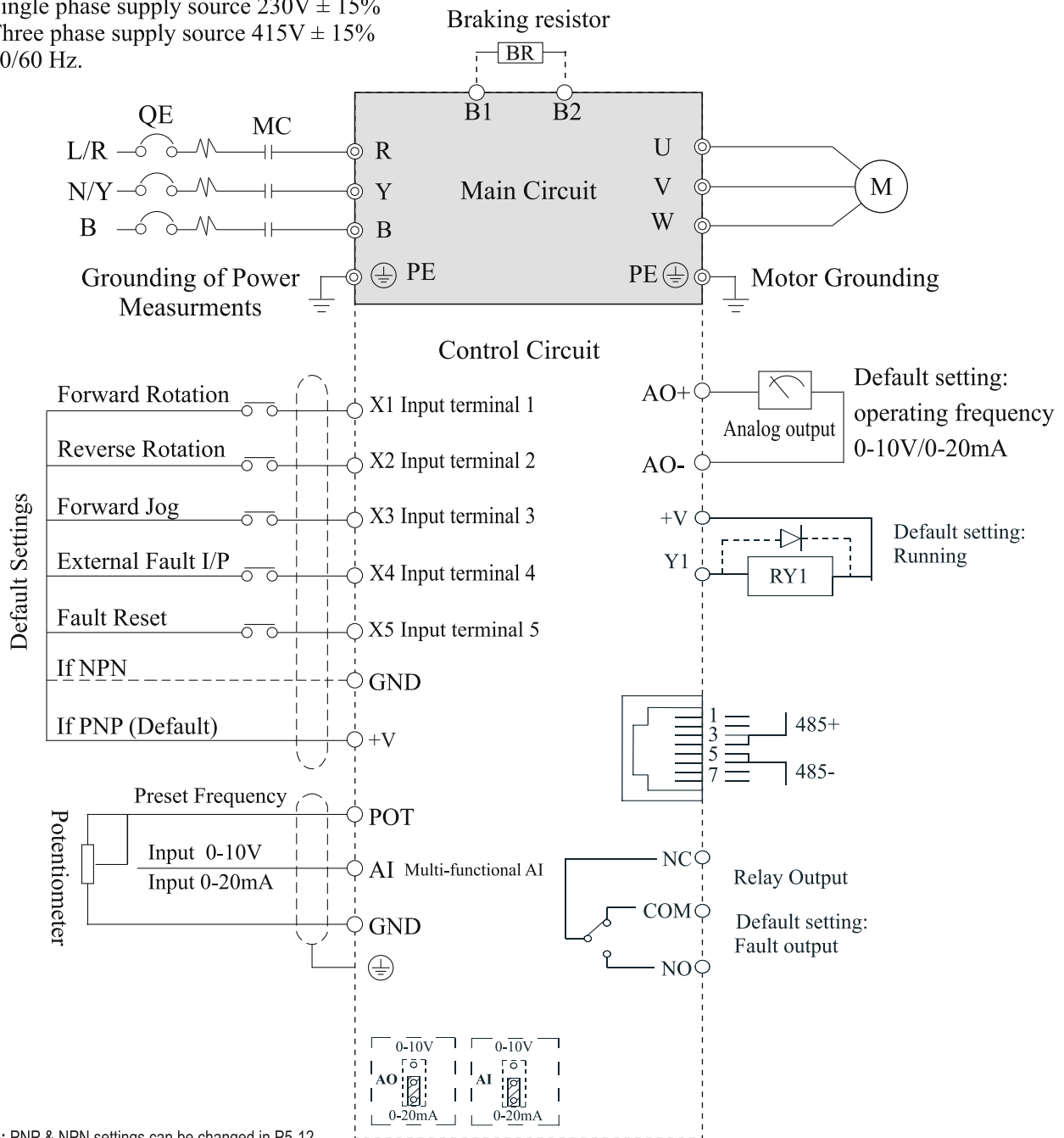
Control characteristics

Control mode	Space vector PWM (SVPWM) based scalar control		
Frequency setting resolution (Hz)	0.1		
Starting torque	Maximum 150% for 60s once in 10 minutes		
Overload endurance	150 % for 1 min, 180 % for 10 sec., 200 % for 1 sec.		
Skip frequency	Two Zones, Setting range 0.1 to 400 Hz		
DC Injection braking	Up to 150% of rated current for 0 to 50.0s during starting and stopping cycles.		

Accel. / Decel. time	0.0 ~ 3600 Sec. Four acceleration/deceleration time settings available		
Braking torque	Maximum 150%		
V/f Mode	4 Pre-set V/f mode and 1 user defined V/f program		
Operating Characteristics			
Frequency Setting	Keypad	Set by Up & Down Keys Set by Panel Encoder	
	External signal	Potentiometer – 10kΩ, 0 to 10VDC Analog Input – 0-20 mA/4-20 mA/0-10 V Communication – Modbus RTU over RS485 Multifunction Terminal – 1 to 5 (8 Steps, JOG, UP & DOWN)	
Operation setting	Keypad	by RUN & STOP Keys	
	External signal	Multifunction Terminal 1 to 5 (RUN, STOP, Fwd/Rev, JOG) External Communication – Modbus RTU over Rs485 Communication – Modbus RTU over Rs485	
Control Input / Output			
Digital input	Programmable digital inputs	5	Terminal X1 to X5
	Logic	PNP or NPN	
	Voltage level	0 – 24 VDC	
	Input resistance	Approx. 6 kΩ	
Analog input	Analog input	1	AI
	Modes	Voltage or Current	
	Voltage level	0 to +10V	
	Current level	0/4 to 20 mA	
Analog output	Analog Output	1	AO
	Voltage level	0 to +10V	
	Current level	0/4 to 20 mA	
Multifunction output	Open collector O/P	1	Y1
	Voltage level at digital output	24V	
	Output current (sink)	50mA	
	Relay output	1	NO,COM,NC
	Max. terminal load (AC)	250V, 5A	
Operation function			
AVR (Automatic Voltage Regulation), Fault Records, Adjustable Carrier Frequency, DC Braking, Frequency Limit, Parameter Lock/Reset, Counter, PI Control, PLC Program, Modbus Communication, Reduced Power Mode, Energy Efficient Running, Hand Function			
Protection function			
Over Voltage, Under Voltage, Over Current, Over Temperature, Over Load, Under Current, Output Short Circuit, System Error			
Display / Keypad			
Removable HMI with 8 keys, 1 switch enabled encoder, 5 digit-7 Segment LED display and 7 status LEDs, Set Frequency, Output Frequency, Custom Units, Parameter Values for Setup, Review and Faults, RUN STOP/RESET, PRG, ESC, JOG/REV, UP, DOWN, HAND			
Enviromental conditions			
Protection level	IP20		
Pollution degree	2		
Installation location	Indoor, <1000 m altitude above sea level		
Ambient temperature	-10°C ~ +55°C		
Storage/ transportation temperature	-20°C ~ +60°C		
Ambient humidity	< 90 %, No condensation		
Vibration	<5.9 m/s2 (0.6 g)		

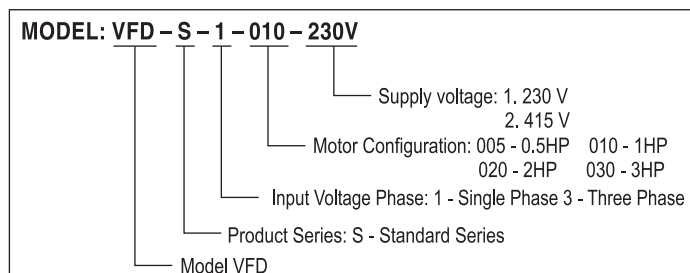
Connection diagram

Single phase supply source $230V \pm 15\%$
 Three phase supply source $415V \pm 15\%$
 50/60 Hz.

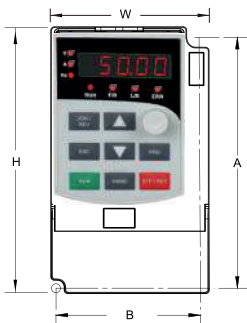
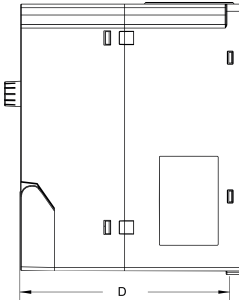


Note: PNP & NPN settings can be changed in P5-12

Model description



Dimensions

							
Product Code	Mounting Dimension		Dimension			Pore Diameter	Weight
	A (mm)	B (mm)	H (mm)	W (mm)	D (mm)	(mm)	(kg)
VFD-S-1-005-230V	141	80.5	150	89	123	φ4.6	0.85
VFD-S-1-010-230V							
VFD-S-1-020-230V							
VFD-S-3-010-415V							
VFD-S-3-020-415V							
VFD-S-3-030-415V							

Ordering information

Product code	Description	Braking unit	Recommended resistance value	Output current
VFD-S-1-005-230V	1 Phase 230V, 0.5HP 0.4 KW	Built In	100W 700 Ω	2.5 A
VFD-S-1-010-230V	1 Phase 230V, 1 HP 0.75 KW	Built In	150W 360 Ω	5 A
VFD-S-1-020-230V	1 Phase 230V, 2 HP 1.5 KW	Built In	200W 200 Ω	7 A
VFD-S-3-010-415V	3 Phase 415V, 1 HP 0.75 KW	Built In	200W 850 Ω	2.5 A
VFD-S-3-020-415V	3 Phase 415V, 2 HP 1.5 KW	Built In	350W 500 Ω	3.7 A
VFD-S-3-030-415V	3 Phase 415V, 3 HP 2.2 KW	Built In	550W 450 Ω	5.1 A

Applications : Suitable for Fans, Pumps, Conveyor, Food & Drink Packaging ,Machinery, Industrial Washing Machine, Textile Applications and Most General Purpose Industries etc.