



### Features :

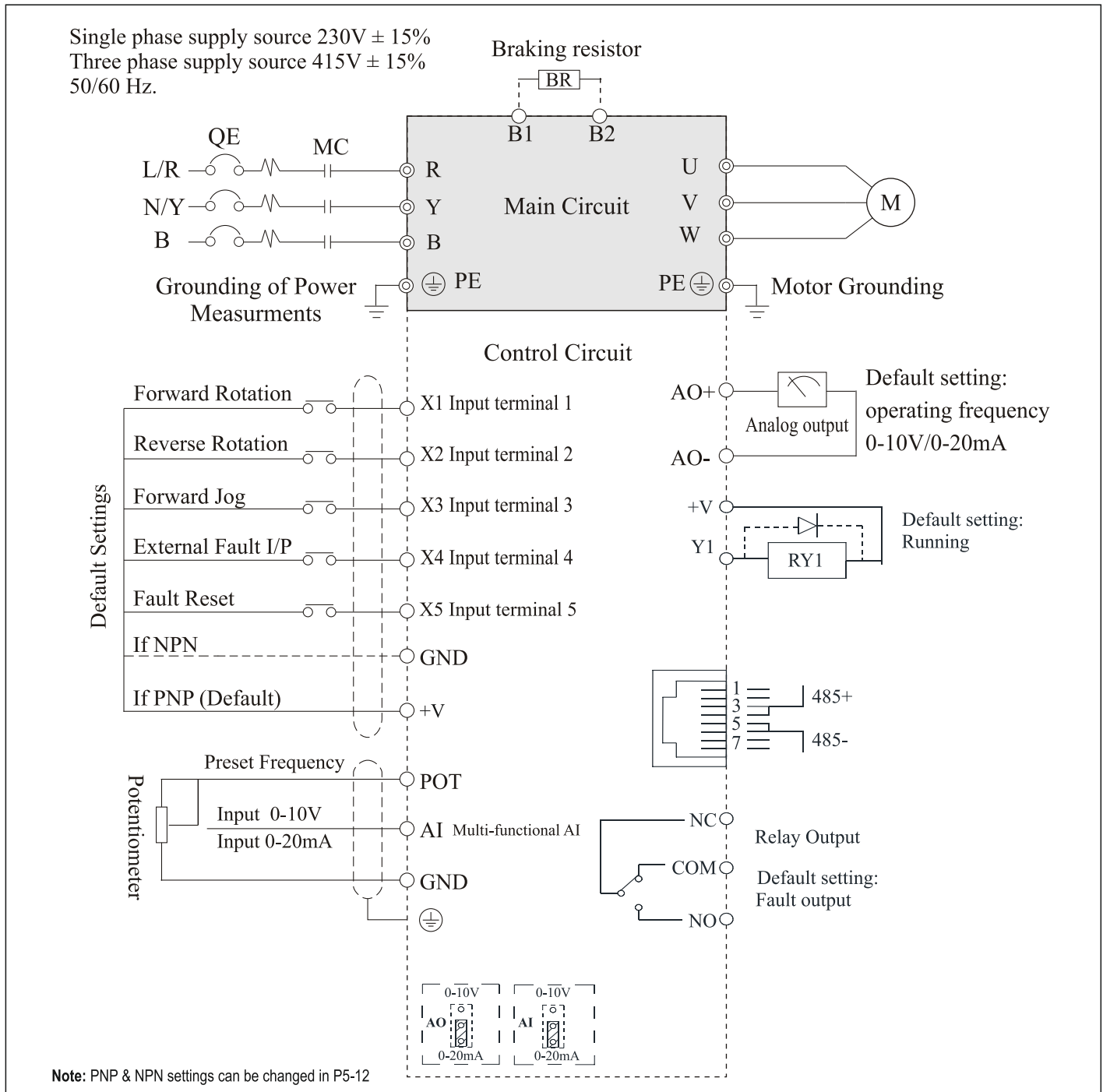
- ▶ V/F Control
- ▶ Automatic voltage regulation
- ▶ 150% Overload capacity
- ▶ Detachable keypad
- ▶ PI Control
- ▶ Provides protection against Over voltage, Under voltage, Over temperature, Over load, Under current, and Short circuit
- ▶ RS485 Modbus communication

## Technical specifications

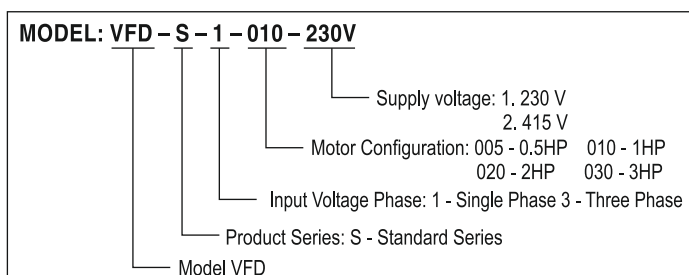
Single Phase			
Model VFD-S-1	005	010	020
Applicable motor output (kW)	0.4	0.75	1.5
Applicable motor output (HP)	0.5	1	2
<b>Input rating</b>			
Rated voltage / Frequency	Single Phase 230VAC, 50/60Hz		
Maximum input current	5A	10A	20A
Voltage tolerance	±15% (195~265V)		
Frequency tolerance	±5% (47~63Hz)		
<b>Output rating</b>			
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
<b>Input rating</b>			
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)		
<b>Output rating</b>			
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		
<b>Control characteristics</b>			
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		
<b>Operating Characteristics</b>			
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	
<b>Control Input / Output</b>			
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	
<b>Operation function</b>			
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			
<b>Protection function</b>			
Over Voltage, Under Voltage, Over Current, Over Temperature, Over Load, Under Current, Output Short Circuit, System Error			
<b>Display / Keypad</b>			
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			
<b>Environmental conditions</b>			
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/s <sup>2</sup> (0.6 g)		

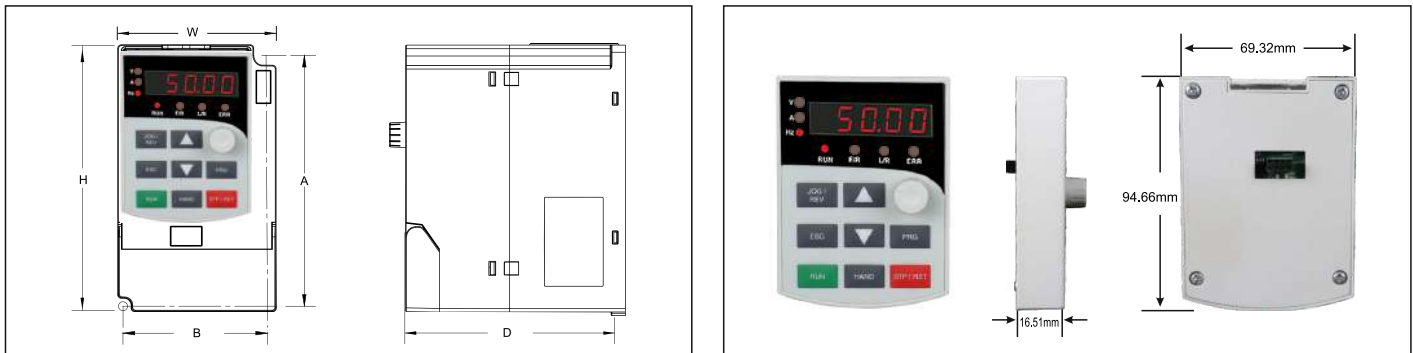
## Connection diagram



## Model description



## Dimensions



Product Code	Mounting Dimension		Dimension			Pore Diameter (mm)	Weight (kg)
	A (mm)	B (mm)	H (mm)	W (mm)	D (mm)		
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.