



Features :

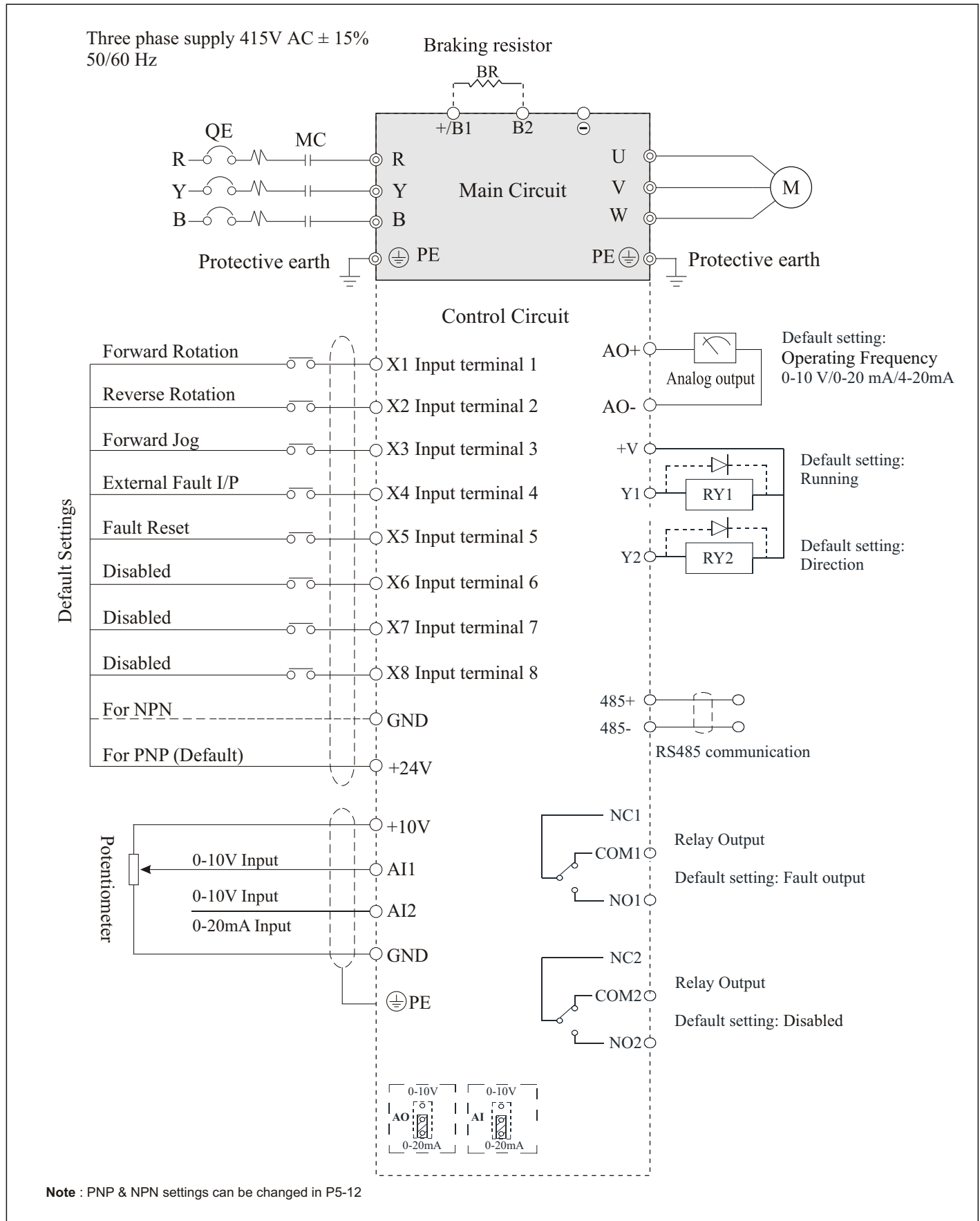
- ▶ V/f Control
- ▶ Automatic voltage regulation
- ▶ 200% Overload capacity for 1 sec
- ▶ Expandable keypad
- ▶ PI Control
- ▶ Provides protection against Over Voltage, Under Voltage, Over Temperature, Over Load, Under Current, Over Current and Short Circuit
- ▶ MODBUS RTU Protocol over RS485 communication

Technical specifications

Three Phase Heavy Duty					
Model VFD-SH-3	050	075	100	150	200
Applicable motor output (kW)	3.7	5.5	7.5	11	15
Applicable motor output (HP)	5	7.5	10	11.1	20
Input rating					
Rated voltage / Frequency	Three Phase 415V AC, 50/ 60 Hz				
Maximum input current	16 A	24 A	31 A	47 A	63 A
Voltage tolerance	±15% (353~477 V)				
Frequency tolerance	±5% (47~63 Hz)				
Output rating					
Rated output capacity (kVA)	6.5	9.3	12	18	23
Rated output current	9 A	13 A	17 A	25 A	32 A
Maximum output voltage (V)	Proportional to input voltage				
Output frequency	0.1 ~ 400 Hz				
Carrier frequency	2 – 10 kHz				
Three Phase Normal Duty					
Model VFD-SN-3	075	100	200	250	
Applicable motor output (kW)	5.5	7.5	15.0	18.5	
Applicable motor output (HP)	7.5	10	20	25	
Input rating					
Rated voltage / Frequency	Three phase 415V AC, 50/ 60 Hz				
Maximum input current	19 A	25 A	50 A	65 A	
Voltage tolerance	±15% (353~477 V)				
Frequency tolerance	±5% (47~63 Hz)				
Output rating					
Rated output capacity (kVA)	12	18	26.5	32.5	
Rated output current	17 A	25 A	37 A	45 A	
Maximum output voltage (V)	Proportional to Input voltage				
Output frequency	0.1 ~ 400 Hz				
Carrier frequency	2 – 10 kHz				
Control characteristics					
Control system	Space vector PWM (SVPWM) based scalar control				
Frequency setting resolution (Hz)	0.1 to upper limit of frequency				
Starting torque	Maximum 150% for 60 Sec once in 10 minutes				
Overload endurance	For ND : 110% up to 60 Sec, 150% up to 3 Sec (every 10 mins) For HD : 150% up to 60 Sec, 180% up to 10s, 200% up to 1 Sec (every 10 mins)				
Skip frequency	Two zones, Setting range 0.1 to 400 Hz				
DC Injection braking	Up to 150% of rated current for 0 to 50.0 Sec during starting and stopping cycles.				

Accel. / Decel. time	0.1 ~ 3600.0 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 & Panel encoder	
	External signal	Potentiometer – 10 kΩ, 0 to 10V DC Analog Input – 0 to 20 mA / 4 to mA / 0 to 10V DC 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 8 (RUN, STOP, Forward/Rev, JOG) External communication – Modbus RTU over RS485	
Control Input / Output			
Digital Input	Programmable digital inputs	8	Terminal X1 to X8
	Logic	PNP or NPN	
	Voltage level	0 – 24V DC	
	Input resistance	Approx 6 kΩ	
Analog Input	Analog input	2	AI1 & AI2
	Modes	AI1 – Voltage/POT; AI2 – Voltage/Current	
	Voltage level	0 to +10 V	
	Current level	0/4 to 20 mA	
Analog Output	Analog Output	1	AO
	Voltage level	0 to +10 V	
	Current level	0/4 to 20 mA	
Multifunction Output	Open collector O/P	2	Y1 & Y2
	Voltage level at digital output	24 V	
	Output current (sink)	50 mA	
	Relay output	2	NO, COM1, NC1 & NO2, COM2, Nc2
	Max. terminal load (AC)	250 V, 5 A	
Operation functions			
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 functions			
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, Paramter 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)		

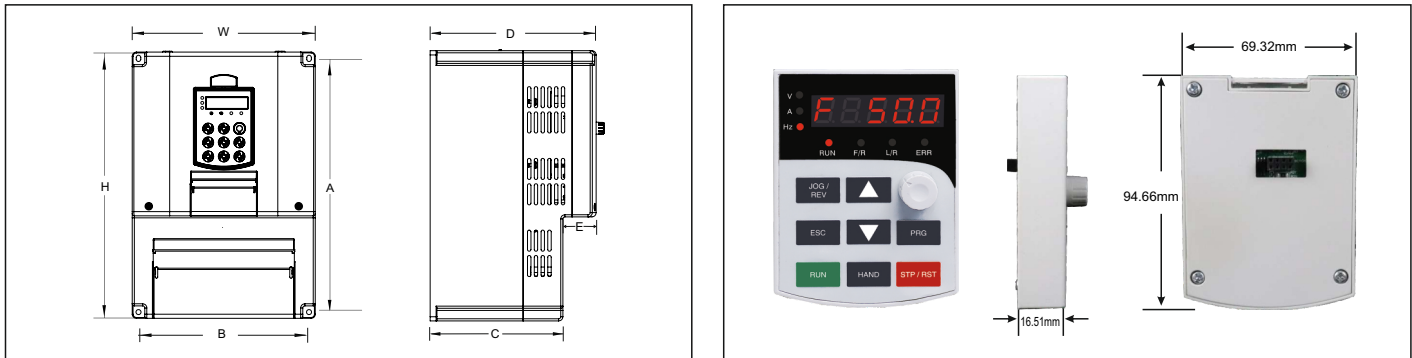
Connection diagram



Model description

MODEL: VFD - SH - 3 - 050 - B - 415V				
				Supply voltage: 415 V
				A-No Breaking unit B-In-built Breaking unit
				Motor configuration: 050 - 5 HP 075 - 7.5 HP 100 - 10 HP 150 - 15 HP 200 - 20 HP 250 - 25 HP
				Input voltage phase: 3 - Three phase
				Product series: S - Standard series H - Heavy duty N - Normal duty
				Model VFD

Dimensions



Product Code	Mounting dimension			Dimension				Pore diameter	Weight
	A (mm)	B (mm)	C (mm)	H (mm)	W (mm)	D (mm)	E (mm)	(mm)	(kg)
VFD-SH-3-050-B-415V	240	148	133.5	247	160	173	39.5	10	2.97
VFD-SN-3-075-B-415V									3.08
VFD-SH-3-075-B-415V									3.19
VFD-SN-3-100-B-415V									6.30
VFD-SH-3-100-B-415V	305	205	157	320	220	196.5	39.5	10	6.46
VFD-SN-3-150-B-415V									6.62
VFD-SH-3-150-B-415V									
VFD-SN-3-200-B-415V									
VFD-SH-3-200-B-415V									
VFD-SN-3-250-B-415V									

Ordering information

Product code	Description	Braking unit	Recommended resistance value	Output current
VFD-SH-3-050-B-415V	3 phase input 415V 3 phase output 0~415V 5HP/3.7KW. Heavy Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	350W 150 Ω	9A
VFD-SN-3-075-B-415V	3 phase input 415V 3 phase output 0~415V 7.5HP/5.5KW. Normal Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	500W 90 Ω	17A
VFD-SH-3-075-B-415V	3 phase input 415V 3 phase output 0~415V 7.5HP/5.5KW. Heavy Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	500W 90 Ω	13A
VFD-SN-3-100-B-415V	3 phase input 415V 3 phase output 0~415V 10HP/7.5KW. Normal Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	800W 60 Ω	25A
VFD-SH-3-100-B-415V	3 phase input 415V 3 phase output 0~415V 10HP/7.5KW. Heavy Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	800W 60 Ω	17A
VFD-SH-3-150-B-415V	3 phase input 415V 3 phase output 0~415V 15HP/11.1KW. Heavy Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	1000W 47 Ω	25A
VFD-SN-3-200-B-415V	3 phase input 415V 3 phase output 0~415V 20HP/15KW. Normal Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	1500W 36 Ω	37A
VFD-SH-3-200-B-415V	3 phase input 415V 3 phase output 0~415V 20HP/15KW. Heavy Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	1500W 36 Ω	32A
VFD-SN-3-250-B-415V	3 phase input 415V 3 phase output 0~415V 25HP/18.5KW. Normal Duty, (8DI PNP/NPN, 2AI, 2TO, 2RO, 1AO), RS485	Built In	2000W 30 Ω	45A

Applications : Suitable for Fans, Pumps, Conveyor, Compressors, Food & Drink Packaging machinery and Most General Purpose Industries.