



Features :

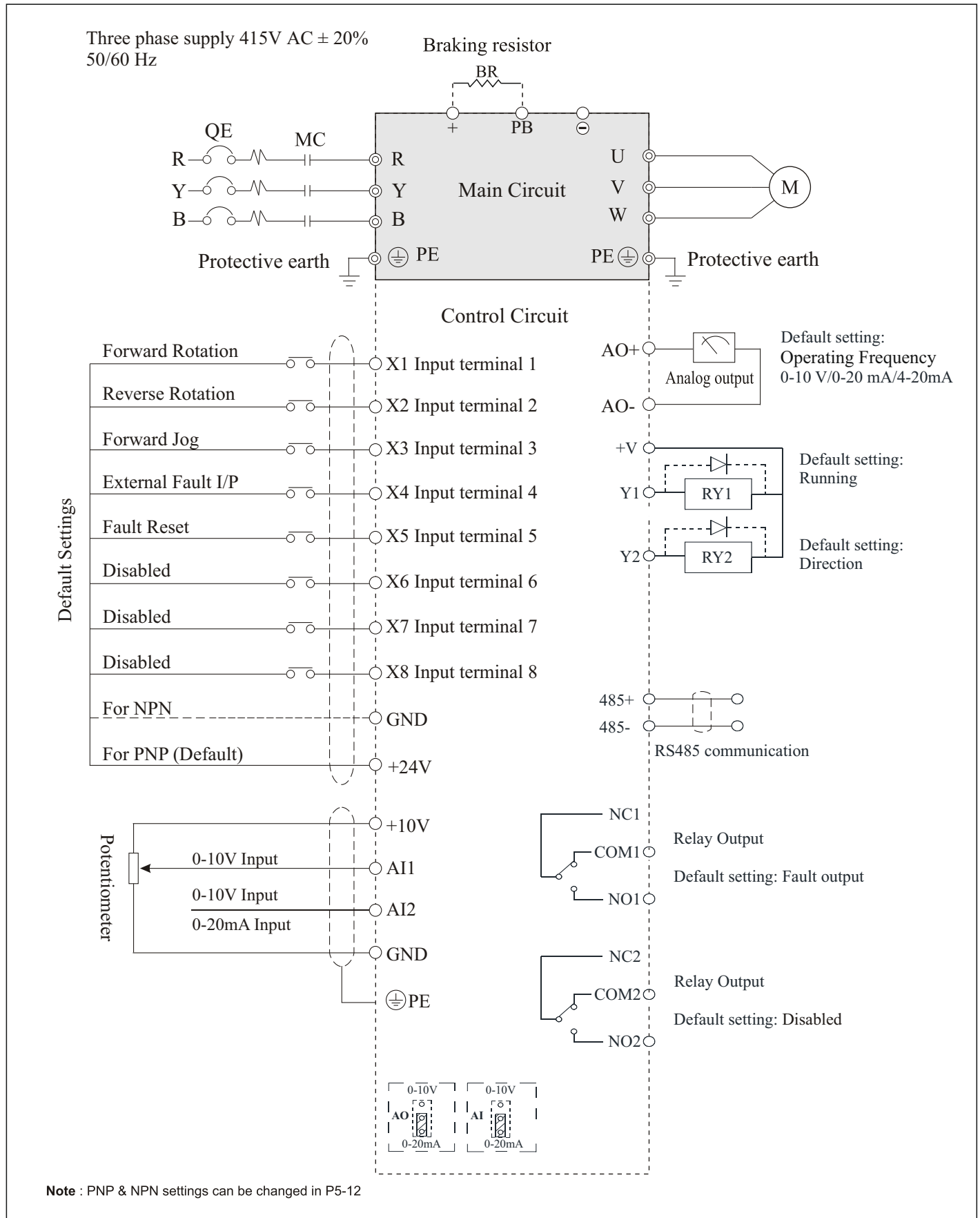
- ▶ V/f Control
- ▶ Automatic voltage regulation
- ▶ 150% Overload capacity for 1 min
- ▶ Expandable keypad
- ▶ PI Control
- ▶ Protection against Over voltage, Under voltage, Over temperature, Over load, Under current, Over current, Short circuit and output phase loss
- ▶ MODBUS RTU protocol over RS485 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	15	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	±20% (332 ~ 498 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				
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 : 120% up to 60 Sec, 150% up to 10s, 180% up to 1 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 20 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			

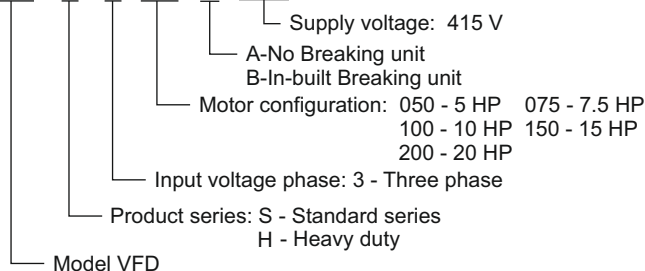
Control Input / Output			
Digital input	Programmable digital inputs	8	Terminal X1 to X8
	Logic	PNP or NPN	
	Voltage level	0 – 24V DC	
	Input resistance	Approx 6 kΩ	
Analog input	Analog input	2	AI1 & AI2
	Modes	AI1 – Voltage / POT; AI2 – Voltage / Current	
	Voltage level	0 to +10 V	
	Current level	0 / 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	NO1, 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			
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 working 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

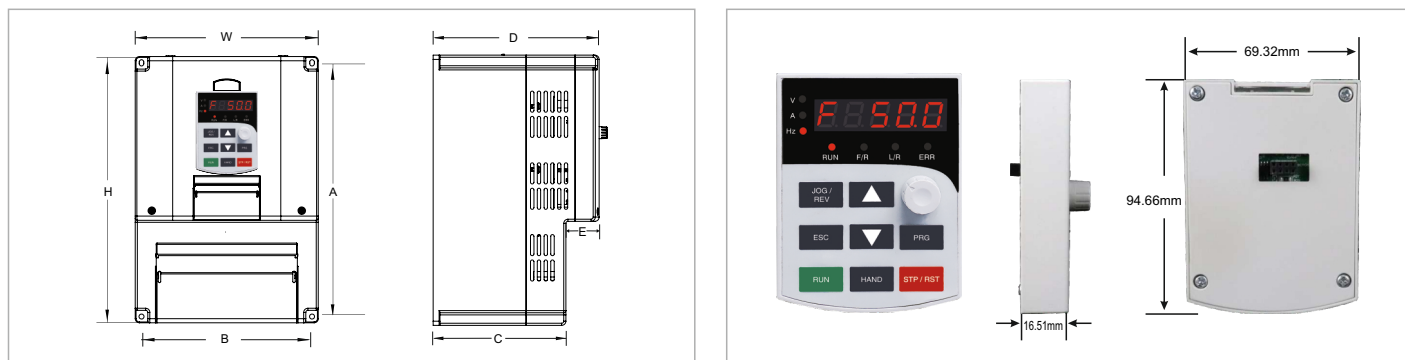


Model description

MODEL: VFD - SH - 3 - 050 - B - 415V



Dimensions



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

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-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-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-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

Applications :

Suitable for Fans, Pumps, Conveyor, Compressors, Food & drink packaging machinery and most general purpose industries.