Variable Frequency Drive

VFD-S



Features :

- V/f Control
- Automatic voltage regulation
- 150% overload capacity for 1 min
- Expandable keypad
- PI feedback 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

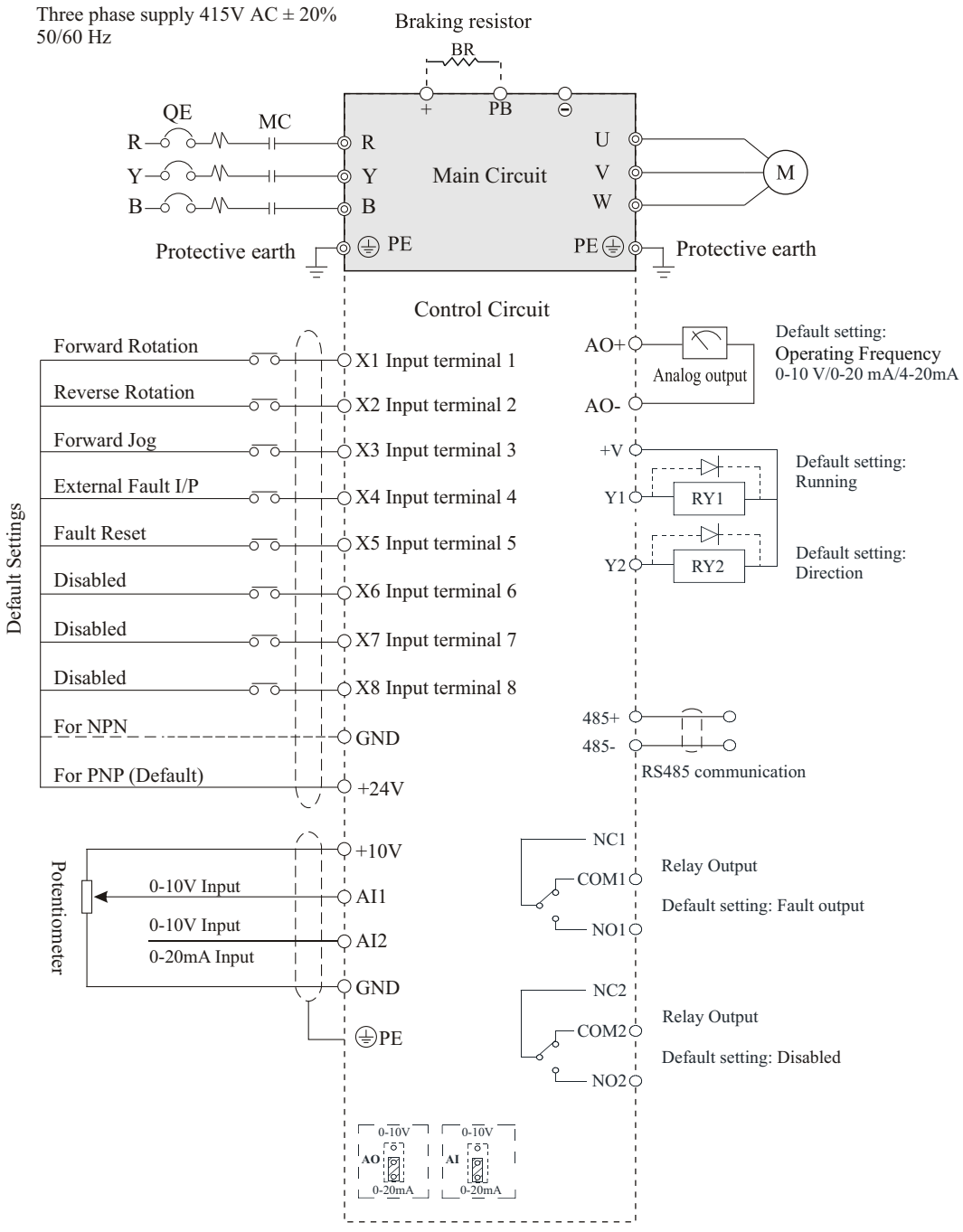
Technical specifications

	Single phase						Three phase										
Model	002	005	010	020	030	050	005	010	020	030	050	075	100	150	200	250	300
Applicable motor output (kW)	0.18	0.4	0.75	1.5	2.2	4.0	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
Applicable motor output (HP)	0.2	0.5	1	2	3	5	0.5	1	2	3	5	7.5	10	15	20	25	30
Input rating																	
Rated voltage / Frequency	230V AC, 50/60 Hz						415V AC, 50/60 Hz										
Maximum input current	1.5A	5A	10A	16A	20A	32A	1.5A	3.5A	7A	10A	16A	24A	31A	47A	63A	80A	96A
Voltage tolerance	±20% (332 ~ 498V)																
Frequency tolerance	±5% (47 ~ 63 Hz)																
Output rating																	
Rated output current	1A	2.5A	5A	7A	11A	18A	1.2A	2.5A	3.7A	5.1A	9A	13A	17A	25A	32A	37A	45A
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 Hz																
Overload endurance	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																
V/f mode	4 Pre-set V/f mode & 1 user defined V/f program																

Control Input / Output		**0.5 to 3 HP (H1 frame)**	**5 to 30 HP (H2 & H3 frame)**
Digital input	Programmable digital inputs	5	8
	Logic	PNP or NPN	
	Voltage level	0 - 24V DC	
	Input resistance	~6kΩ	
Analog input	Analog input	2	2
	Modes	AI1 - Voltage / POT; AI2 - Voltage / Current	
	Voltage level	0 to +10V	
	Current level	0/4 to 20mA	
Analog output	Analog output	1	1
	Voltage level	0 to +10V	
	Current level	0/4 to 20mA	
Multifunction output	Open collector O/P	1	2
	Voltage level at digital output	24V	
	Output current (sink)	50mA	
	Relay output	1	2
	Max. terminal load (AC)	250V, 5A	

Enviromental conditions	
Protection level	IP20
Pollution degree	2
Installation location	Indoor, <1000 m altitude above sea level
Ambient working temperature	-10 °C ~ +60 °C
Storage / Transportation temperature	-20 °C ~ +65 °C
Ambient humidity	<90 %, No condensation
Vibration	<5.9 m/s^2 (0.6 g)

Connection diagram



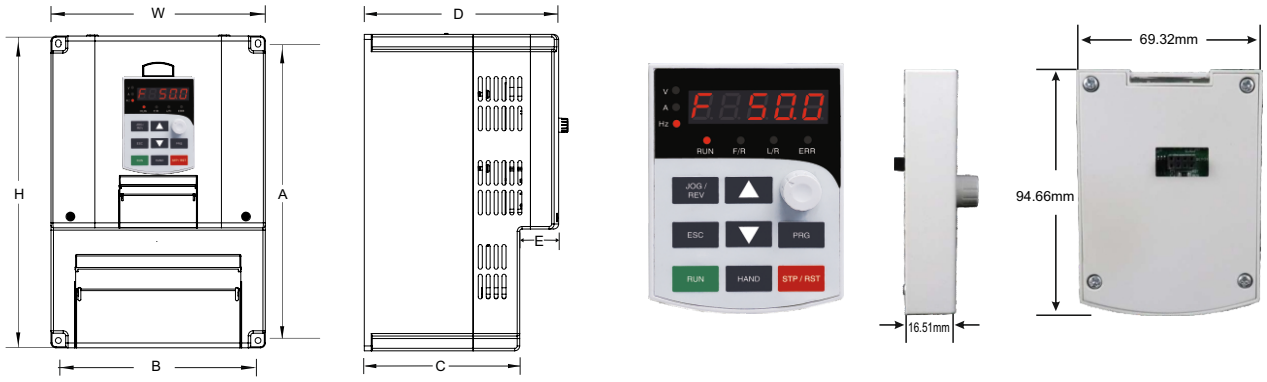
Note : PNP & NPN settings can be changed in P5-12

Model description

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

- 415V — Supply voltage: 230V / 415V
- B — A-No breaking unit; B-In-built breaking unit
- 050 — Motor configuration: 002-0.25HP, 005-0.5HP, 010-1HP, 020-2HP, 030-3HP, 050-5 HP, 075-7.5 HP, 100-10 HP, 150-15 HP, 200-20 HP, 250-25 HP, 300-30 HP
- 3 — Input voltage phase: 1 - Single phase; 3 - Three phase
- SH — Product series: S - Standard series; H - Heavy duty
- VFD — Model VFD

Dimensions



Product code	Mounting dimension		Dimension			Pore diameter	Weight
	A	B	H	W	D	(mm)	(kg)
VFD-S-1-002-230V	141	80.5	150	89	123	5.2	0.96
VFD-S-1-005-230V							0.96
VFD-S-1-010-230V							0.98
VFD-S-1-020-230V							1
VFD-S-1-030-230V							1.03
VFD-S-3-005-415V							0.96
VFD-S-3-010-415V							0.98
VFD-S-3-020-415V							1.03
VFD-S-3-030-415V							1.03
VFD-S-3-050-415V							1.03
VFD-S-1-050-230V	240	148	247	160	173	10	3.58
VFD-SH-3-050-B-415V							3.58
VFD-SH-3-075-B-415V							3.66
VFD-SH-3-100-B-415V							3.78
VFD-SH-3-150-B-415V	305	205	320	220	196.5	10	7.07
VFD-SH-3-200-B-415V							7.28
VFD-SH-3-250-B-415V							7.50
VFD-SH-3-300-B-415V							7.75

Ordering information

Product code	Description	Braking unit	Recommended resistance value	Output current
VFD-S-1-002-230V	1 phase input 230V AC, 3 phase output 0 to rated Input voltage 0.25HP/0.18kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display	Built In	100W 700Ω	1A
VFD-S-1-005-230V	1 phase input 230V AC, 3 phase output 0 to rated Input voltage 0.5HP/0.4kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display	Built In	100W 700Ω	2.5A
VFD-S-1-010-230V	1 phase input 230V AC, 3 phase output 0 to rated input voltage 1HP/0.75kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	150W 360Ω	5A
VFD-S-1-020-230V	1 phase input 230V AC, 3 phase output 0 to rated input voltage 2HP/1.5kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	200W 200Ω	7A
VFD-S-1-030-230V	1 phase input 230V AC, 3 phase output 0 to rated input voltage 3HP/2.2kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display	Built In	300W 120Ω	11A
VFD-S-1-050-230V	1 phase input 230V AC, 3 phase output 0 to rated Input voltage 5HP/3.7kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	600W 70Ω	18A
VFD-S-3-005-415V	3 phase input 415V AC, 3 phase output 0 to rated Input voltage 0.5HP/0.4kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	200W 850Ω	1.2A
VFD-S-3-010-415V	3 phase input 415V AC, 3 phase output 0 to rated Input voltage 1HP/0.75kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	200W 850Ω	2.5A
VFD-S-3-020-415V	3 phase input 415V AC, 3 phase output 0 to rated input voltage 2HP/1.5kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	350W 500Ω	3.7A
VFD-S-3-030-415V	3 phase input 415V AC, 3 phase output 0 to rated input voltage 3HP/2.2kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display)	Built In	550W 450Ω	5.1A
VFD-S-3-050-415V	3 phase input 415V AC, 3 phase output 0 to rated input voltage 3HP/2.2kW, General purpose series (5DI, 2AI, 1AO, RS485, 1RO SPDT, 1TO, Detachable display, Compact)	Built In	500W 300Ω	9A
VFD-SH-3-050-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 5HP/3.7kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	350W 150Ω	9A
VFD-SH-3-075-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 7.5HP/5.5kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	500W 90Ω	13A
VFD-SH-3-100-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 10HP/7.5kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	800W 60Ω	17A
VFD-SH-3-150-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 15HP/11kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	1000W 47Ω	25A
VFD-SH-3-200-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 20HP/15kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	1500W 36Ω	32A
VFD-SH-3-250-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 25HP/18.5kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	3000W 32Ω	37A
VFD-SH-3-300-B-415V	3 phase input 230V AC, 3 phase output 0 to rated Input voltage 30HP/22kW, General purpose series (8 DIs, 2 AI, RS485, 2 RO, 2 TO, 1AO, Detachable display)	Built In	4000W 26Ω	45A

Applications :
Suitable for Fans, Pumps, Conveyor, Compressors, Food & Drink packaging machinery and Most general purpose industries.