FV20-Mini series
Mini Vector Inverter

Product Model Description

FV20–M–4 T 2.2G

FV20	Vector control technology platform
M	Mini series
2	200V
4	400V
S	Single-phase AC input
T	Three-phase AC input
2.2G	2.2kW Constant torque/heavy-load

Product Series

■ FV20-M–4T□□□G Three-phase 400V Constant torque/heavy-load application

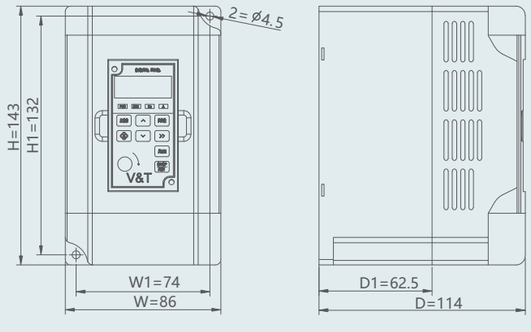
Rated power(kW)		0.75	1.5	2.2
Motor power(kW)		0.75	1.5	2.2
Output	Voltage (V)	Three-phase 0 to rated input voltage		
	Rated current (A)	2.5	3.7	5.0
	Overload capacity	150% 1 minute, 180% 10 seconds, 200% 0.5 second Interval of 10 minutes (inverse time characteristic)		
Input	Rated voltage/ frequency	Three-phase 380V/480V; 50Hz/60Hz		
	Allowable voltage range	323V ~ 528V; Voltage unbalancedness ≤3%; allowable frequency fluctuation: ±5%		
Braking unit		Built-in as standard		
Protection class		IP20		
Cooling mode		Forced air cooling		

■ FV20-M–2S□□□G Single-phase 200V Constant torque/ heavy-load application

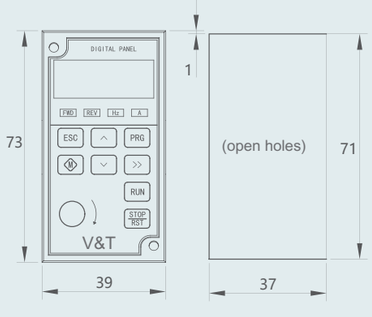
Rated power(kW)		0.75	1.5
Motor power(kW)		0.75	1.5
Output	Voltage (V)	Three-phase 0 to rated input voltage	
	Rated current (A)	4	7.5
	Overload capacity	150% 1 minute, 180% 10 seconds, 200% 0.5 second Interval of 10 minutes (inverse time characteristic)	
Input	Rated voltage/ frequency	Three-phase/ Single-phase 200V/240V; 50Hz/60Hz	
	Allowable voltage range	180V ~ 260V; Voltage unbalancedness ≤3%; allowable frequency fluctuation: ±5%	
Braking unit		Built-in as standard	
Protection class		IP20	
Cooling mode		Forced air cooling	

Technical Specifications

Control Performance	Control mode	V/F control	Approximate Vector Control	Sensorless vector control 1	Sensorless vector control 2
	Starting torque	1.0Hz 150%	1.0Hz 150%	0.5Hz 150%	0.25Hz 150%
	Range of speed regulation	1:50	1:50	1:100	1:200
	Steady speed precision	± 0.5%	± 0.5%	± 0.3%	± 0.3%
	Torque control	NO	NO	YES	YES
	Torque control precision	—	—	±5%	±5%
	Torque response time	—	—	<20ms	<20ms
General Functions	Key functions	Under-voltage regulation, switching of start command source, speed tracing function,multi-step frequency reference, Simple built-in PLC multistage speed capability, motor parameters auto-tuning, S curve acceleration and deceleration, slip compensation, PID regulation, The pendulum frequency function,droop control, current limitation, manual torque boost and auto torque boost, Current limit, multi-function input and output terminals, The built-in timer/counter each one			
	Frequency reference modes	Nine basic given: The keyboard setting potentiometer, Set the keyboard up/down key, Analog channel AI1 / AI2 setting, High-speed pulse DI setting, PID function setting, Multistage speed setting, Simple set of PLC, Up/Down setting(operation panel or terminal), Upper computer communication settings, and can be combined with each other switching			
	Frequency range	0.00 ~ 650.00Hz			
	Start-up frequency	0.00~10.00Hz, 0.00~20.00s			
	Acceleration time and deceleration time	Straight line and the S curve acceleration and deceleration deceleration, Four kinds of deceleration time, scope:0.1~6000.0s			
	Dynamic braking capacity	Brake starting voltage: 105.0~140.0%; Brake termination voltage: 105.0~150.0%			
	DC braking capability	DC braking initial frequency: 0.00~50.00Hz; DC braking current: 0.0~150.0% DC braking time: 0.0~60.0s, without initial waiting time for DC braking to realize quick			
	Electronic control	Inching frequency range: 0.00~600.00Hz, Dynamic deceleration time: 0.1~6000.0s			
Unique Characteristics	Multi-functional button M	The unique multifunction key can be set the following 0: reversal 1: Point to move forward 2: Some dynamic inversion 3:running command source switching			
	Parameter protection	The standard operation panel can realize all parameter modification is prohibited			
	RS485 communication ports	Dual 485 communication ports support Modbus protocol (RTU), the maximum distance is 500m			
	Power On Self-Test (POST)	Implementation of internal and peripheral circuit on electricity self-inspection, such as the abnormal communication, electrical grounding, power supply voltage, etc			
	Torque control	Support vector mode / torque control			
	Synchronous machine control	Open-loop control in support of permanent magnet synchronous motor without speed sensor			
Protection Function	Running under voltage protection, reduced overcurrent protection, constant speed overcurrent protection, reduced pressure protection, constant speed overpressure protection, interference protection, inverter overheating protection, inverter overload protection, Underload protection, motor overload protection, abnormal current detection, Output short circuit protection, Output ground protection, Input phase failure, output phase failure, Storage anomaly, RS485 communication abnormal, Internal/downstream communication exceptions, PID feedback abnormal, Normally open/often closed terminals external device exceptions, Timing to protect				
Efficiency	At rated power, efficiency≥93%				
Environmen	Operating site	The product shall be mounted vertically in the electric control cabinet with good ventilation. Horizontal or other installation modes are not allowed. The cooling medium is the air. The product shall be installed in the environment without dust, corrosive gas, combustible gas, oil mist, steam, drip and free from direct sunlight			
	Ambient temperature	-10~+40℃; Derated at 40~50℃, the rated output current shall be decreased by 1% if temperature climb every 1℃			
	Humidity	5~95%, no condensing			
	Altitude	0~2000m; Derated above 1000m, the rated output current shall be decreased by 1% if altitude rise every 100m			
	Vibration	3.5 m/s² ，2～9Hz；10 m/s² ，9～200Hz；15 m/s² ，200～500Hz			
	Storage temperature	-40～+70℃			



Product appearance and installation dimensions (weight：0.88kg)



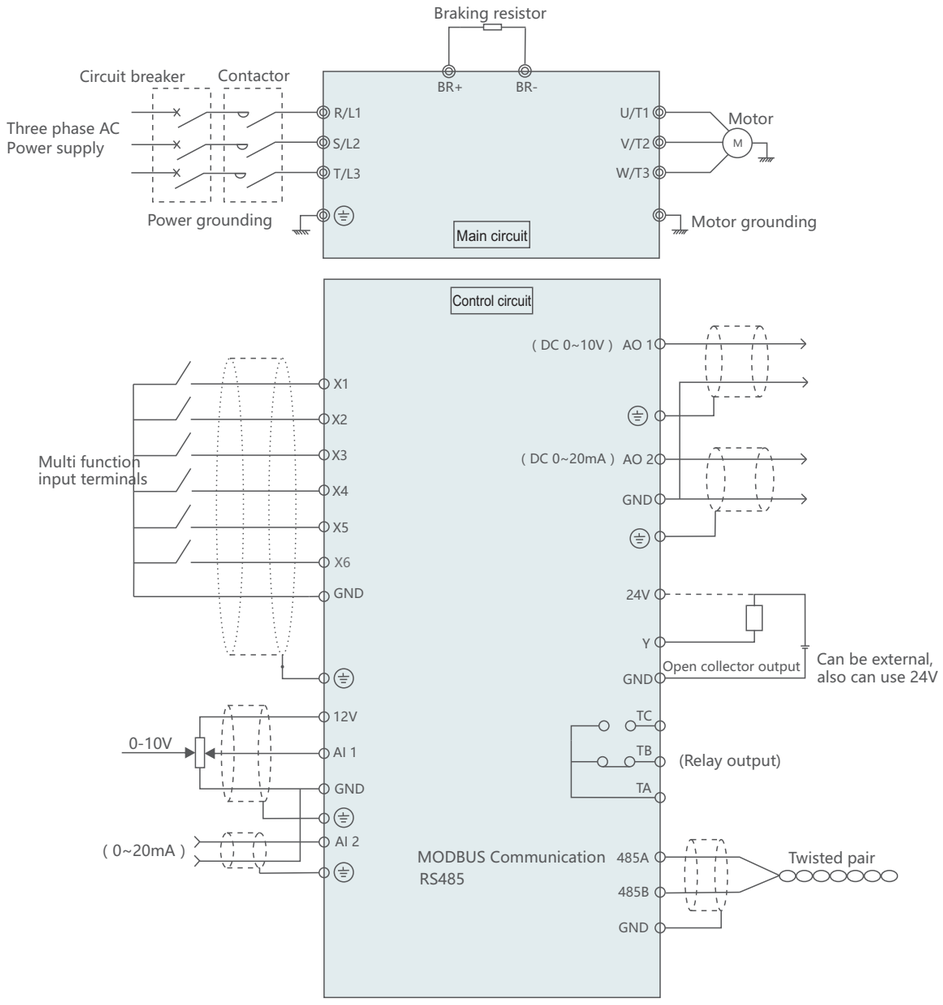
Operation panel appearance and installation dimensions

Braking Resistor Lectotype

Inverter type	Braking unit	Braking resistor unit				Braking torque %
		Power	Resistor	Minimum limit resistor	Qty	
FV20–M–2S0.75G	Built-in as standard	70W	200Ω	200Ω	1	125
FV20–M–2S1.5G		260W	100Ω	100Ω	1	125
FV20–M–4T0.75G		110W	750Ω	125Ω	1	130
FV20–M–4T1.5G		260W	400Ω	100Ω	1	125
FV20–M–4T2.2G		320W	250Ω	100Ω	1	135

Note: The resistance must be greater than the minimum resistance value of the above table, otherwise the brake tube will be damaged.
It is possible to avoid the use of corrugated resistance, which has a high parasitic inductance, it may cause the brake tube to be damaged.
The brake resistance power in the table is calculated with the braking duration within the period of the period, and if the brake lasts longer, the brake resistance power should be larger. The more power of braking resistance, the more reliable the performance.

system wiring diagram



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FV20-Mini series

Mini Vector Inverter

High performance with dual-cpu control

- Use Vector control algorithm which has excellent performance
- Enhanced over-load ability and perfect output protection
- Both synchronous motor drive and asynchronous motor drive feasible
- Support simple torque control mode
- Built-in swing frequency function
- Support simple multi-speed control function by a PLC
- Multiple control mode
- Suitable for general machine and P type machine
- Abundant I/O source