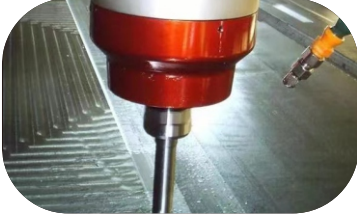


FRECON



FR520 Series Vector Control Inverter



Overview

FR520 series is a high performance, high quality, high power density design, new generation inverter of FRECON, which is Mainly for OEM customers of the mid-high market and for applications such as fan and pump, flexible design, embedded SVC/VC and VF control, widely used in the applications with higher requirements, such as the speed control accuracy and torque response speed, low frequency output characteristics.

Features

New Appearance Design

- More novel and beautiful

New Keypad

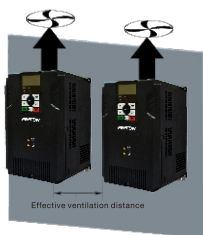
- All series standard with LCD keypad

New Technology Platform, Large Surplus Derating Design

- Adopt Infineon new generation of IGBT hardware platform, with higher configuration and large surplus derating design

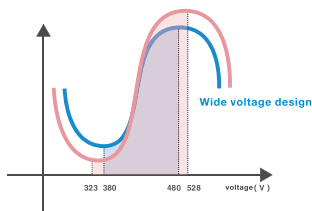
Independent Air Duct

- The independent air duct design , can effectively prevent the dust from entering the inverter and causing the fault of short circuit, improve the reliability
- Select the long-life and max air flow rate cooling fans, effectively reduce inverter temperature rise, ensure reliable and stable operation



Wide Range Voltage Input with International Standards

- Rated voltage: 3 phase 380-480V , 50Hz/60Hz
- Voltage fluctuation range: 325-528V , 50Hz/60Hz

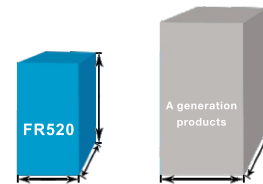


Comprehensive protection functions

- FR520 series have comprehensive protection functions such as output to ground short circuit protection, fan drive circuit protection, external 24VDC short circuit protection, motor overload protection, optional PT100 / PT1000 motor temperature protection function, etc.
- According to the severity of the fault type, it can be selected as pre-warning, fault stop and continuous operation, it is convenient for maintenance

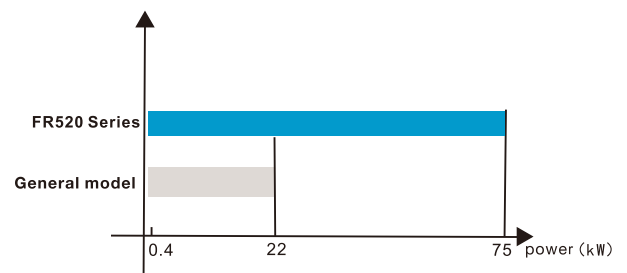
Optimized Structural Design, Leading Technology Platform

- Compare with previous generation products of the same power , the size of FR500A series is smaller, greatly saves the installation space, it's convenient to layout the electronic control device ; maximum installation area reduced by 50%, volume reduced by 60%.



Perfect Brake Circuit Scheme

- Strong braking ability : The short-time braking ability can reach 1.1-1.4 times of inverter's rated power
- Brake protection is more comprehensive and intelligent



- General model: 0.4 – 22 kw built-in brake unit
- FR520 series: Below 37 kw (including 37 kw) , built-in brake unit. 45 kw ~ 75 kw built-in brake unit is optional

Strong Overload Ability

- Heavy load overload capacity:
 - 150% of rated load can keep 1 min
 - 180% of rated load can keep 10 s
 - 200% of rated load can keep 1 s

Excellent Performance

- High-start torque characteristic
- 0.5Hz can provide 150% start torque (Sensor-less vector control 1)
- 0.25Hz can provide 150% start torque (Sensor-less vector control 2)
- Sensorless vector control can reduce susceptibility of motor parameter, improve the field adaptability

Flexible and Diversified Terminal Functions

- Multi-function terminal DI, DO, AO with a variety of logic functions for selection
- AI terminal can be used as multi-function DI terminal
- Built-in multi-group virtual DI and DO function selection to reduce external DI/DO wiring
- Support high-speed pulse input and output, up to 100 KHZ

Built-in self-adaptive PID function module

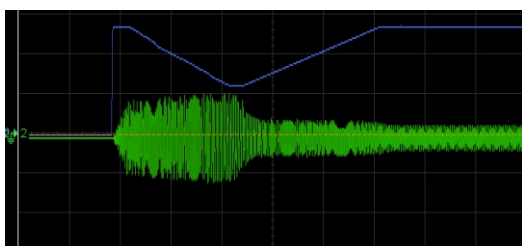
- Built-in two groups of PID parameters , which can automatically switch according to the deviation, DI terminal and frequency conditions
- Given and feedback source selection is various, practical
- Detect function of PID feedback loss , which is convenient for user to detect faults
- Support dormancy and wake up function, can be switched according to the frequency and pressure

V/F fully separated and semi-separated Operation

- Automatically compensate by voltage when overload, realize output voltage constant and meet the application requirements of power supply industry

Speed Tracking Function

- In the case of fast start, the inverter can make the motor to start smoothly according to the current operation direction and speed of the motor



Speed tracking output frequency and current waveform

Multiple Communication Expansion Card

- Support PROFIBUS, CAN, GPRS DTU and other communications

Match a Variety Of Encoder (FR510A)

- Support the OC, push-pull, difference, EN1313, U/V/W rotating transformer and other kinds of encoder

Convenient Debugging

- Strong back ground software



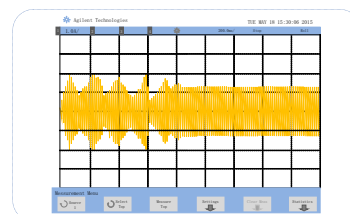
- Specialized upload and download module, convenient parameter debugging and backup
- According to the industry demand, develop a dedicated application macro

The Unique Dead Zone Compensation

- Ensure torque output smoothly under the low frequency

Oscillation Suppression Function

- When detected motor oscillation, automatic trimming output voltage and frequency make motor running smoothly



Oscillation suppression waveform

CE Certification

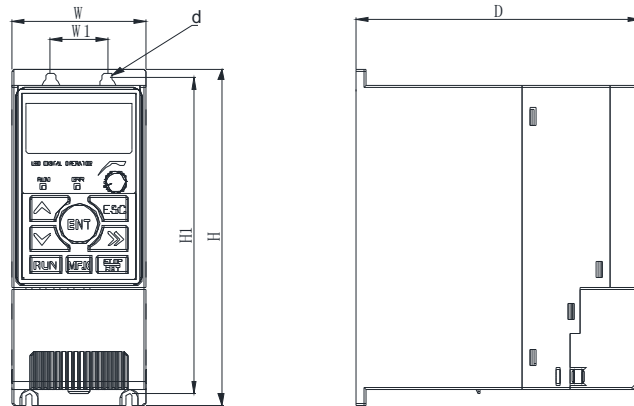
- The drive comply with the directive requirements of the 'New method of technical coordination and standardization' in EU

Technical Parameters

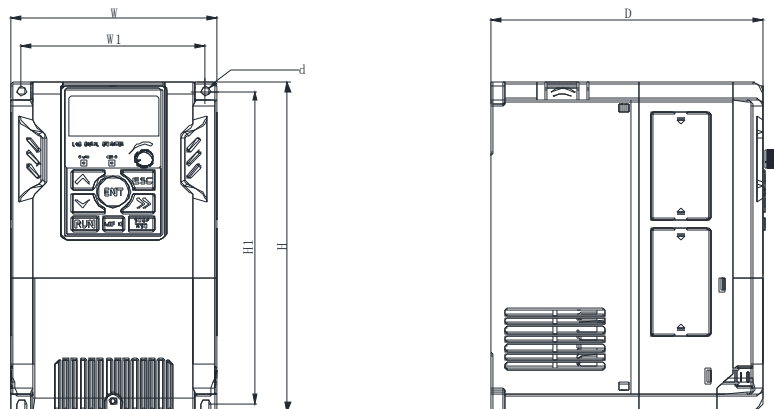
		Specification
Item		FR520 Series
PowerInput	Rated Input Voltage(V)	3 Phase 380v(-15%~+30%)
	Rated Input Frequency(Hz)	50Hz/60Hz,±5%
PowerOutput	Rated Output Voltage (V)	0V~Uin,Error<±3%
	Rated Output Frequency(Hz)	0.00~600.00Hz;Unit:0.01Hz
Load	Types Of Motor	Single-phase asynchronous motor,Three-phase asynchronous motor,Three-phase permanent magnet synchronous motor
	Control Mode	Speed, torque , position
	Motor Parameters	2 Groups
Control Characteristics	Control Mode	V/F Control Sensor-less Vector Control 1 Sensor-less Vector Control 2 Close-loop Vector Control
	Speed Range	1:50(V/F Control), 1:100(Sensor-less Vector Control 1) 1:200(Sensor-less Vector Control 2) 1:1000(Close-loop Vector Control)
	Speed Control Precision	±0.5%(V/F Control), ±0.2%(Sensor-less Vector Control 1 & 2) ±0.1%(Close-loop Vector Control)
	Speed Fluctuation	±0.3%(Sensor-less Vector Control 1 & 2) ±0.1%(Close-loop Vector Control)
	Torque Response	10ms(Sensor-less Vector Control 2)
	Start Torque	0.5Hz:150%(V/F Control, Sensor-less Vector Control 1) 0.25Hz:150%(Sensor-less Vector Control 2) 0.0Hz:180%(Close-loop Vector Control)
Basic Function	Carrier Frequency	0.7kHz~16 kHz
	Overload Capacity	150% Rated Current 60s, 180% Rated Current 10s, 200% Rated Current 1s
	Torque Boost	Auto Torque Boost, Manual Torque Boost 0.1%~30%
	V/F Curve	Three Models: Straight Line; Multi-point; NTh-type V/F Curve
	Acceleration and Deceleration Curve	Straight line or S curve acceleration and deceleration mode. Four kinds of acceleration and deceleration time Ramp time range: 0.0~6000.0s
	DC Brake	DC brake start frequency: 0.00~Max frequency, DC brake time: 0.0s~10.0s, DC brake current: 0.0%~150%
Run	Command Source	Given the control panel, control terminal, serial communication port given
	Frequency Given	9 kinds of frequency sources
	Input Terminal	7 Switch input terminals, one way to make high speed pulse input Support NPN and PNP 3 channel analog inputs, including 2 way 0-10V/0-20mA voltage and current options,a way to support -10 ~+10 V input
	Output Terminal	2 way switch output terminal, which supports a maximum road speed 100kHz pulse output 2 relay output terminals 2 analog output terminal, and optional voltage and current
Featured Function	Parameters copy, parameters backup, flexible function code shown and hidden, reliable speed search, timing control, fixed-length control function and counting function, 14 group of fault records, over voltage stall, under voltage stall, power-on restart, restarting function, the motor temperature protection function, frequency control operation , high accuracy of torque limiting, Sensor-less torque control	
Protection Function	Provide adozen fault protection : over-voltage, over-current,under-voltage, over-temperature, overload,etc	
Environment	Operation Place	Indoors, no direct sunlight, no dust, no corrosive gases, no flammable gases, no oil mist, no water vapor, no water drop and salt, etc
	Altitude	0~2000m Derate 1 % for every 1 00m when the altitude is above 1000 meters
	Ambient Temperature	-1 0 ~ 40 °C (when environment temperature is in 40 ~ 50°C, please derating use.)
Others	Installation	Wall-mounting or flang mounting
	IP Grade	IP20
	Cooling Method	Forced air cooling

Installation Dimensions

0.7-2.2kw Structure Diagram



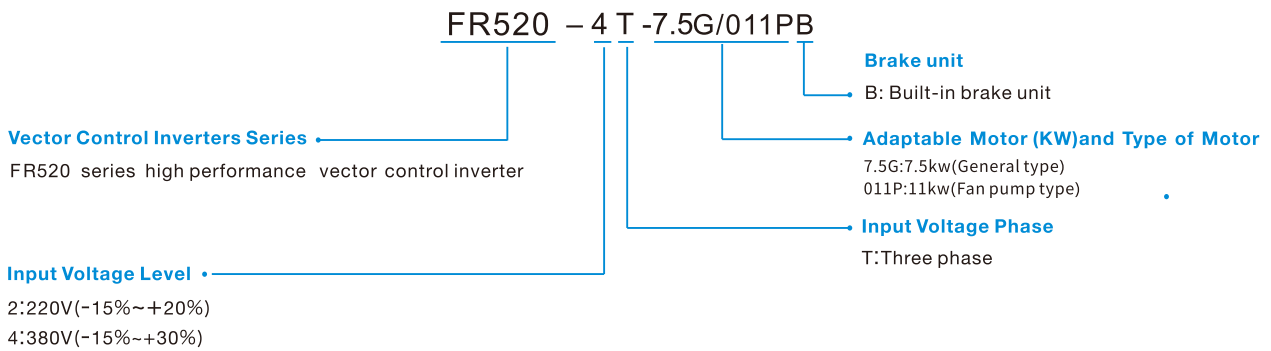
4-22kw structure diagram



Installation Dimensions

Model NO.	External and installation dimensions(mm)						Weight(Kg)
	W	W1	H	H1	D	Installation Hole	
3-Phase:380V, 50/60Hz Range:-15%~+30%							
FR520-4T-0.7G/1.5PB-H	80	34	200	187.5	170	6	1.5
FR520-4T-1.5G/2.2PB-H							
FR520-4T-2.2G/4.0PB-H							
FR520-4T-4.0G/5.5PB-H	116.6	106.6	186.6	176.6	175	4.5	2.5
FR520-4T-5.5G/7.5PB-H							
FR520-4T-7.5G/011PB-H	146	131	249	233	182	5.5	3.9
FR520-4T-011G/015PB-H							
FR520-4T-015G/018PB-H	198	183	300	287	195	5.5	6.2
FR520-4T-018G/022PB-H							
FR520-4T-022G/030PB-H							

Nameplate



Electric Specification

Model NO.	Power Capacity (KVA)	Rated Input Current(A)	Rated Output Current(A)	Applicable Motor	
				kW	HP
3-Phase:380V, 50/60Hz Range:-15%~+30%					
FR520-4T-0.7G/1.5PB-H	1.5	3.4	2.5	0.75	1
FR520-4T-1.5G/2.2PB-H	3	5.0	4.2	1.5	2
FR520-4T-2.2G/4.0PB-H	4	5.8	5.5	2.2	3
FR520-4T-4.0G/5.5PB-H	6	11	9.5	3.7、4	5
FR520-4T-5.5G/7.5PB-H	8.9	14.6	13	5.5	7.5
FR520-4T-7.5G/011PB-H	11	20.5	17	7.5	10
FR520-4T-011G/015PB-H	17	26	25	11	15
FR520-4T-015G/018PB-H	21	35	32	15	20
FR520-4T-018G/022PB-H	24	38.5	37	18.5	25
FR520-4T-022G/030PB-H	30	46.5	45	22	30

Note: 1. (B) Built-in brake unit is optional

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FRECON

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Frecon Website



Face Book

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