

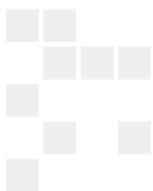


FR30 Series

High Performance Inverter



FRECON ELECTRIC (SHENZHEN) CO.,LTD.



FR30 Series Summary

FR30 series is a new generation inverter of FRECON, with high performance, high quality and high power density design. It is mainly positioned as a full-featured product in the mid-to-high-end market. Its design is flexible, has built-in VC, SVC, and VF controls. Can be widely used in applications with high requirements for speed control accuracy, torque response speed, and low-frequency output characteristics.



Features

Excellent performance

- High-start torque characteristics
- 0.5Hz can provide 150% start torque (Sensor-less vector control 1)
- 0.25Hz can provide 150% start torque (Sensor-less vector control 2)
- Sensor less vector control is less sensitive to motor parameters, improve the field adaptability

STO (Safe torque off) standard built-in

- Stop the drive in dangerous situations.
- Anti-unexpected run switch.

Reactor and EMC

- Harmonic reduction with dual DC reactors(Figure 1)
- Meet EN61000-3-12 harmonic standard
- With EMC C2 filters can be installed in the complex environment(Figure 2)



Figure 1



Figure 2

Flexible and diverse terminal functions

- Multi-function terminal DI, DO, AO has a variety of logic function
- AI terminal can be used as multi-function DI terminal, flexible to select
- 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 100KHz

Built-in adaptive PID function module

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

Reliability design

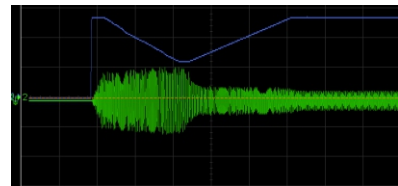
- Corrosion resistant coated circuit boards, minimizing airflow through control panel areas, design features such as ground failure protection, and a 50° C ambient design make the FR30 a safer selection

Operate when the V/F is fully separated and semi-detached

- an 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 realize the motor smooth and no impact start according to the current operation direction and rotate speed of the motor



Supports various communication expansion cards

- Support Profibus-DP, EtherCAT, Profinet, CAN, GPRS-DTU, WiFi and other communication modules, through the remote control system can safely access the drive around the world.

Suitable for various encoder cards

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

Convenient Debugging

- Strong back ground software
- Built-in LCD keypad, can define data display, support parameter backup
- According to the industry demand, develop a dedicated application macro

Diversified IP level design

- Support IP54 and IP20 design to meet the needs of different environments

CE certification

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

FR30 Model description

FR30-4 T-7.5 B

High Performance Inverter

Input Voltage Level

2:220V(-15%~+20%)
4:380V(-15%~+30%)

Brake Unit

B:Built-in brake unit

Adaptable Motor Power

7.5:7.5kW

Input Voltage Phase

S:Single Phase

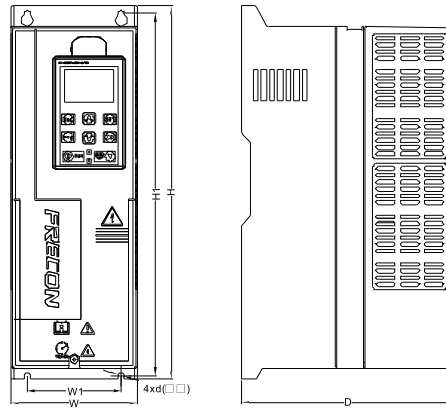
T:Three Phase

Model	Power Capacity (KVA)	Light duty		Heavy duty		Adapter Motor	
		Input Current (A)	Output Current (A)	Input Current (A)	Output Current (A)	kW	HP
FR30-4T-1.5B-H	3	3.1	4.2	1.7	2.5	1.5	2
FR30-4T-2.2B-H	4	4.5	5.5	3.1	4.2	2.2	3
FR30-4T-4.0B-H	6	8	9.5	6.0	7.5	4.0	5
FR30-4T-5.5B-H	8.9	10.5	13	8.0	9.5	5.5	7.5
FR30-4T-7.5B-H	11	14.1	17	10.5	13	7.5	10
FR30-4T-011B-H	17	20.6	25	14.1	17	11	15
FR30-4T-015B-H	21	27.7	32	20.6	25	15	20
FR30-4T-018B-H	24	34.1	37	27.7	32	18.5	25
FR30-4T-022B-H	30	40.5	45	34.1	37	22	30
FR30-4T-030B-H	40	54.8	60	40.5	45	30	40
FR30-4T-037(B)-H	57	67.1	75	54.5	60	37	50
FR30-4T-045(B)-H	69	81.4	91	67.1	75	45	60
FR30-4T-055(B)-H	85	98.9	112	81.4	91	55	70
FR30-4T-075(B)-H	114	134.3	150	98.9	112	75	100
FR30-4T-090(B)-H	134	170	176	134.3	150	90	125
FR30-4T-110(B)-H	160	201	210	170	176	110	150

Technical parameters

Item		Specifications
Power Input	Rated Input Voltage(V)	3-Phase 380V -15%~+30%
	Rated Input Frequency(Hz)	50Hz/60Hz ±5%
Power output	Rated Output Voltage(V)	0~Rated Input Voltage Error±3%
	Rated Output Frequency(Hz)	0.00~600.00Hz Unit:0.01Hz
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)
	Starting Torque	0.5Hz:150%(V/F Control Sensor-less vector control 1) , 0.25Hz:180%(Sensor-less vector control 2), 0.00Hz:180%(Close-Loop Vector Control)
Basic Functions	Carrier Frequency	0.7kHz~16kHz
	Overload Capability	Heavy duty: 150% rated current 60s. Light duty: 110% rated current 60s.
	Torque boost	Automatic Torque Boost Manual Torque Boost 0.1%~30.0%
	V/F Curve	Three mode: straight; multi-point type; N Th-type V / F curve
	Acceleration/Deceleration Curve	Line or 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 Hz DC brake time: 0.0s~10.0sDC brake current:0.0%~150.0%
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 of which can be used as high-speed pulse input. Compatible with active open collector NPN, PNP and dry contact input methods.2 analog input terminals, 0~10V/0~20mA voltage and current optional 2STO
	Output Terminal	1 switch output terminal, supporting maximum 100kHz high-speed pulse output, 3 relay output terminals, 2 analog output terminals, and voltage and current are optional, which can realize the output of physical quantities such as set frequency and output frequency
Featured Functions	Parameter copy, parameter backup, flexible parameter displayed & hidden, common DC bus,Reliable speed search started, timing control, fixed length control, count function. 14 group faults recorded, overvoltage, under voltage, high-precision torque control, V/f separated control, torque control, sensor-less vector control and vector control.	
Protection	Provide fault protection dozen: Over-current, Over-voltage, Under-voltage, Over-temperature, Over-load Etc Protection.	
Display and Keyboard	LCD Display	Display Parameters
	Key lock and Function Selection	Realize the partial or complete locking of the keys, and define the scope of action of some keys to prevent misuse
	Parameter Backup	Can support backup of 3 sets of different setting parameters
Environment	Operation Phase	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 De-rate 1% for every 100m when the altitude is above 1000 meters
	Ambient Temperature	-10°C~40°C(When environment temperature above 40°C, derating use)
Others	Installation	Wall-mounted or Flange mounting
	IP Grade	IP20/IP54
	Cooling Method	Forced air cooling

Installation dimensions



Model	External and install dimensions (mm)						Weight (Kg)
	W	W1	H	H1	D	Install hole	
Three phase power supply: 380V, 50/60Hz Range: -15% ~ +30%							
FR30-4T-0.7B-H	125	87	331	317	214	5.5	3.6
FR30-4T-1.5B-H							
FR30-4T-2.2B-H							
FR30-4T-4.0B-H							
FR30-4T-5.5B-H	125	87	385	371	214	5.5	4.5
FR30-4T-7.5B-H							
FR30-4T-011B-H	150	100	440	115	235	7	6.2
FR30-4T-015B-H							
FR30-4T-018B-H	195	150	485.4	470	232	7	9.5
FR30-4T-022B-H							
FR30-4T-030B-H							
FR30-4T-037(B)-H	210	150	588.4	570	258	7	12.1
FR30-4T-045(B)-H							
FR30-4T-055(B)-H	250	200	550	534	368.8	6.5	31.54
FR30-4T-075(B)-H							
FR30-4T-090(B)-H	265	/	601	/	370	/	/
FR30-4T-110(B)-H							

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Face Book