

FR30 Series

High Performance Inverter



FRECON



ABOUT US

FRECON Electric (Shenzhen) Co., Ltd. is a national key high-tech enterprise, a dual-soft enterprise in Shenzhen, and a professional company in the fields of industrial automation, high efficiency and energy saving, and green new energy which was founded in 2013. We have more than 16 years of experience in the development and application of frequency converters, servo drives, energy-saving control cabinets, solar inverter systems etc.





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

- Built-in safety motion stop function
- Diversified IP level design
- Built-in brake unit
- Supports common DC bus solution
- Support multiple communication expansion cards
- Independent air duct design
- Built-in adaptive PID function module

Features

Reactor and EMC

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



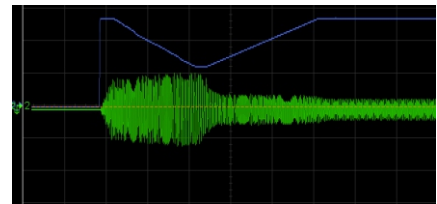
Electric reactor

Built-in safe torque Stop function(STO)

- Stop the transmission in dangerous situations.
- Anti-error start switch.

Built-in adaptive PID function module

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



Speed tracking output frequency and current waveform

Speed tracking function

- In cases where rapid start - up is required, the frequency converter can achieve a smooth and non - impact start of the motor according to the current running direction and rotational speed of the motor.

V/F fully separated and semi-separated operation

- It can automatically carry out current compensation under heavy load to achieve a constant output voltage and meet the application requirements of the power supply industry.



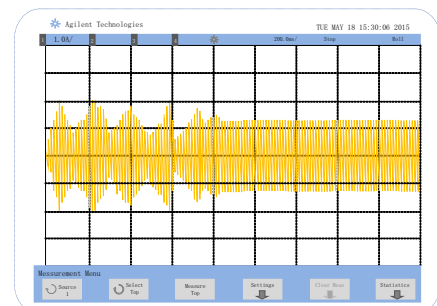
Background software

Convenient debugging

- Powerful background software
- Dedicated upload and download module, convenient parameter debugging, backup
- Develop dedicated application macros based on industry needs

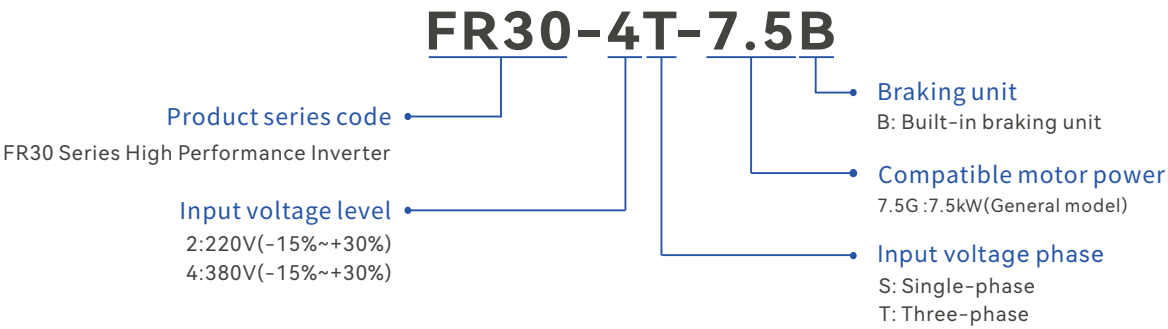
Oscillation suppression function

- When the motor oscillation is detected, the output voltage is automatically fine-tuned. And the frequency makes the motor run smoothly



Waveform diagram of oscillation suppression

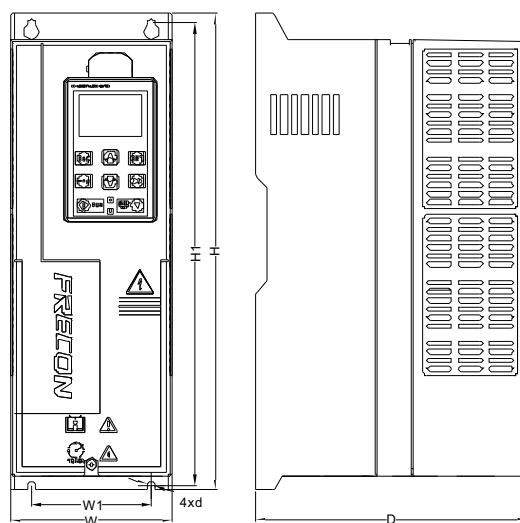
Model Description



Electric Specification

Model	Power Capacity (KVA)	Light Duty		Heavy Duty		Adapted Motor	
		Rated input current (A)	Rated output current (A)	Rated input current (A)	Rated output current (A)	kW	HP
Three phase: 380V, 50/60Hz Range: -15% ~ +30%							
FR30-4T-0.7B-H	1.5	1.7	2.5	0.9	1.5	0.75	1
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

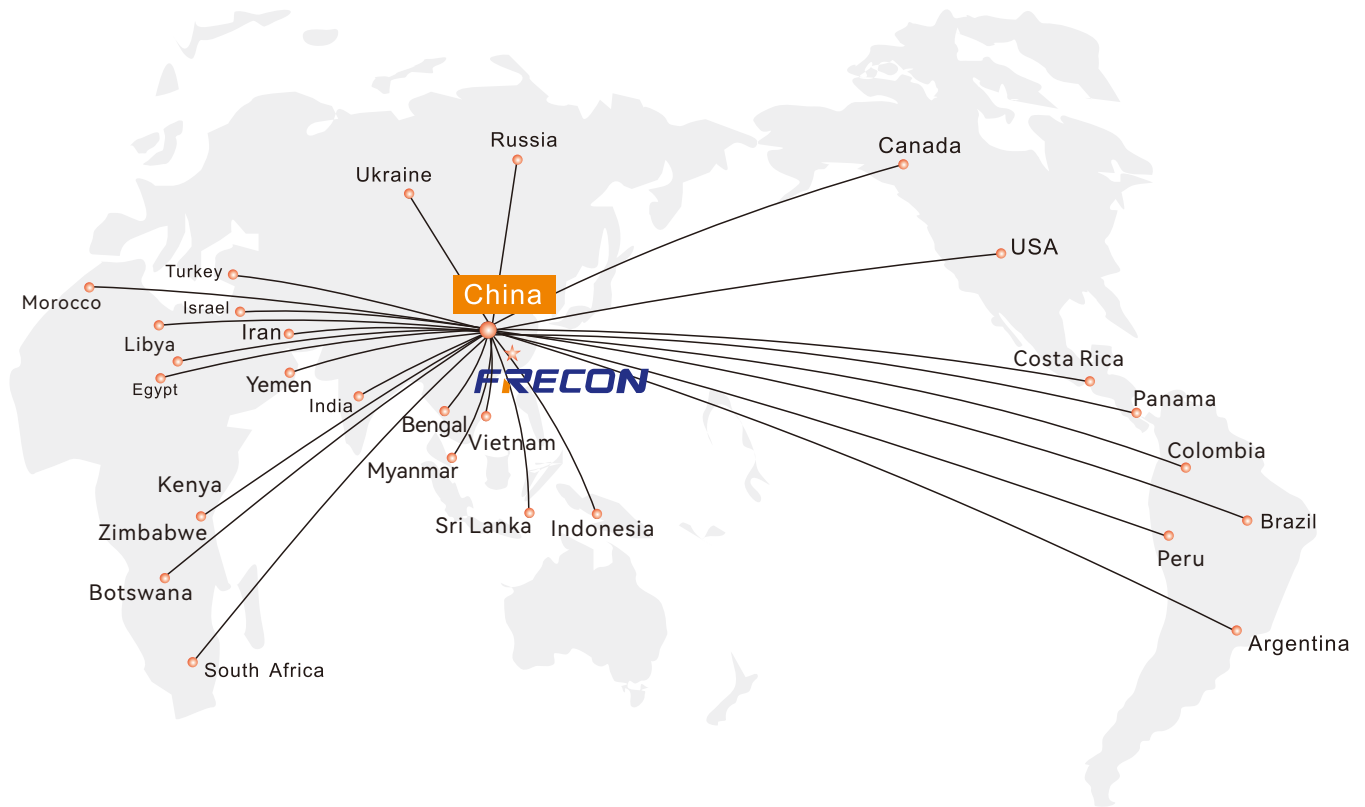
Installation Dimensions



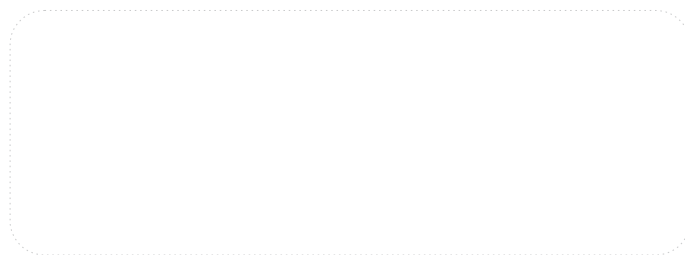
Inverter model	External and installation dimensions(mm)						Weight (kg)
	W	W1	H	H1	D	Installation hole	
Three phase: 380V, 50/60Hz Range: -15% ~ +30%							
FR30-4T-0.7B-H	125	87	331	317	214	5.5	3.6
FR30-4T-1.5B-H							
FR30-4T-2.2B-H							
FR30-4T-4.0B-H	125	87	385	371	214	5.5	4.5
FR30-4T-5.5B-H							
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							
FR30-4T-022B-H	195	150	485.4	470	232	7	9.5
FR30-4T-030B-H							
FR30-4T-037(B)-H							
FR30-4T-045(B)-H	210	150	588.4	570	258	7	12.1
FR30-4T-055(B)-H							
FR30-4T-075(B)-H							
FR30-4T-090(B)-H	265	/	601	/	370	/	/
FR30-4T-110(B)-H							

Technical Parameters

	Item	Specifications
Input power	Rated input voltage (V)	3-phase 380 V (-15%~+30%)
	Rated input frequency (Hz)	50Hz/60Hz, $\pm 5\%$
Output power	Rated output voltage (V)	0~rated input voltage, error $\leq \pm 3\%$
	Rated output frequency (Hz)	0.00~600.00 Hz, unit: 0.01Hz
Control characteristics	Control mode	V/F control; Sensor-less vector control 1; Sensor-less vector control 2; Vector control with PG
	Speed range	1:50 (V/f control); 1:100 (sensor-less vector control 1); 1:200 (sensor-less vector control 2); 1:1000 (vector control with PG)
	Speed control precision	$\pm 0.5\%$ (V/F control) ; $\pm 0.2\%$ (sensor-less vector control 1 & 2) ; $\pm 0.1\%$ (vector control with PG)
	Speed fluctuation	$\pm 0.3\%$ (sensor-less vector control 1 & 2); $\pm 0.1\%$ (vector control with PG)
	Torque response	< 10ms (sensor-less vector control 1 & 2)
	Starting torque	0.5Hz:180% (V/f control, sensor-less vector control 1); 0.25Hz:180% (sensor-less vector control 2); 0.00Hz:180% (vector control with PG)
Basic functions	Carrier frequency	0.7kHz~16kHz
	Overload capability	120% Rated Current 60s, 145% Rated Current 10s, 160% Rated Current 1s.
	Torque boost	Automatic torque boost, Manual torque boost 0.1%~30.0%
	V/F Curve	Three modes: linear type; multi-point type; N-th power type V/F curve
	Acceleration and 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~10.0s; DC brake current: 0.0%~150.0%
	Jog control	Jog frequency range: 0.00Hz~50.00Hz; Jog acceleration/deceleration time 0.0s~6000.0s
Operate	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 operation	LED Display	Display Parameters
	Key lock and function selection	Realize some or all of the keys locked, scope definition section keys to prevent misuse
	Parameter backup	Supports backup of 3 different setting parameters
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, De-rate 1% for every 100m when the altitude is above 1000 meters
	Storage 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



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