CT10M Series

• High Quality

✧ The hardware design and components selection are more optimized and reasonable;

• High Power Density

✧ The structure design layout is more compact;

• High Performance

✧ The software upgrade is more compatible with the end user, industrial control is more flexible, accurate, and the performance is stronger, and it is more suitable for precision control occasions with higher requirements for torque, control accuracy, and response speed;

• Optimize Products User Experience

✧ Easy operation, maintainability, environmental protection, scalability and convenience of Int-ernet of Things access.

CT10M:Power Rate	1 phase & 3 phase Input 3 phase output	220V (+-20%) 0.4KW~4.0KW	380V (+-20%) 0.4KW~400KW

Best Solution For General Purpose Series

Vector Control | PID | Multi-step Freq. | ModBus | Over-voltage & Over-current stall control | Torque Boost | Wobble Frequency Control | Simple PLC | FDT | ……

Start Torque @0.5Hz
100%

Overload Capability
200%

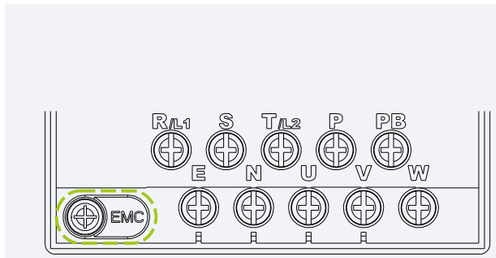
Speed accuracy ±
0.5%

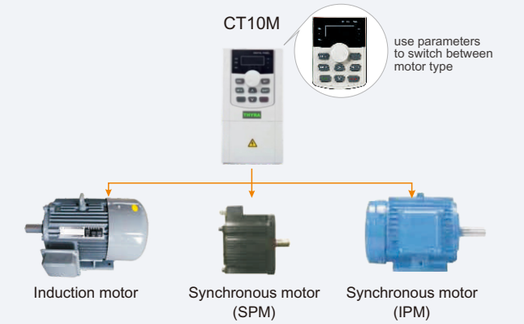
Ambient Temp ℃
40

Speed Regulation
1:100

Multi-step speed max.
16

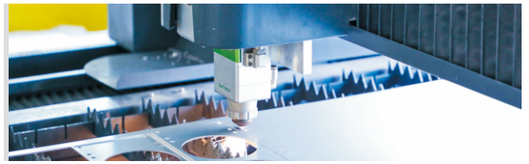
REASONABLE STRUCTURAL DESIGN





EMC grounding design

✧ Independent grounding system selection switch (through the screw access or not to choose), easy to solve the problem of EMC interference and leakage current.



Advanced drive technology

✧ Capable of driving different types of motor. CT10M series runs not only induction motors, but also synchronous motors lice IPM*1 and SPM*2 motors with high performance open and closed loop vector control.

✧ Minimize equipment needed for your business by using the same drive to run induction and synchronous motors.

❶ Interior Permanent Magnet Motor (Motors with permanent magnets inserted into the rotor)

❷ Surface Mounted Permanent Magnet Motor (Motors with permanent magnets mounted on the surface of the rotor)

ADVANCED DESIGN

C3 ◆ EMC Filter
C3 Level Filter Build-In Standardly
Better EMC Performance

IGBT ◆ IGBT Selection
Selection Of Large Margin
Current>2 Times of VFD Current

200% ◆ Overload Capacity
120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

±15% ◆ Voltage Range
Compatible with ±15% input voltage fluctuation, output voltage s table.

S Curve ◆ S Curve
S Curve Acceleration/Deceleration
Better Start /Stop Performance

Flying Start ◆ Flying Start Function
Restart The Running Motor Smoothly
No Current Surge
High Accuracy

Prote Ction ◆ Protection
Overcurrent、Overvoltage、PID feedback failure、Overheat、Undervoltage、The main contactor is abnormal、Motor overload、Fast protection、Unbalanced output、Frequency conversion overload、System abnormal、Motor detection abnormalOutput phase loss、Input phase loss、Short circuit protection of control board power supply.

SPECIFICATION

Input & Output

Input voltage	1AC 220~240V(± 15%) 3AC 220~240V(± 15%) 3AC 380~460V(± 15%)
Input frequency	50Hz/60Hz ±5%
Output voltage	0~input voltage, deviation <±3%
Output frequency	0~600Hz

Control Characteristics

Control mode	v/f control Sensor-less vector control Torque control
Speed accuracy	±0,5% (V/f) ±0,2% (SVC)
Speed fluctuation	±0,3% (SVC)
torque response	< 10ms (SVC)
Starting torque	0,5Hz: 150% (V/f) 0,25Hz: 180% (SVC)
Overload capability	150% Rated current -60s 180% Rated current -10s 200% Rated current -1s
Simple PLC Multi-step speed	16 speed External digital signal control Internal clock
PID function	Standard build-in
Communication	Modbus

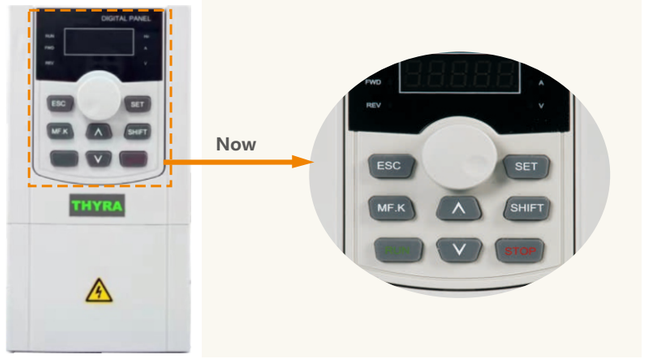
Featured functions

Featured functions	Input &Output delay
	Flexible parameters display
	AVR (Automatic Voltage Regulation)
	Timing control, fixed length control, etc.
	Simple PLC, 16-steps speed control
	Torque control build-in
	S curve acceleratior/deceleration Multi-functional programmable keypad V/f separated control

Environment Limitation

Installation location	Without direct sunlight,free from dust,corrosive gases, oil mist, flammable gases, water vapor, water drop and salt,etc.
Altitude	0~2000m Derated 1% for every 1000m when the altitude is above 1000meters
Ambient temperature	-10°C~50°C (Output derated while the temperature is higher than 40°C)
Storage temperature	-20°C~+70°C
Relative Humidity	5-95% no condensation

Updated Keypad (More Convenient And Stable)



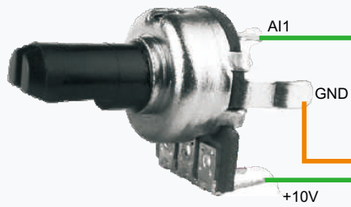
Cooperation brand

AVAGO TECHNOLOGIES
TEXAS INSTRUMENTS
infineon
TDK
VISHAY

World-class components inside, stronger “bones”, healthier “body”.

EASILY CONNECT WAY

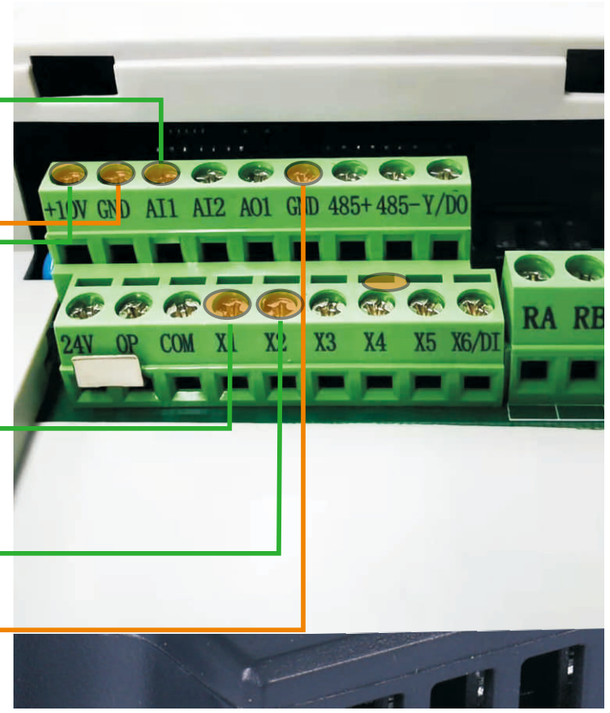
External potentiometers



“Setting Way,P0-03=2 To Use External potentiometers”

External Switch

External Start Button, P0-02=1,P4-00=1
External Stop Button,P4-02=3,P4-11=2

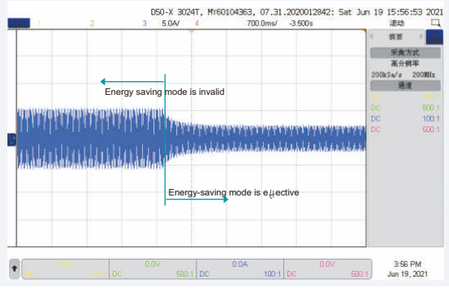


DRIVE DESIGN & FEATURES

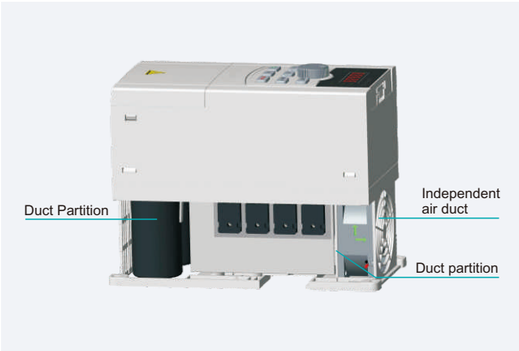
Energy-saving operation of fans and pumps

- With excellent automatic energy-saving function, you only need to set the maximum energy-saving target, as long as the operation meets the energy-saving conditions, you can enter the automatic energy-saving state. By setting the VF function, one-to-multiple and long-distance control applications can be realized to meet the application of transformation occasions.

Automatic energy saving control

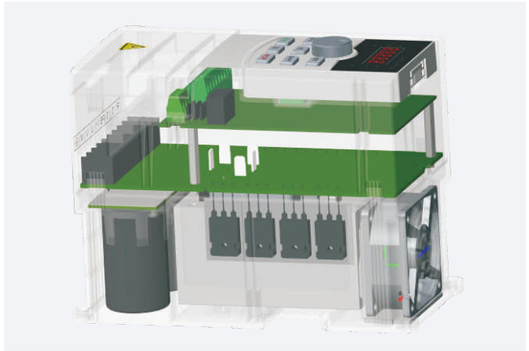


HIGH PERFORMANCE



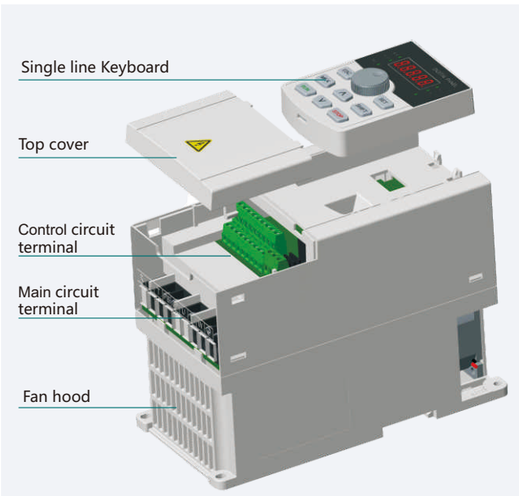
Independent air duct design

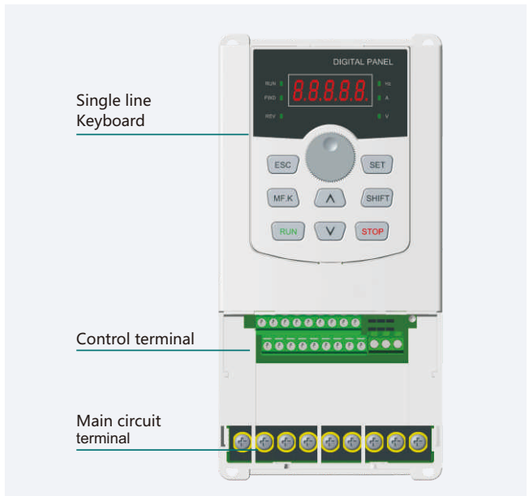
- High protection: completely independent air duct, scientific layout inside the machine, taking into account the heat dissipation of high-power devices.
- The machine has the characteristics of high temperature resistance: scientific air duct design, rapid heat dissipation, low temperature rise of the machine, and no need to reduce the capacity under the ambient temperature of 50 °C.



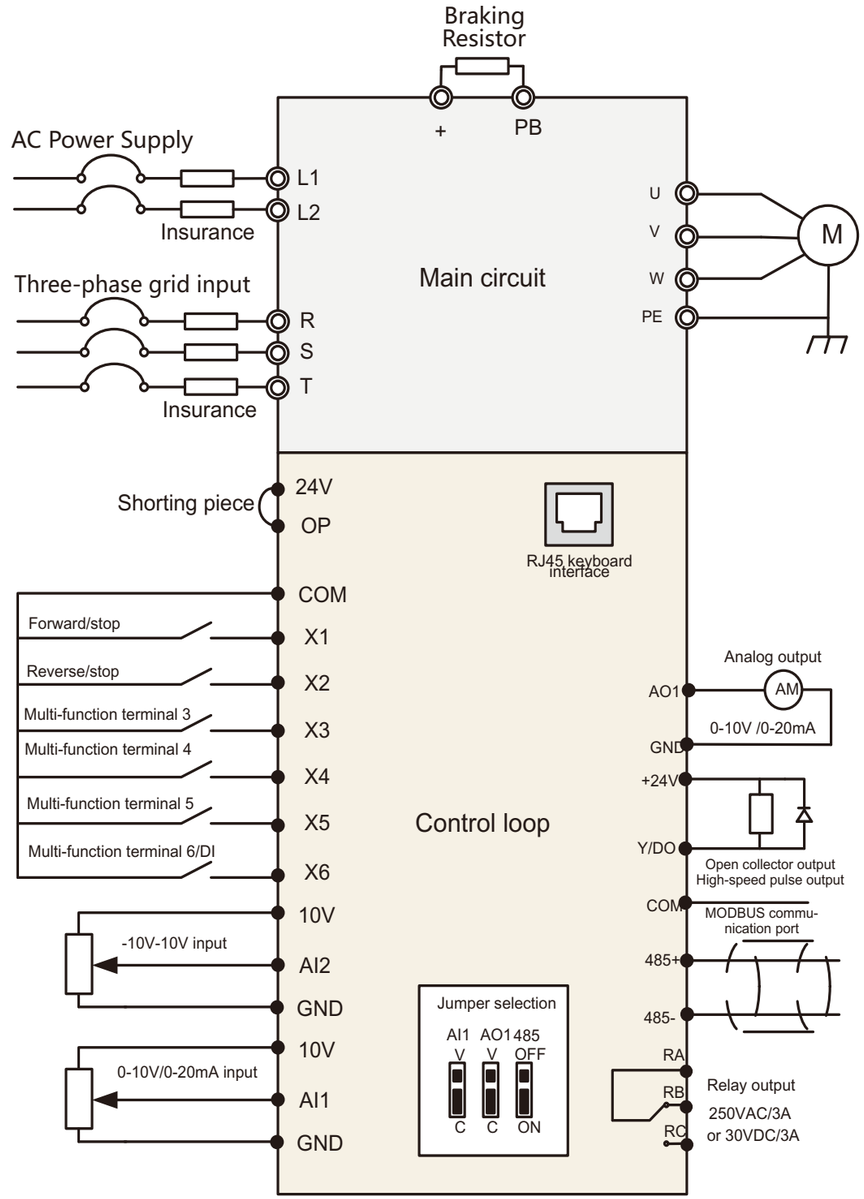
Layered structure design

- The electrical part is separated from the cooling air duct layer by layer, and each part is independent, which can effectively deal with the dust problem of circuit boards and sensitive devices.



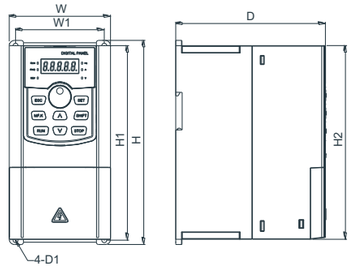


BASIC WIRING DIAGRAM



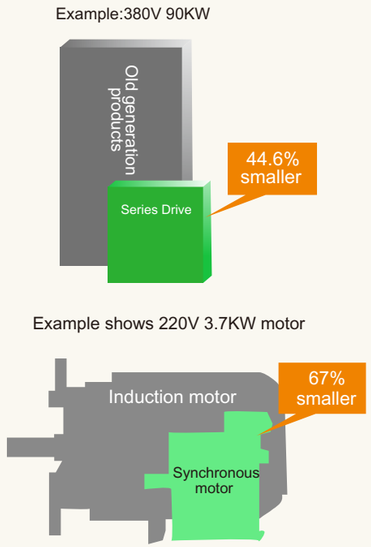
TECHNICAL SPECIFICATION

Model	External and installation dimensions (mm)						Pore size	Weight (kg)
	W1	H1	H	H2	W	D		
CT10M-2S-0.7G	67.5	160	170	----	84.5	129	Φ4.5	1.0
CT10M-2S-1.5G								
CT10M-4T-1.5G								
CT10M-4T-2.2G								
CT10M-2S-2.2G	85	185	194	----	97	143.5	Φ5.5	1.4
CT10M-2S-4.0G								
CT10M-4T-4.0G								
CT10M-4T-5.5G								
CT10M-2T-5.5G	106	233	245	----	124	171.2	Φ5.5	2.5
CT10M-4T-7.5G								
CT10M-4T-11G								
CT10M-2T-7.5G	120	317	335	----	200	178.2	Φ8	8.4
CT10M-2T-11G								
CT10M-4T-15G								
CT10M-4T-18.5G								
CT10M-4T-22G								
CT10M-2T-15G	150	387.5	405	----	255	195	Φ8	12.8
CT10M-2T-18.5G								
CT10M-4T-30G								
CT10M-4T-37G								
CT10M-2T-22G	180	437	455	----	300	225	Φ10	17.8
CT10M-2T-30G								
CT10M-4T-45G								
CT10M-4T-55G								
CT10M-4T-75G	260	750	785	----	395	291	Φ12	50
CT10M-4T-90G								
CT10M-4T-110G								
CT10M-4T-132G	360	950	990	----	500	368	Φ14	88
CT10M-4T-160G								
CT10M-4T-185G								
CT10M-4T-200G								
CT10M-4T-220G	400	1000	1040	----	650	406	Φ14	123
CT10M-4T-250G								
CT10M-4T-280G								
CT10M-4T-315G	600	1250	1300	----	815	428	Φ14	165
CT10M-4T-355G								
CT10M-4T-400G								



- With inside EMC filter and building-block design for IO extension card and different kinds of PG card;
- Top performance in our industry which represent in torque in less than 1Hz 0.5Hz 0.25Hz 0.1Hz and 0Hz that it can compare with any domestic chinese brand for output torque;
- Smooth running and stability;
- Low noise on motor and fast response for 0.1S acceleration and deceleration without dead zone;
- Reverse and forward free switching;
- Sleeping function and energy saving function as well as in built PLC programming;
- Accurate and constant torque mode control;
- Support two group motor parameters which can realize two motor switching control;
- 220V single phase /three phase input and three phase output.

DRIVE DESIGN & FEATURES



Even more compact

- Continues to make applications even smaller by combining the compact designed drive with the light, efficient design of a synchronous motor.
- Use Side-by-Side installation for an even more compact setup.
- Finless models available.

Independent duct design

- Independent air duct design, effectively preventing dust entering inverter, causing short-circuit and other faults and improving reliability;
- Use bigger air volume and long life cooling fan effectively reduces the internal temperature rise of the inverter and ensures reliable and stable operation of inverter.

Perfect protection system

- Designed for 10 years of maintenance-free operation.
- Cooling fan, capacitors, relays, and IGBTs have been carefully selected and designed for a life expectancy up to ten years.

※ Assumes the drive is running continuously for 24 hours a day at 80% load with an ambient temperature of 40℃.

DRIVE DESIGN & FEATURES

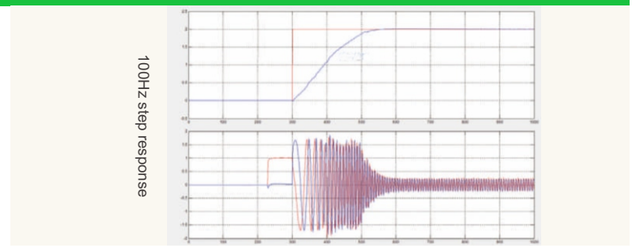
High speed accuracy and wide speed range

✧ **High speed accuracy and wide speed range:**

Steady speed accuracy: ±0.5% (SVC), ±0.02% (VC);
Speed range: 1:200 (SVC), 1:1000 (VC),

✧ **Heavy load overload capability:**

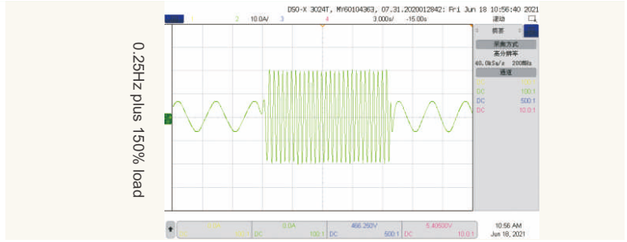
110% rated current for long-term stable operation;
150% rated current for 1 minute;
180% rated current 10s.



High torque in low speed, fast response

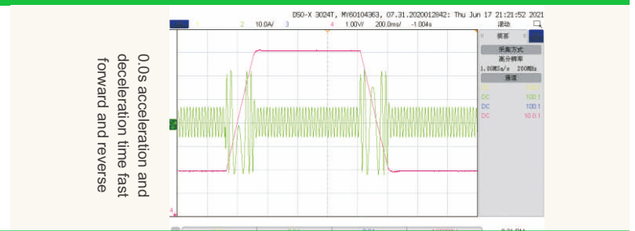
✧ **High torque in low speed, fast response Load capacity in low speed:**

VF: 180%@0.50Hz ;
SVC: 180%@0.25Hz ;
VC: 200%@0.00Hz.



Rapid response to impact loads

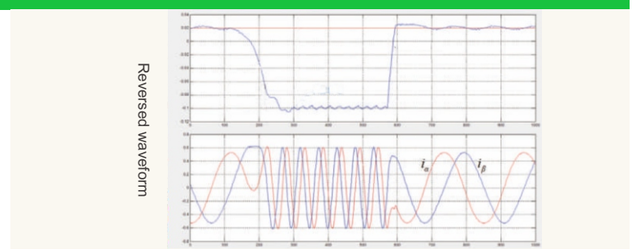
✧ When it meets with sudden load change, inverter can quickly restore the speed, reduce the speed fluctuation, and ensure the production stability and high quality finished products.



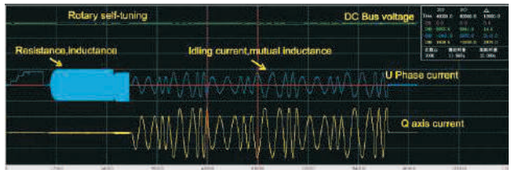
Optimized SVC algorithm, stable operation in power generation

✧ At present, most of the inverters can not work stably under the SVC control mode (especially in the case of being reversed).

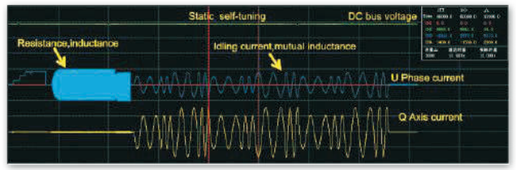
✧ CT10M can run very well, and it achives great convenience in some special applications (such as tension control in rewinding and winding) .



PERFORMANCE FEATURES



Rotary self-tuning



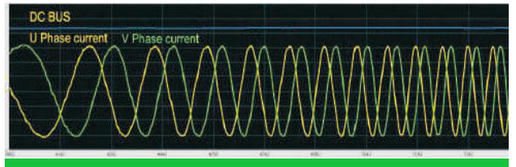
Fully static self-tuning

Self-tuning of motor parameters

✧ It could accurately acquire the motor parameters both in rotary and static self-tuning, so as to provide higher control accuracy and response speed,which is convenient and simple.

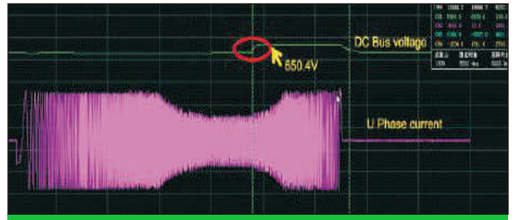
✧ Rotary self-tuning: Must unload the motor. Suit for applications with higher requirement of control accuracy.

✧ Fully static self-tuning: Leading motor tuning algorithm, can acquire the motor parameters in static status, which is compar-able to the rotary self-tuning.



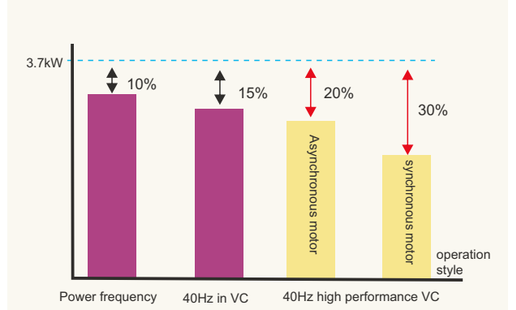
Over current suppression

The current suppression function could avoid the frequent OC fault of inverter. While the current is over the current protection point, it could continuously limit the current below the protection point, so as to protect devices, prevent the overcurrent fault caused by sudden load or interference and reduce the loss caused by.stop without reason.



Over voltage suppression

The overvoltage suppression function could prevent inverter from overvoltage fault in ACC/DEC process. During ACC/DEC, if the bus voltage of inverter reaches or exceeds the overvoltage protection point, the overvoltage suppression function could suppress the rising of bus voltage by automatically adjust the operation frequency, so as to protect the devices and avoid the overvoltage fault caused by the rising of bus voltage.



Comparison diagram of fan energy saving

Excellent energy-saving functions

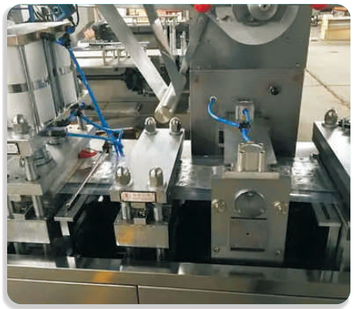
Adopt the new generation of energy-saving control technology to realize the high-efficiency operation of induction motor; reduce the excitation current according to the load current, and automatically adjust according to the loading condition; improve the motor efficiency at most; reduce the motor consumption and energy consumption. 30% of AM&PMSM adopt the VC mode to drive PMSM and the energy utilization could increased by more than 10%.

APPLICATIONS

Printing Dyeiing

Wire Drawing Mchine

Water Supply



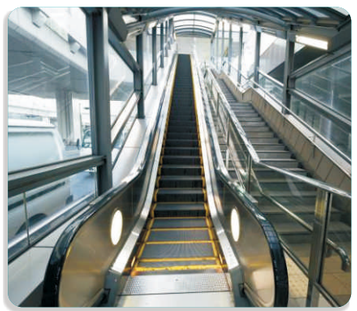
Packing Machiine

Industrial Washing Machine

Construction Hoist

Ball Mill

Air Compressor



Escalator

THYRA

Bencera Resources LLp.

710,Iscon Elegance ,

opp Karnavati Club,Next to Shapath -V,

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