

CT30M Series

THYRA

• 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 Internet 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



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

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 acceleration/deceleration Multi-functional programmable keypad V/f separated control
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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

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

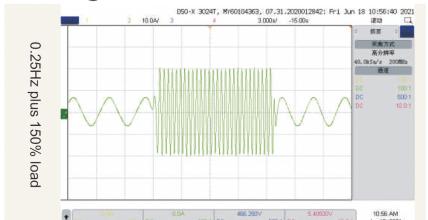
High torque in low speed, fast response

◊ High torque in low speed, fast response Load capacity in low speed:

VF: 180%@0.50Hz ;

SVC: 180%@0.25Hz ;

VC: 200%@0.00Hz.



DRIVE DESIGN & FEATURES

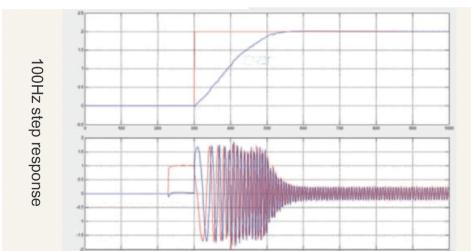
High speed accuracy and wide speed range

◊ 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:

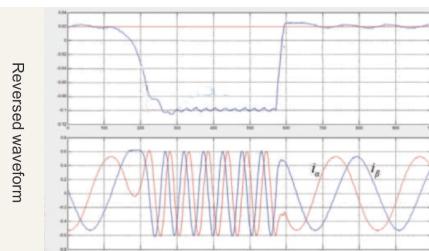
110% rated current for long-term stable operation;
150% rated current for 1 minute;
180% rated current 10s.



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 achieves great convenience in some special applications (such as tension control in rewinding and winding).



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.





ADVANCED DESIGN



◆ EMC Filter

C3 Level Filter Build-In Standardly
Better EMC Performance



◆ IGBT Selection

Selection Of Large Margin
Current>2 Times of VFD Current



◆ Overload Capacity

120% long time running without trip.
150% for 60 seconds
180% for 10 seconds



◆ Voltage Range

±15%

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



◆ S Curve

S Curve Acceleration/Deceleration
Better Start /Stop Performance



◆ Flying Start Function

Restart The Running Motor Smoothly
No Current Surge
High Accuracy



◆ Protection

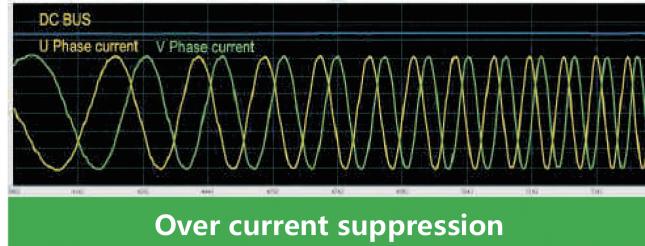
Overcurrent, Overvoltage, PID feedback failure, Overheat, Undervoltage, The main contactor is abnormal, Motor overload, Fast protection, Unbalanced output, Frequency conversion overload, System abnormal, Motor detection abnormal, Output phase loss, Input phase loss, Short circuit protection of control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



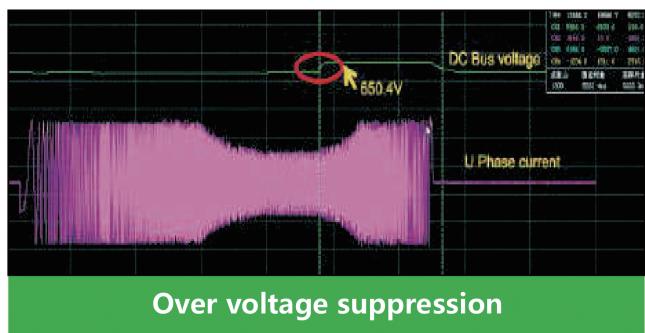
PERFORMANCE FEATURES



TECHNICAL SPECIFICATION



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.



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.

Input and output characteristics	Rated input voltage	200V voltage level: single/three-phase 220VAC 400V voltage level: three-phase 380VAC voltage, continuous fluctuation ±10%, brief fluctuation -15% to +10%
	Rated input frequency	50Hz/60Hz±5%
	Output Voltage	3 phases: 0 to rated input voltage, error less than ±3%
	Output Frequency	0.00 ~ 600.00Hz, unit 0.01Hz
	Overload capacity	150% 1 minute; 180% 10 seconds; 200% 0.5 seconds
Operation control characteristics	Control method	V/f control PG-free vector control (SVC)
	Speed range	1:100 (V/f) 1:200 (SVC)
	Speed control accuracy	±0.5% (V/f control) ±0.2% (SVC)
	Speed fluctuations	±0.3% (SVC)
	Torque Response	<10ms (SVC)
Basic Functions	Starting torque	0.5Hz: 180% (V/f, SVC) 0.25Hz: 180% (SVC)
	V/f curve	Three ways: linear; multi-point; Nth order V/f curve
	V/f separation	2 ways: full separation, semi-separation
	Acceleration and deceleration curves	Straight line or S curve acceleration and deceleration mode; four acceleration and deceleration times; acceleration and deceleration time range 0.0~60000s
	DC brake	DC braking frequency: 0.00Hz~maximum frequency, braking time: 0.0s~30.0s, braking action current value: 0.0%~100.0%
Output terminals	Pointing control	Pointing frequency range: 0.00Hz~50.00Hz; pointing acceleration and deceleration time 0.0s~60000s
	Simple PLC, multi segment operation	Up to 16-speed operation via built-in PLC or control terminal
	Built-in PID	Easy to implement closed-loop control system for process control
	Automatic Voltage Regulation (AVR)/Over pressure and over-draw speed control	When the grid voltage changes, it can automatically maintain the output voltage constant
	Fast current limiting function	Automatic limitation of current and voltage during operation to prevent frequent over-current and over voltage tripping Minimize overcurrent faults and protect products from normal operation
Featured Features	Torque limiting and control	Automatic torque limitation during operation to prevent frequent overcurrent tripping
	Input terminals	Six switching input terminals, including X6 for high-speed pulse input. Support active open collector NPN, PNP and dry contact input mode, two analog input terminals, one for voltage and current input optional, one for voltage input
	Output terminals	A high-speed pulse output terminal, 0 ~ 50kHz square wave signal output, can realize the set frequency, output frequency and other physical quantity output, a switch output terminal, a set of relay output terminal One analog output terminal, voltage and current output can be selected to realize the output of physical quantities such as set frequency and output frequency
Protection function		Power-on motor short-circuit detection, over-current protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, etc.