



Simphoenix

SERVO DRIVE | VFD | PMSM | PLC | HMI

E500 Series Low-power general inverter



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E500 SERIES LOW-POWER GENERAL INVERTER

»» PRODUCT ANALYSIS

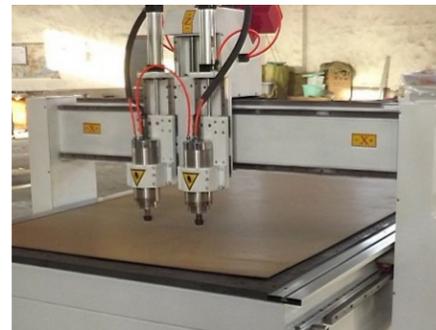
»» PRODUCT INTRODUCTION



E500 series inverter is characterized by the excellent performance, comprehensive protection function, delicate size and elegant appearance on the basis of new hardware platform. Besides, The control keyboard of inverter is available according to the user's need, and the status indicator is especially designed for the monitoring of operation process.

»» INDUSTRY APPALICATION

- Textile
- Engraving
- Ceramics
- Food
- Crimping
- Grinder
- Transmission
- Wire cutting
- centrifuge



Performance	Competitiveness	Value
Universal application	Low-power inverter with excellent performance, 110% load for long-term	Adapt to the Freq. change of low-power field
Load analysis	Real-time monitoring status variables such as current, voltage, freq and rotatory speed to help analyze motor load	Convenient to analyze load running
Status monitoring	Monitor inverter self-setting/running parameters such as setting/running freq, output terminal status, analog output/input and counter	Intuitive display and debugging
Control method	VVVF voltage space control to optimize motor controlling performance	Wide range of application
Specialized function	Self-defining V/F curve, several types of freq setting portfolio such as panel/analog/communication, multi-segment running, PID controller, I/O terminal function setting, analog channel function setting, counter, automatic voltage regulation, current inhibition, synchronous linkage control, torque boost and wobble running	Various function setting
Protection	Excessive current,voltage, heating, load protection, low voltage and short circuit protection	Perfect protection
Failure detection	Four pairs of historical failure record and the detail of freq, output current, output voltage, DC voltage and modular temperature of the last failure	Convenient detection
Communication method	MODBUS-RTU protocol and SUNFAR self-defining protocol available	Networking
Dynamic braking	Braking unit available	Rapid shutdown
Installation	Wall-mounted or rail-mounted	Convenient installation
Certificate	CE certification and IP20 safety features	Safe product
Product tests	Short circuit test, vibration test, temperature test, radiated interference test, voltage dips immunity	Good quality



»» INDUSTRY SOLUTION

Application of inverter in automatic steamed bun molding machine

Introduction

The steamed bun made by traditional machine has the disadvantages of single taste, low output and high cost as well as relatively high consumption. Compared with traditional steamed bun molding machine, new machine with frequency regulation can freely choose the proportion between wrapper and stuffing to reduce the labor, control consumption in the production and improve the product appearance and taste.



Process requirement

- Stepless-speed regulation through potentiometric or communication interface, enabling the size, flour and stuffing to be adjusted the proportion.
- High Stable accuracy and steady running, enabling the noodle to be generated uniformly and smoothly with no harm to gluten.
- Light weight and small size convenient to install and operate.

Solution

According to the characteristics of automatic steamed bun machine, SUNFAR recommends to use E550 series inverter to have frequency changed via panel potentiometer, communicated with RS485, and controlled with PLC or other industrial control machine.

Advantages

- High stable accuracy to ensure the good quality.
- Up to 16 types of frequency setting method to foster the formula adjustment during the food process and improve the yield and reduce the cost.
- Installation features such as small size and elegant appearance adaptable to food machine.
- Built-in excessive voltage and current protection, low voltage and short circuit protection.

The application of inverter in linear cutting machine

Introduction

The functions contained in the inverter like stepless speed regulation, soft startup and constant torque output make the inverter play an important role in the machining. The main advantage in the application of wire cutting machine includes the increasing stability of wire moving, improved process accuracy and high efficiency, which makes the inverter widely applied in the wire cutting machine.

Process requirement

- High stability of wire cutting
- Adjustable speed
- Frequent motor reversing
- Rapid motor braking



Industry solution

Integrated the wire cutting dedicated function and protection circuit of wire moving, failure warning, braking, reversing and high frequency impulse, E500 inverters has several categories of method to adjust the wire moving speed. User is able to control wire reciprocating motion and set the forward & backward time when the reciprocating function is used.

Advantages

- Cutting streak dramatically reduced
- The surface finish and precision improved
- Rapid starting/shutdown and reversing of wire-moving
- Simpler electronic wiring
- Noisy lowered dramatically in reversing
- Electronic stability improved

»» SPECIFICATIONS

Input/output	Rated voltage,frequency	Three phase(4T#)380V 50/60Hz	Single phase(2S#)220V 50/60 Hz
	Permissible voltage fluctuation	300V~460V	180V~260V
	Voltage	0~380V	0~220V
	Frequency	0.0~400Hz	
	Over loading endurance	110% rated current for long term; 150% rated current for 1 min; 180% for 2s	

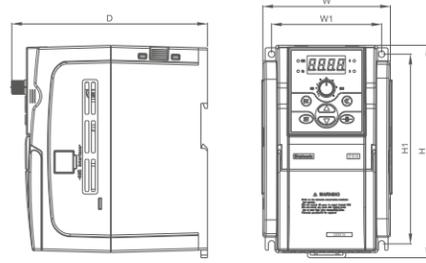
Control characteristics	Control system		VVVF voltage space vector control
	Freq. Control resolution	Analog input	0.1% of maximum output freq.
		Digital input	0.01Hz
	Freq. precision	Analog input	Within 0.1% of maximum output freq.
		Digital input	Within 0.1% of maximum output freq.
	V/F curve (voltage-frequency characteristics)		Reference freq. can be discretionary set between 5 and 1000Hz and V/F curve with multimode can be discretionary set.
	Torque boost		Manual torque boost can be set between 0 and 20 percent.
Automatic current/voltage limiting		It will determine automatically the current and voltage of stator of motor, which will be controlled within the allowable range.	

Environment	Temperature	-10°C~40°C(non-condensing)
	Moisture	90% below (no frosting)
	Surrounding environment	Indoor without direct sunshine, erosion, combustible gas, dust and floating fiber
	Altitude	Under 1000 m
	IP grade	IP 20
	Cooling	Forced cooling

Typical function	Multi-speed selection and wobble freq. running		Up to 7 stages of programmable multi-speed control, 5 running mode available
	PID control available		Optional PID controller to realize simple control of closed-loop
	Rs485 communication and synchronization control		SUNFAR self-defining protocol and MODBUS protocol available
	Freq. setting	Analog input	DC voltage 0~10V, optional DC current 0~20mA
		Digital input	It can set by operation panel, RS485, UP/DW terminal, also can set multiple combinations with analog input.
	Output signal	Relay and OC output	One OC output and relay output (TA, TC) as many as 16 species of choices
		Analog output	One 0~10V voltage signal, upper and lower limits can be set separately.
	Voltage stabilizing running automatically		Three ways for selection: dynamic voltage regulation, static voltage regulation, no voltage regulation, to get the most stable operating result
	Acceleration/deceleration time setting		0.1 Sec~600.0 sec continuous set, S type, linear mode for selection

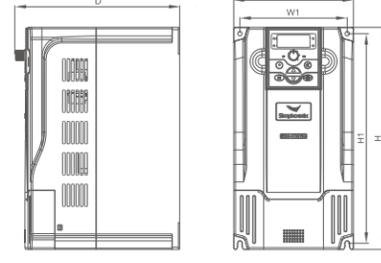
Function highlights	Operation panel display	Running status	Output freq., output current, output voltage, motor rotated speed, setting freq., model temperature, analog output/input
		Alarm content	Last four times fault record, and the last failure parameter record including output frequency, setting frequency, output current, output voltage, DC voltage, model and temperature.
	Protection/warning function		Over current, over voltage, under current, under voltage, electronic thermal, overheating, extreme high temperature, short circuit, phase-lacking of output, internal memory fault
	Installation		Wall-mounted or din raiing

SIZE



Applicable models:

E500-2S0004(B)-E500-2S0007(B)
/E500-2S0015(B)-E500-2S0040(B)
/E500-4T0007(B)-E500-4T0040(B)



Applicable models:

E500-2S0055(B)/E500-4T0055-4T0075
/E500-2S0075(B)/E500-4T0090

Inverter Model (3PH 380V)	Inverter Model (3PH 380V)	W1 mm	W mm	H1 mm	H mm	D mm	螺钉规格
—	E500-2S0004(B)	67.5	81.5	132.5	148	134.5	M4
—	E500-2S0007(B)	67.5	81.5	132.5	148	134.5	M4
E500-4T0007(B)	—	67.5	81.5	132.5	148	134.5	M4
E500-4T0015(B)	E500-2S0015(B)	86.5	101.5	147.5	165	154.5	M4
E500-4T0022(B)	E500-2S0022(B)	86.5	101.5	147.5	165	154.5	M4
E500-4T0030(B)	E500-2S0030(B)	100	110	190	205	169.5	M5
E500-4T0040(B)	E500-2S0040(B)	100	110	190	205	169.5	M5
E500-4T0055(B)	—	121	135	234	248	186	M4
E500-4T0075(B)	E500-2S0055(B)	121	135	234	248	186	M4
E500-4T0090(B)	E500-2S0075(B)	146	160	261	275	190	M5

MODEL DESCRIPTION

E500 -4 T 0007 (B)

Derivative product model	Built-in brake unit and 485 communication	
Power range (KW)	0004	0.4KW
	0007	0.7KW
	0015	1.5KW
	0030	3.0KW
	0110	11KW
Power supply phase	T	Three phase
	S	Single phase
Voltage class	4	380V
	2	220V
Product series	E500 Series Low-power General Inverter	

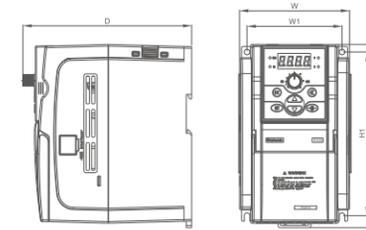
SPECIALIZED SERIES

Engraving specialized inverter

Engraving dedicated inverter is designed on the basis of engraving features and process requirements, integrated special parameters of engraving machine with no need for the user to equip any controller to satisfy control needs.



Mounting Dimensions



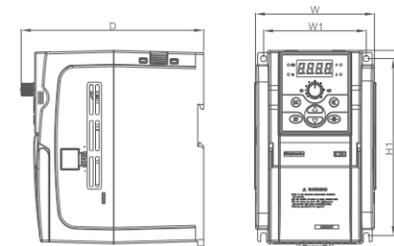
Inverter Model (3PH 380V)	Inverter Model (3PH 380V)	W1 mm	W mm	H1 mm	H mm	D mm	Screw
E500-4T0030L	—	86.5	101.5	147.5	165	154.5	M4
E500-4T0040L	—	86.5	101.5	147.5	165	154.5	M4
E500-4T0055L	E500-2S0037L	100	110	190	205	169.5	M5
	E500-2S0045L						
E500-4T0075L	E500-2S0055L	121	135	234	248	186	M4
	E500-2S0075L						
E500-4T0090L	E500-2S0075L	121	135	234	248	186	M4
E500-4T0110L	E500-2S0090L	146	160	261	275	190	M5

Wire cutting specialized inverter

Wire cutting dedicated inverter is designed on the basis of wire cutting features and process requirements, integrated special parameters of wire cutting machine with no need to equip the controller to realize the control for machine.



Size



Inverter Model	W1 mm	W mm	H1 mm	H mm	D mm	Screw
E310-2S0007X	86.5	101.5	147.5	165	154.5	M4
E310-2S0007BX						