Variable Frequency Drive



Shenzhen Epsivo Technology Co., Ltd.

ABOUT EPSIVO

Shenzhen Epsivo Electric Co., Ltd., established in 2013, is a national high-tech enterprise focusing on the R&D, manufacturing, sales, and service of industrial drive products. It is also recognized as a Shenzhen Double-software certified enterprise and a Shenzhen specialized and sophisticated Enterprise. With independently owned intellectual property rights in industrial automation drive technology, Epsivo operates with a business model centered on rapidly providing customers with standard products and personalized customized services. It is committed to becoming a world-class provider of integrated solutions for industrial automation and drive systems.

Epsivo has mastered leading technologies in synchronous/asynchronous motor electro-hydraulic servo drive, variable frequency vector control, and solar pump drive. Its main products include servo drives, general purpose variable frequency drives, and solar pump inverters. These products cover voltages of 220V, 380V, and 460V, with power ranging from 0.4kW to 710kW. They are widely used in various industries, including injection molding machines, hydraulic presses, hydraulic stations, shoe-making machines, metal balers, film blowing machines, brick machines, and others. Epsivo has obtained nearly 30 patents from the China National Intellectual Property Administration. Simultaneously, it has established a high-standard quality supervision system and has comprehensively passed the IS09001 quality system, ISO14001 environmental management system, ISO45001 occupational health and safety management system, CE certification, and other certifications.





Epsivo is committed to becoming an outstanding supplier in the field of drive and control. With a team spirit of proactive advancement, steady improvement and accumulation of research and development strength, and efficient execution capabilities in the supply chain, it is committed to customizing more competitive solutions for various equipment manufacturing enterprises and automation products in segmented industries, continuously helping enterprises increase productivity, reduce costs, maximize corporate benefits, and promote the mutual growth of corporate and customer values.





ES230

Mini Economy VFD



ES230 is a newly designed smart variable frequency drive, featuring compact structure, easy-to-use, excellent performance and various functions. It can be widely used in woodworking, textile, food, printing and packaging, plastics, machine tools, transportation equipment industries etc.

AC 1PH 220V~240V 0.4~5.5kW

AC 3PH 220V~240V 0.4~5.5kW

AC 3PH 380V~415V 0.75~11kW

Product Features

1. Next-generation motor control platform

Capable of driving asynchronous and permanent magnet synchronous motors, supporting FVC, SVC and V/F control modes

2. Refined design with significant size reduction

With next-generation power device technology, it features high junction temperature, high power density and smaller dimension, reducing size up to 30% and installation area of 70%.

3. Optimized vector control technology, bringing breakthrough in motor control performance

SVC speed control ratio is increased to 1:1000; SVC replaces FVC when the output torque is greater than 10%; SVC winding and unwinding torque accuracy is ≤ 5%.

4. Fast current limiting

When exceeding the limit, the current can be quickly limited to within the limit, avoiding frequent overcurrent alarms caused by sudden loads or disturbances.

5. Unique speed tracking

Requiring no special hardware detection circuit, it can track the motor speed and direction quickly without any impact. It is especially suitable for fans, pumps and other equipment that requires speed tracking.

ES230

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6. Overexcitation function

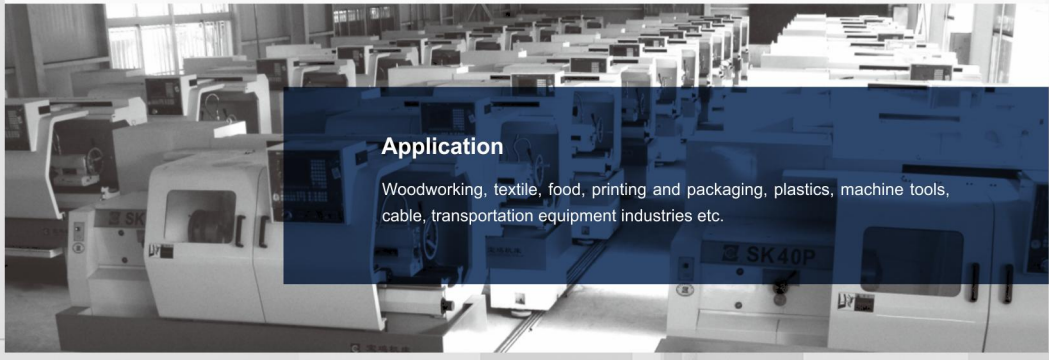
Rapid braking effect can be achieved without adding external brake resistors and other accessories;
It can suppress the rise of bus voltage during deceleration to avoid frequent over-voltage fault alarms. Additionally, it can brake quickly, meeting the requirement of quick stopping at shutdown.

7. Stable, reliable and long product life

Independent airduct design and standard coated PCB prevent dust and oil from entering the VFD and fully protect the electronic components on the PCB, thus ensuring longer service life and reliability.

8. Powerful upper computer monitoring software

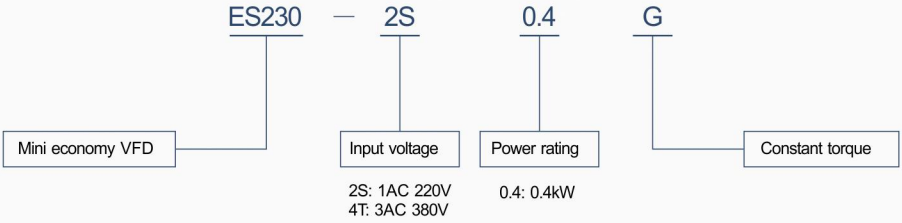
Extensive background monitoring functions which facilitate on-site data collection and debugging; online oscilloscope function; batch uploading and downloading parameters; displaying Group U0 parameters in real time; and monitoring and diagnosis functions.



Application

Woodworking, textile, food, printing and packaging, plastics, machine tools, cable, transportation equipment industries etc.

Model Description



Selection Guide

Model	Power capacity	Input current	Output current	Adaptive motor
	(kVA)	(A)	(A)	(kW)
Single phase 220V-240V(-15%-+20%) 50/60Hz				
ES230-2S0.4GB	1.0	5.4	2.3	0.4
ES230-2S0.75GB	1.5	8.2	4	0.75
ES230-2S1.5GB	3	14	7	1.5
ES230-2S2.2GB	4	23	9.6	2.2
ES230-2S3.7GB	12	40	17	3.7
Three phase 220V-240V(-15%-+20%) 50/60Hz				
ES230-2T0.4GB	1.5	3.4	2.1	0.4
ES230-2T0.75GB	3	5	3.8	0.75
ES230-2T1.5GB	4.5	7.8	6.8	1.5
ES230-2T2.2GB	5.9	10.5	9	2.2
ES230-2T4.0GB	8.9	14.6	13	3.7
ES230-2T5.5GB	17	26	25	5.5
ES230-2T7.5GB	21	35	32	7.5
ES230-2T11GB	30	46.5	45	11
Three phase 380V-480V(-15%-+20%) 50/60Hz				
ES230-4T0.4GB	1.0	2.4	1.2	0.4
ES230-4T0.75GB	1.5	3.4	2.1	0.75
ES230-4T1.5GB	3	5	3.8	1.5
ES230-4T2.2GB	4	5.8	5.1	2.2
ES230-4T4.0GB	6.0	13.5	9.5	4.0
ES230-4T5.5GB	8.9	14.6	13	5.5
ES230-4T7.5GB	11	20.5	17	7.5
ES230-4T11GB	17	26	25	11

ES230

Mini Economy VFD

Technical Specifications

Technical Item		Specification
Basic function	Output frequency	Vector control: 0~500Hz V/f control: 0~3200Hz
	Control mode	V/f control Sensorless vector control (SVC) Close-loop vector control (FVC)
	Carrier frequency	0.8kHz~12kHz, automatically adjusted based on the load characteristics
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: maximum frequency * 0.025%
	Starting torque	G type: 0.5Hz/150%
	Speed adjustment range	1:100 (SVC), 1:1000 (FVC)
	Speed stability accuracy	±0.5% (SVC), ±0.02% (FVC)
	Torque control response & precision	Response time: 5ms, precision: ±5% (FVC)
	Overload capacity	G type: 150% 60s; 180% 3s
	Torque boost	Automatic torque boost; manual torque boost 0.1%~30.0%
	V/f curve	Three types: linear, multiple point and square type (1.2 power, 1.4 power, 1.6 power, 1.8 power, square)
	V/f separation	2 modes: complete separation, half separation
	Acceleration/deceleration mode	Straight line/S curve; four kinds of acceleration/deceleration time, range: 0.1s~6500.0s
	DC braking	DC braking frequency: 0.00Hz~maximum frequency Braking time: 0.0s~36.0s Braking action current value: 0.0%~100.0%
	Jog control	Jog frequency range: 0.00Hz~50.00Hz Jog acceleration/deceleration time: 0.0s~6500.0s
	Simple PLC & multi-step speed operation	It can realize up to 16 steps speed via the built-in PLC function or control terminal
	Built-in PID	Built-in PID control to easily realize the close loop control of the process parameters (such as pressure, temperature, flow, etc.)
	Automatic voltage Regulation (AVR)	Automatically maintain a constant output voltage when grid voltage changes
	Common DC bus	Common DC bus for several inverters, energy balanced automatically
	Overvoltage & overcurrent stall control	Automatically limit the current and voltage during the operation, prevent frequent overcurrent and overvoltage trip

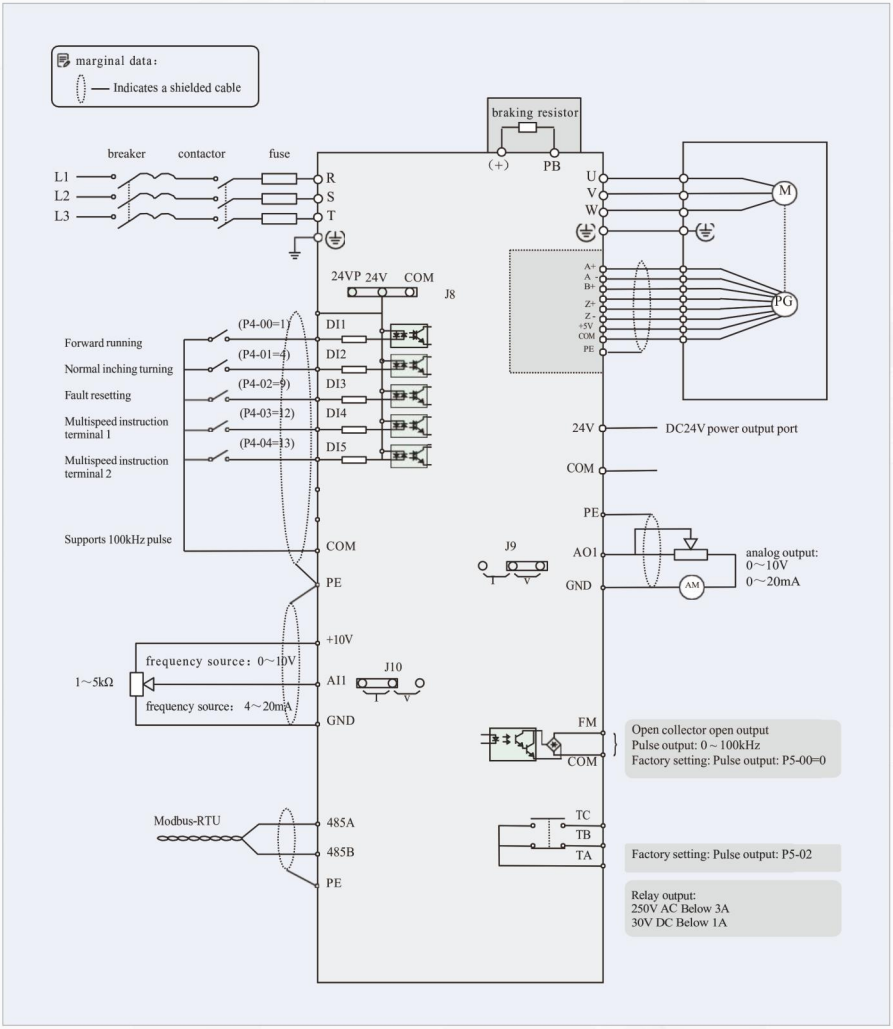
Technical Specifications

Technical Item		Specification
Basic function	Rapid current limit	Minimizing overcurrent fault, protect the normal operation of inverter
	Torque limit & control	"Excavator" characteristics, automatically limit the torque during the operation, prevent frequent overcurrent trip; torque control can be achieved on close-loop vector control mode.
	Fault protection function	Overcurrent, overvoltage, under-voltage, overheating, default phase, overload, short-circuit, etc., can record the detailed running status during failure & has fault automatic reset function
Individualized function	High performance	Can control the asynchronous motor and synchronous motor based on the high-performance current vector control technology
	Non-stop when instantaneous power off	The load feedback energy compensates the voltage reduction when instantaneous power off, so that the AC drive can continue to run for a short time
	Virtual IO	Five groups of virtual DI/DO can realize simple logic control
	Timing control	Time range: 0.0min~6500.0min
	Multi-motor switching	2 groups of motor parameters, arbitrary switching between 2 motors
	Communication protocol	Standard MODBUS (RS-485) and optional CANopen communication
	Multiple encoder support	It supports various encoders such as differential encoder, open-collector encoder and also support rotary transformer
Operation	Running command source	Keypad control Terminal control Serial communication control
	Frequency source	Digital setting, analog setting, pulse frequency setting, serial communication setting, multi-step speed setting & simple PLC, PID setting, etc. These frequency settings can be combined & switched in various modes
	Auxiliary frequency source	There are ten auxiliary frequency sources It can implement fine tuning and frequency synthesis
	Input terminal	5 digital input (DI1~DI5), DI5 supports max. 100 kHz high-speed pulse input 1 analog input: AI1: 0~10V or 4~20mA
	Output terminal	1 output (FM), optional for open collector output or high-speed pulse output (0~100kHz) 1 relay output 1 analog output: AO1: 0~10V or 0/4~20mA
Environment	Altitude	Less than 1000m; rises each 1000m, derates 10% to use
	Ambient temperature	- 10℃~ + 40℃ (if 40℃~50℃, please derate to use)
	Humidity	Less than 95%RH, no water condenses
	Storage temperature	- 20℃~ + 60℃

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Wiring Diagram





- Headquarters
- Exported to more than 50 countries

With rich product lines, worldwide sales and service network, EPSIVO can always provide you fast support.

Professional Motor Drive Manufacturer

Epsivo

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