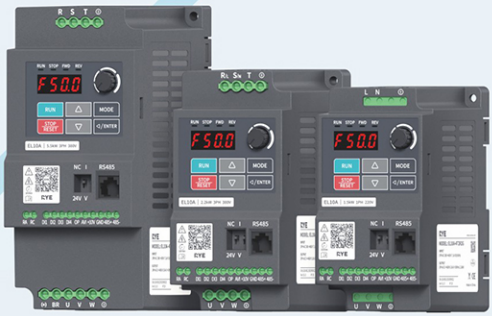
RYE

EL10
UNIVERSAL

SMART INVERTER



COMPANY

INTRODUCTION

CHANGSHA SUNYE ELECTRICAL CO., LTD. (established in 2010) and Shenzhen Sunye Electrical Co., Ltd. (established in 2002) are national high-tech enterprises integrating the R&D, manufacturing, and sales of variable frequency drives, industry-specific all-in-one machines, servo drivers, and new energy products.

The company has purchased a land area of 30 acres in the National High-Tech Industrial Development Zone in Changsha to build its own industrial park with a total construction area of approximately 48,000 square meters. It boasts production lines and workshops covering 10,800 square meters, with an annual output value reaching up to 650 million yuan on average.

Sunye possesses independent intellectual property rights, with products passing national authoritative institution tests and certifications, obtaining multiple software copyrights and intellectual property certificates. Every year, a substantial amount of funds is invested in new technology and product R&D, with several patents or software copyrights being approved. The company owns core platform technologies such as construction hoist drivers, high-performance vector inverters, servos, and permanent magnet synchronous motor controls. Medium and low voltage inverters and servo drives are widely used in industries such as lifting machinery, stone processing, HVAC, machine tools, metal products, wire and cable, plastic packaging, printing and packaging, textile fiber, building materials, metallurgy, coal mines, municipal engineering, automotive, etc.

With the Sunye Industrial Park in Changsha as its R&D and production base and various offices as pivots, the company provides high-quality integrated services to customers across the country. Upholding the philosophy of "innovation, technology, strength," Sunye embodies the corporate spirit of "unity, progressiveness, pragmatism, innovation," adhering to the business principle of "sincerity and precision, coexistence of righteousness and profit," and follows the quality policy of "promoting total quality management and continuous quality improvement, striving for zero defects" to offer industry-leading products to customers.

Certificate of Quality Management system certification(ISO9001)

CE Certification Certificate

Over 100 patents have been granted in total

CONTENTS

More Intelligent, More Boundless

EI10 is a general-purpose compact inverter with high reliability design and rich hardware and software configurations, featuring compactness, ease of use and reliability, which is widely used in food and beverage, logistics, packaging, textile, woodworking machinery and other industries.

Food and beverage

Fans, pumps, dryers, feeding and loading machines, conveyor belts

Logistics packaging

Conveyor lines, conveyor belts, sealing machines, packaging machines, etc.

Textileindustry
Spin

Ventilation and heat exchange fans, conveyors, drum washing machines, dyeing machines, cutting machines, pumps, etc.

Woodworking machinery

Conveyors, edging machines, saws, drills, etc.

PRODUCT ADVANTAGE

1. Nuance and dexterity

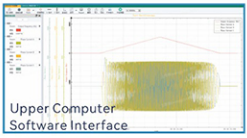
The high power density design is compact and supports DIN-rail/wall mounting with no slit, which is 50% smaller than the previous generation, saving space for panelization and makingfield installation more flexible.

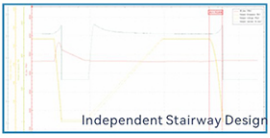
2. Ease of Use

(1) Supports an optional external keyboard for one-click parameter download and fast copying.

(2) Supports monitoring software for upper-level computers, real-time fault monitoring, and operation status monitoring, easy to use for startup debugging.

(3)Supports network design, multi-speed operation, energy-saving operation modes, sleep mode during idle states, and other rich industry-specific features, meeting the application needs of fans, pumps, and other multi-scenario industries.

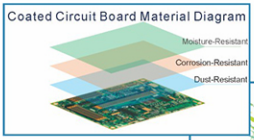


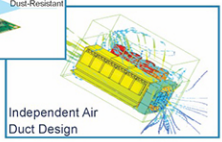


3. Reliability

(1) Standard coated circuit board, optimized independent air duct design, and consideration for component cooling, which improves the product's reliability in harsh environmental conditions;

(2) Wide input voltage range, automatic voltage regulator output adjustment, shock suppression, stallprevention, wave-by-wave current limiting, and non-stop function are some of the special features that make it possible for the inverter to operate stably in poor grid conditions.





Comprehensive Fault Protection			
Undervoltage	Overvoltage	Overcurrent	Output phase loss
IGBT over-emperature	Inverter overload	Motor overload	Line abnormality detection
PID disconnection	Parameter read error	Parameter password error	Communication abnormality
Communication Timeout	DEB abnormality	Excessive slip	Input phase loss
Output phase loss	External terminal emergency stop	External terminal failure	External interruption of operation

TECHNICAL STANDARDS

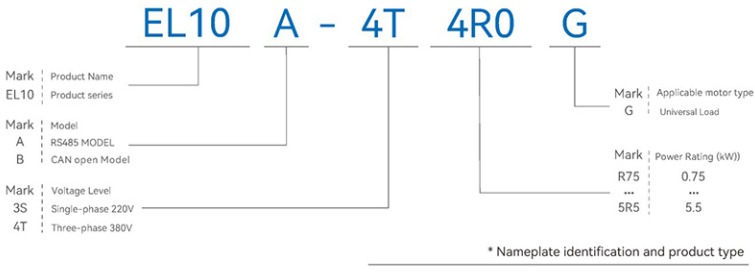
Customized Features

Project	Introduction
Acceleration and deceleration curves	Linear, S-curve, 1.5 power curve, 2 power curve (initial arc can be set separately) Automatic acceleration and deceleration curves
Built-in PID	Built-in PID, for Process Control in Specific Applications
Operation Command Channel	Three Channels: Operation Panel, External Terminals, Communication (Switchable via Parameters)
Frequency Jump Function	Skip parts of the frequency band to avoid resonance points
Multi-speed Operation	Achieve 16-segment speed switching through external terminals
Automatic Voltage Adjustment	The output voltage is automatically kept constant when the grid voltage varies.
Overvoltage and overcurrent stall prevention	Automatic limiting of current and voltage during operation to prevent frequent overcurrent and overvoltage trips
Rapid Current Limiting Function	Minimize overcurrent to the greatest extent, ensuring stable transition of the inverter under extreme conditions
Energy-saving Operation	Energy-saving operation and high work efficiency
Instantaneous Stop Prevention	The inverter can be operated normally for a short period of time by compensating for the voltage reduction in a certain manual manner during an instantaneous power failure.

Usage Environment

Project	Presentation
Usage Location	Indoor, not exposed to direct sunlight, no dust, corrosive, flammable or oil mist,water vapors, drips or salts, etc; Altitude up to 1000 m, above 1000 m with reduced availability
Ambient Temperature	Environmental temperature-10°C to +40°C (tightly side-by-side installation,upper operating temperature limit is 40°C, operation above 40°C requires reduced use, maximum use temperature is 50°C)
Storage Temperature	-20℃~+60℃
Humidity	<95%RH,no water condensation
Vibration	<5.9m/s² (0.6g)
Protection level	IP20
Degree of Environmental Pollution	2
Cooling Method	Forced air cooling

PRODUCT SELECTION



EL10 Inverter Models and Technical Data

• 220V1ϕ

Model EL10A(B)-3SG		R40	R75	1R5	2R2
Power (kW)		0.4	0.75	1.5	2.2
Structure Frame		C0	C0	C0	C1
Output	Rated output capacity (kVA)	1.0	1.6	2.9	4.2
	Rated output current (A)	2.7	4.2	7.5	11.0
	Maximum Output Voltage (V)	Corresponding RV in three phases			
	Output frequency range (Hz)	0.1Hz~599Hz			
	Carrier frequency (kHz)	2kHz~6kHz((default 4kHz)			
Input	Input current (A)	6.5	9.3	15.7	24.0
	Rated voltage, Frequency	Single-phase 200V~240V, 50/60Hz			
	Allowable Input Voltage Range	±10%			
	Allowable power supply frequency variation	±5%			
Cooling Method		Forced cooling			
Weight (kg)		0.6	0.6	0.6	0.8

• 380V3ϕ

Model EL10A(B)-4T__G		R75	1R5	2R2	4R0	5R5
Power (kW)		0.75	1.5	2.2	4.0	5.5
Structure Frame		C1	C1	C1	C2	C2
Output	Rated output capacity (kVA)	2.0	3.3	4.4	7.4	10.4
	Rated output current (A)	2.5	4.2	5.5	9.0	13.0
	Maximum Output Voltage (V)	Corresponding RV in three phases				
	Output frequency range (Hz)	0.1Hz~599Hz				
	Carrier frequency (kHz)	2kHz~6kHz((default 4kHz)				
Input	Input current (A)	3.2	5.0	7.1	10.0	17.0
	Rated voltage, Frequency	Three-phase power supply 380V~460V, 50/60Hz				
	Allowable Input Voltage Range	±10%				
	Allowable power supply frequency variation	±5%				
Cooling Method		Forced cooling				
Weight (kg)		0.8	0.8	0.85	0.85	0.85

TECHNICAL PARAMETER

			Specificities	Description
Control Characteristics			Control method	V/F Control
			Frequency Setting/ Output Frequency Resolution	Panel control: 0.01Hz below 10Hz; 0.1Hz above 10Hz Communication control: 0.01Hz Analog Setting: ±0.1% of Maximum Frequency
			Torque Characteristics	Starting Torque at 5.0Hz meets 150% of Rated Torque
			Overload capacity	Operate at 150% of rated output current for 60 seconds and 180% for 3 seconds
			Frequency Offset	4 points can be set since 0.1~599.0Hz.
			Acceleration and Deceleration Time	0.1~600 seconds (4-stage acceleration/deceleration times can be set independently)
			Stall Prevention	Set at 20~200% of the rated current of the drive according to the motor load characteristics
			DC Braking	Braking current: 0~100% of rated current, braking time: 0~60 seconds
			V/F Curve	Normal V/F curve setting, 1.5 quartile setting, 2 quartile setting
Operation Characteristics	Frequency Setting Signal	Panel operation		Faceplate VR Setting
		External Signal		External Terminals: UP/DOWN Frequency, Jog Operation, AVI/ACI:0~+10VDC/(~20mA Serial Communication Port: Standard Model Supports RS485, Extended Model Supports CANopen
	Operation Setting Signal	Panel operation		Set by RUN, STOP key
		External Signal		Mi1, MI2, MI3 two-stage three-wire control, spot operation, serial communication (RS485)
			Input Terminal Function	16 speeds (including main speed), default speed switching, acceleration/deceleration OFF command, 4-step acceleration/deceleration switching, external counter, fault reset, incremental/ decremental terminal sub-frequency setting, jogging, etc.
			Output Terminal Function	The running indicator, frequency reach indicator, and zero speed indicator are displayed,Counter arrival indication, fault indication, overheat warning, emergency stop, etc.
Interface			Communication/Bus	EL10A supports RS485 communication, EL10B supports CANopen.
			Analog Input	One-way AI
			Digital Input	Four-way DI
			Digital Output	One open relay output normally
			Digital Operation Panel	Includes six function keys, four-digit 7-segment LED display, four-digitLED status indicator, programmable frequency, Display of actual output frequency, output current, parameter settings, parameter lock, and fault indication. Run, stop, reset, forward/reverse can be performed.
			Background Software	Supports inverter parameter operation and virtual monitor function.Graphical monitoring of the inverter's internal status can be realized by means of a virtual monitor.
			Protection Function	Overvoltage, voltage, overcurrent Short circuit before operation, IGBT over temperature, inverter overload, motor overloadDetect line abnormality, PIDdisconnection, parameter reading abnormality, parameter password error, communication abnormality,protective functionCommunication timeout, DEB abnormality, overslip, input phase loss, output phase loss,External terminal emergency stop, external terminal exception, external interrupt operation, etc.

Wiring Diagram for EL10 Rs485 Model

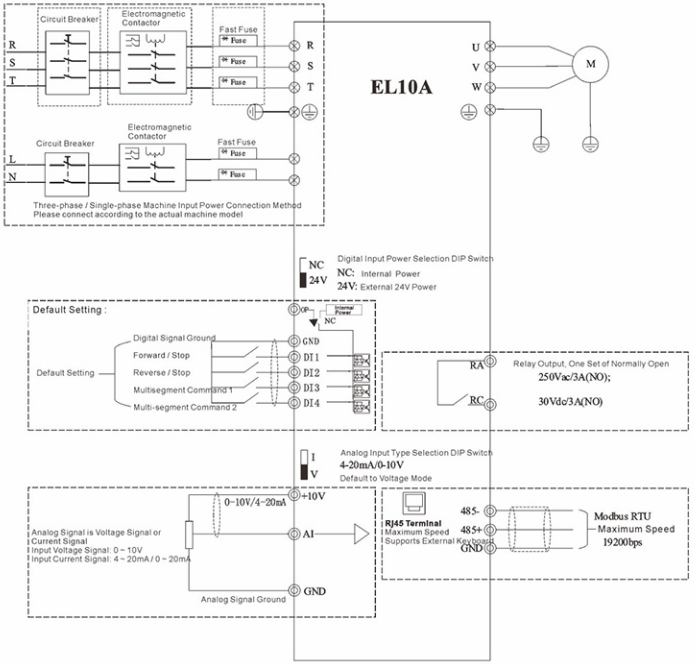


Figure: 3-Phase/Single-Phase Power In terminal wiring diagram

Wiring Diagram for EL10 CANopen Model

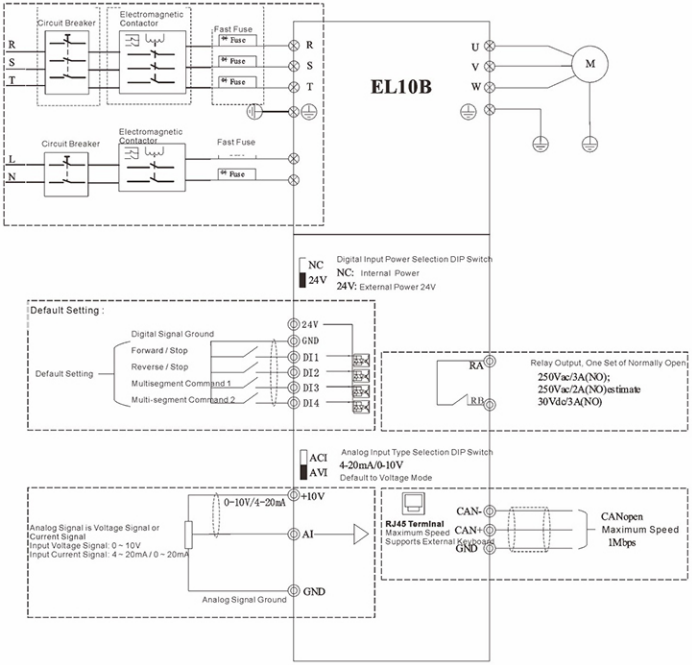
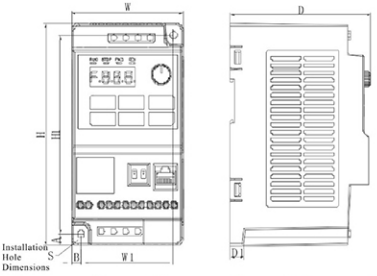


Figure: 3-Phase/Single-Phase Power In terminal wiring diagram

INSTALLATION MODE

Schematic diagram of shape and installation dimensions



	Model	(L) mm	(W) mm	(H) mm	Mounting hole diameter (D) φ mm
Mounting	C0	119.5	57.5	104	4.5
	C1	129.5	59.5	105	5.5
	C2	167.5	72	116	5.5

Product Applications

The Household Air Conditioner Application

Application of the household air conditioner

production line, 150 units are used for each line, mainly for driving electric rollers, fans, belts, etc.

In this project, EI10 inverter is used to control the air conditioner production assembly line. EL10 inverter is compact and easy to debug. Centralized installation is conducive to the control of the on-site operation speed. The fault protection function effectively protects the operation and maintenance of the line, ensuring high-speed and efficient production on site.

The Dispensing Machine Application

Application for dispensing machine in the woodworking industry

Advantage:

1. Precise speed regulation, precisely controlling the stirring frequency of the rubber compound.
2. It features comprehensive protection functions, supporting 30 types of fault detection including overcurrent, overvoltage, overload and phase loss.
3. It is equipped with a standard 485 interface to support rapid networking and communication with PLC, achieving multi-station collaboration and integration.

Material Cart Control System Application

Application of the Material Cart Control System

Advantages:

1. Built-in multi-speed function, enabling quick realization of multi-speed control for the cart.
2. Wide input voltage range: 380V to 460V, automatic voltage regulation output, oscillation suppression, and no stoppage during power interruption.
3. Upper computer monitoring software for real-time fault monitoring and operation status tracking.

Official Public Account

Official Website

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