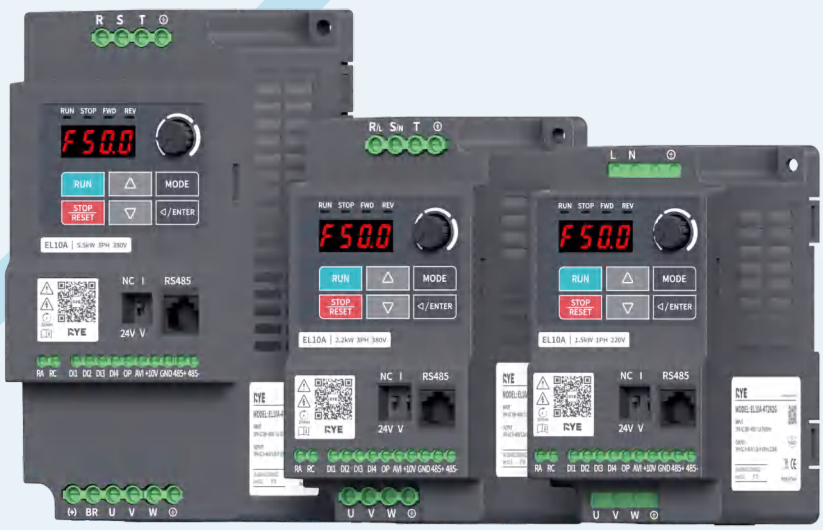
RYE

EL10 UNIVERSAL

SMART INVERTER



COMPANY PROFILE

Standing at the forefront of the industry
Leading the rapid development of China's inverter technology

48000 ²	10800 ²	500 million yuan
Total area	Production lines & workshops	Annual output value

Founded in 2002, Changsha Sunye Electric Co., Ltd. is a national high-tech enterprise integrating the R&D, production, and sales of inverters, industrial all-in-one machines, servo drives, and new energy products. The company purchased 30 acres of land in the Changsha National High-Tech Development Zone to build its own industrial park, with a total construction area of approximately 48,000 square meters and an average annual output value of 500 million yuan. The company uses the Changsha Sunye Industrial Park as its R&D and production base, and utilizes its various offices as a hub to provide high-quality, integrated services to customers worldwide.

Honors

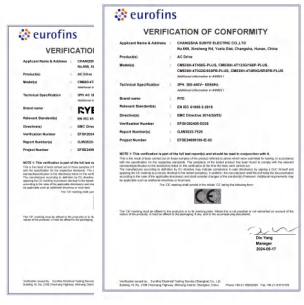
Sunye Electric products have passed the testing and certification of global authoritative organizations and obtained multiple software copyright and intellectual property certificates such as IOS9001, CE, and RoHS.

First recognized as a high-tech enterprise in 2015

Provincial-level enterprise technology center in 2022

National-level "Little Giant" Enterprise

ISO9001 quality system certification



CE certification

Over 100 patents

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

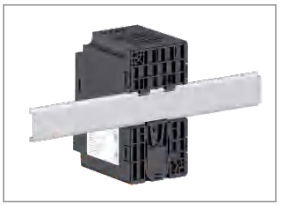
Conveyors, edging machines, saws, drills, etc.

PRODUCT ADVANTAGE

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 cabinet and making field installation more flexible.

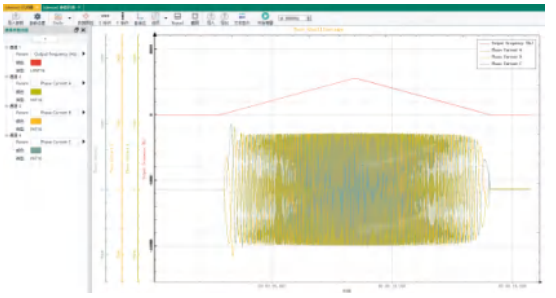
Wall Mounting



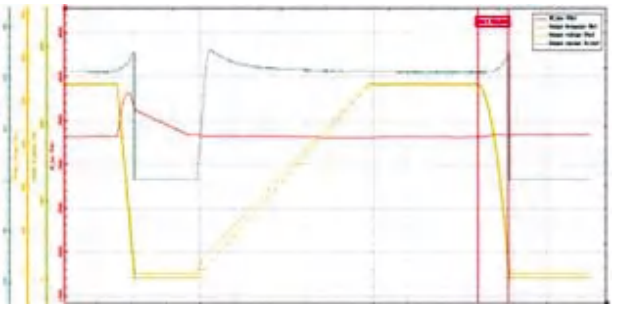
Guide Rail Mounting

Ease Of Use

- Supports an optional external keyboard for one-click parameter download and fast copying.
- Supports monitoring software for upper-level computers, real-time fault monitoring, and operation status monitoring, easy to use for startup debugging.
- 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.



Upper Computer Software Interface

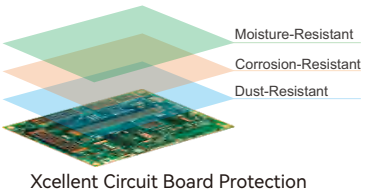


Independent Stairway Design

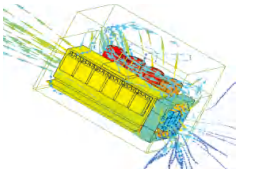
Reliability

- Standard coated circuit board, optimized independent air duct design, and consideration for component cooling, which improves the product's reliability in harsh environmental conditions.
- Wide input voltage range, automatic voltage regulator output adjustment, shock suppression, stall prevention, wave-by-wave current limiting, and non-stop function are some of the special features that make it possible for the VFD 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
.....			

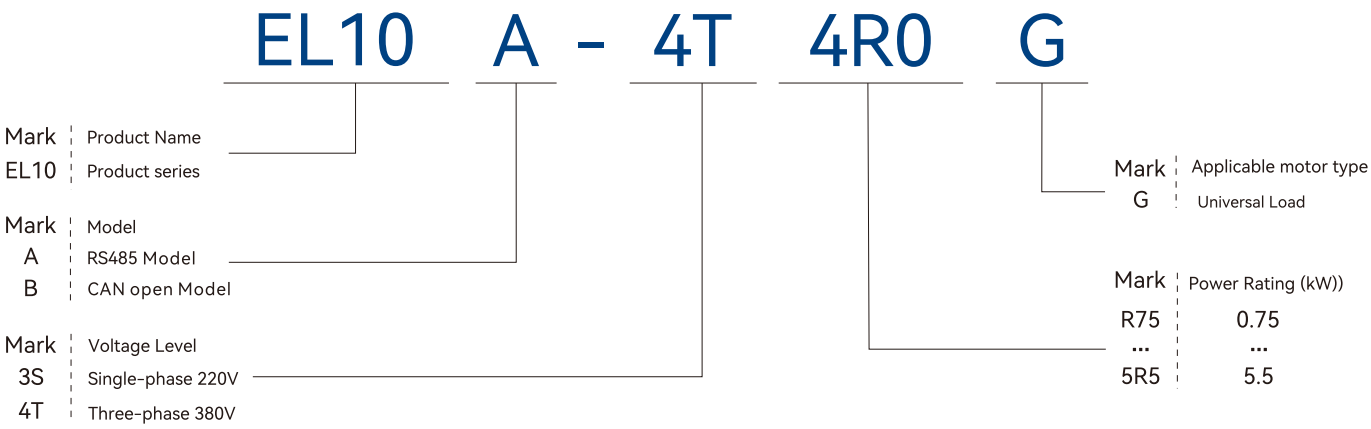


Xcellent Circuit Board Protection



Independent Air Duct Design

PRODUCT SELECTION



* Nameplate identification and product type

EL10 Inverter Models And Specifications

• Model EL10A(B)-3S___G

Structure Frame	Model	Input Voltage (V)	Input Current (A)	Output Current (A)	Power (kW)
C0	R40	Single-phase 220V~240V Range: ±10%	6.5	2.7	0.4
	R75		9.3	4.2	0.75
	1R5		15.7	7.5	1.5
C1	2R2		24.0	11.0	2.2

• Model EL10A(B)-4T___G

Structure Frame	Model	Input Voltage (V)	Input Current (A)	Output Current (A)	Power (kW)
C1	R75	Three-phase 380V~460V Range: ±10%	3.2	2.5	0.75
	1R5		5.0	4.2	1.5
	2R2		7.1	5.5	2.2
C2	4R0		10.0	9.0	4.0
	5R5		17.0	13.0	5.5

EL10 Inverter Technical Parameter

Project		Specification
Control Characteristic	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
	Overload Capacity	Operate at 150% ofrated 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

Project			Specification
Operation Characteristics	Frequency Setting Signal	Panel Operation	Panel VR setting
		External Signal	External terminals: UP/DOWN frequency, jog operation, AV/ACI: 0~+10VDC/0~20mA 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
	Digital Operation Panel		Includes six function keys, four-digit 7-segment LED display, four-digit LED 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			Undervoltage, overvoltage, overcurrent, short circuit before operation, IGBT over temperature, inverter overload, motor overload, detect line abnormality, PID disconnection, parameter reading abnormality, parameter password error, communication abnormality, communication timeout, DEB abnormal overslip, input phase loss, output phase loss, external terminal emergency stop, external terminal exception, external interrupt operation, etc.

Customized Features

Project	Specification
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 frequently 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	Specification
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℃ to +40℃ (tightly side-by-side installation,upper operating temperature limit is 40℃, operation above 40℃requires reduced use, maximum use temperature is 50℃)
Storage Temperature	-20℃~+60℃
Humidity	<95% RH, no water condensation
Vibration	<5.9 m/s^2 (0.6g)
Protection level	IP20
Degree of environmental pollution	2
Cooling method	Forced air cooling

ELECTRICAL WIRING

Wiring Diagram For EL10 Rs485 Model

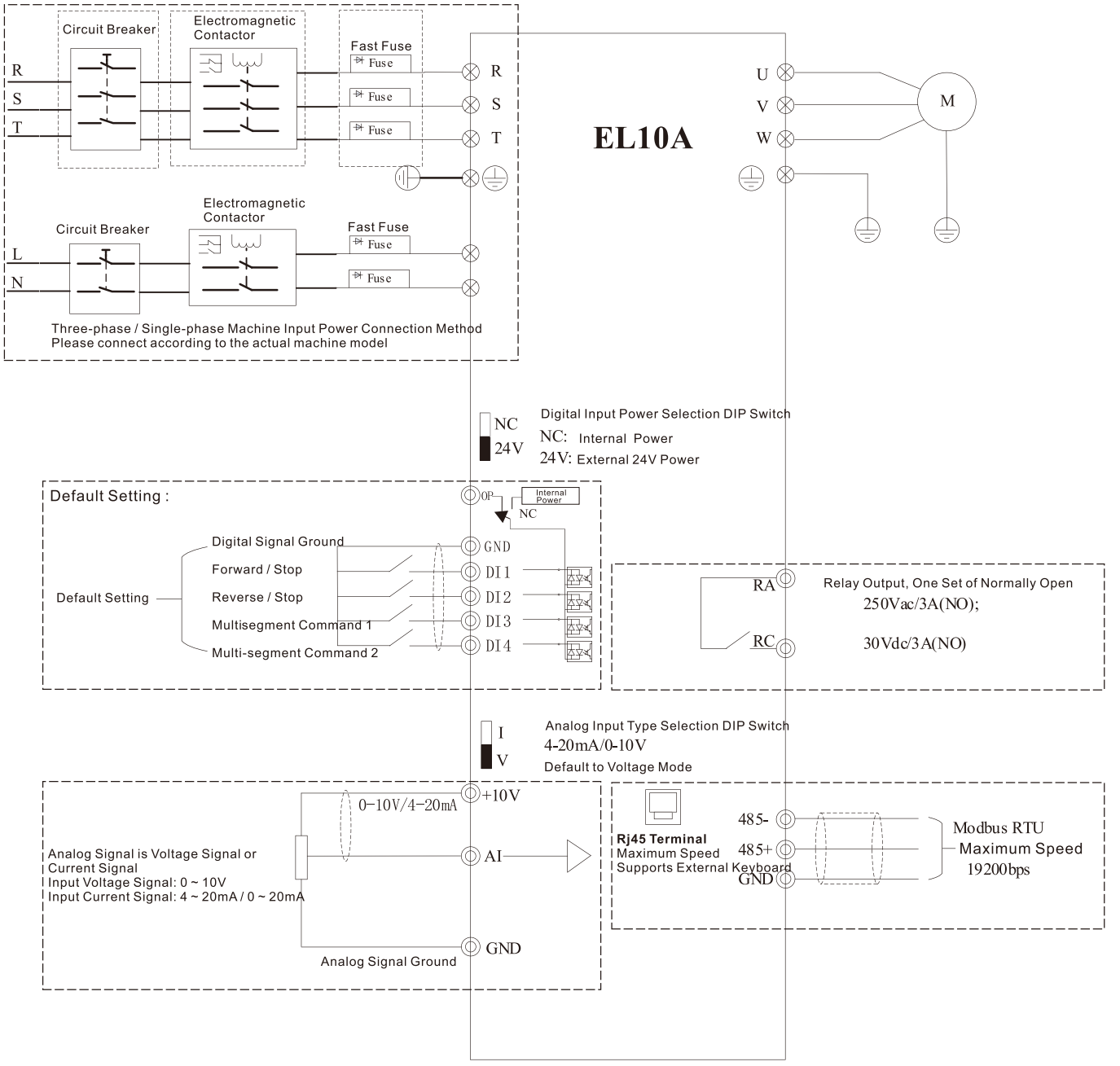


Figure: 3-phase/single-phase power in terminal wiring diagram

Wiring Diagram For EL10 CANopen Model

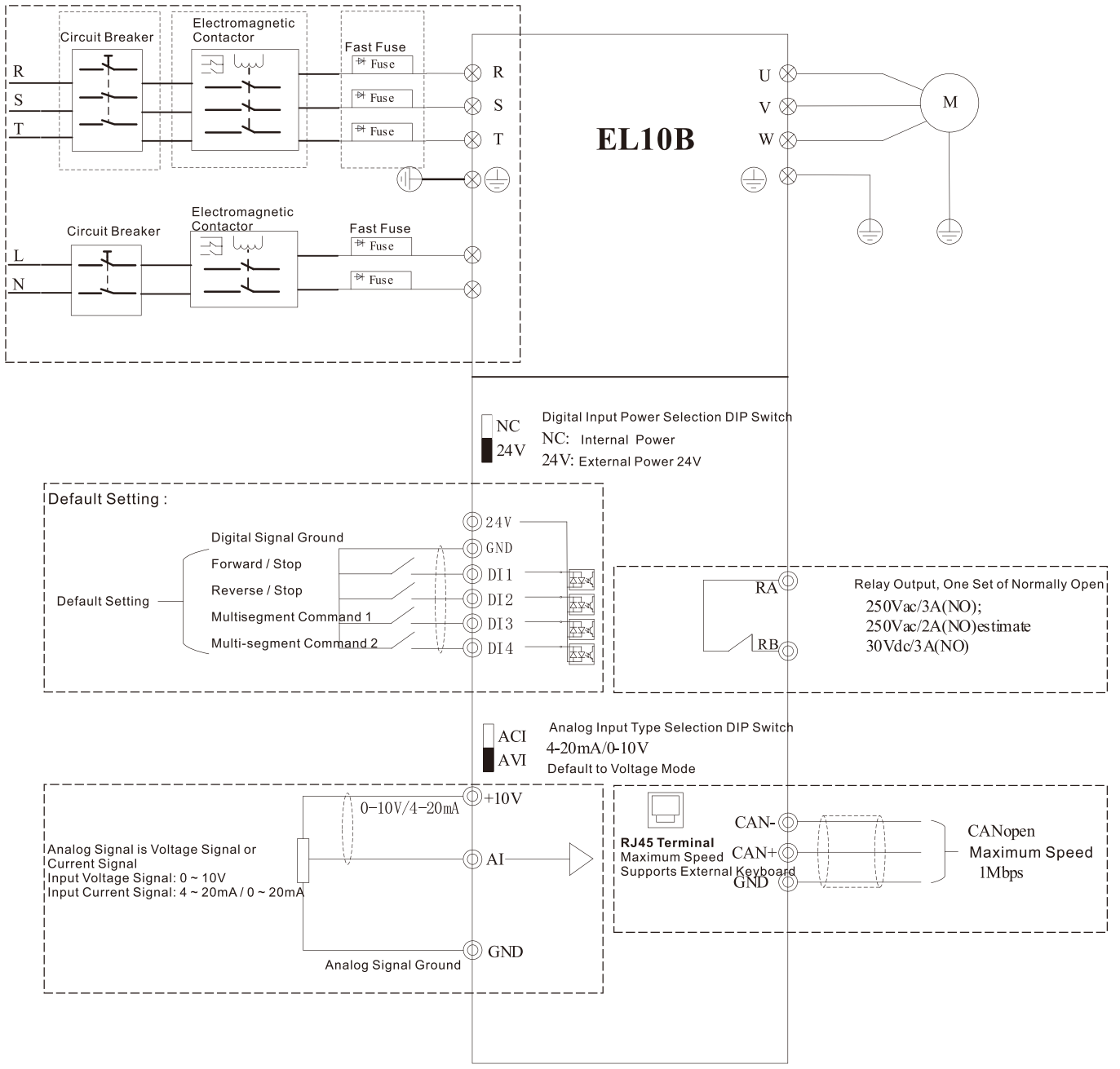
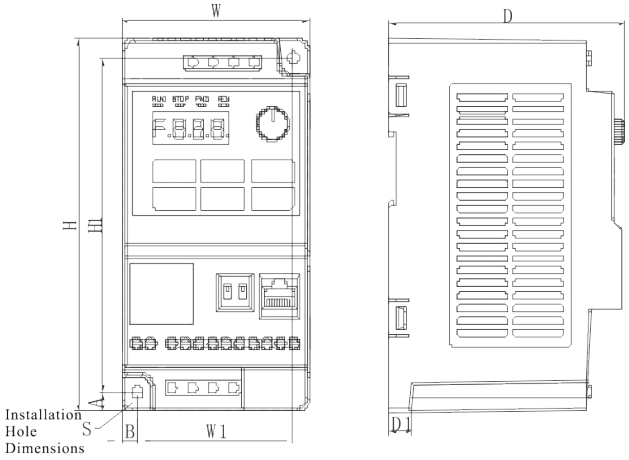


Figure: 3-phase/single-phase power in terminal wiring diagram

INSTALLATION MODE

Schematic Diagram Of Shape And Installation Dimensions



	Model	(D) 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, EL10 VFD is used to control the air conditioner production assembly line. EL10 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

Advantages:
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 over current, over voltage, 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.

Your Trusted Partner In Intelligent Automation Solutions

RYE

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