

# S100(E) Series Compact Open-Loop Vector Frequency Converter

Power Range: 0.4kW-7.5kW





## HUAYUAN GROUP INTRODUCTION

Beijing Huayuan Group Co., Ltd. (referred to as Huayuan Group) was founded in 1983 and is a state-owned enterprise under Xicheng District, Beijing, growing alongside China's reform and opening-up. Since its establishment, the Group has always adhered to the corporate tenet of "Originating from society, serving society" and the spirit of "Perseverance, Unity, Exploration, Struggle". Based in Xicheng and rooted in Beijing, it has gradually developed into a national comprehensive enterprise group. Currently, the Group's total assets exceed 50 billion yuan, with 147 subsidiaries and thousands of employees.



Guided by transformation and upgrading, with "Technology +" serving as the primary development thread, the Group has forged three major business segments: "Smart Technology and Services," "Urban Renewal and Operation," and "Asset Management and Operation." These segments play a pivotal role in enhancing and upgrading the industrial structure within the state-owned assets system, thereby making more substantial contributions to the development of Xicheng District.



## HUAYUAN ELECTRIC INTRODUCTION

Huayuan Electric Co., Ltd. is a holding subsidiary of Beijing Huayuan Group. It focuses on R&D, production, and sales of industrial automation control products, committing to becoming an internationally competitive provider of products and solutions in the industrial automation field, and a reliable industrial partner creating continuous value for users.

As a new force of Huayuan Group in high-tech fields, Huayuan Electric has upheld the Group's spirit of "Perseverance, Unity, Exploration, Struggle" since its establishment, taking the mission of advancing national industrial automation, insisting on independent intellectual property design and development, deeply cultivating the domestic market, establishing its brand in the industry, and actively deploying in international markets.



State-owned Holding



Registered Capital: 100  
Million Yuan



300+ Partners

# CERTIFICATE APTITUDE

60+

Appearance  
Patents

40+

Utility Model  
Patents

20+

Invention Patents

10+

Software  
Copyrights

With continuously improving technical strength and innovation, Huayuan Electric has continuously obtained the National High-Tech Enterprise Certification, developing steadily in intelligent control and industrial automation. The company strictly implements the ISO quality management system to ensure high-quality products and services, and has passed SGS international certification, further proving compliance with international standards. Multiple authoritative certifications demonstrate Huayuan Electric's professional strength and quality commitment, providing reliable solutions for customers.



# R&D TEAM

Huayuan Electric has always regarded its research and development (R&D) capabilities as its core competitiveness. The size of the company's R&D team accounts for more than 30% of the total workforce. Composed of over 50 elites with bachelor's and master's degrees, the team has an average industry experience of more than 8 years, integrating innovative vitality and practical wisdom. Adhering to the design concepts of standardization and modularization, it uses a fully digital design platform and finite element simulation, and has mastered the core control technology of motor drive. Anchored by data and guided by customer needs, the R&D team of Huayuan continuously promotes the improvement of product performance.

# S100

## Series Compact Open-Loop Vector Frequency Converter

Aiming at low-power and compact drive needs in industrial automation, Huayuan Electric launches the S100 Series Compact Universal Frequency Converter.

Supports single-phase 220V and three-phase 380V input, with a power range of 0.4kW~7.5kW, suitable for fans, pumps, packaging machinery, etc. The product has passed CE international certification, providing efficient industrial drive solutions with high reliability and international quality.

Supports Synchronous/  
Asynchronous Motor Control

Complete Protection  
Functions

Rich I/O Functions

Safe and Reliable

Book-type Design, High  
Space Utilization

Fully Independent Air Duct  
Design

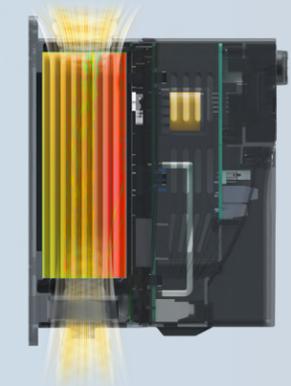


## PRODUCT FEATURES

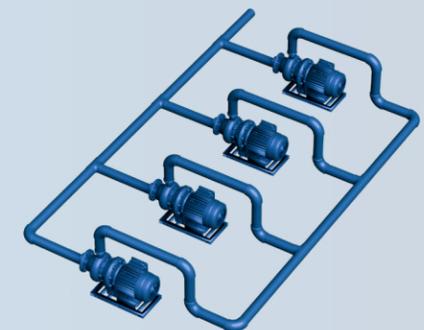
The S100(E) series adopts a narrow book-type design with a slim body, supporting close side-by-side installation to help miniaturize control cabinets and efficiently utilize space.



Fully independent air ducts truly isolate electrical and heat dissipation channels, ensuring long-term reliable operation in harsh environments.



Built-in integrated multi-pump function, supporting up to "3+1" pump controls at most, greatly simplifying water supply control system integration.



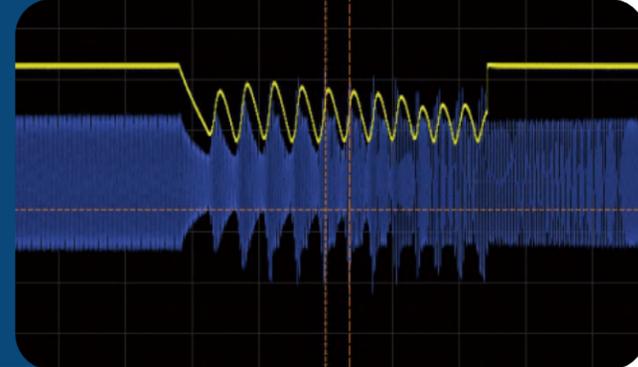
## Fire Mode

Built-in fire function ensures continuous operation of critical equipment in emergencies like fires.



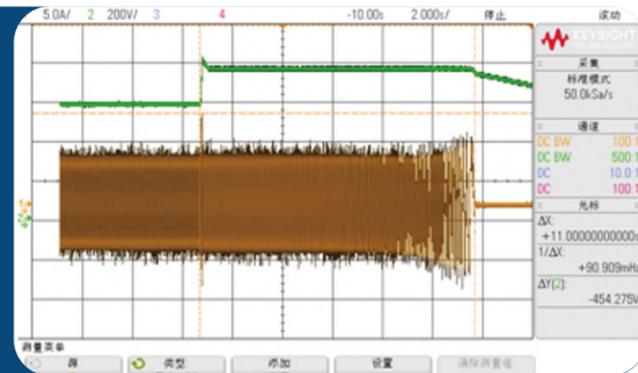
## Instant Power Failure Function

The inverter can maintain normal operation for a period without shutdown when power is suddenly cut off, especially suitable for high-continuity equipment operation scenarios.

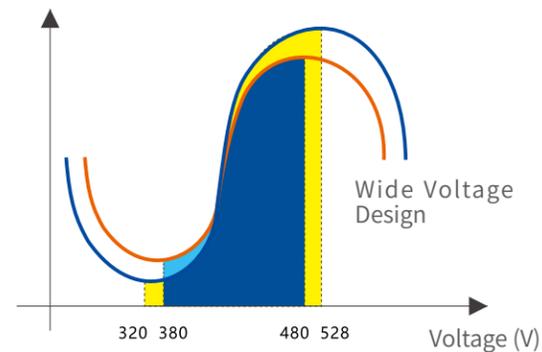


## Excellent Overvoltage Suppression

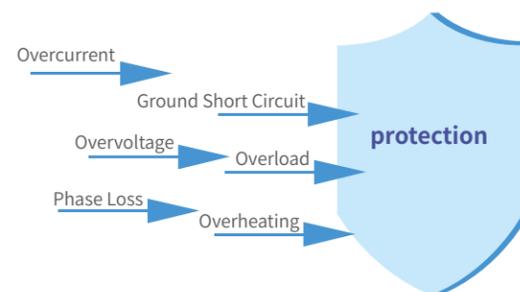
Effectively handles voltage surges during eccentric operation and deceleration, ensuring stable operation under such conditions.



» Wide Voltage Input Range



» Rich protection functions effectively ensure product safety and stability



# INDUSTRY APPLICATIONS

Widely used in small mechanical equipment such as wood carving, metal processing, food packaging, transmission, automated production lines, and centrifuges.



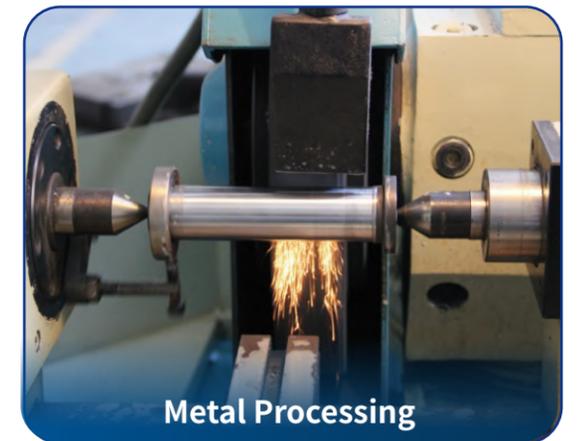
Automated Transfer



Textile



Woodworking



Metal Processing

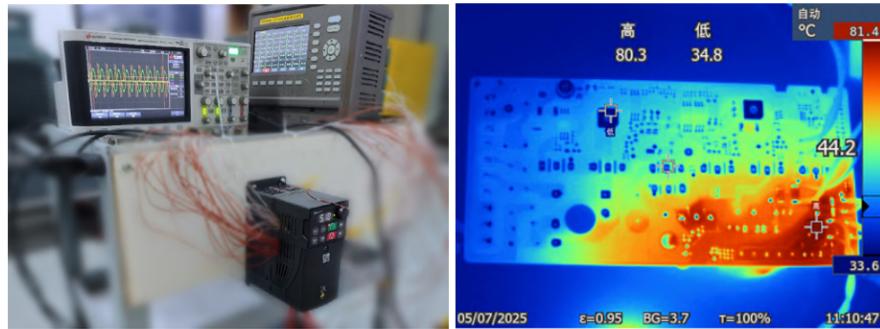


Fan



Water Pump

# HIGH RELIABILITY

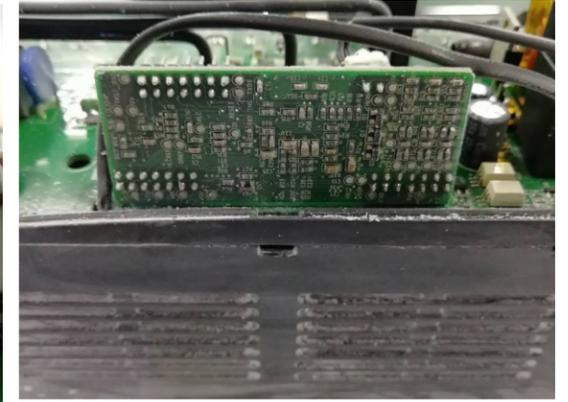


Whole Machine Temperature Rise Testing

Environmental Testing



Dust Testing



Third-party Vibration Test



EMC Testing



Safety Testing

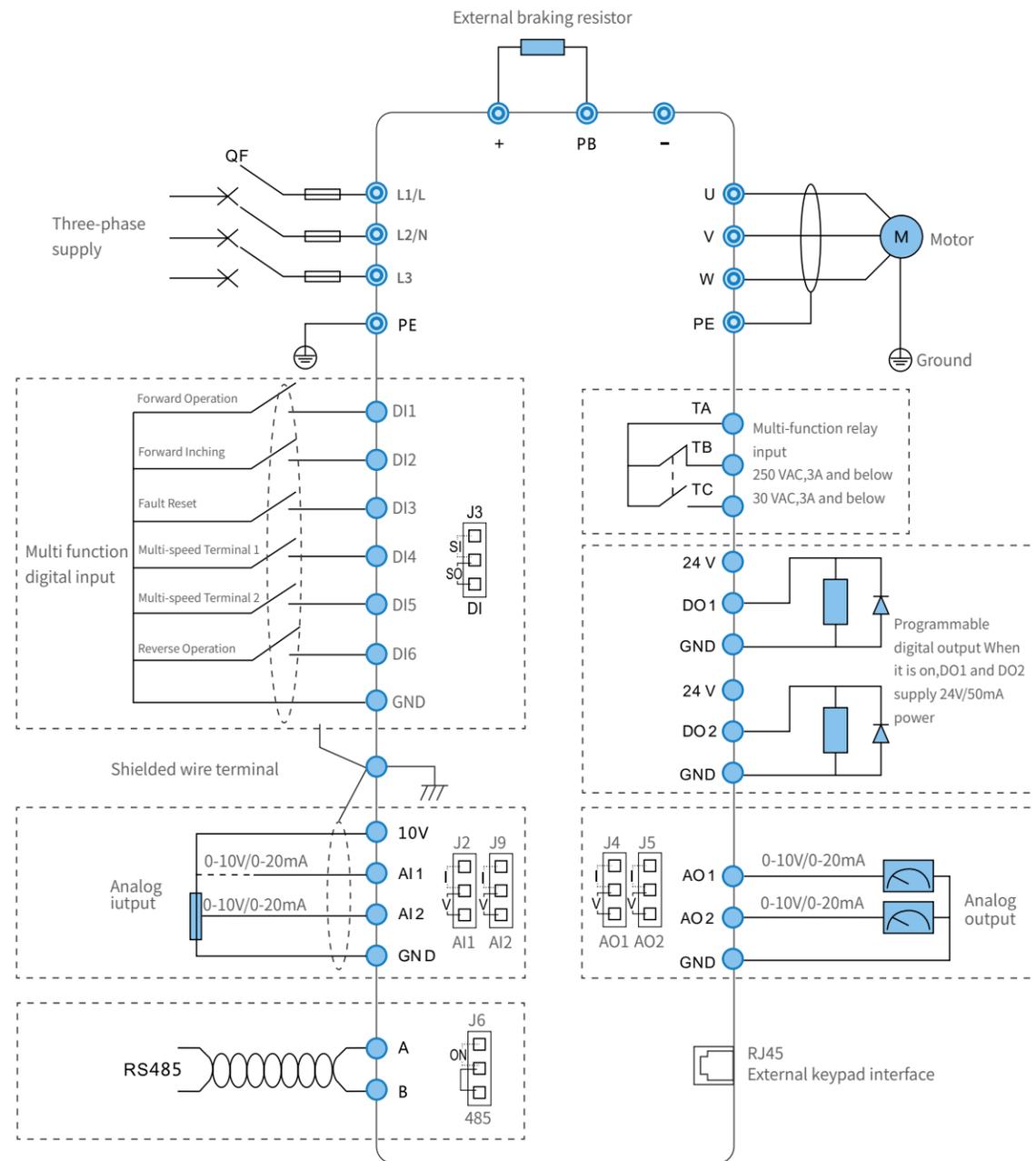


## Product Testing Items and Processes





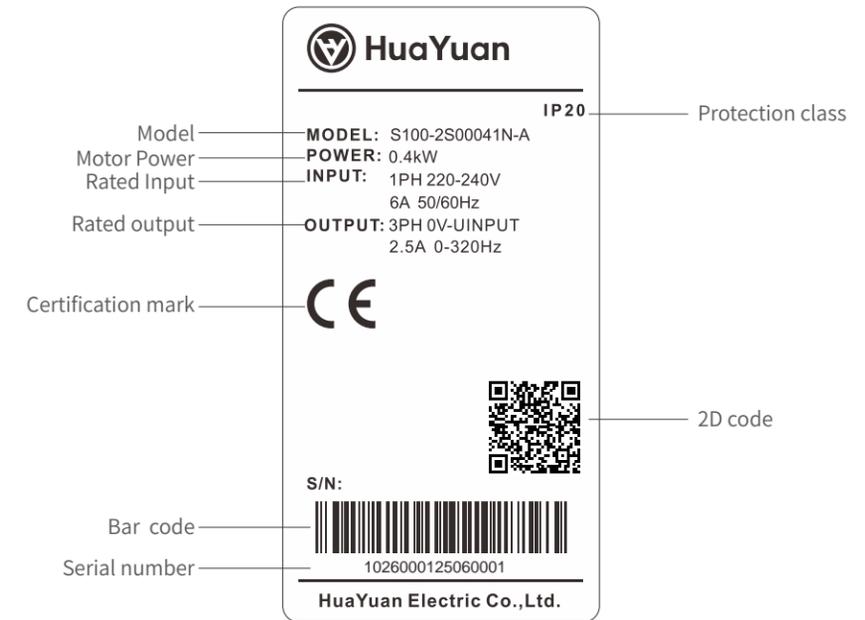
# System wiring diagram



### Remark:

- Jumper J2: AI Analog, Pins 2-3 for Voltage (V), Pins 1-2 for Current (I)
- Jumper J9: AI Analog, Pins 2-3 for Voltage (V), Pins 1-2 for Current (I)
- Jumper J4: AO Analog, Pins 2-3 for Voltage (V), Pins 1-2 for Current (I)
- Jumper J5: AO Analog, Pins 2-3 for Voltage (V), Pins 1-2 for Current (I)
- Jumper J3: DI Digital Input, Pins 2-3 Sink Type, Pins 1-2 Source Type
- Jumper J6: RS485 Terminal Resistor, Pins 2-3 Unconnected, Pins 1-2 120Ω

# Product nameplate description



# Product model description

**S100(E)-2S00041N-A**

① ② ③ ④ ⑤ ⑥ ⑦

- |   |   |   |   |
|---|---|---|---|
| ① Serial number<br>S100: Synchronous Motor<br>S100E: Asynchronous Motor | ② Voltage class<br>2: 220V<br>4: 380V     | ③ Phase number<br>S: Single<br>T: Three                   | ④ Power level(kW)<br>0004: 0.4kW<br>0007: 0.75kW<br>0015: 1.5kW |
| ⑤ Power Class<br>1: <10kW<br>2: 10~99kW<br>3: 100~999kW                 | ⑥ Applicable Motor Type<br>N: Normal Duty | ⑦ Structural Frame<br>A: size A<br>B: size B<br>C: size C |   |

# TECHNICAL SPECIFICATIONS

Item		Specifications		
Input	Rated Voltage/Frequency	2S: 200 - 240V, 50/60 Hz		
		4T: 380-480V, 50/60 Hz		
	Allowable Voltage Fluctuation	Unbalance <3%; Frequency Range: 47-63Hz		
Output	Output Voltage	0-INPUT		
	Output Frequency	0-320Hz (Low Speed Mode - Default)/ 0-3200Hz (High Speed Mode)		
Control feature	Overload Capacity	N: 150%-60s; 180%-3s; 200%-0.5s		
	Control Mode	V/F Control, Open-Loop Vector Control (SVC)		
	Starting Torque	0.25Hz 150% (SVC)		
	Speed Regulation Range	1:100 (V/F) ; 1:200 (SVC)		
	Speed Stability Accuracy	≤ ±0.5% (SVC)		
	Speed Fluctuation	≤ ±0.5% (SVC)		
	Torque Response	≤ 20ms (SVC)		
	Torque Control Accuracy	SVC: ±5%(>=5.00Hz)		
	Frequency Accuracy	Low-Frequency Operation Mode	High-Frequency Operation Mode	
		Digital Setting: 0.01Hz Analog Setting: Max Frequency ×0.2%	Digital Setting: 0.1Hz Analog Setting: Max Frequency ×0.2%	
	Frequency Resolution	0.01Hz	0.1Hz	
	Modulation Mode	SVPWM		
	Carrier Frequency	0.5-16kHz, adjusted by model		
	Automatic Carrier Adjustment	When enabled, the inverter adjusts carrier frequency according to internal temperature.		
	Torque Boost	Manual torque boost 0.1%-30.0% in V/F control mode		
	Torque Curve	0: Linear V/F	5: 1.6 - power V/F	
		1: Multi - point V/F	6: 1.8 - power V/F	
2: Square V/F, 1.2 - power V/F		7: V/F complete separation mode		
4: 1.4 - power V/F		8: V/F semi - separation mode		
Acceleration/Deceleration Time	0-6500.0s, linear or S-curve mode, 4 sets optional			
Basic Functions	Jog Function	Jog frequency range: 0.00-max frequency		
		Jog acceleration/deceleration time: 0.1-6500.0s		
	Simple PLC, Multi-speed	Built-in PLC for 16-speed operation		

Item		Specifications	
Basic Functions	Internal PID	Easy closed-loop control	
	Sleep Wake-up	Process PID sleep/wake-up function	
	Torque Limiting	Limit torque during speed control, avoid overcurrent alarms	
	DC Braking	DC Braking Start Frequency:0.00 - Maximum Set Frequency	
		DC Braking Time:0.01 - 30.00s (0.0: No Action)	
		DC Braking Current:0.0 - 100.0% Inverter Rated Current	
	Automatic Voltage Regulation (AVR)	Maintain output voltage constant when input voltage deviates from rated value, operate when input voltage > rated value	
	Automatic Current Limiting	Control output current, prevent overcurrent faults, ensure uninterrupted operation	
	Overvoltage Stall Control	Suppress DC bus overvoltage	
	MODBUS Communication	Standard protocol, quick connection to peripherals	
Special functions	Binding Function	Bind operation command & frequency input channels, no extra parameters	
	Input Terminal Leakage/ Source Selection	Jumper select leakage/source for DI1-DI6, fit various scenarios	
	Multi-segment AI Curve Correction	Set AI curve with 4 points, flexible correction	
	Dual Motor Parameters	Store two sets of motor parameters, switch control for two motors	
	Virtual I/O Port	5 virtual DI/DO, enable complex logic control	
	User-defined Parameter Group	Summarize parameters to P17, easy viewing/modification	
	Operation & Running	Command Source Channel	Keyboard/external terminal/communication setting, freely switch
Frequency Source Channel		Digital/analog/multi-speed/communication setting, multiple options	
Input Terminals		6 digital inputs (DI1-DI6, leakage/source selectable) DI6 high-speed pulse input (24V, 100kHz)	
		2 analog inputs (0-10V/0-20mA optional) 2 analog AI as digital DI	
		1 relay output (250VAC/3A, 30VDC/3A)	
Output Terminals		DO1 high-speed pulse output (24V, 100kHz)	
	2 analog outputs (0-10V/0-20mA optional)		
Others	Protection Class	IP20	
	Cooling Method	Forced Air Cooling	

## Technical parameters

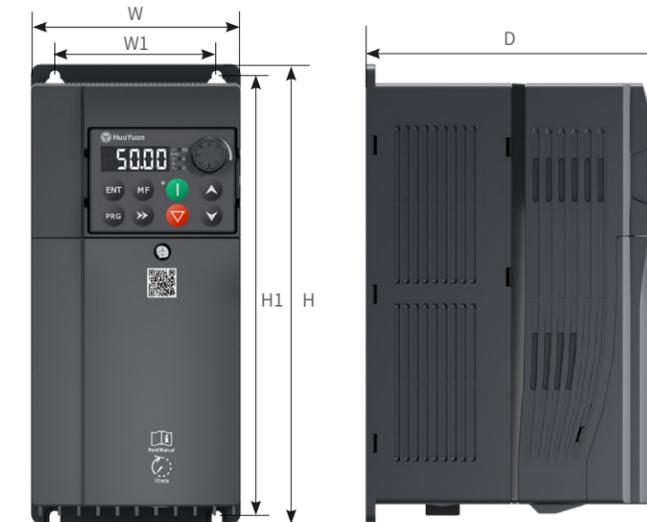
Model	Size	Braking unit	Rated output voltage (VAC)	Rated output current (A)	Rated capacity(kVA)	Adaptive motor (kW)
S100-2S00041N-A	A	Built-in	220	2.5	0.9	0.4
S100-2S00071N-A	A	Built-in	220	4	1.5	0.75
S100-2S00151N-A	A	Built-in	220	7	2.8	1.5
S100-4T00071N-A	A	Built-in	380	2.5	1.7	0.75
S100-4T00151N-A	A	Built-in	380	4	2.6	1.5
S100-4T00221N-A	A	Built-in	380	5.2	3.4	2.2
S100-4T00401N-B	B	Built-in	380	10	5.9	4
S100-2S00221N-C	C	Built-in	220	10	4.1	2.2
S100-2S00401N-C	C	Built-in	220	17	6.4	4
S100-4T00551N-C	C	Built-in	380	13	8.6	5.5
S100-4T00751N-C	C	Built-in	380	17	11.2	7.5

## Mounting dimensions of inverter



Mounting dimension of size A

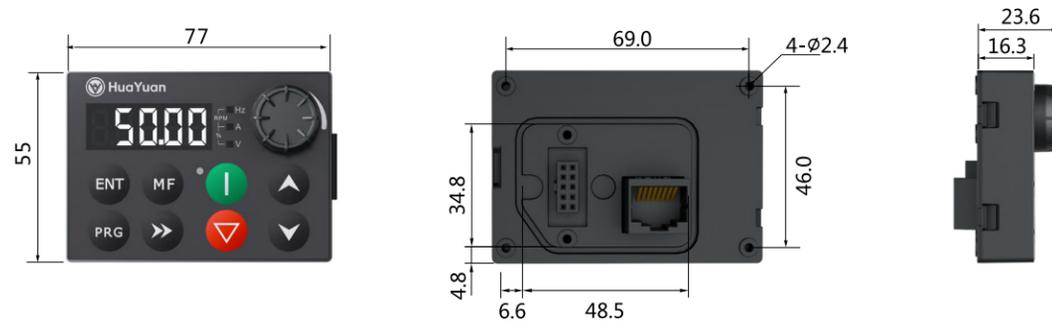
Mounting dimension of size B



Mounting dimension of size C

## Mounting dimensions of keypad

键盘安装尺寸示意图



键盘底座安装尺寸示意图



Size	Model	W1 (mm)	W (mm)	H1 (mm)	H (mm)	D (mm)	Applicable screw
A	S100-2S00041N-A	60	81.5	171.5	182.5	145	M5
	S100-2S00071N-A						
	S100-2S00151N-A						
	S100-4T00071N-A						
	S100-4T00151N-A						
S100-4T00221N-A							
B	S100-4T00401N-B	80	100	189	200	145	
C	S100-2S00221N-C	85	110	230	240	158	
	S100-2S00401N-C						
	S100-4T00551N-C						
	S100-4T00751N-C						



Official Website



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