

M100 Series Dust-proof Open-loop Vector Inverter

Power arrange: 0.4kW~5.5kW



Official website

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202410(V1.0)

HuaYuan Electric

HuaYuan Electric Co., Ltd. is a holding subsidiary of Beijing HuaYuan Group. HuaYuan Electric focuses on the research and development, production, and sales of industrial automation control products, and is committed to becoming an internationally competitive provider of products and solutions in the field of industrial automation.

As a new force in the high-tech field of HuaYuan Group, HuaYuan Electric has adhered to the group's corporate spirit of "resilience, unity, exploration, and struggle" since its establishment. Its mission is to promote the process of national industrial automation, adhere to the design and development of independent intellectual property rights, deeply cultivate and refine in the domestic market, establish a brand in the industry, and actively layout in the international market. Aspire to become a reliable industrial partner that continuously creates value for users.

HuaYuan Electric current research and development products include variable frequency drive products, servo drive products, UPS uninterruptible power supply products, which are widely used in machine tools, packaging, textiles, ceramics, mining, food, chemical industry, transmission, data centers, etc.

Since its establishment, HuaYuan Electric has applied for and obtained multiple patents, including nearly 13 invention patents, over 60 design patents, and over 40 utility model patents, fully demonstrating the company's innovation capabilities and providing strong technical support for product promotion.



Product Introduction

The M100 series frequency converter is a protective open-loop vector frequency converter product, mainly used to drive three-phase AC asynchronous motors. It supports V/F control and open-loop vector control in terms of control performance. (M100E is used to drive synchronous machines, and everything else is the same as M100.)

The M100 series can be applied to industries such as food packaging, woodworking carving, automated assembly lines, ceramics, textiles, industrial washing machines, metal processing, fans, and water pumps. It has a high protection level, complete protection functions, excellent performance, and simple debugging.

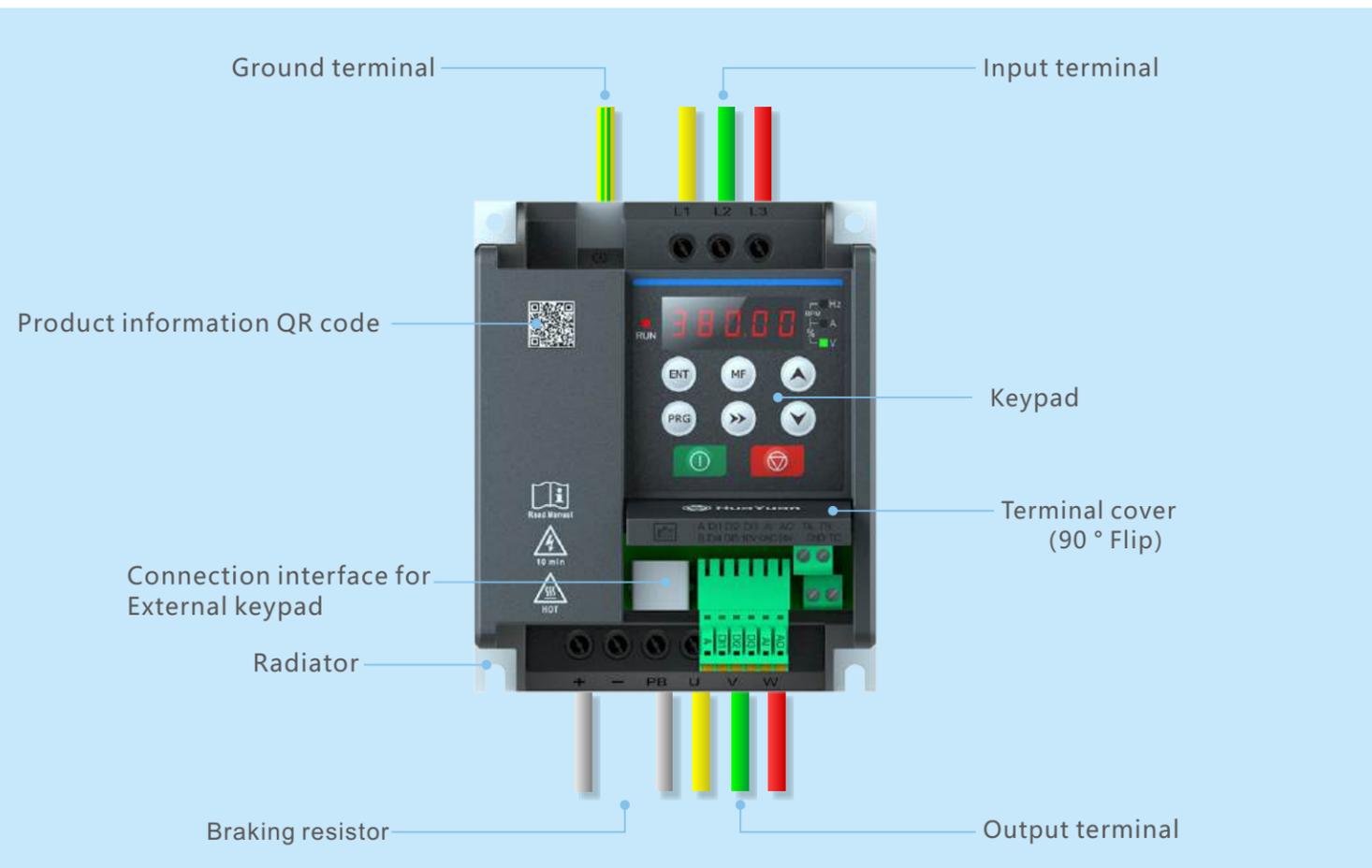
Product development always adheres to the principle of putting people first, providing customers with value for money products, and creating competitive advantages for customers.

The M100 series adopts a one-piece panel and an integrated fixed operation keypad, which provides stronger protection and supports keypad extension. The extension keypad can be optionally equipped with a new generation silicone key keypad for more comfortable operation, bringing customers an unparalleled humanized design experience.

The truly independent air duct design ensures greater reliability of the entire machine.

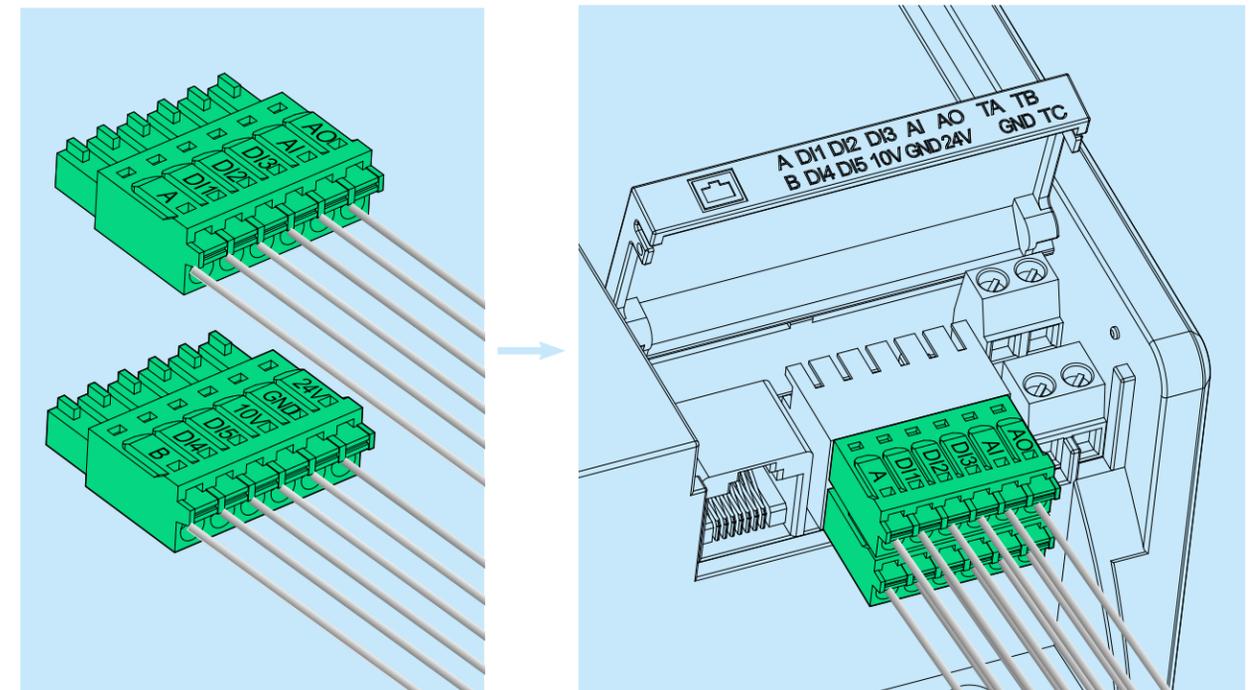


Product Details



Plug and unplug terminal block

Connect the wires according to the symbols on the corresponding terminals, open the wiring cover on the front of the product, and then insert the connected terminals into the terminal base according to the terminal symbols on the wiring cover. This function is easy to wire, simple to operate, and not prone to errors.



Product feature



Excellent control performance

- V/F Control , Open-loop vector Control
- 32-bit high-speed CPU
- 150%-60s Overload ability
- 1Hz provides 150% starting torque
- Powerful suppression function for overvoltage and overcurrent, meeting the requirements of extreme acceleration and deceleration.
- Support controlling synchronous motor



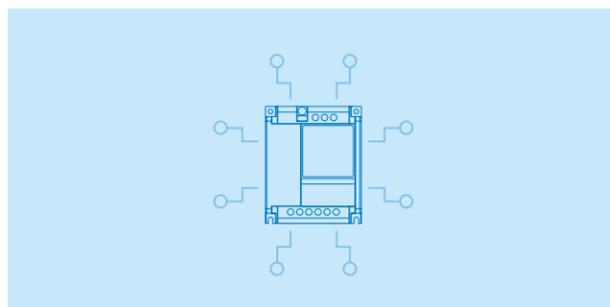
User friendly design

- Up and down, easy wiring
- Flip over terminal cover+ die engraved wiring identification to prevent confusion and loss
- Cast radiator, wall mounted with high reliability
- Support quick disassembly of fans, easy to maintain
- Wide volume design to meet the size requirements of different installation scenarios



Excellent environmental tolerance performance

- Film covered keypad to prevent dust, oil stains, and other contaminants from entering
- Three proof paint coating for electronic devices to prevent dust impurities and extend their lifespan
- Standard configuration meets IP20, optional NEMA 1 protection level,-- Reduce the impact of dust or water droplets on product lifespan
- Truly independent air duct design, with isolated upper and lower chambers



Rich expansion functions

- Standard 485 interface, supports external keypad
- External brake resistor can be connected
- Can be connected to an external EMI filter
- Can adapt to radiators of different sizes and specifications

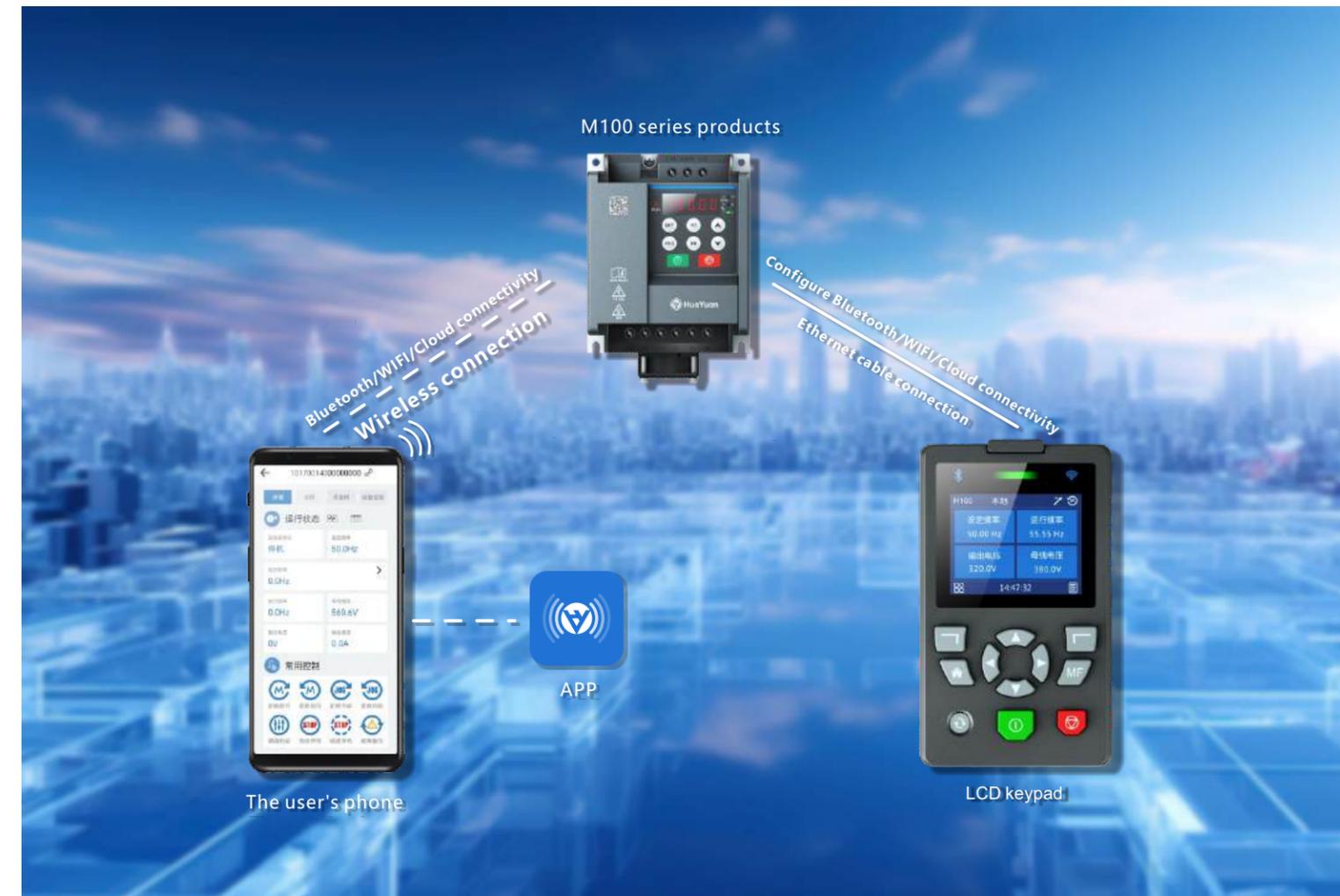
Two types of external keypads can be optionally selected: Dual display keypad or LCD screen keypad



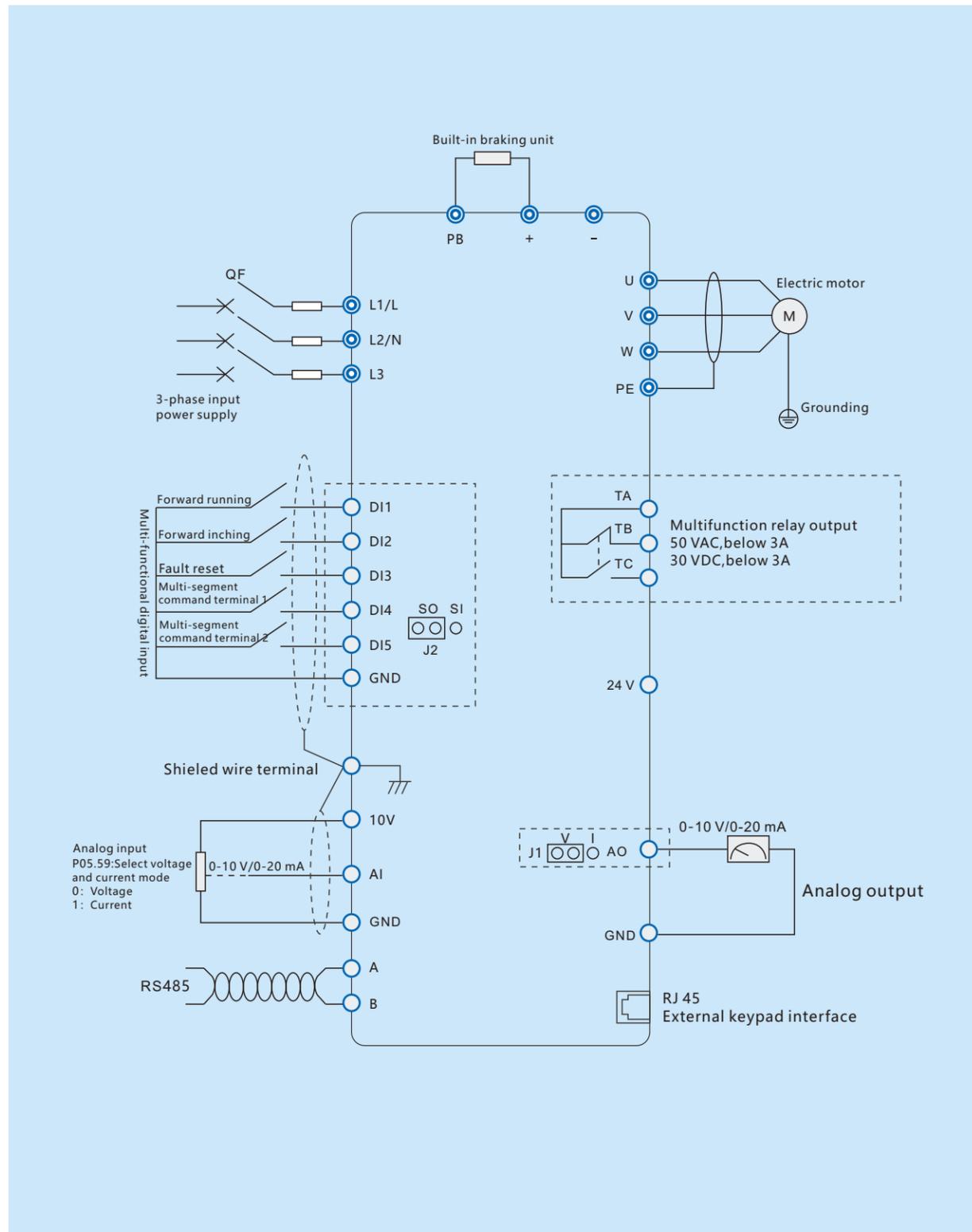
VDP-BT21



VDP-BC41

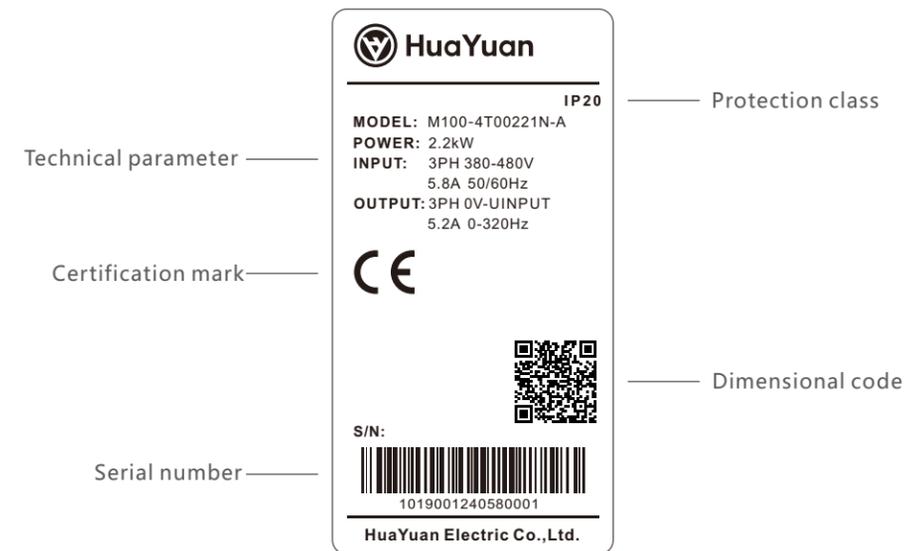


System Wiring Diagram

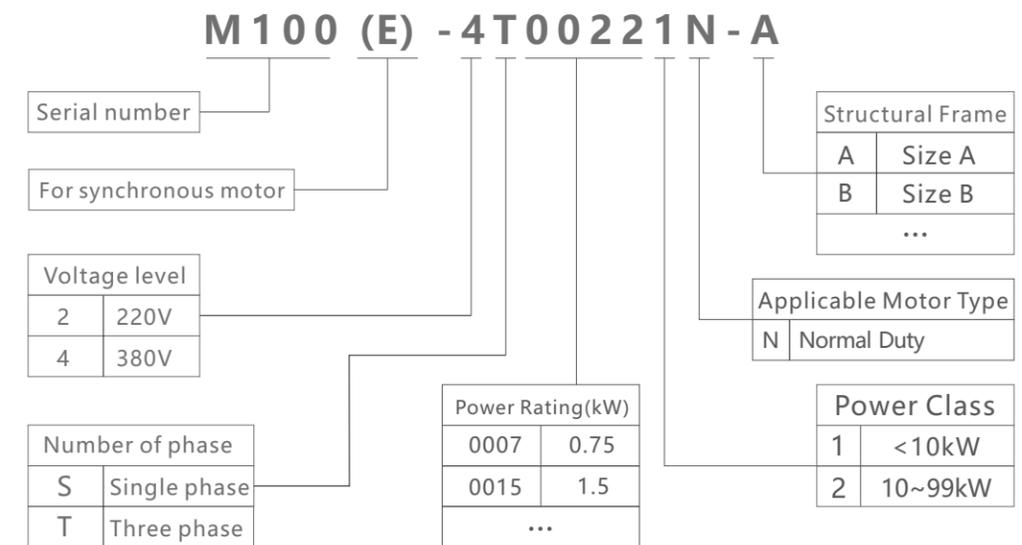


Product Nameplate and Model Descriptions

Descriptions of nameplate contents



Descriptions of product models



Technical Specification Breakdown

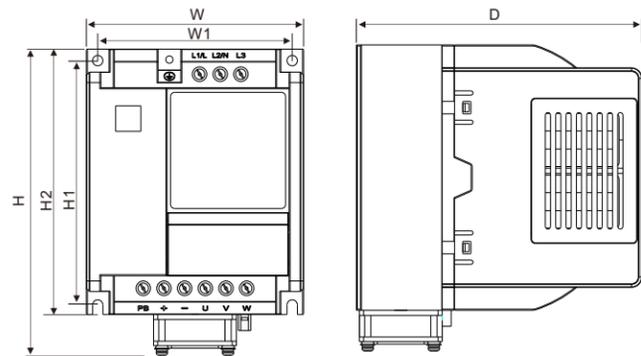
	Item	Specifications	
Input	Rated voltage, frequency	2S: 220 ~ 240V, 4T: 380 ~ 480V, 50/60 Hz	
	Allowable voltage fluctuating range	2S: Fluctuating range 200-253V 4T: Fluctuating range 320-528V; degree of unbalance: <3% Frequency range: 47-63Hz	
Output	Output voltage	0-INPUT	
	Output frequency	0-320 Hz, 0-3200Hz	
	Overload capacity	N: 150% - 60 s; 180% - 3 s; 200% - 0.5 s	
Control feature	Control mode	V/F control, SVC	
	Starting torque	0.25Hz 150% (SVC)	
	Range of speed regulation	1:100 (V/F) ; 1:200 (SVC)	
	Steady speed precision	≤±0.5% (SVC)	
	Speed fluctuation	≤±0.5% (SVC)	
	Torque control accuracy	SVC: ≤±0.5%(≥5.00Hz)	
	Torque response	≤20ms (SVC)	
	Frequency precision	Low frequency operation mode	High frequency operation mode
		Digital setting: 0.01Hz Analog setting: maximum frequency ×0.2%	Digital setting: 0.1Hz Analog setting: maximum frequency ×0.2%
	Frequency resolution	0.01Hz	0.1Hz
	Modulation system	SVPWM	
	Carrier frequency	0.5 - 16kHz , modulated based on mode	
	Auto carrier adjustment	When the function is activated, the inverter can automatically adjust carrier frequency based on the temperature inside.	
	Torque boost	In V/F control mode, the torque can increase by 0.1% -30% manually.	
	Torque curve	0: User customized V/F curve; 1: 2.0 power curve; 2: 1.7 power curve; 3: 1.2 power curve	
Acceleration and deceleration time	0-6500.0s, linear or sigmoid acceleration and deceleration curve mode, optional 4 groups of acceleration and deceleration time		
Inching functions	Frequency range: 0.00-50.00 Hz		
	Acceleration and deceleration time: 0.1-60.0s		
	Optional interval time: 0.0-100.0s		

	Item	Specifications
Basic functions	Simple PLC, multi speeds	Up to 16 speeds can be achieved through built-in PLC function and control terminal functions
	Internal PID	To achieve close-loop control
	Wakeup	Process PID has sleep and wakeup function
	Torque limit	The torque is limited during speed control to prevent frequent over-current alarm
	DC brake	Starting frequency: 0.00- the maximum set frequency
		Time: 0.01 – 30.00s (0.0: not activated) Current: 0.0-100.0% inverter rated current
	Auto voltage regulation (AVR)	When input voltage deviates from the rated value, the function can be used to keep output voltage constant, so AVR is activated in general, especially when input voltage is higher than the rated value
	Auto current-limiting	When the input voltage deviates from the rated voltage, the function can be used to regulate the output voltage, so that AVR should be activated under normal circumstance, especially when the input voltage is higher than the rated voltage
	Over-voltage stalling control	Used to control the voltage of DC bus during the running of the inverter to prevent overvoltage of DC bus
	MODBUS communication	Standard MODBUS communication protocol for rapid communication with peripherals
Special functions	Binding function	Operation command channel is bound with power input channel, without parameter setting
	Input terminal drain/source section	Through jumper terminal, drain or source can be chosen for DI1- DI5 to meet the needs in different cases
	Multi AI curve correction	Up to 4 points can be chosen to set AI curve for flexible and convenient curve correction
	Double motor parameters	Two sets of parameters of asynchronous inverters are stored to achieve the switching function between two different motors
	Virtual I / O port	5 virtual DI/DO ports make complex logic control applications convenient
	Customer-defined parameter set	The customer can choose the required parameter set, sent to P17 as the custom parameter for daily view and modification
Operation and running	Command source channel	Three modes, keypad setting, external terminal setting, communication setting, switchable
	Frequency source channel	Digital setting, analog setting, pulse setting, multi-speed, communication setting etc. for selection
	Input terminal	5 digital input terminals, DI1-DI5, drain and source input can be chosen
		1 analog input terminals AI1:0 – 10V or 0-20 mA can be chosen: 1 analog input terminals AI both can be used as digital input terminal DI
	Output terminal	1 group programmable switch output, the output level is 24 V when open
		1 group programmable relay output, 250 VAC/3 A 30VDC/ 3A 1 group analog output terminals, 0-10 V or 0-20 mA can be chosen

Technical parameters

Modle	Size	Braking unit	Rated Capacity (kVA)	Rated input Current (A)	Rated output Current (A)	Adaptive Motor (kW)
M100-2S00041N-A	A	Built-in	0.9	6	2.5	0.4
M100-2S00071N-A	A	Built-in	1.5	9.5	4	0.75
M100-2S00151N-A	A	Built-in	2.8	14	6.5	1.5
M100-4T00071N-A	A	Built-in	1.7	3.2	2.5	0.75
M100-4T00151N-A	A	Built-in	2.6	5.0	4.0	1.5
M100-4T00221N-A	A	Built-in	3.4	5.8	5.2	2.2
M100-2S00221N-B	B	Built-in	4.1	25	9	2.2
M100-4T00401N-B	B	Built-in	5.9	13	10	4.0
M100-4T00551N-B	B	Built-in	8.6	15	13	5.5

Product Installation Dimensions

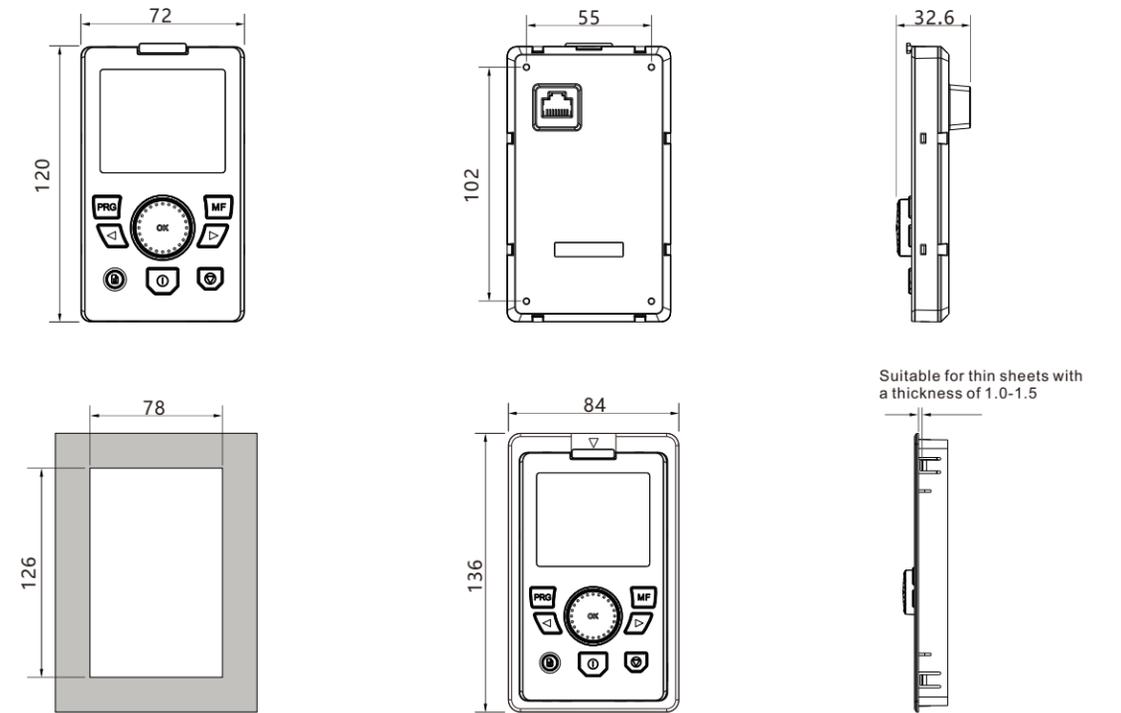


Size	Model	Installation size(mm)		Overall dimension(mm)				Screw size	Torque (kgf·cm)
		W1	H1	W	H	H2	D		
A	M100-2S00041N-A	94	117	105	148	127	138	M4	15±10%
	M100-2S00071N-A								
	M100-2S00151N-A								
	M100-4T00071N-A								
	M100-4T00151N-A								
M100-4T00221N-A									
B	M100-2S00221N-B	129	129	140	161	139	148	M4	15±10%
	M100-4T00401N-B								
	M100-4T00551N-B								

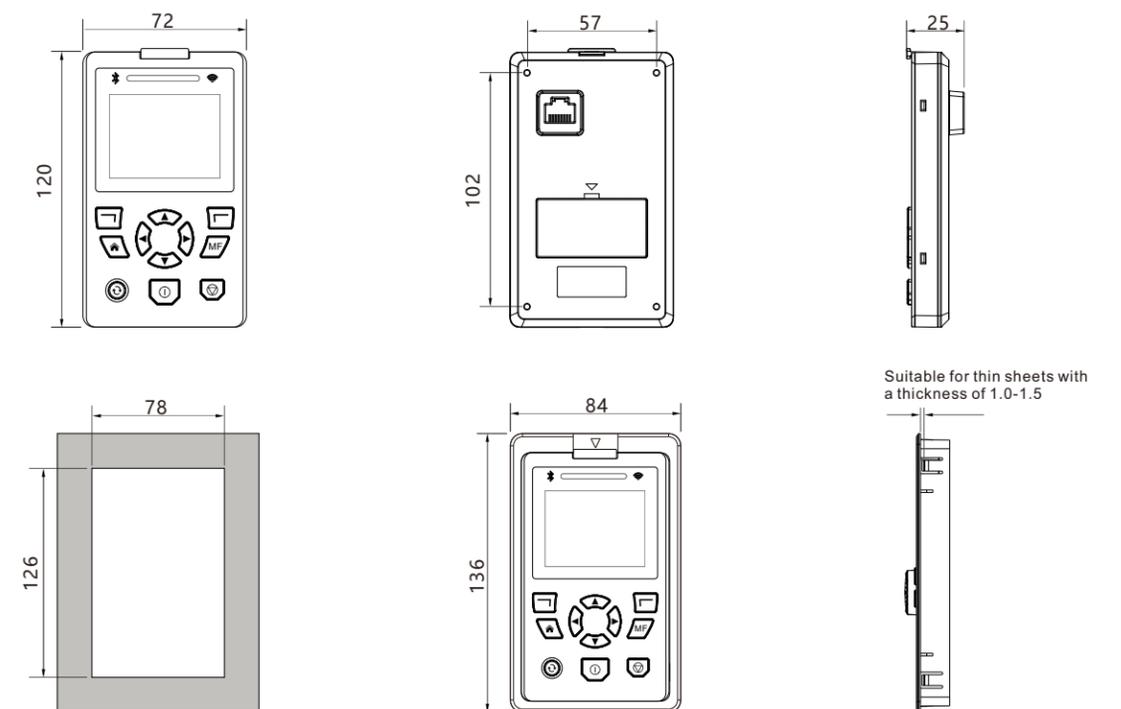
Installation dimensions of external keypad

(Unit:mm)

Double display keypad model: VDP-BT22



LCD keypad model: VDP-BC41



Sales and service network



Tenacity

Unity

Exploration

Struggle

Huayuan Sprit

Vision: To be the globally leading supplier for products of industrial automation and integrated solutions!

Mission: Focus on customer demand to create competitive advantage for customer
Expand employee potential to create development space for employee.

Spirit: Tenacity, unity, exploration, struggle

Core values: Be responsible, cooperative, innovative, and win-win.