

HICONICS

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Drive Efficiency. Link Reliability



HCM100 Series Low Voltage Drive

Hiconics Eco-Energy Drive Technology CO., Ltd.

Web: www.hiconics-global.com

Version: V12024.2.24

Industrial VFD Specialist

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More Compact, More Powerful

HCM100 is a general-purpose compact VFD with high reliability and rich hardware and software configurations. It is compact, user-friendly, and reliable, making it widely applicable in food and beverage, logistics packaging, spin, and woodworking machinery industries.

Food and beverage

Fan, pump, dryer, feeder, conveyor belt

Spin

Fan for ventilation and heat exchange, conveyor, drum washer, dyeing machine, cutting machine, pump, etc.

Logistics packaging

Conveyor line, conveyor belt, edge bander, packaging machine, etc.

Woodworking machinery

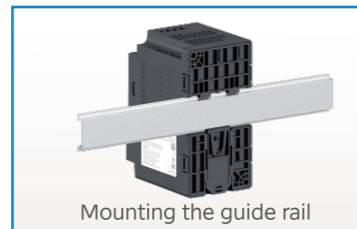
Conveyor, edge bander, saw, drill bit, etc.

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Product advantage

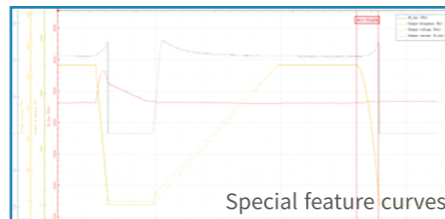
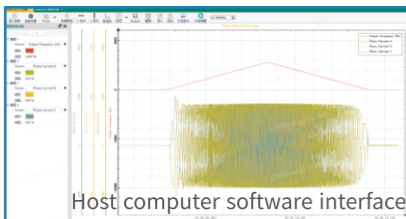
1. Compact

High power density with a compact design, supports seamless installation on guide rails or wall mounting; 50% more compact than the last generation, saving panel space and making on-site installation more flexible;



2. Ease of Use

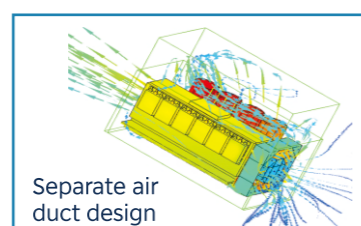
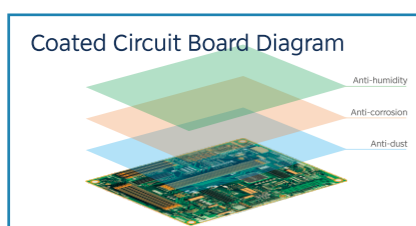
- 1) Supports external operating panel options. Supports one-click parameter download and quick copying;
- 2) Supports host computer monitoring software for real-time error and operating state monitoring. Simple and user-friendly for startup and commissioning;
- 3) Supports networking design, multi-speed running, energy conservation modes, sleep mode during idle states, and other industry-specific features, making it suitable for various industrial applications such as fans and pumps.



3. Reliability

- 1) Circuit boards with standard coating, optimised separate air ducts, and effective device heat dissipation collectively enhance product reliability in harsh environmental conditions;
- 2) Wide input voltage range, automatic voltage output regulation, oscillation suppression, stall prevention, wave-by-wave current limiting, uninterrupted operation during power outages, and other features allow VFDs to operate stably in poor grid conditions.

Complete error protection			
Undervoltage	Overvoltage	Overcurrent	Output phase loss
IGBT overtemperature	VFD overload	Motor overload	Detection line abnormality
PID disconnection	Parameter reading abnormality	Parameter password error	Communication abnormality
Communication timeout	DEB abnormality	Overslip	Input phase loss
Output phase loss	E-stop of external terminal	External terminal abnormality	External interrupt operation
.....			



Personalized function

Item	Introduction
Acceleration and deceleration curve	Straight line, S-curve, power function with an exponent of 1.5 curve, and quadratic curve (with initial arc adjustable separately) Automatic acceleration and deceleration curves
Built-in PID	Built-in PID enables process control on specific occasions
Run command channels	Three channels: operating panel, external terminals, communication setting (switchable via parameters)
Frequency hopping function	Skip certain frequency bands to avoid resonance points
Dynamic braking	Reduce bus voltage swell through energy consumption
Multi-speed running	Enable 16-speed switching through external terminals
Automatic voltage regulation	Automatically maintains a constant voltage output when the grid voltage changes
Overvoltage, overcurrent, and stall prevention	Automatically limit current and voltage during operation; in this way, frequent overcurrent, overvoltage, and trips are prevented
Fast current limiting function	Minimise overcurrent to stabilise VFDs under extreme conditions
Energy-saving mode	Energy conservation mode enhances work efficiency
Momentary stop non-stop	Effective methods for compensating voltage drops during sudden power outages. VFD remains uninterrupted for short durations

Operating environment

Item	Specification
Use place	Indoor, free from direct sunlight, dust, corrosive gas, flammable gas, oil mist, water vapour, dripping water or salt, etc.; Below an altitude of 1000m, no derating is required. Above 1000m, derating is required
Ambient temperature	-10°C ~ +40°C (excluding models with free cooling, installed closely side by side, with an upper limit of the operating temperature of 40°C; Operation exceeding 40°C requires derating, with a maximum operating temperature of 50°C)
Storage temperature	-20°C~+60°C
Humidity	< 95% (RH), w/o water droplets
Vibration	< 5.9m/s ² (0.6g)
Protection rating	IP20
Degree of environmental pollution	2
Cooling method	Forced air cooling

Product selection

HCM100 A - 4T 4R0 G B

Product name	Identification	Model	Identification	Voltage level	Identification	Power rating (kW)	Identification	Applicable motor type	Identification	Brake unit	Identification	Output AC inductor
HCM100: Product series	A	RS485 Model	3S	220V (single phase)	R75	0.75	G	Heavy-duty or over-duty motor	None	None	None	None
	B	CANopen Model	4T	380V (three-phase)			B	w/ a brake unit	(-L)	Optional output AC inductor
					5R5	5.5			(B)	Optional brake unit		

*Nameplate identification and product model

Note: Within the HCM100 series VFDs, C0 and C1 models do not support built-in brake units, while C2 supports optional brake units.

Models and Technical Parameters of HCM100 VFDs

• 220V 1 φ

Model HCM100A(B)-3S__G(B)	R40	R75	1R5	2R2	
Power (kW)	0.4	0.75	1.5	2.2	
Structural frame number	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 three-phase input voltage			
	Output frequency range (Hz)	0.1Hz~599Hz			
Carrier frequency (kHz)	2kHz~6kHz (default 4kHz)				
input	Output current (A)	6.5	9.3	15.7	24.0
	Rated voltage, frequency	Single phase: 200V~240V, 50/60Hz			
	Allowable input voltage variation range	± 10%			
	Allowable power frequency variation	± 5%			
Cooling method	Forced air cooling				
Weight (kg)	0.6	0.6	0.6	0.8	

• 380V 3 φ

Model HCM100A(B)-4T__G(B)	R75	1R5	2R2	4R0	5R5	
Power (kW)	0.75	1.5	2.2	4.0	5.5	
Structural frame number	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 three-phase input voltage				
	Output frequency range (Hz)	0.1Hz~599Hz				
Carrier frequency (kHz)	2kHz~6kHz (default 4kHz)					
input	Output 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 variation range	± 10%				
	Allowable power frequency variation	± 5%				
Cooling method	Forced air cooling					
Weight (kg)	0.8	0.8	0.85	0.85	0.85	

Mounting dimensions	Model	Length (mm)	Width (mm)	Height (mm)	Mounting hole diameter φ (D) mm
	C0	119.5	57.5	104	4.5
	C1	129.5	59.5	105	5.5
C2	167.5	72	116	5.5	

Technical Data

	Characteristics	Description
Control Characteristics	Control mode	V/F control
	Frequency setting/output frequency resolution	Panel control: Below 10Hz: 0.01Hz; above 10Hz: 0.1Hz Communication control: 0.01Hz Analogue setting: Maximum frequency × ±0.1%
	Torque characteristics	Starting torque meets 150% of rated torque at 5.0Hz
	Overload capacity	150% of rated output current for 60 seconds, 180% for 2 seconds
	Prohibit frequency setting	3-point setting from 0.1~599.0Hz
	Acceleration and deceleration time	0.1-600 seconds (4-segment acceleration/deceleration time can be set separately)
	Stall prevention	Motor load characteristics can be set to 20~200% of the drive's rated current
	DC braking	The operation can be adjusted from 0.1~599.0 Hz during a stop, Braking current: 0~100% of rated current; starting time: 0-60 seconds, and stopping time: 0~60 seconds
	V/F curve	Arbitrary V/F curve setting
	Operating Characteristics	Frequency Setting Signal
Operation Signal Setting		Panel operation: Set by RUN and STOP keys External signal: MI1, MI2, MI3 two/three-cable control for jog operation and the serial communication port (RS485)
Input terminal functions		16-speed settings (including main speed) with default speed switching, commands to disable acceleration and deceleration, 4-segment acceleration and deceleration switching, external counting, drive reset, increment/decrement frequency terminal settings, and jog operation
Output terminal functions		Indication in operation, frequency reach indication, zero speed indication, counter reach indication, fault indication, overheat warning, and emergency stop
Human-machine interface	Communication/bus	HCM100A supports RS485 communication, while HCM100B supports CANopen
	Analogue quantity inputs	One AI
	Digital input	Four DI
	Digital output	One normally-open relay output
	Digital operator panel	Including 6 function keys, a 4-digit 7-segment LED display, and 4 status LED indicators, the panel allows for frequency setting and displays actual output frequency and current. It also supports user-defined units, parameter browsing, settings modification, parameter lock function, and fault display. Operations such as start, stop, reset, forward, and reverse can be performed on this device
	Background software	Supports VFD parameter operation and virtual oscilloscope function; Graphical monitoring of internal VFD status is realised via a virtual oscilloscope:
Protection functions	Including undervoltage, overvoltage, overcurrent, short circuit before an operation, GBT overtemperature, VFD overload, motor overload, detection line abnormality, PID disconnection, parameter reading abnormality, parameter password error, communication abnormality, communication timeout, DEB abnormality, overslip, input phase loss, output phase loss, E-stop of external terminals, external terminal abnormality, external interrupt, etc.	

Electrical wiring diagram

HCM100 RS485 Model Wiring Diagram

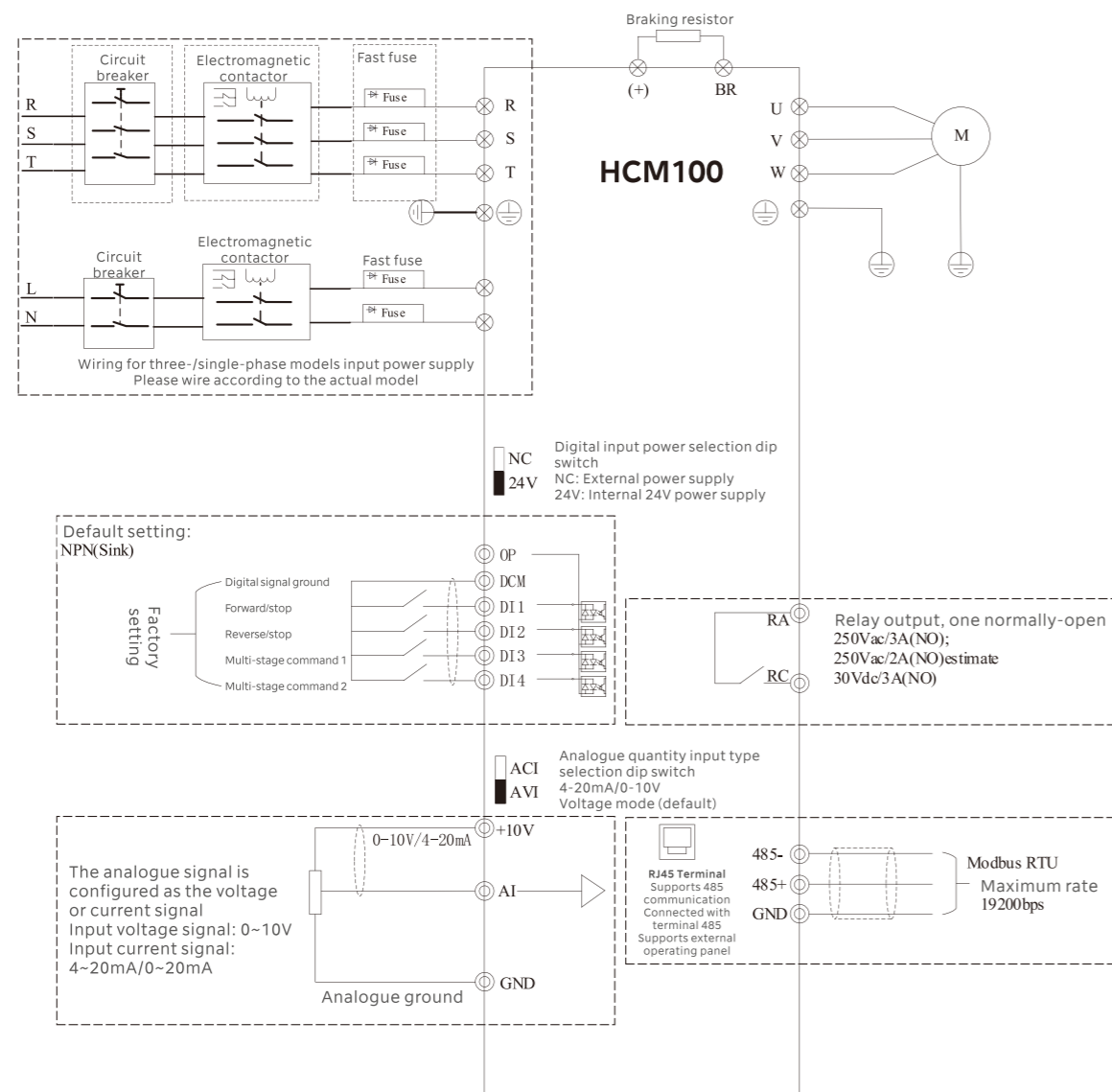


Figure: Wiring diagram for three-/single- phase power input terminals (HCM100A-4T4ROGB and HCM100A-4T5R5GB models support optional built-in brake units, while others do not)

HCM100 CANopen Model Wiring Diagram

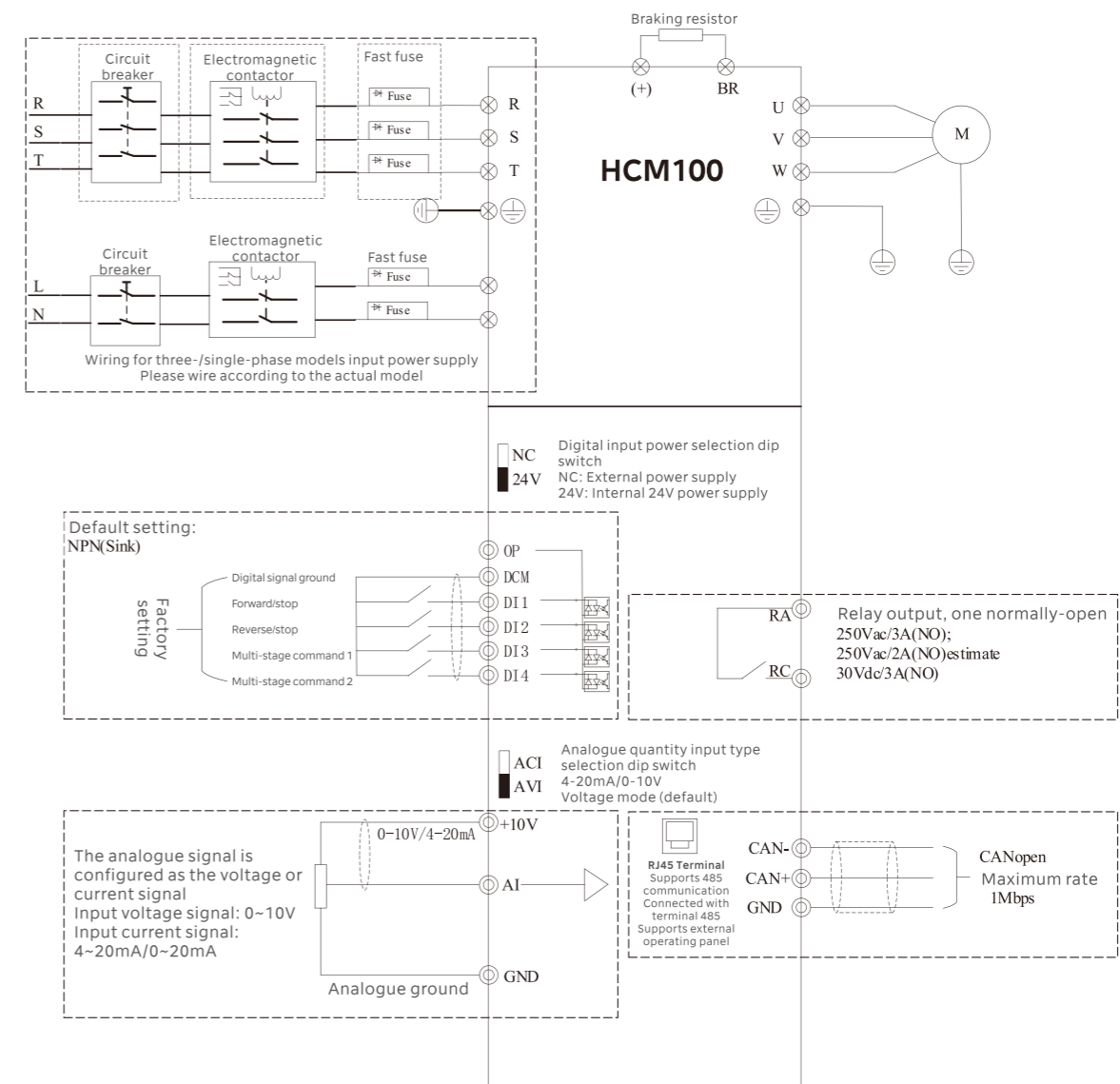
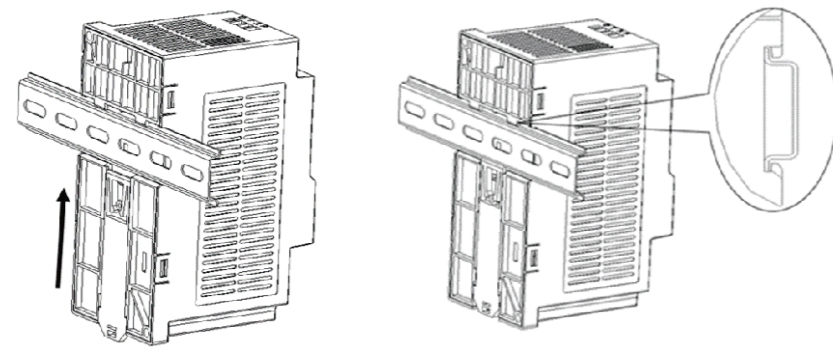


Figure: Wiring diagram for three-/single- phase power input terminals (HCM100A-4T4ROGB and HCM100A-4T5R5GB models support optional built-in brake units, while others do not)

Installation mode

1. Rail installation



2. Wall mounting

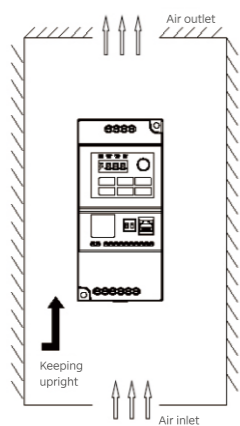


Figure: Single unit mounting diagram

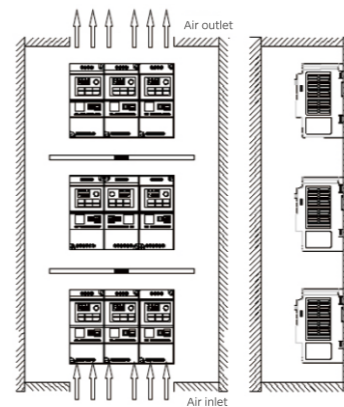


Figure: Side-by-side mounting diagram

Select accessories

All Series

Output AC inductor

Increases the effective transmission distance of the VFD, suppresses output harmonic currents, increases the output high-frequency impedance, and effectively suppresses dv/dt.



C2 Frame

Brake unit

Use resistors to consume the regenerated energy of motors to shorten deceleration time



All Series

EMI Filter

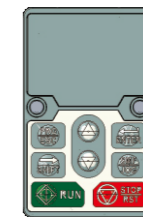
The filter will suppress the electromagnetic interference transmitted from the VFD to the power grid through input power cords. Install the filter as close as possible to the input terminal of the VFD.



All Series

External LED Panel

With external display and commissioning



*Order code: Consult technical support for details

Business profile at a glance

<p>2023 TOTAL REVENUE (USD)</p> <p>51.68_B</p>	<p>2023 NET PROFIT (USD)</p> <p>4.66_B</p>
<p>NUMBER OF EMPLOYEES</p> <p>190_{K+}</p>	<p>BY S&P/MOODY'S/FITCH CREDIT RATINGS</p> <p>A/A3/A</p>
<p>FORTUNE GLOBAL 500 2023</p> <p># 278</p>	<p>FORBES GLOBAL 2000 2023</p> <p># 199</p>
<p>BRAND FINANCE 2023 TOP 500 MOST VALUABLE BRANDS</p> <p># 198</p>	<p>BRAND FINANCE 2023 TOP 100 MOST VALUABLE TECH BRANDS</p> <p># 36</p>

Leading odm provider of green energy products

ODM VALUE CHAIN
A REPEATABLE PATH FOR EXCELLENCE IN QUALITY DELIVERY

GLOBAL R&D STRATEGY

<p>4 Research Institutes</p> <p><small>Central Academy Industrial Technology Research Institute Industrial Technology Research Institute AI Research Institute</small></p>	<p>33 R&D Centers</p> <p>25% Masters & PhDs</p>	<p>50+ Core Laboratory</p> <p>Aesthetics & Design Center</p>
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BILLION LEVEL SUPPLY CHAIN

<p>27.6_B</p> <p>Procurement Volume</p>	<p>100_{K+} Supplier System</p> <p>100% Quality Sampling</p>	<p>Top 5 Supplier Resources</p>
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INTELLIGENT MANUFACTURING

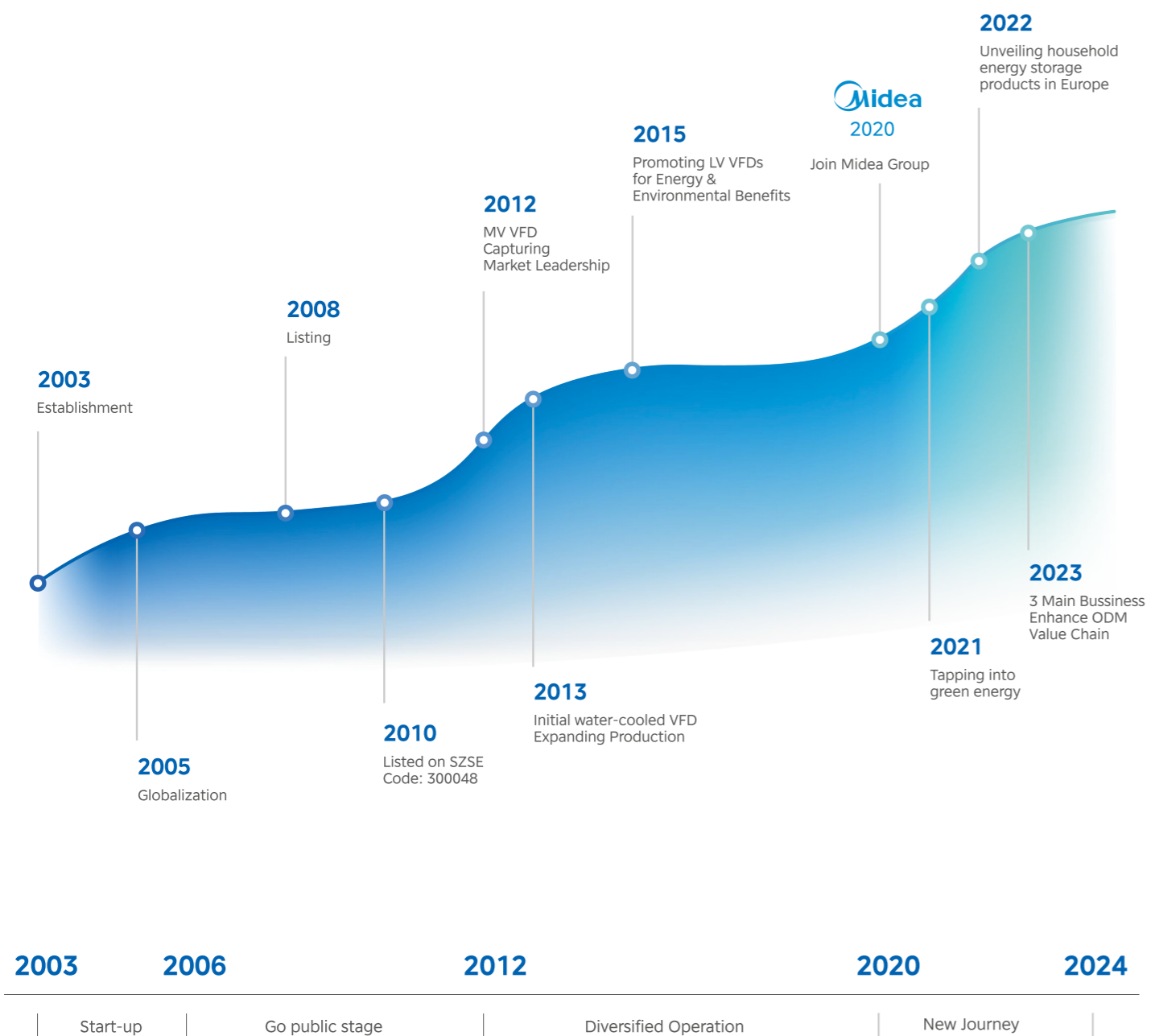
<p>50+</p> <p>Years Manufacturing Experience</p>	<p>40 Global Manufacture Centers</p> <p><small>Inhouse Production Lines Beijing & Anqing Manufacturing Cneter</small></p>	<p>100_K GMP Cleanroom</p> <p>Lighthouse / Digital Factory</p>
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QUALITY CONTROL

<p>130_M</p> <p>Dollars Investment</p>	<p>1st in Industry to Conduct:</p> <p><small>Mechanical back-to-back test Simulation test Motor Load Test</small></p>	<p>CSA Cooperative Sightings Lab</p> <p>UL/CE Certificates</p>
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Milestones

Transformation journey of business diversification and globalization



Manufacturing quality



Digital Plant

All-rounded application of Midea Group's digital capabilities PLM, APS, and MES



Automated Testing

13 sets of automated testing platforms
High-level professional production testing capabilities



Quality System

Full value chain quality control system
Quality Management System (QMS)

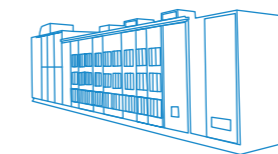


Smart manufacturing demonstration award

China Automation and Intelligent Manufacturing Services Annual Meeting



Industrial VFDs



Deeply cultivated in process/discrete automation industries

Provide more competitive products, solutions and services