

**VEICHI**

# AC600F Series High Ingress Protection Universal AC Drive

**Built for Industrial Extremes**



**VEICHI**

**Suzhou Veichi Electric Co.,Ltd.**

No.1888 Songwei Road, Guoxiang Street, Wuzhong Economic and Technological Development Zone, Suzhou, Jiangsu Province, China.

Tel:+86-512-6617 1988 Fax:+86-512-6617 3610

Facebook: <https://www.facebook.com/veichigroup>

WhatsApp:+86-138 2881 8903 <https://www.veichi.org>



Official Website

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Stock code: 688698

# Rise Above Lead the Way

Industrial equipment confronts extreme weather challenges across rainy and frost-prone regions of Europe, the Americas and Oceania. Traditional AC drives frequently fail under high humidity, salt spray, and sudden temperature shifts, creating operational constraints in critical sectors like metal-lurgy, mining, and heavy industry. Concurrently, demands for enhanced protection and smart drive systems are growing across food processing, medical equipment, marine operations, and outdoor installations.

Our innovative IP66 AC drive delivers all-weather resilience through its sealed construction that withstands heavy rain and frost, combined with corrosion-resistant materials suited for marine environments. Featuring intelligent temperature control and anti-vibration design, it maintains reliable performance across diverse conditions. From Northern European ports to American storm coasts, from Australian farms to urban infrastructure, it empowers global industrial partners with stunning reliability, energy efficiency, and lifespan, driving the world's key industries forward with ultimate stability.

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## About Us



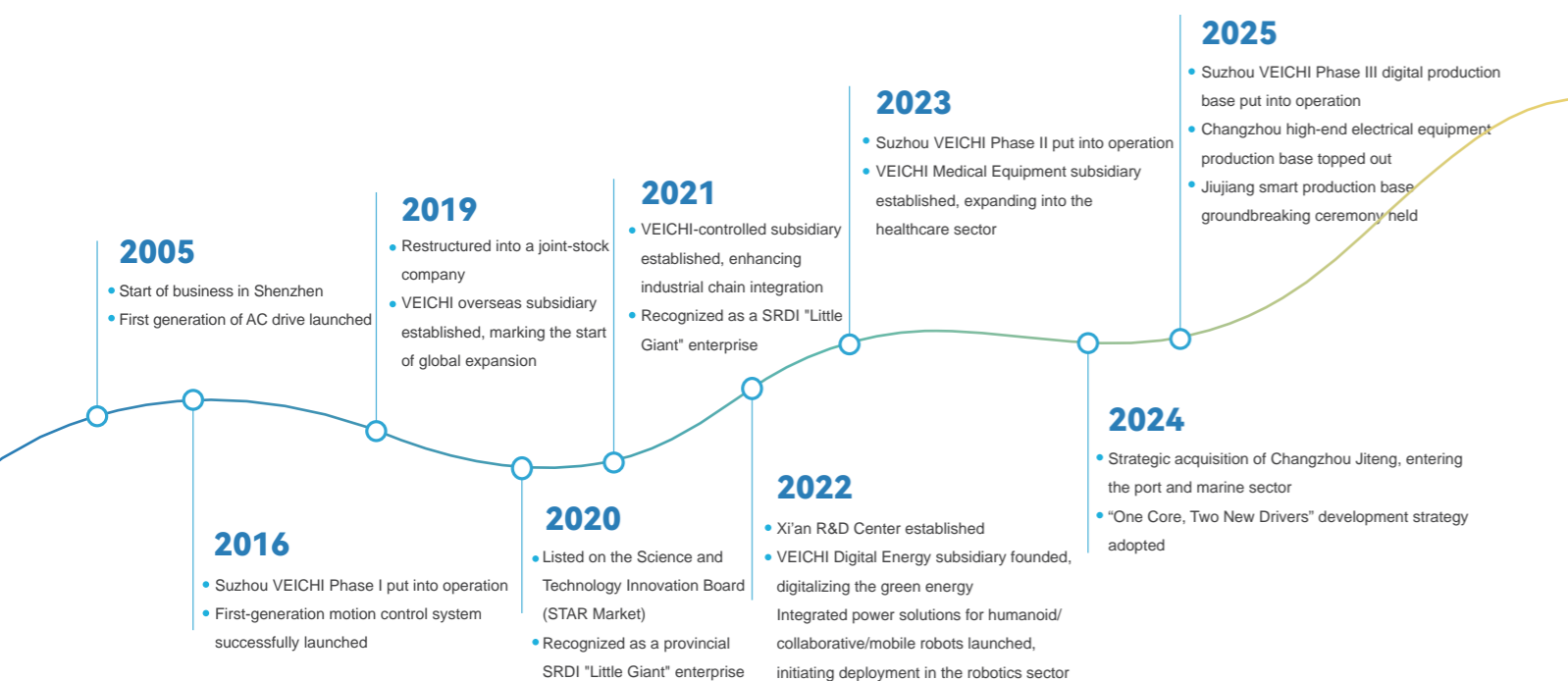
Veichi Electric (Stock Code: 688698) specializes in electrical transmission and industrial control, operating as an integrated high-tech enterprise in R&D, production, and sales of industrial automation products. With a vision to lead in smart industry and green energy solutions, the company leverages its R&D and manufacturing hubs in Suzhou, additional R&D centers in Shenzhen and Xi'an, and wholly-owned subsidiaries overseas, consistently serving customers worldwide with competitive and reliable solutions.

Under the "One Core, Two New Drivers" strategy, Veichi focuses on industrial automation, offering AC drives, servo systems, and control systems widely applied across heavy and light industries, as well as high-end equipment sectors, supporting the digital and intelligent transformation of manufacturing with its tailored solutions. Simultaneously, in two emerging fields, it provides one-stop solutions for humanoid, collaborative, and mobile robots in embodied intelligence, while in green energy, it delves into segments like photovoltaic, energy storage, and hydrogen energy, to "connect every device with green power," fostering a synergistic growth between core operations and new ventures.

Sustained R&D has yielded a portfolio of proprietary patented technologies including silicon carbide application, HF injection, motor controls and protections (auto-tuning, flying-start, high-speed flux-weakening, V/F control, vector control), high-density water-cooling layout, and IGBT drive protection. As of September 30, 2025, Veichi holds 234 patents, with 66 for invention.

Over two decades of steady growth, Veichi has earned numerous certifications and accolades from national and regulatory authorities, including "High-Tech Enterprise," "Postdoctoral Research Workstation," and provincial honors like "Engineering Technology Research Center," "Enterprise Technology Center," and "Industrial Internet Development Demonstration Enterprise (Benchmark Factory Category)."

Guided by its mission to "Drive Smart Industry, Co-create a Green Future," Veichi will continue to intensify R&D and advance into high-performance, high-reliability fields to propel global progress.



## Product Introduce



## Weather-Resistant, Performance-Persistent

The AC600F from Veichi Electric is a high-protection, high-performance AC drive that incorporates vector control technology, engineered to reliably drive induction motors in challenging environments, including those with dust, high humidity, and heavy rainfall. With a power range of 0.75~22kW, this drive enables rapid and efficient deployment across numerous industries such as food processing, rail transport, mining, chemicals, marine vessels, and metallurgy. Delivering the proven performance of the AC600 series, it combines high power density, ease of use, and maintainability in a robust design. Ready for immediate operation upon wiring, it offers a user-friendly experience backed by reliable stability.

Power Range:  
AC 3PH 380V~480V 0.75~22KW

### Superior Protection, Rugged Reliability

Industrial-grade IP66 protection with UV-resistant PC housing, optimized thermal management, and robust hardware structure. Internal dustproof and waterproof design ensures comprehensive defense, enabling stable operation even in outdoor dusty, humid, or heavy rain environments—durable and dependable.

### Quick Heat Dissipation, Quiet Operation

Built-in smart fan with an independent circulating air duct delivers efficient cooling and low-noise performance.

### Dual Core Protection, Solid as a Rock

Optional mechanical disconnect switch and STO (Safe Torque Off) enable physical-level power cut-off, enhancing maintenance and operational safety in accordance with SIL3 safety standards.

### Strong Anti-Interference, Stable Operation

Entire series has built-in C3 filters to resist interference in complex electromagnetic environments, with higher-spec built-in C2 filters available for stricter electrical scenarios.

### Global Certification, Internationally Recognized

Products strictly adhere to international safety and quality certifications (e.g., CE, UL), complying with global market standards for seamless export and application.

### Wide Compatibility, One Drive for Multiple Uses

It is compatible with various motor types including synchronous, asynchronous, and reluctance motors, achieving "one drive for multiple applications" to reduce inventory and operational costs.













### Module Programming, Customizable at Will

User-defined modular programming offers simple and intuitive operation, flexibly adapting to various process needs.

### External Keypad, Convenient Control

External keypad control offers flexible installation positions and convenient operation, easily integrated into various equipment systems.

I Application

Industry	Device	Requirement	Feature	Application
<div>Food Processing</div> <div></div>	Blower, Centrifuge, Separator, Mixer, Grinder	Meets stringent hygiene & durability requirements in food processing	<ul style="list-style-type: none"><li>• Precise process control enables higher food production speeds while reduces energy consumption and enhancing operational safety.</li><li>• Precise speed and torque control ensure extended stable operation, even under fluctuating loads.</li><li>• Automatic torque boost allows a single drive to be adapted for multiple applications, increasing deployment flexibility.</li><li>• Safe torque off (SIL 3) is integrated to protect both personnel and equipment, ensuring compliance with stringent safety standards.</li><li>• Bilingual External Keypad (Chinese/English) simplifies operation and interface navigation, significantly reducing setup and maintenance time.</li></ul>	<div></div> <div></div>
<div>Military Equipment, Submarines, Marine Vessels</div> <div></div>	Conveyors	Enhances safety & reliability in critical applications such as hospital life support systems, military equipment, submarines, and marine vessels ; Delivers uncompromising power control under salt spray corrosion, condensation, vibration, and even temporary immersion	<ul style="list-style-type: none"><li>• Precise speed and torque control ensure extended stable operation, even under fluctuating loads.</li><li>• Safe Torque Off (SIL 3) enhances safety for both personnel and machinery.</li><li>• Robust and reliable design improves overall system stability.</li><li>• Built-in C2 filter strengthens immunity to electromagnetic interference.</li><li>• External +24 V power supply support maintains communication during main power loss.</li></ul>	<div></div> <div></div>
<div>Urban Landscape Water Pumps, Outdoor Fans, Rail Transportation</div> <div></div>	Compressors, Fans, Pumps, Outdoor HVAC	Enables energy efficiency & intelligent control in urban landscape water systems, outdoor fans, rail transport, and ranch water supply systems	<ul style="list-style-type: none"><li>• Continuous hardware optimization improves energy efficiency class and power conversion performance.</li><li>• Adjustable ACC/DEC ramps enhance pumping control precision.</li><li>• Robust and reliable design ensures long-term system stability.</li><li>• Comprehensive product and service portfolio enables full-process optimization.</li></ul>	<div></div> <div></div>
<div>Metallurgy, Mining, Heavy Industry</div> <div></div>	Fans, Pumps	Ensures continuous, stable operation through its sealed, dust-tight, and corrosion-resistant construction, effectively prevents contamination-induced short circuits or failures, and maintains uninterrupted production in demanding metallurgical, mining, and heavy industrial environments characterized by dense dust, high temperatures, and humidity	<ul style="list-style-type: none"><li>• Enhanced mechanical productivity shortens the return on investment period.</li><li>• Smoother motor control and precise process management enhances operational stability.</li><li>• The integrated STO (SIL 3) function ensures complete safety for both operational equipment and personnel.</li><li>• Multiple major fieldbus protocols including PROFIBUS, PROFINET, EtherCAT, and Ethernet/IP are available.</li><li>• An IP66 rating up to 22 kW and IP55 up to 90 Kw delivers high protection for harsh environments.</li><li>• The high-reliability design reduces unplanned downtime, lowers maintenance costs, and ensures consistent high-quality production.</li></ul>	<div></div> <div></div>

Product Advantages

Exquisite Craftsmanship, Superior Protection

IP66



Protection Level Difference



◀ **IP20 AC Drive**  
IP20: Not dustproof and waterproof by design – requires installation in an electrical cabinet for dust protection.



**IP54 AC Drive ▶**  
IP54: Dust and water splashes proof.

**IP66 AC Drive ▶**

IP66: Fully suitable for outdoor exposure (dust and water jets)



Protection Level Selection

Protection Range					
1st Number	Name	Description	2nd Number	Name	Description
0	No protection	-	0	No protection	-
1	Protected against solid objects over 50mm	A 50mm diameter probe must not fully penetrate	1	Protected against dripping water	Vertically falling drops shall not be harmful
2	Protected against solid objects over 12.5mm	A 12.5mm diameter probe must not fully penetrate	2	Protected against dripping water when cabinet tilted up to 15°	Vertically falling drops shall not be harmful when the cabinet is tilted at 15°
3	Protected against solid objects over 2.5mm	A 2.5mm diameter probe must not fully penetrate	3	Protected against splashing water	Water splashed at up to 60°from vertical shall not be harmful
4	Protected against solid objects over 1.0mm	A 1.0mm diameter probe must not fully penetrate	4	Protected against spraying water	Water sprayed from any direction shall not be harmful
5	Protected against dust	Ingress of dust is not prevented, but dust inside shall not damage the machine	5	Protected against water jets	Water jetted from any direction shall not be harmful
6	Dust tight	No dust ingress into the housing at a low pressure of 20mbar.	6	Protected against powerful water jets	Powerful water jetted from any direction shall not be harmful
Note: The test probe diameter must not pass through openings in the housing.			7	Protected against temporary immersion	Ingress of water shall not occur when immersed under standard conditions of pressure and time
			8	Protected against continuous immersion	Ingress of water shall not occur when immersed under defined conditions of pressure and time

Complete Protection, Certified Safety

STO Expansion

Isolation Switch



Superior internal heat dissipation delivers automotive-grade cooling solutions.

Comprehensive protection features provide end-to-end coverage from input to output.

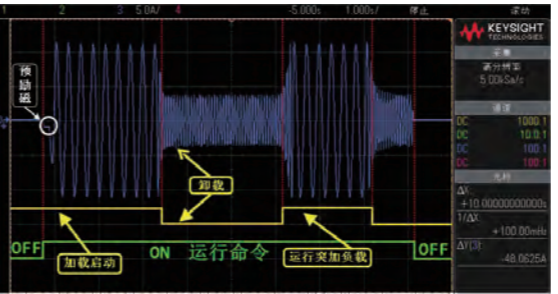
Authoritative certification with full CB approval meets global export requirements.

International wide-voltage design allows input voltage fluctuation within  $\pm 15\%$  of rated value.

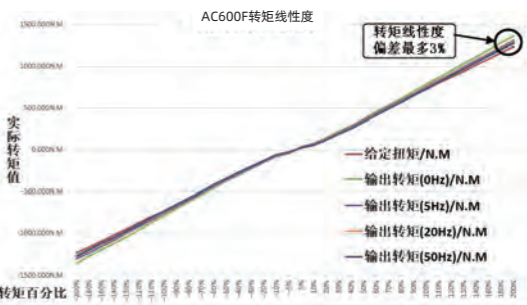
Peak Performance, Maximum Efficiency

High Starting Torque

In closed-loop vector mode, the drive delivers 200% of rated torque at 0.0Hz and maintains stable load operation even at 0.01Hz, ensuring exceptionally smooth and stable starting performance.

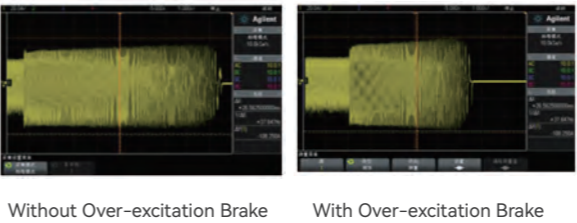


In torque control mode, it delivers stable torque output with under 3% linearity deviation, ensuring reliable equipment operation.



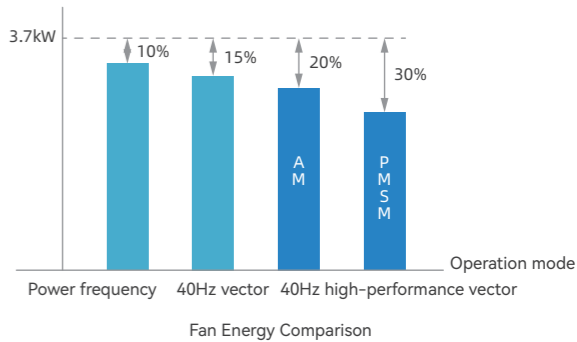
Over-excitation Brake

The over-excitation braking function enables rapid braking without additional resistors in inertial shutdown scenarios by suppressing DC bus voltage rise during deceleration without drive overvoltage faults.



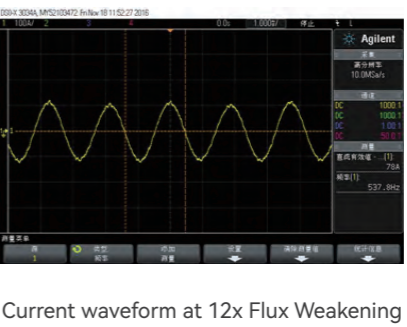
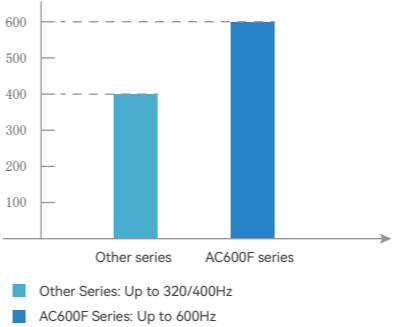
Energy-saving Performance

The next-generation energy-saving control technology, that is auto excitation current adjustment based on load conditions, maximizing motor efficiency while reducing losses and energy consumption.



Stable High-speed Flux Weakening Control

A new flux weakening algorithm with high-bandwidth current vector control achieves stable high-speed flux weakening operation, supporting up to 12x flux weakening with high-precision output.



# Product Specifications

## Main Control Performance

Motor type	3PH asynchronous motor, permanent magnet synchronous motor, and synchronous reluctance motor
Control mode	V/F, SVC, FVC, and VF split control
Modulation mode	PWM
Speed control range	SVC: Rated load 1: 200 FVC: Rated load 1: 1000
Speed stabilizing accuracy	SVC: ± 0.5% (3PH AM), ±0.1% (PMSM) FVC: ±0.02%
Starting torque	SVC: 150% of rated torque at 0.25Hz FVC: 200% of rated torque at 0Hz
Torque response	SVC: <10ms ; FVC: <5ms
Torque accuracy	SVC: ±5% ; FVC: ±2.5%
Frequency accuracy	DI: Max. frequency × (±0.01%) ; AI: Max. frequency × (±0.2 %)
Frequency resolution	DI: 0.01Hz ; AI: Max. frequency × ±0.05 %
Input voltage harmonics	<5%

## Basic Functions

Torque control	Torque setting calculation and speed limit in torque mode
DC brake	Starting frequency: 0.00Hz~50.00Hz; Braking time: 0.0s~60.0s; Braking current: 0.0%~150.0% of rated current
Torque boost	Auto or manual(0.1%~30.0%)
V/F curve	4 patterns: Linear, self-defined, torque drop characteristic curve(1.1~1.9 power), and square
ACC/DEC curve	2 patterns: Linear and S-curve acceleration/deceleration 4 time sets; unit: 0.01s; max. duration: 650.00s Time basis:0.1s or 1s, for 65000s or 6500.0s max respectively
Rated output voltage	Voltage compensation enables voltage output within 50%~100% settable with the rated voltage of the motor as 100% (the output cannot exceed the input voltage)
Auto current limit	Auto current limit to prevent frequent tripping due to over-current fault
Instantaneous power loss mode	Uninterrupted operation by bus voltage control in case of instantaneous power loss
Standard functions	PID control, fly track and restart after power down, hopping frequency, upper/lower frequency limit control, programmed operation, multi-frequency, RS485 communication, analog output, frequency pulse output, parameter access level setting, common parameter setting, monitoring parameter comparator output, counting and timing, and swing frequency
Frequency source	Keypad digits, keypad potentiometer, analog voltage/current terminal AI1 and AI2, communication and multi-channel terminals, A/B channel combination, etc.
Feedback input source	AI1 and AI2, communication, and PUL terminal

## Protections

Over-voltage, low-voltage, current limit, over-current, overload, electronic thermal relay, over-heat, over-voltage stall, data protection, overspeed, and I/O phase loss

## Basic Functions

Command source	Keypad, terminals and communication
Input command signal	Start, stop, forward and reverse, jog, multi-frequency, coasting stop, reset, acceleration/deceleration time, frequency source, and external fault prompts
Output signal	1 × RO, 1× open collector output, and 1× AO for 0V~10V, 0mA~20mA or 4mA~20mA, or frequency pulse output
External power input	24V±15%, DC, 1200mA max. (in accordance to CE requirements)
Expansion	3 expansion ports for communication(CAN, Profinet, Modbus, Ethercat) and functions(PG board, black box)
Fan	Speed regulation and error detection
Safety Function	STO(SIL 3)

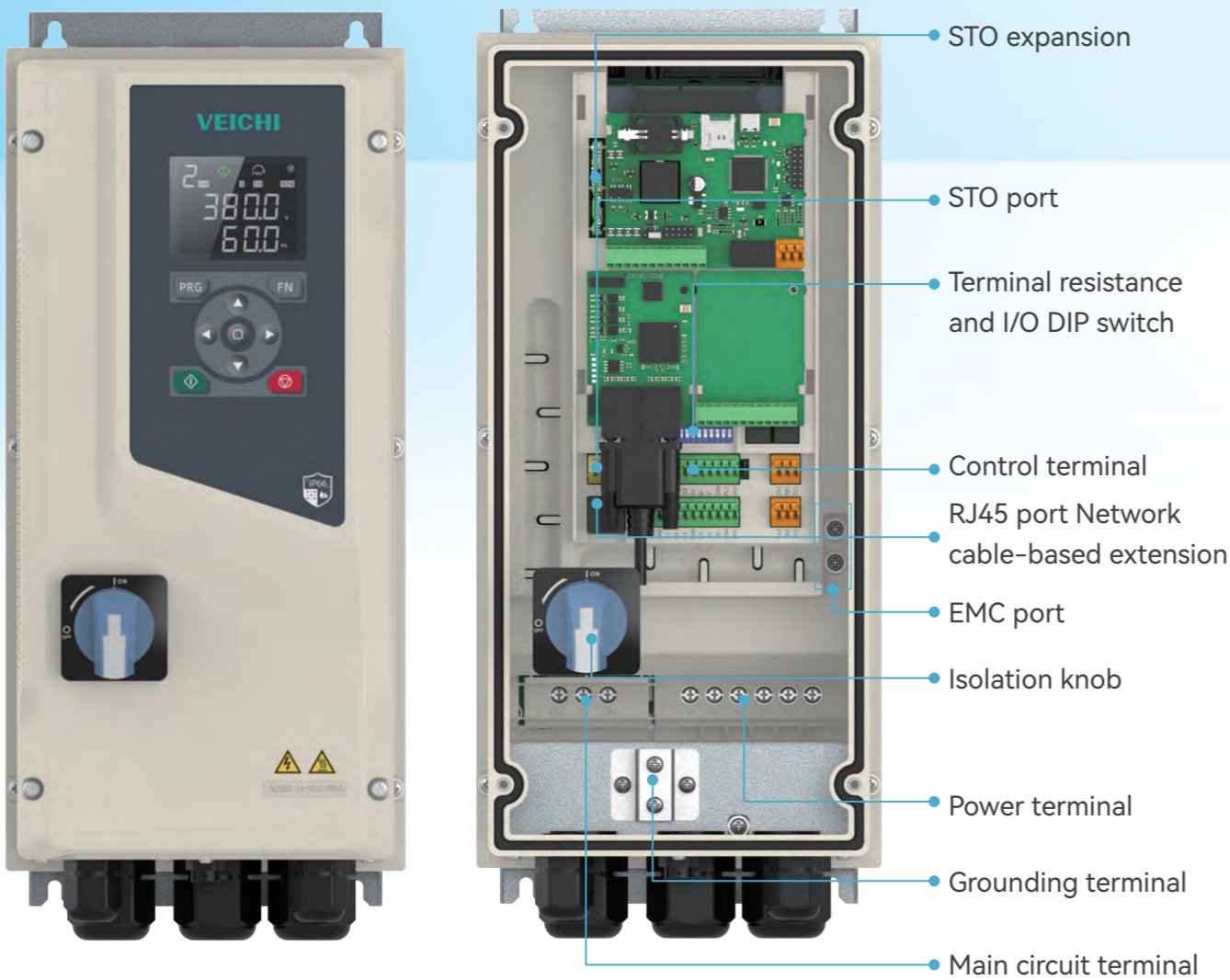
## Keypad

Parameter copy	Upload and download the information of the AC drive to realize fast parameter copying
Status monitoring	All parameters of the monitoring group include output frequency, target frequency, output current, input voltage, output voltage, motor speed, PID feedback, PID target, module temperature, target torque, output torque, etc.
Alarm and error	Overvoltage, undervoltage, overcurrent, short circuit, phase loss, overload, overheat, over-voltage stall, current limit, data damage, operating status of current faults, and fault history

## Environment

Altitude	No derating below 1000m, Derating between 1000m~3800m (Contact us when above 3800m)
Temperature	Storage temperature: -40℃~70℃ Operating temperature: -20℃~50℃
Humidity	95% max., no condensing
Vibration	In accordance to EN61800-5-1
Installation method	Wall-mounting, floor-mounting, penetrating-mounting
Protection level	IP66(22kW and below) and IP55 (22kW and above)
Pollution class	PD3
Overvoltage class	OVC III
Protection class	Class I
Cooling method	Natural/air cooling

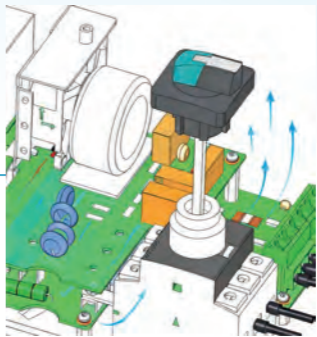
Hardware Structure



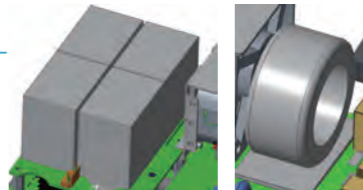
**Ultra-Low Noise Fan**  
IP66 cooling fan features compact size and stable operation, offering quieter performance for noise-sensitive environments.



**Fiberglass + High-Strength Polycarbonate**  
High strength with lightweight design delivers exceptional corrosion resistance and chemical stability.



**Internal Circulation Cooling**  
Compact construction features robust protection, low energy consumption, efficient heat exchange, intelligent temperature control, and modular design.



**Common-Mode Choke + Film Capacitor**  
This uses reverse-phase cancellation and common-mode differentiation, instead of conventional reactor-electrolytic solutions, to create counteracting magnetic fields for effective noise filtering with useful signal preservation.

# Software Configuration

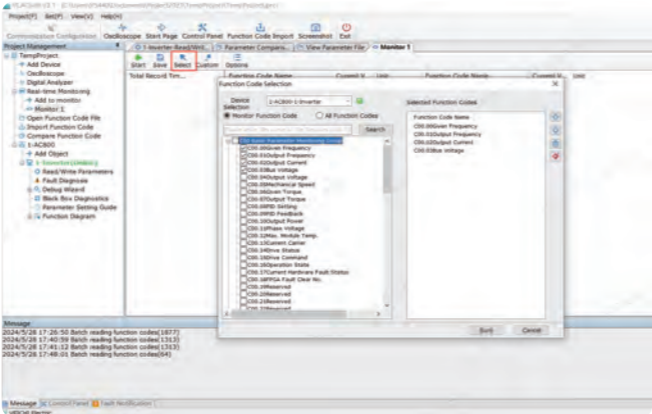


## Multiple Motor Control

AC600F drives standard 3-phase asynchronous motors, variable-frequency motors, AC servo motors, PM synchronous motors, synchronous reluctance motors, and high-speed synchronous motors.

## Black Box

AC600F supports auto fault recording and data tracking to assist in troubleshooting and system analysis.

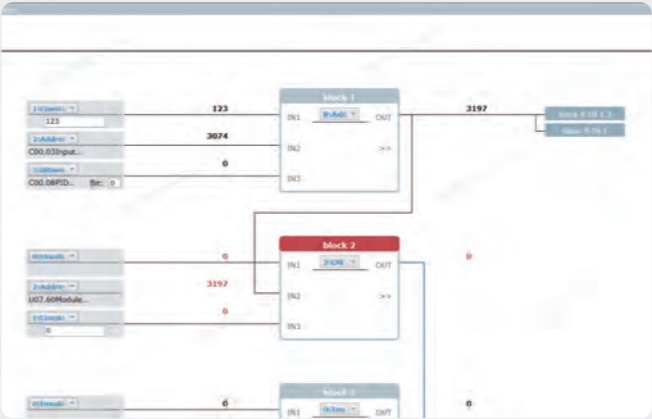


## PC Software Tools

Comprehensive suite includes parameter configuration, oscilloscope display, multi-device management, and torque tuning - enabling streamlined commissioning and real-time product monitoring

## Strong Connector Configuration

- Multi-device parameter arithmetic and logic operations
- Secondary channel setting after parameter adjustment
- Up to 10 function blocks, each with 3 input signals for operational processing



## Multi-Motor Parameter Switching

4 sets of motor parameters storage for multi-motor control, compatible with V/F and vector modes for different motor types without hardware modifications

## Built-in Application Macros

Specialized built-in macros for tension control, power balancing, dual-PG positioning, independent dual PID control, and firefighting mode

## Motor Auto-Tuning Upgrade

On-line motor parameter correction to ensure model compatibility and precise adaptation to various motor specifications








Extension Configuration

Exceptional Expandability

Multiple expansion interfaces for customized requirements and three expansion cards supported simultaneously

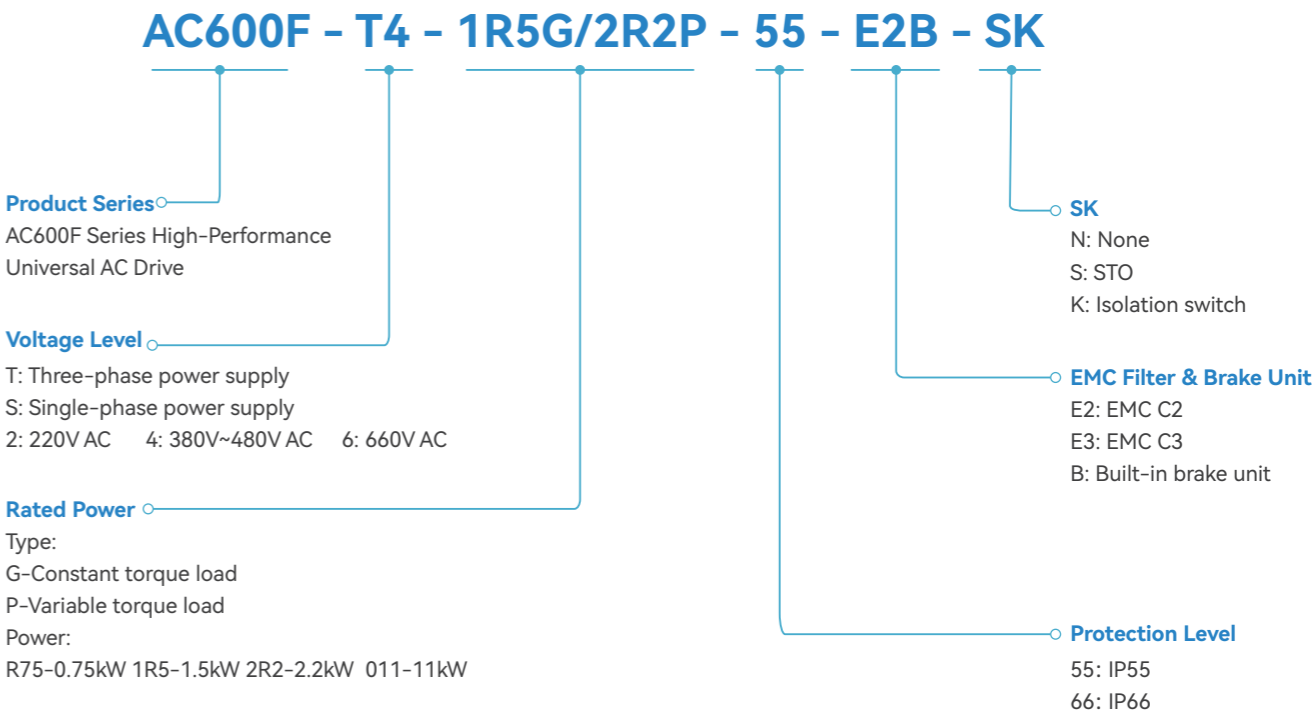
Communication Bus

 MODBUS	MODBUS TCP	 PROFINET	PROFINET
 MODBUS	MODBUS RTU	EtherNet/IP	EtherNet/IP
 CANopen	CANopen	EtherCAT	EtherCAT
 PROFIBUS	PROFIBUS-DP		

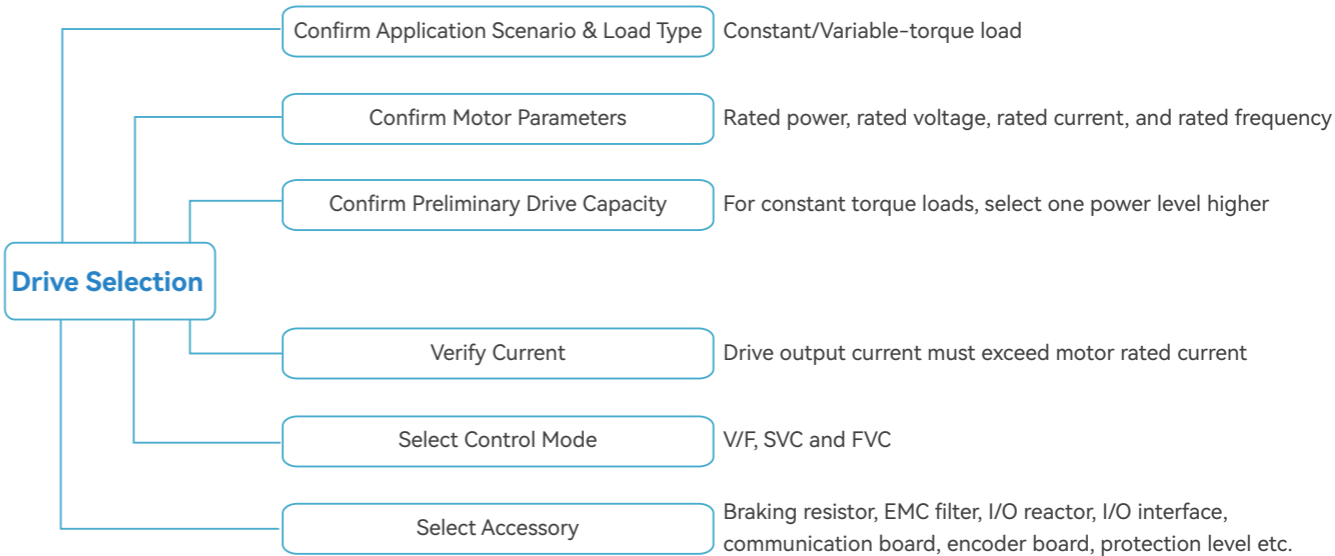
Accessory List

	Name	Model	Application	Function
Brake unit	Built-in brake unit	Product Model + B	AC600F series	T4: Standard with built-in brake for 0.75kW~22kW models
Communication expansion	CANopen board	AC600CAN1	AC600F series	For CANopen bus
	Profinet board	AC600PN1		For Profinet bus
	Profibus-DP board	AC600DP1		For Profibus-DP bus
	Modbus TCP board	AC600TCP1		For Modbus TCP bus
	EtherCAT board	AC600EC1		For EtherCAT bus
	EtherNet/IP board	AC600EIP1		For EtherNet/IP bus
Function expansion	BACnet board	AC600BNT1		For BACnet bus
	Incremental encoder board	AC600PG1		For incremental encoder closed-loop control with 1:1 frequency division output
	PG board	AC600PG2		For position control via pulse input, compatible with incremental encoder closed-loop control and unlimited frequency division output
	Sin/Cos encoder board	AC600PG3		For sincos encoder closed-loop control
	Absolute encoder board	AC600PG4		For absolute encoder closed-loop control
	Resolver board	AC600RT1		For resolver closed-loop control
	Black box & IO board	AC600IO1		For black box function, Type-C interface, 4×inputs, 1×Y output, 1×RO, 1×AI, 1×AO, or 3×temperature sensor inputs (PT100/PT1000/KTY84)Independent battery available for power supply

Model Description



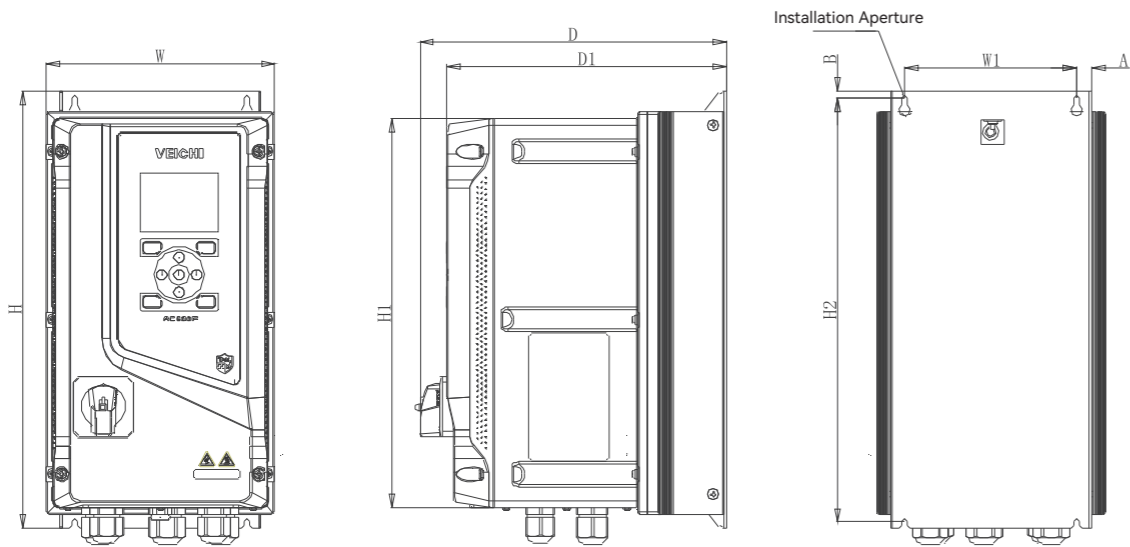
Selection Guide



Output Current

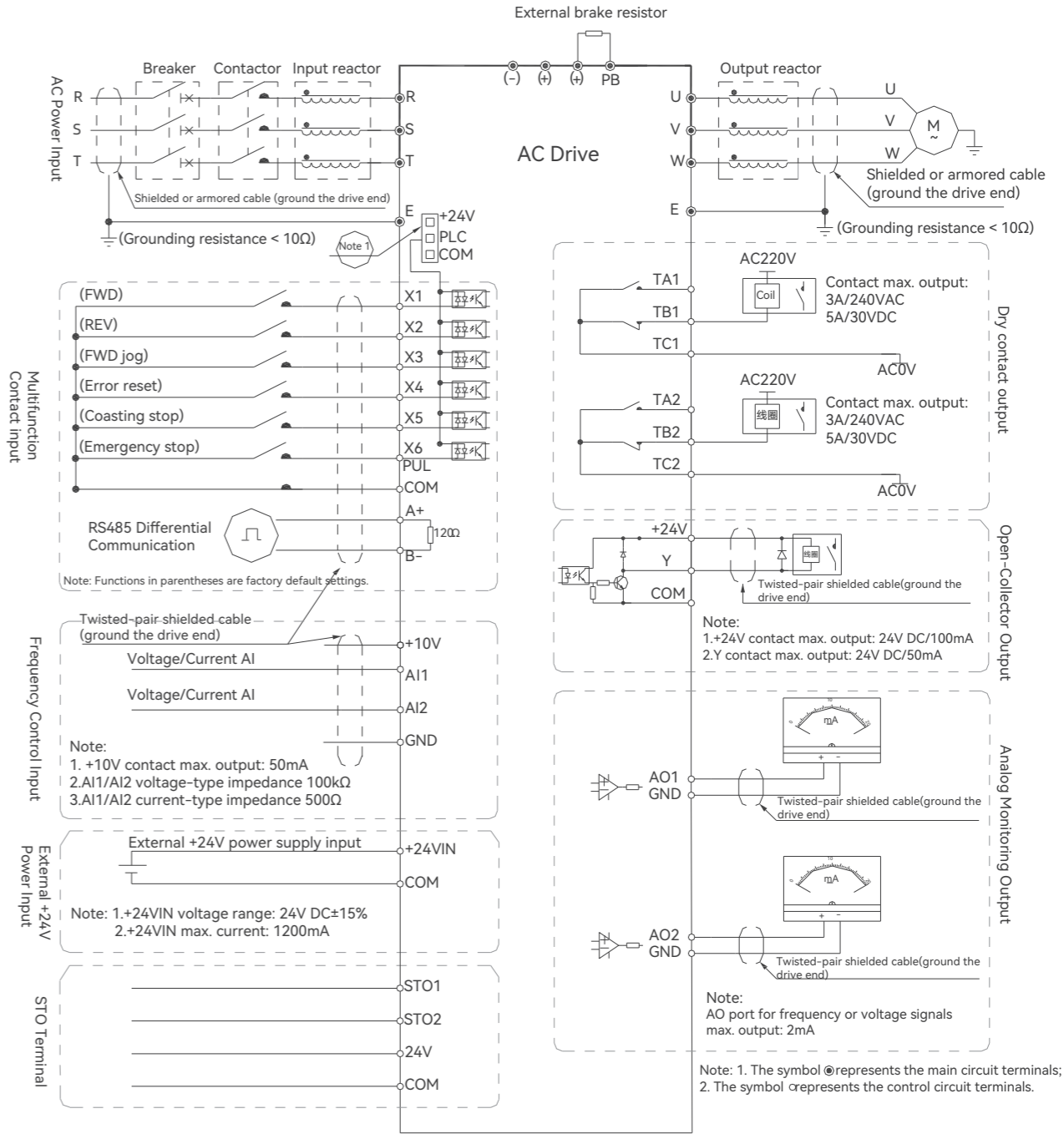
Voltage(V)	220V	380V	660V	Voltage(V)	220V	380V	660V
Power(kW)	Rated Output Current (A)			Power(kW)	Rated Output Current (A)		
0.75	4	3	-	18.5	70	38	-
1.5	7	4	-	22	80	45	28
2.2	10	6	-	30	110	60	35
4	16	10	-	37	130	75	45
5.5	20	13	-	45	160	90	52
7.5	30	17	-	55	200	110	63
11	42	25	-	75	260	150	86
15	55	32	-	90	320	180	98

Installation Size



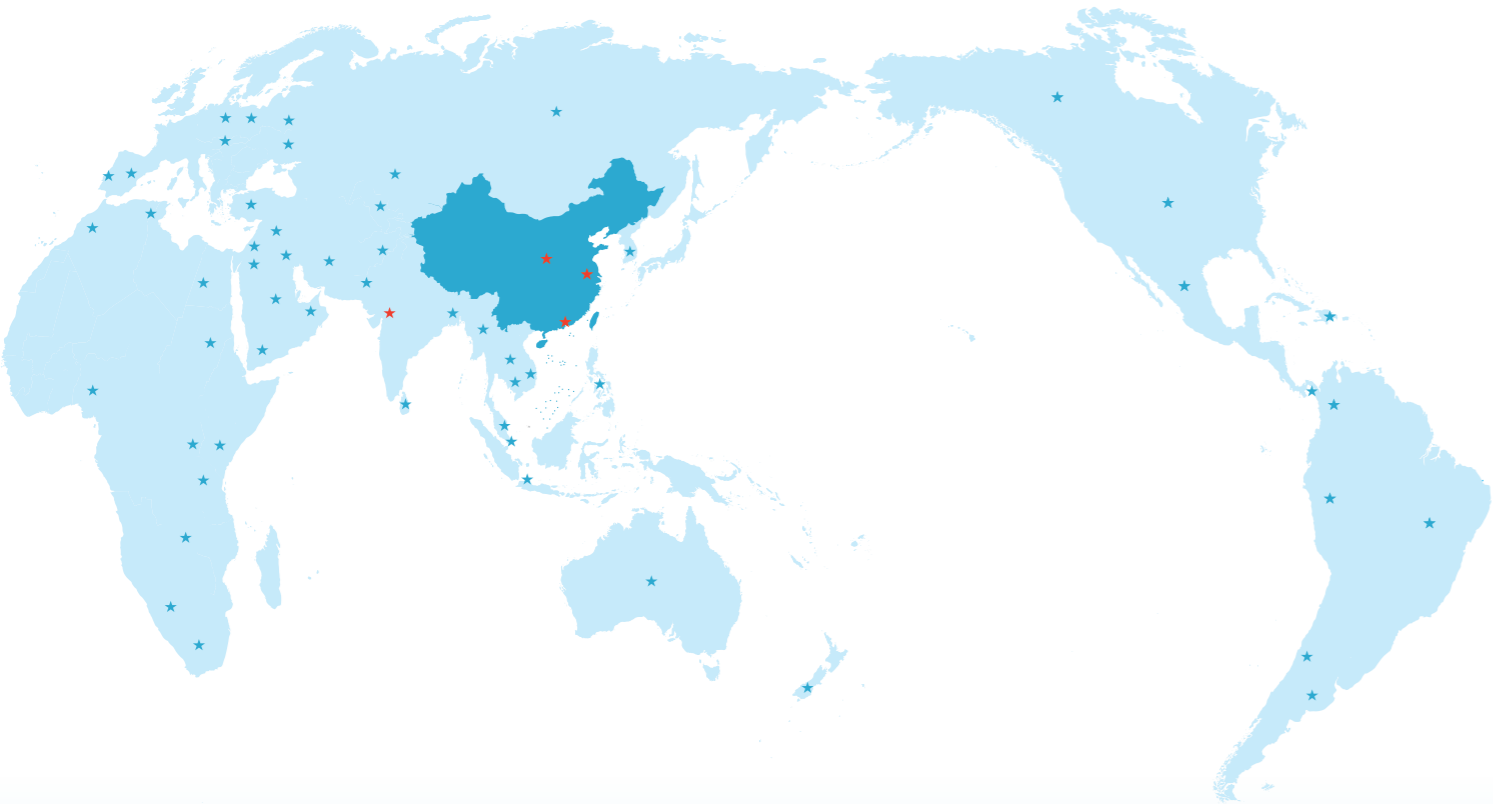
Case	Drive Model	Outer Dimension (mm)					Hole Position (mm)				Net (kg)	Installation Aperture
		W	H	H1	D	D1	W1	H2	A	B		
V1	AC600F-T4-R75G/1R5P	170	325	290	209	189	128	315	5.5	10.8	5.2	4-M4
	AC600F-T4-1R5G/2R2P											
V2	AC600F-T4-2R2G/004P	170	325	290	228	208	128	315	5.5	10.8	6.2	4-M4
	AC600F-T4-004G/5R5P											
	AC600F-T4-5R5G/7R5P											
V3	AC600F-T4-7R5G/011P	170	380	350	250	230	128	365	6.75	11	8.8	4-M5
	AC600F-T4-011G/015P											
V4	AC600F-T4-015G/018P	200	460	430	267.5	247.5	159.4	445	9.25	11.5	13.5	4-M6
	AC600F-T4-018G/022P											
	AC600F-T4-022G/030P											

Wiring Diagram



# PIONEERING TECHNOLOGY UNMATCHED SERVICE

VEICHI Electric has established an integrated global service network through its innovative "Region + Industry" marketing strategy, which synergizes cross-sector resources and distribution channels to deliver comprehensive solutions. With permanent business and technical support teams strategically located across 21 major Chinese cities and overseas operations including Indian subsidiaries, the company is supported by an extensive network of 313 domestic and international distributors that ensure seamless market coverage. By consistently delivering superior product quality backed by professional technical support and service excellence, VEICHI Electric continues to enhance its global brand reputation while driving sustainable international growth through reliable, customer-centric solutions.



A growing network of 334 distributors now represents our expanded global reach. Domestically, our operations are anchored by resident teams in 22 major cities, while our overseas expansion is bolstered by a series of subsidiaries and offices, marking a significant step in our journey to becoming a truly global service provider.



# GREEN INNOVATION FUTURE REIMAGINED

As China accelerates its "carbon peak" and "carbon neutral" initiatives, VEICHI Electric has positioned itself at the forefront of integrating intelligent manufacturing with sustainable solutions - a strategic convergence that addresses both industrial efficiency and environmental imperatives.

By leveraging market-driven insights and continuous technological innovation, we are developing advanced industrial control systems that not only optimize production processes but also incorporate energy-efficient solutions, thereby accelerating industry-wide digital transformation. Through our pioneering "Twin Wings" strategy - which synergizes automation excellence with sustainability practices - we enable manufacturing partners to successfully transition to data-driven, eco-conscious operations, ultimately creating sustainable industrial productivity that meets global climate objectives.

