

ATLE7-H Series

Low-Voltage Variable Frequency Drive



PRODUCT MANUAL

Dedicated to Motor Drive and Control



ATF 奥托科技

Corporate Culture

Vision

To be a leader in motor drive and control

Mission

Inherit the military gene, create first-class products, and make national contributions

Values

Integrity, unity, creativity, risk taking

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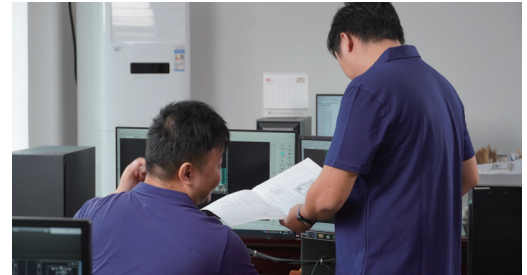
Company Profile

Changsha ATA Automation Co., Ltd. is a national “Little Giant” enterprise specialized in the R&D, production, and sales of soft starters, variable frequency drives (VFDs), and intelligent motor control solutions. We have consistently focused on the development of motor drive and control products and the provision of complete solutions, establishing in-depth cooperation with over 1,000 large-scale enterprises.



A highly experienced R&D team has independently established the Changsha Medium/High Voltage High-Power Variable Frequency Soft-Start Technology Innovation Center and the Hunan Provincial Enterprise Technology Center, fostering deep exchanges with global researchers and experts to ensure product reliability.

With over 80 patents, more than 20 software copyrights, and participation in numerous national standard formulations, we have achieved key technological breakthroughs—including series voltage equalization, medium-low voltage isolation, large-margin long-life multi-level redundancy, flying start, three-phase digital phase-locked loop algorithms, high-power seamless switching, and reliable thyristor/IGBT drive and magnetic triggering. Our medium-voltage soft starters ($\geq 28,000$ kW) and variable-frequency soft starters ($\geq 16,000$ kVA) have been successfully deployed in major projects, positioning us as an industry leader and trusted partner.



The company's flagship products include low-voltage soft starters, medium-voltage soft starters, low-voltage variable frequency drives, medium-voltage variable frequency drives, medium-voltage variable frequency soft starters, and motor intelligent drive controllers. These products are widely used across diverse industrial sectors such as metallurgy, petroleum, chemicals, machinery, shipbuilding, oil fields, mining, papermaking, cement, fire protection, power generation, coal mining, and wastewater treatment.

We have been successfully applied in major domestic and international enterprises and national key projects, including PetroChina, Sinopec, CNOOC, Ansteel Group, Shougang Group, and Messer Group. The company has earned consistent praise from customers for its superior product quality and reliable after-sales service. The products are exported to countries including Saudi Arabia, Oman, Indonesia, Malaysia, Vietnam, Russia, Democratic Republic of the Congo, Zambia, Georgia and Brazil etc, enjoying a strong international reputation.

Certifications

Since 1998 – Driving & Protecting Industrial Power Systems



- ISO 9001 Quality Management System Certification
- ISO 14001 Environmental Management System Certification
- ISO 45001 Occupational Health and Safety Management System Certification
- Intellectual Property Management System Certification
- CCC Certification
- CE Certification
- EAC Certification



Product Description

The ATLE7-H Series Standard VFD is a high-performance product integrated with vector control technology. Equipped with advanced current vector control, it can easily drive induction motors—boasting superior quality and high power density. It also delivers notable improvements in usability, maintainability, environmental friendliness, space-saving installation, and design standards, further optimizing the user experience.



ATLE7 Series Low-Voltage VFD

- Current Vector Control
- Adaptive Acceleration/Deceleration
- Wide Speed Regulation Range
- Shock-Free Speed Tracking

Product Features

01

Current Vector Control

Based on the motor's operating status, adjust motor parameters online to achieve optimal control of the motor.

02

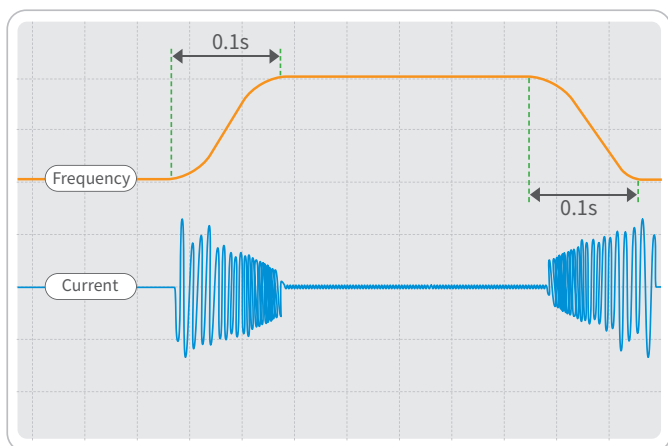
Wide Speed Regulation Range

Output frequency: 0 ~ 1200Hz

03

Adaptive Acceleration/Deceleration

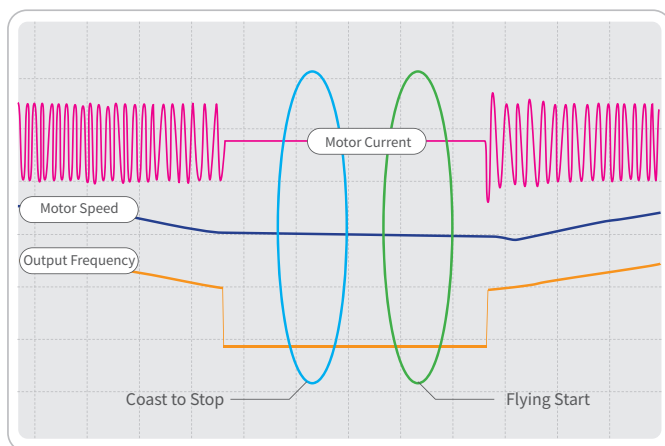
Intelligently adjust the acceleration/deceleration rate based on the load's operating status



04

Superior Acceleration/Deceleration Performance

With excellent current and voltage control technology, the VFD operates stably without tripping even when alternating between acceleration and deceleration repeatedly under 0.1s commands.



05

Shock-Free Speed Tracking

The VFD completes the identification of motor speed, direction, and phase angle within 0.2 seconds without the need for dedicated hardware detection circuits, and it smoothly tracks the starting of the freely rotating motor.

06**Momentary Power Loss Ride-Through**

During momentary grid power loss, the VFD continues operating without shutting down using energy fed back by the motor, and resumes normal operation once power is restored.

07**Intelligent Flux Braking**

Based on the motor's operating status, it intelligently determines the flux braking intensity to minimize deceleration time as much as possible.

08**Intelligent Energy-Saving Operation**

It intelligently identifies the energy-saving intensity based on the motor's operating status, minimizing the motor's energy consumption to the greatest extent.

09**Full-Range DC Braking**

DC braking can be activated at any frequency without a deceleration process.

10**Direct Switching Capability**

With excellent current-limiting performance, the VFD can connect to or disconnect from the motor at will while in operation.

11**Communication & Networking**

It adopts the international standard MODBUS communication protocol, facilitating complete network control with PLCs, HMI touchscreens, etc.

12**Modular, Flexible & Highly Adaptive**

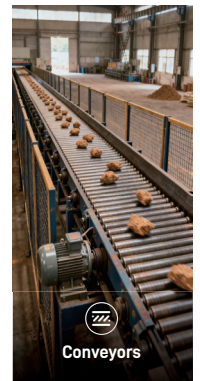
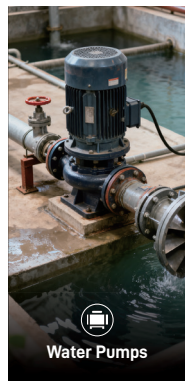
Adopting a modular design concept, it provides control for various general applications. The output capability of the ATLE7 Series has been proven to meet most industrial control requirements.

13**Rich Hot-Swappable Options**

Communication expansion cards and operation panels can be hot-swapped directly.

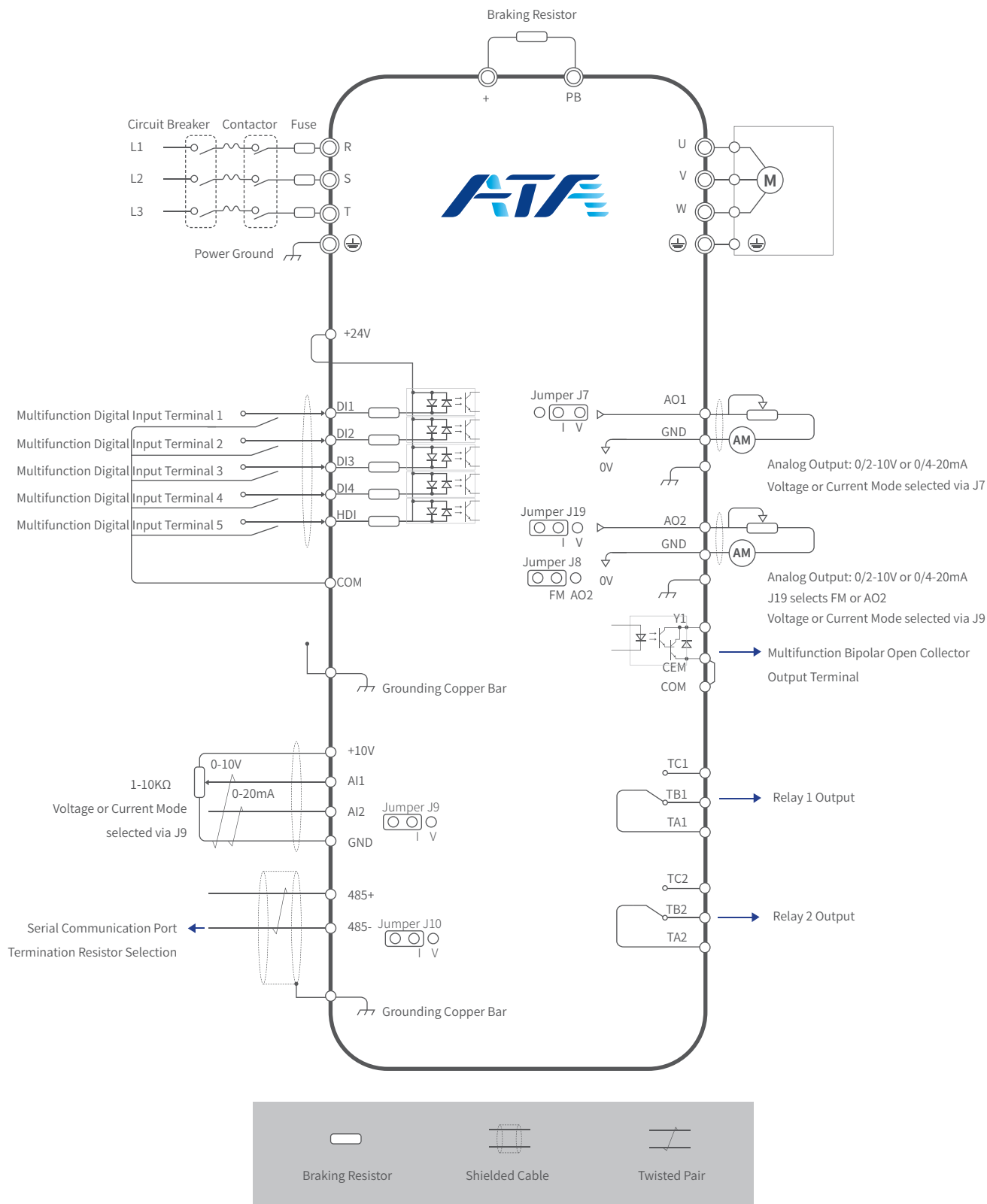
Application Fields

The ATLE7-H Series serves applications spanning compressors, HVAC, water pumps, textiles, plastics, ceramics, mining, conveyors, centrifuges, mills, saws, metal processing, packaging machinery, elevators and escalators, pharmaceuticals, and tanning machines.

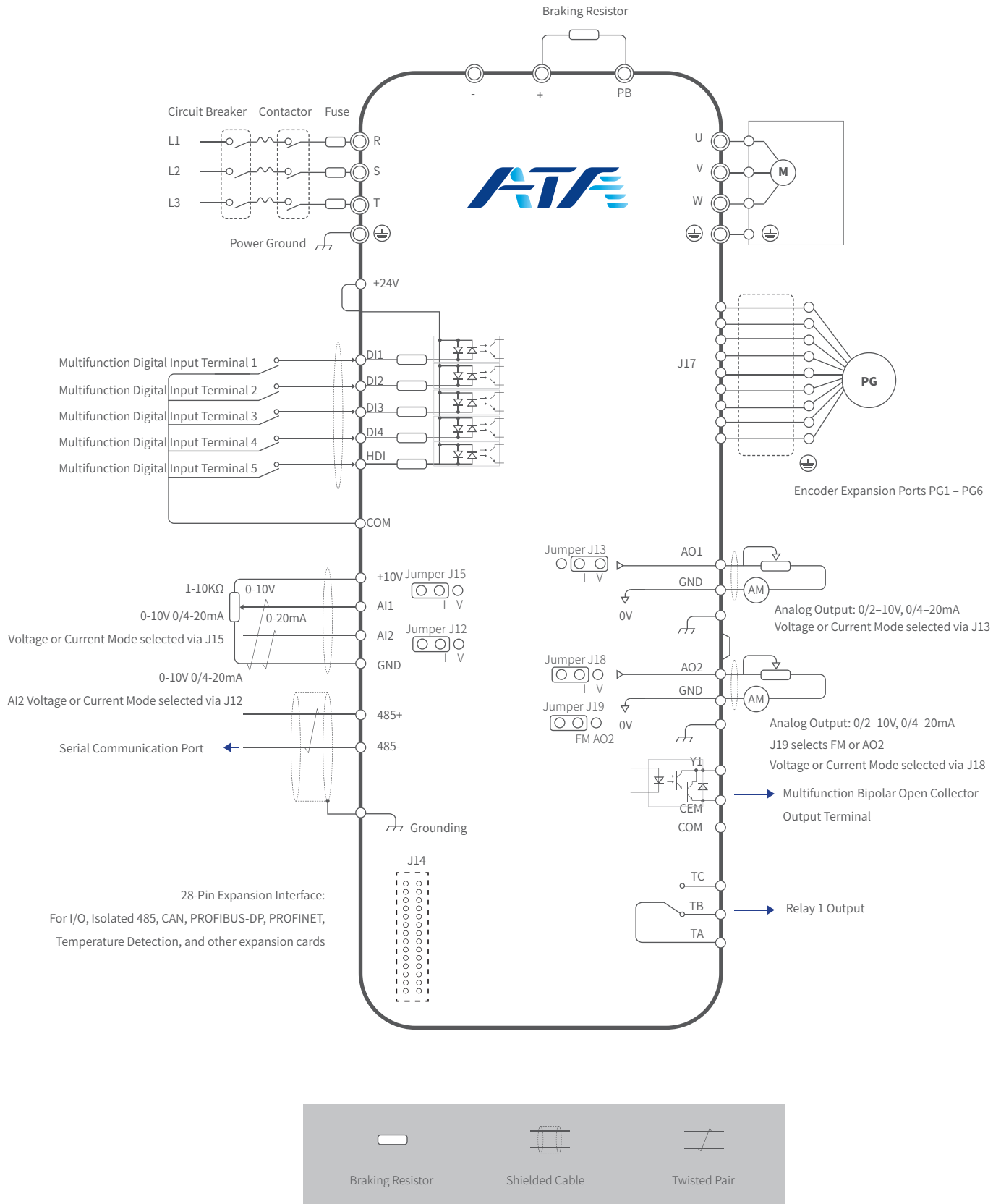


Standard Wiring Diagram

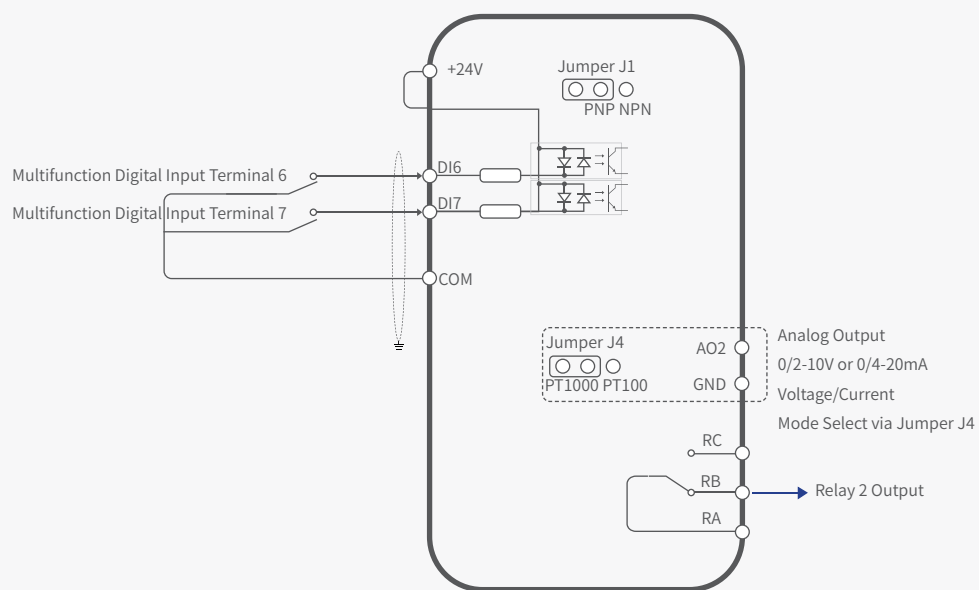
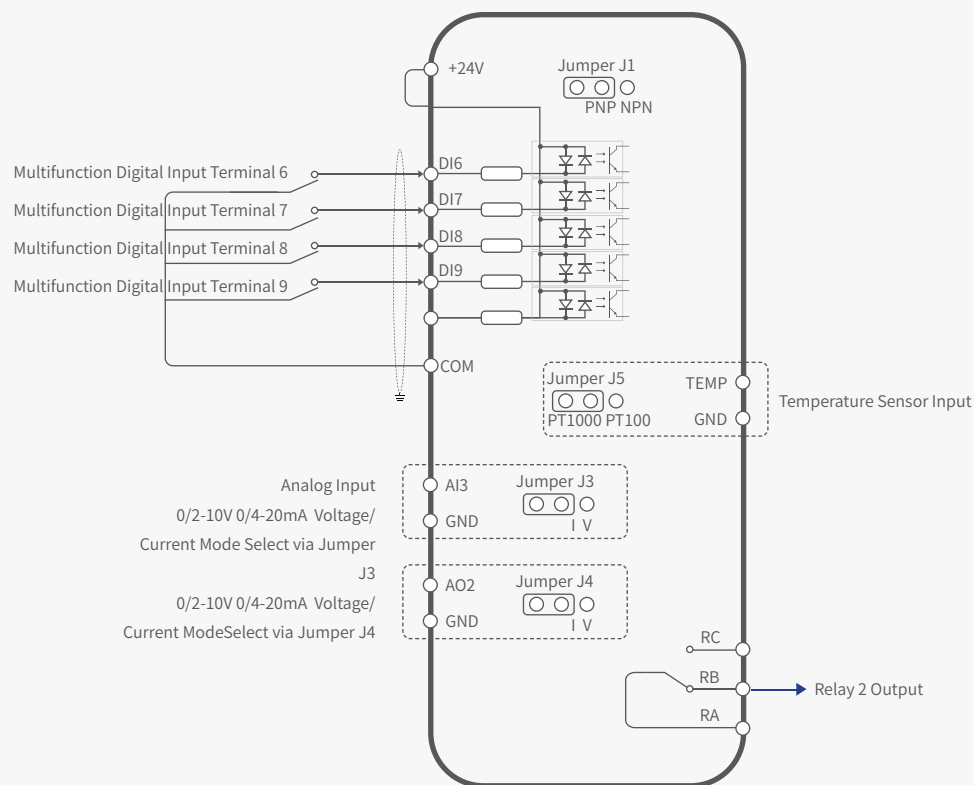
Wiring Schematic for VFDs with Power Rating of 2.2kW and Below



Wiring Schematic for VFDs with Power Rating of 4.0kW and Above



Expansion Card Terminal Diagram



Model Description & Dimensions

The standard products of ATA Low-Voltage VFDs cover the power range of 0.75-1250kW. Meanwhile, we also provide customers with personalized in-depth customization solutions.



Model explanation

ATLE7-H S - A 4 T 4R0 G B /5R5 P B

Product Series Name:
ATLE7-H Series
E7: Technology Platform

Compatible Motor:
—: Not Specified
S: For Synchronous Motors Only

Design Version:
—: Version A
B: Version B
C: Version C

Voltage Class:
3: 220V
4: 380V
5: 480V
7: 660V

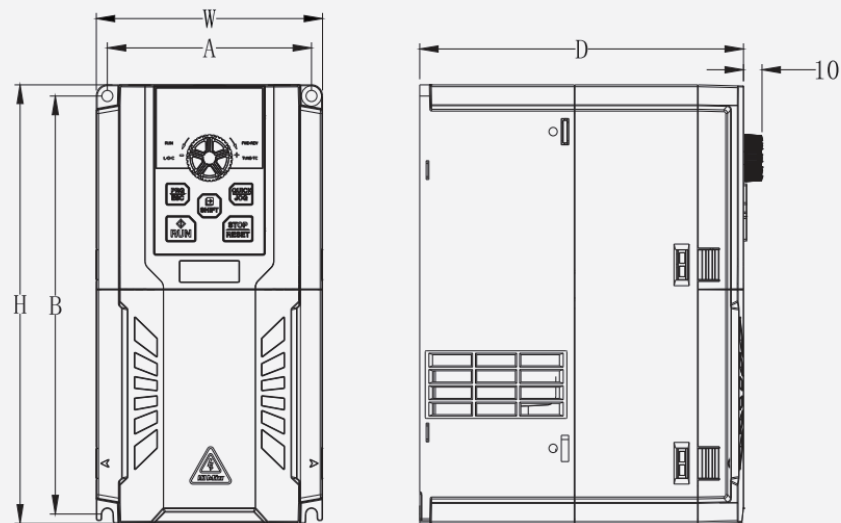
Built-in Braking Unit
B: Built-in Braking Unit
(B): Optional Built-in Braking Unit
Blank: No Built-in Braking Unit

Applicable Model Type:
G: Heavy-duty / General Purpose
P: Light-duty / Fan & Pump Application

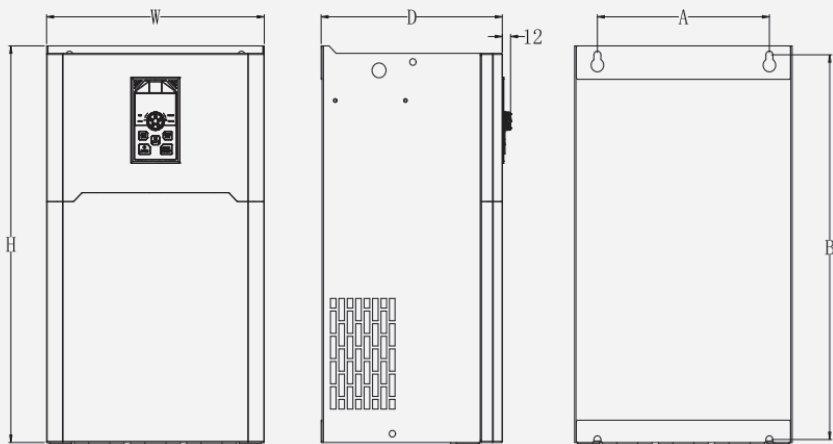
Applicable Motor Power:
0.75KW~1200KW
R= (·)
4R0=4.0KW 011=11KW

Voltage Classification:
T: Three-phase Input
S: Single-phase Input

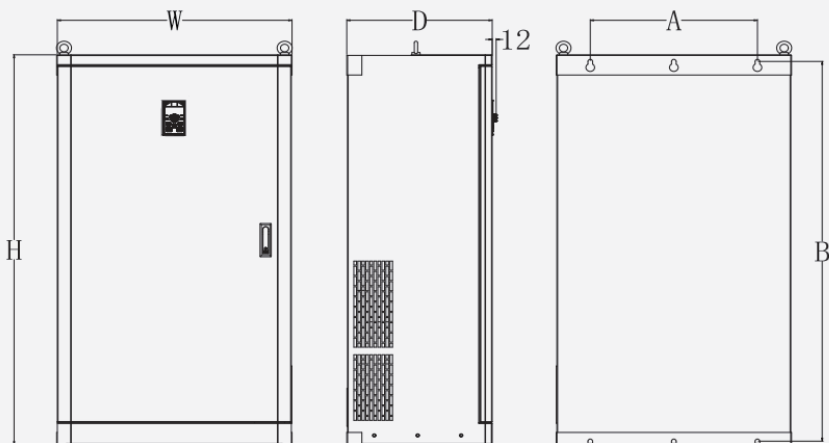
ATLE7 Dimensional Drawings



A: Plastic Wall-Mount Type



B: Sheet Metal Wall-Mount Type



C: Vertical Type

VFD Model	Rated Input Current (A)	Rated Output Current (A)	Adaptive Motor (kW)	Mounting Hole Positions		Overall Dimensions			Mounting Hole Diameter (mm)	Structure Type A/B
				A(mm)	B(mm)	H(mm)	W(mm)	D(mm)		
Single-phase 220V Voltage Range: -15% ~ +20%										
ATLE7-H-3SR40G	5.4	2.3	0.4	64	138	148	74	130	Φ4.5	A
ATLE7-H-3SR75G	8.2	4.0	0.75	64	138	148	74	130	Φ4.5	A
ATLE7-H-3S1R5G	14.0	7.0	1.5	76	156	165	86	140	Φ5	A
ATLE7-H-3S2R2GB	23.0	9.6	2.2	76	156	165	86	140	Φ5	A
ATLE7-H-3S4ROGB	40.0	17.0	4.0	111	223	234	123	176	Φ6	A
ATLE7-H-3S5R5GB	60.0	25.0	5.5	147	264	275	160	186	Φ6	A
ATLE7-H-3S7R5GB	75.0	32.0	7.5	147	264	275	160	186	Φ6	A
ATLE7-H-3S11GB	100.0	45.0	11.0	174	319	330	189	186	Φ6	A
ATLE7-H-3S15G	130.0	60.0	15.0	200	410	425	255	206	Φ7	B
Three-phase 220V Voltage Range: -15% ~ +20%										
ATLE7-H-3TR40GB	2.7	2.3	0.4	76	156	165	86	140	Φ5	A
ATLE7-H-3TR75GB	4.2	4.0	0.75	76	156	165	86	140	Φ5	A
ATLE7-H-3T1R5GB	7.7	7.0	1.5	98	182	192	110	165	Φ5	A
ATLE7-H-3T2R2GB	12.0	9.6	2.2	98	182	192	110	165	Φ5	A
ATLE7-H-3T4R0GB	19.0	17.0	4.0	111	223	234	123	176	Φ6	A
ATLE7-H-3T5R5GB	28.0	25.0	5.5	147	264	275	160	186	Φ6	A
ATLE7-H-3T7R5GB	35.0	32.0	7.5	147	264	275	160	186	Φ6	A
ATLE7-H-3T11GB	47.0	45.0	11.0	174	319	330	189	186	Φ6	A
ATLE7-H-3T15G	65.0	60.0	15.0	200	410	425	255	206	Φ7	B
ATLE7-H-3T18G	80.0	75.0	18.0	200	410	425	255	206	Φ7	B
ATLE7-H-3T22G	97.0	90.0	22.0	245	518	534	310	258	Φ10	B
ATLE7-H-3T30G	115.0	110.0	30.0	245	518	534	310	258	Φ10	B
ATLE7-H-3T37G	166.0	152.0	37.0	290	544	560	350	268	Φ10	B
ATLE7-H-3T45G	190.0	176.0	45.0	290	544	560	350	268	Φ10	B
ATLE7-H-3T55G	214.0	210.0	55.0	320	678	695	410	295	Φ10	B
ATLE7-H-3T75G	256.0	253.0	75.0	320	678	695	410	295	Φ10	B
ATLE7-H-3T93G	389.0	380.0	93.0	380	1025	1050	480	330	Φ10	C
ATLE7-H-3T110G	435.0	426.0	110.0	500	1170	1200	590	365	Φ14	C
ATLE7-H-3T132G	539.0	530.0	132.0	500	1170	1200	590	365	Φ14	C
ATLE7-H-3T160G	608.0	600.0	160.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-3T200G	680.0	660.0	200.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-3T220G	740.0	720.0	220.0	500	1255	1290	700	400	Φ14	C

VFD Model	Rated Input Current (A)	Rated Output Current (A)	Adaptive Motor (kW)	Mounting Hole Positions		Overall Dimensions			Mounting Hole Diameter (mm)	Structure Type A/B
				A(mm)	B(mm)	H(mm)	W(mm)	D(mm)		
Three-phase 380V Voltage Range: -15% ~ +20%										
ATLE7-H-4TR75GB/1R5PB	3.4/5.0	2.1/3.8	0.75/1.5	76	156	165	86	140	Φ5	A
ATLE7-H-4T1R5GB/2R2PB	5.0/5.8	3.8/5.1	1.5/2.2	76	156	165	86	140	Φ5	A
ATLE7-H-4T2R2GB/4R0PB	5.8/10.5	5.1/9.0	2.2/4.0	76	156	165	86	140	Φ5	A
ATLE7-H-4T4R0GB/5R5PB	10.5/14.6	9.0/13.0	4.0/5.5	98	182	192	110	165	Φ5	A
ATLE7-H-4T5R5GB/7R5PB	14.6/20.5	13.0/17.0	5.5/7.5	98	182	192	110	165	Φ5	A
ATLE7-H-4T7R5GB/9R0PB	20.5/22.0	17.0/20.0	7.5/9.0	111	223	234	123	176	Φ6	A
ATLE7-H-4T9R0GB/011PB	22.0/26.0	20.0/25.0	9.0/11.0	111	223	234	123	176	Φ6	A
ATLE7-H-4T011GB/015PB	26.0/35.0	25.0/32.0	11.0/15.0	147	264	275	160	186	Φ6	B
ATLE7-H-4T015GB/018PB	35.0/38.5	32.0/37.0	15.0/18.5	147	264	275	160	186	Φ6	B
ATLE7-H-4T018GB/022PB	38.5/46.5	37.0/45.0	18.5/22.0	174	319	330	189	186	Φ6	B
ATLE7-H-4T022GB/030PB	46.5/62.0	45.0/60.0	22.0/30.0	174	319	330	189	186	Φ6	B
ATLE7-H-4T030G(B)/037P(B)	62.0/76.0	60.0/75.0	30.0/37.0	200	410	425	255	206	Φ7	B
ATLE7-H-4T037G(B)/045P(B)	76.0/92.0	75.0/90.0	37.0/45.0	200	410	425	255	206	Φ7	B
ATLE7-H-4T045G(B)/055P(B)	92.0/113.0	90.0/110.0	45.0/55.0	245	518	534	310	258	Φ10	B
ATLE7-H-4T055G(B)/075P(B)	113.0/157.0	110.0/152.0	55.0/75.0	245	518	534	310	258	Φ10	B
ATLE7-H-4T075G(B)/093P(B)	157.0/180.0	152.0/176.0	75.0/93.0	290	544	560	350	268	Φ10	B
ATLE7-H-4T093G/110P	180.0/214.0	176.0/210.0	93.0/110.0	290	544	560	350	268	Φ10	B
ATLE7-H-4T110G/132P	214.0/256.0	210.0/253.0	110.0/132.0	320	678	695	410	295	Φ10	B
ATLE7-H-4T132G/160P	256.0/307.0	253.0/304.0	132.0/160.0	320	678	695	410	295	Φ10	B
ATLE7-H-4T160G/185P	307.0/345.0	304.0/340.0	160.0/185.0	380	1025	1050	480	330	Φ10	C
ATLE7-H-4T185G/200P	345.0/385.0	340.0/380.0	185.0/200.0	380	1025	1050	480	330	Φ10	C
ATLE7-H-4T200G/220P	385.0/430.0	380.0/426.0	200.0/220.0	380	1025	1050	480	330	Φ10	C
ATLE7-H-4T220G/250P	430.0/468.0	426.0/465.0	220.0/250.0	500	1170	1200	590	365	Φ14	C
ATLE7-H-4T250G/280P	468.0/525.0	465.0/520.0	250.0/280.0	500	1170	1200	590	365	Φ14	C
ATLE7-H-4T280G/315P	525.0/590.0	520.0/585.0	280.0/315.0	500	1170	1200	590	365	Φ14	C
ATLE7-H-4T315G/355P	590.0/665.0	585.0/650.0	315.0/355.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-4T355G/400P	665.0/785.0	650.0/725.0	355.0/400.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-4T400G/450P	785.0/883.0	725.0/820.0	400.0/450.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-4T450G/500P	883.0/920.0	820.0/900.0	450.0/500.0	500	1255	1290	700	400	Φ14	C
ATLE7-H-4T500G/550P	920.0/1020.0	900.0/1000.0	500.0/550.0	/	/	1800	1000	500	立式	C
ATLE7-H-4T550G/630P	1020.0/1120.0	1000.0/1100.0	550.0/630.0	/	/	1800	1000	500	立式	C
ATLE7-H-4T630G	1120	1100	630	/	/	1800	1000	500	立式	C
ATLE7-H-4T710G	1315	1250	710	/	/	2200	1200	600	立式	C
ATLE7-H-4T800G	1560	1450	800	/	/	2200	1200	600	立式	C
ATLE7-H-4T900G	1760	1710	900	/	/	2300	1500	600	立式	C
ATLE7-H-4T1000G	1960	1900	1000	/	/	2300	1500	600	立式	C

VFD Model	Rated Input Current (A)	Rated Output Current (A)	Adaptive Motor (kW)	Mounting Hole Positions		Overall Dimensions			Mounting Hole Diameter (mm)	Structure Type A/B
				A(mm)	B(mm)	H(mm)	W(mm)	D(mm)		
Three-phase 660V Voltage Range: -15% ~ +20%										
ATLE7-H-7T030GB	42.0	38.0	30.0	245	554	570	310	264	φ10	C
ATLE7-H-7T037GB	49.5	47.0	37.0	245	554	570	310	264	φ10	C
ATLE7-H-7T045GB	58.0	55.0	45.0	245	554	570	310	264	φ10	C
ATLE7-H-7T055GB	70.0	65.0	55.0	245	554	570	310	264	φ10	C
ATLE7-H-7T075G	90.0	86.0	75.0	220	705	725	350	275	φ10	C
ATLE7-H-7T093G	105.0	100.0	93.0	220	705	725	350	275	φ10	C
ATLE7-H-7T110G	130.0	120.0	110.0	220	705	725	350	275	φ10	C
ATLE7-H-7T132G	170.0	150.0	132.0	320	815	835	440	295	φ10	C
ATLE7-H-7T160G	200.0	175.0	160.0	320	815	835	440	295	φ10	C
ATLE7-H-7T185G	208.0	198.0	185.0	320	815	835	440	295	φ10	C
ATLE7-H-7T200G	235.0	215.0	200.0	320	815	835	440	295	φ10	C
ATLE7-H-7T220G	247.0	245.0	220.0	320	815	835	440	295	φ10	C
ATLE7-H-7T250G	265.0	260.0	250.0	380	1115	1140	550	330	φ12	C
ATLE7-H-7T280G	305.0	299.0	280.0	380	1115	1140	550	330	φ12	C
ATLE7-H-7T315G	350.0	330.0	315.0	380	1115	1140	550	330	φ12	C
ATLE7-H-7T355G	382.0	374.0	355.0	380	1115	1140	550	330	φ12	C
ATLE7-H-7T400G	435.0	410.0	400.0	500	1348	1380	700	400	φ14	C
ATLE7-H-7T450G	490.0	465.0	450.0	500	1348	1380	700	400	φ14	C
ATLE7-H-7T500G	595.0	550.0	500.0	500	1348	1380	700	400	φ14	C
ATLE7-H-7T550G	605.0	600.0	550.0	/	/	2200	800	600	Vertical Type	C
ATLE7-H-7T630G	684.0	650.0	630.0	/	/	2200	800	600	Vertical Type	C
ATLE7-H-7T710G	768.5	730.0	710.0	/	/	2200	800	600	Vertical Type	C
ATLE7-H-7T800G	860.0	825.0	800.0	/	/	2200	1050	600	Vertical Type	C
ATLE7-H-7T900G	955.0	920.0	900.0	/	/	2200	1050	600	Vertical Type	C
ATLE7-H-7T1000G	1060.0	1025.0	1000.0	/	/	2200	1050	600	Vertical Type	C
ATLE7-H-7T1200G	1265.0	1250.0	1200.0	/	/	2200	1050	600	Vertical Type	C

Technical Specifications

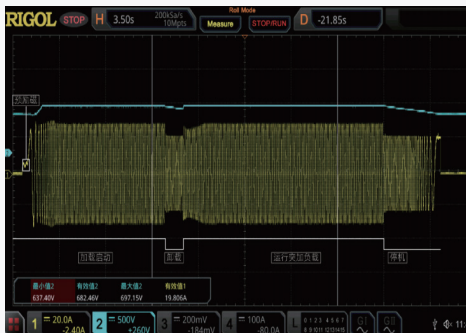
Function Description		Specification Index
Display & Keypad Operation	Phase Loss Protection	Input phase loss protection, output phase loss protection
	Instant Overcurrent Protection	Shuts down when the output current exceeds 250% of the rated output current
	Overvoltage Protection	Shuts down when the DC voltage of the main circuit exceeds 820V (for three-phase 380V models); Shuts down when the DC voltage of the main circuit exceeds 410V (for three-phase 220V and single-phase 220V models)
	Undervoltage Protection	Shuts down when the DC voltage of the main circuit is below 350V (for three-phase 380V models); Shuts down when the DC voltage of the main circuit is below 190V (for three-phase 220V and single-phase 220V models)
	Overheating Protection	Triggers protection when the inverter bridge overheats
	Overload Protection	Heavy-load application: Shuts down after 60s at 150% of rated current Light-load application: Shuts down after 60s at 110% of rated current
	Overcurrent Protection	Shuts down for protection when the current exceeds 2.5 times the rated current of the VFD
	Braking Protection	Overload protection for the braking unit, short-circuit protection for the braking resistor
	Short-Circuit Protection	Output inter-phase short-circuit protection, output-to-ground short-circuit protection
	Motor Protection	Motor stall protection, flying start protection, overload protection, overheating protection (Analog input A12 supports 4 types of motor temperature sensor inputs: PT100, PT1000)
	Motor Overheating Protection	Supports motor temperature sensor input (PT100, PT1000)



Function Description		Specification Index	
Customizable Functions	Operation Command	Given via operation panel, control terminal, or serial communication port (switchable via multiple methods)	
	Frequency Command	10 types of frequency commands: Digital given, analog voltage given, analog current given, pulse given, serial port given (switchable via multiple methods)	
	Auxiliary Frequency Command	10 types of auxiliary frequency commands: Enables flexible auxiliary frequency fine-tuning and frequency synthesis	
	Input Terminals	Standard: 5 DI terminals; 2 AI terminals: AI1 supports -10V~10V voltage mode input; AI2 supports -10V~10V voltage mode input, 0~20mA current mode input, and temperature mode input (function switchable via DIP switch)	Expansion Capability: 4 DI terminals; Temperature detection
	Output Terminals	Standard: 1 DO terminal; 1 relay output terminal; 1 FM (configurable as high-speed pulse output or general DO function); 2 AO terminals, supporting 0~20mA current output or 0~10V voltage output	Expansion Capability: 1 DO terminal; 1 relay output terminal
Basic Functions	Input Frequency Resolution	Digital setting: 0.01Hz; Analog setting: 0.025% of maximum frequency	
	Drivable Motor Types	Induction motors (IM), Permanent magnet synchronous motors (PMSM)	
	Control Mode	Open-loop vector control (SVC/V/F control)	
	Starting Torque	Model G: 0.5Hz/180% (SVC); Model P: 0.5Hz/120% (SVC)	
	Speed Regulation Range	1:200(SVC) 1:1000(FVC)	
	Speed Stability Accuracy	0.3% (SVC) 0.01%(FVC)	
	Torque Control Accuracy	FVC: $\pm 3\%$ SVC: 5Hz 以上 $\pm 5\%$	
	Torque Boost	Automatic torque boost; Manual torque boost: 0.1%~30.0%V/F	
	V/F Curve	Three types: Linear, Multicurve, Square V/F curve	

Function Description		Specification Index
Basic Functions	Torque Control Accuracy	FVC:±3% SVC:5Hz 以上 ±5%
	Torque Boost	Automatic torque boost; Manual torque boost: 0.1%~30.0%V/F
	V/F Curve	Three types: Linear, Multicurve, Square V/F curve
	Acceleration/Deceleration Curve	Linear or S-curve acceleration/deceleration modes are selectable; Rounded corners can be set to reduce mechanical impact caused by frequency changes. Four groups of acceleration/deceleration times can be set, with acceleration time range: 0.0~6500.0s
	DC Braking	DC braking starts from 0.00Hz to maximum frequency; Braking time: 0.0s~100.0s; Braking action range: 0.0%~100.0%
	Jog Control	Jog frequency range: 0.0Hz~50.0Hz; Jog acceleration/deceleration time: 0.0s~6500.0s
	Simple PLC & Multi-speed Operation	Up to 16-speed operation can be achieved via built-in PLC curve control
	Built-in PID	Facilitates easy implementation of process control/PID control systems
	Automatic Voltage Regulation (AVR)	Automatically maintains stable output voltage when grid voltage changes
	Overvoltage/Overcurrent Runaway Control	Automatically suppresses grid voltage during operation to prevent frequent overvoltage trips
	Fast Current Limiting Function	Minimizes overcurrent faults to the greatest extent, protecting the VFD for normal operation
	Torque Limitation & Control	"Excavator" characteristic: Automatically limits torque during operation to prevent frequent overcurrent trips; Torque control can be achieved in closed-loop vector mode
Operating Environment	Applicable Location	Indoors; avoid direct sunlight, dust, corrosive gases, flammable gases, oil mist, steam, seawater/salt spray, etc.
	Altitude	No derating required for use below 1000m; For every 100m increase above 1000m, derate by 1%. Maximum altitude: 3000m; Contact the manufacturer if exceeding 3000m
	Ambient Temperature	-10°C ~+50°C ; Derating is required when ambient temperature is 40~50°C : derate by 1.5% for every 1°C increase
	Humidity	Less than 95% RH, no condensation
	Vibration	Less than 5.9m/s ² (0.6g)
	Storage Temperature	-20° C~+60° C

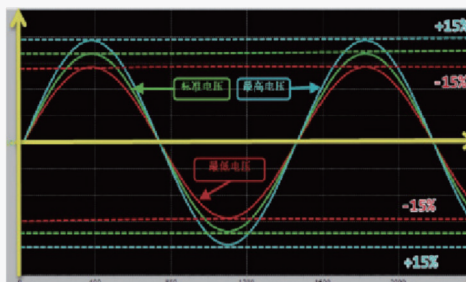
Performance Features				
· Control Mode Selection ·				
Control Mode	Speed Control	Torque Control	Position Control	Applicable Motor
VF	●			Induction motor
Voltage-Frequency Separation	●			Torque motor, EPS power supply, series resonance
High-performance Vector Control (Without PG)	●	●		Induction motor, permanent magnet synchronous motor
High-performance Vector Control (With PG)	●	●	●	Induction motor, permanent magnet synchronous motor
· Excellent Control Performance ·				
Control Mode	Speed Control	Torque Control	Applicable Motor	
High-performance Vector Control (Without PG)	1:200	150%	Permanent magnet synchronous motor	
High-performance Vector Control (Without PG)	1:100	150%	Induction motor	
High-performance Vector Control (With PG)	1:1000	200%	Induction motor, permanent magnet synchronous motor	



High Starting Torque Characteristics

High low-frequency torque: In closed-loop vector mode, it can output 200% of the rated torque at 0.0Hz, and can operate stably under load at the ultra-low speed of 0.01Hz. The powerful low-torque output effectively ensures stable and smooth startup.

Stable torque output in torque control mode: The linearity deviation is within 3%, which greatly ensures the stable operation of the equipment.



Wide Voltage Design

The input voltage allows a fluctuation range of $\pm 15\%$ of the standard rated voltage. During operation, it can avoid the impact caused by voltage fluctuations, which meets the requirements of harsh power grid environments.

Motor Parameter Self-Learning

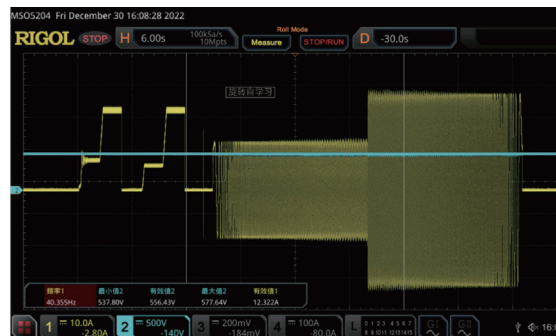
Whether in rotating or stationary motor self-learning mode, accurate motor parameters can be obtained. It is easy to debug and operate, and provides higher control precision and response speed.

Rotating Self-Learning /

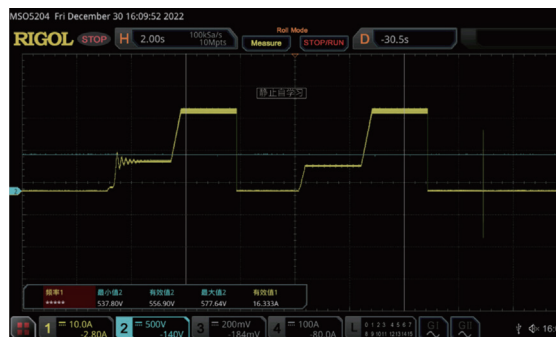
Must be separated from the load for learning; suitable for scenarios with high control precision requirements.

Stationary Self-Learning /

Equipped with a powerful motor self-learning algorithm, it can obtain motor parameters when the motor is stationary, and its effect is comparable to rotating self-learning.



Rotating Self-Learning



Stationary Self-Learning

Over-Excitation Braking Function

In some inertia stop scenarios, rapid braking can be achieved via the over-excitation braking function without adding a braking resistor, which enhances the product's usability. The over-excitation braking function effectively suppresses the rise of bus voltage during deceleration, prevents overvoltage faults of the VFD, and realizes rapid braking at the same time, meeting the requirement of rapid stop in case of power outage.



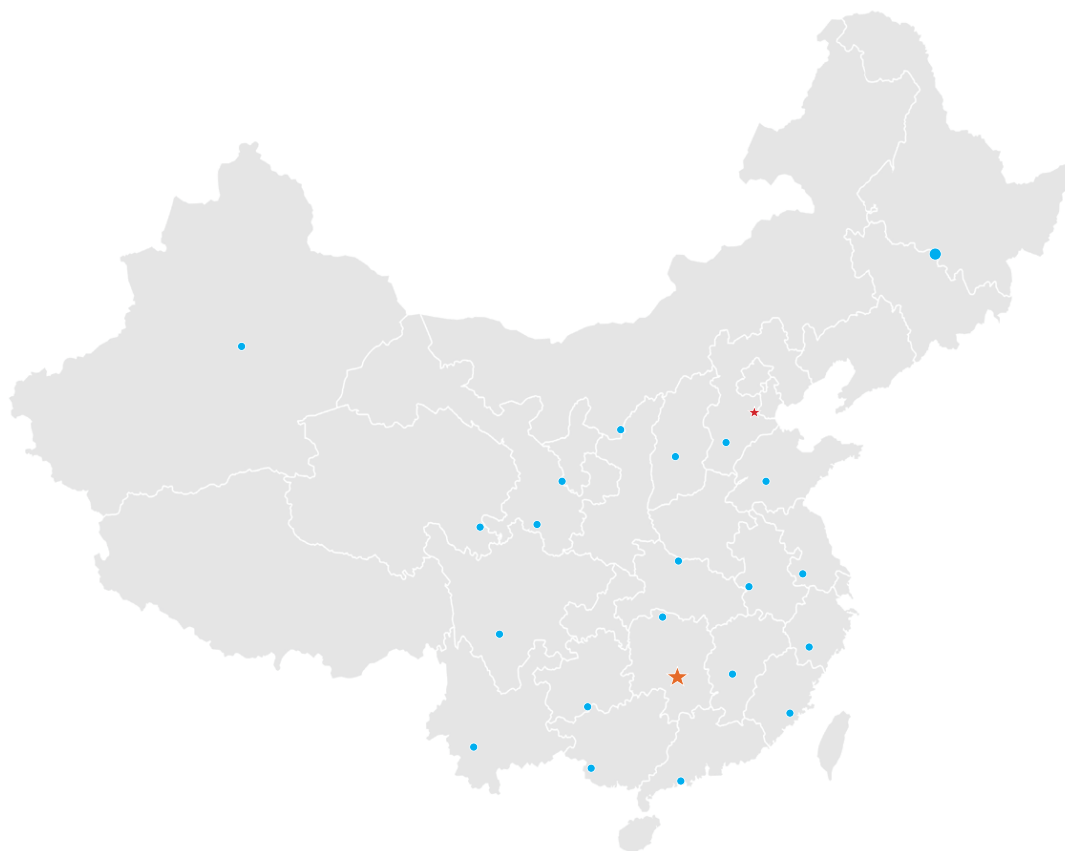
Over-Excitation Braking Function Enabled



Over-Excitation Braking Function Disabled

Service Support

We provide comprehensive post-sales services including technical consultation, training programs, on-site support, rapid response mechanisms, 24/7 monitoring, scheduled maintenance, and documentation management.



● Subsidiaries / Offices

★ Headquarters / Inventory Center / Spare Parts Center



Service Hotline

+852 6589 9216



Tech. Support Hotline

+86 0731-88996605 +86 0731-88996887

Ordering Instructions

Committed to providing the highest quality services and efficient ordering solutions.

**When placing an order
please provide the following information**

01

Motor Mode
Rated Power
Rated Current
Rated Voltage
Rated Speed

02

The type of motor
driving load such
as fan, water pump,
compressor and
etc.

03

If the device will be
operated in special
environment, please
inform us when you
place the order

04

Please contact
us for additional
requirements

- ◆ The company reserves the right to modify product design and specifications without prior notice.
- ◆ In case of any discrepancy between the images in this product selection manual and the actual product, the actual product shall prevail.
- ◆ The final interpretation right of this product selection manual belongs to Changsha ATA Automation Co., Ltd.



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