

ATA QB-7 Series

Low-Voltage Soft Starter



PRODUCT MANUAL

Dedicated to Motor Drive and Control

A tall, modern office building with a light-colored facade and many windows. The building is covered in a large blue semi-transparent overlay that contains white text. The text is arranged in a vertical stack on the left side of the building. The building's name 'ATF 奥托科技' is visible at the top right corner of the building's facade.

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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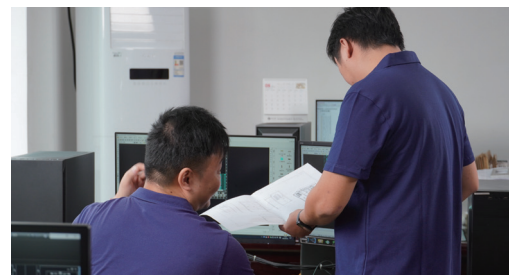
Company Profile

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



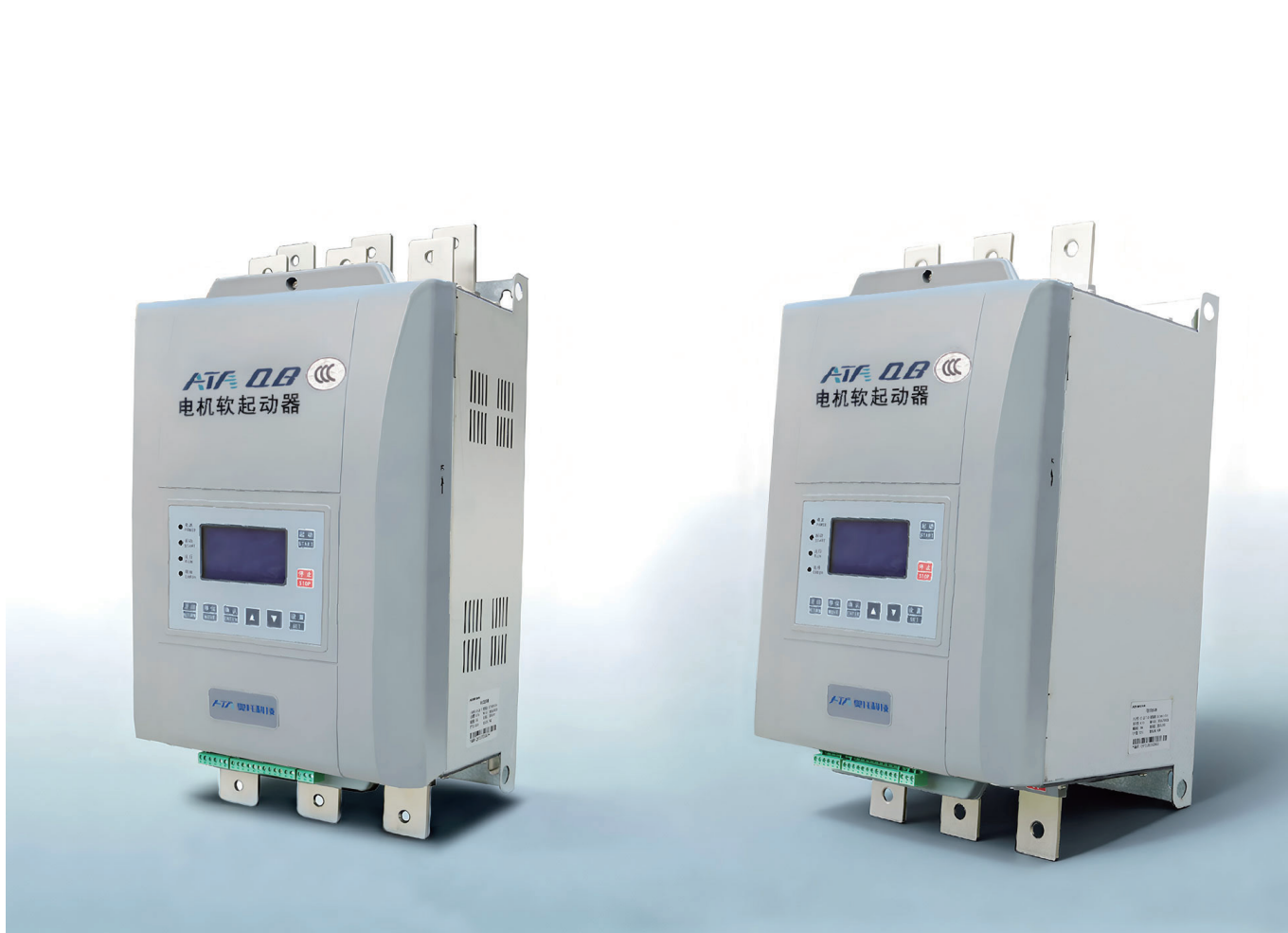
Product Description

ATA QB-7 series motor soft starters is a new-generation device integrating power electronics with advanced motor control theory. Engineered as the optimal upgrade over conventional autotransformer, star-delta, and magnetic starters, they deliver superior starting performance for heavy-duty loads including fans, pumps, compressors, and ball mills.



Standard Type

Built-in Bypass Type



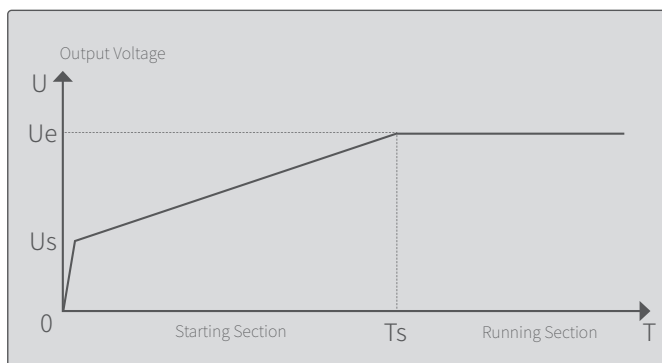
QB-7 Series Low-Voltage Soft Starter

- Diverse Start-stop Modes
- Optimized Structural Design
- Extensive User Interfaces
- Comprehensive Protection
- Advanced Event Logging
- High Scalability
- Multi-Protocol Communication
- Enhanced Display Capabilities
- Flexible Wiring Options
- ...

Product Features

01 Diverse Start-Stop Modes

ATA QB-7 series features four starting modes: voltage start, ramp start, current-limit start, and heavy-load (kickstart) start.

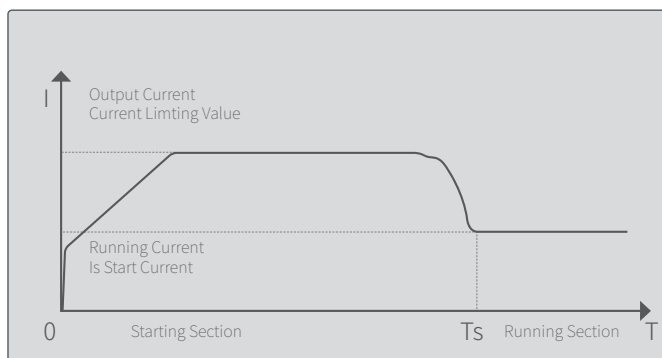
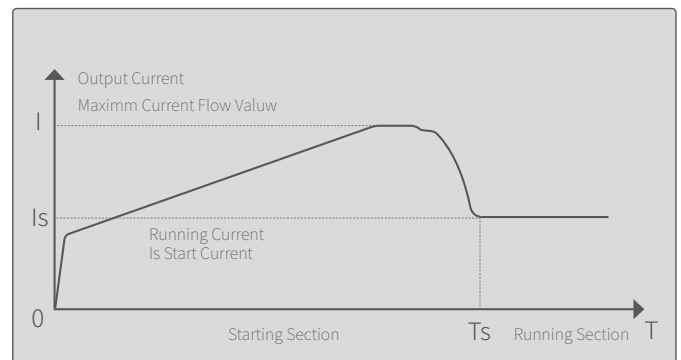


Voltage Start

Suitable for heavy-load start equipment, it features reduced start current, freely adjustable parameters, and keypad configuration.

Ramp Start

Suitable for fan and pump loads, it features adaptive control, reduced start current, freely adjustable parameters, and keypad configuration.

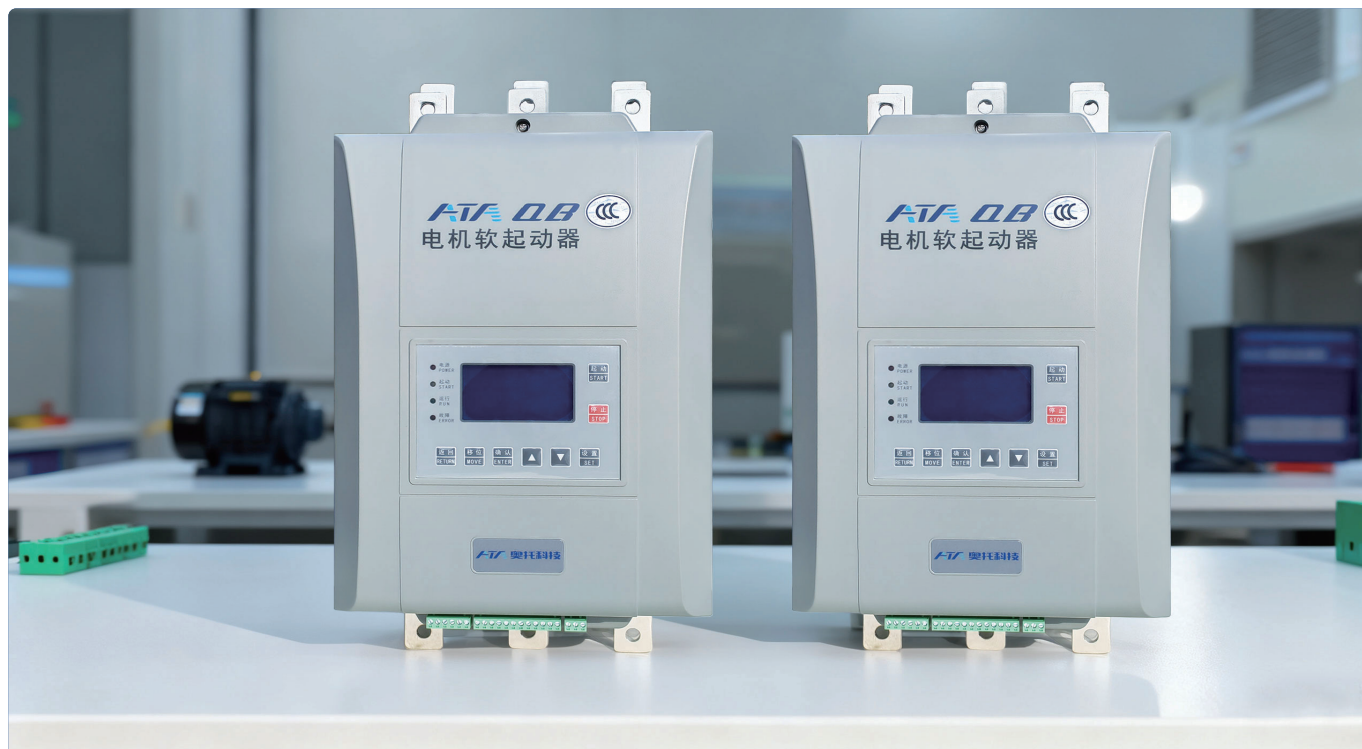
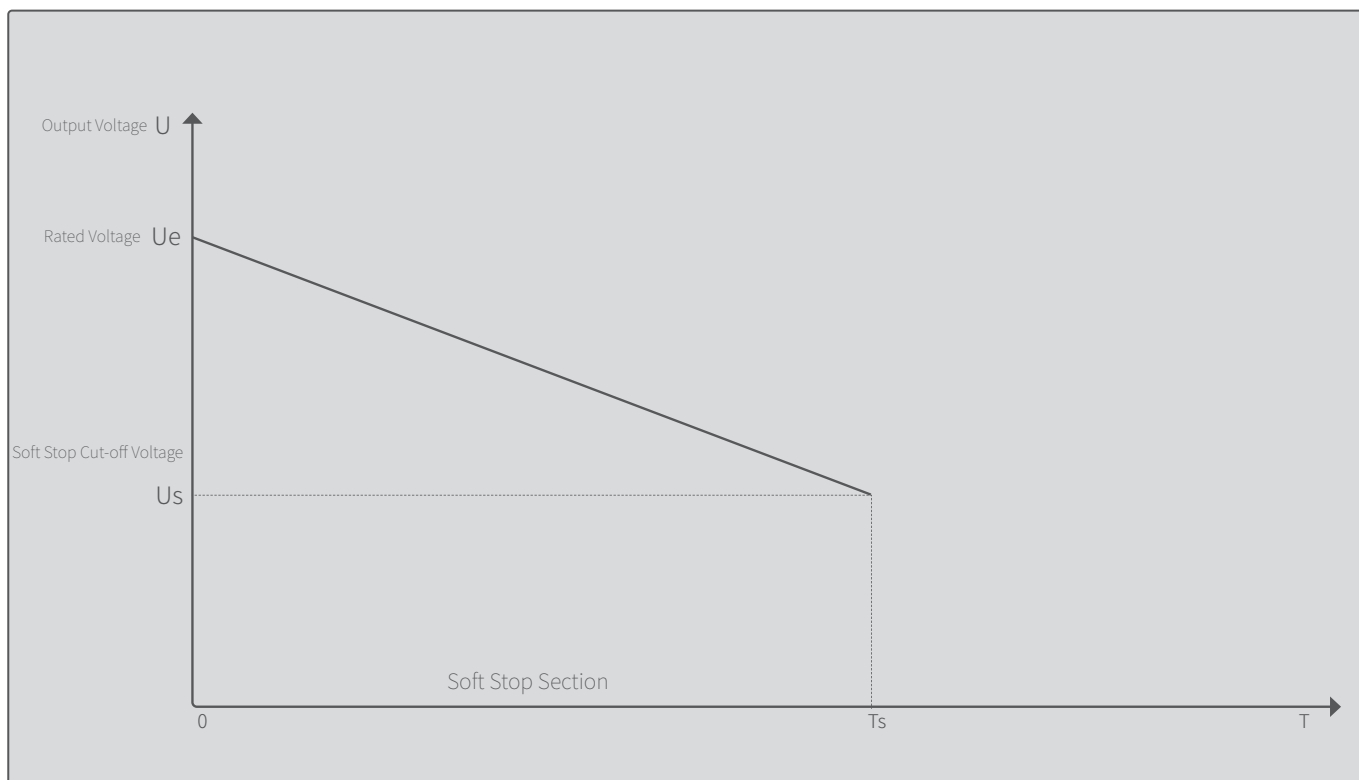


Current-Limit Start

Suitable for light-load start devices, it features limited start current, freely adjustable parameters, and keypad configuration.

Stop Modes

ATA QB-7 series products offer two stop modes: Free Stop and Soft Stop. The figure below illustrates the output waveform of Soft Stop mode.



Product Features



02

Optimized Structural Design

Dual CPU structure with mutual redundancy for reliable operation, proprietary compact internal design for easy integration into existing systems.

The built-in bypass functionality eliminates the need for external accessories, saving costs and reducing space requirement.

03

Extensive User Interfaces

Standard 485 communication, PROFIBUS communication is optional, 1 fault output (passive), 2 programmable relay output (passive), 2 programmable logic input (active), 1 programmable logic output (active), users can configure according to needs.

04

Comprehensive Protection

Overcurrent, motor overload, current three-phase unbalance, over/undervoltage, phase loss, overheating, underload, PTC and thyristor short circuit and other protection functions.

05

Advanced Event Logging

Dynamic fault log stores 80+ records, enabling quick troubleshooting. Automatic updating saves storage space.



06

High Scalability

Expandable function (The built-in bypass mode is unavailable) : You can choose the Internet real-time monitoring module or leakage detection module extension according to your needs. (Both are optional accessories, And you can only choose one of two).

07

Multi-Protocol Communication

The built-in communication port allows direct communication with the PC for remote control and telematics. (RS-485 interface as standard, Profibus interface is optional).

08

Enhanced Display Capabilities

LCD display in line with a variety of working conditions, language support Chinese and English switching, support expandable display, convenient for complete sets of cabinets.

09

Flexible Wiring Options

Suitable for electric motor internal and external wiring mode.

Standard Type Soft Starter



Model Explanation

ATA QB - 7 - XXX - X

ATA QB:
ATA Solid-State Soft Starter
for Induction Motors

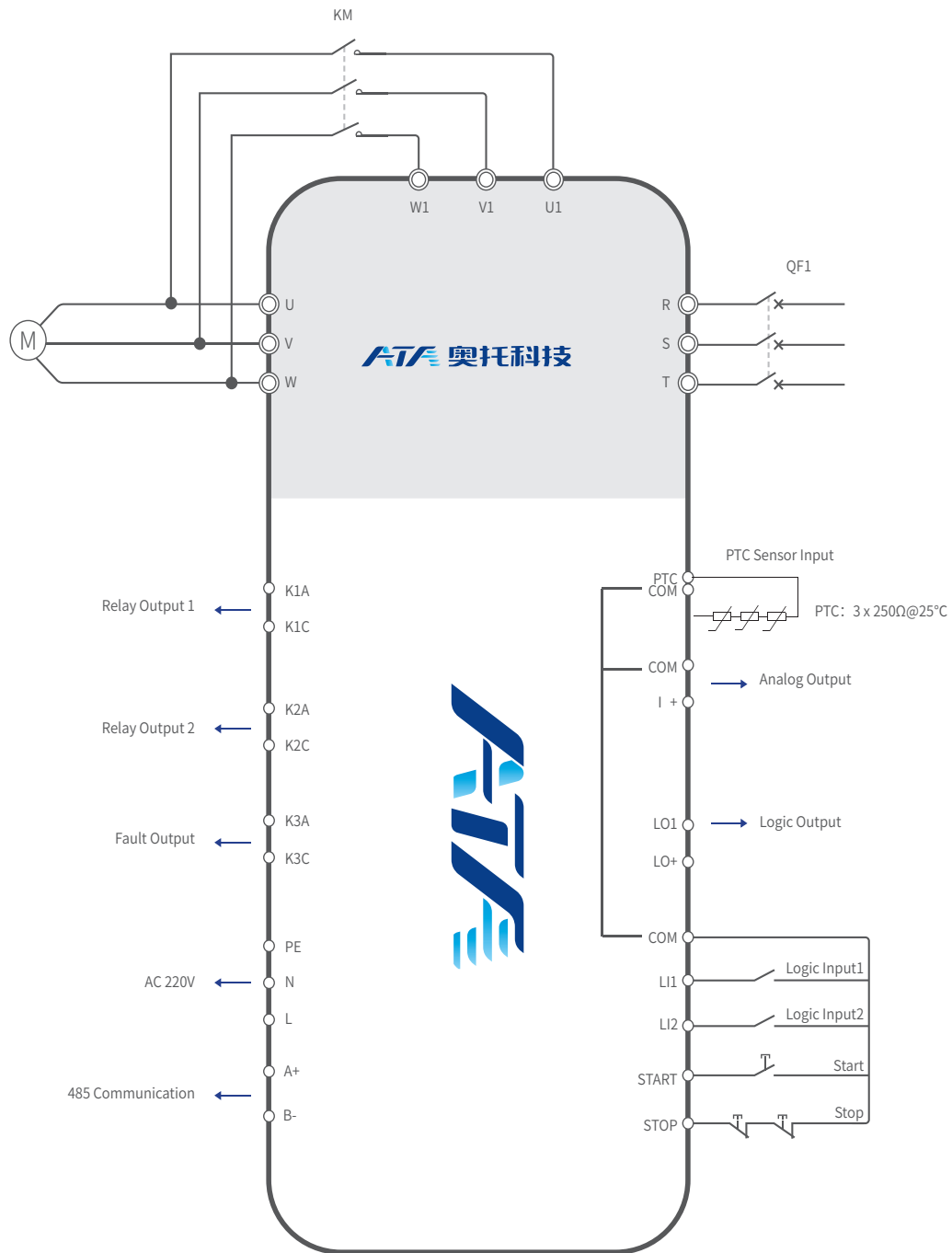
7: Design S/N

2: AC 690 V
Empty: AC 380 V

Power Specification

Note: For power rating 090, it will be abbreviated as '90' in subsequent text for brevity.

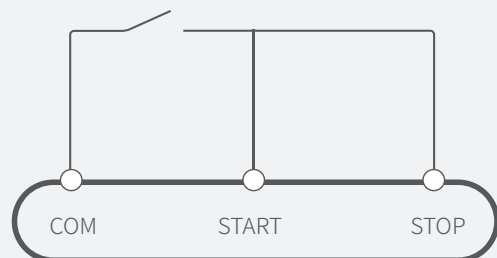
Soft Starter Wiring Diagram



Single-Point Wiring Diagram

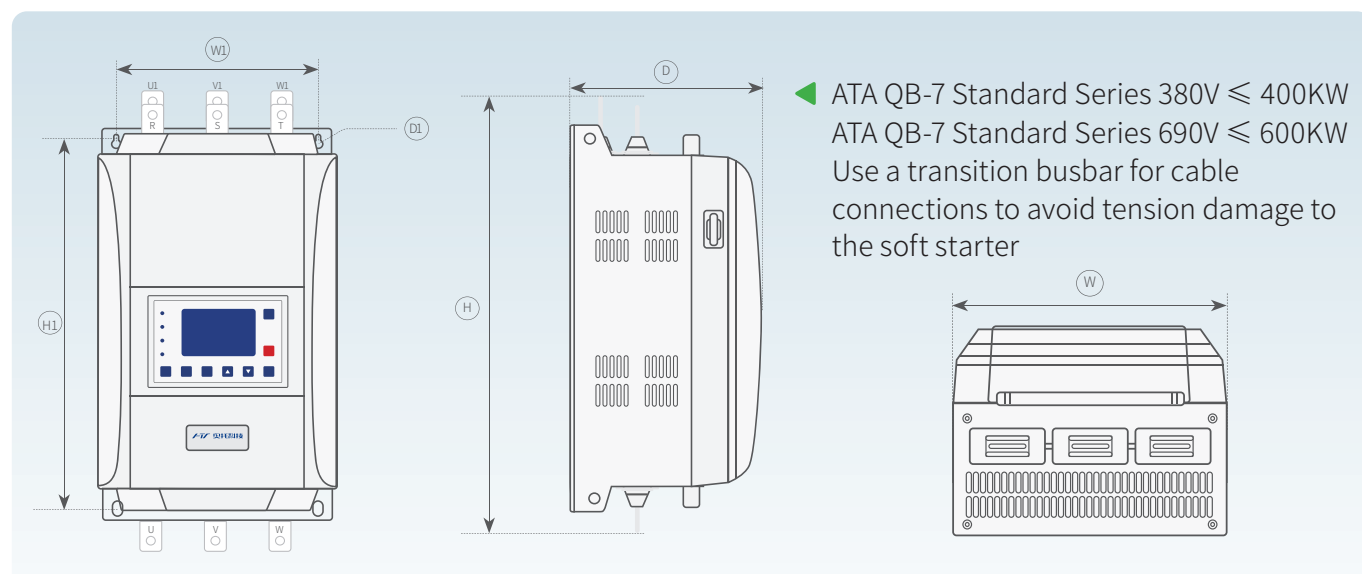
Instant Stop: display screen parking mode is set to instant stop
Soft Stop: display screen parking mode is set to soft stop

- ※ Relay outputs 1 and 2 in the figure are bypass outputs by default, and Logical inputs 1 and 2 are undefined by default
- ※ Standard RS 485 communication, PROFIBUS communication can be optional
- ※ When remote reset and soft start local reset are adopted, the normally closed point of the faulty intermediate relay (extension) needs to be connected in series with the starting relay coil circuit to prevent false start during reset

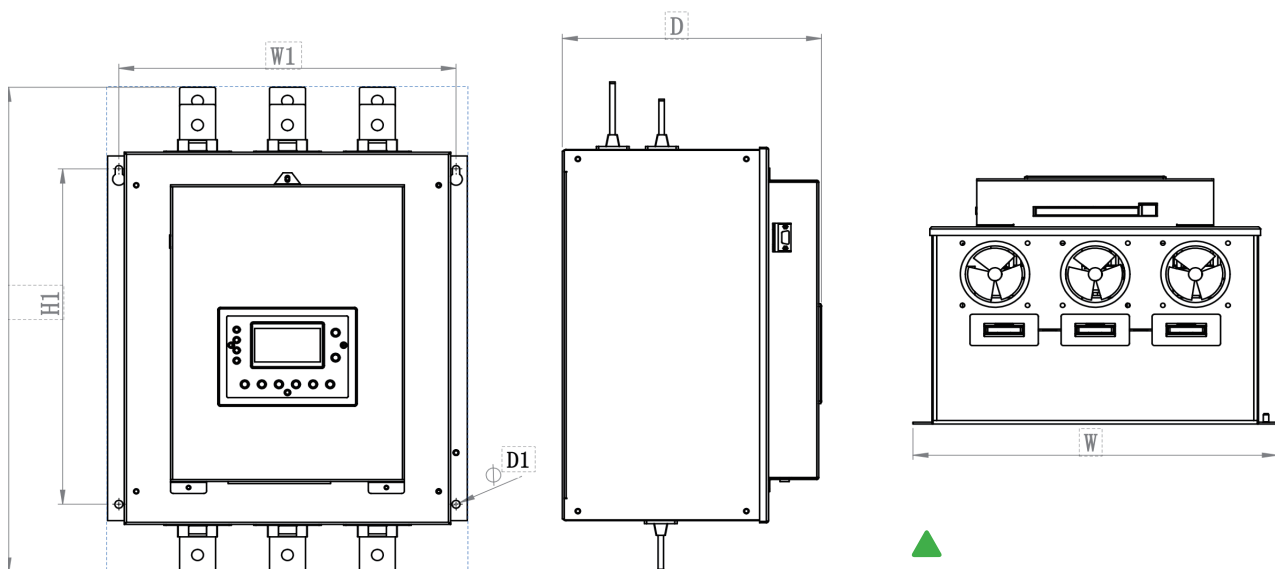


Standard Type Outline Diagram

ATA QB-7 series soft starters installation method is wall-mounted, in order to facilitate the ventilation and heat dissipation of the equipment, the soft starter should be installed vertically, and leave enough heat dissipation space on the equipment.



Model	Nominal Current (A)	Overall Dimension (mm)			Mounting Dimension (mm)		
		W	H	D	W1	H1	Hole Diameter(D1)
ATA QB-7 Standard Series 380V							
ATA QB-7-8	16	242	453.5	190	200	381	9
ATA QB-7-11	22						
ATA QB-7-15	30						
ATA QB-7-22	44						
ATA QB-7-30	60						
ATA QB-7-37	74						
ATA QB-7-45	90						
ATA QB-7-55	110						
ATA QB-7-75	150	270	499	208.5	230	399.5	9
ATA QB-7-90	180						
ATA QB-7-110	220						
ATA QB-7-132	264	300	533	208.5	260	432	9
ATA QB-7-160	320						
ATA QB-7-200	400						
ATA QB-7-250	500	315	570	208.5	270	459.5	9
ATA QB-7-320	640						
ATA QB-7-400	800						
ATA QB-7-500	1000	400	564	284.5	375	390	9
ATA QB-7-600	1200	500	664	290	477	480	9
ATA QB-7-700	1400						
ATA QB-7-800	1600						



ATA QB-7 Standard Series 380V $\geq$ 500KW
1140 $\geq$ 200KW

Model	Nominal Current (A)	Overall Dimension (mm)			Mounting Dimension (mm)		
		W	H	D	W1	H1	Hole Diameter(D1)
ATA QB-7 Standard Series 690V							
ATA QB-7-13-2	13	242	453.5	190	200	381	9
ATA QB-7-18-2	18						
ATA QB-7-30-2	30						
ATA QB-7-45-2	45						
ATA QB-7-55-2	55						
ATA QB-7-75-2	75						
ATA QB-7-90-2	90						
ATA QB-7-110-2	110	270	499	208.5	230	399.5	9
ATA QB-7-132-2	132						
ATA QB-7-160-2	160						
ATA QB-7-200-2	200	300	533	208.5	260	432	9
ATA QB-7-250-2	250						
ATA QB-7-320-2	320						
ATA QB-7-400-2	400	315	570	208.5	270	459.5	9
ATA QB-7-500-2	500						
ATA QB-7-600-2	600						
ATA QB-L Standard Series 1140V							
ATA QB-7-200-3	126	400	631.5	266	375	430	9
ATA QB-7-250-3	157						
ATA QB-7-320-3	201						
ATA QB-7-400-3	251						
ATA QB-7-500-3	340						
ATA QB-7-600-3	409						
ATA QB-7-700-3	475						
ATA QB-7-800-3	543						

Built-in Bypass Type Soft Starter



Model Explanation

ATA QB - 7 - XXX P- X

ATA QB:
ATA Solid-State Soft Starter for
Induction Motors

7: Design S/N

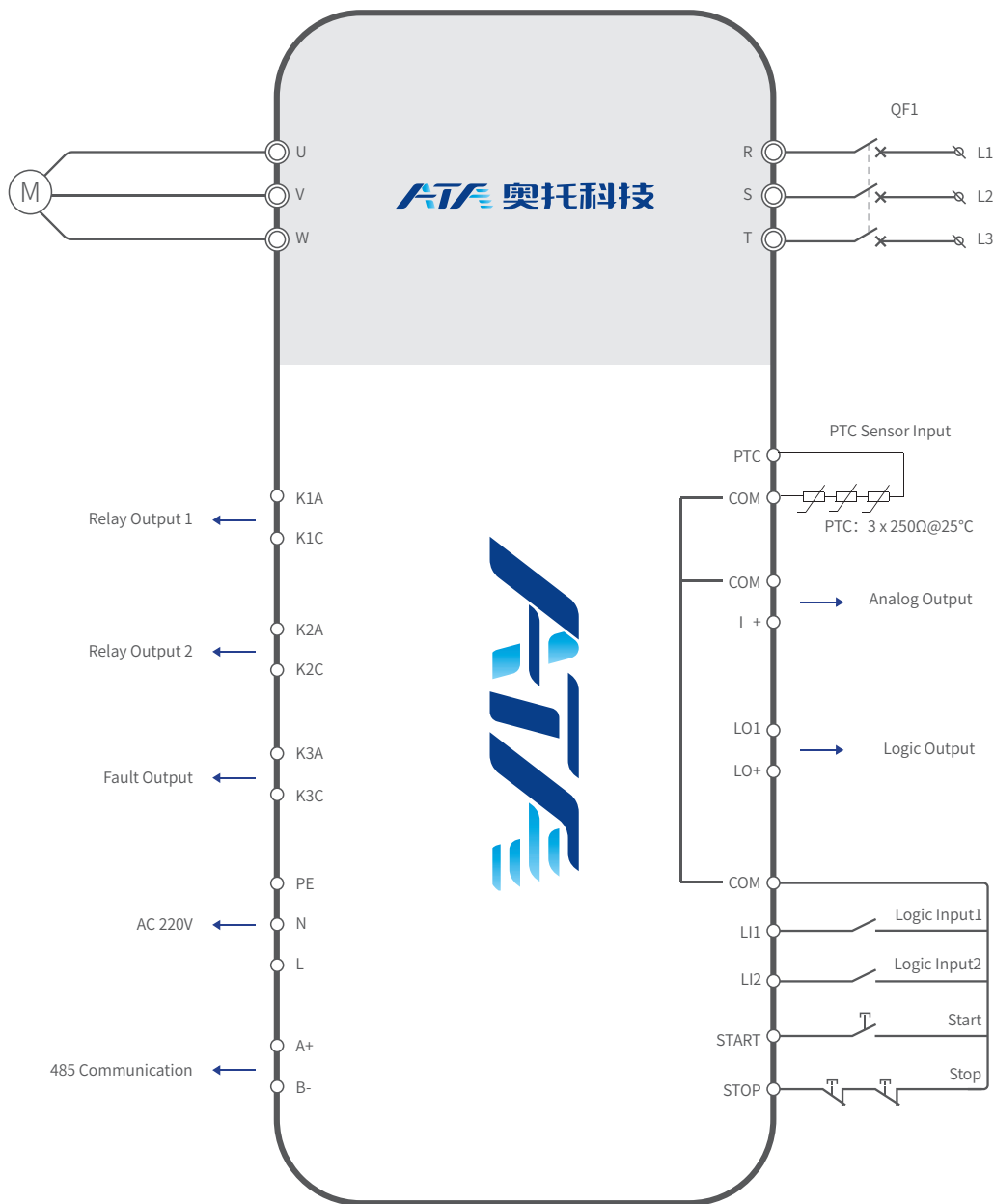
2: AC 690 V
Empty: AC 380 V

P: Built in Bypass

Power Specification

Note: For power rating 090, it will be abbreviated as '90' in subsequent text for brevity

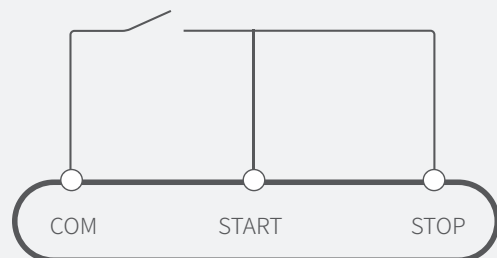
Soft Starter Wiring Diagram



Single-Point Wiring Diagram

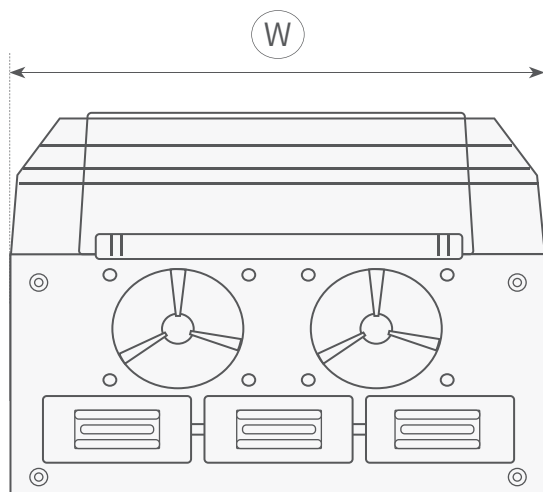
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Soft Stop: display screen parking mode is set to soft stop

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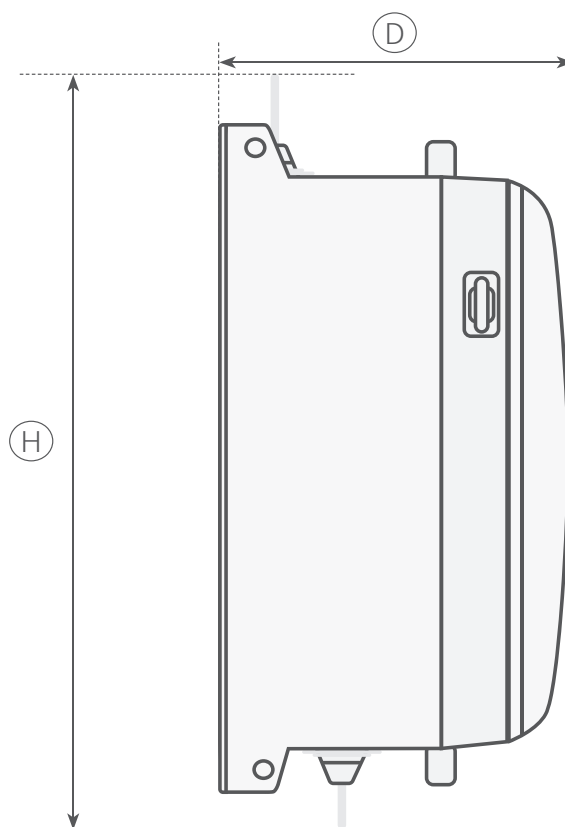
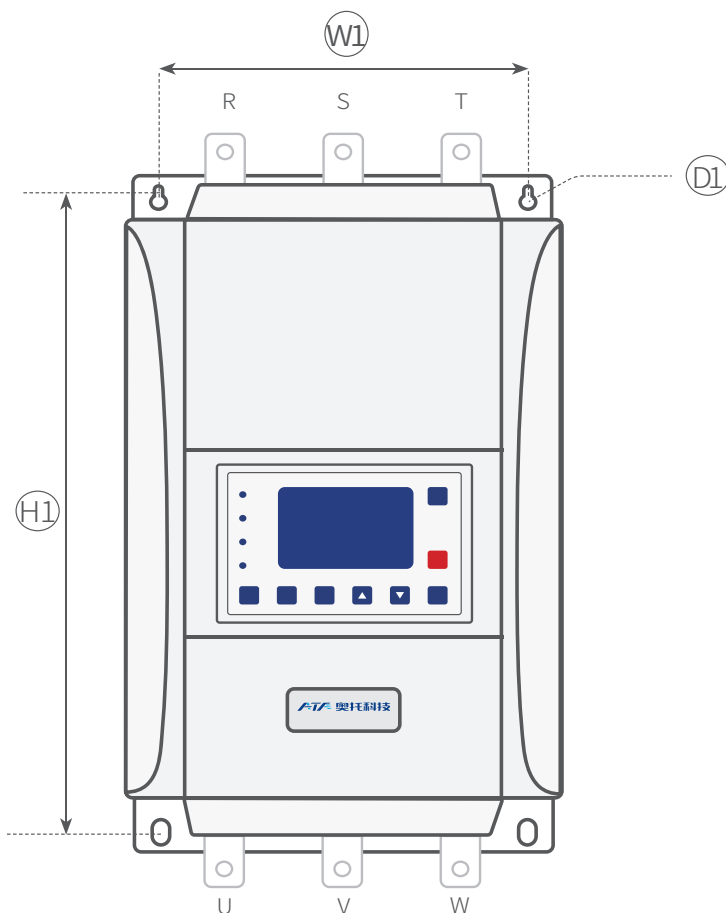


Standard Type Outline Diagram

ATA QB-7 series soft starters installation method is wall-mounted, in order to facilitate the ventilation and heat dissipation of the equipment, the soft starter should be installed vertically, and leave enough heat dissipation space on the equipment.



- ATA QB-7 Built in bypass serie 380V $\leq$ 320KW
- ATA QB-7 Built in bypass serie 690V $\leq$ 600KW
- Use a transition busbar for cable connections to avoid tension damage to the soft starter



Model	Nominal Current (A)	Overall Dimension (mm)			Mounting Dimension (mm)		
		W	H	D	W1	H1	Hole Diameter(D1)
ATA QB-7 Built in bypass serie 380V							
ATA QB-7-8P	16	242	442	190	200	381	9
ATA QB-7-11P	22						
ATA QB-7-15P	30						
ATA QB-7-22P	44						
ATA QB-7-30P	60						
ATA QB-7-37P	74						
ATA QB-7-45P	90						
ATA QB-7-55P	110	270	499	281	230	399.5	9
ATA QB-7-75P	150						
ATA QB-7-90P	180						
ATA QB-7-110P	220	300	533	315	260	432	9
ATA QB-7-132P	264						
ATA QB-7-160P	320						
ATA QB-7-200P	400	315	560	334	270	459.5	9
ATA QB-7-250P	500						
ATA QB-7-320P	640						
ATA QB-7 Built in bypass serie 690V							
ATA QB-7-13P-2	13	242	442	190	200	381	9
ATA QB-7-18P-2	18						
ATA QB-7-30P-2	30						
ATA QB-7-45P-2	45						
ATA QB-7-55P-2	55						
ATA QB-7-75P-2	75						
ATA QB-7-90P-2	90						
ATA QB-7-110P-2	110	270	499	281	230	399.5	9
ATA QB-7-132P-2	132						
ATA QB-7-160P-2	160						
ATA QB-7-200P-2	200	300	533	315	260	432	9
ATA QB-7-250P-2	250						
ATA QB-7-320P-2	320						
ATA QB-7-400P-2	400	315	560	334	270	459.5	9
ATA QB-7-500P-2	500						
ATA QB-7-600P-2	600						

External Terminal Descriptions

Terminal No			Terminal Name	Explanation
Main Circuit	R、S、T		AC Power Input	Connect breaker with 3 phase AC power
	U1、V1、W1		AC Power Output	Connect to 3 phase AC contactor (Built-in bypass type without this terminal)
	U、V、W		AC Power Output	Connect to 3 phase AC induction motor
Control Circuit	Relay Output 1	K1A	Normally Open Passive Contact	CCan be defined with different requirement Terminal power: 2A/250V AC/DC. The default output is bypass
		K1C		
	Relay Output 2	K2A	Normally Open Passive Contact	
		K2C		
	Fault Output	K3A	Passive Contact	There are two modes of operation for the fault relay output. That is, when the fault is closed and when the fault is broken
		K3C		
	Logic Input (Active Contact)	LI1		Passive contact access or short connection, can not be directly introduced into the external power supply. LI1、LI2 can be defined with different requirement
		COM		
		LI2		
		START		
		STOP		
	Programmable Logical Output	LO+	Power Input	Connect to +24V or +12V 50mA
		LO1	Programmable Logic Output 1	Can be defined with different requirement
	Analog Signal Output	I+		0 ~ 20mA or 4 ~ 20mA analog signal output Default: 4-20mA analog signal output
		COM		8mA corresponds to one times the rated current; 20mA corresponds to four times the rated current.



Terminal No			Terminal Name	Explanation
Control Circuit	PTC input	PTC	PTC	When the PTC sensor reaches the protection value, two kinds of protection can be used simultaneously.
		COM	COM	PTC sensor alarm (relay output or logical output is set as ptc sensor alarm) Fault output PTC alarm (ptc protection input)
	Communication Interface (RS-485)	Communication Terminal		RS-485 port (standard) and profibus port (optional)
	Control Source	L		AC 220V (+10%、-15%) , 50/60Hz DC 220V (+10%、-15%)
		N		
		PE		
	RJ45	Extended Display		External extension display

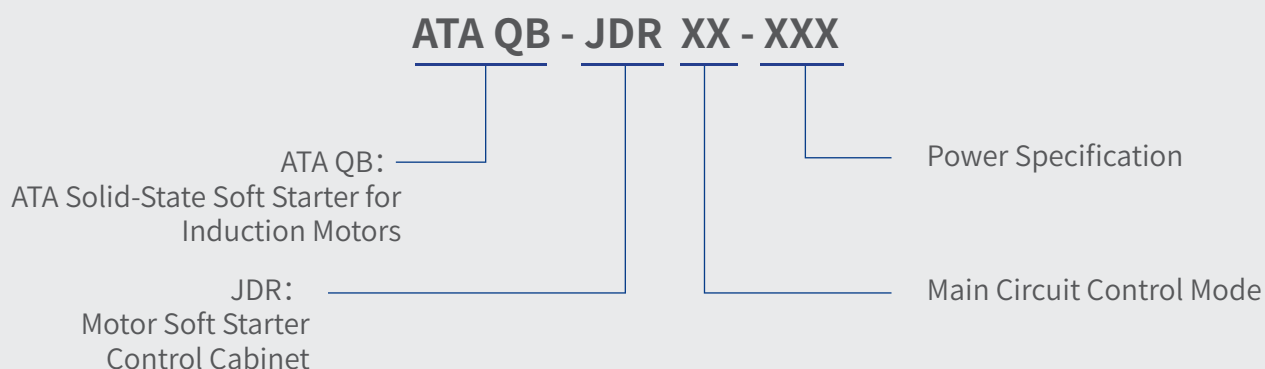
Note: The Bypass and fault output ports need to expand intermediate relays.



Control Cabinet Introduction

ATA QB-7 series Motor Soft StarterControl Cabinet has covered the rated current from 15-1600A, for customized services, please consult the company's technical staff.

Model explanation



Note: Cabinet dimensions are customizable. Contact our technical team for specific requirements.

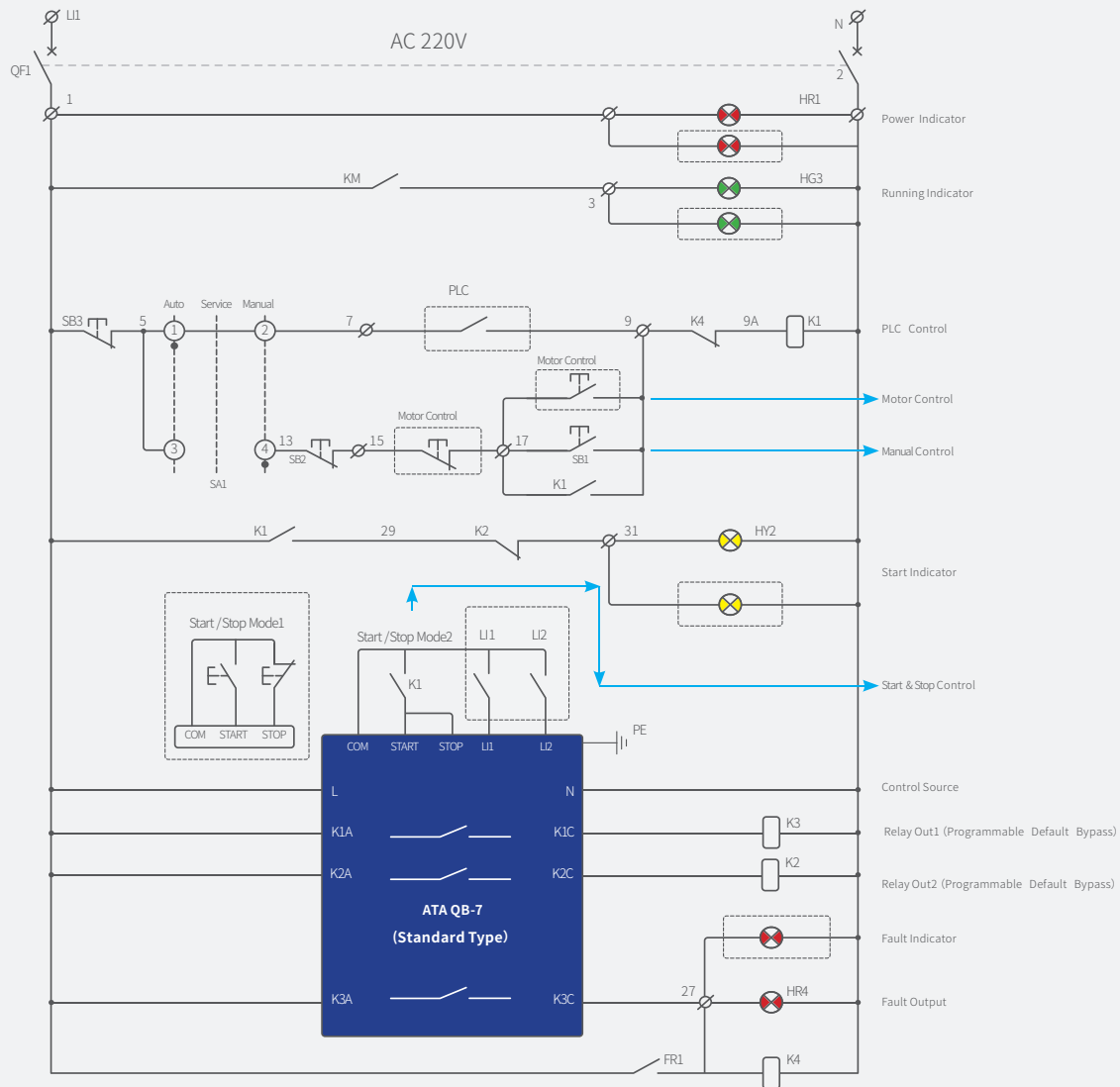
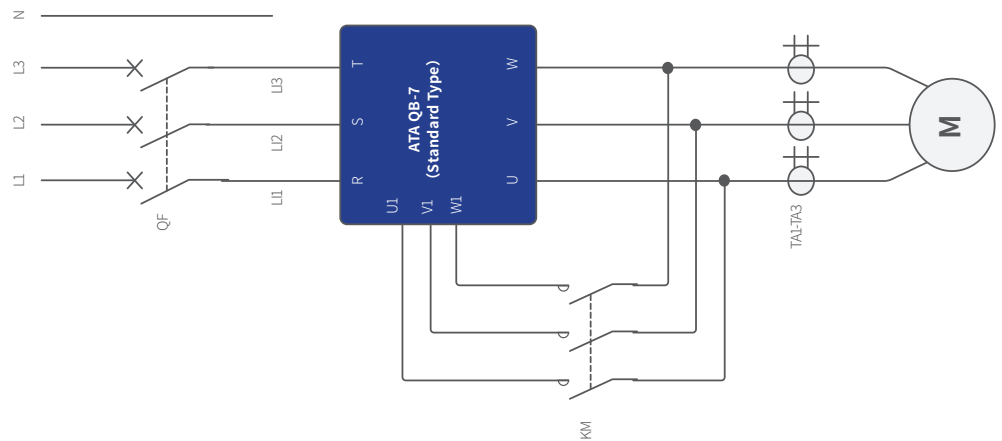
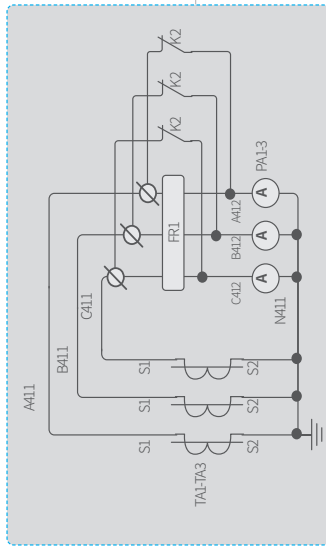


Model Specifications

Model	Motor Power	Rated Current	Cabinet Size (MM)		
			W	D	H
ATA QB-JDR11-8	7.5	15	600	800	2200
ATA QB-JDR11-11	11	22	600	800	2200
ATA QB-JDR11-15	15	30	600	800	2200
ATA QB-JDR11-22	22	44	600	800	2200
ATA QB-JDR11-30	30	60	600	800	2200
ATA QB-JDR11-37	37	74	600	800	2200
ATA QB-JDR11-45	45	90	600	800	2200
ATA QB-JDR11-55	55	110	600	800	2200
ATA QB-JDR11-75	75	150	600	800	2200
ATA QB-JDR11-90	90	180	600	800	2200
ATA QB-JDR11-110	110	220	600	800	2200
ATA QB-JDR11-132	132	270	600	800	2200
ATA QB-JDR11-160	160	320	600	800	2200
ATA QB-JDR11-200	200	400	600	800	2200
ATA QB-JDR11-250	250	500	600	800	2200
ATA QB-JDR11-320	320	640	800	800	2200
ATA QB-JDR11-400	400	800	800	800	2200
ATA QB-JDR11-500	500	1000	800	800	2200
ATA QB-JDR11-600	600	1200	800	800	2200
ATA QB-JDR11-700	700	1400	800	800	2200
ATA QB-JDR11-800	800	1600	800	800	2200

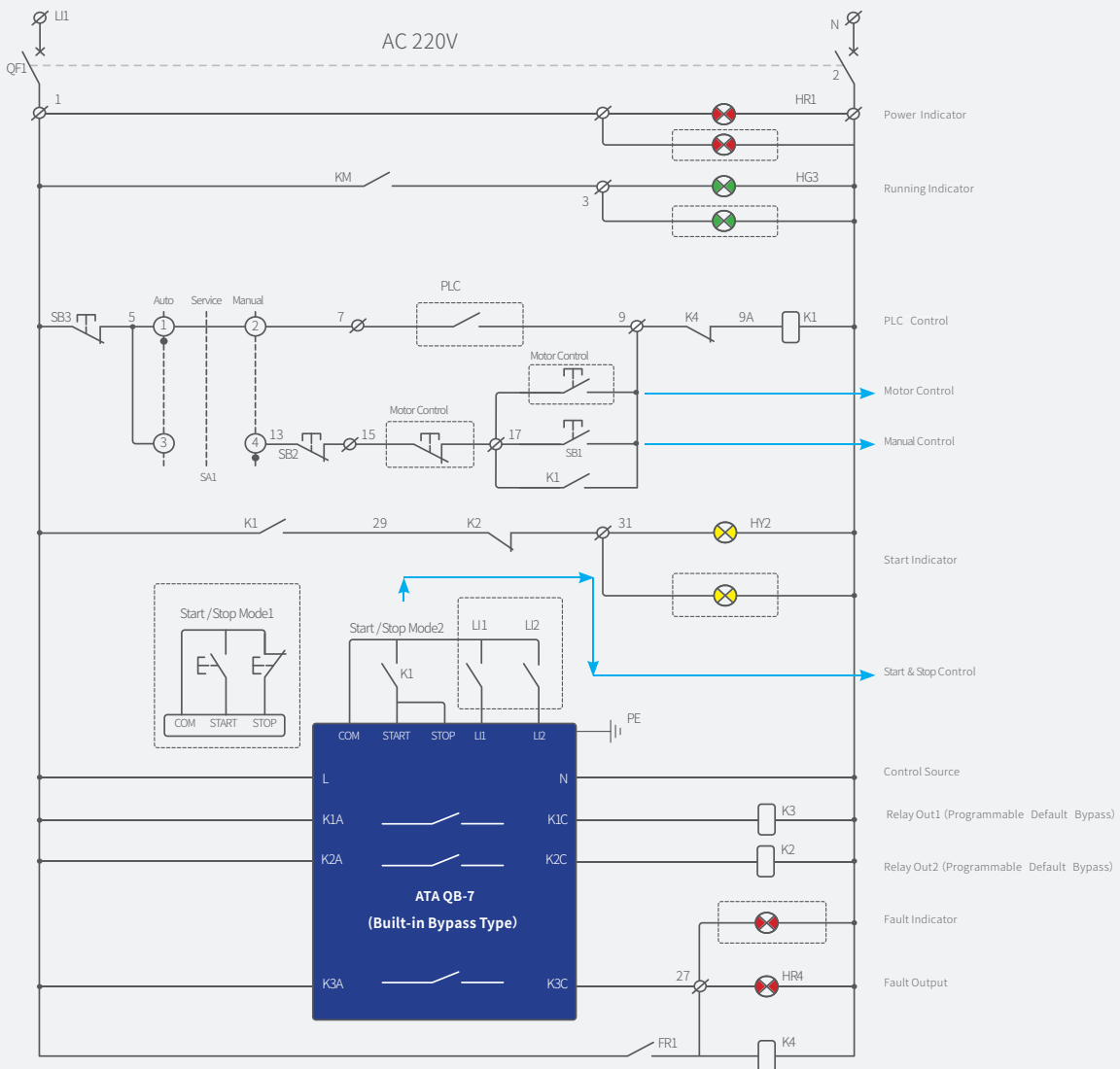
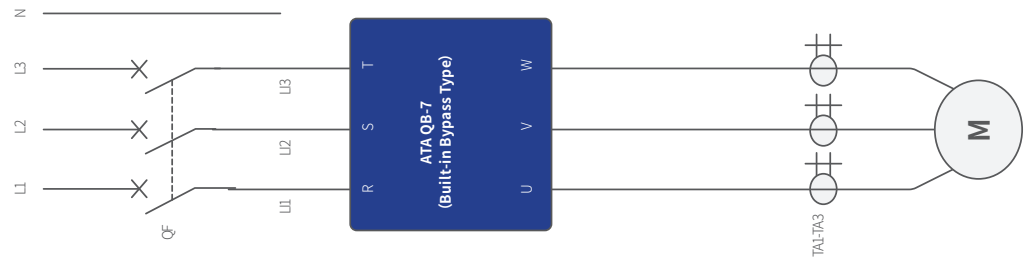
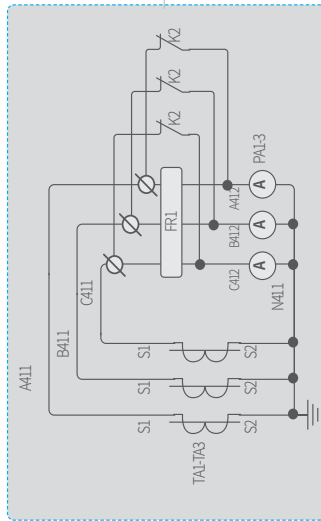
Control Cabinet Control Schematic Diagram (Standard Type)

Note: This circuit can be selected according to the site conditions



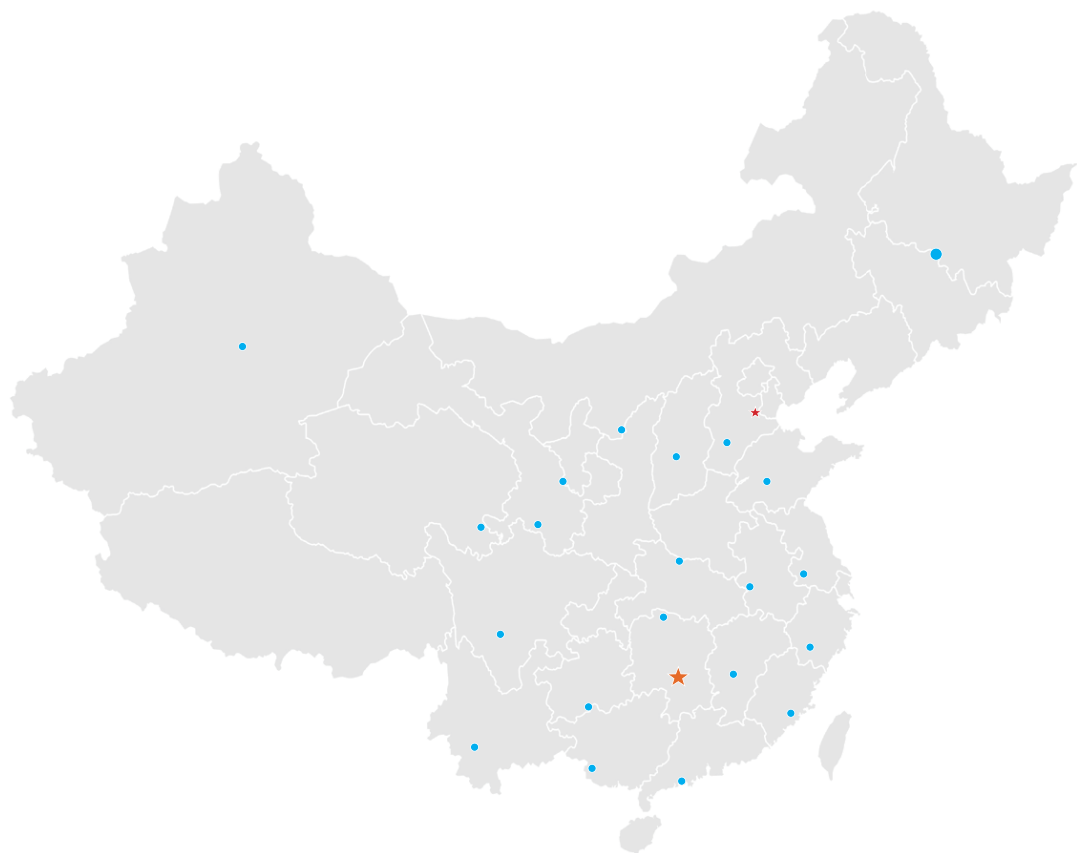
Control Cabinet Control Schematic Diagram (Built-in bypass Type)

Note: This circuit can be selected according to the site conditions



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.



WhatsApp Account



English Website

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