

ATA SA-5系列 产品选型手册

交流电机软起动器





长沙奥托自动化技术有限公司隶属于长沙奥托科技，由原国防科技大学奥托开发中心发展而来，是一家集研发、生产、销售、国际贸易于一体的现代化高新技术企业。

以“专”为本

秉承着“专”的核心价值观，公司致力于为客户提供“专业技术，专诚服务，专精品质”，自主研制生产出ATA QB系列低压软起动器、ATA QB-JDR系列软起柜成套、ATA SA系列低压软起动器、ATA SA-JDR系列软起柜成套、ATA QB-H系列中高压固态软起动装置、ATA QB-S系列手车式中高压固态软起动装置、ATA SA-H系列中高压固态软起动装置、ATA QB-R系列绕线电机调速控制器(行车控制器)、ATA QBLV系列低压变频器、ATA QBMV系列中压变频器、KTZ系列能源汽车电机控制器、FDCS现场数据测控系统、TPV/TPR电压/功率调节器、DZH系列多功能转换器等，已在钢铁、冶金、化工、石油、造纸、造船等领域得到了户泛应用。公司还在火力发电机组数据监测系统、高炉煤气布袋除尘控制系统、工厂锅炉监测系统、工厂能源计量管理中心、高低压配电监测系统、涂料厂自动配料系统、丙纶纺丝机控制系统、新能源汽车电机控制器等工程项目上成功配套生产，并投入市场，有成功的应用和丰富的经验。

优秀技术

公司产品已在钢铁、矿山、水泥、石油、化工、冶金、港口、造船、电力、医药、市政、纺织、轻工、印刷、建筑、造纸等领域得到了广泛应用；能可靠地与电动机拖动设备配套使用，如：风机、水泵、压缩机、破碎机、搅拌机、球磨机、皮带机等多类型负载设备；产品已大批量成功应用于日立泵、梅塞尔等外资企业；出口至印度、巴西、阿曼、印尼、越南、伊朗、巴基斯坦、吉尔吉斯斯坦、塔吉克斯坦、俄罗斯等国家，并得到成功的应用。

真诚服务

同时，奥托围绕“用户至上，真诚服务”的服务理念，打造三位一体服务模式——集售前、售中、售后三位于一体的闭环式服务，联线上、线下、电话三位为一体的全覆盖服务，全方位立体化服务，随时响应客户。并独创“6s服务”体系，“专项(Special)、无缝(Seamless)、专业(Specialty)、共享(Shared)、快捷(Shortcut)、灵活(Smart)为原则，提供一流服务。

／ 品质成就卓越
创新引领未来 ／



COMPANY Introduction

公司简介

Changsha ATA automation CO.,LTD.belongs to changsha ATA science and technology from the original national university of defense technology ATA development center, is a collection of research and development, production, sales, international trade in one of the modern high- tech enterprises.

Focus on the "only"

Adhering to the core values of "special", the company is committed to providing customers with "professional technology, dedicated service, specialized quality", independently developed and produced ATA QB series low-voltage soft starter, ATA QB-JDR Series set of soft start up cabinets, ATA SA series low-voltage soft starter, ATA SA-JDR Series set of soft start-up cabinets, ATA QB-H series medium-high pressure solid-state soft-starting, ATA QB-S series handcar-type medium-high-pressre solid-state soft-starting device, ATA SA-H series medium-highpressure old-state soft-starting device, ATA QB-R series winding motor speed regulating controller (driving controller), ATA QBLV Series low Voltage Inverter, ATA QBMV Series medium Voltage Inverter, KTZ Series Energy Automotive Motor Controller, FDSC Field data Measurement and Control system, TPV / TPR Voltage / Power regulator, DZH Series Multi-function Converter, etc., have been used in iron and steel, metallurgy, chemical industry, etc. Petroleum, papermaking, shipbuilding and other fields have been widely used; The company is also engaged in the data monitoring system for thermal power generating sets, the bag dust removal control system for blast furnace gas, the monitoring system for factory boilers, the energy metering and management center for factories, the monitoring system for high and low voltage distribution, and the automatic batching system for paint plants. The control system of polypropylene spinning machine and the motor controller of new energy vehicle have been successfully applied and experienced in engineering projects such as production and market.

Good technology

The company's products have been widely used in iron and steel mines, cement, petroleum, chemical industry, metallurgy port, shipbuilding, electric power, medicine, municipal administration, textile light industry, printing, construction, paper making and other fields, Can be used reliably with motor drive equipment, such as: fan, water pump, compressor crusher, mixer, ball mill, belt machine and other types of load equipment; Products have been successfully applied in large quantities to Hitachi pump, messel and other foreign enterprises; Export to India Brazil, Oman, Indonesia, Vietnam, Iran, Pakistan, Kyrgyzstan, Tajikistan, Russia and other countries and has been successfully applied.

Sincere service

At the same time, ATA around the "customer first, sincere service" concept of service, to create a trinity service model - set pre -sale, sale, after-sale three in one of the closed-loop service, online, offline, telephone three as one of the full coverage of the service all-round three- -dimensional service, ready to respond to customers, And the original "6s service" system, to "Special, Seamless, Specialty, Shared, Shortcut, Smart" as the principle, to provide first-class service.





CHANGSHA ATA AUTOMATION CO.,LTD.

一份耕耘，一份收获。科学的企业管理、宏大的企业规模、稳定强大的研发团队与营销网络铸就了奥托科技今天的辉煌。

品质成就卓越，创新引领未来。奥托人的宗旨就是生产出高品质的产品并广泛服务于社会。不断进取、勇于拼搏、精益求精的奥托人自始至终都不敢有丝毫的懈怠，一直在自动化技术领域不断地进取与创新，努力把奥托科技建设成国际知名品牌！

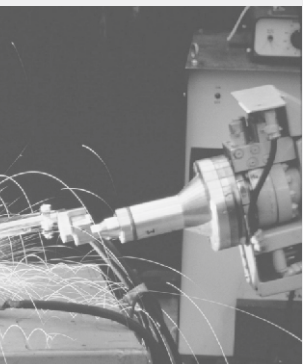
明天的奥托科技将以领先的技术、可靠的产品矗立在自动化智能控制领域的最前沿！

A plough, a harvest. Scientific enterprise management, huge enterprise scale, stable and powerful R&D team and marketing network have created the brilliance of ATA SCIENCE & TECHNOLOGY today.

Excellent quality achievements, innovation leads the future. Ottoman's aim is to produce high-quality products and widely serve the society. ATA people who are constantly enterprising, brave and striving for excellence dare not slack at all. They have been constantly making progress and innovating in the field of automation technology and striving to build ATA SCIENCE & TECHNOLOGY technology into an internationally renowned brand!

Tomorrow's ATA SCIENCE & TECHNOLOGY technology will stand at the forefront of the field of automated intelligent control with leading technology and reliable products.





奥托产品广泛应用于各个领域

ATA products are
widely applied to various realms



ATA SA-5 Series

ATA SA-5系列交流电机软起动器

Soft-starter of AC Motors

概述

ATA SA-5系列交流电机软起动器采用先进的计算机控制技术与电力电子技术，以晶闸管为主回路开关元件，通过改变晶闸管的导通角来控制电动机平稳升降和无触点通断，实现电动机的平稳起停。有效地减小对电网的冲击，降低设备的振动、噪声及起动机机械应力，延长电动机及相关设备的使用寿命。

ATA SA-5系列交流电机软起动器具有技术先进、工作稳定可靠、保护功能齐全等特点，其性能达到了国际上同类产品的先进水平。

Summarization

ATA SA-5 series soft-starter of AC motors integrates with the advanced computer control technology and electronic technology. It adopts large power thyristor as the switching component of main circuit. By changing the flow angle of thyristor, it controls the motor voltage from rise to reduce smoothly and non-contact on-off, then perfectly finishes the motor smooth starting or stopping. ATA SA-5 soft-starter reduces the impact on the power network imposed by the current, decreases equipments' shaking, noise and starting mechanical stress, therefore helps prolong the motor and its relative equipments operation life.

ATA SA-5 series soft-starter of AC motors holds various characteristics such as advanced technology, reliable operation and complete protection function, and its performances have reached international standards.

主要功能特点 Main function and feature

- 技术先进

采用PIC高性能微处理器全数字智能控制及强大的软件支持。

- 性能稳定

所有元器件经过严格筛选，控制板喷涂防腐绝缘漆，使得产品适应高温、高污染环境。

- 结构优化

独特的模块化结构，方便用户集成或成套。

- 保护完善

多种保护功能(如过流、过载、缺相、过热、可控硅短路等)，完善的保护功能，更有效的保护电动机及相关设备的安全。

- 界面友好

菜单式操作，中/英文液晶显示。

- 抗干扰强

静电屏蔽性能佳，抗电磁干扰能力强。

- 模拟信号

可提供4~20mA模拟输出信号。

- 通信功能

Rs485接口。

- **Advanced technology**

Adopting PIC high-performance microprocessor with full digital intelligent and powerful software support.

- **Stable performance**

All components are strictly screened, and the control panel is sprayed with anti-corrosion insulating varnish, making the product suitable for high temperature and high pollution environment.

- **Structure optimization**

The unique structure of modularization facilitates users to integrate or form a complete set.

- **Safety protection**

Multiple protection functions preventing problems like over current, overload, lacking phase, overheating, silicon controlled short circuit etc. The perfect protection functions and more effective protection for motor and relate equipment.

- **Friendly interface**

The menu operation with liquid crystal display in both Chinese and English.

- **Strong anti-jamming capacity**

The excellent function of electrostatic screening and strong resistance to electromagnetic interference.

- **The analogue signal output**

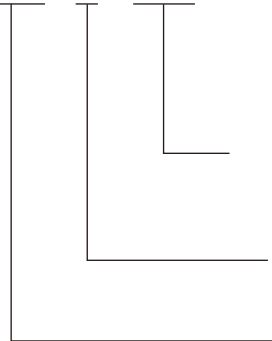
The analog output signal within 4~20mA can be provided.

- **Communication**

Rs485 interface.

型号说明 Model explanation

ATA SA - 5 - □□□



功率规格

如110 表示110kW

设计序列号

如 5 表示 ATA SA-5系列

软起动器命名编号

Power specification

For example 110 means 110kW

Design S/N

For example 5 means ATA SA-5 series

Name and No

使用条件 Work condition

- 主回路电源：三相AC380V（±20%），50Hz或60Hz
- 适配电机：鼠笼式异步电动机（其他电机请标明）
- 控制回路电源：AC220V（±15%），50Hz或60Hz
- 冷却方式：内部风冷
- 防护等级：IP20
- 环境条件：环境温度：-25℃~+55℃
环境湿度：<95%无冷凝或滴水
海拔高度：<2000m（大于2000米可降容选型）
- 安装场所：柜内安装

注：①该使用条件适用于所有ATA SA系列产品及成套装置。

②如有特殊使用条件，请在订货时说明。

- **Power for main circuit:**
3 phase AC 380V(±20%), 50HZ or 60HZ
- **Adapt motor:** Squirrel-cage asynchronous motor(please note for other motors)
- **Power for control circuit:**
AC 220V(±15%), 50HZ or 60 HZ
- **Cooling mode:** Internal wind-cooling
- **Protection level:** IP20
- **Condition:**
Condition temperature: -25℃~+55℃
Relative humidity: ≤95% without condensation
Suitable for operating at an altitude of less than 2000m;
otherwise, the power grade of its adapted motor should be degraded.
- **Installation sites:**
Install in cabinet

Note: 1, This work condition adaptes to all the ATA SA series soft-start device.

2, For special conditions, please note when speak for.



The quality achievement

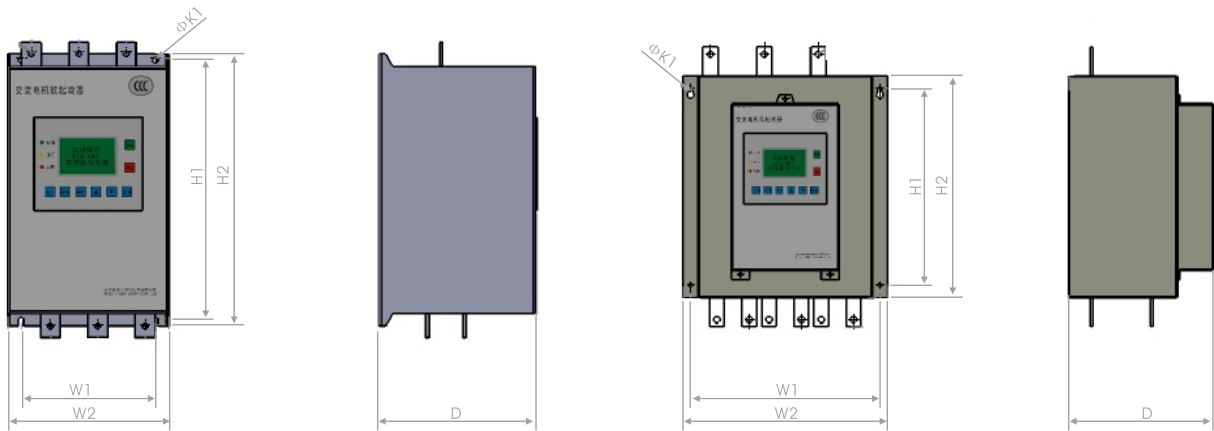
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独特性能 Unique performance

- 采用双CPU冗余设计全数字智能控制。
- 起动过程采用自适应智能化控制。
- 起动方式多样，保护功能完善。
- 具有自由停车与软停车控制方式。
- 具有在线监测和实时数据显示功能。
- 具有RS-485通信接口。
- 具有0~20mA, 或4~20mA电流标准电流输出。
- Be all-digital and intelligently controlled by double-CPU redundancy design.
- Ultra-dynamic process of self-application of intelligent control.
- Different starting modes, perfect function.
- With free-stop and soft-stop modes.
- With online monitoring and real-time data displaying.
- With RS-485 interface.
- With 0~20mA or 4~20mA standard current signal output.

结构尺寸 Structure and Dimension



A: ATA SA-5-8/11/15/22/30/37/45/55

B: ATA SA-5-75/90/110 C: ATA SA-5-132/160/200

D: ATA SA-5-250/320 E: ATA SA-5-400

F: ATA SA-5-500

ATA SA-5 软起动器外形图
ATA SA-5 Soft-starter Profile Diagram

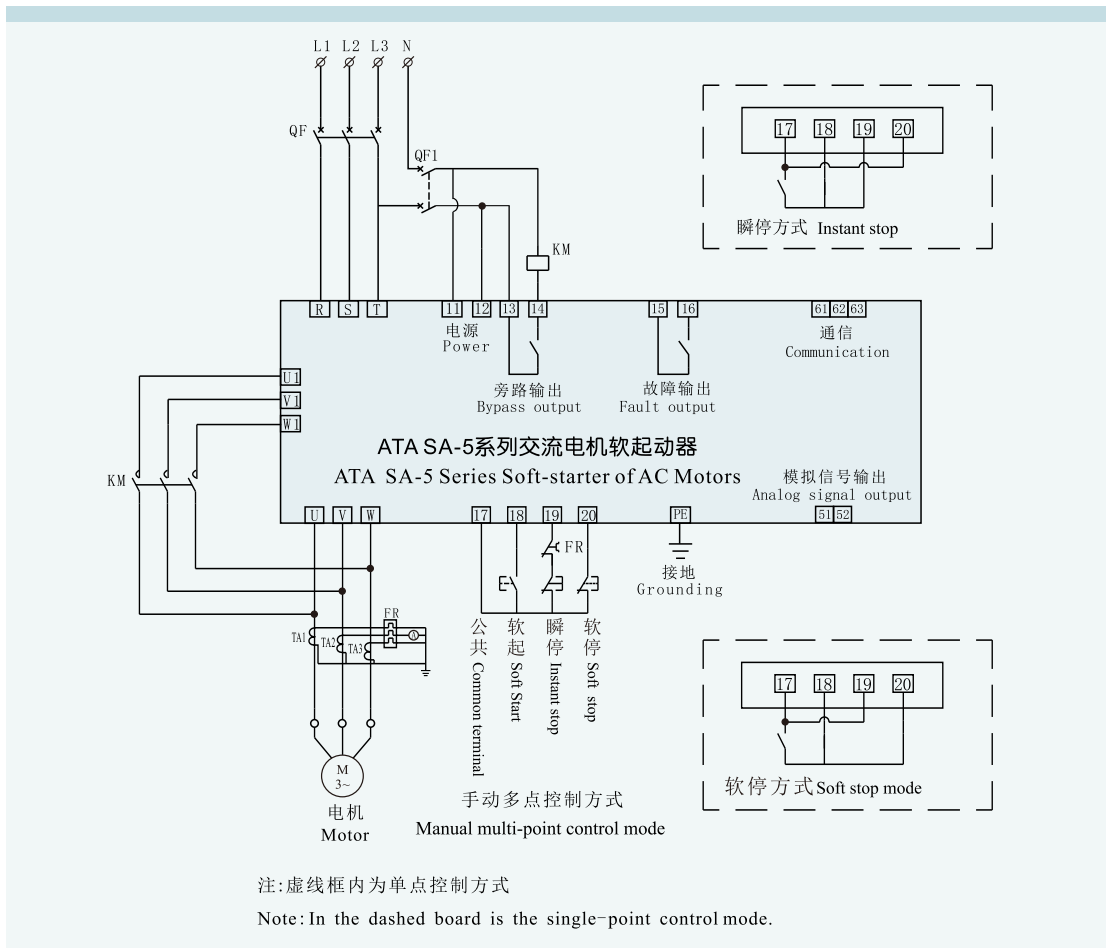
图号 No.	外型 Profile	安装尺寸 Installation Size			外形尺寸 Profile Size		
		H1	W1	K1	H2	W2	D
1-1	A	332	170	Φ7	348	204	200
1-2	B	330	316	Φ9	374	340	243
	C	370	356	Φ9	425	382	243
	D	390	375	Φ9	445	400	263
	E	390	416	Φ9	450	441	288
	F	537	644	Φ11	577	668	353
	G	483	893.5	Φ11	825	915.5	437.1

型号规格 Model

型号 Model	适配电机 功率(kW) Motor Power	标称电流(A) Rated Current	结构编号 Structure No.
ATA SA-5-8	7.5	15	A
ATA SA-5-11	11	22	A
ATA SA-5-15	15	30	A
ATA SA-5-22	22	44	A
ATA SA-5-30	30	60	A
ATA SA-5-37	37	74	A
ATA SA-5-45	45	90	A
ATA SA-5-55	55	110	A

型号 Model	适配电机 功率(kW) Motor Power	标称电流(A) Rated Current	结构编号 Structure No.
ATA SA-5-75	75	150	B
ATA SA-5-90	90	180	B
ATA SA-5-110	110	220	B
ATA SA-5-132	132	270	C
ATA SA-5-160	160	320	C
ATA SA-5-200	200	400	C
ATA SA-5-250	250	500	D
ATA SA-5-320	320	640	D
ATA SA-5-400	400	800	E
ATA SA-5-500	500	1000	F
ATA SA-5-600	600	1200	G
ATA SA-5-700	700	1400	G
ATA SA-5-800	800	1600	G

标准接线图 Standard control principle diagram



外接端子说明 External terminal information

端子编号 Terminal No..		端子名称 Terminal Name	说明 Explanation	
主回路 Main circuit	R、S、T	交流电源输入 AC Power input	由断路器(QF)接三相交流电源。 Connect Breaker with 3-Phase AC Power	
	U1、V1、W1	交流电源输出 AC Power output	接至三相交流接触器进线端。 Connect to the input terminal of 3-Phase AC contactor	
	U、V、W	交流电源输出 AC Power output	接至三相交流接触器出线端。 Connect to the output terminal of 3-Phase AC contactor	
控制回路 Control circuit	控制电源(交流220V) Control power(AC220V)	11	控制电源零线N Control Power N	外接软起动器控制电源。 Connect to control power of soft-starter
		12	控制电源火线L Control Power L	
	运行输出(无源触点) Running state output (potential-free contact)	13	常开触点 NO contact	运行时, 13、14触点闭合 触点容量为: 16A/250V AC In Running,terminal 13,14 close contact capability: 16A/250V AC
		14		
	故障输出(无源触点) Fault state output (potential-free contact)	15	常开触点 NO contact	故障时, 15、16触点闭合 触点容量为: 2A/250V AC In fault,terminal 15,16 close contact capability: 2A/250V AC
		16		
	起停控制(无源触点) Starting/Stopping control (potential-free contact)	17	公共端子	17、18触点 起动 Terminal 17,18 Start 17、19触点 瞬停 Terminal 17,19 Instant-stop 17、20触点 软停 Terminal 17,20 Soft-stop 无源触点接入或短接, 不能直接引入外部电源。 Connect to external potential-free contact or short connect can not direct connected to external power.
		18	起动端子START	
		19	停止端子STOP	
		20	软停端子SFST	
	模拟信号输出 Analog signal output	51	信号输出IOUT	0~20mA或4~20mA模拟信号输出
		52	地线GND	0~20mA或4~20mAA analog signal output
	通信接口(RS-485) Communication interface (RS-485)	61	通讯端子正A+ Communication Terminal A+	RS-485接口(默认) RS-485 (Default)
		62	通讯端子负A- Communication Terminal A-	
63		端子屏蔽PE Shielding Terminal PE		



The quality achievement

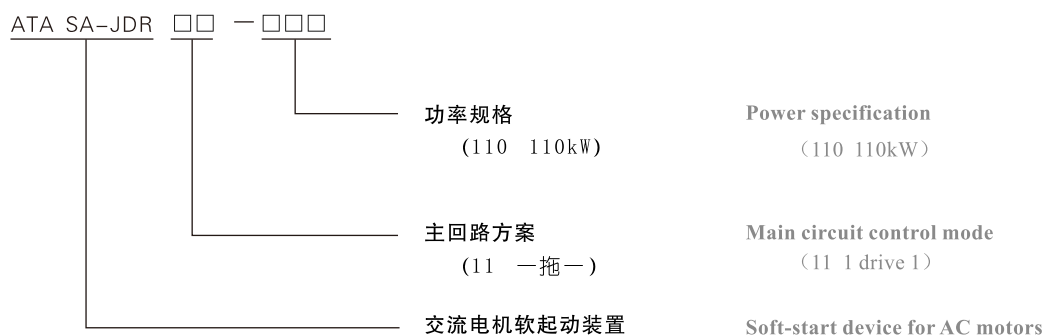
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ATA SA-JDR Series
ATA SA-JDR系列软启动柜成套
Soft-start complete plant

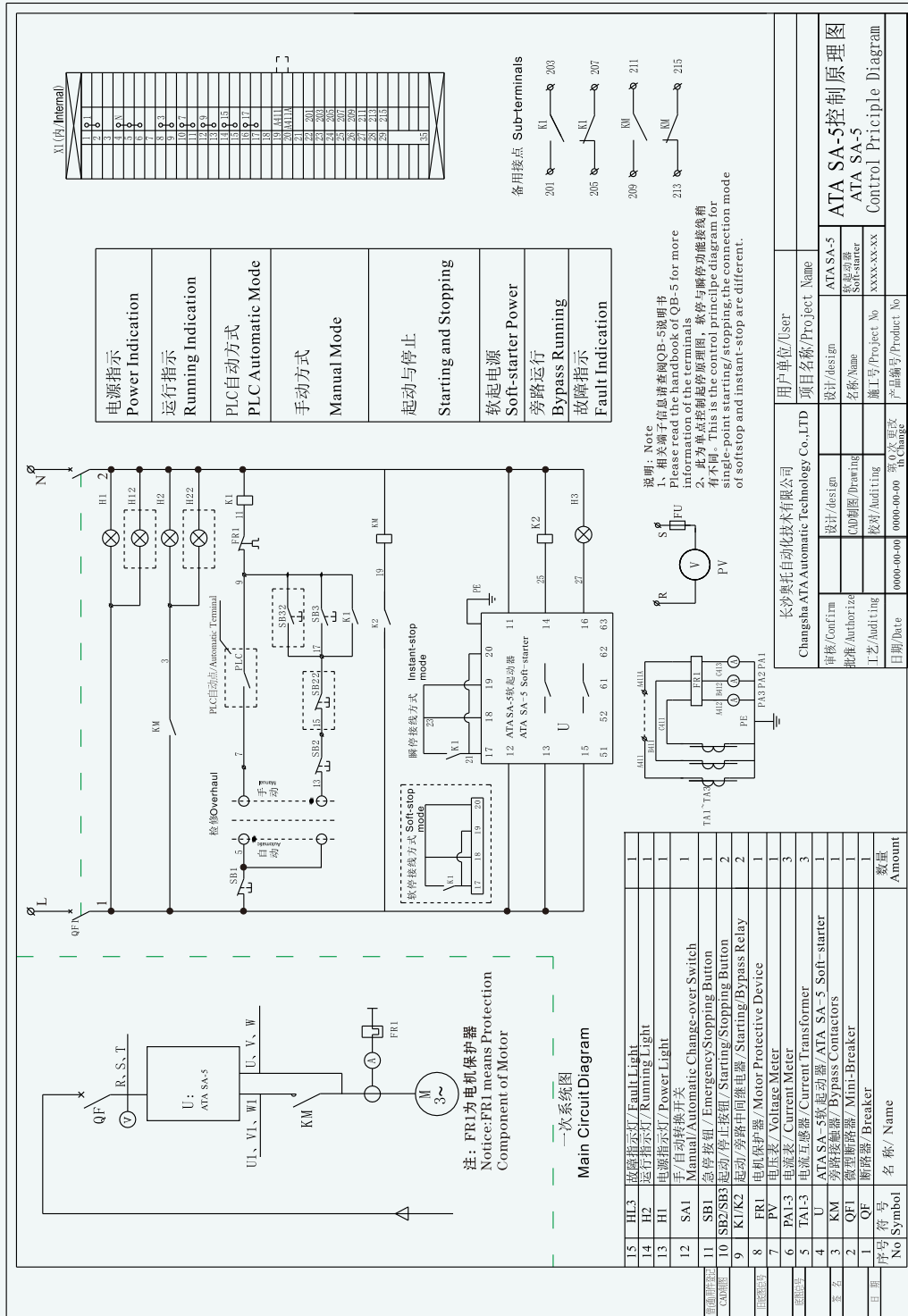
型号说明 Model explanation



型号说明 Model explanation

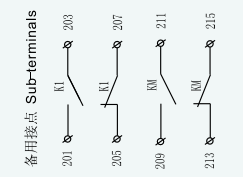
标准型负载 Standard load					
型号规格 Model	适配电机功率 (kW) Motor power	标称电流 (A) Rated current	标准柜体尺寸 (mm) Cabinet size		
			宽 Wide	深 Deep	高 High
ATA SA-JDR11-8	7.5	15	600	600	2200
ATA SA-JDR11-11	11	22	600	600	2200
ATA SA-JDR11-15	15	30	600	600	2200
ATA SA-JDR11-22	22	44	600	600	2200
ATA SA-JDR11-30	30	60	600	600	2200
ATA SA-JDR11-37	37	74	600	600	2200
ATA SA-JDR11-45	45	90	600	600	2200
ATA SA-JDR11-55	55	110	600	600	2200
ATA SA-JDR11-75	75	150	600	600	2200
ATA SA-JDR11-90	90	180	600	600	2200
ATA SA-JDR11-110	110	220	600	600	2200
ATA SA-JDR11-132	132	270	600	600	2200
ATA SA-JDR11-160	160	320	600	600	2200
ATA SA-JDR11-200	200	400	600	600	2200
ATA SA-JDR11-250	250	500	600	600	2200
ATA SA-JDR11-320	320	640	600	600	2200
ATA SA-JDR11-400	400	800	800	800	2200
ATA SA-JDR11-500	500	1000	800	800	2200

控制原理图 Control principle diagram



XT (内/ Internal)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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用户单位/ User	长沙奥托自动化技术有限公司
项目名称/ Project Name	ATA SA-5
设计/ design	软启动器
审核/Confirm	名称/Name
批准/Authorize	名称/Name
工艺/Auditing	施工号/Project No.
日期/Date	产品编号/Product No.
	0000-00-00 第0次更改 In Change

ATA SA-5 控制原理图
ATA SA-5
Control Principle Diagram

订货须知 Notice for Order Placing

订货时请提供下列资料

- △ 电动机型号、额定功率、额定电流、额定电压、额定转速
- △ 电动机拖动负载类型（风机、水泵、压缩机等）
- △ 设备使用在特殊环境条件时应在定货时提出
- △ 若用户有其他要求，请与我公司联系

- 本公司保留产品设计与规格变更的权利，恕不另行通知。
- 本产品选型手册中图片与实物如有差别，以实物为准。
- 本产品选型手册最终解释权归长沙奥托自动化技术有限公司所有。

Those data should be provided when you place an order:

- △ Motor model, rated power, rated current, rated voltage and rated rotary speed.
- △ The type of motor dragging load such as fan, water pump, compressor and etc.
- △ If the device will be operated in special environment, please inform us when you place the order.
- △ Please contact us for additional requirements.

- Our company reserves the right to revise product design and specification without notice.
- All pictures or images contained within this manual are for illustration purpose only.
- CHANGHSA ATA AUTOMATION CO.,LTD reserves the final right to interpret this manual.

未来发展 Future development ▶

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