

ELEVATOR  
SERIES  
PRODUCTS  
直梯系列产品

北京索德电气工业有限公司

Beijing DYNAMIC SWORD Electric Industrial Co.,Ltd.

北京总部  
beijing office

地址：北京市经济技术开发区兴盛街9号 邮编100176  
电话：+86-10-6787 8700  
传真：+86-10-6787 9700

Add.:NO.9 Xingsheng Street B.D.A. Beijing 100176 China  
Tel: +86-10-6787 8700  
Fax: +86-10-6787 9700

深圳分公司  
Shenzhen office

地址：广东省深圳市南山区侨香路侨城北高发  
东方科技园华科大厦2C-2 邮编：518053  
电话：+86-755-2675 5186  
传真：+86-755-2675 5186

Add.:HuaKe mansion 2C-2,Gaofa oriental technology Park,qiaocheng north Qiaoxiang  
Road,Nanshan District,Shenzhen,Guangdong Province,518053 China  
Tel:+86-755-2675 5186  
Fax:+86-755-2675 5186

湖州办事处  
huzhou office

地址：浙江省湖州市南浔镇 邮编313009  
电话：+86-139 1196 5127

Add.:Nanxun town, huzhou city, zhejiang province,313009 China  
Tel:+86-139 1196 5127



www.swordelec.com



■ Perfectly solve the problem concerning riding comfort with its excellent driving control performance.

Effectively solved the challenged vibrant problem under full speed operation and suppressed the noise of motor.

■ Free of angle to self-tuning of synchronous motor

Automatically identify the angle position of electromagnetic pole in 100 ms when first power-on, with an angular deviation less than 5°.

Automatically identify the encoder direction at the first time running, no need of manual correction U/V/W output sequence of motor.

Automatically learn motor parameters at the first time inspection running.

■ High performance synchronous motor without torque compensation of sensor starting.

Remove the variation of position (reverse movement) when open the brake, the torque compensation function of anti-vibration.

Self-adapt to load, excellent start effectiveness can be achieved without adjustment.

Good consistency and strong circumstance adapt ability environment of starting, no change with variety of mechanical status.

■ Various protection methods of car uncontrollability of synchronous motor

Prevent synchronous motor from occurring car uncontrollability safety hazards, with specific precaution measures such as auto-adaption to encoder wiring sequence and self-learning U/V/W phase sequence, etc.

Protection it from uncontrollable galloping car happening due to encoder wiring sequence malfunction, motor parameters error, initial magnetic pole angle error, encoder arbitrary wiring sequence drop; additionally, the supplementary service of the galloping distance is strictly controlled within 200mm, to provide a maximum protection.

■ 一流的驱动控制性能，完美解决电梯舒适感问题。有效解决全速运行时的抖动难题，有效抑制曳引机噪音。

■ 同步机免角度自学习

磁极位置的识别，磁极位置检测的角度偏差在5°以内；第一次运行自动识别编码器对应方向，无需手动校正电机U/V/W输出线序；第一次检修运行，自动完整学习电机参数。

■ 高性能同步机无传感器启动转矩补偿功能

消除打开抱闸时的位置变动（倒溜），防止振动的转矩补偿功能；实现载荷的自适应，无需调整即可达到良好的启动效果；一致性好，启动效果环境适应性强，不随机械状态的变化而变化。

■ 多种同步机飞车防护策略

自适应编码器线序、自动学习U/V/W相序等特有安全保护措施杜绝同步曳引机飞车安全隐患；

保障编码器线序错误不飞车，电机参数错误不飞车，初始磁极角度错误不飞车，编码器任意线序掉线不飞车；以及将飞车距离控制在200mm以内补充功能，最大限度的保护人生命安全。



■ Close-loop control auto-shift to open-loop control of Synchronous machine. (customization)

■ Encoder anomaly detection, auto-shift to open-loop operation, level off at the nearest floor to release the trapped passenger during the system running, effectively prevent accident of uncontrollable galloping car, and eliminate complaints over the person-shutting accident.

■ Optimized base blocking function

Hardware and software detect the safety circuit at the same time, making sure the circuit is cut off, the inverter stops outputting signal so as to prevent the inverter appearing over-current malfunction.

Completely solve arcing problem when contactor with loads, improve the working life of the control system.

■ Unique function of inverter power monitoring (inverter rate monitor)

The driving unit of elevator controller equipped with independent core monitoring CPU, monitors main fluctuation and abnormal circuit, and avoids elevators accidentally to stop or shut passengers due to malfunction or damage of control systems caused by external or internal power supply.

■ 同步电机闭环控制自动切换开环控制运行（定制）

■ 系统运行过程中，检测编码器异常，自动切换到开环运行，就近平层开门放人，防止编码器异常带来的飞车事故，杜绝此类问题带来的关人投诉。

■ 优异的基极封锁功能：安全回路硬件与软件同时检测，确保电梯在安全回路断开时，变频器停止输出，防止变频器发生过流故障；彻底解决接触器带载断开时的拉弧问题，提高控制系统使用寿命。

■ 独特的变频器电源监控功能（变频器心率监控）

电梯控制器驱动单元设立独立核心监控CPU，监控电源波动与电路异常监控，防止外部或者内部电源问题引起控制系统故障及损坏所造成的电梯停梯、关人时间。



## S600 Integrated Elevator Controller

S600系列一体化控制器



### S600 Features

S600系列产品特点

- Dynamic integration of drive and control function with advanced performance.
  - Full protection structural design, simply remove neither cap of the upper cover to complete the debug connection.
  - Comply with GB7588.1, EN81-20 standard.
  - Integrated sync encoder card.
  - Auto-generate N curves, auto-identified ultra-short storey and directly leveling off.
  - Enhanced basic electrode blocking function: prevent over-current and machine broken.
  - synchro motor free angle learning; Motor parameter complete learning at static state
  - Current loop parameter self-learning, it is convenient to use and feel comfortable without debugging
  - Avoid car uncontrollable for synchronous motor operation.
  - Current detection function: ensure normal state of output contactor, prevent cohesive short-circuit.
  - No weighing start and obtain higher function of prevent the car sliding in reverse
  - Acceleration and deceleration compensation function (feedforward control): no speed response of vibration and overstrike.
  - Multi-CUP redundancies for security monitoring:  
Multiple communication redundant monitoring (cooperation between hardware and software)  
Hoistway safety signal redundant monitoring ( forced change, limit position, security, door lock, etc.)  
Encoder signal redundant monitoring; Operation, brake redundant monitoring
  - “Heart Ratio” monitoring function:  
Input power monitoring (RST); 24V、5V、3V、±12V Internal power monitoring: 24V, 5V, 3V,±12V
  - Advanced anti-piracy function: Control system full communication dynamic encryption, random time authentication.
  - Support mobile phone debugging (Android, IOS), remote assistance.
  - Support remote monitors (Ethernet, GPRS)
- 驱动与控制有机结合，性能优异
  - 全防护结构设计，拆除上部下盖，即可完成调试接线
  - 满足GB7588.1、EN81-20标准
  - 集成同步编码器卡
  - N条曲线自动生成，超短层自动识别，直接停靠
  - 增强性基极封锁功能：防过流，防炸机
  - 同步机免角度学习，静止状态电机参数完整学习
  - 电流环参数自学习，舒适感免调试、使用方便
  - 同步电机运行防飞车功能
  - 电流检出功能：确保输出接触器的状态正常，防止粘连连接
  - 无称重启动，高级防倒溜车功能
  - 加减速补偿功能（前馈控制）：无振动、超调的速度响应
  - 多CPU冗余安全监控：  
多重通信冗余监控（软硬件结合）  
井道安全信号冗余监控(强换、限位、安全、门锁等)  
编码器信号冗余监控  
运行、抱闸冗余控制
  - “心率”监控功能：输入电源监控（RST）  
内部电源监控：24V、5V、3V、±12V
  - 高级防盗版功能：控制系统全通信动态加密，随机时间认证
  - 高级防窜货功能：驱动单元和控制单元随机加密认证，绑定匹配使用
  - 支持手持调试功能（安卓、苹果），远程协助功能

### Applicable Elevator Types of S600

S600系列适用范围



单梯、并联梯、4~8台群控（附加群控板）  
Single elevator, parallel elevators, group-control  
with 4~8 elevators (with group control board )



客梯、医用梯、住宅梯、残障梯、消防梯  
Passenger elevator, medical elevator,  
residence elevator, elevator for disabled,  
fire elevator

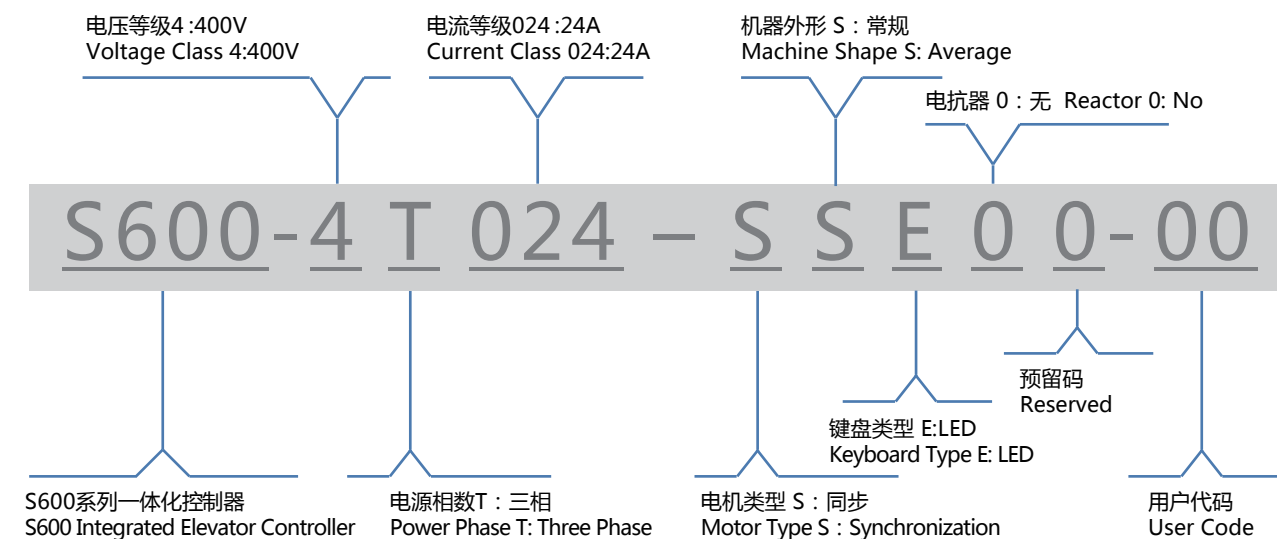


标配梯速≤4m/s，最大楼层64层  
Standard elevator speed: ≤4m/s,  
the maximum floor: 64 storey.



### S600 Naming Rule

S600系列产品命名规则



Comprehensive Technical Index of S600 Series Products

S600系列产品综合技术参数

Basic feature	Maximum floor	64 storey
	Elevator speed	4.00m/s of standard maximum speed ( Available with 12m/s equipped with absolute value encoder for nonstandard elevator )
	Group control quantity	4 for standard, 8 for nonstandard
	Communication mode	CANBUS, RS422、 UART、 SPI
Control characteristic	Control mode	Close-loop vector control
	Maximum starting torque	200% ( with PG vector control )
	Speed control range	1:1000 ( with PG vector control )
	Speed control accuracy	±0.05% (with PG vector control 25±10°C)
	Torque response	≤10ms ( with PG vector control)
	Frequency control range	0~60Hz
	Frequency accuracy	±0.01%
	Setting resolution ratio for frequency	±0.01Hz/50Hz
	No weighing start compensation	≤10ms ( with PG vector control)
	Start torque	If it utilizes Sin-Cos encoder, the system could complete the torque compensation required by load within 2ms.
	Overload capacity	150% 90s of rated outputcurrent, 180% 5s of rated output current , 230% 3s of rated output current
	Breaking capacity	150% of rated current ( externally connect break resistor), rated output current is 90A and below shouldbuilt-in brake unit for controller.
	Accelerated speed range	0.1~2.0m/s2
	Carrier frequency	2~15kHz
Encoder	Encoder of the synchronous motor	Standard equip Sin-Cos encoder port ( 5V ) ,ERN1387/487
	Encoder card of the asynchronous motor	Support ABZ encoder (OC, push-pull)
	Absolute value encoder card	Optional when elevator speed is over 4.0m/s.
I/O signal control	Programmable opto-isolator common input	30 Road, utilizeexternal 24VDC power, high level input available.
	Programmable opto-isolator high voltage input	4 Road, with standard 110VDC, 110VAC input, customizable with 220VDC、 220VAC
	Programmable relay output	8 Road normally open contact, 10A 30V DC, 10A 125V AC or 5A 250V AC
	CANBUS	2 Road, hall call and car call communication interface
	Serial communication interface	1 Road RS422 : used for parallel and group control 1 Road UART handheld keyboard, 1 Road UART remote monitor, 1 road USB blue-tooth

Protect function	Over voltage protection	200V class : Machine shut down when busbar voltage of main circuit is over 400VDC; 400V class : Machine shut down when busbar voltage of main circuit is over 800VDC ;
	Under-voltage protection	200V class : Machine shut down when busbar voltage of main circuit is under 190VDC; 400V class: Machine shut down when busbar voltage of main circuit is under 380VDC ;
	Module protect function	Protection such as over heat, over current, direct connection, etc.
	Over-load protection	Including inverter overload protection and motor overload protection
	Input lack-phase protection	If input lack-phase during - operation - then the system will shut down output to protect the drive controller
	Short circuit protection between output phases	Short circuit at any two phases during the operation, the system will shut down output to protect drive controller.
	Output short circuit protected to ground	Any phase short circuit to ground occurred during the operation, the system will shut down output to protect drive controller.
	Break resistor short-circuit protection	When break resistor short circuit occurred, the brake unit will timely protect.
	Pulse encoder detection	PG line break detection
	Cooling fin over heat protection	Real-time monitoring the cooling fin temperature through thermistor, if it surpassed the protecting point then it starts to protect.
	Motor over heat protection	Output protection function when tractor is over heat.





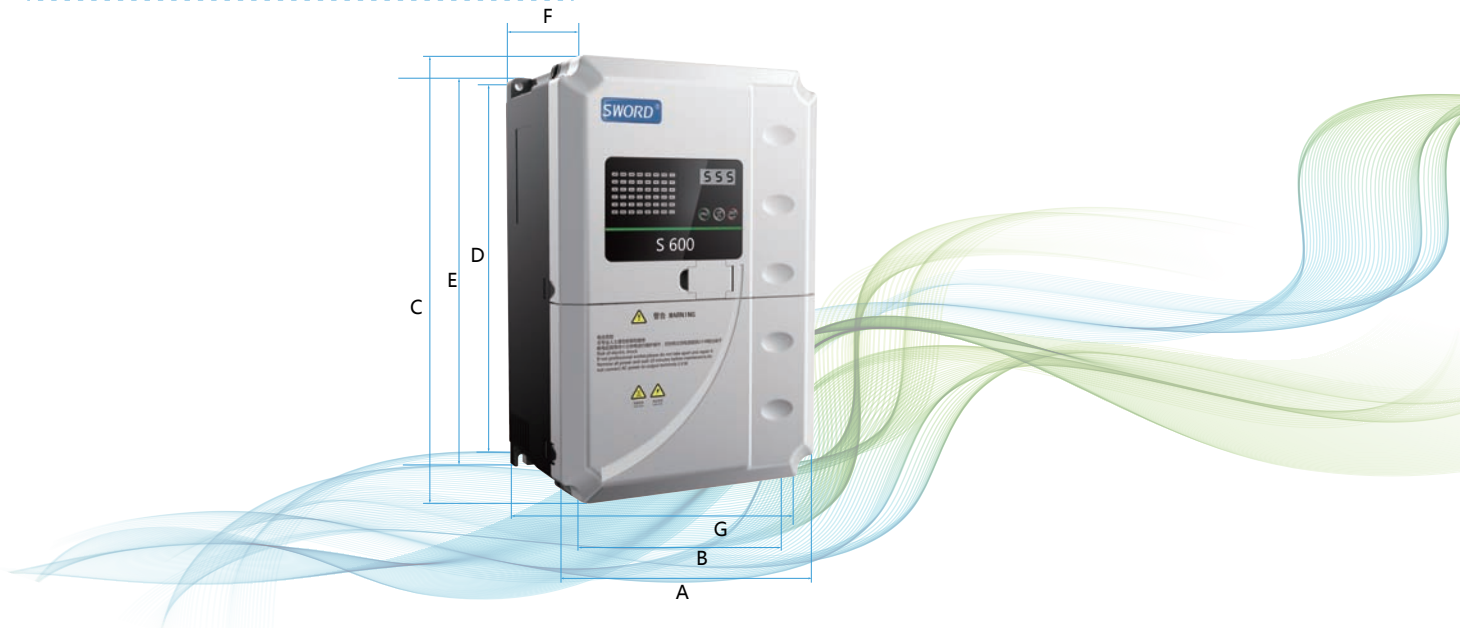
S600 Series Products Type Selection

S600系列产品选型

Type 系统型号	Input Voltage 输入电压	Input Current ( A ) 输入电流(A)	Output Current ( A ) 输出电流(A)	Matching Motor ( kw ) 适配电机(kw)	Braking Resistance ( W/Ω ) 制动电阻 ( 功率W/阻值Ω )
S600-2S009-SSE0000	Single AC 187V~264V 单相交流187V~264V	10.0	8.8	2.2	650W 75.0Ω
S600-2S014-SSE0000		15.0	14.0	3.7	1000W 50.0Ω
S600-2T009-SSE0000	Three phase AC 187V~264V 三相交流187V~264V	10.0	8.8	2.7	650W 75.0Ω
S600-2T014-SSE0000		15.0	14.0	3.7	1000W 50.0Ω
S600-2T017-SSE0000		19.0	17.0	4.0	1200W 40.5Ω
S600-2T024-SSE0000		25.0	23.6	5.5	1800W 27.0Ω
S600-2T032-SSE0000		34.0	32.0	7.5	2500W 19.5Ω
S600-2T036-SSE0000		38.0	36.0	11.0	3000W 16.0Ω
S600-2T042-SSE0000		43.0	42.0	13.5	3500W 14.0Ω
S600-2T048-SSE0000		49.0	48.0	15.0	4500W 11.0Ω
S600-2T060-SSE0000		63.0	60.0	18.5	5500W 9.0Ω
S600-2T071-SSE0000		73.0	71.0	22.0	6500W 7.5Ω
S600-2T090-SSE0000		92.0	90.0	30.0	9000W 5.5Ω
S600-4T009-SSE0000	Three phase AC 323V~456V 三相交流323V~456V	10.0	8.8	3.7	1200W 136.0Ω
S600-4T014-SSE0000		15.0	14.0	5.5	1800W 91.0Ω
S600-4T017-SSE0000		19.0	17.0	7.5	2500W 65.0Ω
S600-4T024-SSE0000		25.0	23.6	11.0	3500W 47.0Ω
S600-4T032-SSE0000		34.0	32.0	15.0	4500W 36.0Ω
S600-4T036-SSE0000		38.0	36.0	18.5	5500W 30.0Ω
S600-4T042-SSE0000		43.0	42.0	20.0	6000W 27.0Ω
S600-4T048-SSE0000		49.0	48.0	22.0	7000W 23.0Ω
S600-4T060-SSE0000		63.0	60.0	30.0	9000W 18.0Ω
S600-4T071-SSE0000		73.0	71.0	37.0	11000W 15.0Ω
S600-4T090-SSE0000		92.0	90.0	45.0	13500W 12.0Ω

S600 Installation Size and Weight

S600系列产品安装尺寸和质量



Type 控制器型号	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Installation Diameter φ(mm) 安装孔径Φ(mm)	Weight(kg) 质量(kg)	Type 机箱型号
S600-2S009-SSE0000	206	187	306	287	300	135	200	6.5	7	Size A
S600-2S014-SSE0000										
S600-2T009-SSE0000										
S600-2T014-SSE0000										
S600-2T017-SSE0000										
S600-2T024-SSE0000										
S600-4T009-SSE0000										
S600-4T014-SSE0000										
S600-4T017-SSE0000										
S600-4T024-SSE0000										
S600-2T032-SSE0000	226	207	332	313	326	176	220	6.5	10.5	Size B
S600-2T036-SSE0000										
S600-2T042-SSE0000										
S600-4T032-SSE0000										
S600-4T036-SSE0000										
S600-4T042-SSE0000										
S600-2T048-SSE0000	292	230	504	493	470	187	285	5.5	18	Size C
S600-2T060-SSE0000										
S600-2T071-SSE0000										
S600-2T090-SSE0000										
S600-4T048-SSE0000										
S600-4T060-SSE0000										
S600-4T071-SSE0000										
S600-4T090-SSE0000										

## S610 Series Specific Drivers

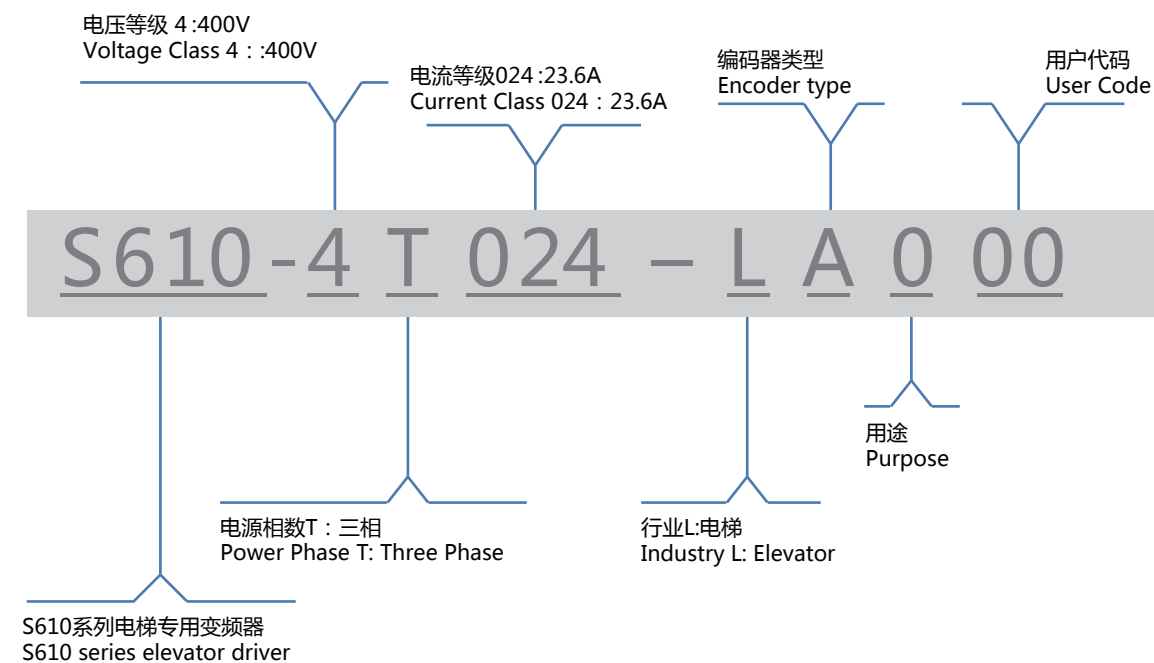
### S610系列产品特点

- Elevator' s dedicated function: forced deceleration judgement ; hoistway self-learning; abnormal position protection correct ;
  - Automatically generate N curves and recongnize ultra-short layers, directly stop at the leveling ;
  - Asynchro motoe dedicated open loop control function with high-performance and reliable safety :
    - Special control algorithm to ensure reliability, stability and high-load ability, guaranteeing OHZ frequency stable operation ;
    - Making sure that elevator start to open brake, stop at 0 frequency without sliding down; there is no change as the change of loading ;
    - Excellent speed control accuracy, guaranteeing the consistency of elevator' s leveling; there is no change as the change of loading ;
    - Excellent control algorithm, perfectly suppressing the vibration with low frequency during open loop operation to solve power generation vibrating problem in the operation of open loop making it more stable and comfortable for elevator operation ;
  - Enhancing base blockade function: current-limiting, anti-bombing machine ;
  - Support to debug by phone(Andriod, IOS), remote assitance function ;
  - Support to conduct ISP(In System Programming), remote ISP
- Frances O' Grady, the head of Britain' s Trades Union Congress, threw down a gauntlet on ;



## S610 Naming Rule

### S610系列产品命名规则



- 电梯专用功能：强迫减速判断；井道自动学习；位置异常保护校正；
- 直接停靠功能：N条曲线自动生成，距离控制直接停靠；超短层自动识别；
- 异步机专用开环控制功能，性能优异，安全可靠：
  - 特殊的控制算法，确保低频控制的稳定性、可靠性和高负载能力，保证0HZ频率稳定运行；
  - 确保电梯启动开闸、零频停车不溜车；并不随载荷的变化而变化；
  - 优异的速度控制精度，保证电梯平层的精度和一致性，并不随载荷变化而变化；
  - 优异的控制算法，完美抑制电梯开环运行低频抖动，解决电梯开环发电载方向运行抖动问题，电梯运行更加舒适稳定；
- 增强性基极封锁功能：防过流，防炸机；
- 支持手持调试功能（安卓、苹果），远程协助功能；
- 支持在线烧录程序、远程烧录程序；



梯速≤4m/s，最大楼层64层  
Rated speed ≤4m/s, the Highest floor is 64



S610 Series Products Technological Parameters

S610系列产品综合技术参数

Input	Rated voltage; frequency	Single phase:220V;50Hz/60Hz Three phase:220V;50Hz/60Hz Three phase:380V;50Hz/60Hz
	Range of permissible voltage operating	Single phase/Three phase:187V~264V Three phase:323V~456V
	Imbalance of input voltage	< 2%
	Range of input power frequency	< 2%
Output	Voltage	Three phase AC 0V~ input voltage
	Frequency	0Hz ~ 100Hz
	Overload	Over 150%, 90s; Over 180% , 5s
The main control performance	Ways of control	Flux vector control without no PG, Flux vector control with PG, V/F control
	Ways of debugging	Space Vector PWM
	Start torque	0.5Hz, 150% of rated torque(without flux vector control); 0 Hz, 180% of rated torque (with PG flux vector control)
	Accuracy of speed control	Flux vector control without PG : ±0.5%; flux vector control with PG: ±0.05%
	Frequency resolution	Digital setting : 0.01Hz ; Analog setting : maximun frequency×0.05%
	Torque improvement	Torque improvement by hands: 0.0~30.0%
	V/F curve	Four kinds of way: one way that the user sets the curve method of V/F and three curve methods decreasing torque features(2.0 power, 1.7 power, 1.2 power)
	Automatic current limiting	Automatically limit current during operation period to prevent triping caused by frequent overcurrent
Operation	Operation order channe	Set operating board and set control terminal
	Frequency settetd channel	Digital given, set analog voltage, set analog current
	Digital input terminal	Functional digital input of 10-way, X1 ~ X10, optional high and low leveling
	Digital output terminal	Functional digital output of 2-way, D1 is optional for NPN or PNP, D2 is output of NPN
	Analog input terminal	2-way analog input, AI1 : -10V ~ +10V ; AI2 : 0V ~ +10V/0 ~ 20Ma
	Analog output terminal	2-way analog output, AO1 : -10V ~ +10V ; AO2 : 0V ~ +10V/0 ~ 20mA
	Relay output terminal	3-way programmable relay output, including 2-way is normally open output, 1-way is normally closed/open output
Operation board	LED display	Display IO status, setting frequency, output frequency, output voltage, output current
	Datas copy	Quickly copy information through operation board
Using environment	Using places	Inner of home, free from direct sunlight, no dust, corrosive gases, flammable gases, oil mist, water vapor, drip or salt
	Altitude	Reduce the rated current to use when it is more than 1000m, and every 100m increase, the output current is reduced by 4 % of rated current
	Enviroment temperature	- 10 ~ + 40℃ (among temperatur of 40~50℃, please reduce the rated to use)
	Humudity	20% ~ 90%RH , waterless beads coagulate
	Vibration	Less than 5.9 m/s2 (0.6g)
	Temperature of storage	- 40 ~ + 70℃
Others	Protection	Over-current protection, over-voltage protection, under-voltage protection, over-temperature protection, overload protection, module protection, etc.
	Protection classes	IP20
	Cooling method	Air-cooled, with fan control
	Ways of installation	Wall-mounted

S610 Series Products Type Selection

S610系列产品选型

Type 系统型号	Input Voltage 输入电压	Input Current ( A ) 输入电流(A)	Output Current ( A ) 输出电流(A)	Matching Motor ( KW ) 适配电机(kw)	Braking Resistance ( W / Ω ) 制动电阻 ( 功率W/阻值Ω )
S610-2S009-L0000	Single AC 187V~264V 单相交流 187V~264V	10.0	8.8	2.2	650W 75.0Ω
S610-2S014-L0000		15.0	14.0	3.7	1000W 50.0Ω
S610-2T009-L0000	Three phase AC 187V~264V 三相交流187V~264V	10.0	8.8	2.7	650W 75.0Ω
S610-2T014-L0000		15.0	14.0	3.7	1000W 50.0Ω
S610-2T017-L0000		19.0	17.0	4.0	1200W 40.5Ω
S610-2T024-L0000		25.0	23.6	5.5	1800W 27.0Ω
S610-2T032-L0000		34.0	32.0	7.5	2500W 19.5Ω
S610-2T036-L0000		38.0	36.0	11.0	3000W 16.0Ω
S610-2T042-L0000		43.0	42.0	13.5	3500W 14.0Ω
S610-2T048-L0000		49.0	48.0	15.0	4500W 11.0Ω
S610-2T060-L0000		63.0	60.0	18.5	5500W 9.0Ω
S610-2T071-L0000		73.0	71.0	22.0	6500W 7.5Ω
S610-2T090-L0000		92.0	90.0	30.0	9000W 5.5Ω
S610-4T009-L0000	Three phase AC 323V~456V 三相交流323V~456V	10.0	8.8	3.7	1200W 136.0Ω
S610-4T014-L0000		15.0	14.0	5.5	1800W 91.0Ω
S610-4T017-L0000		19.0	17.0	7.5	2500W 65.0Ω
S610-4T024-L0000		25.0	23.6	11.0	3500W 47.0Ω
S610-4T032-L0000		34.0	32.0	15.0	4500W 36.0Ω
S610-4T036-L0000		38.0	36.0	18.5	5500W 30.0Ω
S610-4T042-L0000		43.0	42.0	20.0	6000W 27.0Ω
S610-4T048-L0000		49.0	48.0	22.0	7000W 23.0Ω
S610-4T060-L0000		63.0	60.0	30.0	9000W 18.0Ω
S610-4T071-L0000		73.0	71.0	37.0	11000W 15.0Ω
S610-4T090-L0000		92.0	90.0	45.0	13500W 12.0Ω





S610 Installation Size and Weight

S610产品安装尺寸和质量



Type 系统型号	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Installation Diameterφ(mm) 安装孔径Φ(mm)	Weight(kg) 质量(kg)	Type 机箱型号
S610-2S009-L0000	206	187	306	287	300	135	200		6.5	4	Size A
S610-2S014-L0000											
S610-2T009-L0000											
S610-2T014-L0000											
S610-2T017-L0000											
S610-2T024-L0000											
S610-4T009-L0000											
S610-4T014-L0000											
S610-4T017-L0000	226	207	332	313	326	176	220		6.5	6	Size B
S610-4T024-L0000											
S610-2T032-L0000											
S610-2T036-L0000											
S610-2T042-L0000											
S610-4T032-L0000	292	230	504	493	470	187	285	477	6.5	18	Size C
S610-2T048-L0000											
S610-2T060-L0000											
S610-2T071-L0000											
S610-2T090-L0000											
S610-4T048-L0000											
S610-4T060-L0000											
S610-4T071-L0000											
S610-4T090-L0000											

S610M专用变频器  
S310 Specific Inverter of Compact Escalator



S610M专用变频器主要产品特点

Features

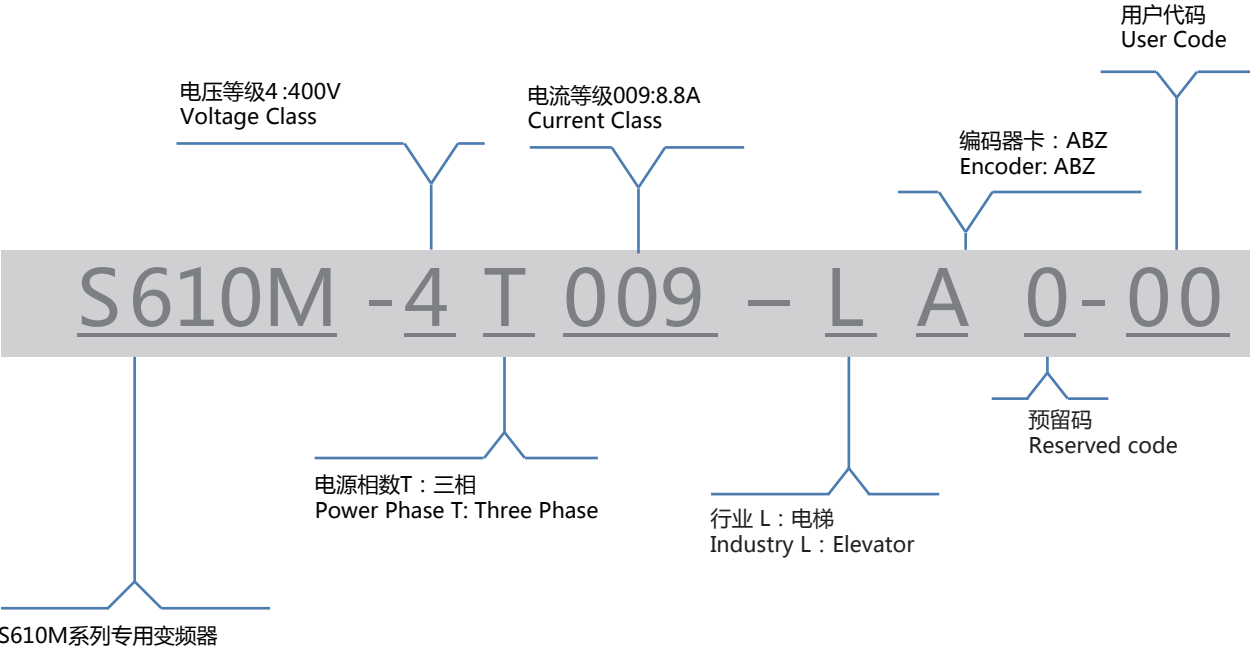
- Elevator special function: forced deceleration judgment; automatic learning of hoistway; position abnormality protection correction;
- direct docking function: N curves are automatically generated, distance control is directly docked; ultra-short layer automatic identification
- Open-loop control function for asynchronous machine, excellent performance, safe and reliable:
  - 1、Special control algorithm to ensure the stability, reliability and high load capacity of low frequency control to ensure stable operation of 0HZ frequency;
  - 2、Ensure that the elevator starts to open, zero-frequency parking does not slip; does not change with load changes
  - 3、Excellent speed control accuracy, ensuring the accuracy and consistency of the elevator level, does not change with load changes
  - 4、Excellent control algorithm, perfect suppression of low-frequency jitter in elevator open-loop operation, solving the problem of running jitter in the open-loop power generation direction of the elevator, and the elevator operation is more comfortable and stable.
- enhanced base block function: anti-overcurrent, anti-fried machine
- support handheld debugging function (Android, Apple), remote assistance function
- support online burning program, remote burning program
- compact size, saving installation space

- 电梯专用功能：强迫减速判断；井道自动学习；位置异常保护校正；
- 直接停靠功能：N条曲线自动生成，距离控制直接停靠；超短层自动识别；
- 异步机专用开环控制功能，性能优异，安全可靠：
  - 1、特殊的控制算法，确保低频控制的稳定性、可靠性和高负载能力，保证0HZ频率稳定运行；
  - 2、确保电梯启动开环、零频停车不溜车；并不随载荷的变化而变化；
  - 3、优异的速度控制精度，保证电梯平层的精度和一致性，并不随载荷变化而变化；
  - 4、优异的控制算法，完美抑制电梯开环运行低频抖动，解决电梯开环发电载方向运行抖动问题，电梯运行更加舒适稳定；
- 增强性基极封锁功能：防过流，防炸机；
- 支持手持调试功能（安卓、苹果），远程协助功能；
- 支持在线烧录程序、远程烧录程序；
- 体积紧凑，节省安装空间；



S610M系列产品命名规范

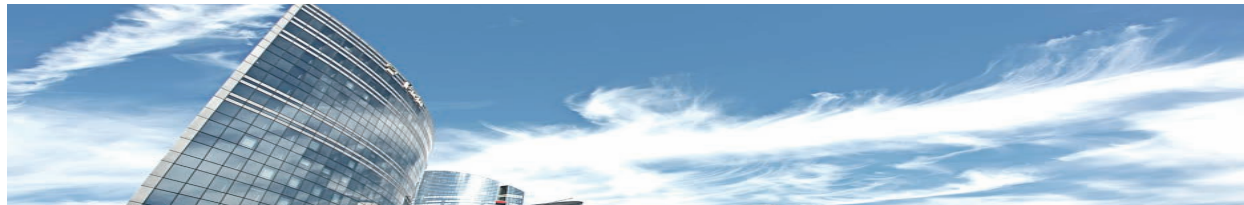
Naming rule



S610M Series Products Type Selection

S610M系列产品选型

Type 系统型号	Rated Capacity ( KVA ) 额定容量(KVA)	Rated Input Current ( A ) 额定输入电流(A)	Rated Output Current ( A ) 额定输出电流(A)	Matching Motor ( KW ) 适配电机(kw)
S610M-2S009-L0000	3.5	13	9	1.5
S610M-2S014-L0000	5.4	20	14	2.2
S610M-2T009-L0000	3.5	10	9	1.5
S610M-2T014-L0000	5.4	15	14	2.2
S610M-2T017-L0000	6.5	19	17	3.7
S610M-4T009-L0000	6.0	10	9	3.7
S610M-4T014-L0000	9.2	15	14	5.5
S610M-4T017-L0000	11.0	19	17	7.5



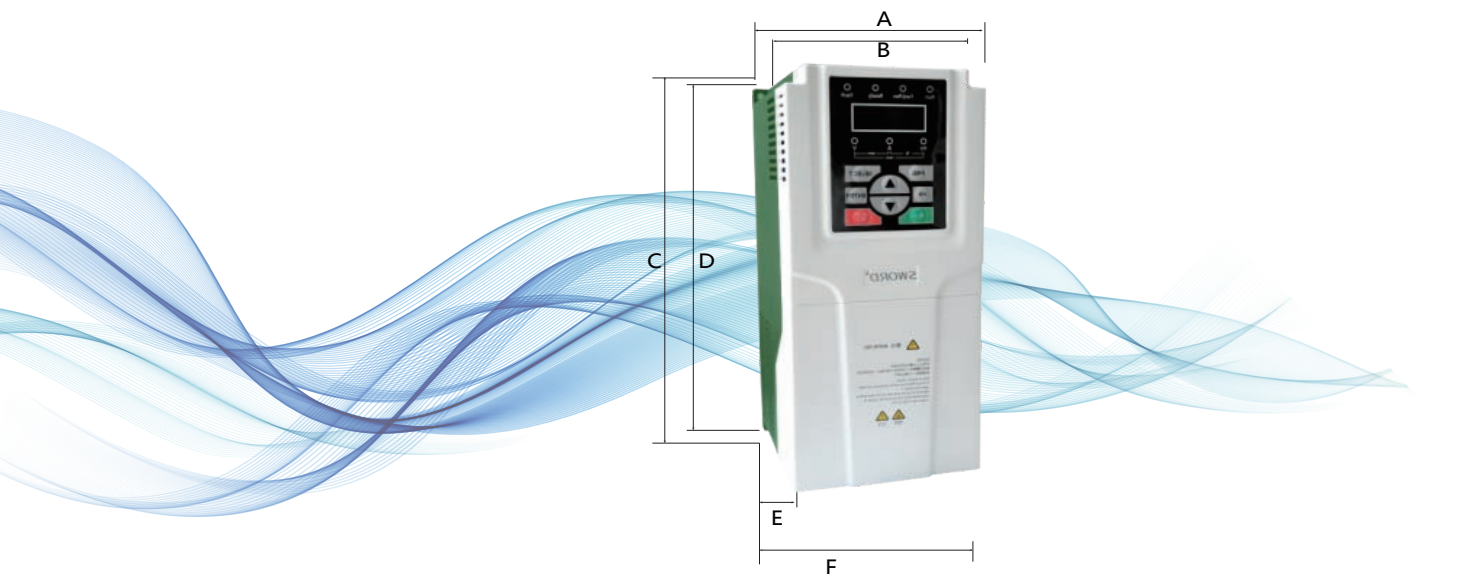
S610M Series Products Technological Parameters

S610M系列产品综合技术参数

Input	Rated voltage; frequency	Single phase:220V;50Hz/60Hz Three phase:220V;50Hz/60Hz Three phase:380V/440V;50Hz/60Hz
	Range of permissible voltage operating	Single phase/Three phase:187V~264V Three phase:323V~456V
	Imbalance of input voltage	< 2%
	Range of input power frequency	< 2%
Output	Voltage	Three phase AC 0V~ input voltage
	Frequency	0Hz ~ 100Hz
	Overload	Over 150%, 90s; Over 180% , 5s
The main control performance	Ways of control	Flux vector control without no PG, Flux vector control with PG, V/F control
	Ways of debugging	Space Vector PWM
	Start torque	0.5Hz, 150% of rated torque(without flux vector control); 0 Hz, 180% of rated torque (with PG flux vector control)
	Accuracy of speed control	Flux vector control without PG : ±0.5%; flux vector control with PG: ±0.05%
	Frequency resolution	Digital setting : 0.01Hz ; Analog setting : maximun frequency×0.05%
	Torque improvement	Torque improvement by hands: 0.0~30.0%
	V/F curve	Four kinds of way: one way that the user sets the curve method of V/F and three curve methods decreasing torque features(2.0 power, 1.7 power, 1.2 power)
	Automatic current limiting	Automatically limit current during operation period to prevent triping caused by frequent overcurrent
Operation	Operation order channe	Set operating board and set control terminal
	Frequency settetd channel	Digital given
	Digital input terminal	Functional digital input of 8-way, X1 ~ X8, optional low leveling
	Digital output terminal	OC digital output of 2-way
	Relay output terminal	3-way programmable relay output, including 2-way is normally open output, 1-way is normally closed/open output
Operation board	LED display	Setting frequency, output frequency, output voltage, output current
	Datas copy	Quickly copy information through operation board
Using environment	Using places	Inner of home, free from direct sunlight, no dust, corrosive gases, flammable gases, oil mist, water vapor, drip or salt
	Altitude	Reduce the rated current to use when it is more than 1000m, and every 100m increase, the output current is reduced by 4 % of rated current
	Enviroment temperature	- 10 ~ + 40℃ (among temperatur of 40~50℃, please reduce the rated to use)
	Humudity	20% ~ 90%RH , waterless beads coagulate
	Vibration	Less than 5.9 m/s2 (0.6g)
	Temperature of storage	- 40 ~ + 70℃
Others	Protection	Over-current protection, over-voltage protection, under-voltage protection, over-temperature protection, overload protection, module protection, etc.
	Protection classes	IP20
	Cooling method	Air-cooled, with fan control
	Ways of installation	Wall-mounted

S660 Installation Size and Weight

S660产品安装尺寸和质量



Type 系统型号	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Installation diameter φ(mm) 安装孔径Φ(mm)	Weight(kg) 质量(kg)	Type 机箱型号
S610M-2S009-L0000	110	100	250	240	130	73	5.3	1.9	MINI
S610M-2S014-L0000									
S610M-2T009-L0000									
S610M-2T014-L0000									
S610M-2T017-L0000									
S610M-4T009-L0000									
S610M-4T014-L0000									
S610M-4T017-L0000									



S660 Integrated Controller by Parallel Communication

S660系列并行一体化电梯控制器

S660 Series Products Features

S660系列产品特点

- Integrated Design: Perfect integration of drive and control function with advanced performance ; Integrated design with compact structure; Available for synchro and asynchro motor ; Fully enclosed design, humanized human-machine interface, higher protection class ; Three Modes: Full parallel control, Full serial control, Hybrid control with serial and parallel.  
Three modes: full-parallel control, full-serial control, mix of serial and parallel control.
- CPU redundant security monitoring : Multiple communication redundant monitoring (combination of software and hardware) ; The signal of hoistway redundant monitoring (forced change, limit position, security, door lock) ; Encoder redundant monitoring; redundant control of operation and brake.
- “Heart Ratio” monitoring function: Input power monitoring (RST) ; : 24V、5V、3V、±12V Internal power monitoring: 24V, 5V, 3V,±12V ; Advanced preventing goods mix function: Random encryption authentication of drive and control unit, binding and matching usage.
- Be able to operate open loop of asynchro motor without encoder to control lift ;
- Support up to 8 floors full collection as standard (enable to extend to 16 floors full collection).
- Various door-control functions setting to satisfy different requirements of cargo lifts.
- Support UPS and ARD operation, realize automatic rescue operation after electricity is cut off;
- Extension of serial control: CAN communication in the car, RS485 communication for the hall.
- Motor parameter is completely learnt at static state.
- 26 road button input, 14 road switch input, 21 road relay output.
- Multiple output display methods: binary code, BCD code, 7-segment, gray code.

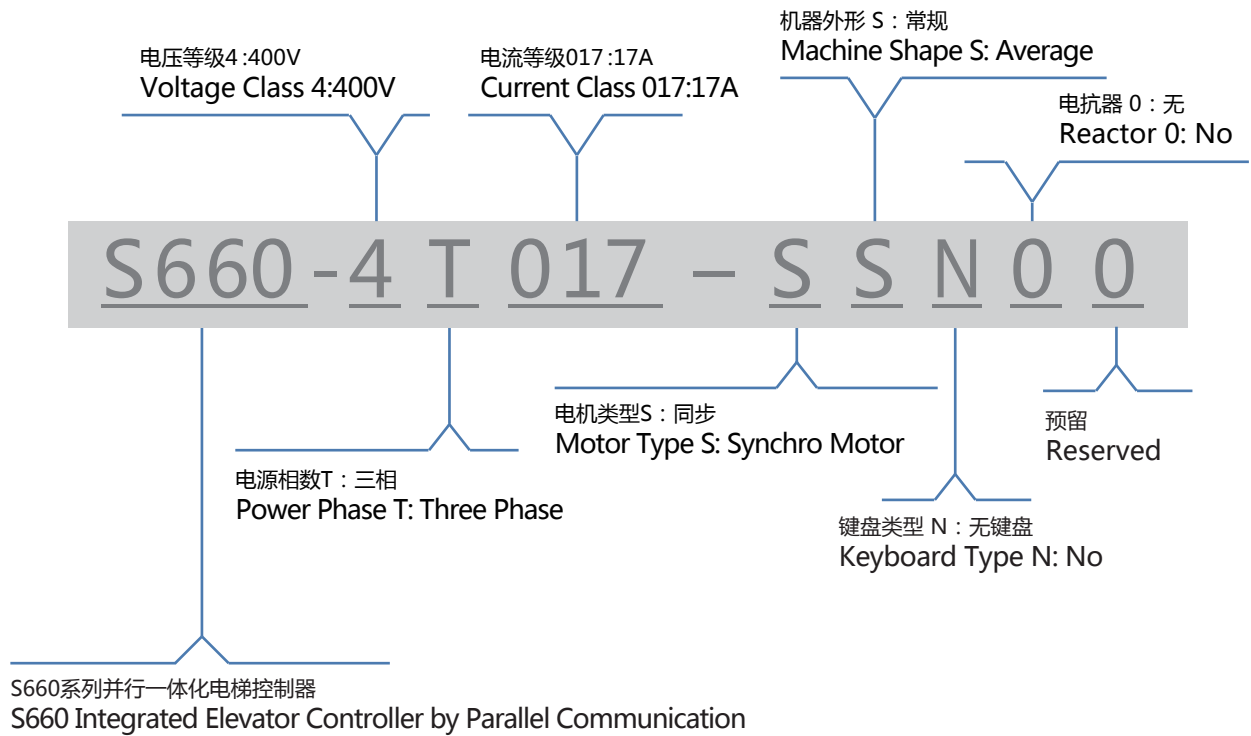


- 一体化设计：  
驱动与控制完美结合，性能优异；结构更紧凑；  
同、异步一体；全防护结构设计，人机界面友好，防护等级更高；  
三种模式：全并行控制，全串行控制，串并混合控制；
- 多CPU冗余安全监控：多重通信冗余监控（软硬件结合）；  
井道安全信号冗余监控(强换、限位、安全、门锁等)；  
编码器信号冗余监控；运行、抱闸冗余控制；
- “心率”监控功能：  
输入电源监控（RST）；内部电源监控：24V、5V、3V、±12V；  
高级防窜货功能：驱动单元和控制单元随机加密认证，绑定匹配；
- 异步开环控制，无需编码器即可实现电梯控制运行
- 标准配置满足8层全集选应用(可扩展至16层全集选)；
- 丰富的门控功能设定，满足货梯门控多样性的需求；
- 支持UPS、ARD运行，停电后自动救援运行；
- 串行通信控制扩展：轿内CAN通信、轿外RS485通信；
- 26路按钮输入，24路开关量输入，21路继电器输出；
- 多种显示输出方式：二进制编码、BCD码、七段码、格雷码；



Naming Rule of S660 Series Products

S660系列产品命名规则



Comprehensive Technical of S660 Series Products

S660系列产品综合技术参数

Basic feature	Maximum floor	16 storey
	Elevator speed	Standards max. speed: 1.75m/s
	Group control quantity	4 for standard, 8 for nonstandard
	Communication mode	CANBUS, RS422、UART、SPI
Control characteristic	Control mode	Close-loop vector control
	Maximum starting torque	200% ( with PG vector control )
	Speed control range	1:1000 ( with PG vector control )
	Speed control precision	±0.05% (with PG vector control 25±10°C)
	Torque response	≤10ms ( with PG vector control)
	Frequency control range	0~60Hz
	Frequency accuracy	±0.01%
	Setting resolution ratio for frequency	±0.01Hz/50Hz
	Control mode	≤10ms ( with PG vector control)
	No weighing start compensation	If it utilizes Sin-Cos encoder, the system could complete the torque compensation required by load within 2ms.
	Overload capacity	150% 90s of rated outputcurrent, 180% 5s of rated output current , 230% 3s of rated output current
	Breaking capacity	150% of rated current ( externally connect break resistor), rated output current is 90A and below shouldbuilt-in brake unit for controller.
	Accelerated speed range	0.1~2.0m/s <sup>2</sup>
	Carrier Frequency	2~15kHz
Encoder	Encoder of the synchronous motor	Standard equip Sin-Cos encoder port ( 5V ) ,ERN1387/487
	Encoder card of the asynchronous motor	Support ABZ encoder (OC, push-pull)
	Without encoder card	AC asynchro motor control without encoder
I/O signal control	Programmable Opto-isolator common input	24-way, external 24DC power, effective input with high level
	Programmable Opto-isolator high voltage input	4-way, standard 110VDC, 110VAC; customizable 220VDC, 220VAC
	Programmable relay output	21-way normally open contact, 10A 30V DC; 10A 125V AC; 5A 250V AC. 1-way normally closed contact
	CANBUS	One-way; group control by parallel communication
	Serial communication interface	1-way RS485: reserve 1-way RJ45 handheld keyboard, 1-way UART remote monitor, 1-way USB Bluetooth
	Input and output of programmable order button	Standard 26-way, scalable to 50 way

Applicable Elevator Types of S660

S660系列适用范围



別墅梯、貨梯、对电气系统控制  
成本苛刻的客梯工况  
Lower costs electric system of  
passenger condition for Villa  
elevator, dumbwaiters;



标准：梯速≤1.75m/s ;  
Standard: rated speed ≤1.75m/s



非标：梯速 > 1.75m/s时 ,  
控制器支持CAN串行通信控制  
Non-standard: rated speed  
> 1.75m/s, controller can operate  
serial communication control by CAN

Protection	Overvoltage protection	200Vclass: more than 400VDC, the main circuit bus voltage is stopped 400Vclass : more than 800VDC, the main circuit bus voltage is stopped
	Under voltage protection	200V class: under 190VDC, the main circuit bus voltage is stopped 400V class: under 380VDC, the main circuit bus voltage is stopped
	Module protection	Fault protection such as overheating, over current, and pass-through
	Overload protection	Overload protection of converter and motor
	Protection of input loss phase	If system is input loss phase, output is cut off to protect drive controller during the operation process
	Protection output of phase short circuit	Any two phases occur short circuit, then the output is cut off to protect drive controller
	Protection of output ground short circuit	Any phase occurs output ground short circuit, then the output is cut off to protect drive controller
	Protection of braking resistor short circuit	If braking resistor occurs short circuit, the braking unit takes measures to protect in time
	The detection of pulse encoder	PG disconnection detection
	Protection of heat sink overheat	Real-time monitoring of heat sink temperature through thermistor, if the temperature is beyond the protection point leading to output protection
	Protection of traction machine overheat	PG disconnection detection

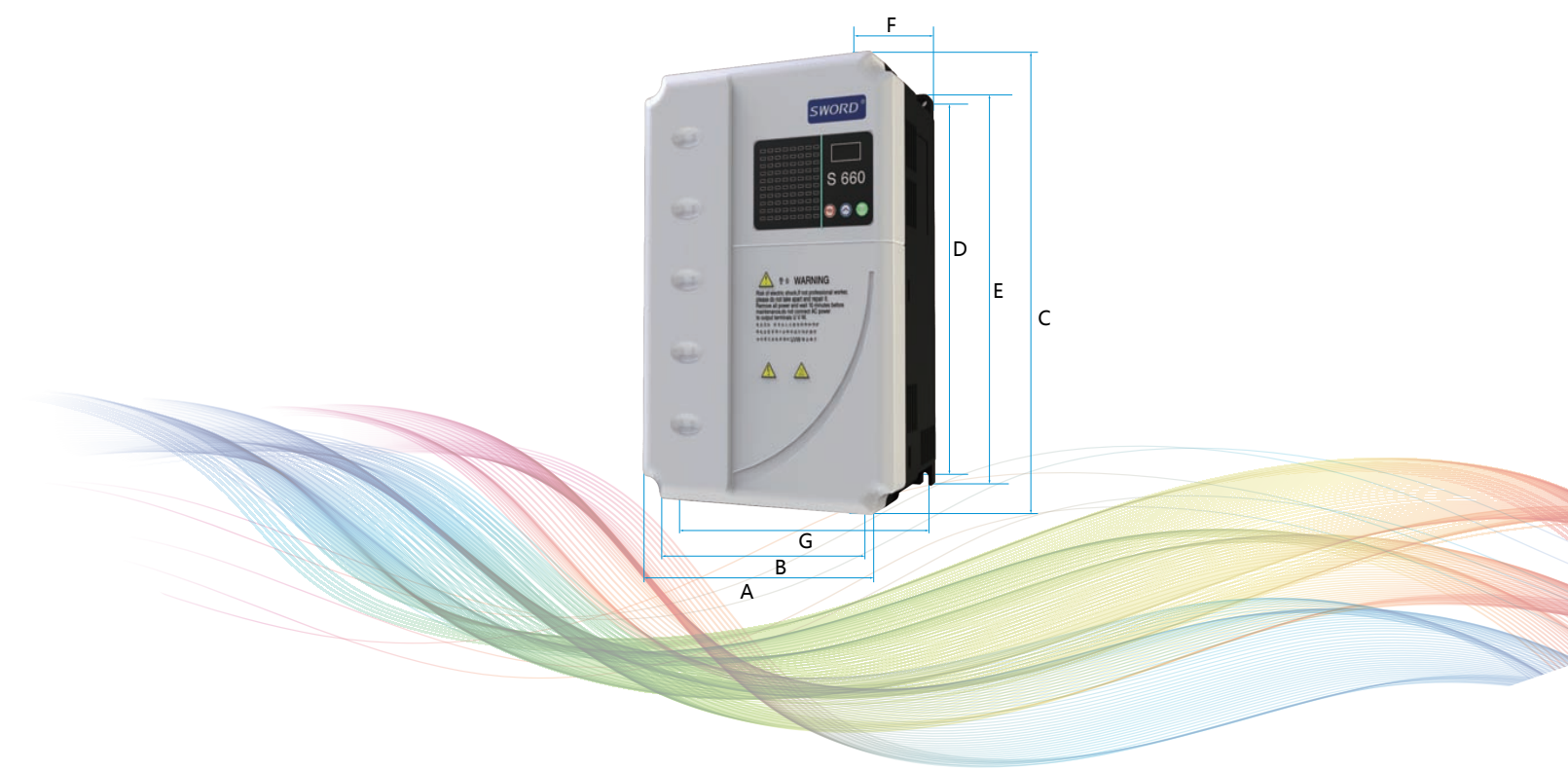
S660 Series Products Type Selection

S660系列产品选型

Type 系统型号	Input Voltage 输入电压	Input Current ( A ) 输入电流(A)	Output Current ( A ) 输出电流(A)	Matching Motor ( kw ) 适配电机(kw)	Braking Resistance ( W/Ω ) 制动电阻 ( 功率W/阻值Ω )
S660-2S009-SSE0000	Single AC 187V~264V	10.0	8.8	2.2	650W 75.0Ω
S660-2S014-SSE0000		15.0	14.0	3.7	1000W 50.0Ω
S660-4T009-SSE0000	Three phase AC 323V~456V	10.0	8.8	3.7	1200W 136.0Ω
S660-4T014-SSE0000		15.0	14.0	5.5	1800W 91.0Ω
S660-4T017-SSE0000		19.0	17.0	7.5	2500W 65.0Ω
S660-4T024-SSE0000		25.0	23.6	11.0	3500W 47.0Ω
S660-4T032-SSE0000		34.0	32.0	15.0	4500W 36.0Ω
S660-4T036-SSE0000		38.0	36.0	18.5	5500W 30.0Ω
S660-4T042-SSE0000		43.0	42.0	20.0	6000W 27.0Ω
S660-4T048-SSE0000		49.0	48.0	22.0	7000W 23.0Ω
S660-4T060-SSE0000		63.0	60.0	30.0	9000W 18.0Ω
S660-4T071-SSE0000		73.0	71.0	37.0	11000W 15.0Ω
S660-4T090-SSE0000		92.0	90.0	45.0	13500W 12.0Ω

S660 Installation Size and Weight

S660产品安装尺寸和质量

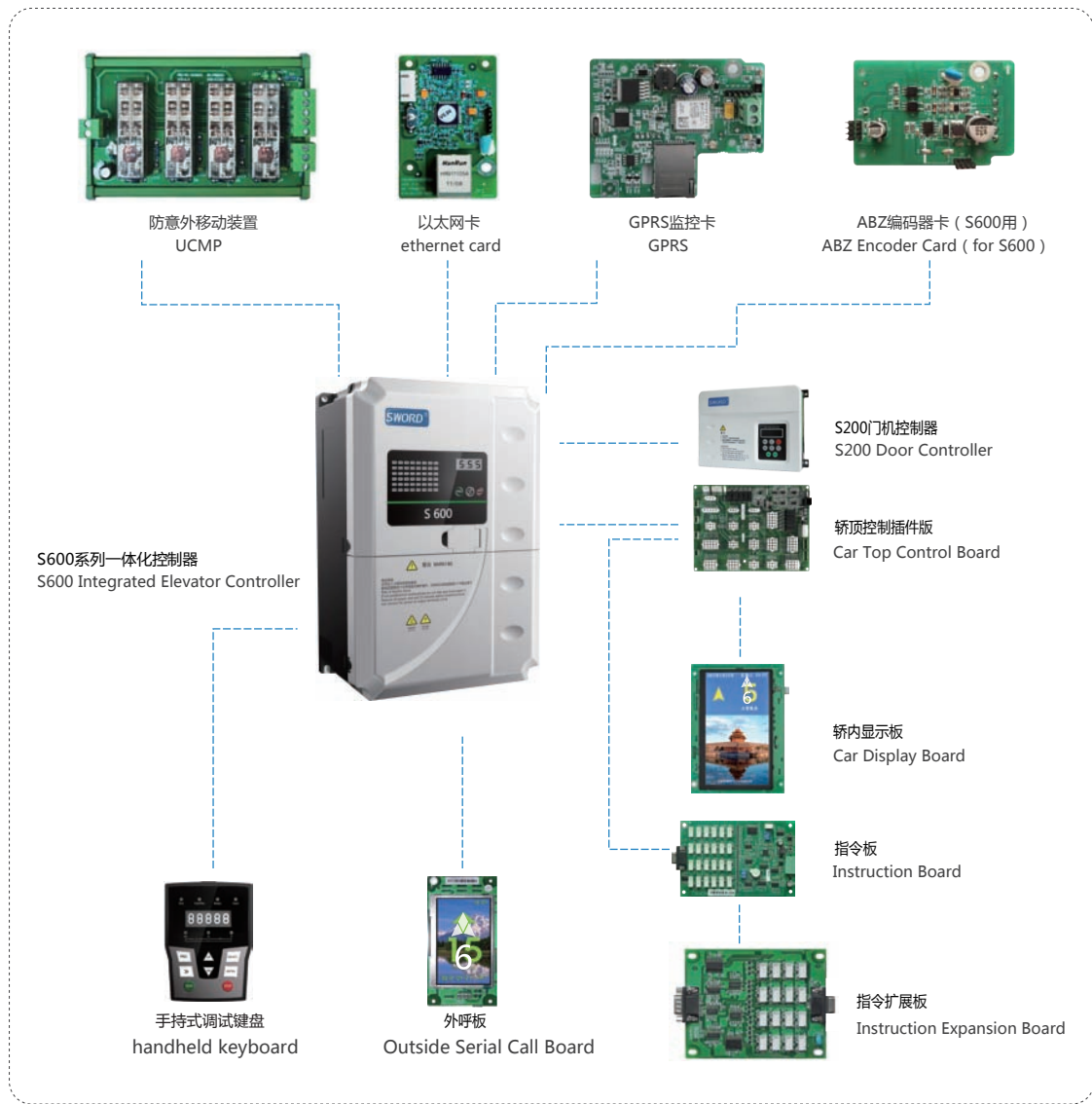


Type 系统型号	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Installation diameter φ(mm) 安装孔径Φ(mm)	Weight(kg) 质量(kg)	Type 机箱型号
S660-2S009-SSE0000	206	187	306	287	300	135	200		6.5	4	Size A
S660-2S014-SSE0000											
S660-4T009-SSE0000											
S660-4T014-SSE0000											
S660-4T017-SSE0000											
S660-4T024-SSE0000	226	207	332	313	326	176	220		6.5	6	Size B
S660-4T032-SSE0000											
S660-4T036-SSE0000											
S660-4T042-SSE0000	292	230	504	493	470	187	285	477	6.5	18	Size C
S660-4T048-SSE0000											
S660-4T060-SSE0000											
S660-4T071-SSE0000											
S660-4T090-SSE0000											



## Solution of S600 Serial Integrated Controller

S600串行一体机解决方案



### Configuration Features:

- 1、Support various encoder types, such as ABZ, Sincos, 1313 absolute value, UVW, etc
- 2、IOT function optional (Ethernet, 2G, 2G + five parts intercom)
- 3、Support three types of UCMP card: synchronous, asynchronous, and synchronous + asynchronous
- 4、10 road programming DI input, 4 road high-voltage HI input, 8 road relay DO output
- 5、Various car call and hall call display boards enable to select (LED, LCD, etc.), users can customize size and displaying types.
- 6、Functions of mobile phone APP debugging, remote assistance, remote and online program update
- 7、Control system full communication dynamic encryption, random time authentication

#### 配置特点

- 1、支持ABZ、sincos、1313绝对值、UVW等多种编码器类型
- 2、选配物联网功能（以太网、2G、2G+五方对讲）
- 3、支持同步、异步、同异步三种UCMP卡
- 4、10路可编程DI输入、4路高压HI输入、8路继电器DO输出
- 5、多种厅、内外串行显示板（点阵、液晶等）可供选择，尺寸、显示可定制
- 6、手机APP调试，远程协助功能，在线升级程序、远程升级程序
- 7、控制系统全通信动态加密，随机时间认证

## Solution of S660 Parallel Integrated Controller--Full parallel Communication

S660并行一体机解决方案(一)--全并行方式



### Configuration Features:

- 1、Support various encoder types, such as ABZ, Sincos, 1313 absolute value, UVW, etc.
- 2、Support open-loop and close-loop operation modes
- 3、IOT function optional (Ethernet, 2G, 2G + five parts intercom)
- 4、Support three types of UCMP card: synchronous, asynchronous, and synchronous + asynchronous
- 5、24 road DI input, 26 road button input, 4 road high-voltage input, 21 road relay DO output
- 6、Support up to 8 floors full collection as standard (12 floors single collection), enable to extend to 16 floors full collection.
- 7、Support extension of serial control: CAN communication in the car, RS485 communication for the hall.
- 8、Support multiple display methods: binary code, BCD code, 7-segment, gray code.
- 9、Functions of mobile phone APP debugging, remote assistance, remote and online program update.

#### 配置特点

- 1、支持ABZ、sincos、1313绝对值、UVW等多种编码器类型
- 2、支持开环、闭环运行模式
- 3、选配物联网功能（以太网、2G、2G+五方对讲）
- 3、支持同步、异步、同异步三种UCMP卡
- 4、24路DI输入、26路按钮输入、4路高压HI输入、21路继电器DO输出
- 5、标准配置满足8层全集选（12层单集选）应用，可扩展至16层全集选
- 6、支持串行通信控制扩展：轿内CAN通信、轿外RS485通信
- 7、支持多种显示：二进制码、格雷码、BCD码、七段码
- 8、手机APP调试，远程协助功能，在线升级程序，远程升级程序
- 9、控制系统全通信动态加密，随机时间认证

Solution of S660 Parallel Integrated Controller--parallel at hall + serial in the car

S660并行一体机解决方案(二) --厅外并行+轿内串行



Configuration Features:

- 1、Support various encoder types, such as ABZ, Sincos, 1313 absolute value, UVW, etc.
- 2、Support open-loop and close-loop operation modes
- 3、IOT function optional (Ethernet, 2G, 2G + five parts intercom)
- 4、Support three types of UCMP card: synchronous, asynchronous, and synchronous + asynchronous
- 5、24 road DI input, 26 road button input, 4 road high-voltage input, 21 road relay DO output
- 6、Serial communication mode in the car, support up to 14 floors full collection (26 floors single collection).
- 7、Support multiple display methods of main control board and car top control board: binary code, BCD code, 7-segment, gray code.
- 8、Functions of mobile phone APP debugging, remote assistance, remote and online program update.
- 9、Control system full communication dynamic encryption, random time authentication.

- 配置特点
- 1、支持ABZ、sincos、1313绝对值、UVW等多种编码器类型
  - 2、支持开环、闭环运行模式
  - 3、选配物联网功能（以太网，2G、2G+五方对讲）
  - 4、支持同步、异步、同异步三种UCMP卡
  - 5、24路DI输入、26路按钮输入、4路高压HI输入、21路继电器DO输出
  - 6、轿内串行通讯方式，可配置满足14层全集选（26层单集选）应用
  - 7、主控制板、轿顶控制板支持多种并行显示：二进制码、格雷码、BCD码、七段码
  - 8、手机APP调试，远程协助功能，在线升级程序，远程升级程序
  - 9、控制系统全通信动态加密，随机时间认证