

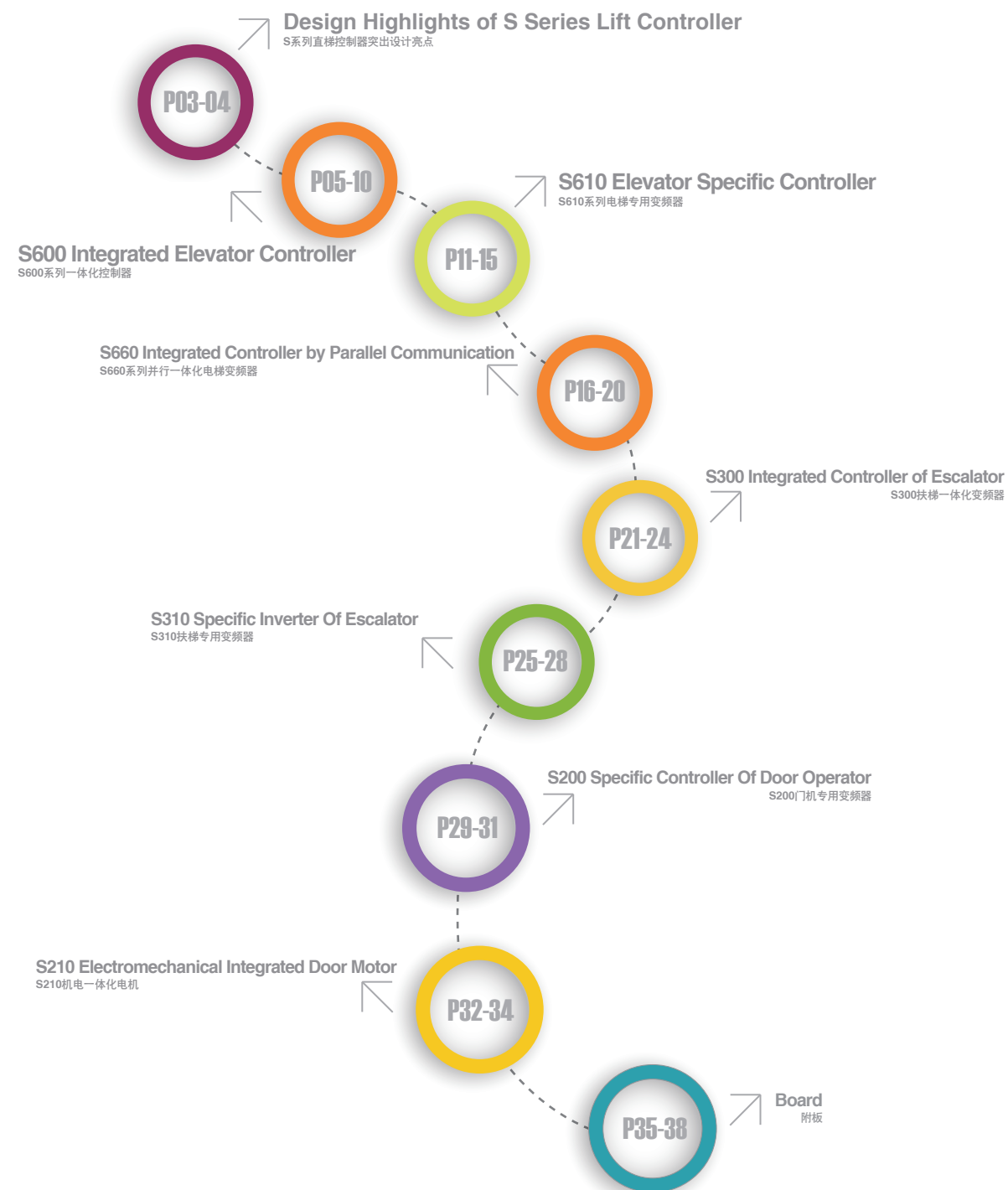


About SWORD 公司简介

Beijing SWORD Electric Industrial Co., Ltd founded in 1999, a national level High & New Technology Enterprise, specialized in R&D and production of Electrical Drive Control Systems and Motors, with Secondary Confidential Qualification Certificate of National Military Industry. SWORD focuses on researching, developing and manufacturing high-end Drive & Control Systems and Motors. Major businesses cover industries of vessels, elevators, new energy automobiles, robots, military products, intelligent manufacturing, IOT, enterprise informatization management, etc. Main products include mid-to-high/medium/low voltage Inverter, Marine Power Generation Propulsion System, Marine Shaft Power Generation System, Integrated Elevator Controller, New Energy Vehicle Drive Controller, Mobile Power Generation System, Elevator IOT, Enterprise Integrated Information Management Platform, etc.

北京索德电气工业有限公司成立于1999年，是一家专业从事电气传动控制系统、电机研发和生产的国家级高新技术企业，具有国家军工二级保密资格证书。

索德电气专注于高端驱动&运动控制与系统电机的研发、制造，业务涉及船舶、电梯、新能源汽车、机器人、军品、智能制造、物联网、企业信息化等领域。产品主要包括高/中/低压变频器、船舶电力推进系统、船舶轴带发电系统、一体化电梯控制器、新能源汽车驱动控制器、移动电源发电系统、电梯物联网、企业综合信息化管理平台等。



Design Highlights of S Series Lift Controller

S系列直梯控制器突出设计亮点

■ 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

自动适应编码器线序、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到开环控制运行（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.
- Double 32-bits process chip.
- Integrated synchronous and asynchronous function.
- Achieved free of angle learning of synchronous motor.
- Complete learning motor parameters under stationary state.
- Auto-learning current loop parameters, no need to debug the riding comforts, simple to use.
- No weighted start, advanced antidumper functions.
- When encoder wire of synchronous motor disconnect, the system will auto-shift to open-loop operation from close-loop, make elevator leveling off at the nearest floor and release the passengers.
- Auto-generate N curves, auto-identified ultra-short layer and directly leveling off.
- Meet GB7588.1 standard
- Integrated sync encoder card.
- Support inside-car debugging function.
- Control system all-communications dynamic encrypted, random time identified. (Hall call, CAN communication of Car call dynamic encrypt communication.)
- Support mobile-phone debugging function. (Android, IOS)
- Support remote distance monitoring function. (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
- 双32位处理芯片
- 支持同步控制和异步控制
- 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
- 无称重启动，高级防倒溜车功能
- 同步曳引机编码器断线，闭环切开环运行，就近平层停车，开门放入
- N条曲线自动生成，超短层自动识别，直接停靠
- 满足GB7588.1标准
- 集成同步编码器卡
- 支持轿厢内调试功能
- 控制系统全通信动态加密，随机时间认证（外呼、内选CAN通信动态加密通信）
- 支持手持调试功能（安卓、苹果）
- 支持远程监控功能（以太网、GPRS）

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

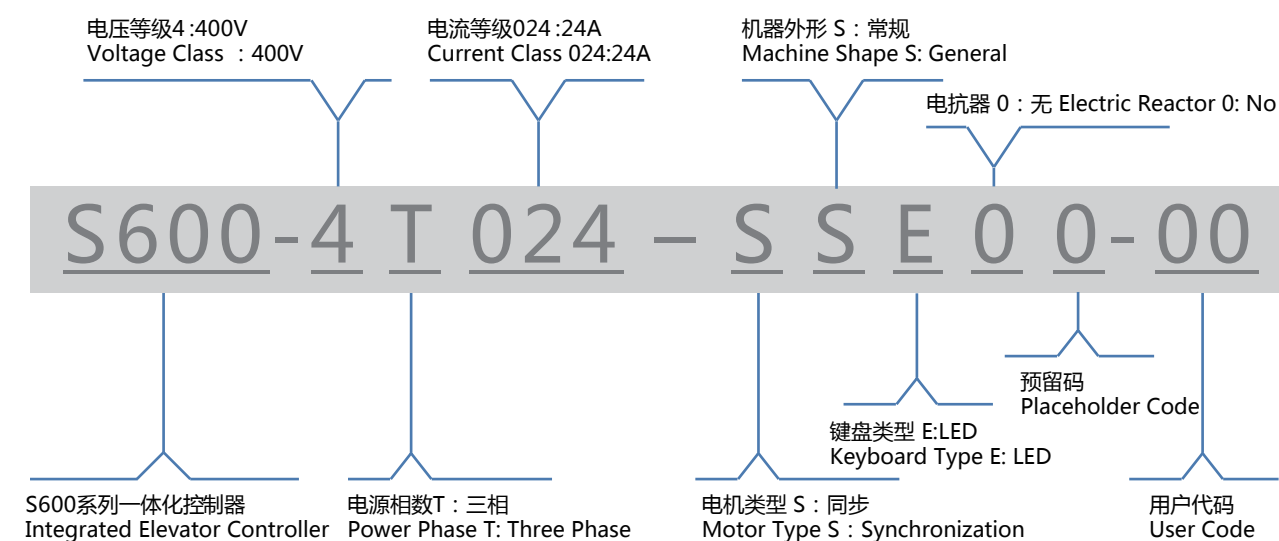


标配梯速≤4m/s，最大楼层64层
Standard elevator speed: ≤4m/s,
the maximum floor: 64 storey.



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℃) |
| | 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 of the synchronous motor | Standard equip Sin-Cos encoder port (5V) ,ERN1387/487 |
| Encoder | 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

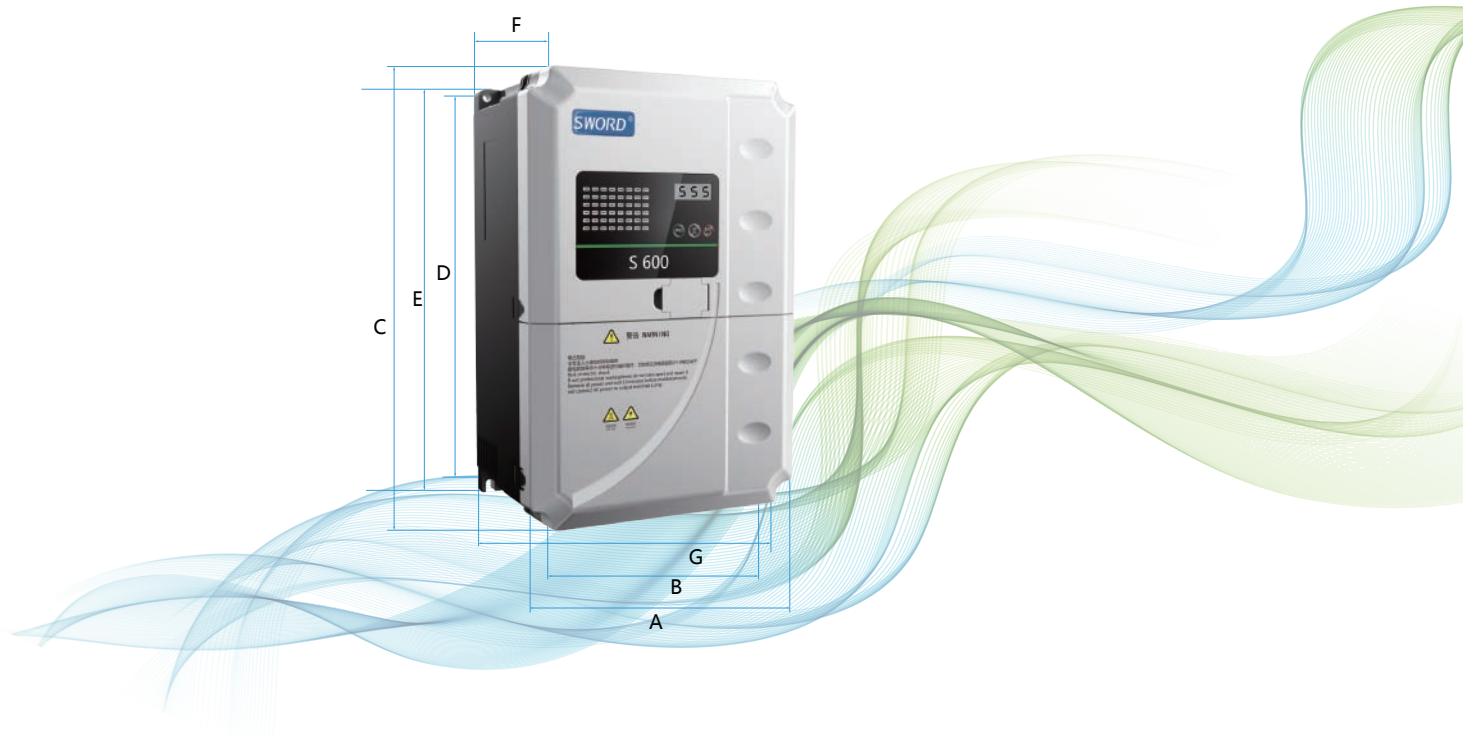
S600系列产品选型

| Types | Input Voltage | Input Current (A) | Output Current (A) | Matching Motor (kw) | Braking Resistance (W/Ω) |
|--------------------|-----------------------------|---------------------|----------------------|-----------------------|----------------------------|
| S600-2S009-SSE0000 | Single AC 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 | 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 | 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 Series Products Type Selection

S600系列产品安装尺寸和质量



| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | Installation Diameter φ (mm) | Weight (kg) | Type |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------|---------------|--------|
| S600-2S009-SSE0000 | 206 | 187 | 306 | 287 | 300 | 135 | 200 | | 6.5 | 4 | Size A |
| S600-2S014-SSE0000 | | | | | | | | | | | |
| S600-2T009-SSE0000 | | | | | | | | | | | |
| S600-2T014-SSE0000 | | | | | | | | | | | |
| S600-2T017-SSE0000 | | | | | | | | | | | |
| S600-2T024-SSE0000 | | | | | | | | | | | |
| S600-2T032-SSE0000 | 226 | 207 | 332 | 313 | 326 | 176 | 220 | | 6.5 | 6 | SizeB |
| S600-2T036-SSE0000 | | | | | | | | | | | |
| S600-2T042-SSE0000 | | | | | | | | | | | |
| S600-4T048-SSE0000 | 292 | 230 | 504 | 493 | 470 | 187 | 285 | 477 | 6.5 | 18 | Size C |
| S600-4T060-SSE0000 | | | | | | | | | | | |
| S600-4T071-SSE0000 | | | | | | | | | | | |
| S600-4T090-SSE0000 | | | | | | | | | | | |

S610 series products Features

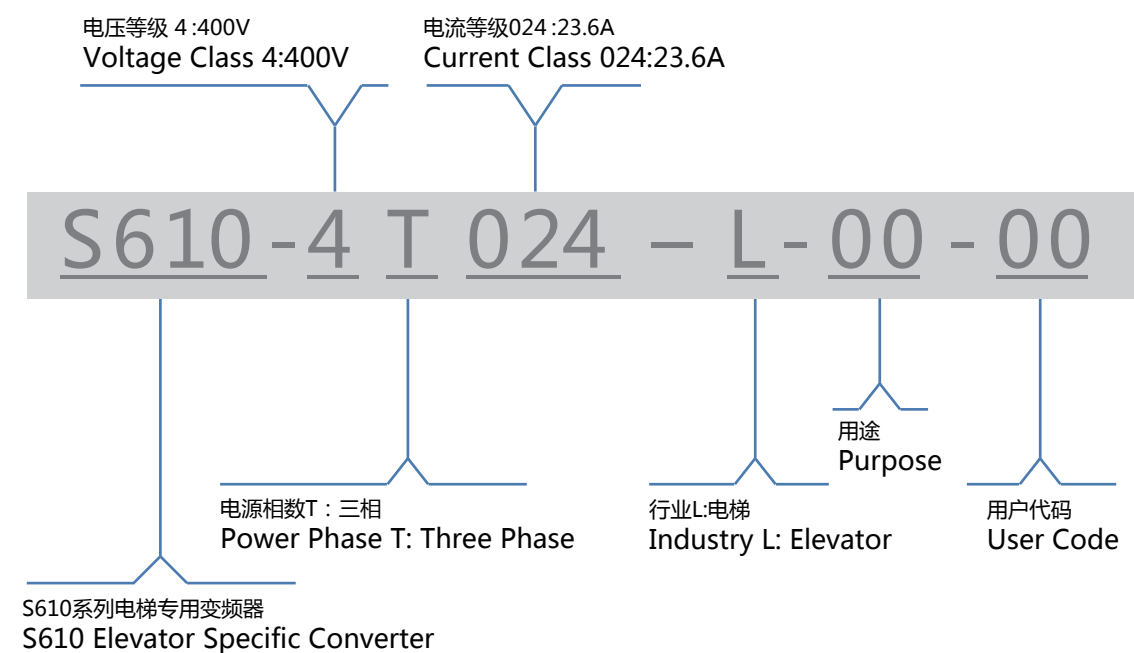
S610系列产品特点

- It is available to control by synchro motor and asynchro motor
- synchro motor free angle learning
- Motor parameter is completely learnt by itself at static state
- Current loop parameter self-learning, it is convenient to use and feel comfortable without debugging
- No weighted start, advanced antidumper functions.
- Closed control system: N of curves generate automatically and recognize by itself as lift is beyond short floors, control distances to stop directly
- Special open loop control of asynchro motor with excellent performance and complete protection
- UPS is automatically operating when electricity is cut off
- Enable detection, brake contactor control, running contactor control, forced deceleration judgment, well automatic learning, position abnormal protection and correction, overspeed protection, in advance open the door, contact adhesion protection and other elevator special functions, which make it simple for lift control
- Base blockade function
- Mobile debugging (android, iphone)



Naming Rule of S610 Series Products

S610系列产品命名规则



- 支持同步控制和异步控制
- 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
- 无称重启动，高级防倒溜车功能
- 闭环控制系统：距离控制，N条曲线自动生成，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，保护完善
- 支持UPS运行，可实现在停电后的自动救援
- 具有使能检测、抱闸接触器控制、运行接触器控制、强迫减速判断、井道自动学习、位置异常保护校正、超速保护、提前开门、触点粘连保护等多种电梯专用功能，使电梯控制彻底变得简单
- 基极封锁功能
- 支持手机调试功能（安卓、苹果）

Applicable elevator types of S610

S610系列适用范围



梯速 $\leq 4\text{m/s}$ ，最大楼层64层
Rated speed $\leq 4\text{m/s}$, the Highest floor is 64



Comprehensive Technical of S610 Series Products

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 order channe | Set operating board and set control terminal |
| | Frequency settetd channel | Digital given, set analog voltage, set analog current |
| Operation | 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 | Input Voltage | Input Current (A) | Output Current (A) | Matching Motor (Kw) | Braking Resistance (W/Ω) |
|------------------|-----------------------------|---------------------|----------------------|-----------------------|----------------------------|
| S610-2S009-L0000 | Single AC 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 | 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 | 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 | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | Installation Diameter φ (mm) | Weight (kg) | Type |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------|---------------|--------|
| 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 | | | | | | | | | | | |
| S610-4T024-L0000 | | | | | | | | | | | |
| S610-2T032-L0000 | 226 | 207 | 332 | 313 | 326 | 176 | 220 | | 6.5 | 6 | Size B |
| S610-2T036-L0000 | | | | | | | | | | | |
| S610-2T042-L0000 | | | | | | | | | | | |
| S610-4T032-L0000 | | | | | | | | | | | |
| S610-2T048-L0000 | 292 | 230 | 504 | 493 | 470 | 187 | 285 | 477 | 6.5 | 18 | Size C |
| S610-2T060-L0000 | | | | | | | | | | | |
| S610-2T071-L0000 | | | | | | | | | | | |
| S610-2T090-L0000 | | | | | | | | | | | |
| S610-4T048-L0000 | | | | | | | | | | | |
| S610-4T060-L0000 | | | | | | | | | | | |
| S610-4T071-L0000 | | | | | | | | | | | |
| S610-4T090-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

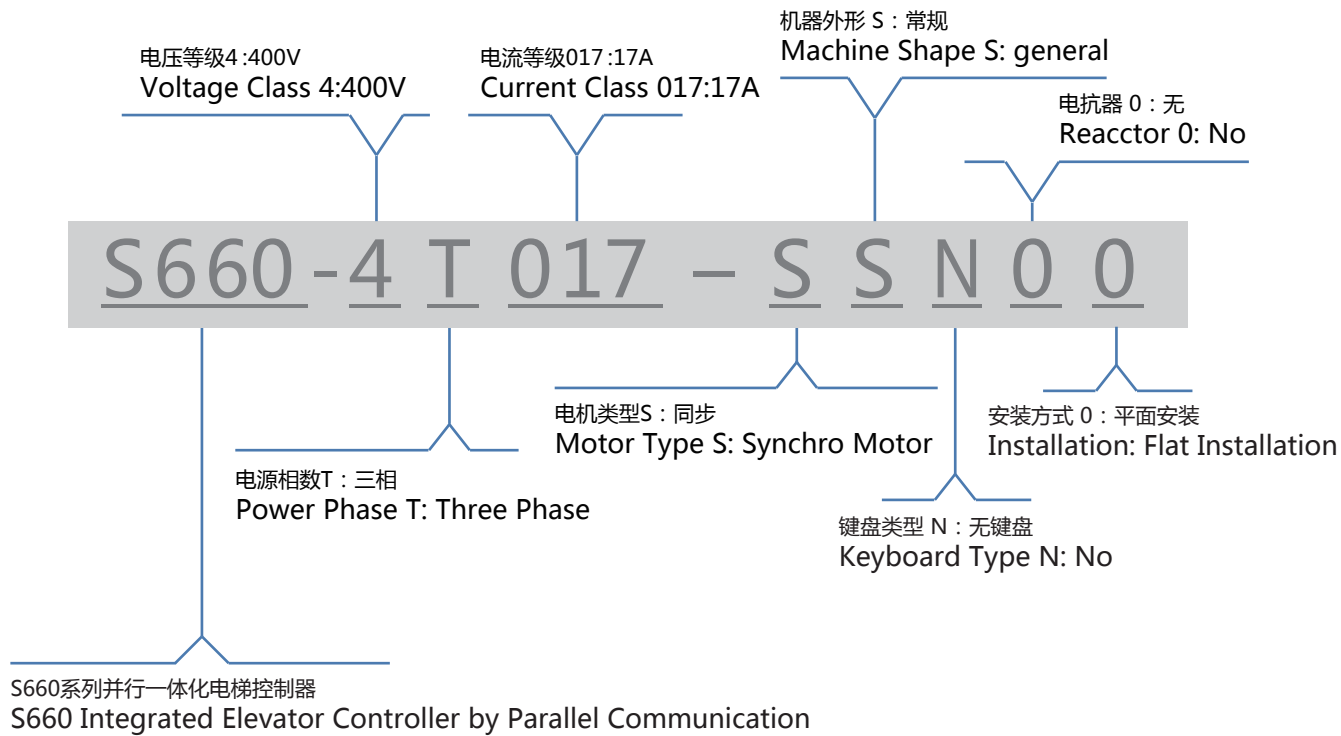
- Combination of drive and control with excellent performance
- Reduce space of the controller cabinet
- A fully enclosed design with higher protection
- Dual 32-bit processing chip
- It is available to control by synchro motor and asynchro motor
- Be able to operate open loop of asynchro motor without encoder to control lift;
- Standard configuration to apply 8 floors selection;
- Synchro motor free angle learning
- Motor parameter is completely learnt at static state
- Current loop parameter self-learning, it is convenient to use and feel comfortable without debugging
- No weighted start, advanced antidumper functions.
- N of curves generate automatically and recognize by itself as lift is beyond short floors, control distances to stop directly
- Input and output of 26-way button, on-off output of 24-way, relay output of 22-way
- Ways of display output: Binary code, BCD code, 7-segment code, Gray code
- Various functions setting to satisfy different requirements
- UPS operation is automatically operating after electricity is cut off
- Mobile debugging (Android, iphone)
- Remote monitors (Ethernet, GPRS)



- 驱动与控制有机结合，性能优异;
- 一体化设计结构更紧凑，减小控制柜体积
- 全防护结构设计，人机界面友好，防护等级更高
- 双32位处理芯片
- 支持同步控制和异步控制
- 支持异步开环控制，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
- 同步免角度学习
- 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
- 无称重启动，高级防倒溜车功能
- N条曲线自动生成，超短层自动识别，距离控制，直接停靠
- 26路按钮输入输出，24路开关量输入，22路继电器输出
- 显示输出方式：二进制编码、BCD码、七段码、格雷码
- 丰富的门控功能设定，满足货梯门控多样性的需求
- 支持UPS运行，停电后自动救援运行
- 支持手机调试功能
- 支持远程监控功能（以太网、GPRS）

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 ² |
| | 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



别墅梯、货梯、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 |
| | | |

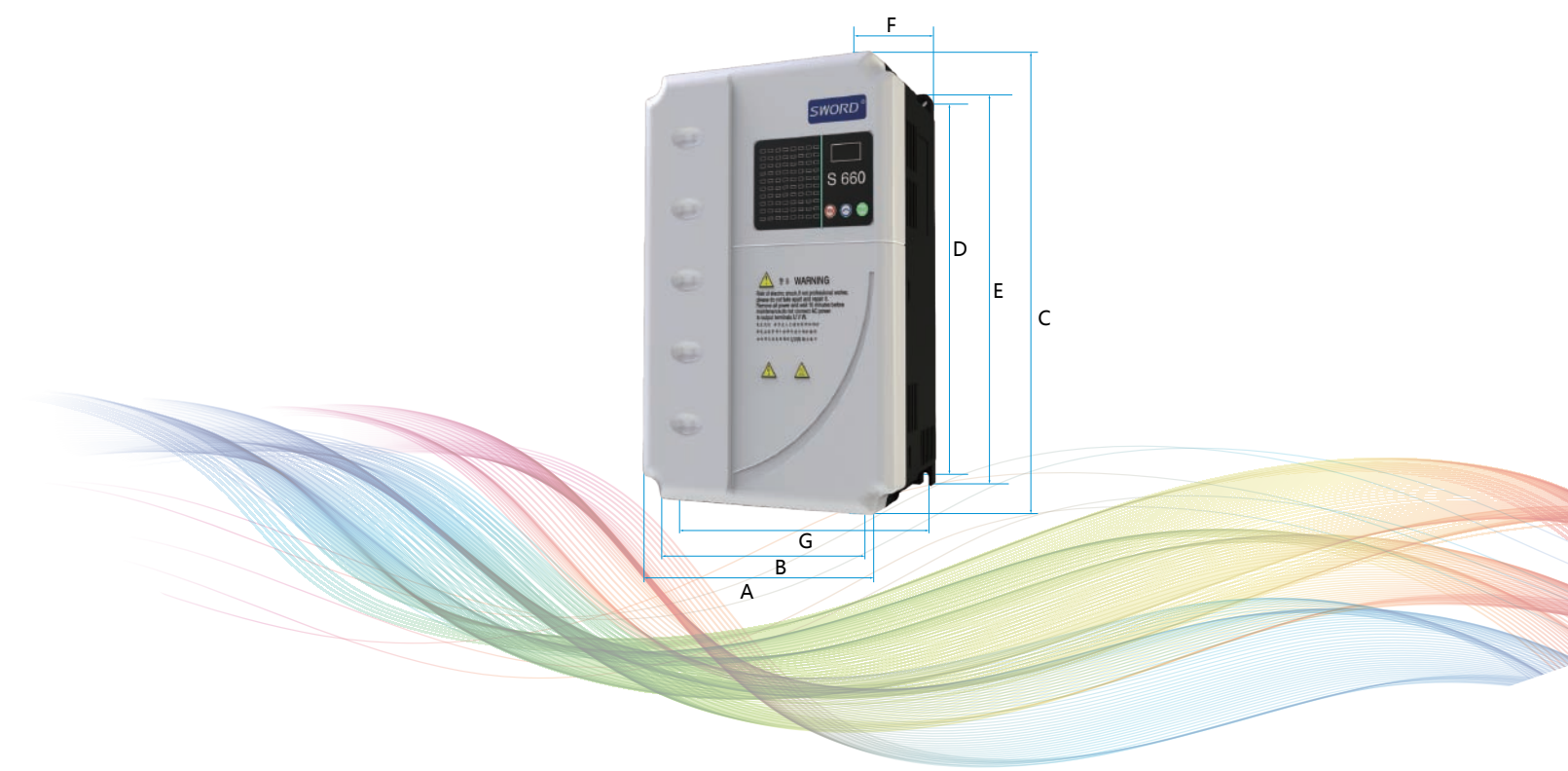
S660 Series Products Type Selection

S660系列产品选型

| Type | Input Voltage | Input Current (A) | Output Current (A) | Matching Motor (kw) | Braking Resistance (W/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

S610产品安装尺寸和质量



| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | Instllation diameter φ (mm) | Weight (kg) | Type |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------------------|---------------|--------|
| 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 | | | | | | | | | | | |



S300 series products Features

S300系列产品特点

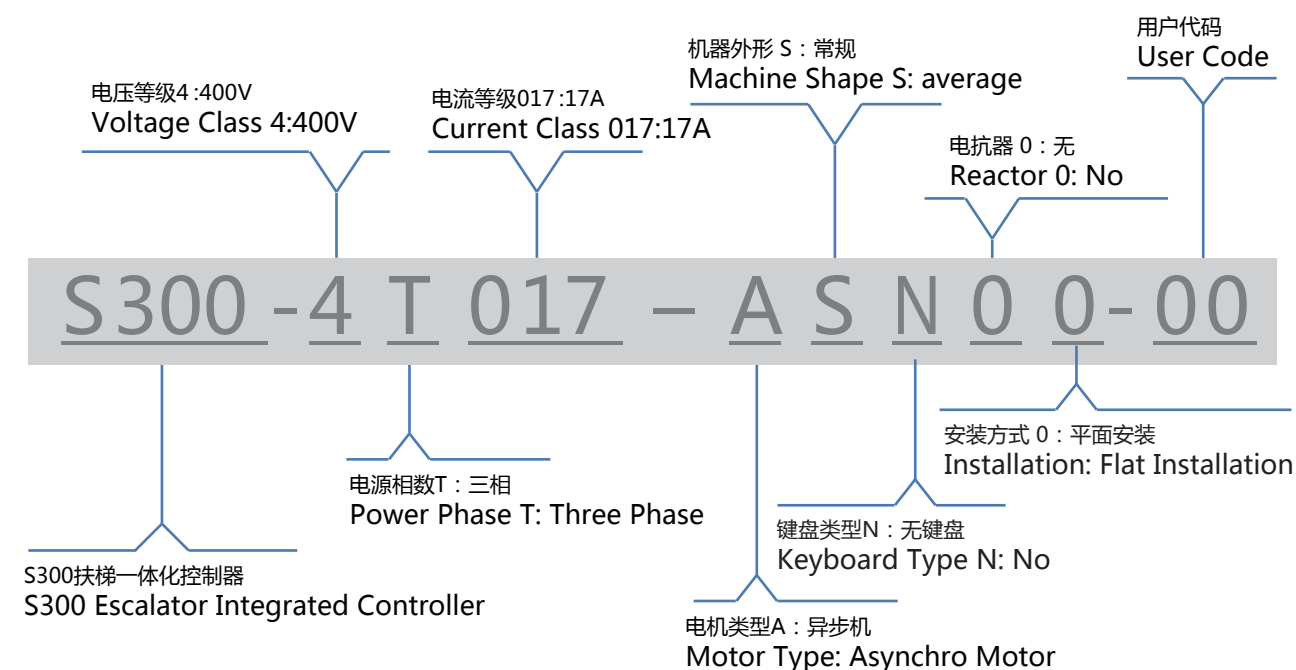
- 集电机驱动、扶梯变频切换控制、扶梯逻辑部分功能于一身，结构紧凑，以更低成本、更佳配合，提高了扶梯的安全性和稳定性。
- 具有全变频控制、旁路变频控制、工频星角控制等多种控制方式，最大限度的满足不同客户的使用需求。
- 提供蓝牙接口，实现手机调试。手机调试助手设置账户管理，方便客户对扶梯操作人员的权限管理。
- 可以通过网卡与服务器相连接，将扶梯运行数据上传到服务器PC端进行监视，实现远程监控。
- 安全回路信号采集板使安全回路故障点检测定位简单快捷。
- 具有3种节能运行模式，控制方式更加灵活，大幅节约能量，延长扶梯机械结构的使用寿命。
- 丰富的Mini键盘功能，基本满足现场客户的调试工作。
- 插件板节省现场繁琐的接线工作，使现场安装维护工作更加便捷。
- 上下部安全回路信号检测功能大幅节省系统线缆，节约成本。

- Combining motor drive, variable frequency switching control and logic control of escalator into one controller, with lower cost, compact structure, excellent matching up to improve security and stability of escalators.
- Have various ways of control, such as full frequency control, bypass frequency control, power frequency star control, which greatly satisfy requirements of different customers.
- Provide Bluetooth interface for mobile phone debugging. It is able to set account management through phone debugging assistant to help our guests manage their operation staff.
- Connecting with Server via network card, operation data can be uploaded to Server PC to achieve remote monitor.
- Acquisition board of safe circuit signal makes it easy and quick for detecting fault point.
- Possessing 3 energy-saving operation modes and flexible control ways lead to achievement of increasingly saving energy, prolonging the service life of escalator's structure
- Various functions of Mini keyboards satisfy debugging work of people on site.
- Plug-in board saves the workload of wiring on site to make it convenient for installation and maintenance.
- Signal detection function of upper and lower safety circuit greatly saves cables with low cost.



Naming Rule of S300 Series Products

S300系列扶梯产品命名规则



Comprehensive Technical Index of S300 Series Escalator Products

S300系列扶梯产品综合技术参数

| | | |
|-----------------------------|--|---|
| input | Rated voltage;frequency | Three phase,380V;50Hz/60Hz |
| | Range of permissible voltage operating | Three phase,380V;323V~456V |
| | Imbalance of input voltage | <2% |
| | Range of input power frequency | <2% |
| output | Voltage | Three phase communication 0V~ input voltage |
| | Frequency | 0Hz~100Hz |
| | Overload | Over 150%, 2min; Over 180% , 6s |
| | | |
| The main control performanc | Ways of control | V/F control, open loop vector |
| | Start torque | If it is 0.5Hz, 150% of rated torque(open loop vector) |
| | Accuracy of speed control | Open loop vector |
| | Frequency resolution | Digit setting : 0.01Hz |
| | Torque improvement | Manual torque improvement : 0.0~30.0% |
| | Auto-Current-Limit | Automatically limit current during operation period to prevent triping caused by frequent overcurrent |
| | | |
| Operation | Operation order channel | Set operation board and set control terminal |
| | Set frequen cychannel | Digital setting |
| | Digital input terminal | 38 digit multi-function input , X1~X38 , X1~X30 with active low, X31~X38 with High and low optional |
| | Digital output terminal | Multi-function input of 12 digital, OC outpu from control board; it is available to turn to relay output |
| Operation panel | Display on panel LED | It is able to display the condition of input X terinal and faults with full keyboard and 5-digit LED |
| | Handheld LED keyboard | It is avaiable to quickly copy parameter through this function and can display set frequency, output frequency, output voltage and output current and so on |
| Using environment | Using places | Inner, 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 each 100m increase, the output current is reduced by 4 ‰ of rated current |
| | Enviroment temperature | - 10 ~ + 40°C (among temperatur of 40~50°C, please reduce the rated to use) |
| | Humudity | 20% ~ 90%RH , no droplets freeze |
| | Vibration | Less than 5.9 m/s2 (0.6g) |
| | Temperature of storage | - 40~ + 70°C |
| | | |
| Others | Protection | Over-current protection, over-voltage protection, under-voltage protection, over-temperature protection, overload protection, module protection, etc |
| | Cooling method | Air-cooled, with fan control |
| | Ways of installation | Wall-mounted |

S300 Installation Size and Weight

S300系列产品安装尺寸和质量



| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | Installation Diameter φ (mm) | Weight (kg) | Type |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------------------|---------------|--------|
| S300-4T009-ASK0000 | 206 | 187 | 306 | 287 | 300 | 135 | 200 | | 6.5 | 4 | Size A |
| S300-4T014-ASK0000 | | | | | | | | | | | |
| S300-4T017-ASK0000 | | | | | | | | | | | |
| S300-4T024-ASK0000 | | | | | | | | | | | |
| S300-4T032-ASK0000 | 226 | 207 | 332 | 313 | 326 | 176 | 220 | | 6.5 | 6 | Size B |
| S300-4T036-ASK0000 | | | | | | | | | | | |
| S300-4T042-ASK0000 | | | | | | | | | | | |
| S300-4T048-ASK0000 | | | | | | | | | | | |
| S300-4T060-ASK0000 | 292 | 230 | 504 | 493 | 470 | 187 | 285 | 477 | 6.5 | 18 | Size C |
| S300-4T071-ASK0000 | | | | | | | | | | | |
| S300-4T090-ASK0000 | | | | | | | | | | | |
| | | | | | | | | | | | |

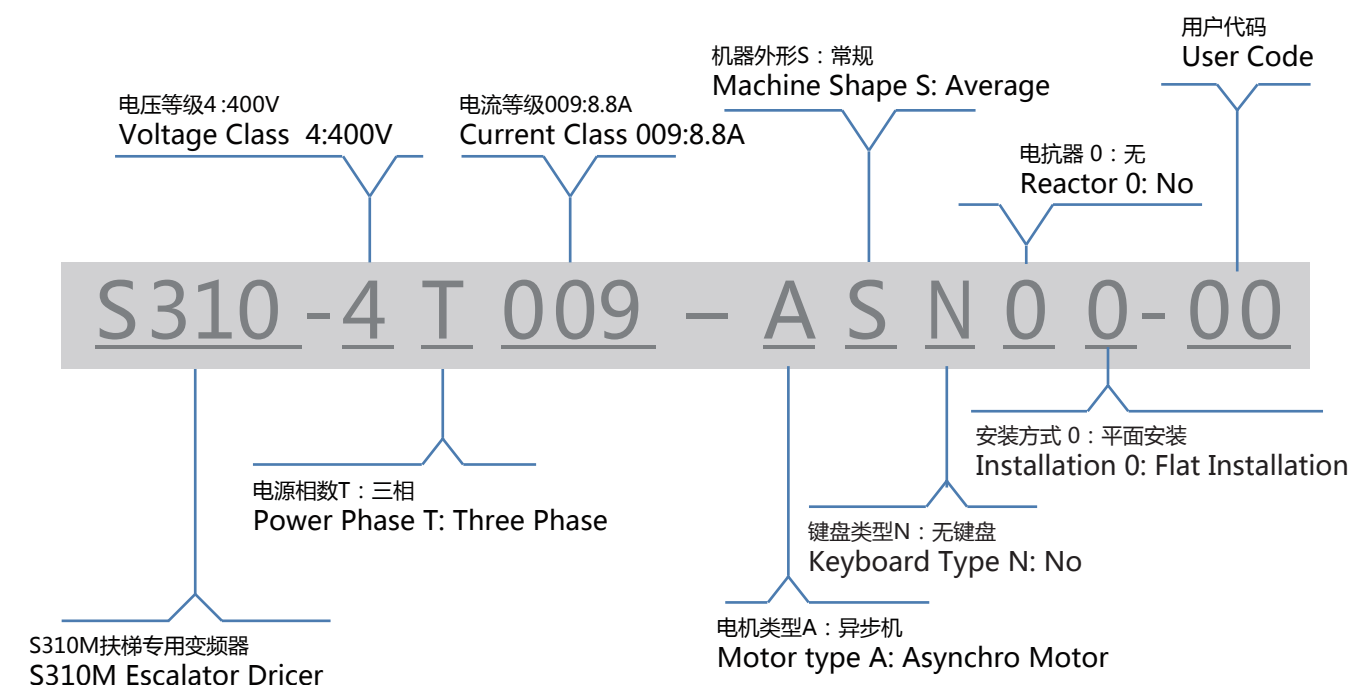
S310M Specific Inverter of Escalator

S310M扶梯专用变频器



Naming Rule of S310M Series Products

S310M系列扶梯产品命名规则



S310 Series Products Features

S310系列产品特点

- Integrate motor drive and control functions of escalator frequency conversion switching into one with compact structure, lower cost and excellent matching up, improving escalator's security and stability.
- Have various control ways such as full frequency control, bypass frequency control, industrial frequency star control, and greatly satisfying different people's requirements.
- Through Bluetooth interface, it can achieve mobile phone debugging. Setting account management by phone debugging assistant, it is convenient for management staff to limit scope of authority
- Having function of full keyboard, it is able to completely finish work on site
- With compact volume, saving installation space, and accessory protection class satisfy the standards of IP21
- Built-in EMI filter and reactor to meet EN61000-3-12 harmonic standards and C2, EN12015/EN12016 standards in EN61800-3;
- Have long life cycle with high reliability (Environment temperature 50 degrees, 10-year life)
- 集电机驱动、扶梯变频切换控制功能于一身，结构紧凑，以更低的成本、更佳的合作，提高了扶梯的安全性和稳定性。
- 具有全变频控制、旁路变频控制、工频星角控制等多种控制方式，最大限度的满足不同客户的使用需求。
- 提供蓝牙接口，实现手机调试。手机调试助手设置账户管理，方便客户对扶梯操作人员的权限管理。
- 具备全键盘功能，完全满足现场客户的调试工作。
- 体积紧凑，节省安装空间，搭配附件防护等级实现 IP21
- 内置EMI滤波器和电抗器，满足EN61000-3-12谐波标准及EN61800-3中 C2的标准, EN12015/EN12016 标准
- 长寿命，高可靠性（环境温度50度，10年寿命）



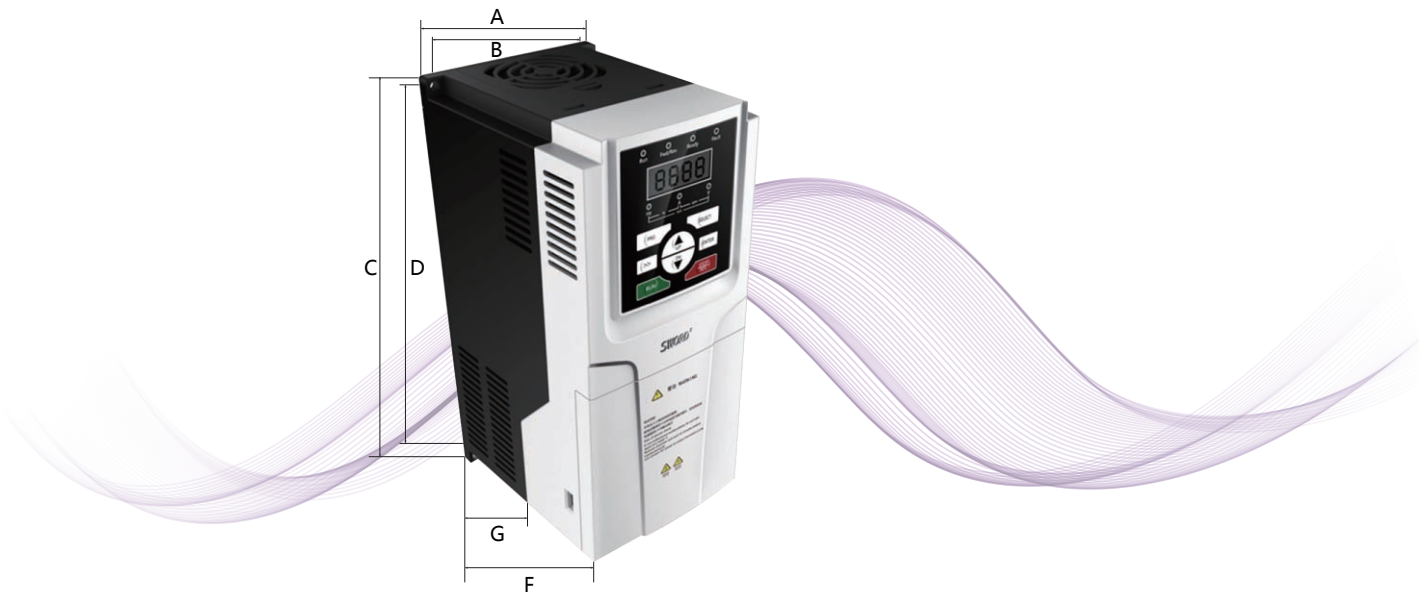
Comprehensive Technical Information of S310M Series Escalator Products

S310M系列扶梯产品综合技术参数

| | | |
|---------------------------|---------------------------|--|
| Input | Voltage | Three phase 380V (-15%) -500VAC (+10%) |
| | Frequency | 45Hz~66Hz |
| Output | Voltage | Three phase AC 0V~ input Voltage |
| | Frequency | 0Hz~100Hz |
| | Overload | Over 150%, 2min; Over 180% , 6s Over 200%,2s |
| The main control features | Ways of control | Open loop vector : ±0.5% |
| | Start torque | If it is at 0.5Hz, 150% of rated torque(open loop vector) |
| | Accuracy of speed control | Open loop vector : ±0.5% |
| | Frequency resolution | Digital setting : 0.01Hz |
| | Torque improvement | Torque improvement by hands: 0.0~30.0% |
| | Auto-Current-Limit | Automatically limit current during operation period to prevent triping caused by frequent overcurrent |
| | Carrier frequency | 0.5KHz~16KHz , Automatically adjust carrier frequency in accordance with rated load capcity |
| | Speed tracking | Time less than 300ms |
| | | |
| Operation | Operation order channel | Set operation panel, set control terminal, set CAN communication interface. It is available to change by different methods. |
| | Set frequency channel | Digital setting |
| | Digital input terminal | Multi-function input of 9 digital, Input high and low optional |
| | Digital output terminal | Normally open relay output of 7-way, normally open and closed relay output of 1-way |
| Operation panel | Display on LED | It is able to display the condition of input X terminal and faults with full keyboard and 5-digit LED |
| | Handheld LED keyboard | It is available to quickly copy parameter through this function and can display set frequency, output frequency, output voltage and output current and so on |
| Using environment | Using places | Indoor, 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 ~ + 50°C (among temperature of 40~50°C, please reduce the rated to use) |
| | Humudity | 20% ~ 90%RH , no droplets freeze. |
| | Vibration | Less than 5.9 m/s2 (0.6g) |
| | Storage temperature | - 40 ~ + 70°C |
| Others | Protection | Over-current protection, over-voltage protection, under-voltage protection, over-temperature protection |
| | Cooling method | Air-cooled, with fan control |
| | Ways of installation | Wall-mounted |

S310M Installation Size and Weight

S310M系列扶梯产品安装尺寸和质量



| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | Installation Diameter φ (mm) | Weight (kg) | Type |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------------------------------|---------------|------|
| S310M-4T009-ASK0000 | 110 | 100 | 250 | 240 | 240 | 130 | 73 | 5.3 | 1.9 | Mini |
| S310M-4T014-ASK0000 | | | | | | | | | | |



S200 series products Features
S200系列产品特点

- 支持同步电机控制和异步电机控制
- 支持AB、ABZ编码器同步电机闭环矢量控制
- 两种控制模式：距离控制、速度控制
- 多重关门受阻判断机制，保证安全的同时，关门受阻自动开门
- 无编码器控制时，能实现低频超大扭矩（小于0.2Hz,150%电机转矩），大幅提升控制性能，防止撞门撞人
- 高性能开关门曲线算法防止超调，实现快速开关门，且避免撞门
- 具有受阻力矩自动识别和关门受阻重开门功能
- 多种自动学习功能：自动学习电机，编码器相序自动调整，自动自动学习门宽，自动学习受阻力矩，自动学习系统惯量，自动学习优化运行曲线。
- 可作为轿顶门机一体化控制器使用，省去轿顶板

- It is available to control by synchro motor and asynchro motor
- It is also able to support closed loop vector control by AB,ABZ encoder
- Two ways of control: distance control, speed control
- Several kinds of detecting ways for door close with obstruction and automatically open the door meanwhile keeping safety
- It can achieve the maximum torque(less than 0.2Hz, and 150% of motor torque) with low frequency if there is no encoder, greatly improve control performance and stop hit door and hurt people
- High-performance curvealgorithm of switchingthe door prevents bringing overshoot to achieve quick open and closed the door and to avoid hit the door
- Possess the function of automatic recognize of the blocked torque and the function of reopen the door of closed the door with obstruction
- Multiple self-learning functions: automatically learning motor, automatic debugging of encoder's phase sequence, automatic learning door width by itself, automatically learning the blocked torque, learning systematic inertia by itself, automatically learning optimized operation curve
- It can be used as integrated door controller (integrated car top board and door motor) and save car top board.

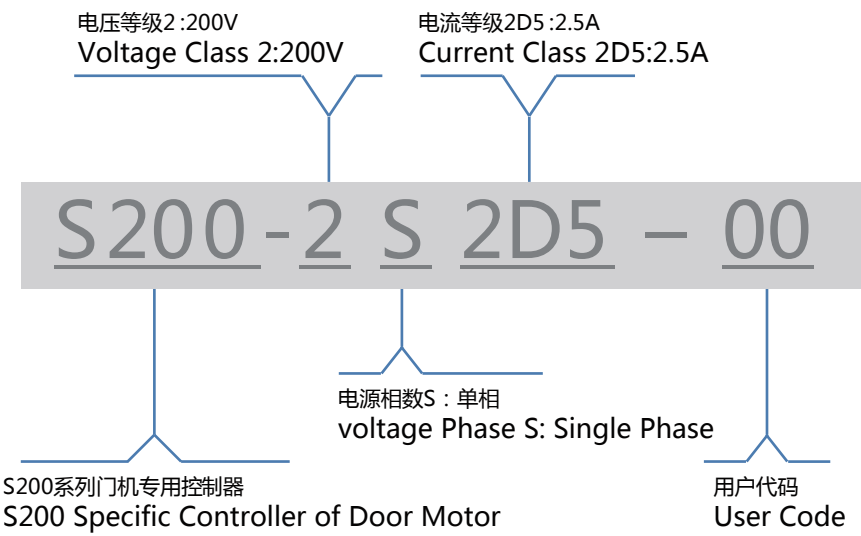
S200 Comprehensive Technical Information

S200门机系列产品综合技术参数

| | | |
|-----------------------------|---|--|
| Input | Rated voltage; frequency | Single phase : 220V ; 50Hz/60Hz |
| | Range of permissible voltage operating | Single phase : 220V ; 198V~242V |
| | Imbalance of input voltage | < 3% |
| | Range of input power frequency | ±5% |
| Output | Overload | Three phase AC 0V~ input voltage |
| | Frequency | 0Hz ~ 100Hz |
| | Overload | Over 150%, 60s; Over 180% , 3s |
| The main control performanc | Ways of control | Flux vector control with PG |
| | Ways of running | Operation mode of door operator control, operation mode of general inverter |
| | Ways of debugging | Space Vector PWM |
| | Start torque | 0.5Hz, 150% of rated torque(without flux vector control); |
| | Frequency precision | Digital setting: the maximum frequency |
| | Frequency resolution | Number setting : 0.01Hz |
| | Acceleration and deceleration curves | Linear acceleration and deceleration |
| | Automatic current limiting | Automatically limit current during operation period to prevent tripping caused by frequent overcurrent |
| Major control functions | Encoder and the connection way | It is able to conduct by permanent synchro motor closed loop control under the way of general ABZ encoder;the encoder' s method of open collector output and push-pull output |
| | The operation way of door operator | Distance operation way |
| | Door operator maintain torque as it is in place | Segment settings of door operator maintain torque as it is in place |
| | | |
| Operation | Operation order channel | Set operation panel, set control terminal, set communication |
| | Frequency set channel | Set operating board |
| | Input signal of multi-function | DI input of 8-way;External reset signal, protection signal of safety curtain for door, protection signal of touch tablet, switch signal at low speed, door interlock signal, operation enable signal |
| | Relay output | 2 way normally open, 1 way normally closed contact capacity: |
| board | Communication function | 1-way CAN communication, 1-way RS485 communication; it supports communication control function |
| | LED display | Display setting frequency, output frequency, output voltage, output current |
| Using environmen | 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, s reduced by 10%of rated current |
| | Vibration | - 10 ~ + 40℃ (among temperatur of 40~50℃, please reduce the rated to use) |
| | Humudity | 5% ~ 95%RH , waterless beads coagulate |
| | Vibration | Less than 5.9 m/s2 (0.6g) |
| Others | Temperature of storage | - 40 ~ + 70℃ |
| | Protection | Overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection and so on |
| | Protection classes | IP21 |
| | Cooling method | Natural cooling |
| | Ways of installation | Wall mounting type |
| | Effeciency | ≥95% |

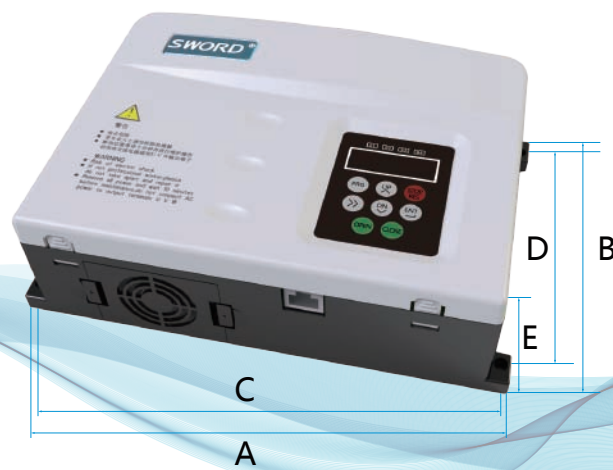
Naming Rule of S200 Series Products

S200系列门机产品命名规则



S200 Installation Size and Weight

S200产品安装尺寸和质量



| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | Installation Diameter φ (mm) | Weight (kg) |
|------------|--------|--------|--------|--------|--------|--------|--------------------------------|---------------|
| S200-2S1D3 | 217 | 147 | 205 | 129 | 198 | 66 | 5.5*6.5 | 0.85 |



S210 Electromechanical Integrated Door Operator

S210机电一体化门电机



S210 series products Features

S200系列产品特点

- Combination of door operator and controller to achieve the result of highly integrated design, reducing more than 30% of its volume;
- To complete the maximum torque and low frequency without encoder control, greatly improve control performance to prevent hitting the door and hurting people;
- Have the ability of one-button debugging on-site and no debugging for parameters of door operator;
- The design of curve algorithm of high-performance switch can stop bringing overshoot to quickly open the door and avoid hit the door
- Have the function of automatically recognize blocked torque and reopen the door as it is closing the door;
- Support close loop vector control of synchro motor by AB, ABZ encoder.
- Two control models: distance control and speed control;
- Multiple ways of self-learning functions: automatic learning motor, automatic adjustment of encoder's phase sequence, automatically learning door width by itself, learning blocked torque by itself, learning systematic inertia by itself, learning optimized operation curve by itself;
- Multiple functions of Mini keyboards to satisfy debugging work on site;

- 将控制器并入门电机内部，实现机电一体化高度融合设计，减小产品体积30%以上
- 无编码器控制时，能实现低频超大扭矩（小于0.2Hz,150%电机转矩），大幅提升控制性能，防止撞门撞人
- 具有现场一键调试，门电机参数免调试功能
- 高性能开关门曲线算法防止超调，实现快速开关门，且避免撞门
- 具有受阻扭矩自动识别和关门受阻重开门功能
- 支持AB、ABZ编码器同步电机闭环矢量控制
- 两种控制模式：距离控制、速度控制
- 多种自动学习功能：自动学习电机，编码器相序自动调整，自动自动学习门宽，自动学习受阻扭矩，自动学习系统惯量，自动学习优化运行曲线
- 丰富的Mini键盘功能，基本满足现场客户的调试工作

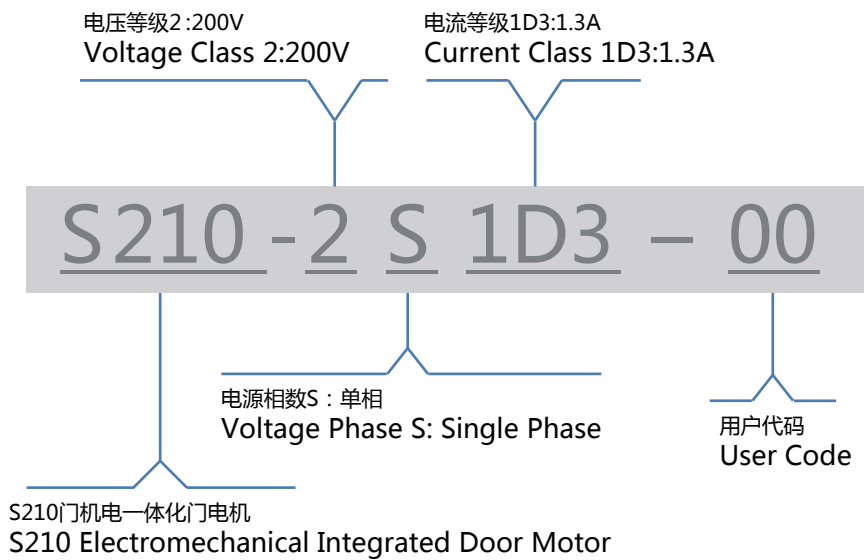
S210 Comprehensive Technical Information

S210产品综合技术参数

| | | |
|------------------------------|--|--|
| Input | Rated voltage; frequency | Single phase : 220V ; 50Hz/60Hz |
| | Range of permissible voltage operating | Single phase/Three phase : 198V~242V |
| | Imbalance of input voltage | < 3% |
| | Range of input power frequency | ±5% |
| Output | Voltage | Three phase AC 0V~ input voltage |
| | Frequency | 0Hz ~ 100Hz |
| | Overload | Over 150%, 60s; Over 180% , 3s |
| | | |
| The main control performance | Ways of control | Flux vector control with PG |
| | Ways of debugging | Space vector PWM |
| | Start torque | If it is at 0.5Hz, 200% of rated tirque(flux vector control with PG) |
| | Accurancy of frequency | Digital setting: the maximum frequency × ±0.01% |
| | Frequency resolution | Digital setting:0.01Hz |
| | Acceleration and deceleration curves | Linear accerlaration and deceleration |
| | Operation modes | Operation modes of door operator, operation modes of general inverter |
| | Automatic current limiting | Automatically limit current during operation period to prevent triping caused by frequent overcurrent |
| | | |
| | | |
| Major control functions | Encoder and connection modes | AC permrnant synchro motor closed-loop control is under the way of general ABZ encoder The method of output and push-pull output of encoder open collector |
| | The operation mode of door operator | Operation mode of distance |
| | Door operator maintain torque as it is in plac | Segment settings of door operator maintain torque as it is in place |
| Operation function | Operation order channel | Set operation board, set control terminal, set communication |
| | Frequency set channel | Set operation board |
| | Input signal of multi-functional terminal | External reset signal, protection signal of safety curtain for door, protection signal of touch tablet, switch signal at low speed, door interlock signal, operation enable signal |
| | Communication function | Set communication order and feedback of door operator operation |
| Operation panel | LED display | Displayable set frequency, output frequency, output voltage, output current and so on |
| Enviroment | Using places | Using in indoor, free from direct sunlight, without dusts, causticity gas, flammability gas, oil fog, vapor, drip, salt and so on |
| | Altitude | If it is more than 1000m, it will use by decreasing the rated; if increase 1000m, it will decrease 10% of the rated |
| | Enviroment temperature | (Enviroment temperature is 40 ~ 50°C, please take use of by reducing the rated) |
| | Humudity | 5% ~ 95%RH , No water droplets freeze |
| | Vibration | Less than 5.9 m/s2 (0.6g) |
| | Temperature of storage | - 40 ~ + 70°C |
| Others | Protection | Overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection and so on |
| | Protection classes | IP21 |
| | Cooling method | Natural cooling |
| | Ways of installation | Wall mounting type |
| | Effeciency | ≥95% |

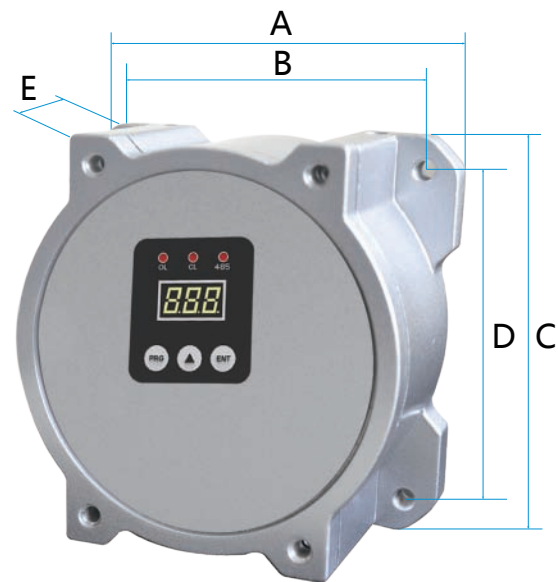
Naming Rule of S210 Series Products

S210系列产品命名规则



S210 Installation size and weight

S210产品安装尺寸和质量



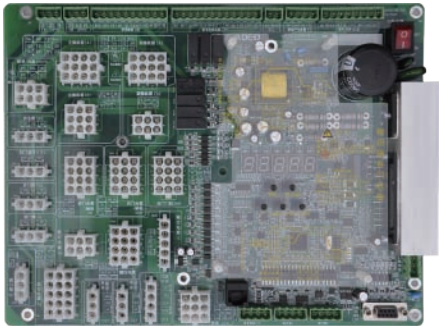
| Type | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | Installation Diameter (mm) | Weight (kg) |
|------------|--------|--------|--------|--------|--------|------------------------------|---------------|
| S210-2S1D3 | 140 | 115 | 140 | 116 | 65 | 5.5 | 3.2 |

S600轿顶板

S600 Car Top Board

用途：用于采集开关/空载/满载/超载/门到位信号等，并将其传输给控制器，实现控制开门，到站照明等功能。

For receiving the signals of no-load/overload, open/closed door in-place, Light curtain/shield panle, and outputting open /closing door ,arrival gong signals etc

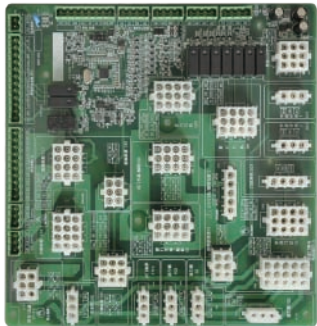


轿顶门机控制三合一板

Car Top Board with the motor controller and interface of communication

Model/型号：SW-CIB-D10

Dimension/尺寸：294*223*39

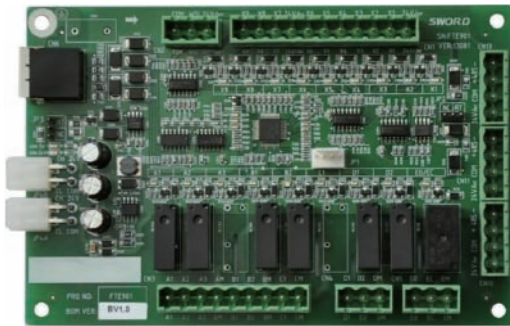


轿顶二合一板

Car Top Board with interface of communication

Model/型号：SW-CIB-10

Dimension/尺寸：232*217*39



轿顶板

Car Top Board

Model/型号：FTE901

Dimension/尺寸：152*99*32

S600指令板

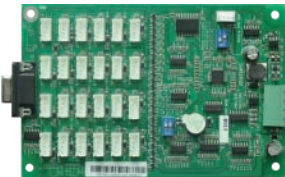
S600 Instruction Board

指令板

按钮指令的采集和按钮指示灯的输出

Instruction Board

For button instructitons sampling and outputing of button indication.



Model/型号：FCE900-2.0

Dimension/尺寸：158*96*23

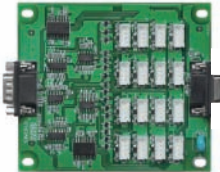
指令扩展板

通过级联方式扩展16个内召按钮，最大可实现64层内选呼梯

Instruction Expansion Board

To expand car call buttons of 16 by mode of cascade ,and the max car

call is up to 64 floors



Model/型号：FEE900

Dimension/尺寸：122*96*16

群控板

Group Control Board



用途：用于电梯群控控制

Be used for elevator group control

Model/型号：FGE900

Dimension/尺寸：218*134*18

外呼板

Hall Call Board

厅外串行板

用于接收处理呼梯、VIP、消防和锁梯开关、输出到站钟、显示电梯楼层、电梯状态及故障代码。点阵颜色可分为红色、蓝色、绿色；安装方式为竖向

Hall Call Serial Board

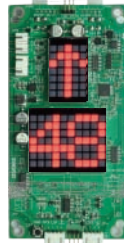
Used for receiving Call Lift, VIP, Fire and Lock Lift Switch signals, outputting Arrival Chime, displaying floor numbers, lift state and error code. The lattice colors include

red, blue and green. Installation: Vertical Installation



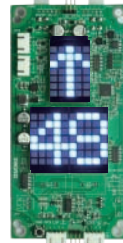
Model/型号：SW-HB-L1

Dimension/尺寸：137*76*8



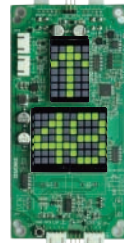
Model/型号：FHL0SR

Dimension/尺寸：154*72*20



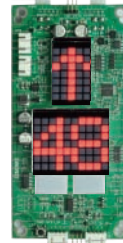
Model/型号：FHL0SB

Dimension/尺寸：154*72*20



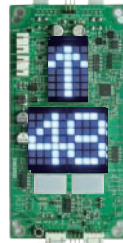
Model/型号：FHL0SG

Dimension/尺寸：154*72*20



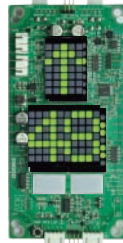
Model/型号：FHL0SR0

Dimension/尺寸：154*72*20



Model/型号：FHL0SB0

Dimension/尺寸：154*72*20



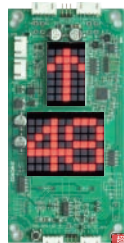
Model/型号：FHL0SG0

Dimension/尺寸：154*72*20



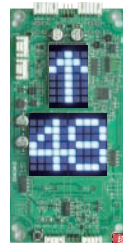
Model/型号：SW-HB-L10

Dimension/尺寸：146*76*8



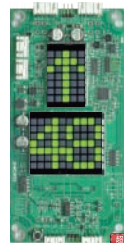
Model/型号：FHL0TR

Dimension/尺寸：153*72*10



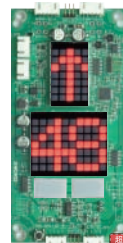
Model/型号：FHL0TB

Dimension/尺寸：153*72*10



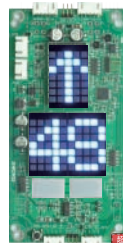
Model/型号：FHL0TG

Dimension/尺寸：153*72*10



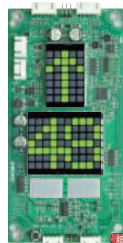
Model/型号：FHL0TR0

Dimension/尺寸：153*72*10



Model/型号：FHL0TB0

Dimension/尺寸：153*72*10



Model/型号：FHL0TG0

Dimension/尺寸：153*72*10

横向厅外串行板

用于接收处理呼梯、VIP、消防和锁梯开关、输出到站钟、显示电梯楼层、电梯状态及

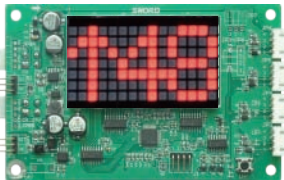
故障代码。点阵颜色可分为红色、蓝色、绿色；安装方式为横向

Horizontal Hall Outside Serial Board

Used for receiving Call Lift, VIP, Fire and Lock Lift Switch signals, outputting Arrival

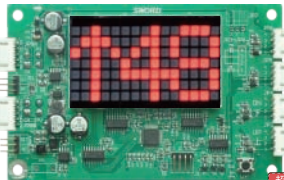
Chime, displaying floor numbers, lift state and error code. The lattice colors include

red, blue and green. Installation: Horizontal Installation



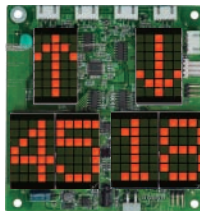
Model/型号：FHL1SR

Dimension/尺寸：134*77*20



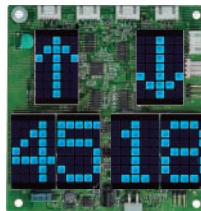
Model/型号：FHL1TR

Dimension/尺寸：133*77*10



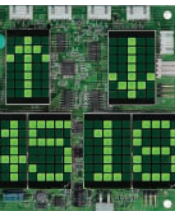
Model/型号：FHL2SR

Dimension/尺寸：108*112*22



Model/型号：FHL2SB

Dimension/尺寸：108*112*22



Model/型号：FHL2SG

Dimension/尺寸：108*112*22

并联显示外呼

用于同时接收处理两部电梯的呼梯、VIP、消防和锁梯，输出到站钟，显示电梯楼层、电梯

状态、故障代码。I/O端口可重定义

Parallel Hall Call Board

Receiving and processing signal of Car Calling ,VIP , Fire and Lock lift switch of two

elevators simultaneously ,Outputting Arrival Gong, Displaying Lift Floors, Lift State,

and Fault Code, I/O port could be redefined

超薄Mini外呼

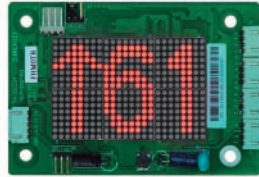
用于接收处理呼梯、VIP、消防和锁梯开关，以及输出到站钟，输入输出端口可多功能定义。显示电梯楼层，电梯状态及

故障代码，兼容横向及竖向安装

Slim Mini Hall Call Board

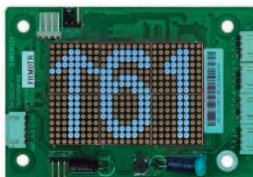
Receiving and processing signal of Car Calling ,VIP , fire And Lock Lift Switch ,outputting Arrival Gong, I/O port could

be redefined, displaying lift floors, lift state, and fault code ,both horizontal and vertical installation are available



Model/型号：FHM0TR

Dimension/尺寸：105*72*10



Model/型号：FHM0TB

Dimension/尺寸：105*72*10



Model/型号：FHM0TG

Dimension/尺寸：105*72*10

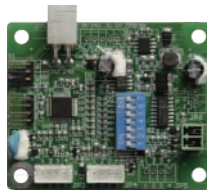
无显示厅外串行板

用于接收处理呼梯、锁梯和厅门锁开关，以及输出到站钟

Non-display Hall Outside Serial Call Board

Receiving and processing the signal of Car Calling ,lift

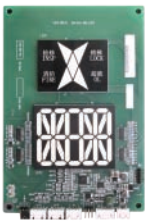
Lock And Hall Lock Switch ,outputting Arrival Gong



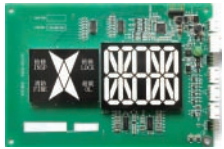
Model/型号：FHM300

Dimension/尺寸：70*57*22

外呼板
用于接收处理呼梯、VIP、消防和锁梯开关，输出到站钟，显示电梯楼层、电梯状态及故障代码
Hall Call Board
Used for receiving and disposing signal of Lift Calling, VIP, Fire and Lock Lift Switch , Outputting Arrival Chime, Displaying Floor Numbers, Lift State and Error Code



Model/型号：SW-HB-C0H
Dimension/尺寸：173*126*8



Model/型号：SW-HB-C0H
Dimension/尺寸：173*126*8



Model/型号：FHS0BW-0
Dimension/尺寸：147*74*10



Model/型号：FHC050
Dimension/尺寸：147*78*16



Model/型号：FHC070
Dimension/尺寸：147*78*12



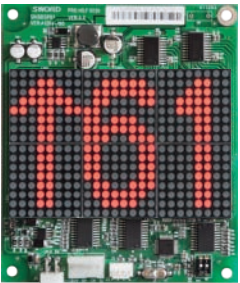
Model/型号：FHS0BW06-0(1.0)
Dimension/尺寸：173*126*15.6



Model/型号：FHS0BW06-0(1.0)
Dimension/尺寸：173*126*15.6

显示板 Car Display Board

轿厢显示板（大显示）
用于轿厢内部显示楼层，运行方向等信息
Car Displaying Board(Large Display)
Used for displaying the floor name and the operation direction



Model/型号：FDL0RR
Dimension/尺寸：133*105*10

7寸液晶显示
用于轿厢内部显示楼层，运行方向等信息(横竖可设) ;还具有语音报站，播放宣传广告和通知信息等功能。
7 inches LCD
For floor name displaying in car,and operation direction displaying(for both horizontal and vertical);
Also with the functions of Voice,ADS Broadcasting and Message Noticing etc.

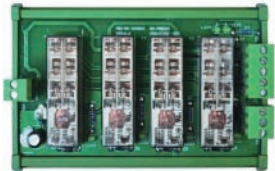


Model/型号：FDC007
Dimension/尺寸：180*130*21



防意外移动装置 UCMP

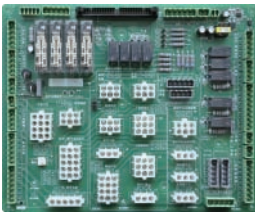
用途：轿厢意外移动检测子系统；实现电梯开门情况下的平层和在平层功能，可提高电梯的运行效率。
The car accident mobile detection subsystem realizes the horizontal and horizontal functions of the elevator under the open door condition, and improves the operation efficiency of the elevator.



Model/型号：FFU001
Dimension/尺寸：129*72*18.3

UCMP及控制柜插件二合一板 Plug-in Board In Control Cabinet

用于实现规范插线和防止轿厢意外移动双重功能。
For realizing the double functions of standard inserting and preventing car accidental movement.



Model/型号：SWE9-ECB-C5-2.0
Dimension/尺寸：260*210*30

以太网卡 Ethernet Card

用途：用于接入局域网或互联网，可实现监视电梯运行状态，实现电梯远程故障诊断。
Be used for connecting with internet or LAN, monitoring the operation state of the elevator, realizing remote diagnosis and parameters load.



Model/型号：SW-NB-ETH
Dimension/尺寸：45*70*18

GPRS监控卡 Gprs Monitor Card

用途：通过GPRS监控卡接入物联网，实现电梯远程监控和故障诊断
Be used for connecting with internet,monitoring the operation state of the elevator, realizing remote diagnosis and parameters load



Model/型号：SW-IOT-2000
Dimension/尺寸：66*51*22.2

编码器卡 Encoder Card

用途：动力机为异步电机时，异步编码器卡可实现集电极开路输出和推挽输出。
Asynchronous encoder card can be realized with open-collector outputs and push-pull output when the power machine is an asynchronous motor.



带分频输出ABZ编码器卡(S610用)
Frequency divider output ABZ encoder card(For S610)

Model/型号：SW-PG-ABZ1
Dimension/尺寸：70*45*15



带分频输出sincos编码器卡（S610用）
Frequency divider output sincos encoder card(For S610)

Model/型号：SW-PG-SIN1
Dimension/尺寸：70*45*15



ABZ编码器卡（S600用）
ABZ encoder card(For S600)

Model/型号：SW-PG-OC
Dimension/尺寸：70*45*15

解决方案 Solution

