

SIWO 斯沃®

SIWOQ系列自动转换开关电器



SIWOQ

沈阳斯沃电器

SHENYANG SIWO ELECTRICAL EQ

有限公司

EQUIPMENT CO., LTD.

**斯沃电器
忠告用户
安全第一**

**SIWO GIVES ADVICE
TO ALL USERS
SAFETY IS FIRST.**

概述

SIWOQ系列自动转换开关电器，是集开关与逻辑控制于一体，无需外加控制器，真正实现机电一体化的自动转换开关电器。具有电压检测、频率检测、通讯接口、电气与机械互锁等功能，可实现自动、电动远程、紧急手动控制。

操作是由逻辑控制板以各种逻辑命令来管理电机、变速箱的操作运行来实现，电机带动开关弹簧蓄能，瞬时释放的加速机构，快速接通分断电路或进行电路转换，通过明显可见状态实现安全隔离，极大的提高了电气性能与机械性能。

100A以下开关整体设计为金属外壳，小巧坚固。125A以上开关，控制部分为金属外壳，开关部分采用不饱和聚脂玻璃纤维增强模塑料制造外壳，有较强的介电性能，防护能力和可靠的操作安全性。

开关适用于供电系统的主电源与备用电源的自动转换或两台负载设备的自动转换及安全隔离等。

开关造型美观，新颖、简洁、体积小、功能全，是同类产品的理想选择。

SIWOQ系列产品已获得3C认证证书。沈阳斯沃电器有限公司有权因改进产品对技术性能进行修改并不做特别声明。

General

SIWOQ series automatic transfer switching equipment integrates switch and logic control. Thus, it's not necessary to use controller. The ATSE truly achieves mechanical and electrical integration. It has the functions of voltage detection, frequency detection, communication interface, electrical and mechanical interlocking, etc. which can realize automatic, electric remote, emergency manual control.

Operation is carried out through the logic control board which gives various logic commands to control the motor and gear-box. The motor drives the accelerating mechanism of spring stored energy and instantaneous release to quickly make and break circuit or changeover circuit. Realize safe isolation through visible conditions. All of which greatly increase the electrical and mechanical properties.

Entirely design of the switch below 100A is metal enclosure which is small and compact. Control part of the switch over 125A is metal enclosure and switch part adopts DMC enclosure, which have high dielectric property, protective capability as well as operating safety.

The switch is used for automatic transfer between main power supply and emergency power supply or automatic transfer and safety isolation of two load equipments.

The switch is beautiful, novel, simple, small size and has complete functions. It's the best choice among the similar products.

SIWOQ series product has acquired China Compulsory Certificate. Shenyang SIWO Electrical Equipment Co., Ltd. reserves the right to change the technical performance and details for improving the products at any time without notice.



符合标准2
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SIWOQ系列自动转换开关电器产品符合下列标准

SIWOQ series automatic transfer switching equipment product conforms to the following standards

- 国际标准 IEC 60947-1 《低压开关设备和控制设备 第一部分：总则》

IEC 60947-3 《低压开关设备和控制设备、开关、隔离器、隔离开关及熔断器组合电器》

IEC 60947-6-1 《低压开关设备和控制设备 多功能开关 自动转换开关电器》

- 国家标准 GB 14048.1 《低压开关设备和控制设备 总则》

GB 14048.3 《低压开关设备和控制设备 开关、隔离器、隔离开关及熔断器组合电器》

GB/T 14048.11 《低压开关设备和控制设备 第6部分：多功能电器 第1篇：自动转换开关电器》

- 使用环境与用途

使用环境 SIWOQ自动转换开关电器在下列条件下能可靠工作

海拔高度不超过2000米；

环境温度不高于40℃，不低于-5℃；

温度为+40℃时，相对湿度不超过50%；

对由于变化偶尔产生的凝露应采取特殊措施；

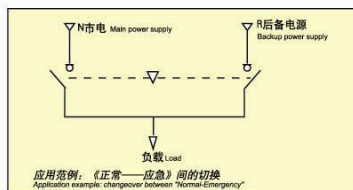
无爆炸危险介质环境；

无雨雪侵袭环境；

污染等级为3级

用途 交流50赫兹，额定电压380V，额定电流16A至3150A。用于不频繁接通与分断电路。

- 产品如需特殊要求，请与公司联系。



- International Standard

IEC 60947-1 Low-voltage switchgear and controlgear Part one: General rules

IEC 60947-3 Low-voltage switchgear and controlgear, switches, disconnectors, switch-disconnectors and fuse-combination units

IEC 60947-6-1 Low voltage switchgear and controlgear Multiple function switch Automatic transfer switching equipment

- National Standard

GB 14048.1 Low-voltage switchgear and controlgear Part one: General rules

GB 14048.3 Low-voltage switchgear and controlgear switches, disconnectors, switch-disconnectors and fuse-combination units

GB/T 14048.11 Low-voltage switchgear and controlgear Part 6-1: Multiple function equipment-Automatic transfer switching equipment

- Operation Environment and Usage

Operation Environment

SIWOQ automatic transfer switching equipment can work reliably under the following conditions:

Height above sea level does not exceed 2,000m;

Ambient temperature is not higher than 40°C and not lower than -5°C;

Relative humidity does not exceed 50% when temperature is +40°C;

Some special measures should be adopted on the condensation caused by change in temperature;

No explosive dangerous medium environment;

No rain and snow attack environment;

Pollution degree is 3.

Usage

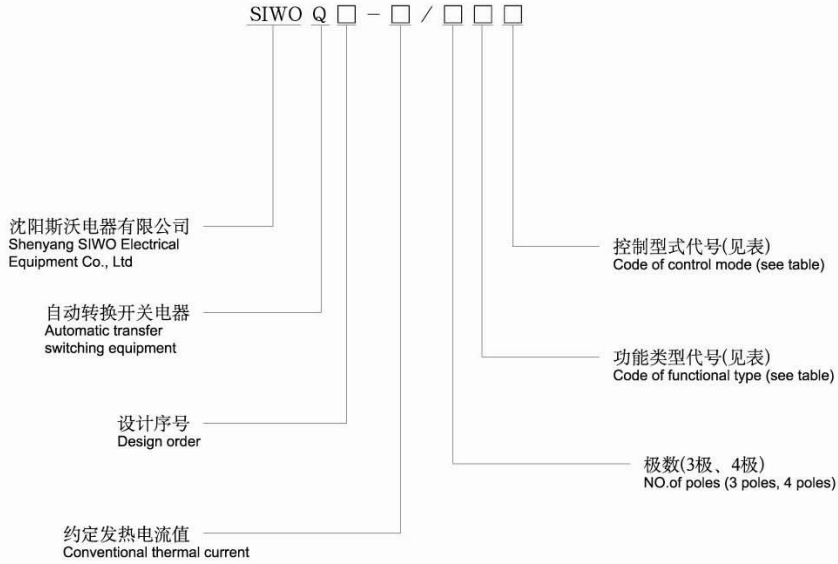
AC 50Hz, rated voltage 380V, rated current from 16A to 3150A.

The switch is used for infrequently making and breaking circuit.

- If customer has any special requirement for products, please contact with the company.

SIWOQ系列自动转换开关电器型号说明

Model description of SIWOQ series automatic transfer switching equipment



注：设计序号

1. 约定发热电流值(A): 100
2. 约定发热电流值(A): 63
3. 约定发热电流值(A): 160、250、630、1600、3150

产品功能对照表

产品型号	功能类型	扩展功能介绍
SIWOQ1-100/3.4	R1、R2、S1、 S2、S3、S4、S5	可配装RS232、 RS485通讯接口
SIWOQ2-63/3.4		
SIWOQ3-160/3.4		
SIWOQ3-250/3.4		
SIWOQ3-630/3.4		
SIWOQ3-1600/3.4	S3、S6	
SIWOQ3-3150/3.4		

选型举例：

SIWOQ1-100/4S1~380V 1e 63A

SIWOQ1自动转换开关电器，约定发热电流值100，交流额定工作电压380V，额定电流63A，4极，S1型，市电-市电系统自投自复。

Note: Design order

1. Conventional thermal current (A):100
2. Conventional thermal current (A):63
3. Conventional thermal current (A):160, 250, 630,1600,3150

Product functional table

Product model	Functional type	Extended Function Introductions
SIWOQ1-100/3.4	R1、R2、S1、 S2、S3、S4、S5	RS232 or RS485 communication interface can be used
SIWOQ2-63/3.4		
SIWOQ3-160/3.4		
SIWOQ3-250/3.4		
SIWOQ3-630/3.4		
SIWOQ3-1600/3.4	S3、S6	
SIWOQ3-3150/3.4		

Example of model selection:

SIWOQ1-100/4S1~380V 1e 63A

SIWOQ1 automatic transfer switching equipment, conventional thermal current value is 100, AC rated operational voltage is 380V, rated current is 63A, 4poles, S1 mode, main power supply-automatic transfer and automatic recovery of AC power system.

SIWOQ系列自动转换开关电器控制型式

Control mode of SIWOQ series automatic transfer switching equipment

R型

1. 自投自复, 缺相检测(主、备各三相), 失压检测, 消防置零, 指示灯指示。
2. 自投不自复, 缺相检测(主、备各三相), 失压检测, 消防置零, 指示灯指示。

S型

1. 自投自复, 缺相检测(主、备各三相), 失压检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口。
2. 自投自复, 缺相检测(主、备各三相), 失压检测, 过、欠压检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口。
3. 自投不自复, 缺相检测(主、备各三相), 失压检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口。
4. 自投不自复, 缺相检测(主、备各三相), 失压检测, 过、欠压检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口。
5. 自投自复, 缺相检测(主、备各三相), 失压检测, 过、欠压检测, 频率检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口, 油机启动(I路为市电-II路为油机)。
6. 自投不自复, 主、备各三相缺相检测, 失压检测, 频率检测, 消防置零, 数码显示, 参数设定、修改, 具备扩展接口, 油机启动(I路为市电-II路为油机)。

R mode

1. Automatic transfer and automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, set zero position for fire protection, indicator light display.
2. Automatic transfer and no automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, set zero position for fire protection, indicator light display.

S mode

1. Automatic transfer and automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface.
2. Automatic transfer and automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, over and under voltage detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface.
3. Automatic transfer and no automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface.
4. Automatic transfer and no automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, over and under voltage detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface.
5. Automatic transfer and automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, over and under voltage detection, frequency detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface, oil generator start (I circuit is main power supply/II circuit is oil generator).
6. Automatic transfer and no automatic recovery, phase lack detection (respective three phases of main power supply and emergency power supply), lost voltage detection, frequency detection, set zero position for fire protection, digital display, parameter setting and modify, with extended interface, oil generator start. (I circuit is main power supply/II circuit is oil generator).

4



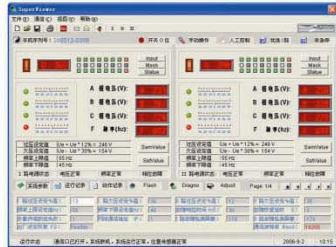
SIWOQ系列自动转换开关电器

SIWOQ series automatic transfer switching equipment

- 开关具有三极、四极（三极+可通断中性极）产品。
- 分为16A、20A、25A、32A、40A、50A、63A、80A、100A、125A、160A、200A、250A、315A、400A、500A、630A、1000A、1250A、1600A、2000A、2500A、3150A，23个电流等级。
- 产品采用自主研发的一体化专用压力模板。
- 控制部分采用军品品质电源模块、SMT技术，保证了产品的可靠性。
- 开关控制部分具有良好的电磁兼容性。
- 独特的相位检测功能保证了负载设备的安全使用。
- 产品具有可视化、数字化、网络化的功能特点。
- 设计序号2为超薄型，厚度137mm。
- 可远程消防置零，紧急情况下可强制置零（同时切断两路电源）
- 具有自动、电动和手动三种操作方式选择。具有明显通断位置指示、挂锁等功能。
- 使用斯沃专用控制软件

- The switch has 3 poles or 4 poles (3 poles + on and off neutral pole) product.
- They are divided into 23 current ratings of 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 250A, 315A, 400A, 500A, 630A, 1000A, 1250A, 1600A, 2000A, 2500A, 3150A.
- The product adopts self-research and self-develop special pressure sensing board of integrated design.
- Control part adopts power supply module of military product quality, and also use SMT technique to ensure the reliability of the product.
- The control part of switch has excellent EMC.
- The function of special phase detection ensures safe use of load equipment.
- The product has features of visualization, digit and networking.
- Design order 2 is slim type; main body thickness is 137mm.
- Remotely set zero position for fire protection; compulsorily transfer to zero position under emergency condition (cut off two power supplies at the same time)
- It has selections for three operation modes of automatic, electric and manual . It has functions of obvious indication for making and breaking positions and padlock, etc.
- Use SIWO special controlling software

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SIWO 斯沃® SIWOQ 系列自动转换开关电器 (A.T.S.E.)

SIWOQ系列自动转换开关电器产品电气性能与机械性能 Electrical properties and mechanical properties of SIWOQ series automatic transfer switching equipment

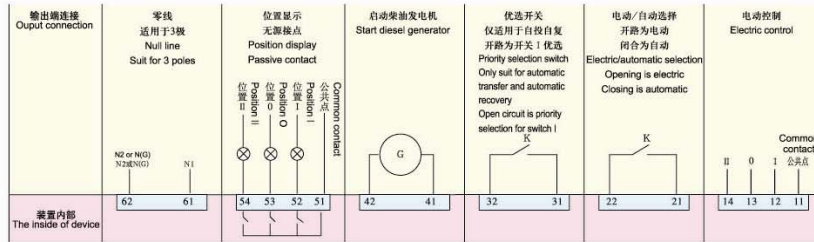
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约定发热电流 Ith (A)	Conventional thermal current Ith (A)	100A(Q1)										160~3150(Q3)												
		63A(Q2)										160A		250A		630A			1600A			3150A		
额定电流 In (A)	Rated current In (A)	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	1000	1250	1600	2000	2500	3150
额定绝缘电压 Ui(V)	Rated impulse withstand voltage Ui(V)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
介电强度 (V)	Dielectric strength (V)																							
额定冲击耐受电压 Uimp (kV)	Rated impulse withstand voltage Uimp(kV)	6	6	6	6	6	6	6	10	10	10	10	10	10	10	10	10	10	10	10	10	6	6	6
额定工作电流 Ie(A)	Rated operational current Ie(A)																							
380V	AC31 B														315	400	500	630	1000	1250	1600	2000	2500	3150
	AC33 B	16	20	25	32	40	50	63	80	100	125	160	200	250										
过载能力	Overload capacity																							
额定短时耐受电流Icw (kA Rms)/1s	Rated short-time withstand current (kA Rms)/1s	5	5	5	5	5	5	5	5	5	10	10	10	10	12.6	12.6	12.6	12.6	32	32	32	50	50	50
接通分断能力	Making and breaking capacity																							
额定分断能力 (A Rms) 380V	Rated breaking capacity (A Rms) 380V	600	600	600	600	600	600	600	600	600	960	960	1500	1500	945	945	945	945	2400	2400	2400	3000	3000	3000
额定接通能力 (A Rms) 380V	Rated making capacity (A Rms) 380V	600	600	600	600	600	600	600	600	600	960	960	1500	1500	945	945	945	945	2400	2400	2400	3000	3000	3000
额定短路接通能力 Icm(KA 峰值)	Rated short-circuit making capacity Icm (KA peak value)	8	8	8	8	8	8	8	8	8	17	17	17	17	26	26	26	26	66	66	66	105	105	105
操作性能	Operation properties																							
机械寿命(循环操作次数)	Mechanical durability (number of cyclic operation)	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	2500	2500	2500	2500	2500	2500	1500	1500	1500	1500
电气寿命(循环操作次数)	Electrical durability (number of cyclic operation)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500	500	500	500	500
重量(kg) 3极	Weight(kg) 3 poles	4.8	4.8	4.8	4.8	4.8	4.8	5.0	5.0	5.0	7.2	7.2	8	8	10	10	10	10	22	22	34	74.8	74.8	82.2
4极	4 poles	5.0	5.0	5.0	5.0	5.0	5.0	5.2	5.2	5.2	7.5	7.5	9	9	11	11	11	11	28	28	40	101.2	101.2	128.7

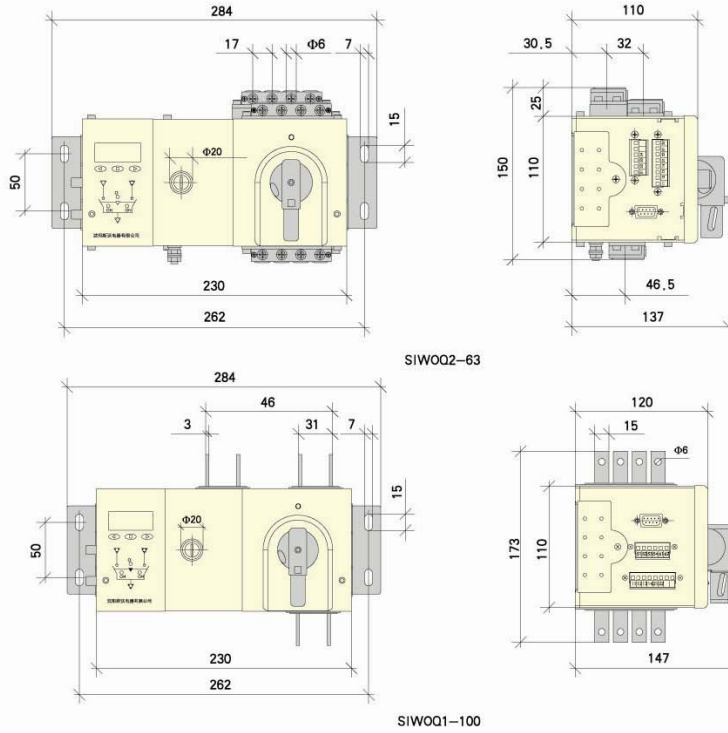
SIWOQ1-100和SIWOQ2-63接插端子图与外形安装尺寸

Terminal diagram, outline and installation dimension of SIWOQ1-100 and SIWOQ2-63

接插端子图Terminal diagram



外形安装尺寸Outline and installation dimension

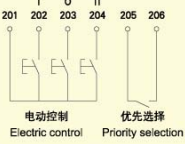
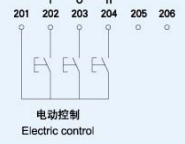
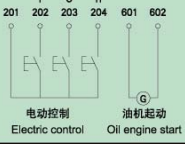
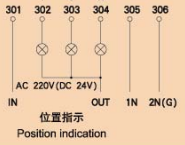

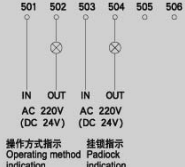


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SIWOQ3-160~3150自动转换开关电器接插端子图

Terminal diagram of SIWOQ3-160~3150 automatic transfer switching equipment

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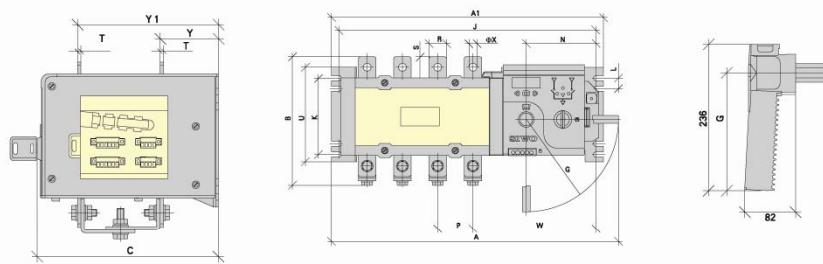
 <p>201 202 203 204 205 206</p> <p>电动控制 优先选择 Electric control Priority selection</p>	<p>功能类型控制型式为R1、S1、S2型开关的控制电路接线端子。 Wiring terminals for control circuit of functional type and control mode R1, S1, S2 type switch.</p>
 <p>201 202 203 204 205 206</p> <p>电动控制 Electric control</p>	<p>功能类型控制型式为R2、S3、S4型开关的控制电路接线端子。 Wiring terminals for control circuit of functional type and control mode R2, S3, S4 type switch.</p>
 <p>201 202 203 204 601 602</p> <p>电动控制 油机启动 Electric control Oil engine start</p>	<p>功能类型控制型式为S5、S6型开关的控制电路。 Control circuit of functional type and control mode S5、S6 type switch.</p>
 <p>301 302 303 304 305 306</p> <p>AC 220V(DC 24V)</p> <p>IN OUT 1N 2N(G)</p> <p>位置指示 Position indication</p>	<p>位置显示、零线端子。零线适用于3极 Position display, null line terminals.Null line Suit for 3 poles</p>
 <p>401 402 403 404 405 406</p> <p>IN OUT IN OUT</p> <p>AC 220V (DC 24V) AC 220V (DC 24V)</p> <p>预断 I 预断 II</p> <p>Pre-off I Pre-off II</p> <p>辅助触点/指示 辅助触点/指示</p> <p>Auxiliary contact/ indication Auxiliary contact/ indication</p>	<p>预断辅助触点/指示接线端子。 Wiring terminals for pre-off auxiliary contacts/indication.</p>
 <p>501 502 503 504 505 506</p> <p>IN OUT IN OUT</p> <p>AC 220V (DC 24V) AC 220V (DC 24V)</p> <p>操作方式指示 挂锁指示</p> <p>Operating method indication Padlock indication</p>	<p>手动/自动、挂锁指示接线端子。 Wiring terminals for manual/automatic, padlock indication.</p>

SIWOQ3-160~630自动转换开关电器外形与安装尺寸

Outline and installation dimensions of SIWOQ3-160~630 automatic transfer switching equipment



SIWOQ3-160~630自动转换开关电器实物图



SIWOQ3-160~630自动转换开关电器

规格 Specification	A	A1	B	C	G	J	K	L	N	P	R	S	T	U	W	ØX	Y	Y1
SIWOQ3-160/3(125A,160A)	377	296	151	189	191	275	78/108	15	99	36	20	25	3.5	134	169	9	56	141
SIWOQ3-160/4(125A,160A)	407	326	151	189	191	305	78/108	15	99	36	20	25	3.5	134	164	9	56	141
SIWOQ3-250/3(200A,250A)	417	336	184	189	191	315	78/108	15	99	50	25	30	3.5	134	176	11	60	145
SIWOQ3-250/4(200A,250A)	467	386	184	189	191	365	78/108	15	99	50	25	30	3.5	134	175	11	60	145
SIWOQ3-630/3(315A,400A)	453	385	258	252	191	365	180	112	65	32	40	5	208	197	11	83	200	
SIWOQ3-630/4(315A,400A)	513	445	258	252	191	424	180	112	65	32	40	5	208	192	11	83	200	
SIWOQ3-630/3(500A,630A)	453	385	279	252	191	365	180	112	65	40	50	6	208	197	12	84	201	
SIWOQ3-630/4(500A,630A)	513	445	279	252	191	424	180	112	65	40	50	6	208	192	12	84	201	

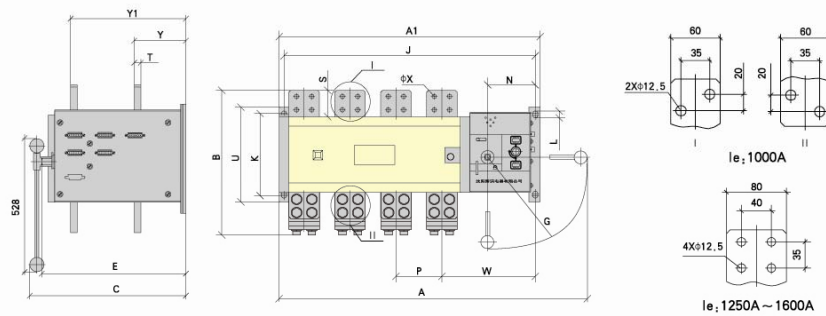
SIWOQ3-1000~1600自动转换开关电器外形与安装尺寸

Outline and installation dimensions of SIWOQ3-1000~1600 automatic transfer switching equipment



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SIWOQ3-1000~1600自动转换开关电器实物图



SIWOQ3-1000~1600自动转换开关电器

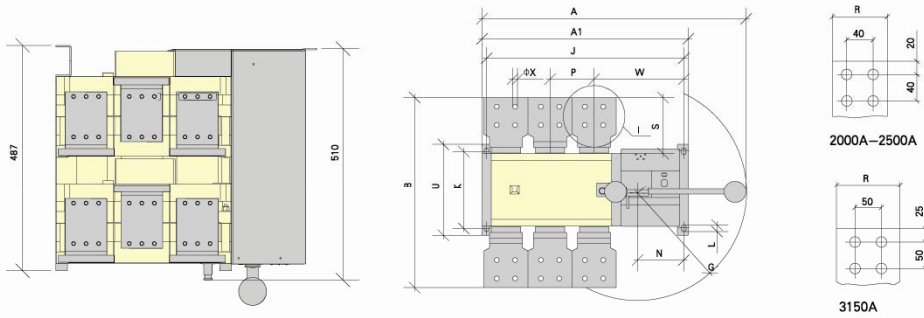
规格 Specification	A	A1	B	C	E	G	J	K	L	N	P	R	S	T	U	W	ØX	Y	Y1
SIWOQ3-1600/3(1000A)	889	562	342	385	320	470	537	212	18	126	120	60	56	8	250	236	12.5	107	252
SIWOQ3-1600/4(1000A)	1003	677	342	385	320	470	651	212	18	126	120	60	56	8	250	229	12.5	107	252
SIWOQ3-1600/3(1250A, 1600A)	889	562	373	385	320	470	537	212	18	126	120	80	69	8	250	236	12.5	107	252
SIWOQ3-1600/4(1250A, 1600A)	1003	677	373	385	320	470	651	212	18	126	120	80	69	8	250	229	12.5	107	252

SIWOQ3-2000~3150自动转换开关电器外形与安装尺寸

Outline and installation dimensions of SIWOQ3-2000~3150 automatic transfer switching equipment



SIWOQ3-2000~3150自动转换开关电器实物图



SIWOQ3-2000~3150自动转换开关电器

规格 Specification	A	A1	B	C	E	G	J	K	L	N	P	R	S	T	U	W	∅X	Y	Y1
SIWOQ3-2500/3(2000A,2500A)	889	562	465	560	501	470	537	212	18	126	120	80	127	10	250	236	13	68	457
SIWOQ3-2500/4(2000A,2500A)	1003	677	465	560	501	470	651	212	18	126	120	80	127	10	250	229	13	68	457
SIWOQ3-3150/3(3150A)	889	562	520	560	501	470	537	212	18	126	120	120	152	15	250	236	13	63	462
SIWOQ3-3150/4(3150A)	1003	677	520	560	501	470	651	212	18	126	120	120	152	15	250	229	13	63	462

2009

NO.2

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