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COMPREHENSIVE
CATALOG OF SENSORS

传感器综合目录

安全光幕/安全激光雷达/安全地垫/安全触边/安全继电器

Safety light curtain/safety lidar/safety mat/safety edge/safety relay



新达公司是一家专业从事光，电，机技术为一体的产品研究，开发，生产，销售，代理的科技企业，是传感器产品的专业制造商。致力于防止人碰触引起的工伤事故，例如安全保护装置和模具安全检测器，我们的产品系列有安全光幕（安全光栅）、安全激光雷达、压敏安全地垫、安全边缘、安全开关、安全继电器等。其中安全光幕系列产品是光电安全保护器，测量光幕，屏幕，车辆分离，高精度微处理器模具根据理货（模具安全检测器），误模多功能，光电反射板（反射器），反射模具和冲头周围的自动化设备，为行业知名企业提供优质的产品和服务并获得经过多年的不懈努力，不断转型，不断完善，我们的产品已销往全国各地和中亚地区，客户遍及全国主要汽车制造1，家电制造，金属加工和锻造设备等。广泛用于冲床，剪板机，折弯机，注塑机，液压机，拉丝机，皮革机械，木工机械，自动流水线和自动模具检测等。公司全体员工将一如既往地坚持“客户至上，以质量求生存”，以科技谋发展，以管理经营的经营理念”，务实专业为广大客户提供优质的产品，解决实际问题，建立长期稳定的良好合作关系，欢迎您的合作，欢迎！大家伙将是您理想的合作伙伴。

CYNDAR is a scientific and technological enterprise that specializes in product research, development, production, sales and agency of optical, electrical and mechanical technology. It is a professional manufacturer of sensor products. Committed to preventing work-related accidents caused by human touch, such as safety protection devices and mold safety detectors, our product series include safety light curtains (safety gratings), safety laser radars, pressure-sensitive safety mats, safety edges, safety switches, Safety relays, etc. Among them, the safety light curtain series products are photoelectric safety protectors, measuring light curtains, screens, vehicle separation, high-precision microprocessor molds according to tally (mold safety detectors), mis-mold multi-functions, photoelectric reflectors (reflectors), The automatic equipment around the reflective mold and the punch provides high-quality products and professional services for well-known companies in the industry. After years of unrelenting efforts, continuous transformation and continuous improvement, our products have been sold to customers throughout the country and Central Asia. Major automobile manufacturing, home appliance manufacturing, metal processing and forging equipment, etc. throughout the country. It is widely used in punch presses, shears, bending machines, injection molding machines, hydraulic presses, wire drawing machines, leather machinery, woodworking machinery, automatic assembly lines and automatic mold inspections. All employees of the company will, as always, insist on "customer first, survive by quality," develop with science and technology, and operate with management philosophy," pragmatically and professionally provide customers with high-quality products, solve practical problems, and establish long-term stable cooperation. Relationship, your cooperation is welcome, welcome! Big guy will be your ideal partner.

服务领域

SERVICE AREA

公司集光电保护技术的设计，制造和服务于一体，以推广安全生产意识为己任，以创造安全生产环境为目标，将产品推广到社会生产的众多领域。公司主要服务于锻压行业，汽车制造业，电子电器制造业，五金家电制造业和地铁屏蔽门系统等。

The company integrates the design, manufacture and service of photoelectric protection technology, takes the promotion of safety production consciousness as its responsibility, takes the creation of safety production environment as its goal, and extends its products to many fields of social production. The company mainly serves in forging industry, automobile manufacturing industry, electronic and electrical manufacturing industry, hardware and household appliances manufacturing industry and subway screen door system, etc.

产品用途

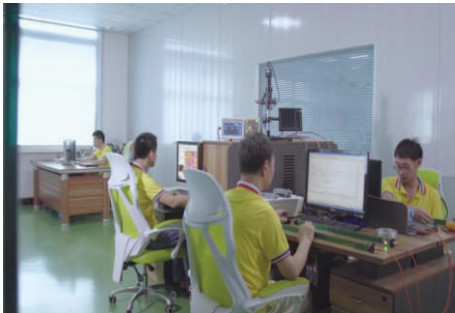
PRODUCT USE

产品与机械设备配套，保护操作者的人身安全。如：

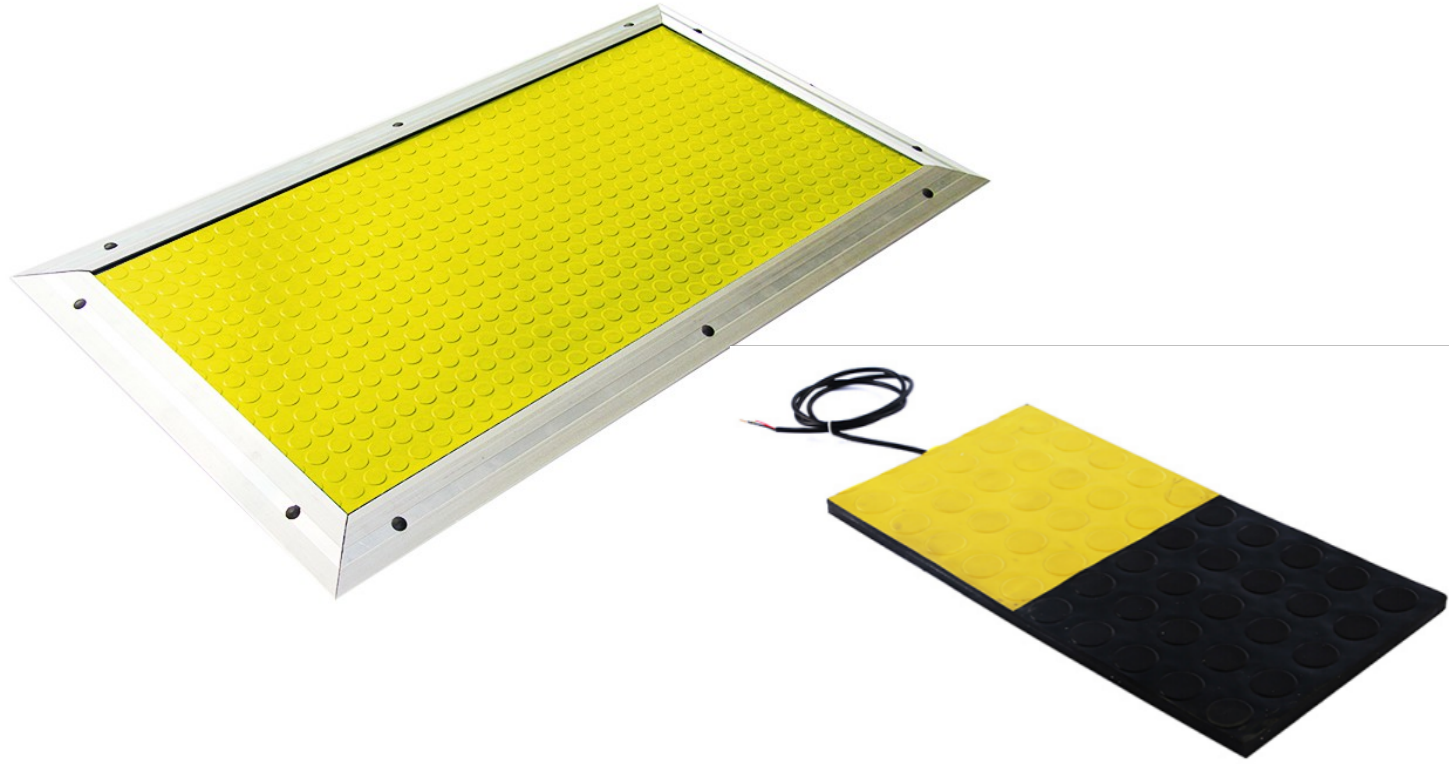
- | | | | | |
|---------|-----------|-------------|----------|--------|
| ◆ 冲压机械 | ◆ 自动化仓储设备 | ◆ 升降控制机械 | ◆ 注塑机械 | ◆ 热熔机 |
| ◆ 剪切机械 | ◆ 立体车库 | ◆ 其他存在的危险场合 | ◆ 自动化装配线 | ◆ 压装机 |
| ◆ 折弯机械 | ◆ 压滤机械 | ◆ 木工机械 | ◆ 橡胶机械 | ◆ 纺织机械 |
| ◆ 焊接流水线 | ◆ 制模机械 | ◆ 切纸机械 | ◆ 吹瓶机 | ◆ 压力机 |

The product is matched with the mechanical equipment to protect the operator's personal safety. Such as:

- | | | |
|-------------------------------|-----------------------------------|------------------------------|
| ◆ Stamping Machinery | ◆ Automated warehousing equipment | ◆ Lift Control Machinery |
| ◆ Shearing Machinery | ◆ Stereo garage | ◆ Other Dangerous Situations |
| ◆ Bending Machinery | ◆ Filter Press Machinery | ◆ Woodworking machinery |
| ◆ Welding line | ◆ Molding Machinery | ◆ Paper Cutting Machinery |
| ◆ Injection Molding Machinery | ◆ hot-melt machine | |
| ◆ Automated assembly line | ◆ press mounting machine | |
| ◆ Rubber machinery | ◆ Textile machinery | |
| ◆ bottle blowing machine | ◆ press | |



◆ 安全地毯传感器 Safety mat sensor



◆ Ls11系列 与LS15系列 Ls11 Series and Ls15 Series

- LS11标准系列。适用于工厂工况使用，整体封装，PVC防滑表面，R9防滑等级。
- LS15抗碾压抗冲击系列。适用于重型工况或特殊工业场合使用，整体封装，NBR橡胶防滑层，R9防滑等级。
- 用于检测体重在20公斤以上的人或重物。
- 超过300万次机械寿命。
- LS11系列可承受动态载荷<200 kg / CM²
- LS15系列可承受<800 kg / CM²的冲击载荷。
- 单个区域安全保护装置可以使用多个安全地毯传感器组件。
- 安全地毯与开关模式控制器兼容。
- 接受非标准尺寸和异型安全地毯产品定制。
- LS11 standard series. Suitable for use in factory conditions, overall package, PVC non-slip surface, R9 non-slip grade.
- LS15 anti-rolling and anti-impact series. Suitable for use in heavy working conditions or special industrial occasions, integral package, NBR rubber anti-skid layer, R9 anti-skid grade.
- Used to detect people or heavy objects weighing more than 20 kg.
- More than 3 million cycles of mechanical life.
- LS11 series can bear dynamic load <200 kg / Cm2
- LS15 series can withstand impact loads of <800 kg / Cm2.
- A single area safety protection device can use multiple safety carpet sensor components.
- The safety mat is compatible with the switch mode controller.
- Accept customization of non-standard size and special-shaped safety carpet products.

◆ 安全地毯技术标准 Safety carpet technical standards

项目project		型号model	LS11	LS15
检测方式Detection mode			压力传感方式Pressure sensing mode	
操作力Operational power			<20kg	
最大允许动负载 Maximum allowable live load			<200kg/cm ²	冲击载荷<800kg/cm ²
机械寿命 Mechanical life			> 3,000,000次second	> 3,000,000次second
封装及表面防护层 Packaging and Surface Protection Layer			PVC	PVC,CR
环境温度 ambient temperature			-20℃——+55℃	-35℃——+65℃
防护等级Protection level			Ip65	
最大湿度（23度） Maximum humidity (23 degrees)			95%(结露Condensation)	
安排分类 Arrangement classification	响应时间response time		13ms	
	EN 1760-1重置命令Reset Command		支持Support	
	ISO 13849-1:2006		Cat.3	
	MTTFd		> 30年year	
	Bi0d		6*10 [^]	
	Nop（接受Acceptance）		52560/年yea	
	IEC 61508：PFHS		9.99*10 ⁻⁴ 1/h(SIL3)	

安全地毯传感器和安全控制器QRSN-SR系列或QRSN-SRA地毯系列共组成的安全系统符合以下标准。

The safety system composed of the safety carpet sensor and safety controller QRSN-SR series or QRSN-SRA carpet series complies with the following standards. EN1760-1 ISO13856-1 EN62061-1 EN ISO13849-1 IEC61508-1 EN60204-1

◆ 安全地毯技术说明 Safety carpet technical description

1) 安全地毯规格标准

Safety Carpet Specification Standard

安全垫规格尺寸 Safety pad specifications and dimensions (L1xL2)	LS11型type	LS15型type
	PVC整体封装型 PVC integral package	NBR整体封装抗碾压型 NBR integral package roll-resistant type
	厚度thickness 11mm	厚度thickness 15mm (20mm定制Customized)
30cmx30cm	LS11-30X30	LS15-30X30
40cmx40cm	LS11-40X40	LS15-40X40
50cmx25cm	LS11-50X25	LS15-50X25
50cmx40cm	LS11-50X40	LS15-50X40
50cmx50cm	LS11-50X50	LS15-50X50
60cmx40cm	LS11-60X40	LS15-60X40
75cmx25cm	LS11-75X25	LS15-75X25
75cmx50cm	LS11-75X50	LS15-75X50
75cmx75cm	LS11-75X75	LS15-75X75
100cmx25cm	LS11-100X25	LS15-100X25
100cmx50cm	LS11-100X50	LS15-100X50
100cmx75cm	LS11-100X75	LS15-100X75
100cmx100cm	LS11-100X100	LS15-100X100
150cmx50cm	LS11-150X50	LS15-150X50
150cmx75cm	LS11-150X75	LS15-150X75
150cmx100cm	LS11-150X100	LS15-150X100
含铝压边外缘尺寸 Size of outer edge of aluminium blank holder	L1+100mmxL2+100mm	L1+120mmxL2+120mm
备注：		

1.安全地毯尺寸为不含铝压边净尺寸，尺寸误差为+/-6mm
The size of the safety carpet is net size without aluminum crimping, and the dimensional error is +/-6mm

2.接受非标准尺寸安全地毯定制。非标准尺寸安全地毯单边长度应<3000mm,面积≤1.5m²
Accept non-standard size safety carpet customization. Non-standard size safety carpets should have a single side length. of <3000mm and an area of ≤1.5m²

3.接受异型安全地毯设计和定制，用户需提供防护区域平面图及技术要求。
异型安全地毯最大面积≤3m²
To accept the design and customization of the special-shaped safety carpet, the user needs to provide the protection area plan and technical requirements. Shaped safety carpet with a maximum area of ≤3m²

2) 安全地毯外形尺寸、边缘非感应区及类型

Safety carpet dimensions, edge non-sensing areas and types

标准安全地毯为矩形尺寸，可根据使用要求在上表中选购。也可以根据需要定制。安全地毯传感器的单边尺寸L限于200-3000毫米，面积不大于1.5平方米。

The standard safety carpet is rectangular in size and can be purchased from the above table according to the requirements. It can also be customized as needed. The single-sided dimension L of the safety carpet sensor is limited to 200-3000 mm and the area is not more than 1.5 square meters.

矩形安全地毯外形尺寸如下图：

The dimensions of the rectangular safety carpet are as follows:



L1：为安全地毯宽边

L2：为安全地毯窄边

安全地毯表面积： $L1 \times L2 \leq 1.5m^2$

安全地毯信号电缆从窄边出线。

面积 $>1.5m^2$ 以上的防护区域，建议采用多块安全地毯拼接方式。

安全地毯封装边缘是非传感感应区，非传感感应区域不具有感应功能，安全地毯的边缘非感应区的宽度为：

非电缆引出边非感应边缘区宽度S1=10mm

电缆引出边缘非感应区宽度S2=20mm

L1: for the safety carpet wide side

L2: for the narrow side of the safety carpet

Safety carpet surface area: $L1 \times L2 \leq 1.5m^2$

The safety carpet signal cable exits from the narrow side.

For protective areas with an area $>1.5 m^2$ or more, it is recommended to use multiple safety carpet splicing methods.

The edge of the safety carpet package is a non-sensing sensing area, and the non-sensing sensing area does not have a sensing function.

The width of the non-sensing area of the edge of the safety carpet is:

Non-cable lead-out edge non-inductive edge area width S1=10mm

Cable lead-out edge non-sensing area width S2=20mm

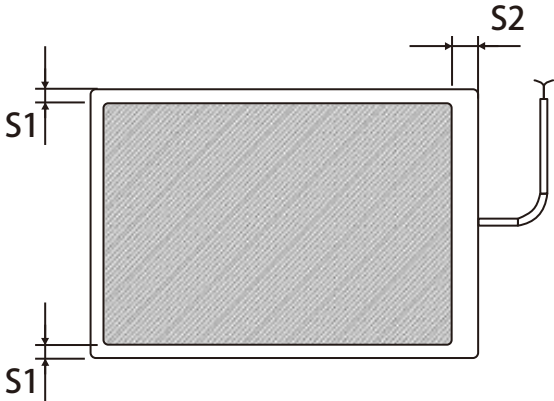
安全地毯根据系统配置分为R型和K型两种型号。选择不同的组合，可以实现较大的区域的安全防护。可以采用多个安全地毯拼接安装方式。可以多区域分别控制，也可以单区域控制。一个单区域控制穿了使用安全地毯的数量应 <10 个，单区域面积应 $<8m^2$ 。

需要注意的是，单区域拼接安装只能两个安全地毯的S1边相邻。若无法保证相邻的两块安全地毯是S1边相邻，可采用分区域控制方式，以保证防护区域的安全可靠。若安全地毯的信号电缆长度2米无法满足您的要求，请在订货时声明。

The safety of the carpet is divided into two models: R type and K type according to the system configuration. Choose different combinations to achieve a greater range of security protection. A variety of safety carpet splicing installation methods can be used. Multi-zone control and single-zone control are possible. The safe use of a single area of the carpet to control the amount of wear should be <10 , and the area should be $<8 m^2$.

It is important to note that a single splicing installation can only have two safety carpets S1 and their neighbors. If the safety of two adjacent carpets cannot be guaranteed to be adjacent to S1, a sub-area control method can be used to ensure the safety and reliability of the protected area.

If a safety mat with a signal cable length of 2 meters cannot meet your requirements.



R型	 R型安全地毯 R-type safety carpet	两芯黑色TPE护套电缆VVR $\phi 4mm$ $2 \times 0.35mm^2$ (红、黑) 电缆长度2米 内部封装终端电阻 (R=1.2K Ω) Two-core black TPE sheathed cable VVR $\phi 4mm$ $2 \times 0.35mm^2$ (red, black) cable length 2 meters, Internal package terminal resistance (R = 1.2K Ω)
K型	 K型安全地毯 K-type safety carpet	2*两芯黑色TPE护套电缆 VVR $\phi 4mm 2 \times 0.35mm^2$ (红、黑) 电缆长度2米。 2 * Two-core black TPE sheathed cable VVR $\phi 4mm$ $2 \times 0.35mm^2$ (red, black) cable length 2 meters

新达 安全地毯

安全地毯异型定制



安全地毯案例

Tner-A31系列安全继电器模块

- 最高符合ISO13849–1的PLe标准和IEC 62061的SiL3标准经验证的双通道安全监控电路
- 多功能配置拨码开关，可适用于多种安全传感器
- 输入输出LED指示
- 自动/手动复位拨杆，快速配置系统
- 宽度22.5mm，减少安装空间
- 可选螺钉端子或弹簧端子，适用范围更广
- PLC信号输出

Tner-A31 series safety relay module

- Proven dual-channel safety monitoring circuit design up to the PLe standard of ISO13849–1 and SiL3 standard of IEC 62061
- Multi-function configuration DIP switch, applicable to a variety of safety sensors
- Input and output LED indication
- Automatic/manual reset lever to quickly configure the system
- Width 22.5mm, reducing installation space
- Optional screw terminal or spring terminal, wider application range
- PLC signal output

安全强制断开型继电器输出

3个常开瞬时型安全触点（3NO）1个常闭瞬时型安全触点（1NC）

多功能配置拨码开关

- 可配置成适用于急停，光幕，门锁，触边，地毯，双手开关等多种功能。

安全特性

- 冗余的回路并且带有自我监控功能
- 在元器件发生故障时，安全功能依然有效
- 在每个开-闭周期中都会自动测试安全触点是否正确地断开和闭合

Safety forced-off relay output

- 3 normally open instantaneous safety contacts (3NO), 1 normally closed instantaneous safety contacts (1NC)

Multi-function configuration dial switch

- It can be configured for emergency stop, light curtain, door lock, edge contact, carpet, two-hand switch and other functions.

Safety features

- Redundant circuit with self-monitoring function
- In the event of component failure, the safety function is still effective
- In each opening-closing cycle, it will automatically test whether the safety contacts are properly opened and closed

LED指示灯 LED indicator

- 电源指示 ● Power indicator
- 输入状态指示 ● Input status indication
- 输出状态指示 ● Output status indication

自动复位开关 Automatic reset switch

- 可配置自动/手动复位开关 ● Configurable automatic/manual reset switch

LCS-SRA104-2A1B/LCS-SRB104-2A1B

系列安全继电器模块

LCS-SRA/B型安全继电器是用于压敏传感保护装置的信号处理部件。

安全继电器接受并评估带有1.2KΩ监控电阻的压敏传感器的输入信号。

通过集成输出信号交换电路（OSSD）传输并评估接受的信号，并直接给机器的控制装置发送安全指令。

LCS-SRA104-2A1B/LCS-SRB104-2A1B series safety relay module

The LCS-SRA/B safety relay is a signal processing component for pressure sensitive sensor protection devices.

The safety relay accepts and evaluates the input signal of a pressure-sensitive sensor with a 1.2KΩ monitoring resistor.



■ 技术参数 technical parameter

安全控制等级Safety Control Level	4级 Level 4
电源电压 supply voltage	DC24/+10%/-20%
功 耗 Power waste	2.9W
负载功能 Load function	AC-1:6A/250VAC/1500VA
	AC-15:4A/240VAC
	DC-1:6A/24VDC/150W
	DC-13:4A/24VDC

回应时间 Response time	≤30ms(从输入到输出/From input to output)
环境温度 Ambient temperature	-25℃~85℃
环境湿度 Ambient humidity	35%~85%(No icing or condensation)
介电强度 Dielectric strength	AC1500V，60S无击穿或闪络(No breakdown or flashover)
继电器寿命 Relay life	8000次 times
外形尺寸 Outline size	114.5mm*100.5mm*22.5mm



LCS-SRA/B型安全继电器技术参数表

LCS-SRA/B Safety Relay Technical Parameters

项目/型号 (Type /Project)		LCS-SRA104-2A1B	LCS-SRA134-2A1B	LCS-SRB104-2A1B	LCS-SRB134-2A1B
Test principles 测试原理:		EN1760-1 , EN1760-2 , EN12978 , ISO13849-1			
适用安全产品系列类型 Applicable Safety Product Series Type		安全激光雷达、安全光幕、安全地垫 、安全触边 Safety Lidar, Safety Light Curtain, Secure Ground Pad, Secure Touch Edge			
	性能级别 Performance	Pie	Pie	Pie	Pie
	安全类别 Security category	Cat.3	Cat.3	Cat3	Cat3
寿命 life	机械寿命 mechanical life	> 300 万次	> 300 万次	> 100 万次	> 100 万次
使用条件 Conditions of Use	复位方式 reset mode	自动/手动 Automatic/manual	自动/手动 Automatic/manual	自动/手动 Automatic/manual	自动/手动 Automatic/manual
	使用电压 service voltage	AC/DC 24 V	AC 220 V	AC/DC 24 V	AC 220 V
	容许电压范围 Allowable voltage range	-15%~+10% AC/ 15%~+20% DC	-15% - +10%	-15%~+10% AC/ 15%~+20% DC	-15% - +10%
	常用电流 Common Current	192 MA/89 MA	48 mA / 28 mA	192 MA/86 MA	48 mA / 28 mA
	保护电流 Protection	250 MA	250 MA	250 MA	250 MA
	耗电量 power consumption	< 5 VA/ < 3W	< 7VA	< 5 VA/ < 3W	< 7VA
时间 time	响应时间 response time	< 10 ms	< 10 ms	< 13 ms	< 13 ms
	再启动时间 Restart time	< 190 ms	< 190 ms	< 190 ms	< 190 ms
继电器输入 relay input	输入端子 input terminal	Y1、Y2	Y1、Y2	Y1、Y2	Y1、Y2
	终端电阻 Terminating	1.2KΩ	1.2KΩ	1.2KΩ	1.2KΩ
	触发电阻 Trigger resistance	<400 Ω	<400 Ω	<400 Ω	<400 Ω
	线缆电阻 Cable resistance	< 100 Ω	< 100 Ω	< 100 Ω	< 100 Ω
	线缆长度 (max) Cable length(max)	100 m	100 m	100 m	100 m
	开关阈值 Switch threshold	< 600 Ω	< 600 Ω	< 600 Ω	< 600 Ω
	电览断路 Electrical circuit	> 1.8 KΩ	> 1.8 KΩ	> 1.8 KΩ	> 1.8 KΩ
继电器输出 [计] relay output	输出常开端子 Output constant terminal	13, 14 / 23, 24	13, 14 / 23, 24	13, 14 / 23, 24	13, 14 / 23, 24
	输出常闭端子 Output normally closed	31, /32	31, /32	31, / 32	31, /32
	触点数量 Number of contacts	2NO+1NC	2NO+1NC	2NO+1NC	2NO+1NC
	开关电流 switching current (min. / max.)	10 mA/2 A	10 mA/2 A	10 mA/2 A	10 mA/2 A
	开关容量 Switching capacity (max.)	5A/24VDC	5A/220VAC	5A/24VDC	5A/220VAC
	开关机械寿命 Switching Mechanical Life	500 万次	500 麻	500 弧	500 曲
	开关电气寿命 Switching Electrical Life	100 万次	100 於	100^J	100 成
安装条件 Installation conditions	安装方式 way to install	导轨 lead rail	导轨 lead rail	导轨 lead rail	导轨 lead rail
	防护等级 levels of protection	IP20	IP20	IP20	IP20
	环境温度 ambient temperature	-20℃ 到 +50℃	-20℃ 到 +50℃	-20℃ 到 +50℃	-20℃ 到 +50℃
	环境湿度 ambient humidity (23℃)	95%	95%	95%	95%
安全分类 Security classification	外形尺寸 Dimensions	45 x 75 x 105 mm	45 x 75 x 105 mm	45 x 75 x 105 mm	45 x 75 x 105 mm
	EN 1760-1 重置命令 Reset command	支持			
	ISO 13849-1 : 2015	Cat 3 Pie			
	MTTF _d	>30 年			
	B10d	3*10 ⁷			
	N _{OP} (接受) (accept)	52560/年			
	IEC 61508 : PFH _s	6.99*10 ⁻¹ 1/h(SIL3)			