

光电传感器系列

Photoelectric sensor series

光电传感器简介

Introduction of photoelectric sensor

► 光电传感器原理Photoelectric sensor

光电传感器是利用光的各种性质，检测物体的有无和表面状态的变化传感器。

光电传感器主要有发光的投光部和接受光线的受光部构成。如果投射的光线因检测物体不同而被遮掩或反射，到达受光部的量将会发生变化。受光部将检测出这种变化，并转换为电气信号，进行输出。大多使用可见光（主要为红色，绿色，蓝色来判断颜色）和红外光。

Photoelectric sensor utilize the properties of visible light (red green blue) or infrared light .

Photoelectric sensor consists of two part: an emitter (the light source) and a receiver (the detector). When there is a target shielding/reflecting the light, the amount of light reaching the receiver will decrease/increase. Then the receiver will convert this change to electric signals and output it.

► 光电传感器的分类Classification of photoelectric sensor

漫反射型Diffuse reflection type

在投受光一体型中,如果投光器发出的光线碰到检测物体,检测物体反射的光线将进入受光部,受光量将增加.利用这种光量增加的变化来检测.

The emitter and receiver is designed in the same unit, the same side. When light send out from the emitter is reflected by objects, the amount of light received by receiver will increase. The detection is operated based on this kind of increased light.

特点:安装方便,应用成本相对低.

Features: easy to install,

The cost of application is relatively low.



回归反射型Retro reflective type

在投受光一体型中,投光部发出的光线将反射到相对设置的反射板上,再回到受光部.如果检测物体遮挡光线,进入受光部的光量减少.利用这种光量减少的变化来检测.

The emitter and receiver is designed on one side, while the reflector is installed on the other side. Generally, light sent out from the emitter will project on the reflector. Then the reflected light will back to the receiver. When there is a target shielding the light, the amount of light reaching the receiver will decrease. The detection is operated based on this kind of decreased light.

特点:光线通过检测物体两次,适合透明物体的检测

Features: can detect the transparency object.



对射型Thru-beam type

为了使投光器发出的光能进入受光器,对向设置投光器与受光器.如果检测物体进入投光器和受光器之间遮挡了光线,进入受光器的光亮减少.利用这种光亮减少来进行测试.

The emitter and receiver are installed in parallel. When there is a target shielding the light the amount of light reaching there receiver will decrease. The detection is operated based on this kind of detection light

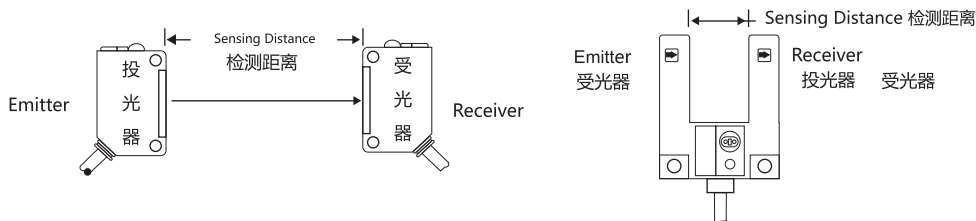
此外,检测方式与对射相同,在传感器形状方面,也有投光受光不一体化的,称为槽形光电开关.

U-shaped photoelectric sensors adopts this principle for detection, too. The difference is, the emitter and receiver is designed in the same unit

对射型光电开关优点Characters

1.动作和稳定度高,检测距离长,(5-20米) 2.检测物体的光泽,颜色,倾斜等影响小

1. High stability, long sensing range to tens of meters 2. Little affection from color glossiness inclination of detected object



► 光电传感器术语(示例)Basic terms of photoelectric sensor

动作模式Operation mode

●遮光动作Dark on

对射型, 镜面反射型

Through-beam type & Retro-reflective type

遮光动作:当受光器光束被遮或者减少时,有输出

Dark on: There is an output when the light amount arriving the receiver is decreased (for through beam type and retro-reflective type). Or when the light amount arriving the receiver doesn't increase. (for diffuse reflection type)

漫反射型

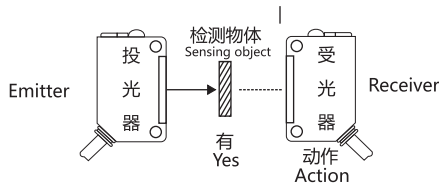
Diffuse reflection type

旋转编码器
Rotary encoder

接近传感器
Proximity sensor

光电传感器
Photoelectric sensor

区域传感器
Area Sensor

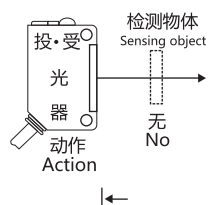


●入光动作Light on
对射型, 镜面反射型

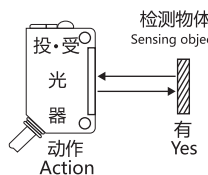
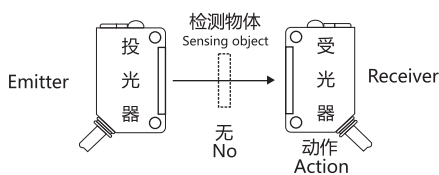
Through-beam type & Retro-reflective type

入光动作: 当受光器光束增加时, 有输出

Light on: There is an output when the light amount arriving the receiver is decreased (for through beam type and retro-reflective type) .or when the light amount arriving the receiver doesn't increase . (for diffuse reflection type)



漫反射型
Diffuse reflection type



► 光电传感器的注意事项Notice of photoelectric sensor

注意!!!: 本传感器与安全性无关, 不能做为冲压安全装置或其它人身安全保护装置使用, 主要应用于工件计数, 定位等检测用途。

Warning: Do not use photo electronic sensor for dangerous machines, as it is not a kind of safety protection device. They are mostly applied for counting and positioning.

●注意事项Note

- 1, 请勿在有易燃, 易爆气体的环境下使用
- 2, 请勿擅自拆卸, 修理, 改造本产品。
- 3, 使用时请勿超出额定电压范围, 否则可能引起产品破裂或烧毁
- 4, 请使用在额定范围内的负载, 超载可能使产品无法工作或烧毁
- 5, 请勿让开关负载短路, 以免引起产品破裂或烧毁
- 6, 请注意工作电源的极性, 勿接错线, 否则可能引起产品破裂或烧毁

1. Please do not use the unit in flammable and explosive gas areas
2. Not any repair, disassembling and modification without a qualified person is allowed
3. Be sure the input is within the rated supply voltage .Or there might be damages like crack, burn-out
4. Please use the rated load over loads may cause product damage
5. Please do not let loading short-circuit, for fear that cause product damage
6. Pay attention to power supply polarity ,do not make mistake. Otherwise may cause product damage

●安装时Installation

安装传感器时, 请勿使用扳手等过大力量上紧, 以免将造成功能变差及毁坏。

When installing the sensor please do not use spanner or high power ,for fear that result in function error product damage.

●使用环境Operation environment

请勿在水中, 降雨中及室外使用。Please do not use the sensor in water ,in the rain and outdoor.

周围环境

安装在以下场所时, 可导致误动作和故障, 所以请避免使用 Following area are forbidden

- 1, 尘埃多的场所 Dusty area
- 2, 阳光直接照射的场所 Direct sunlight area
- 3, 产生腐蚀性气体的场所 Area with corrosive gas
- 4, 接触到有机溶剂等的场所 Organic solvent area
- 5, 有震动, 冲击的场所 Having vibration impaction
- 6, 直接接触水, 油, 药品的场所 Water ,oil, medicine
- 7, 湿度高, 可能会结露的场所 High humidity area

●保养及检查Regular maintenance and inspection

请按规定定期对传感器进行保养及检查 Make maintenance and inspection timely

- 1, 是否按规定进行布线及连接 Correct link&connection
- 2, 安装螺钉是否有松动 Be sure no loose screw
- 3, 光轴调整, 灵敏度调整是否已完成 Be sure light beam sensitivity adjustment finished
- 4, 检测物体, 工件速度是否符合额定规格 Target& work piece speed accord with the rated regulation
- 5, 投, 受光器的透镜面上是否附着有垃圾, 灰尘等异物 No dirt or stain attached on the receiver or emitter face
- 6, 受光器是否被太阳光(墙壁等的反射)等强光直接照射 No direct sunlight to the receiver
- 7, 绝对不能自行分解, 修理透镜外壳 Do not demolish or repair without authorization

光电式接近传感器的透镜外壳基本上是塑料的, 请用干布轻轻的擦拭污渍。请不要使用稀释剂等有机溶剂。

Lens case of photoelectric proximity sensors is generally made of plastic. Please clean it with soft cloth Do not use thinner to wipe the stains

圆柱形漫反射光电传感器SP12系列

Cylindrical diffuse-reflective photoelectric sensor SP12 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
灵敏度可以调节

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

► 型号说明 Model Explanation

S	P	12	-05	D	N	K	-Z	-□	-□
基本型号 Model S 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: P:圆柱形光电 Cylindrical photoelectric sensor	直径OD: 12:12mm	检测距离 Sensing distance: 05:5cm 10:10cm	检测方式 Sensing method: D:漫反射 Diffusere-reflective R:回扫反射 Retro-Reflective with MSR function T:对射 Throughbeam	输出方式 Output configuration: N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	输出状态 Operation mode: K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5: 5m	客户定制 Customized informat

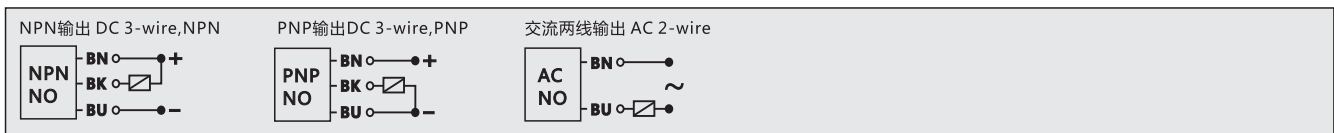
► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SP12-05DNK-Z		5cm	N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	导线引出 Cable line
SP12-10DNK-Z		10cm			

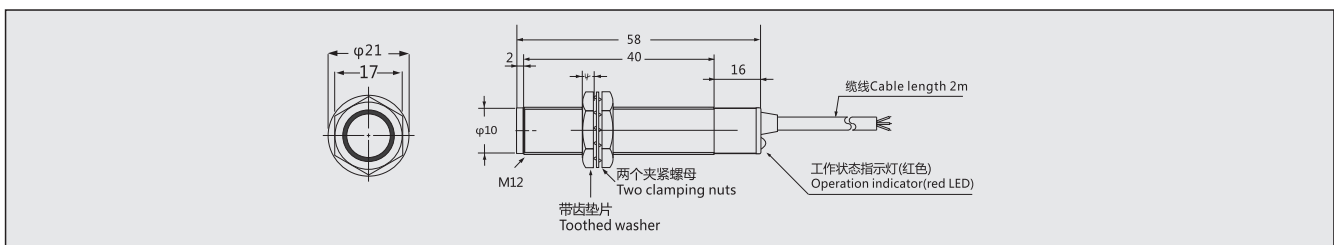
► 技术规格 Specification

型号 Type	SP12-05/10 DN/DP/DA	
电源电压 Voltage	直流NPN/PNP 10-30VDC	交流AC:220VAC
检测距离 Sensing distance	5cm/10cm	
光源 Light source	红外发光二极管 Infrared LED	
应差距离 Differential travel	检测距离的10%以下 10%max.of sensing distance	
消耗电流 Leakage current	10mA max.	AC:350mA DC:100mA
响应时间 Response time	2ms max.	
输出/电源指示 Output/Power indication	-/红色LED Red LED	
回路保护 Protection circuits	电源逆向保护,输出短路保护 Power supply reverse polarity, Output short-circuit protection	
环境照度 Ambient illumination	太阳光 Sunlight:10000lx,白炽灯 Incandescent lamp:3000lx	
环境温度 Ambient temperature	-25~+55°C(不结冰 with no icing)	
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage:35~95%RH(不结露 with no condensation)	
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current -carrying parts and case	
耐电压 Dielectric strength	AC1000V max. 50~60Hz 1min 充电部总体与外壳间 Between current -carrying parts and case	
重复精度 Repeat precision	<5%	
负载电流 Load current	<200mA	
压降 Drop	<1.5V	
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z各方向 2h double amplitude for 2 hours each in X, Y and Z directions	
冲击(耐久) Shock resistance	500m/s ² X, Y, Z各方向 10次 500m/s ² 10 times each X, Y and Z directions	
防护等级 Degree of protection	IEC IP67	
材质 Material (外壳 Case / 透镜 Lens)	镀镍黄铜 Brass-nicke plated / PMMA	

► 电路输出方式(示例) Example for output circuit



► 安装尺寸图 Mounting Dimensions(单位 Unit:mm)



旋转编码器 Rotary encoder

接近传感器 Proximity sensor

光电传感器 Photoelectric sensor

区域传感器 Area Sensor



圆柱形漫反射光电传感器SP18系列

Cylindrical diffuse-reflective photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
灵敏度可以调节

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

型号说明 Model Explanation

S	P	18	-10	D	N	K	-Z	-□	-□
基本型号 Model S:型号代码 Model code S□: 特殊型号定义 Special definition	传感器类别: P:圆柱形光电 Cylindrical photoelectric sensor	直径OD: 18:18mm	检测距离 Sensing distance: 10:10cm 30:30cm 50:50cm 80:80cm	检测方式 Sensing method: D:漫反射 Diffusere-reflective R:回归反射Retro- Reflective with MSR function T:对射Throughbeam	输出方式 Output configuration: N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	输出状态 Operation mode: K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

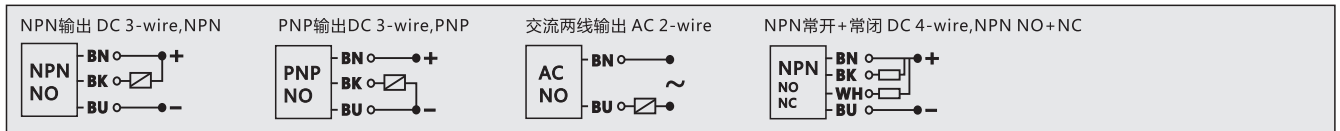
产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SP18-10DNK-Z		10cm	N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	导线引出 Cable line
SP18-30DNK-Z		30cm			
SP18-50DNK-Z		50cm			
SP18-80DNK-Z		80cm			

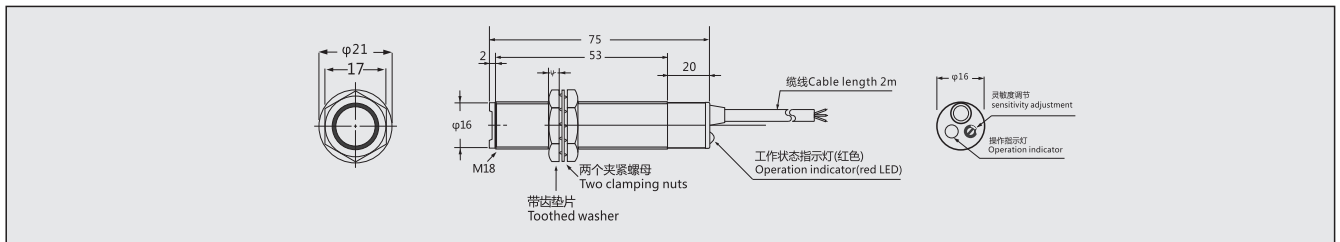
技术规格 Specification

型号 Type	SP18-10/30/50/80DN/DP/DA	
电源电压 Voltage	直流NPN/PNP/DC:10-30VDC	交流AC:220VAC
检测距离 Sensing distance	10cm/30cm/50cm/80cm	
光源 Light source	红外发光二极管 Infrared LED	
应差距离 Differential travel	检测距离的10%以下 10%max.of sensing distance	
消耗电流 Leakage current	30mA max.	AC :350mA DC:100mA
响应时间 Response time	2ms max.	
输出/电源指示 Output/Power indication	-/红色LED Red LED	
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection	
环境照度 Ambient illumination	太阳光Sunlight:10000lx, 白炽灯Incandescent lamp:3000lx	
环境温度 Ambient temperature	-25~+55°C(不结冰with no icing)	
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage:35~95%RH(不结露with no condensation)	
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current -carrying parts and case	
耐电压 Dielectric strength	AC1000V max. 50~60Hz 1min 充电部总体与外壳间 Between current -carrying parts and case	
重复精度 Repeat precision	<5%	
负载电流 Load current	<200mA	
压降 Drop	<1.5V	
振动(耐久) Vibration resistance	10~55Hz复振幅1.5mmX, Y, Z各方向2h double amplitude for 2 hours each in X, Y and Z directions	
冲击(耐久) Shock resistance	500m/s²X, Y, Z各方向10次 500m/s² 10 times each X, Y and Z directions	
防护等级 Degree of protection	IEC IP67	
材质 Material(外壳 Case / 透镜 Lens)	镀镍黄铜 Brass-nicke plated / PMMA	

电路输出方式(示例) Example for output circuit



安装尺寸图 Mounting Dimensions(单位 Unit:mm)



圆柱形回归反射光电传感器SP18系列

Cylindrical Retro-Reflective with MSR function photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
灵敏度可以调节

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

► 型号说明 Model Explanation

S	P	18	-2	R	N	K	-Z	-□	-□
基本型号 Model S 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: P:圆柱形光电 Cylindrical photoelectric sensor	直径OD: 18:18mm	检测距离 Sensing distance: 2:2m	检测方式 Sensing method: D:漫反射 Diffuse-reflective R:回归反射Retro- Reflective with MSR function T:射灯Throughbeam	输出方式 Output configuration: N:NPN输出 DC 3-wire,NPN P:PNP输出DC 3-wire,PNP A:交流两线输出 AC 2-wire	输出状态 Operation mode: K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

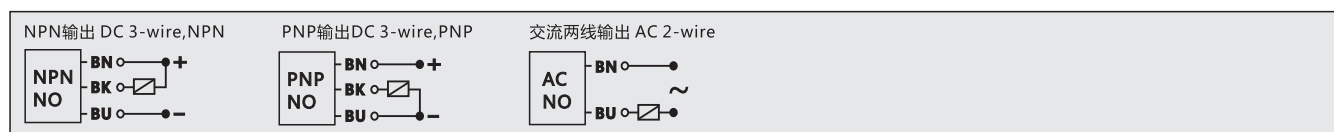
► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SP18-2RNK-Z		2m	N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	导线引出 Cable line

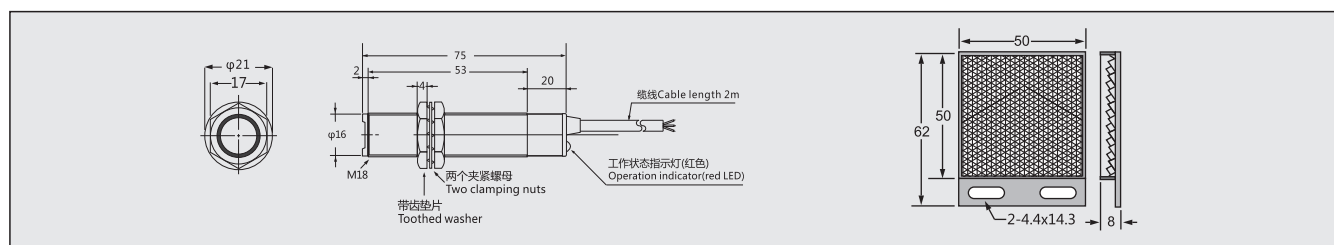
► 技术规格 Specification

型号 Type	SP18-2 RN/RP/RA	
电源电压 Voltage	直流NPN/PNP/DC:10-30VDC	交流AC:220VAC
检测距离 Sensing distance	2m	
光源 Light source	红外发光二极管 Infrared LED	
应差距离 Differential travel	检测距离的10%以下 10% max. of sensing distance	
消耗电流 Leakage current	25mA max.	AC:350mA DC:100mA
响应时间 Response time	2ms max.	
输出/电源指示 Output/Power indication	-/红色LED Red LED	
回路保护 Protection circuits	电源逆向保护,输出短路保护 Power supply reverse polarity, Output short-circuit protection	
环境照度 Ambient illumination	太阳光 Sunlight:10000lx,白炽灯 Incandescent lamp:3000lx	
环境温度 Ambient temperature	-25~+55°C(不结冰 with no icing)	
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage:35~95%RH(不结露 with no condensation)	
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current - carrying parts and case	
耐电压 Dielectric strength	AC1000V max. 50~60Hz 1min 充电部总体与外壳间 Between current - carrying parts and case	
重复精度 Repeat precision	<5%	
负载电流 Load current	<200mA	
压降 Drop	<1.5V	
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z 各方向 2h double amplitude for 2 hours each in X, Y and Z directions	
冲击(耐久) Shock resistance	500m/s² X, Y, Z 各方向 10次 500m/s² 10 times each X, Y and Z directions	
防护等级 Degree of protection	IEC IP65	
材质 Material (外壳 Case / 透镜 Lens)	镀镍黄铜 Brass-nickel plated / PMMA	

► 电路输出方式(示例) Example for output circuit



► 安装尺寸图 Mounting Dimensions (单位 Unit:mm)



旋转编码器
Rotary encoder

接近传感器
Proximity sensor

光电传感器
Photoelectric sensor

区域传感器
Area sensor

圆柱形对射光电传感器SP18系列

Cylindrical Throughbeam photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
适用于远距离检测

Ideal for a variety of applications
With a metal connector that can be tightened security
Far distance detection

型号说明 Model Explanation

S	P	18	-5	T	N	K	-Z	-□	-□
基本型号 Model S 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: P:圆柱形光电 Cylindrical photoelectric sensor	直径 OD: 18:18mm	检测距离 Sensing distance: 5:5m 10:10m 20:20m	检测方式 Sensing method: D:漫反射 Diffusere-flective R:回归反射 Retro-Reflective with MSR function T:对射 Throughbeam	输出方式 Output configuration: N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP A: 交流两线输出 AC 2-wire	输出状态 Operation mode: K: 常开 NO B: 常闭 NC KB: 常开+常闭 NO+NC	产品等级 Product grade: Z: Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5: 5m	客户定制 Customized informat

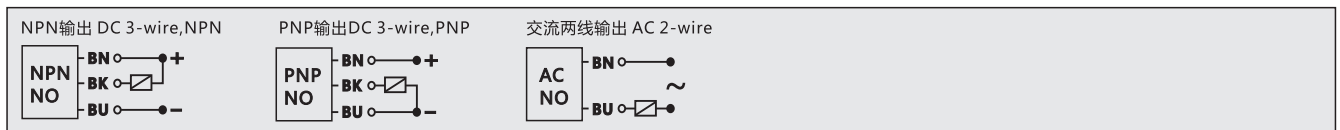
产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SP18-5TNK-Z		5m	N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP A: 交流两线输出 AC 2-wire	K: 常开 NO B: 常闭 NC KB: 常开+常闭 NO+NC	导线引出 Cable line
SP18-10TNK-Z		10m			
SP18-20TNK-Z		20m			

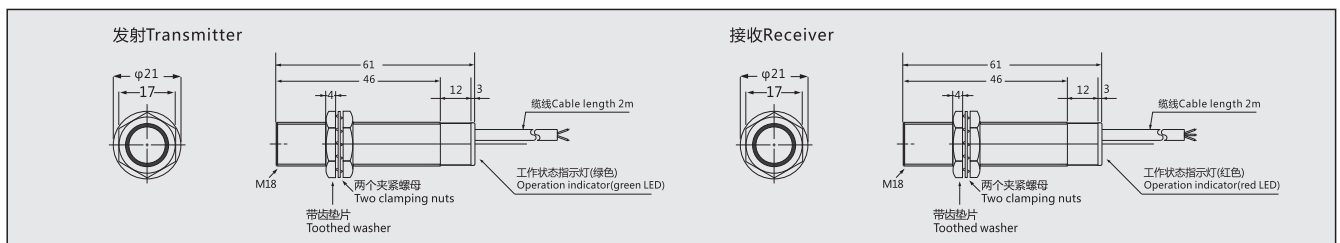
技术规格 Specification

型号 Type	SP18-5/10/20TN/TP/	
电源电压 Voltage	直流 NPN/ PNP/ DC: 10-30VDC	交流 AC: 220VAC
检测距离 Sensing distance	5m/10m/20m	
光源 Light source	红外发光二极管 Infrared LED	
应差距离 Differential travel	检测距离的10%以下 10% max. of sensing distance	
消耗电流 Leakage current	45mA max.	AC: 350mA DC: 100mA
响应时间 Response time	2ms max.	
输出/电源指示 Output/Power indication	绿色 LED Green LED / 红色 LED Red LED	
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection	
环境照度 Ambient illumination	太阳光 Sunlight: 10000lx, 白炽灯 Incandescent lamp: 3000lx	
环境温度 Ambient temperature	动作时 Operating: -25~+55°C, 保存时 Storage: -40~+70°C (不结冰 with no icing)	
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH / Storage: 35~95%RH (不结露 with no condensation)	
绝缘电阻 Insulation resistance	20MΩ max. (DC 500V) 充电部总体与外壳间 Between current - carrying parts and case	
耐电压 Dielectric strength	AC 1000V max. 50~60Hz 1min 充电部总体与外壳间 Between current - carrying parts and case	
重复精度 Repeat precision	<5%	
负载电流 Load current	<200mA	
压降 Drop	<1.5V	
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z 各方向 2h double amplitude for 2 hours each in X, Y and Z directions	
冲击(耐久) Shock resistance	500m/s² X, Y, Z 各方向 10次 500m/s² 10 times each X, Y and Z directions	
防护等级 Degree of protection	IEC IP65	
材质 Material (外壳 Case / 透镜 Lens)	镀镍黄铜 Brass-nickel plated / PMMA	

电路输出方式(示例) Example for output circuit



安装尺寸图 Mounting Dimensions (单位 Unit: mm)



旋转编码器
Rotary encoder

接近传感器
Proximity sensor

光电传感器
Photoelectric sensor

区域传感器
Area Sensor

方形漫反射光电传感器SJK系列

Cylindrical diffuser-reflective photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
灵敏度可以调节

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

► 型号说明 Model Explanation

S	JK	-30	D	M	K	-Z	-□	-□
基本型号 Model S: 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: JK: 方形光电 Rectangular photoelectric sensor	检测距离 Sensing distance: 30: 30m 50: 50m	检测方式 Sensing method: D: 漫反射 Diffuser-reflective R: 回归反射 Retro-Reflective with MSR function T: 对射 Throughbeam	输出方式 Output configuration: M: 继电器输出 Relay N: NPN 输出 DC 3-wire, NPN P: PNP 输出 DC 3-wire, PNP A: 交流两线输出 AC 2-wire	输出状态 Operation mode: K: 常开 NO B: 常闭 NC KB: 常开+常闭 NO+NC	产品等级 Product grade: Z: Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SJK-30DM		30cm	M: 继电器输出 Relay N: NPN 输出 DC 3-wire, NPN P: PNP 输出 DC 3-wire, PNP A: 交流两线输出 AC 2-wire	K: 常开 NO B: 常闭 NC KB: 常开+常闭 NO+NC	导线引出 Cable line
SJK-50DM		50cm			

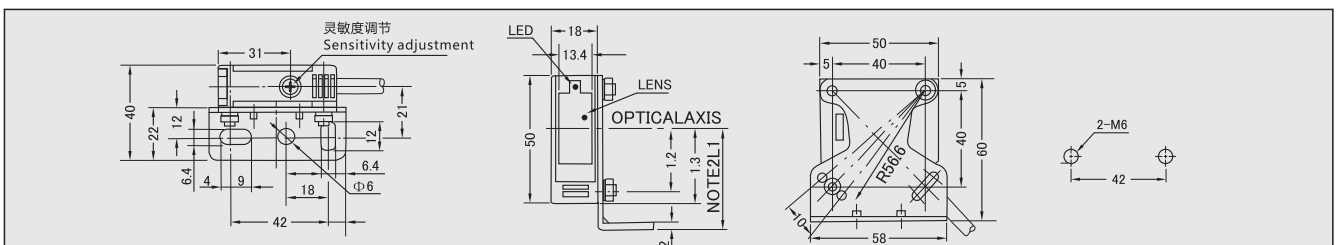
► 技术规格 Specification

型号 Type	SJK-30/50DM
电源电压 Voltage	交直流: 12-220V
检测距离 Sensing distance	30cm/50cm
光源 Light source	红外发光二极管 Infrared LED
动作模式 Operation mode	入光时 ON Light-ON 遮光时 ON Dark-ON
消耗电流 Leakage current	DC/AC 2W max.
响应时间 Response time	30ms max.
输出/电源指示 Output/Power indication	- / 红色 LED Red LED
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection
环境照度 Ambient illumination	白炽灯 Incandescent lamp: 3000lx
环境温度 Ambient temperature	-25~+55°C (不结冰 with no icing)
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage: 35~95%RH (不结露 with no condensation)
绝缘电阻 Insulation resistance	20MΩ max. (DC 500V) 充电部总体与外壳间 Between current-carrying parts and case
耐电压 Dielectric strength	AC 1500V max. 50~60Hz 1min 充电部总体与外壳间 Between current-carrying parts and case
重复精度 Repeat precision	< 5%
负载电流 Load current	< 1A
压降 Drop	< 0.5V
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z 各方向 2h double amplitude for 2 hours each in X, Y and Z directions
冲击(耐久) Shock resistance	500m/s ² X, Y, Z 各方向 10次 500m/s ² 10 times each X, Y and Z directions
防护等级 Degree of protection	IEC IP64
材质 Material	丙烯酸酯树脂 Methacrylic

► 电路输出方式(示例) Example for output circuit

继电器输出 Relay DC 5-wire	继电器输出 Relay AC 5-wire	继电器输出 Relay DC+AC 5-wire
 BN 10to240VDC BU WH BK GY	 BN 90to250VAC BU WH BK GY	 BN 24to240VAC BU 12to240VDC WH BK GY

► 安装尺寸图 Mounting Dimensions (单位 Unit: mm)



旋转编码器
Rotary encoder

接近传感器
Proximity sensor

光电传感器
Photoelectric sensor

区域传感器
Area sensor

方形回归反射光电传感器SJK系列

Rectangular photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
灵敏度可以调节

Ideal for a variety of applications
With a metal connector that can be tightened security
Sensitivity adjustment

型号说明 Model Explanation

S	JK	-2	R	M	K	-Z	-□	-□
基本型号 Model S:型号代码 Model code S□:特殊型号定义 Special definition	传感器类别: JK:方形光电 Rectangular photoelectric sensor	检测距离 Sensing distance: 2:2m 4:4m	检测方式 Sensing method: D:漫反射 Diffusere-flective R:回归反射 Retro-Reflective with MSR function T:射Throughbeam	输出方式 Output configuration: M:继电器输出 Relay N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	输出状态 Operation mode: K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

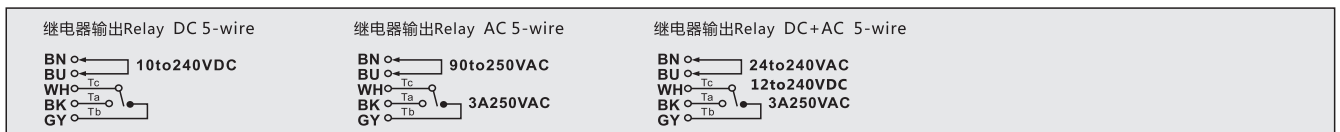
产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SJK-2RDM		2m	M:继电器输出 Relay N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	导线引出 Cable line
SJK-4RDM		4m			

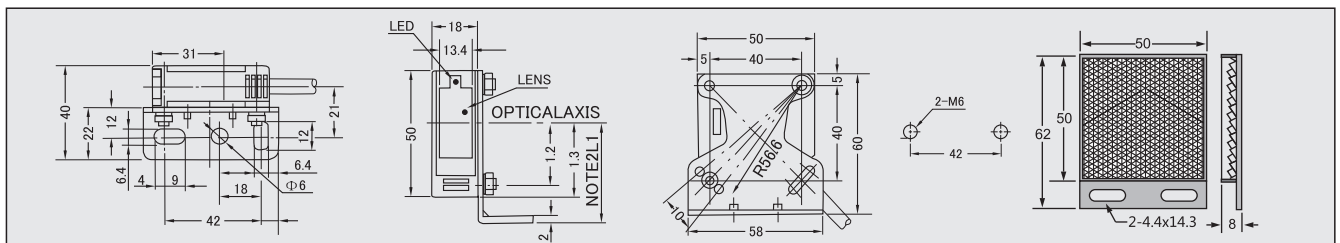
技术规格 Specification

型号 Type	SJK-2/4 RM2	SJK-2/4 RM2
电源电压 Voltage	交直流:12-240V	
检测距离 Sensing distance	2m/4m	
光源 Light source	红外发光二极管 Infrared LED	
动作模式 Operation mode	入光时 ON Light-ON	遮光时 ON Dark-ON
消耗电流 Leakage current	DC/AC 2W max.	
响应时间 Response time	30ms max.	
输出/电源指示 Output/Power indication	-/红色 LED Red LED	
回路保护 Protection circuits	电源逆向保护,输出短路保护 Power supply reverse polarity, Output short-circuit protection	
环境照度 Ambient illumination	白炽灯 Incandescent lamp:3000lx	
环境温度 Ambient temperature	动作时 Operating:-25~+55°C,保存时 Storage:-40~+70°C(不结冰 with no icing)	
环境湿度 Ambient humidity	工作时/保存时 Operating/Storage:35~95%RH(不结露 with no condensation)	
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current -carrying parts and case	
耐压 Dielectric strength	AC1500V max. 50~60Hz 1min 充电部总体与外壳间 Between current -carrying parts and case	
重复精度 Repeat precision	<5%	
负载电流 Load current	<1A	
压降 Drop	<0.5V	
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mmX, Y, Z各方向 2h double amplitude for 2 hours each in X, Y and Z directions	
冲击(耐久) Shock resistance	500m/s² X, Y, Z各方向 10次 500m/s² 10 times each X, Y and Z directions	
防护等级 Degree of protection	IEC IP64	
材质 Material	丙烯酸酯树脂 Methacrylic	

电路输出方式(示例) Example for output circuit



安装尺寸图 Mounting Dimensions(单位Unit:mm)



方形对反射光电传感器SJK系列

Rectangular photoelectric sensor SP18 series



用途与特点 Application and features

适用于多种用途，产品性能与品质良好
金属外壳，便于安装保护，
适用于远距离检测

Ideal for a variety of applications
With a metal connector that can be tightened security
Far distance detection

型号说明 Model Explanation

S	JK	-5	T	M	K	-Z	-□	-□
基本型号 Model S 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: JK:方形光电 Rectangular photoelectric sensor	检测距离 Sensing distance: 5:5m 10:10m	检测方式 Sensing method: D:漫反射 Diffuse-reflective R:回归反射 Retro-Reflective with MSR function T:对射 Throughbeam	输出方式 Output configuration: M:继电器输出 Relay	输出状态 Operation mode: K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5: 5m	客户定制 Customized informat

产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SJK-5TM		5m	M:继电器输出 Relay N:NPN输出 DC 3-wire,NPN P:PNP输出 DC 3-wire,PNP A:交流两线输出 AC 2-wire	K:常开 NO B:常闭 NC KB:常开+常闭 NO+NC	导线引出 Cable line

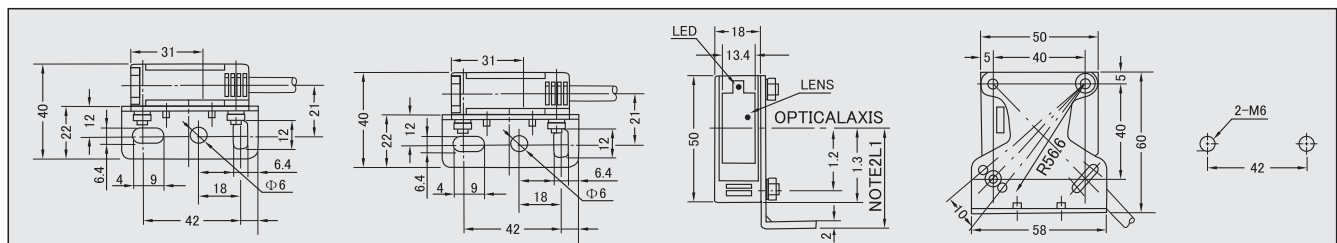
技术规格 Specification

型号 Type	SJK-5TM
电源电压 Voltage	交直流:12-240V
检测距离 Sensing distance	5m
光源 Light source	红外发光二极管 Infrared LED
动作模式 Operation mode	入光时 ON Light-ON 遮光时 ON Dark-ON
消耗电流 Leakage current	DC/AC 3W max.
响应时间 Response time	30ms max.
输出/电源指示 Output/Power indication	- /红色 LED Red LED
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection
环境照度 Ambient illumination	白炽灯 Incandescent lamp:3000lx
环境温度 Ambient temperature	-25~+55°C (不结冰 with no icing)
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage:35~95%RH (不结露 with no condensation)
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current-carrying parts and case
耐压 Dielectric strength	AC1500V max. 50~60Hz 1min 充电部总体与外壳间 Between current-carrying parts and case
重复精度 Repeat precision	<5%
负载电流 Load current	<1A
压降 Drop	<0.5V
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z 各方向 2h double amplitude for 2 hours each in X, Y and Z directions
冲击(耐久) Shock resistance	500m/s ² X, Y, Z 各方向 10次 500m/s ² 10 times each X, Y and Z directions
防护等级 Degree of protection	IEC IP64
材质 Material (外壳 Case / 透镜 Lens)	丙烯酸酯树脂 Methacrylic

电路输出方式(示例) Example for output circuit

继电器输出 Relay DC 5-wire	继电器输出 Relay AC 5-wire	继电器输出 Relay DC+AC 5-wire
 BN 10to240VDC BU Tc WH Ta BK Tb GY	 BN 90to250VAC BU Tc WH Ta BK Tb GY 3A250VAC	 BN 24to240VAC BU 12to240VDC WH Ta BK Tb GY 3A250VAC

安装尺寸图 Mounting Dimensions (单位 Unit:mm)



旋转编码器 Rotary encoder

接近传感器 Proximity sensor

光电传感器 Photoelectric sensor

区域传感器 Area Sensor

方形漫反射光电传感器SZ系列

Compact photoelectric sensor with Built in Amplifier SZ series



用途与特点 Application and features

体积小,适用于多种用途
金属外壳,便于安装保护,
灵敏度可以调节

Small size, suitable for a variety of uses
With a metal connector that can be tightened security
Sensitivity adjustment

► 型号说明 Model Explanation

S	Z	-30	D	N	K	-Z	-□	-□
基本型号 Model S: 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: Z: 方形内置小型放大器型 Compact photoelectric sensor with Built in Amplifier	检测距离 Sensing distance: 30: 30cm 5: 5m	检测方式 Sensing method: D: 漫反射 Diffusere-flective R: 回归反射 Retro-Reflective with MSR function T: 对射 Throughbeam	输出方式 Output configuration: N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP	输出状态 Operation mode: K: 常开 NO B: 常闭 NC	产品等级 Product grade: Z: Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5: 5m	客户定制 Customized informat

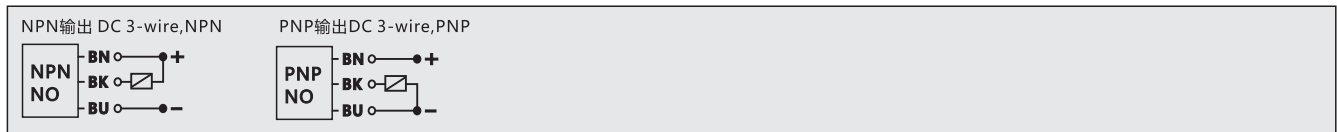
► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SZ-30DNK		30cm	N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP	K: 常开 NO B: 常闭 NC	导线引出 Cable line
SZ-5TNK		5m			

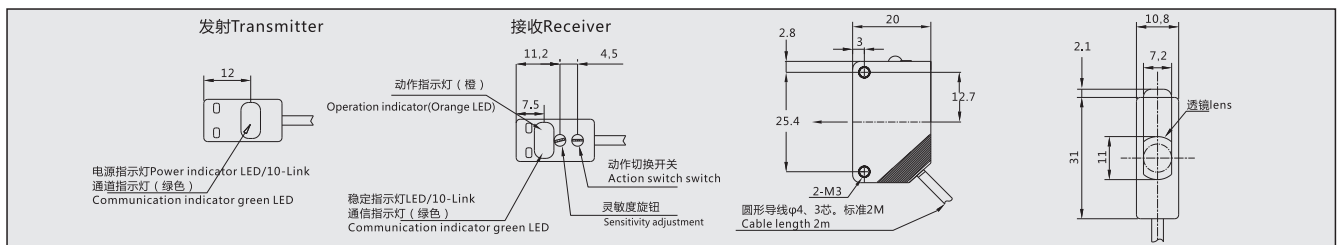
► 技术规格 Specification

型号 Type	SZ-30DNK
电源电压 Voltage	直流: 10-30VDC
检测距离 Sensing distance	30cm 5m
光源 Light source	红外发光二极管 Infrared LED
消耗电流 Leakage current	30mA max.
响应时间 Response time	1ms max.
输出/电源指示 Output/Power indication	- / 红色 LED Red LED
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection
环境照度 Ambient illumination	太阳光 Sunlight: 10000lx, 白炽灯 Incandescent lamp: 3000lx
环境温度 Ambient temperature	-25 ~ +55°C (不结冰 with no icing)
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH / Storage: 35~95%RH (不结露 with no condensation)
绝缘电阻 Insulation resistance	20MΩ max. (DC 500V) 充电部总体与外壳间 Between current-carrying parts and case
耐压 Dielectric strength	AC1000V max. 50~60Hz 1min 充电部总体与外壳间 Between current-carrying parts and case
重复精度 Repeat precision	< 5%
负载电流 Load current	< 200mA
压降 Drop	< 1.5V
振动(耐久) Vibration resistance	10~55Hz 复振幅 1.5mm X, Y, Z各方向 2h double amplitude for 2 hours each in X, Y and Z directions
冲击(耐久) Shock resistance	500m/s² X, Y, Z各方向 10次 500m/s² 10 times each X, Y and Z directions
防护等级 Degree of protection	IEC IP64
外壳 Case	PBT

► 电路输出方式(示例) Example for output circuit



► 安装尺寸图 Mounting Dimensions (单位 Unit: mm)



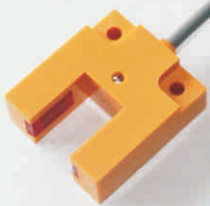
旋转编码器 Rotary encoder

接近传感器 Proximity sensor

光电传感器 Photoelectric sensor

区域传感器 Area Sensor

槽型光电传感器SU15系列 U-shape photoelectric sensor SU15 series



用途与特点 Application and features

体积小,反应速度快
适用于小物体检测
抗光干扰性强

Small volume, fast reaction speed
Suitable for small object detection
Strong anti-interference

► 型号说明 Model Explanation

S	U	-15	T	N	K	-Z	-□	-□
基本型号 Model S 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: U:槽型光电 U-shape photoelectric sensor	检测距离 Sensing distance: 15:15mm	检测方式 Sensing method: T:对射 Throughbeam	输出方式 Output configuration: N:NPN输出 DC 3-wire, NPN P:PNP输出 DC 3-wire, PNP	输出状态 Operation mode: K:常开 NO B:常闭 NC	产品等级 Product grade: Z:Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

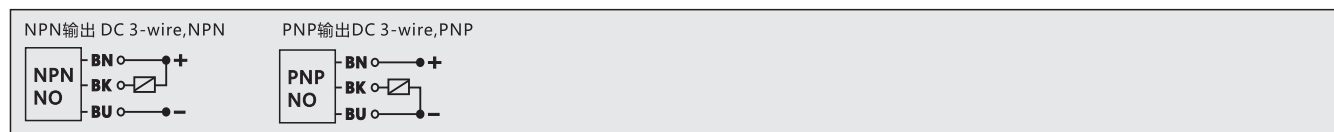
► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SU-15T		15mm	N:NPN输出 DC 3-wire, NPN P:PNP输出 DC 3-wire, PNP	K:常开 NO B:常闭 NC	导线引出 Cable line

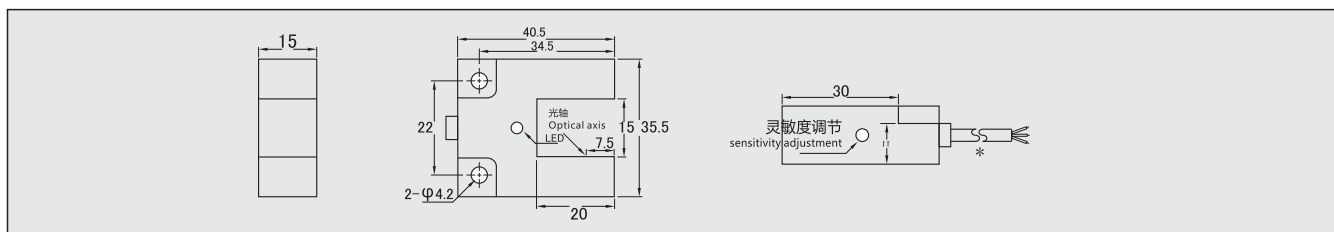
► 技术规格 Specification

型号 Type	SU-15N/P
电源电压 Voltage	直流:10-30VDC
检测距离 Sensing distance	15mm
光源 Light source	红外发光二极管 Infrared LED
消耗电流 Leakage current	25mA max.
响应时间 Response time	1ms max.
输出/电源指示 Output/Power indication	-/红色 LED Red LED
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection
环境照度 Ambient illumination	太阳光 Sunlight:1000lx, 白炽灯 Incandescent lamp:1000lx
环境温度 Ambient temperature	动作时 Operating: -10~+55°C, 保存时 Storage: -25~+70°C (不结冰 with no icing)
环境湿度 Ambient humidity	工作时/保存时 Operating/Storage: 35~85%RH/35~95%RH (不结露 with no condensation)
绝缘电阻 Insulation resistance	20MΩ max. (DC500V) 充电部总体与外壳间 Between current-carrying parts and case
耐压 Dielectric strength	AC500V max. 50~60Hz 1min 充电部总体与外壳间 Between current-carrying parts and case
重复精度 Repeat precision	<5%
负载电流 Load current	<200mA
压降 Drop	<1.5V
冲击(耐久) Shock resistance	500m/s ² X, Y, Z各方向10次 500m/s ² 10 times each X, Y and Z directions
防护等级 Degree of protection	IEC IP64
外壳 Case	PC

► 电路输出方式(示例) Example for output circuit



► 安装尺寸图 Mounting Dimensions (单位 Unit:mm)



旋转编码器
Rotary encoder

接近传感器
Proximity sensor

光电传感器
Photoelectric sensor

区域传感器
Area sensor

槽型光电传感器SU30系列
U-shape photoelectric sensor SU30 series



用途与特点 Application and features

内置直流发射器
发射接收一体，便于安装保护
灵敏度可以调节

Built-in DC launcher
Launching and receiving, easy to install and protect
Sensitivity can be adjusted

► 型号说明 Model Explanation

S	U	-30	T	N	K	-Z	-□	-□
基本型号 Model S: 型号代码 Model code S □: 特殊型号定义 Special definition	传感器类别: U-槽型光电 photoelectric sensor	检测距离 Sensing distance: 30:30mm	检测方式 Sensing method: T:对射 Throughbeam	输出方式 Output configuration: N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP	输出状态 Operation mode: K: 常开 NO B: 常闭 NC	产品等级 Product grade: Z: Z级	线缆长度 Cable length (标配2米 Standard Cable length is 2m) 5 : 5m	客户定制 Customized informat

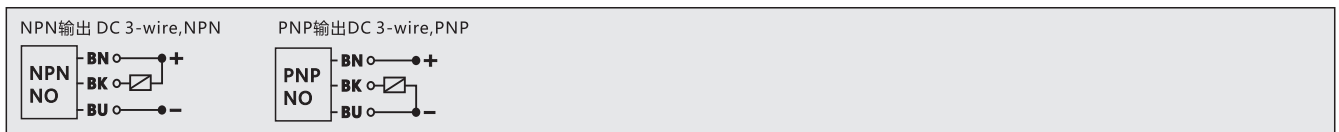
► 产品种类 Product Category

型号 Model	形状 Appearance	检测距离 Sensing distance	输出规格 Output configuration	动作状态 Operation mode	连接方式 Connection mode
SU-30T		30mm	N: NPN输出 DC 3-wire, NPN P: PNP输出 DC 3-wire, PNP	K: 常开 NO B: 常闭 NC	导线引出 Cable line

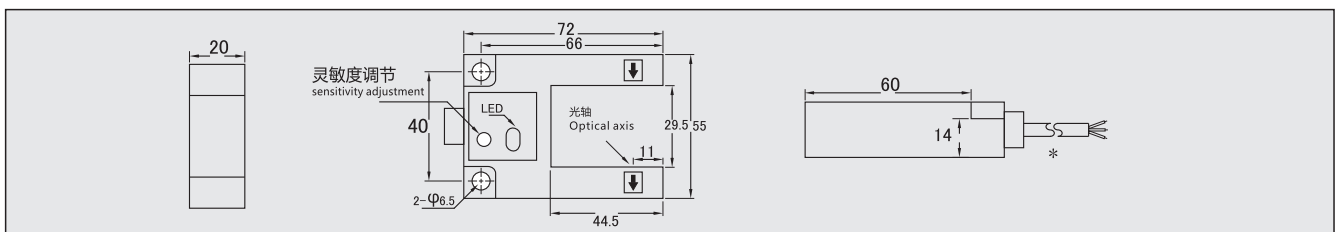
► 技术规格 Specification

型号 Type	SU-30N/P
电源电压 Voltage	直流: 10-30VDC
检测距离 Sensing distance	30mm
光源 Light source	红外发光二极管 Infrared LED
消耗电流 Leakage current	40mA max.
响应时间 Response time	1ms max.
输出/电源指示 Output/Power indication	- / 红色 LED Red LED
回路保护 Protection circuits	电源逆向保护, 输出短路保护 Power supply reverse polarity, Output short-circuit protection
环境照度 Ambient illumination	太阳光 Sunlight: 10000lx, 白炽灯 Incandescent lamp: 3000lx
环境温度 Ambient temperature	-25 ~ +55°C
环境湿度 Ambient humidity	工作时/保存时 Operating 35~85%RH/Storage: 35~95%RH (不结露 with no condensation)
绝缘电阻 Insulation resistance	20MΩ max. (DC 500V) 充电部总体与外壳间 Between current -carrying parts and case
耐电压 Dielectric strength	AC 500V max. 50~60Hz 1min 充电部总体与外壳间 Between current -carrying parts and case
重复精度 Repeat precision	< 5%
负载电流 Load current	< 200mA
压降 Drop	< 1.5V
冲击(耐久) Shock resistance	500m/s² X, Y, Z各方向 10次 500m/s² 10 times each X, Y and Z directions
防护等级 Degree of protection	IEC IP64
外壳 Case	PC

► 电路输出方式(示例) Example for output circuit



► 安装尺寸图 Mounting Dimensions (单位 Unit: mm)



HNC

Sensor

世华电气技术有限公司

HNC Electric Limited



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