

# 威帕传感器资料

## vape sensor data



### COMPANY PROFILE 公司简介

上海威帕电气有限公司成立于2006年，坐落于上海浦东川沙，是一家专业研发、设计、制造及销售plc、伺服驱动器、传感器等工业控制元器件的高新技术企业，所生产的产品广泛应用于汽车、纺织、包装、物流、新能源、锂电等行业。

公司将始终秉持“创新、品质、责任、服务”的理念，努力贴近客户需求，以卓越的产品和完善的售前、售中、售后服务朝着“智能制造”阔步前进。

Shanghai VAPE Electric Co., Ltd. was founded in 2006 , which located in Chuansha, Pudong, Shanghai. It is a High-Tech company specializing in PLCs, Servo drives, sensors; including R&D , design, manufacturing, and sales of such industrial control components and units. Our products are widely used in the automotive, textile, packaging, logistics, new energy, lithium battery, and other industries.

Our company will always put customers' needs first , operating with the concept of "Innovation, Quality, Responsibility, and Service". We will keep dedicated with the highest level of delivery and solution that provided to customers. We will always focus on "Intelligent manufacturing" with excellent pre-and after services to our customers.

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SHANGHAI VAPE ELECTRIC CO., LTD.

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P F 30 T 60 B N O - E

### ① Type Code(产品类型)

P:Photoelectric  
(P:光电产品)

### ② Shape Code(外型)

F:Rectangular (F:方型)  
M:ThreadedCylindrical (M:螺纹圆柱)  
R:SmoothCylindrical (R:无螺纹圆柱)  
T:Special(T:特殊型)  
C:Color mark(色标)  
E:Optical fiber ampler(光纤放大器)

### ③ Dimension (产品尺寸)

M30:M30X1.5Threaded Cylindrical  
(M30:M30X1.5螺纹圆柱型)  
R18:Φ18 Smooth Cylindrical(R18:Φ18无螺纹圆柱)  
U15:Groove Width 15mm(U15:槽宽15mm)  
31/21/35/42:Product Specifications code产品规格代号

### ④ Range Adjustment(距离调节)

N/A:Not adjustable(无:距离不可调节)  
V:Adjustable(V:距离可调节)

### ⑤ Sensing Mode(检测方式)

T:Through beam(T:对射型)  
D:Diffuse Reflection(D:漫反射)  
R:Retro Reflection(R:回落反射)  
P:Polarized Reflection(P:偏振反射)  
B:Background Suppression背景抑制型  
LT:Laser Through beam激光对射型  
LR:Laser Diffuse Reflection激光回落反射型  
LB:Laser Background Suppression 激光背景抑制型

### ⑥ Sensing Distance(感应距离) (mm/cm/m)

03=3m(回落反射03:3米)  
50=50cm(漫反射50:50厘米)  
20=20m(对射20:20米)  
\*D082=Diffuse Reflection Code(反射型代号)  
\*T068=Through beam Reflection(对射型代号)

注释:D082/T068代表光纤模块组，无尾缆

### ⑪ Connection(连接方式)

N/A:Cable 2m(无:标配2米)  
0.5:0.5m(0.5:0.5米)  
E:M12 Connector(E: M12插件式)  
T:Terminal(端子)

### ⑩ Light Source(光源)

N/A:Infrared LED(无:红外光)  
R:Red LED(R:红光)

### ⑨ Output Status(输出状态)

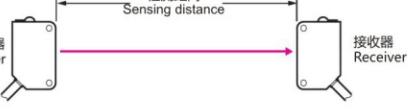
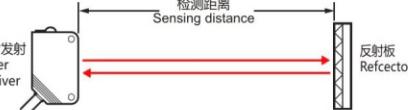
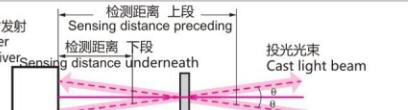
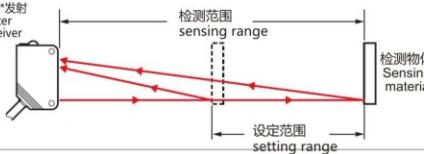
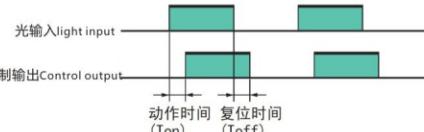
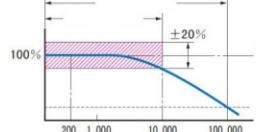
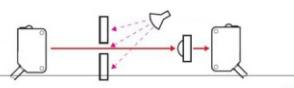
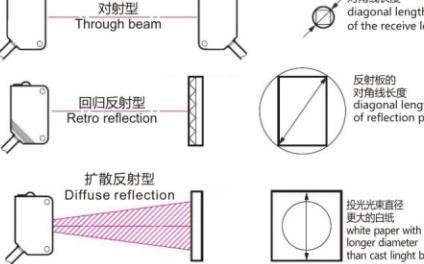
O:NO  
C:NC  
A:NO+NC  
S:Programmable(S:可编程电位器转换)  
W:Cable optional(W:导线转换)  
N/A:无

### ⑧ Output type(输出方式)

N:NPN  
P:PNP  
R:NPN+PNP  
J:Relay output(J:继电器输出)  
T: 2 wire(T:两线式)  
E:Emitter(E:发射器)  
N/A : 无

### ⑦ Supply Voltage (电压范围)

A:5-15V DC  
B:10-30V DC  
C:10-36V DC  
D:10-60V DC  
E:12-240V AC/DC  
F:20-250V AC  
G:90-250V AC  
H:20-250AC/DC  
N/A:无

项目	说明图	含义
检测距离 Sensing distance	对射型 Through beam 	在对射型，回归反射型中: 考虑到产品的分散和温度变化等，能稳定设定的最大检测距离。 标准状态下的实力值无论那种方式都比额定检测距离更长。 In Through beam,Retro reflection: Considering the dispersion of products and temperature changes, the maximum sensing distance can be set stably.The strength value in the standard state is longer than the rated sensing distance in either way.
	回归反射型 Retro reflection 	
	扩散反射型 Diffuse reflection 	在扩散反射型中对标准检测物体(白图纸)，考虑到产品的分散和温度变化等，能稳定设定的最大检测距离。 标准状态下的实力值无论哪种方式都比额定检测距离更长。 In diffuse reflection, about the standard sensing material(white drawing paper), takes into account the dispersion of the product and temperature changes, the maximum sensing distance that can be set stably The strength value in the standard state is longer than the rated sensing distance in either way
	限定反射型 Limited reflection 	如左图的光学系统，设计时使投光轴与受光轴在检测物体的表面以同样的倾斜角交叉。 在该光学系统中，从物体发出的正反射光能稳定检测出的距离范围为检测距离。 As the optical system on the left, at design time ,casting axis and receiving axis intersect at the same inclination angle on the surface of the sensing material. In the optical system, the distance of the positive reflection light emitted from the object can be stably detected as the sensing distance.
设定范围 Setting range	BGS 	可对物体的检测位置限度进行设定 相对于标准检测物体(白图纸)可设定的范围称为设定范围。被设定的位置作为限度,将能检测物体的范围称为检测范围。检测范围根据传感器的检测模式而不同,有时存在于设定位置开始的传感器一侧(BGS模式) The sensing limit of the object can be set, and the range that can be set relative to the standard sensing material (white drawing paper) is called the setting range.The set position is used as the limit, and the range of the detectable object is called the sensing range. The sensing range varies depending on the sensing mode of the sensor, and sometimes exists on the sensor side where the set position starts(BGS mode)
指向角 Pointing angle		对射型，回归反射型作为光电传感器可动作的角度范围。 Through beam, Retro reflection as a range of angles at which the photoelectric sensor can operate
差动距离 Differential distance		扩射反射型，距离设定型 动作距离与回归距离的差 一般用产品样本中相对于额定检测距离的比率来表示。 Diffuse reflection,Distance settable The discrepancy between acting distance and regression distance Generally expressed in the product sample relative to the rated sensing distance
响应时间 response time		从光输入的断续开始，到控制输出动作或回归为止的延迟时间称为“响应时间” 在光电传感器中，一般动作时间(Ton) 回归时间(Toff). The delay time from the interruption of the light input to the control output operation or regression is called “response time” in the photoelectric sensor, and the general operation time (Ton) regression time (Toff).
使用环境亮度 Using ambient brightness	 	使用环境亮度用受光器的受光面亮度表示,并将受光输出相对于200Lx时的值变化20%时的亮度定义为“使用环境亮度.”并不是进行误动作之前的动作界限亮度。 Using ambient brightness is represented by the brightness of the light receiving surface of the receiver, and the brightness at which the received light output changes by 20% from the value at 200 Lx is defined as "Using ambient brightness" ,and it is not the limit of the brightness of the action before the malfunction.
标准检测物体 Standard sensing material		无论对射型或回归反射型,都将具有比光学系统的对角线长度更大直径的不透明体测杆作为标准检测物体。 一般在对射型中,将投·受光透镜的对角线长度作为标准检测物体的直径,而在回归反射型中则使用反射板的对角线长度。 Regardless of the Through beam or Retro reflection, an opaque pole with a larger diameter than the diagonal length of the optical system is used as the standard sensing material Normally, the diagonal length of the cast/receive lens is used as the diameter of standard sensing material in the Through beam, and the diagonal length of the reflection plate is used in the Retro reflection. 尺寸为100×100mm (有效检测范围为400mm以内) 尺寸为200×200mm (有效检测范围为400mm以上) Size is 200×200mm ( effective sensing range is above 400m ) Size is 100×100mm ( effective sensing range is within 400m )

项目	说明图	含义
最小检测物体 minimum sensing material	<p>对射型 Through beam 反射型 Retro reflection 扩散反射型 Diffuse reflection</p>	<p>对射型,反射型的情况下在额定检测距离上将灵敏度调整为稳定入光动作值将可检测的最小检测物体作为代表例。 在反射型中,将灵敏度设定为最大,将可检测的最小检测物体作为代表例。 In the case of Through beam and retro reflection, the sensitivity is adjusted to a stable light input operating value at a rated sensing distance and a detectable minimum sensing material is used as a representative example. In reflection, set the sensitivity to the maximum and use the detectable minimum sensing material as the representative example.</p>
检测区域特性 sensing area characteristics	<p>Standard sensing material 标准检测体</p> <p>传感器</p>	<p>漫反射型光电传感器在设检测距离内,标准检测体分别从其右方和左方靠近,以传感器动作的位置点为轨迹所表示的图。(灵敏度最大状态下)此图对被测物体的位置设定以及传感器并排使用时的间隔设定有用。</p> <p>Diffuse photoelectric sensor is within the sensing distance, standard sensing materials are approached from their left and right respectively, the figure that show the trace of the sensor movement position. (Maximum sensitivity) The figure is useful for setting the position of the detected object and setting the interval when the sensor is used side by side</p>
检测体大小对 检测距离的影响 the effect of the detected object size on the sensing distance	<p>漫反射型</p> <p>白色无光泽纸 边长 (mm)</p> <p>传感器</p>	<p>在漫反射型中,标识被测物体大小对检测距离影响的规律 In diffuse reflection, representing the effect rule of the detected object size on the sensing distance</p>
检测物体的表面 验收与检测距离 Surface acceptance and sensing distance of the sensing object		<ul style="list-style-type: none"> <li>— 标准模式 SUS(有光泽) Standard mode SUS(glossy)</li> <li>— 标准模式 白纸 Standard mode white paper</li> <li>— 标准模式 黑纸 Standard mode black paper</li> <li>— 标准模式 铝箔(内侧) Standard mode Aluminum foil (inner side)</li> <li>- - - 长距离模式 SUS(有光泽) Long distance mode SUS(glossy)</li> <li>- - - 长距离模式 白纸 Long distance mode white paper</li> <li>- - - 长距离模式 黑纸 Long distance mode black paper</li> <li>- - - 长距离模式 铝箔(内侧) Long distance mode Aluminum foil (inner side)</li> <li>- - - 超高速模式 SUS(有光泽) Superhigh speed mode SUS(glossy)</li> <li>- - - 超高速模式 白纸 Superhigh speed mode white paper</li> <li>- - - 超高速模式 黑纸 Superhigh speed mode black paper</li> <li>- - - 超高速模式 铝箔(内侧) Superhigh speed mode Aluminum foil (inner side)</li> </ul>

## 产品特点

采用专用IC制造,性能稳定,指示灯可视范围大  
发射器和接收器置于一体,检测距离可调  
多样性:备有多种检测距离机型  
通用性强,可与同行业类似产品互换,性价比高



## Product Features

Professional IC design,stable performance, large visible range  
Transmitter and receiver in an organic whole, detection distance adjustable  
Various types,equip with different sensing distance  
Strong commonality,interchangeable with similar products,high cost performance

## 选型表 Ordering Information

检测方式 Sensing mode	形状Shape	类型 type	检测距离 Sensing distance	型号Model	
				NPN	PNP
对射型 (投光器+受光器) Through beam reflection Emitter +Receiver		PM18塑料外观 Plastic Housing	20m	PM18-T20BNA PM18-T20BNO PM18-T20BNC PM18-T20BE	PM18-T20BPA PM18-T20BPO PM18-T20BPC
		PT18塑料外观 Plastic Housing	20m	PT18-T20BNA PT18-T20BNO PT18-T20BNC PT18-T20BE	PT18-T20BPA PT18-T20BPO PT18-T20BPC
		PM30X金属外观 Metal Housing	60m	PM30X-T60BNA PM30X-T60BNO PM30X-T60BNC PM30X-T60BE	PM30X-T60BPA PM30X-T60BPO PM30X-T60BPC
回归反射型 Retro reflection		PM18塑料外观 Plastic Housing	3m	PM18-R03BNA PM18-R03BNO PM18-R03BNC	PM18-R03BPA PM18-R03BPO PM18-R03BPC
		PM18金属外观 Metal Housing	6m	PM18V-R06BNA	PM18V-R06BPA
		M.S.R	4m	PM18V-P04BNA	PM18V-P04BPA
		PM18塑料外观 Plastic Housing	3m	PT18-R03BNA PT18-R03BNO PT18-R03BNC	PT18-R03BPA PT18-R03BPO PT18-R03BPC
		PM30X金属外观 Metal Housing	5m	PM30X-R05BNA PM30X-R05BNO PM30X-R05BNC	PM30X-R05BPA PM30X-R05BPO PM30X-R05BPC
漫反射 (扩散型) Diffuse reflection		PM18塑料外观 Plastic Housing	50cm	PM18V-D50BNA PM18V-D50BNO PM18V-D50BNC	PM18V-D50BPA PM18V-D50BPO PM18V-D50BPC
		PM18金属外观 Metal Housing	60cm	PM18V-D60BNA	PM18V-D60BPA
		PT18塑料外观 Plastic Housing	50cm	PT18V-D50BNA PT18V-D50BNO PT18V-D50BNC	PT18V-D50BPA PT18V-D50BPO PT18V-D50BPC
		PM30X金属外观 Metal Housing	100cm	PM30X-D100BNA PM30X-D100BNO PM30X-D100BNC	PM30X-D100BPA PM30X-D100BPO PM30X-D100BPC

## 额定规格/性能 Ratings and Specifications

## 标准型(塑料外观) Standard (Plastic Housing)

Sensing mode(检测方式)	Through beam reflection对射型	Retro reflection回归反射型	Diffuse reflection漫反射型		
Model(型号)	PM18-T20B□A	PM18-R03B□A	PM18V-D50B□A		
	PM18-T20B□O	PM18-R03B□O	PM18V-D50B□O		
	PM18-T20B□C	PM18-R03B□C	PM18V-D50B□C		
	PM18-T20BE	—	—		
Sensing distance(检测距离)	20m	3m	50cm		
Standard target(标准检测体)	—	Optical diffuser plate 40X60	White paper100X100mm		
Output type(输出类型)	N:NPN P:PNP				
Output state(输出状态)	DC 3 wire : NO/NC , DC 4 wire: NO + NC (三线:NO/NC ,四线: NO + NC)				
Sensing material(检测物体)	Φ15mm Opaque object Φ15mm不透明体	Φ75mm Opaque object Φ75mm不透明体	—		
Light source(光源)	Infrared light 850nm(红外光850nm)	Infrared light 850nm(红外光850nm)/Red light 660nm(红光660 )			
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)				
Residual voltage(残留电压)	2V DC(load current <100mA)/2V DC以下(负载电流低于100mA时)				
Current consumption(消费电流)	Emitter:<20mA / Receiver:<15mA /	<20mA			
Load current(负载电流)	≤100mA(overload protection )/≤100mA(带过载保护)				
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection(短路保护,电源逆接极性保护)				
Response frequency (响应频率)	200Hz				
Switch delay(开关延迟)	<0.5ms				
Differential travel (应差距离)	—	—	20%max		
Pointing angle(指向角)	发射器/接收器 : 3 ~ 15°	2 ~ 10°	—		
Indicator light(指示灯)	Red LED(红色指示灯)				
Connection(连接方式)	Cable2m-PVC-terminal/标准导线长2米PVC-可配端子				
Ambient temperature(环境温度)	Work:-10°C ~ +55°C store:-25°C ~ +70°C,iced forbidden/(使用时:-10°C ~ +55°C 保存时:-25°C ~ +70°C,不结冰)				
Ambient humidity(环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)				
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)				
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)				
Insulation resistance (绝缘强度)	>500MΩ ( DC500V megger ) /500MΩ以上(DC500V摇表)充电部整体与外壳间				
Anti-vibration(耐振动)	10 ~ 55 Hz, double-amplitude 1.5mm ,X,Y,Z( 2H )/10 ~ 55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H )				
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)				
Protection degree(防护等级)	IEC规格 IP67				
Housing material(材质)	Hosing : ABS Lens : PMMA(壳体:丙烯腈-苯乙烯-丁二烯共聚物 透镜:亚克力)				
外观尺寸图	PM18导线引出型(Wire)				
Dimension(尺寸图) (Unit/单位:mm)					
	<span style="float: right;">CAD数据</span>				

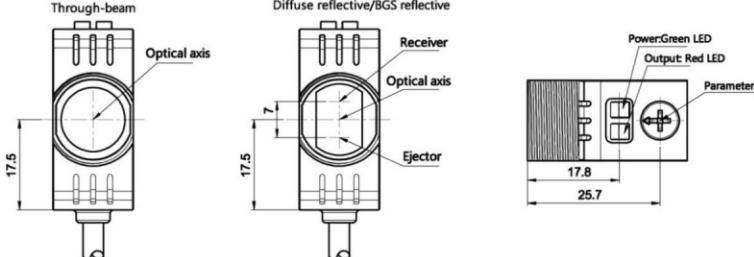
## 额定规格/性能 Ratings and Specifications

## 标准型(金属外观) Standard (Metal Housing)

Sensing mode(检测方式)	Retro reflection(回归反射型)		Diffuse reflection(漫反射型)
Model(型号)	PM18V-R06B N(P)A	PM18V-P04B N(P)A	PM18V-D60B N(P)A
Sensing distance(检测距离)	6m	4m(M.S.R)	60cm
Standard target(标准检测体)	(40X60mm)反光板		White paper 300X300mm
Output mode(输出方式)	N:NPN P:PNP		—
Output state(输出状态)	4 Wire: NO/NC(wire switch) ; N0+NV: Two outputs/四线 : NO/NC ( 导线切换 ) ; NO+NC: 两路输出		
Sensing material(检测物体)	>Φ75mm Opaque object (Φ75mm不透明体以上)		—
Light source(光源)	Red light 660nm(红光660)		
Power supply(电源电压)	DC12-24V 脉动(p-p)10%以下(DC10-30V)		
Residual voltage(残留电压)	2V DC(load current < 100mA)/2V DC(以下负载电流低于100mA时)		
Current consumption (消费电流)	<20mA		
Load current(负载电流)	≤100mA(overload protection) / ≤100mA(带过载保护)		
Circuit protection(回路保护)	Short circuit protection, reverse power polarity protection, output polarity reverse protection/有短路保护，电源逆接极性保护，输出极性逆接保护		
Control output(控制输出)	NPN : Max200mA/DC30 V <2.5V/200mA Max PNP : Max200mA/DC30 V <2.5V/200mA Max		
响应时间	小于2ms		
Differential travel (应差距离)	<20% sensing distance / < 20%的感应距离Sn		
Switch delay(开关延迟)	<0.5ms		
Pointing angle(指向角)	2~10°		—
Indicator light(指示灯)	Output: yellow LED, Power: Green LED(动作指示:黄色指示灯, 电源指示:绿色指示灯)		
Connection(连接方式)	Cable 2m-PVC-terminal/标准导线长2米PVC-可配端子		
Ambient temperature (环境温度)	Work:-10°C~+55°C store:-25°C~+70°C, iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C, 不结冰)		
Ambient humidity (环境湿度)	Work:35~85%RH store:35~95%RH, dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH, 不结露)		
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:10000Lx 热灯光:3000Lx(接收光)		
Withstand voltage(耐压)	1000VAC, 50/60Hz 1min(1000VAC, 50/60Hz 1min充电部整体与外壳间)		
Insulation resistance (绝缘强度)	>20MΩ (DC500V megger) / 500MΩ以上(DC500V摇表)充电部整体与外壳间		
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm X,Y,Z(2H)/10~55 Hz, 复振幅 1.5mm X,Y,Z(2H)		
Anti-impact(耐冲击)	Approx100G(1000m/S²), X,Y,Z(3 times)/大约100G(1000m/S²), X,Y,Z(各方向3次)		
Protection degree(防护等级)	IEC IP67		
Housing material(材质)	Hosing: Nickel-copper alloy Lens: PMMA Tail: PC/壳体: 镍铜合金 镜头: PMMA ; 尾部: PC		
Dimension(尺寸图) (Unit/单位:mm)			

## 额定规格/性能 Ratings and Specifications

## 标准型(塑料外观) Standard (Plastic Housing)

Sensing mode(检测方式)	Through beam reflection(对射型)	Retro reflection(回归反射型)	Diffuse reflection(漫反射型)		
Model(型号)	PT18-T20B□A(Receiver)/接收	PT18-R03B□A	PT18V-D50B□A		
	PT18-T20B□O(Receiver)/接收	PT18-R03B□O	PT18V-D50B□O		
	PT18-T20B□C(Receiver)/接收	PT18-R03B□C	PT18V-D50B□C		
	PT18-T20BE(Ejector)/发射	—	—		
Sensing distance(检测距离)	20m	0.1-3m	50cm Adjustable potentiometer/(电位器可调)		
Standard target(标准检测体)		Optical diffuser plate 40X60	White paper100X100mm		
Output mode(输出方式)	N:NPN P:PNP				
Output state(输出状态)	DC 3 wire : NO/NC , DC 4 wire: NO+NC (三线:NO/NC ,四线: NO+NC)				
Sensing material(检测物体)	>Φ7mm Opaque object (Φ7mm不透明体以上)	>Φ75mm Opaque object (Φ75mm不透明体以上)			
Light source(光源)	Infrared light 850nm(红外光850nm)	Infrared light 850nm(红外光850nm)	Infrared light 850nm(红外光850nm)		
		Red light 660nm(红光660 )			
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)				
Current consumption (消费电流)	Emitter:<20mA (发射管 : 20mA以下)	<20mA			
	Emitter:<15mA (发射管 : 15mA以下)				
Control output(控制输出)	NPN : Max200mA/DC30 V <2.5V/200mA Max PNP : Max200mA/DC30 V <2.5V/200mA Max				
Load current(负载电流)	≤100mA (overload protection )/≤230mA(带过载保护)				
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection(短路保护,电源逆接极性保护)				
Response frequency (响应频率)	200Hz				
Switch delay(开关延迟)	<1ms				
Differential travel (应差距离)	—	—	20%max		
Pointing angle(指向角)	3~15°	2~10°	—		
Indicator light(指示灯)	Output:Red LED Power:Green LED(动作指示红色指示灯,电源指示绿色指示灯)				
Connection(连接方式)	Cable2m-PVC-terminal/标准导线长2米PVC-可配端子				
Ambient temperature (环境温度)	Work:-10°C~+55°C store:-25°C~+70°C,iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰)				
Ambient humidity (环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)				
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)				
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)				
Insulation resistance (绝缘强度)	>500MΩ ( DC500V megger ) /500MΩ以上(DC500V摇表)充电部整体与外壳间				
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm ,X,Y,Z( 2H)/10~55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H)				
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)				
Protection degree(防护等级)	IEC IP67				
Housing material(材质)	Hosing: ABS Lens : PMMA(壳体:丙烯晴-苯乙烯-丁二烯共聚物 透镜:亚克力)				
Dimension(尺寸图) (Unit/单位:mm)	 <span style="float: right;">CAD数据</span>				

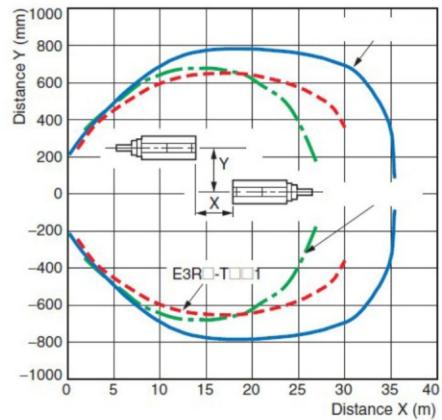
## 额定规格/性能 Ratings and Specifications

## 标准型(金属外观) Standard (Metal Housing)

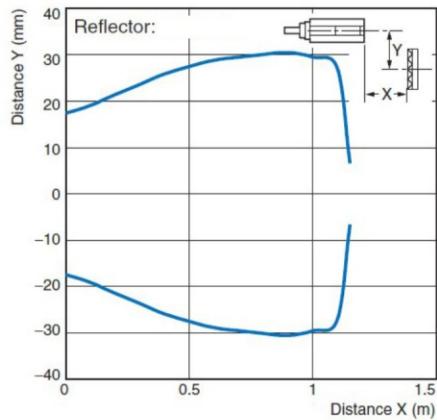
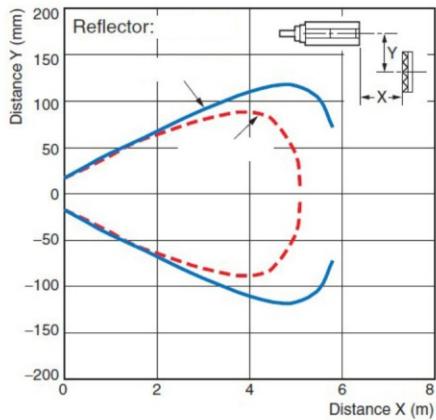
Sensing mode(检测方式)	Through beam reflection对射型	Retro reflection回归反射型	Diffuse reflection漫反射型		
Model(型号)	PM30X-T60B□A	PM30X-R05B□A	PM30V-D100B□A		
	PM30X-T60B□O	PM30X-R05B□O	PM30V-D100B□O		
	PM30X-T60B□C	PM30X-R05B□C	PM30V-D100B□C		
	PM30X-T60BE	—	—		
Sensing distance(检测距离)	60m	5m	100cm		
Standard target(标准检测体)	—	Optical diffuser plate 50X50	White paper 200X200mm		
Output type(输出类型)	N:NPN P:PNP				
Output state(输出状态)	DC 3 wire : NO/NC , DC 4 wire: NO+NC (三线:NO/NC ,四线: NO+NC)				
Sensing material(检测物体)	Φ15mm Opaque object Φ15mm不透明体	Φ75mm Opaque object Φ75mm不透明体	—		
Light source(光源)	Infrared light 850nm(红外光850nm)	Infrared light 850nm(红外光850nm)/ Red light 660nm(红光660 )	Infrared light 850nm(红外光850nm)		
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)				
Residual voltage(残留电压)	2V DC(load current <100mA)/2V DC(负载电流低于100mA时)				
Current consumption(消费电流)	Emitter:<20mA / Receiver:<15mA	<20mA			
Load current(负载电流)	≤100mA(overload protection )/≤100mA(带过载保护)				
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection(短路保护,电源逆接极性保护)				
Response frequency (响应频率)	200Hz				
Switch delay(开关延迟)	<1ms				
Differential travel (应差距离)	—	—	20%max		
Pointing angle(指向角)	发射器/接收器 : 3 ~ 15°	2 ~ 10°	—		
Indicator light(指示灯)	Red LED(红色指示灯)				
Connection(连接方式)	Cable 2m-PVC-terminal/标准导线长2米PVC-可配端子				
Ambient temperature(环境温度)	Work:-10°C~+55°C store:-25°C~+70°C,iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰)				
Ambient humidity(环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)				
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)				
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)				
Insulation resistance (绝缘强度)	>500MΩ ( DC500V megger ) /500MΩ以上(DC500V摇表)充电部整体与外壳间				
Anti-vibration(耐振动)	10 ~ 55 Hz, double-amplitude 1.5mm ,X,Y,Z( 2H )/10 ~ 55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H )				
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)				
Protection degree(防护等级)	IEC 规格 IP67				
Housing material(材质)	Hosing: ABS Lens : PMMA(壳体:丙烯腈-苯乙烯-丁二烯共聚物 透镜:亚克力)				
外观尺寸图 Dimension(尺寸图) (Unit/单位:mm)	<span style="float: right;">CAD数据</span>				

## 平行移动特性 Parallel Operating Range

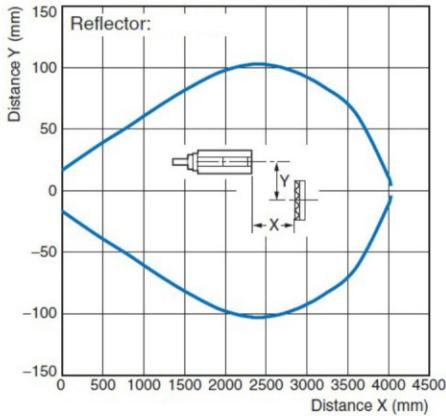
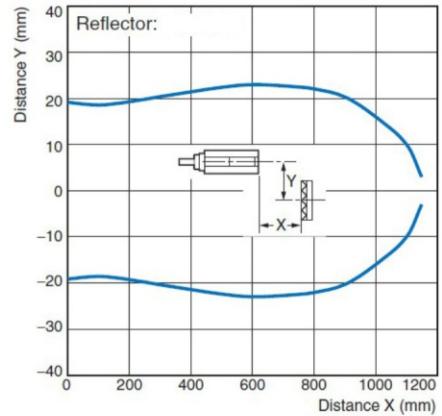
## 对射型Through-beam Models



## 回归反射型 (带MSR功能) Retro-reflective Models (with MSR function)



## 透明检测 Transparent detected with P-opaque function



## 产品特点

小型放大器内置型  
指尖般大小尺寸  
光斑小,可并排安装缩小到相互干扰的间距



## Product Features

Small amplifier built-in  
Micro size like fingertip  
Small light spot, available to install side by side, reduce the range of mutual interference

## 选型表 ordering information

检测方式 Sensing mode	形状 Appearance	类型type	检测距离 Sensing distance	型号Model	
				NPN	PNP
对射型 (投光器+受光器) Through beam reflection Emitter + Receiver		模拟量输出 Analog output	100mm	PT08-R PT08-E	
			1m	PF12-T01BNO PF12-T01BNC PF12-T01BE	PF12-T01BPO PF12-T01BPC
			3m	PF22-T03BNO PF22-T03BNC PF22-T03BE	PF12-T03BPO PF12-T03BPC
漫反射 (扩散型) Diffuse reflection		标准型 Standard	5~30mm	PF12-D30BNO PF12-D30BNC	PF12-D30BPO PF12-D30BPC
			5~15mm	PF22-D15BNO PF22-D15BNC	PF22-D15BPO PF22-D15BPC
		BGS	5~30mm	PF22-D30BNO PF22-D30BNC	PF22-D30BPO PF22-D30BPC
			1~15mm	PF12-B15BNO PF12-B15BNC	PF12-B15BPO PF12-B15BPC
			1~30mm	PF12-B30BNO PF12-B30BNC	PF12-B30BPO PF12-B30BPC

## 额定规格/性能 Ratings and Specifications

## 模拟量输出 Analog output

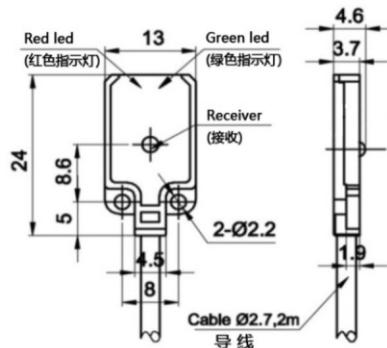
检测方式	Through beam reflection(对射型)
型号	PT08-R(Receiver)/接收
	PT08-E (Emitter)/发射
Sensing distance(检测距离)	100mm
Sensing target(检测物体)	Opaque materials of 0.8mm(不透明体0.8mm以上)
Output state(输出状态)	NO
Power supply(电源电压)	5V DC
Current consumption (消费电流)	<20mA
Connection(连接方式)	Connectors/连接器
Ambient temperature(环境温度)	Work:-10°C ~ +55°C store:-25°C ~ +70°C, iced forbidden/(使用时:-10°C ~ +55°C 保存时:-25°C ~ +70°C, 不结冰)
Ambient humidity(环境湿度)	Work&store:35~95%RH
Ambient illumination (环境照明)	Lamplight:5000Lx
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm ,X,Y,Z(2H)/10~55 Hz, 复振幅 1.5mm ,X,Y,Z(2H)
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)
Protection degree(防护等级)	IEC IP54
Housing material(材质)	PC
Dimension(尺寸图) (Unit/单位:mm)	<span style="float: right;">CAD数据</span>

## 额定规格/性能 Ratings and Specifications

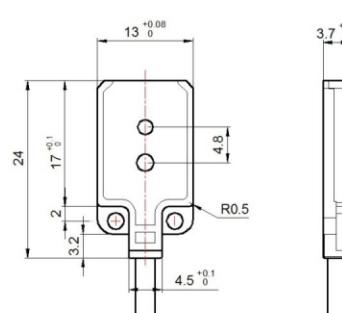
#### 标准型 Standard

检测方式Sensing mode		对射型Through beam reflection	漫反射(扩散型)Diffuse reflection	背景抑制型BGS			
型号Model	PF12-T01B□O(Receiver)/接收	PF12-D30B□O	PF12-B15B□O	PF12-B30B□O			
	PF12-T01B□C(Receiver)/接收	PF12-D30B□C	PF12-B15B□C	PF12-B30B□C			
	PF12-T01BE (Ejector)/发射						
Sensing distance(检测距离)	1m	5~50mm	1~15mm	1~30mm			
Sensing target(检测物体)	Opaque materials of Φ2mm(Φ2mm不透明体)		Φ0. 15mm	Non-glossy objects.Φ0.15mm非光泽物体			
Output mode(输出方式)	N:NPN, NO:NPN-NO, NC:NPN-NC, P:PNP, PO:PNP-NO, PC:PNP-NC						
Output state(输出状态)	DC 3 wire : NO/NC , DC 4 wire: NO+NC (三线:NO/NC,四线: NO + NC)						
Pointing angle(指向角)	投光器:3~20° 受光器:3°以上						
Light source(光源)	Red light 660 nm(红光 660 nm)						
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)						
Current consumption(消费电流)	<20mA						
Control output(控制输出)	NPN type:Max50mA/DC26.4V Residual voltage 1.0V/50mA Max(NPN类型:Max50mA/DC26.4V 残压1.0V/50mA Max)						
	PNP type:Max50 mA/DC26.4V Residual voltage 1.0V/50mA Max(PNP 类型:Max50 mA/DC26.4V 残压1.0V/50mA Max)						
Load current(负载电流)	≤100mA(overload protection)/≤100mA(带过载保护)						
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection(短路保护,极性保护)						
Switch delay(开关延迟)	<0.5ms						
Indicator light(指示灯)	Output:Red LED,(动作指示:红色指示灯)						
Connection(连接方式)	Cable2m-PU-terminal/标准导线长2米PVC-可配端子						
Ambient temperature(环境温度)	Work:-10°C~+55°C store:-25°C~+70°C,iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰)						
Ambient humidity(环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)						
Ambient illumination(环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)						
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)						
Insulation resistance(绝缘强度)	>20MΩ ( DC500V megger ) /20MΩ以上(DC500V摇表)充电部整体与外壳间						
Anti-vibration(耐振动)	10 ~ 55 Hz, double-amplitude 1.5mm ,X,Y,Z( 2H )/10 ~ 55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H )						
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)						
Protection degree(防护等级)	IEC IP67 IP65						
Housing material(材质)	Hosing: PBT Lens :PMMA						

PF12对射导线引出型(Wire)



### PF12漫反射导线引出型(Wire)



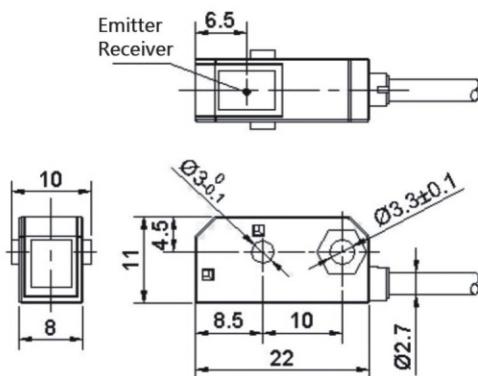
CAD数据

## Dimension(尺寸图) (Unit/单位:mm)

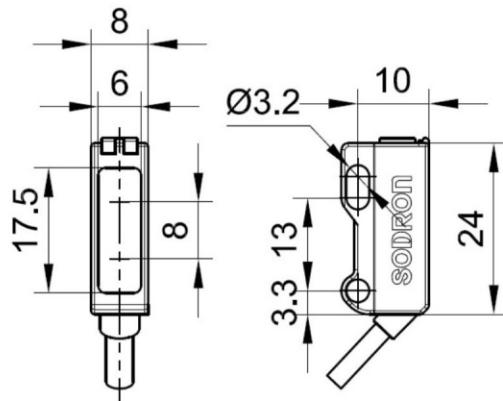
## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

Sensing mode(检测方式)	Through beam reflection(对射型)	Focus ON(限定反射)			
Model(型号)	PF22-T03B□O (Receiver)/接收	PF22-D15B□O	PF22-D30B□O		
	PF22-T03B□C (Receiver)/接收	PF22-D15B□C	PF22-D30B□C		
	PF22-T03BE (Emitter)/发射				
Sensing distance(检测距离)	3m	5~15mm	5~30mm		
Sensing target(检测物体)	>Φ6mm Opaque object/Φ6mm以上的不透明体	50X50mm白纸			
Output mode(输出方式)	N:NPN, NO:NPN-NO, NC:NPN-NC, P:PNP, PO:PNP-NO, PC:PNP-NC				
Output state(输出状态)	DC 3 wire : NO/NC,				
Pointing angle(指向角)	发射器:2~20° 受光器:2~70°				
Min.Sensing target (最小检测物体)	Opaque materials of Φ5mm(Φ5mm不透明体以上)	Φ0.15mm			
Light source(光源)	infrared light 850nm/(红外光 850nm)	Red light 660nm/(红光 660nm)			
Power supply(电源电压)	DC12~24V, impulse(P-P) <10% (DC10~30V)/DC12~24V脉动(P-P)10%以下 (DC10~30V)				
Current consumption(消费电流)	<10mA				
Control output(控制输出)	NPN type:Max50mA/DC26.4V Residual voltage 1.0V/50mA Max(PNP类型:Max50mA/DC26.4V 残压1.0V/50mA Max) PNP type:Max50 mA/DC26.4V Residual voltage 1.0V/50mA Max(PNP类型:Max50 mA/DC26.4V 残压1.0V/50mA Max)				
Load current(负载电流)	≤100mA(overload protection)/≤100mA(带过载保护)				
Circuit protection(回路保护)	reverse connection protection(极性保护)				
Switch delay(开关延迟)	<1ms				
Indicator light(指示灯)	Output:Blue LED,(动作指示:蓝色指示灯)				
Connection(连接方式)	Cable 2m-PU-terminal/标准导线长2米PVC-可配端子				
Ambient temperature(环境温度)	Work:-10°C~+55°C store:-25°C~+70°C,iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰)				
Ambient humidity(环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)				
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)				
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)				
Insulation resistance(绝缘强度)	>20MΩ ( DC500V megger ) /20MΩ以上(DC500V摇表)充电部整体与外壳间				
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm,X,Y,Z( 2H )/10~55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H )				
Anti-impact(耐冲击)	Approx100G(1000m/S <sup>2</sup> ),X,Y,Z(3 times)/大约100G(1000m/S <sup>2</sup> ),X,Y,Z(各方向3 次)				
Protection degree(防护等级)	IEC IP40	IP 65			
Housing material(材质)	Hosing: ABS Lens :Optical PC				

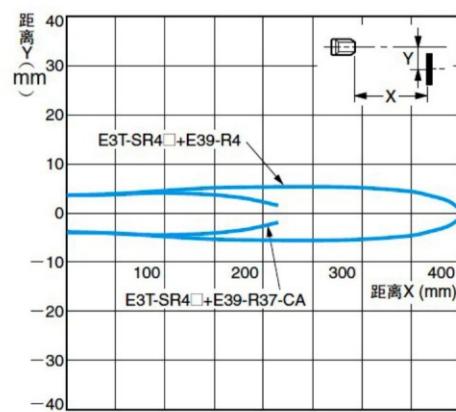
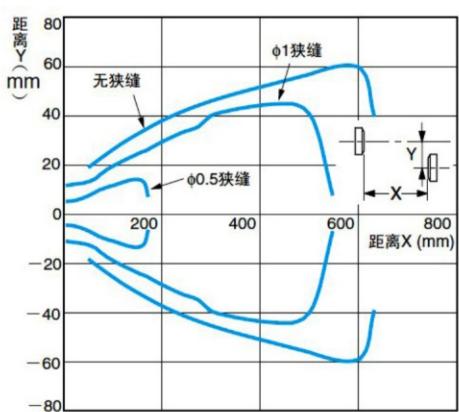
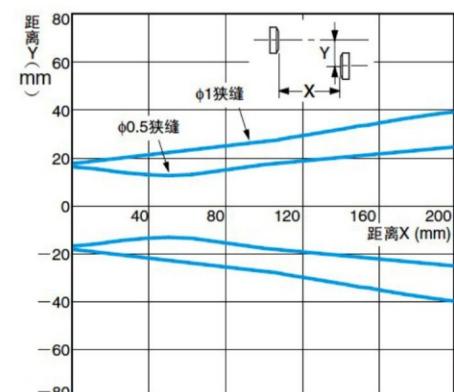
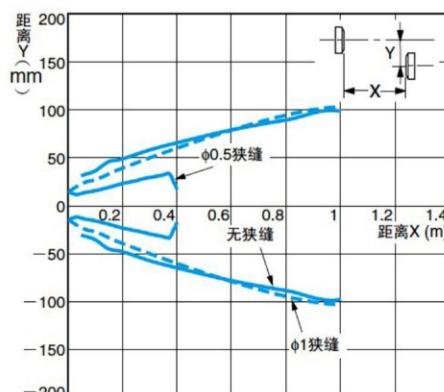
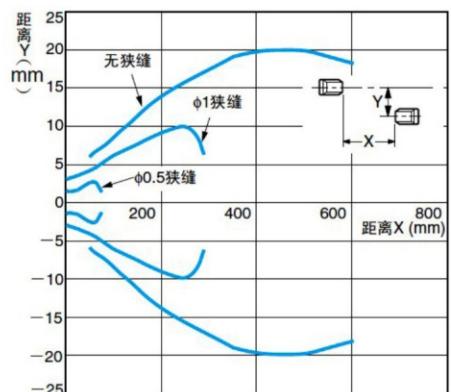
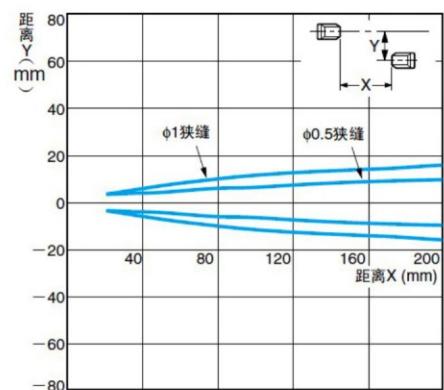
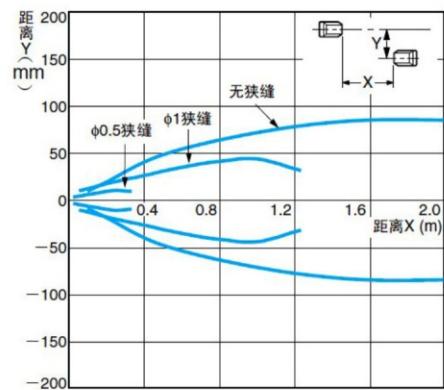
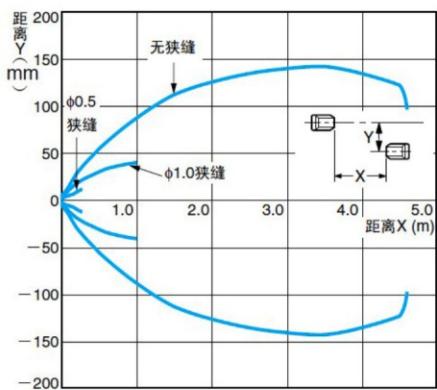
Dimension(尺寸图)  
(Unit/单位:mm)

CAD数据



## 平行移动特性 Parallel Operating Range

## 对射型Through-beam Models



## 产品特点

采用ASIC,响应快，频率高;  
 三种光源可选:红光，红外光，激光；  
 外壳采用耐油,耐腐蚀材质;  
 IP67保护构造，防止相互干扰功能;  
 规格丰富：对射、漫反、偏振、BGS、小斑光;



## Product Features

Use ASIC with fast response and high frequency  
 Three Kinds of Light source are optional :infrared LED, Red LED, Laser  
 Housing is oil resistant and corrosion resistant material  
 IP67 protection structure, prevent mutual interference  
 Rich specifications: Through beam reflection, diffuse reflection, polarization, BGS, small spots;

## 选型表 Ordering Information

检测方式 Sensing mode	形状 Appearance	类型 type	检测距离 Sensing distance Sensing mode	型号 Model	
				NPN	PNP
对射型 (投光器+受光器) Through beam reflection Emitter+Receiver		标准型 Standard	10m	PF31V-T10BNS PF31-T10BE	PF31V-T10BPS PF31-T10BE
			15m	PF31V-T15BNS PF31V-T15BE	PF31V-T15BPS PF31V-T15BE
			25m	PF31V-T25BNS PF31V-T25BE	PF31V-T25BPS PF31V-T25BE
		激光型laser	60m	PF31V-LT60BNS PF31-LT60BE	PF31V-LT60BPS PF31-LT60BE
回归反射型 (带MSR功能) Retro reflection		带M,S,R功能 with M,S,R function	3m	PF31V-P03BNS	PF31V-P03BPS
		无M,S,R功能 without M,S,R function	5m	PF31V-R05BNS	PF31V-R05BPS
		激光型Laser	5m	PF31V-LR03BNS	PF31V-LR03BPS
反射型 Reflection		长距离 Long distance	1m	PF31V-D01BNS	PF31V-D01BPS
			100mm	PF31V-D100BNS	PF31V-D100BPS
		BGS	红光Red	20~150mm	PF31V-B15BNS
			红外Infrared	20~300mm	PF31V-B30BNS
			激光型laser	20~150mm	PF31V-LB15BNS
			20~300mm	PF31V-LB30BNS	PF31V-LB30BPS

注明 : 1.背景抑制型 ( BGS功能 ) , 带可调电位器 , 设定检查距离范围。

2.标准导线的长度是2米,其余长度可定制;

3.以上表格中体现的型号是常开或常闭可调节,若是需要独立分开的常开,常闭可以定制;

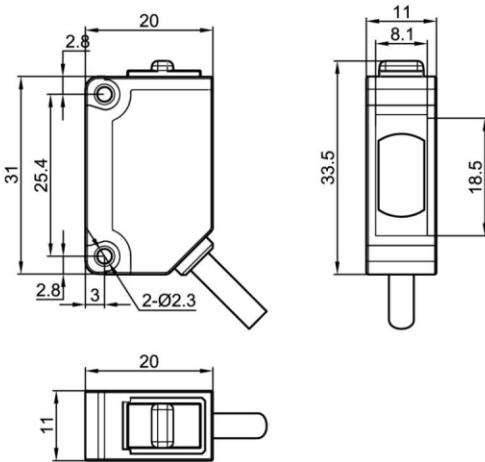
Note:1.Background suppression type ( BGS function) with adjustable potentiometer, setting sensing distance range.

2.The length of the standard wire is 2 meters, the rest of the length can be customized;

3.The model shown in the above table is normally open or normally closed, if it needs to be separated normally open, normally closed can be customized;

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

检测方式 Sensing mode	对射型 Through beam			回归反射型 Retro reflection		漫反射型 Diffuse reflection					
				无M.S.R功能	带M.S.R功能	短距离	长距离				
型号 Model	PF31V-T10B□S	PF31V-T15B□S	PF31V-T30B□S	PF31V-R05B□S	PF31V-P03B□S	PF31V-D10B□S	PF31V-D01B□S				
	PF31-T10BE	PF31-T15BE	PF31-T30BE								
检测距离 Sensing distance	10m	15m	25m	5m	3m	100mm	1m				
标准检测体 Standard target	Φ15mm以上不透明体 Opaque object			反光板40X60mm Reflector		白纸100*100mm white paper	白纸300*300mm white paper				
输出类型 Output type	NPN/PNP, NO/NC										
输出状态 Output state	三线(DC 3 wire) :NO/NC										
检测物体 Sensing material	Φ15mm以上不透明体 Opaque object			Φ75mm以上不透明体 Opaque object							
光源 Light source	红外光(infrared LED)850nm/红光(Red LED)660nm										
电源电压 Power supply	DC12~24V±10%脉动 ( p-p ) 10%以下 / DC12~24V, impulse(P-P) <10% ( DC10-30V )										
压降	2VDC以下 ( 负载电流低于100mA时 ) <2V DC ( load current<100mA )										
消费电流 Current consumption	发射器15mA以下 Emitter:<20mA ; 接收器20mA以下 Receiver:<15mA			30mA以下							
负载电流 Load current	≤100mA(带过载保护) / ≤100mA(overload protection)										
回路保护 Circuit protection	有短路保护 , 电源逆接极性保护 , 输出逆接极性保护 Short-circuit protection, reverse connection protection , Output reverse polarity protection										
响应时间 Response time	动作 Action	<1ms									
	复位 Reset	<1ms									
指向角 Pointing angle	3 ~ 15°			2 ~ 10°							
指示灯 Indicator light	动作指示 : 黄色LED/output:Yellow LED ; 电源指示灯 : 绿色LED/Power:Green LED										
连接方式 Connection	PVC导线引出式2m ( 标准型 ) Cable2m-PVC-terminal										
周围温度/湿度 Ambient temperature/humidity	动作时 : -10°C ~ +55°C ( 不结冰 ) / 35~85% RH ( 不结露 ) Work:-10°C~+55°C store:-25°C~+70°C, iced forbidden 保存时 : -25°C ~ +70°C ( 不结冰 ) / 35~95% RH ( 不结露 ) Work:35~85%RH store:35~95%RH, dewde forbidden										
环境照明 Ambient illumination	太阳光 : 10000lux 热灯光 : 3000lux/sunlight:11000Lx lamplight:3000Lx(Receives light)										
耐压 Withstand voltage	1000VAC, 50/60Hz 1min 充电部整体与外壳间 / 1000VAC, 50/60Hz 1min										
绝缘强度 Insulation resistance	20MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间 / > 500MΩ ( DC500V megger )										
耐振动(耐久) Anti-vibration	耐久 : 10 ~ 55 Hz 复振幅 1.5mm X,Y,Z各方向 2H / 10 ~ 55Hz double-amplitude 1.5mm X,Y,Z(2H) / 10 ~ 55 Hz										
耐冲击(耐久) Anti-impact	大约100G(1000m/s <sup>2</sup> )X,Y,Z各方向 3次 Approx100G(1000m/S <sup>2</sup> ), X,Y,Z(3 times)										
防护等级 Protection degree	IEC IP67										
材质 Housing material	壳体 : PBT; 镜头 : 光学PMMA ; Hosing : PBT Lens : PMMA										
Dimension(尺寸图) (Unit/单位:mm)	 <span style="float: right;">CAD数据</span>										

注明: 分为两种模式 : 距离不可调模式和距离可调模式 ( 带可调电位器 ), 如 PF31V-D01BN□□ : V 为距离可调 ;

以 PF31-T10B□S 为例 , 第一个□ : N/P S: NO/NC 电位器切换 ;

Note: It is divided into two modes: distance-non-adjustable mode and distance-adjustable mode (with adjustable potentiometer), such as PF31V-D01BN□□: V is adjustable;

Take PF31-T10B□S as an example, the first □: N/P S: NO/NC potentiometer switching;

## 额定规格/性能 Ratings and Specifications

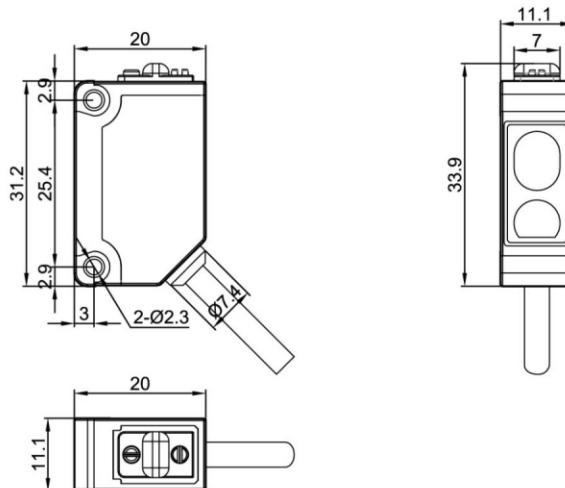
## 距离设定型(BGS)Distance-settable

检测方式Sensing mode	距离设定型distance-settable	
型号Model	PF31V-B15BNS	PF31V-B30BNS
	PF31V-B15BPS	PF31V-B30BPS
检测距离Sensing distance	20~150mm	20~300mm
设定范围 Setting range	白纸white paper(100X100)mm	
反特率特性(黑白偏差) Reflectivity characteristic	设定距离的10%以下/10% of set distance max	
输出类型Output type	NPN/PNP, NO , NC set	
差动 Differential travel	设定距离的10%以下/10% of set distance max	
光源Light source	红光(Red LED)660nm	
电源电压Power supply	DC12~24V±10%脉动 ( p-p)10%以下/DC12~24V,impulse(P-P) <10% (DC10-30V)	
消费电流 Current consumption	<30mA	
回路保护Circuit protection	有短路保护，电源逆接极性保护，输出逆接极性保护Short-circuit protection, reverse connection protection , Output reverse polarity protection	
应答时间Response time	动作.回复:各1ms/Operate or reset: 1ms max	
距离设定Distance setting	5次循环按钮/5-turned endless adjuster	
环境照明 Ambient illumination	太阳光 : 10000lux 热灯光 : 3000lux/sunlight:11000Lx lamplight:3000Lx(Receives light)	
周围温度 Ambient temperature	动作时 : -10°C ~ +55°C (不结冰, 不结露) Work:-10°C~+55°C iced forbidden 保存时 : -25°C ~ + 70°C (不结冰,不结露 ) Work:35~85%RH dewdew forbidden	
周围湿度Ambient humidity	动作时 : 35~85% RH (不结露) 保存时 : 35~95% RH (不结露) Work:35~85%RH store:35~95%RH,dewdew forbidden	
绝缘电阻 Insulation resistance	20MΩ以上 ( DC500V摇表 ) 充电部整体与外壳间/> 500MΩ ( DC500V megger )	
耐压Dielectric strength	1000VAC,50/60Hz 1min充电部整体与外壳间/1000VAC,50/60Hz 1min	
耐振动(耐久)Anti-vibration	耐久 : 10 ~ 55 Hz复振幅1.5mm X,Y,Z各方向 2H/10 ~ 55Hz double-amplitude 1.5mm ,X,Y,Z(2H)/10 ~ 55 Hz	
耐冲击(耐久)Anti-impact	1000VAC at 50/60 Hz for 1 minute	
防护等级Protection degree	IEC IP67	
连接方式connection method	PVC导线引出式2m ( 标准型 ) Cable2m-PVC-terminal	
指示灯 Indicator light	动作指示 : 黄色LED/output:Yellow LED ; 电源指示灯 : 绿色LED/Power:Green LED	
材 质Housing material	壳体 : PBT; 镜头 : 光学PMMA ; /Housing : PBT Lens :PMMA	
Dimension(尺寸图) (Unit/单位:mm)	<div style="text-align: right;">CAD数据</div>	

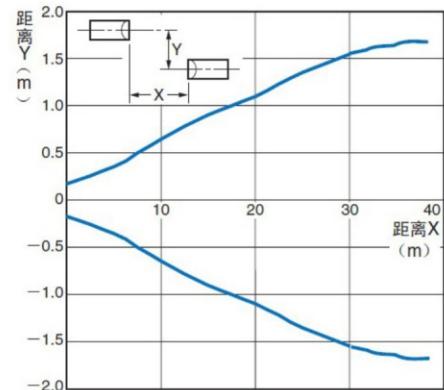
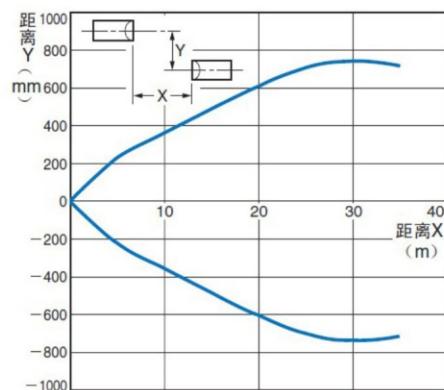
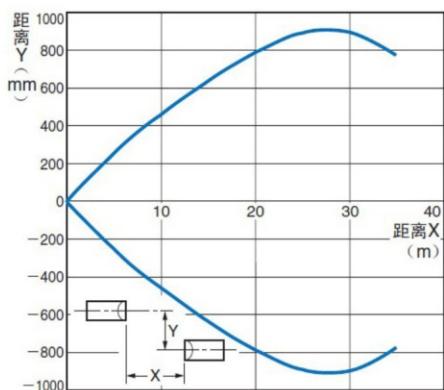
## 额定规格/性能 Ratings and Specifications

## 激光型 Laser

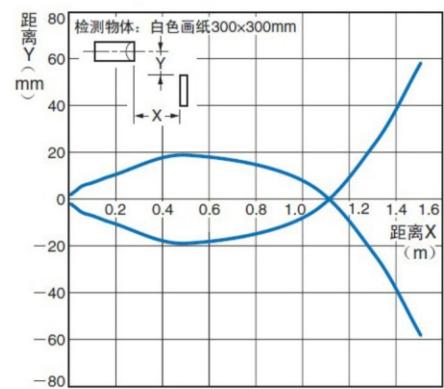
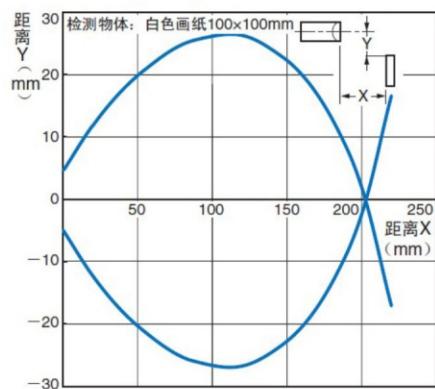
检测方式 Sensing mode	对射型 Through beam	回归反射型 Retro reflection
型号 Model	标准响应型 Standard response	
	PF31V-LT60B□S	
	PF31V-LT60BE	PF31V-LR03B□S
检测距离 Sensing distance	60m	5m
光点直径 Spot diameter	3m远处直径5mm/5-mm dia,at 3m	
标准传感物体 Standard sensing object	不透明：直径12mm以上 Opaque:12-mm dia.min	
最小检测物体 Minimum detectable object	3m远处直径6mm的不透明物体6-mm-dia.opaque object at 3m	
方向角度 Directional angle	接收器：3 ~ 15° Receiver:3 to 15	
光源(发光波长) Light source(wavelength)	红光(Red LED)655nm	
电源电压 Power supply voltage	DC12~24V±10%脉动 (p-p)10%以下/DC12~24V,impulse(P-P) <10% (DC10~30V)	
消耗电流 Current consumption	发射器15mA以下 Emitter:<20mA ; 接收器20mA以下 Receiver:<15mA	
控制输出 Control output	负载电源电压DC26.4V以下，负载电流100mA以下，开路集电极输出 Load power supply voltage:26.4 VDC max,Load current:100mA max,Open collector output	
残余输出电压 Residual output voltage	负载电流低于10mA时：1V以下 Load current of less than 10mA:1V max 负载电流为10~100mA时：2V以下 Load current of 10 to 100mA:2V max	
输出模式切换 Output mode switching	在Light.ON和Dark.ON之间切换 Switch to change between light-ON and dark-ON	
保护电路 Protection circuits	电源逆接保护,输出短路保护,防止相互干扰功能,输出逆接保护 Reversed power supply polarity protection,Output short-circuit protection,Mutual interference prevention, and Reversed output polarity protection	
响应时间 Response time	动作或复位：1ms以下 Operate or reset:1 ms max	
灵敏度调节 Sensitivity adjustment	单回旋转 调节器 One-turn adjuster	
使用环境照明度(接收器侧) Ambient illumination(Receiver side)	太阳光：10000lux 热灯光：3000lux/sunlight:11000Lx lamplight:3000Lx(Receives light)	
周围温度 Ambient temperature	动作时：-10°C ~ +55°C (不结冰, 不结露) Work:-10°C ~ +55°C iced forbidden 保存时：-25°C ~ +70°C (不结冰,不结露) Work:35~85%RH store:35~95%RH,dewdew forbidden	
周围湿度 Ambient humidity	动作时：35 ~ 85% RH (不结露) 保存时：35 ~ 95% RH (不结露) Work:35~85%RH store:35~95%RH,dewdew forbidden	
绝缘电阻 Insulation resistance	DC500V时20MΩ以上	
耐压 Dielectric strength	AC1,000V 50/60Hz 1min	
抗振动性 Vibration resistance	耐久：10 ~ 55 Hz复振幅1.5mm X,Y,Z各方向 2次/10 ~ 55Hz double-amplitude 1.5mm ,X,Y,Z(2)/10 ~ 55 Hz	
抗冲击性 Shock resistance	500m/s2 X,Y,Z各方向3次	
保护等级 Degree of protection	IEC IP67	
连接方法 Connection method	预先配线型 ( 标准长度 : 2m) Pre-wired cable(standard length:2m)	
指示灯 Indicator light	动作指示：黄色LED/output:Yellow LED ; 电源指示灯：绿色LED/Power:Green LED	
材质 Hosing material	壳体：PBT; 镜头：光学PMMA ; /Hosing : PBT Lens :PMMA	

Dimension(尺寸图)  
(Unit/单位:mm)

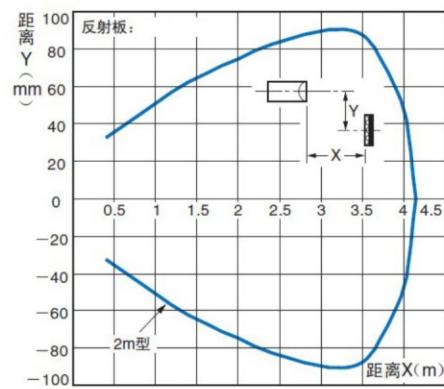
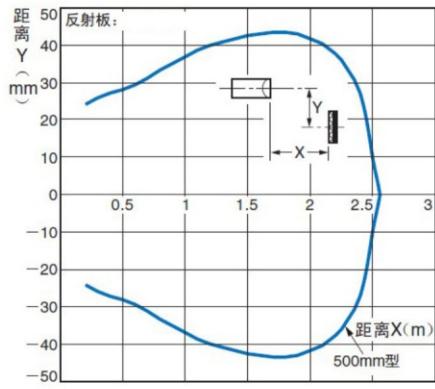
平行移动特性 Parallel movement characteristics  
对射型 Through-beam Models



## 扩散反射型 Diffuse-reflective Models



## 回归反射型 Retro-reflective Models



注明：不同的反光板曲线是不相同的；  
Note: Different reflector curves are not the same;

## 产品特点

AC/DC电源都适用的长距离传感器  
良好的可视性,采用可见光红色LED  
继电器触点输出  
增加类DC型系列产品



## Product Features

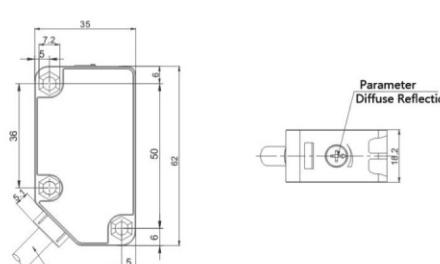
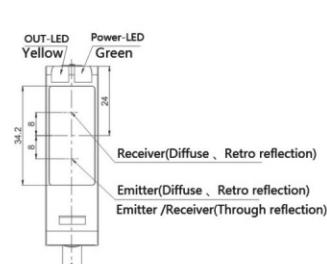
Long-range sensor for AC/DC power supply  
Good visibility, visible light red LED  
Relay contact output  
Increase DC type series products

## 选型表 Ordering Information

检测方式 Sensing mode	形状 Appearance	类型type	检测距离 Sensing distance	型号Model	
				NPN	PNP
对射型 (投光器+受光器) Through beam reflection Emitter +Receiver		标准型 Standard	40m	PF35-T40BNA PF35-T40BNO PF35-T40BNC PF35-T40BE	PF35-T40BPA PF35-T40BPO PF35-T40BPC
			20m	PF50-T20BNA PF50-T20BNO PF50-T20BNC PF50-T20BE	PF50-T20BPA PF50-T20BPO PF50-T20BPC
		继电器型 Relay output	40m	PF50-T20EJA PF50-T20EE	
			20m	PF65-T10EJA PF65-T10EE	
回归反射型 Retro reflection		标准型 Standard	10m	PF35-R14BNA PF35-R14BNO PF35-R14BNC	PF35-R14BPA PF35-R14BPO PF35-R14BPC
			10m	PF50-R3BNA PF50-R3BNO PF50-R3BNC	PF50-R3BPA PF50-R3BPO PF50-R3BPC
		MSR	6m	PF50-P6BNA PF50-P6BNO PF50-P6BNC	
			10m	PF50-R3EJA	
		继电器型 Relay output	200cm	PF35V-D120BNA PF35V-D120BNO PF35V-D120BNC	PF35V-D120BPA PF35V-D120BPO PF35V-D120BPC
			50cm	PF50-D50BNA PF50-D50BNO PF50-D50BNC	PF50-D50BPA PF50-D50BPO PF50-D50BPC
			50cm	PF50-D50EJA	
漫反射 (扩散型) Diffuse reflection		标准型 Standard	200cm	PF35V-D120BNA PF35V-D120BNO PF35V-D120BNC	PF35V-D120BPA PF35V-D120BPO PF35V-D120BPC
			50cm	PF50-D50BNA PF50-D50BNO PF50-D50BNC	PF50-D50BPA PF50-D50BPO PF50-D50BPC

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

Sensing mode(检测方式)	Through beam reflection(对射型)	Retro reflection(回归反射型)	Diffuse reflection(漫反射型)			
Model(型号)	PF35-T40B□O(Receiver)/接收	PF35-R14B□O	PF35V-D120B□O			
	PF35-T40B□C(Receiver)/接收	PF35-R14B□C	PF35V-D120B□C			
	PF35-T40B□A(Receiver)/接收	PF35-R14B□A	PF35V-D120B□A			
	PF35-T40BE(Ejector)/发射	—	—			
Sensing distance(检测距离)	40m	10m	200cm(Parameter)/(电位器可调)			
Standard target(标准检测体)	—	optical diffuser plate 50×50(反光板50×50)	white paper 200×200(白纸200×200)			
Output mode(输出方式)	N:NPN P:PNP					
Output state(输出状态)	DC 3 wire : NO/NC , DC 4 wire: NO+NC (三线:NO/NC ,四线: NO+ NC)					
Sensing material(检测物体)	>Φ15mm Opaque object(Φ15mm不透明体以上)	>Φ75mm Opaque object(Φ75mm不透明体以上)	—			
Light source(光源)	infrared light 850nm(红外光850nm)	infrared light 850nm(红外光850nm)	infrared light 850nm(红外光850nm)			
		Red light 660nm(红光660nm)				
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)					
Residual voltage(残留电压)	<2V DC ( load current <100mA ) /<2V DC( 负载电流低于100mA时 )					
Current consumption (消费电流)	Emitter:<20mA(发射管:<20mA)	<20mA				
	Receiver:<15mA(接收管:<15mA)	<20mA				
Load current(负载电流)	≤100mA(overload protection)/≤100mA(带过载保护)					
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection(短路保护,电源逆接极性保护)					
Response frequency(响应频率)	500Hz					
Switch delay (开关延迟)	ON	<0.5ms				
	OFF	<0.5ms				
Hysteresis error(应差距离)	—	—	20%max			
Pointing angle(指向角)	3~15°	2~10°	—			
Indicator light(指示灯)	动作指示灯:黄色 output:Yellow LED 电源指示灯:绿色 Power:Green LED					
Connection(连接方式)	Cable2m-PVC-terminal/标准导线长2米PVC-可配端子					
Ambient temperature (环境温度)	Work:-10°C~+55°C store:-25°C~+70°C,iced forbidden/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰)					
Ambient humidity (环境湿度)	Work:35~85%RH store:35~95%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~95%RH,不结露)					
Ambient illumination (环境照明)	sunlight:11000Lx lamplight:3000Lx(Receives light)/太阳光:11000Lx 热灯光:3000Lx(接收光)					
Withstand voltage(耐压)	1000VAC,50/60Hz 1min(1000VAC,50/60Hz 1min充电部整体与外壳间)					
Insulation resistance (绝缘强度)	>500MΩ ( DC500V megger ) /500MΩ以上(DC500V摇表)充电部整体与外壳间					
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm ,X,Y,Z(2H)/10~55 Hz, 复振幅 1.5mm ,X,Y,Z(2H)					
Anti-impact(耐冲击)	Approx100G(1000m/S²),X,Y,Z(3 times)/大约100G(1000m/S²),X,Y,Z(各方向3 次)					
Protection degree(防护等级)	IEC IP65					
Housing material(材质)	Hosing : ABS Lens : PMMA(壳体:丙烯腈-苯乙烯-丁二烯共聚物 透镜:亚克力)					
Dimension(尺寸图) (Unit/单位:mm)	 					

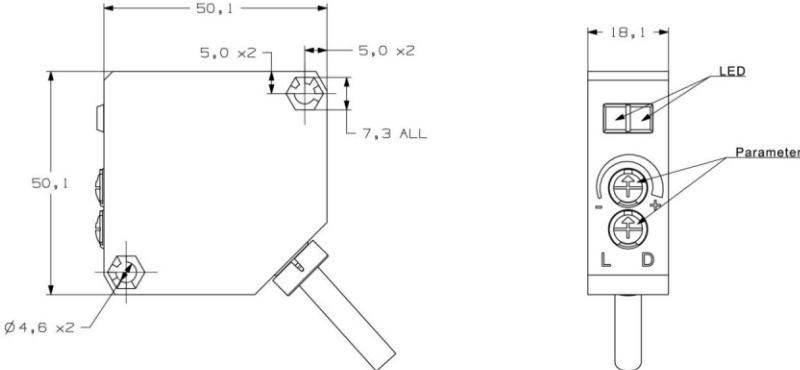
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## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

检测方式Sensing Model	对射型Through-beam	回归反射型 Retro-reflective		漫反射(扩散型)Diffuse-reflection			
型号Model	PF50-T40□S	PF50-T05□S	无偏振片 No polarizer	带偏振片(M.S.R功能) With polarizer(M.S.R function)			
	PF50-T40BE	PF50-T05BE	PF50-R7B□S	PF50-P6B□S			
检测距离Sensing distance	40m	—	—	6m 300mm			
标准检测体 Standard sensing object	Φ15mm以上不透明体 Opaque Φ15mm min		Φ75mm以上不透明体 Opaque Φ75mm min	白纸 white paper 300*300mm			
输出方式Output mode	NPN/PNP, NO/NC						
输出状态Output state	三线:NO/NC Three wires:NO/NC						
光 源Light source	红色发光二极管 ( 660nm ) Red LED ( 660nm )						
电源电压Power supply voltage	DC12~24V含脉动 ( p-p)10% DC10~30V impulse ( p-p)10%						
消费电流 Power consumption	40mA以下 (投光器25mA以下、受光器15mA以下) less than 40mA	30mA以下 Less than 30mA					
负载电流Load current	≤100mA(带过载保护)Overload protection						
回路保护Circuit protection	有短路保护，电源逆接极性保护，输出逆接极性保护 Short-circuit protection,reverse connection protection						
响应时间Response time	1ms以下 less than 1ms						
指向角Directional angle	投光器/受光器 : 3°以上 above 3°	1.5°以上 above 1.5°					
灵敏度调节 Sensitivity adjustment	单方向旋钮 One-turn adjuster						
连接方式Connection	PVC导线引出式2m ( 标准型 ) /M8接插件型 Cable 2m-PVC-terminal						
温度/湿度 Temperature/Humidity	动作时 : -25°C ~ +55°C (不结冰) / 35~85% RH (不结露) work:-25°C ~ +55°C,iced forbidden/35~85% RH dewde forbidden 保存时 : -40°C ~ +70°C (不结冰) / 35~95% RH (不结露) store:-40°C ~ +70°C,iced forbidden/35~95% RH dewde forbidden						
周围光度 Ambient illumination	太阳光 : 11,000lux 热灯光 : 3,000lux Sunlight : 11,000lux Lamplight : 3,000lux						
耐 压 Dielectric strength	1,500VAC,50/60Hz 1min充电部整体与外壳间						
绝缘电阻 Insulation resistance	20MΩ以上 ( DC500V摇表 ) 充电部整体与外壳间						
耐 振 动 ( 耐 久 ) Vibration resistance	耐久 : 10~55 Hz复振幅1.5mm X,Y,Z各方向 2H 10~55 Hz, double-amplitude1.5mm X,Y,Z 2H						
耐冲击 ( 耐 久 ) Shock resistance	500m/s <sup>2</sup> X,Y,Z各方向 3次 500m/s <sup>2</sup> for three times each in X, and Z directions						
防护等级 Protection degree	IEC IP67						
材 质Material	壳体 : ABS; 镜头 : 亚克力 Hosing:ABS ; Lens: PMMA						

CAD数据

Dimension(尺寸图)  
(Unit/单位:mm)

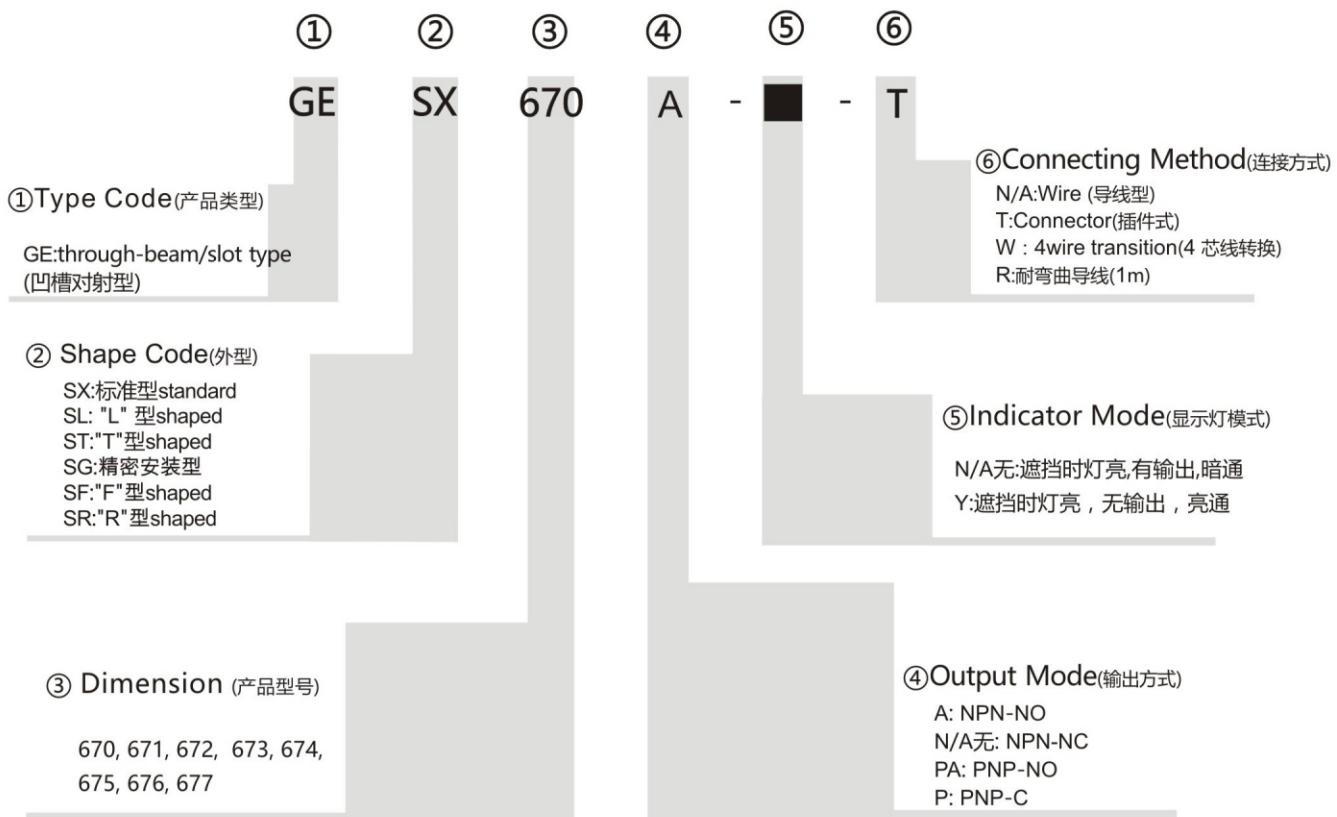
## 额定规格/性能 Ratings and Specifications

继电器型 Relay output

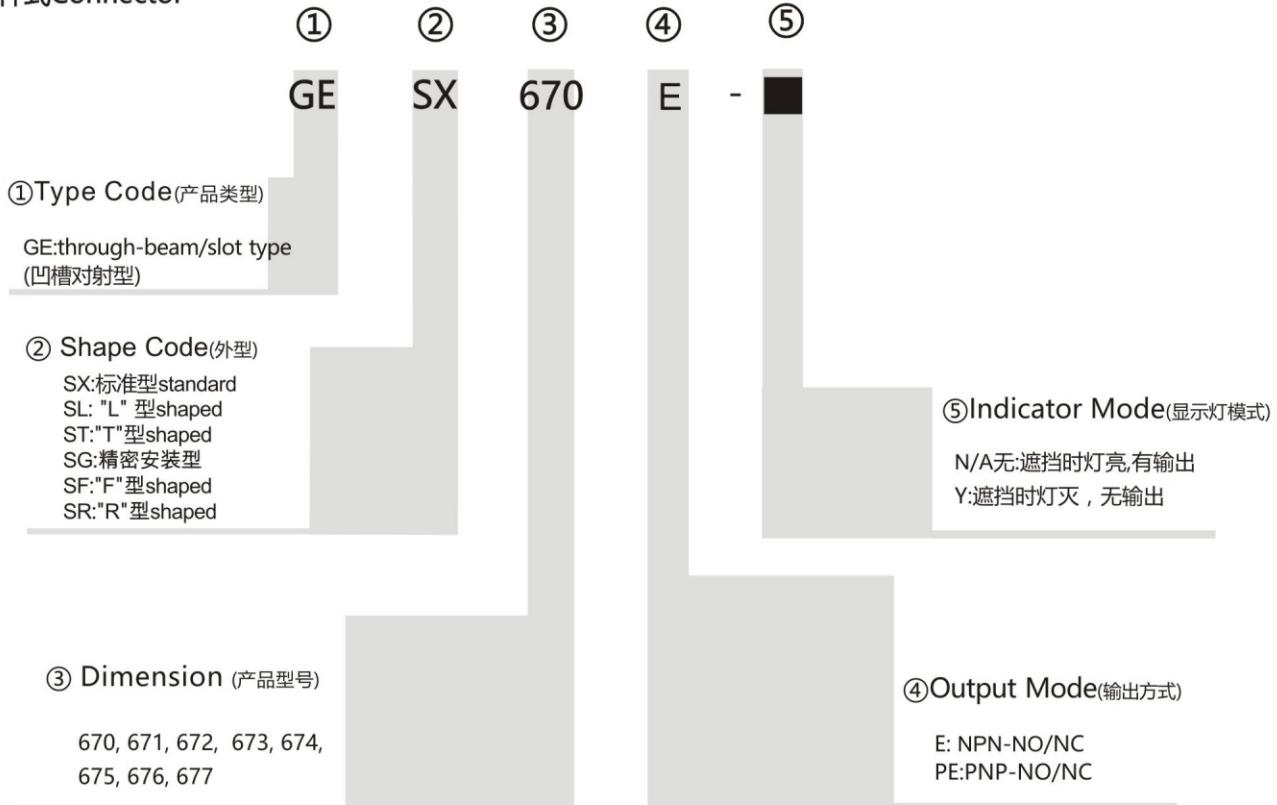
检测方式 Sensing Model	对射型 Through beam reflection		回归反射型 Retro reflection		漫反射(扩散型) Diffuse reflection			
型号Model	PF50-T40EJA	PF50-T05EJA	无偏振片	带偏振片(M.S.R功能)	长距离			
	PF50-T40EE	PF50-T05EE	PF50-R7BEJA	PF50-P6BEJA	PF50-D30BEJA			
检测距离 Sensing distance	40m	—	—	6m	300mm			
标准检测体Standard target	Φ15mm以上不透明体Opaque Φ15mm min		Φ75mm以上不透明体Opaque Φ75mm min		白纸 white paper 300*300mm			
输出方式Output mode	NPN/PNP, NO/NC							
输出状态Output state	三线:NO/NC Three wires:NO/NC							
光源Light source	红色发光二极管 (624nm) Red LED (624nm)							
电源电压Power supply	DC12~240V							
消费电流 Current consumption	3W以下(投光器1.5W以下、受光器1.5W以下) Less than 3W		2W以下 Less than 2W					
控制输出Control output	继电器输出:1c触点 AC250V 3A( $\cos\phi=1$ )以下、DC5V 10mA以上 入光时ON/遮光时ON 开关切换式 Relay output SPDT, 250 VAC, 3A max. ( $\cos\phi=1$ ), 5 VDC, 10 mA min., Light-ON/Dark-ON selectable							
寿命Life (继电器输出)	机械Mechanical 电5,000万次以上 (开关频率18,000次/h) 50,000,000 times min. (switching frequency: 18,000 times/h)							
	电气Electrical 电10万次以上(开关频率1,800次/h) 100,000 times min. (switching frequency: 1,800 times/h)							
负载电流Load current	$\leq 100\text{mA}$ (带过载保护) Overload protection							
回路保护Circuit protection	有短路保护，电源逆接极性保护，输出逆接极性保护 Short-circuit protection, reverse connection protection							
响应时间 Response time	20ms以下 Less than 20ms							
指向角Directional angle	投光器/受光器 : 3°以上 Above 3°		1.5°以上 Above 1.5°		—			
灵敏度调节 Sensitivity adjustment	单方向旋钮 One-turn adjuster							
连接方式Connection	PVC导线引出式2m (标准型) / M8接插件型 Cable 2m-PVC-terminal							
温度/湿度 Temperature/Humidity	动作时 : -25°C ~ +55°C (不结冰) / 35 ~ 85% RH (不结露) work:-25°C ~ +55°C, iced forbidden/35 ~ 85% RH dewde forbidden 保存时 : -40°C ~ +70°C (不结冰) / 35 ~ 95% RH (不结露) store:-40°C ~ +70°C, iced forbidden/35 ~ 95% RH dewde forbidden							
周围光度 Ambient illumination	太阳光 : 11,000lux 热灯光 : 3,000lux Sunlight : 11,000lux Lamplight : 3,000lux							
耐压Dielectric strength	1,500VAC, 50/60Hz 1min 充电部整体与外壳间							
绝缘强度 Insulation resistance	20MΩ以上 (DC500V摇表) 充电部整体与外壳间							
耐振动(耐久) vibration resistance	耐久 : 10 ~ 55 Hz复振幅1.5mm X,Y,Z各方向 2H 10 ~ 55 Hz, double-amplitude 1.5mm X,Y,Z 2H							
耐冲击(耐久) Shock resistance	500m/s² X,Y,Z各方向 3次 500m/s² for three times each in X, and Z directions							
防护等级 Protection degree	IEC IP67							
材质Material	壳体 : ABS; 镜头 : 亚克力 Hosing: ABS ; Lens: PMMA							
Dimension(尺寸图) (Unit/单位:mm)								

CAD数据

## 导线引出型(1m) Pre-wired Models



## 插件式Connector



## 产品特点

体积小,重量轻,安装便捷;  
投光器和受光器置于一体,不需要对光轴;  
专用芯片处理,抗光能力强,抗电磁干扰能力强;  
通槽内检测,灵敏度高,稳定可靠

## Product Features

Small size, light weight, convenient installation  
Emitter and receiver in the same house, not need to adjust optic axis  
ASIC, ambient light resistance, anti-electromagnetic interference  
Detection through slot, high sensitivity, stable and reliable



## 选型表 Ordering Information

形状 Shape	检测方式 Sensing method	检测距离 Sensed distance	输出配置 Connection method	输出形态 Out type	
				NPN	PNP
标准型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SX670E GE-SX670E-Y	GE-SX670PE GE-SX670PE-Y
L型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SL671E GE-SL671E-Y	GE-SL671PE GE-SL671PE-Y
T型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-ST672E GE-ST672E-Y	GE-ST672PE GE-ST672PE-Y
紧密安装型	对射型 (凹槽形) Through-beam (With slot)	5mm(槽宽) 5mm(slot width)	遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SG673E GE-SG673E-Y	GE-SG673PE GE-SG673PE-Y
紧密安装型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SG674E GE-SG674E-Y	GE-SG674PE GE-SG674PE-Y
T型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-ST675E GE-ST675E-Y	GE-ST675PE GE-ST675PE-Y
F型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SF676E GE-SF676E-Y	GE-SF676PE GE-SF676PE-Y
R型			遮挡时灯亮,有输出 遮挡时灯亮,无输出	GE-SR677E GE-SR677E-Y	GE-SR677PE GE-SR677PE-Y

注明:1.以上型号中体现的都是标准导线; 2.耐弯曲导线可以定制,在型号尾端部分加“R”

连接用连接器	种类 Type		型号 Model	备注 Remarks		
	接插件 Connector	附带导线 Connector with Cable		EE-1006		
			EE-1001	EE-1006		
			EE-1006	EE-1006		
	R-带耐曲折导线 Connector with RobotCable	EE-1001-R				
			EE-1006-R			

## 导线引出型 Pre-wired models

形状Shape	检测方式Sensing method	检测距离Sensing distance	连接方式Connection method	输出形态Out type	
				NPN	PNP
标准型	对射型 ( 凹槽形 ) Through-beam(With slot)	5mm(槽宽) 5mm(slot width )	导线引出型 ( 1m ) pre-wired Models(1m)	GE-SX670A GE-SX670 GE-SX670-W	GE-SX670PA GE-SX670P GE-SX670P-W
L型				GE-SL671A GE-SL671 GE-SL671-W	GE-SL671PA GE-SL671P GE-SL671P-W
T型				GE-ST672A GE-ST672 GE-ST672-W	GE-ST672PA GE-ST672P GE-ST672P-W
紧密安装型				GE-SG673A GE-SG673 GE-SG673-W	GE-SG673PA GE-SG673P GE-SG673P-W
紧密安装型				GE-SG674A GE-SG674 GE-SG674-W	GE-SG674PA GE-SG674P GE-SG674P-W
T型				GE-ST675A GE-ST675 GE-ST675-W	GE-ST675PA GE-ST675P GE-ST675P-W
F型				GE-SF676A GE-SF676 GE-SF676-W	GE-SF676PA GE-SF676P GE-SF676P-W
R型				GE-SR677A GE-SR677 GE-SR677-W	GE-SR677PA GE-SR677P GE-SR677P-W

注1：导线长度可根据客户需要定制

注2：耐折导线引出型标准长度1米，在型号中体现“R”

Note 1: Wire length can be customized according to customer needs

Note 2: The standard length of the bending resistance pre-wire type is 1m, and "R" is shown in the model

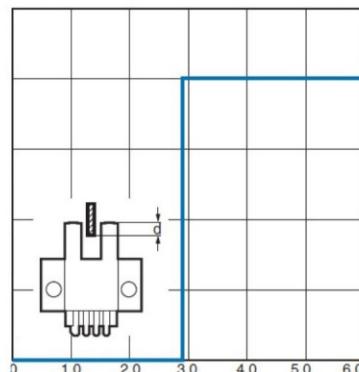
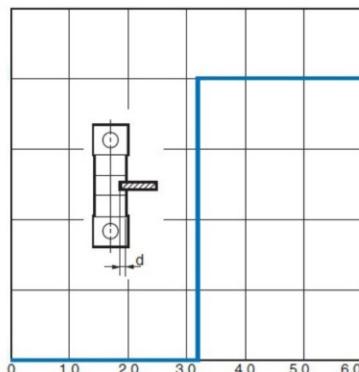
## 特性参数表 Ratings and Specifications

## 标准型 Standard

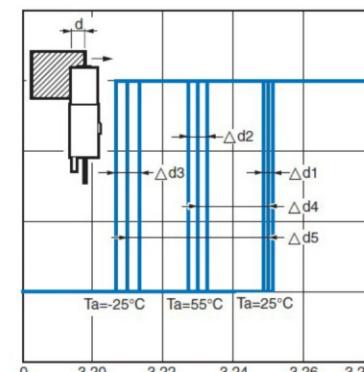
形状Shape		标准型	L型	T型	紧密安装型	紧密安装型	T型	F型	R型
型号Model	插件式 connector	GE-SX670E GE-SX670E-Y GE-SX670PE GE-SX670PE-Y	GE-SL671E GE-SL671E-Y GE-SL671PE GE-SL671PE-Y	GE-ST672E GE-ST672E-Y GE-ST672PE GE-ST672PE-Y	GE-SG673E GE-SG673E-Y GE-SG673PE GE-SG673PE-Y	GE-SG674E GE-SG674E-Y GE-SG674PE GE-SG674PE-Y	GE-ST675E GE-ST675E-Y GE-ST675PE GE-ST675PE-Y	GE-SF676E GE-SF676E-Y GE-SF676PE GE-SF676PE-Y	GE-SR677E GE-SR677E-Y GE-SR677PE GE-SR677PE-Y
	引线式 Pre-wired models	GE-SX670A GE-SX670 GE-SX670PA GE-SX670P GE-SX670-W GE-SX670P-W	GE-SL671A GE-SL671 GE-SL671PA GE-SL671P GE-SL671-W GE-SL671P-W	GE-ST672A GE-ST672 GE-ST672PA GE-ST672P GE-ST672-W GE-ST672P-W	GE-SG673A GE-SG673 GE-SG673PA GE-SG673P GE-SG673-W GE-SG673P-W	GE-SG674A GE-SG674 GE-SG674PA GE-SG674P GE-SG674-W GE-SG674P-W	GE-ST675A GE-ST675 GE-ST675PA GE-ST675P GE-ST675-W GE-ST675P-W	GE-SF676A GE-SF676 GE-SF676PA GE-SF676P GE-SF676-W GE-SF676P-W	GE-SR677A GE-SR677 GE-SR677PA GE-SR677P GE-SR677-W GE-SR677P-W
输出类型 Output type	A : PNP-NO, N/A无:NPN-NC, PA:PNP-NO, P:PNP-NC, WR:NO/NC								
检测距离 Sensing distance	5mm(槽宽)5mm ( slot width )								
检测物体 Sensing material	2×0.8mm以上的不透明体 Above 2×0.8mm Opaque material								
回差范围 Hysteresis	0.025mm以下 Less than 0.025mm								
光源 Light source	红外发光二极管 ( 940mm ) Infrared emitting diode ( 940mm )								
电源电压 Power supply	DC5~24V±10%波纹(P-P)10%以下 DC5~24V±10% ripple(P-P)less than 10%								
指示灯 Indicator light	入光时亮灯 ( 红色 ) ( A型、R型为遮光时亮灯 ) Lights when entering light(red) ( A-shaped,R-shaped light when cover light )								
消费电流 Current consumption	12mA以下 ( 接插座型、L端子开放时 ) 35mA以下 ( NPN导线引出型 ) 30mA以下 ( PNP导线引出型 ) 12 mA max. (Connector models, L terminal open), 35 mA max. (NPN pre-wired models), 30 mA max. (PNP pre-wired models)								
控制输出 Output control	NPN型 : NPN开放式接插座 输出5~24V 残留电压1.3V以下 ( 负载电流100mA时 ) 、残留电压0.4V以下 ( 负载电流40mA时 )								
	PNP型 : PNP开放式接插座 输出5~24V 残留电压1.3V以下 ( 负载电流100mA时 ) NPN open collector: 5 to 24 VDC, 100 mA load current with a residual voltage of 0.8 V max. 40 mA load current with a residual voltage of 0.4 V max. PNP open collector: 5 to 24 VDC, 50 mA load current with a residual voltage of 1.3 V max. OFF current (leakage current): 0.5 mA max.								
回路保护 Circuit protection	——								
响应频率 Response frequency	>1KHZ以上 ( 平均值kHZ ) 1KHZ min ( AVG 3000HZ )								
环境照明 Ambient illumination	受光面照度 荧光灯 : 10001以下 Intensity of illumination fluorescent lamp:<3000lx								
环境温度 Ambient temperature	工作时 : -25°C~+55°C 保存时 : -30°C~+80°C ( 无结冰、结露 ) Work: -25°C~+55°C store:-30°C~+80°C with no icing or condensation								
环境湿度 Ambient humidity	工作时 : 5%~85%RH 保存时 : 5%~95% ( 无结冰、结露 ) Work: 5%~85%RH store: 5%~95%,with no icing or condensation								
耐振动 Anti-vibration	200~2000Hz(最大加速度100m/s <sup>2</sup> )上下振幅1.5mm X,Y,Z各方向2h ( 4min周期 ) Destruction: 20 to 2,000 Hz (peak acceleration: 100 m/s <sup>2</sup> )1.5-mm double amplitude for 2h (4-min periods) each in X, Y, and Z directions								
耐冲击 Anti-shock	500m/S <sup>2</sup> , X,Y,Z各方向3次 500m/S <sup>2</sup> , X,Y,Z 3 times								
耐压 Withstand voltage	1000VAC,50/60Hz 1min (1000VAC,50/60Hz 1min充电部整体与外壳间)								
防护等级 Protection degree	IP54 IEC60529								
连接方式 Connection	接插座型 ( 可直接焊接 ) 、导线引出型 ( 标准导线长1米 ) 、接插座中继型 ( 标准导线长0.1米 ) Connector Models (direct soldering possible), Pre-wired Models (Standard cable length: 1 m)Models with Connectors (Standard cable length: 0.1 m),								
材质 Material	壳体 : 聚对苯二甲酸丁二醇酯 ( PBT ) Hosing : Polybutylene phthalate ( PBT ) 罩盖 投、受光部 : 聚碳酸酯Cover Emitter/receiver:Polycarbonate								

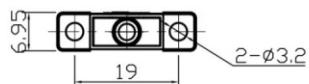
## 工程数据 Performance data

## 检测位置特性 Position Characteristics

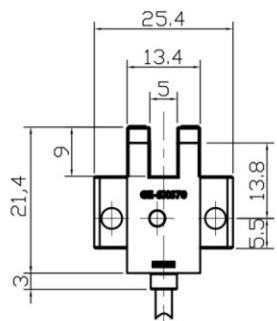


## 检测位置特性 Position Characteristics

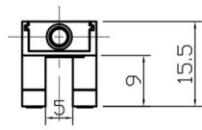
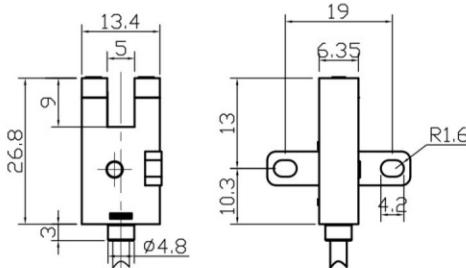
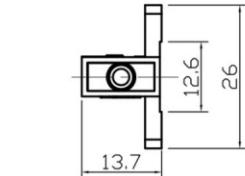




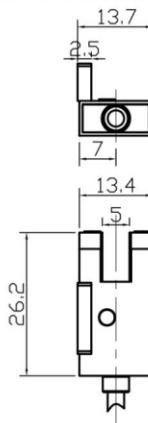
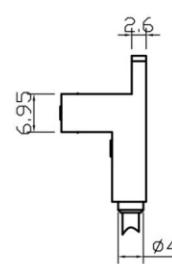
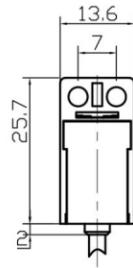
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◆GE-SX670-WR



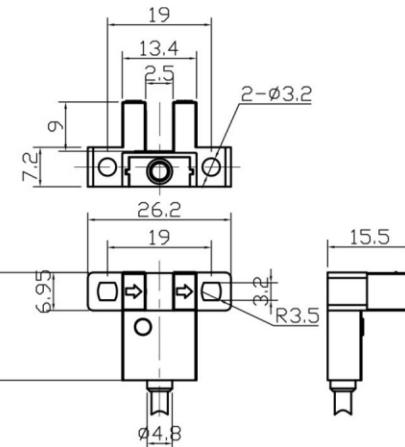
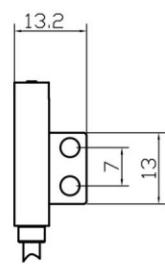
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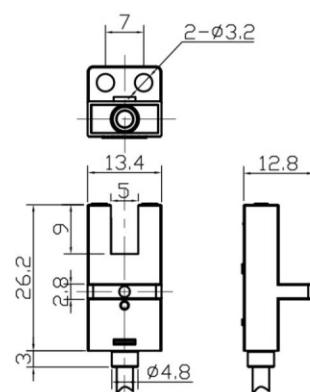
◆GE-SG674□  
◆GE-SG674-WR



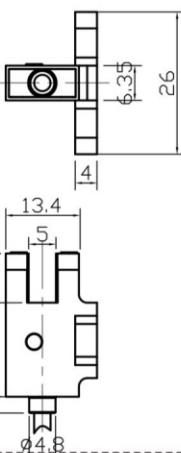
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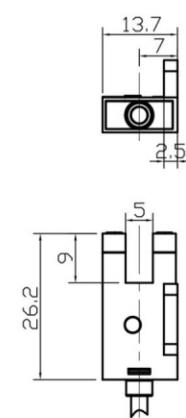
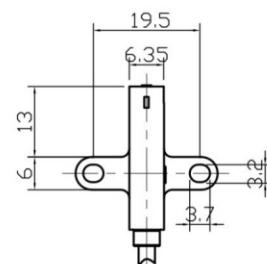
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◆GE-SL671-WR



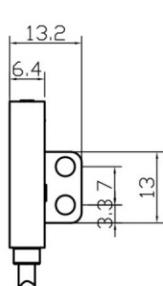
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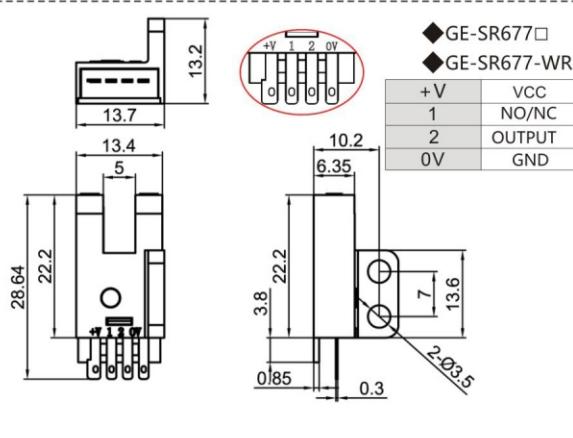
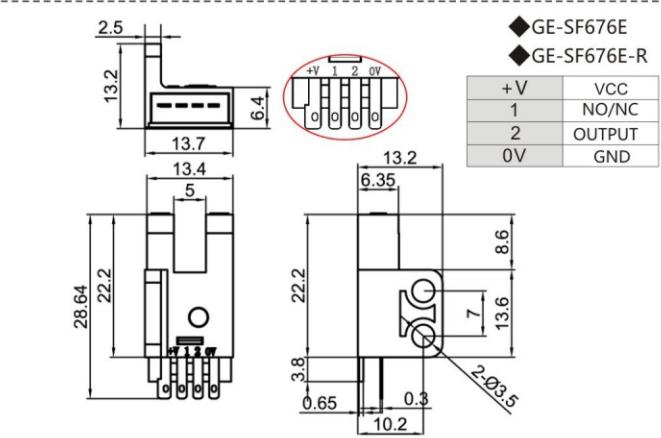
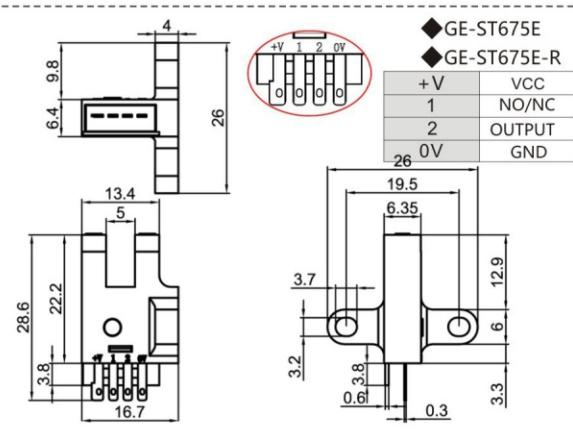
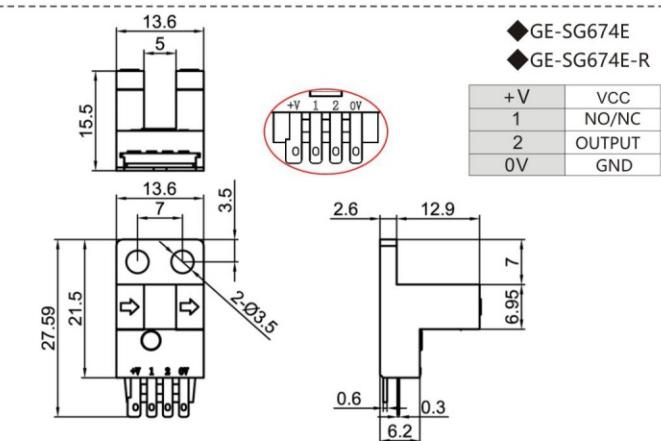
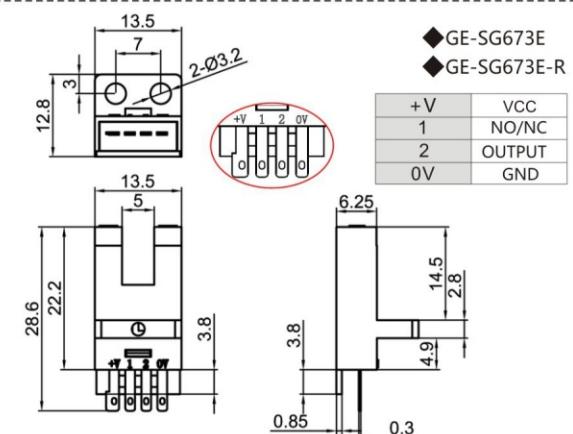
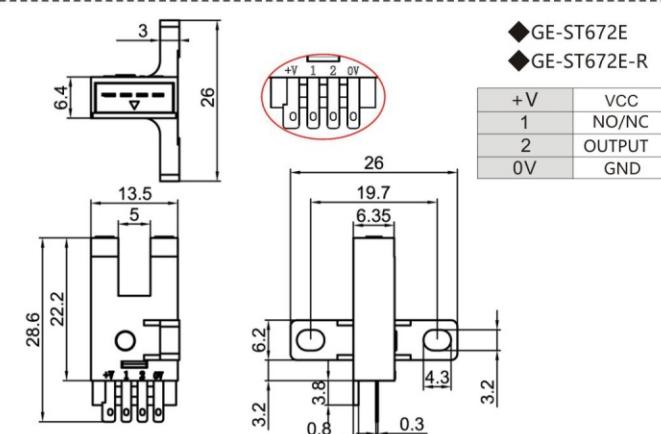
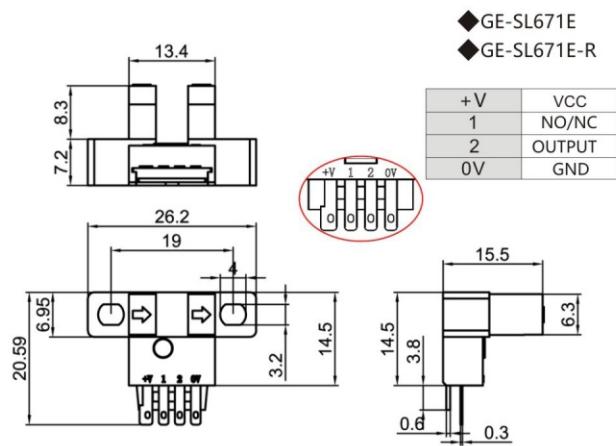
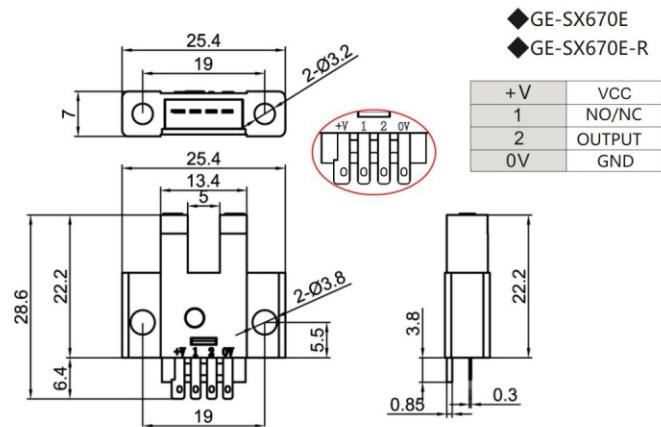


◆GE-ST675□  
◆GE-ST675-WR



◆GE-SR677□  
◆GE-SR677-WR





## 产品特点

- 尺寸小巧，有5中型号备选；
- 显示灯从多个方向可见，可安装在任意位置；
- 外壳采用耐油,耐腐蚀材质;
- 所有的型号均标配耐曲折导线；



## Product Features

- Various small size, 5 models available
- The displayed light is visible from multiple direction and can be installed at any position
- Hosing oil-resistant and corrosion-resistant materials
- All models are equipped with standard bending resistance wire;

## 选型表

形状Shape	检测方式 Sensing method	检测距离 Sensing distance	连接方式 Connection method	输出形态Out type	
				NPN	PNP
标准型				GE-SX950A GE-SX950 GE-SX950-W	GE-SX950PA GE-SX950P GE-SX950-W
L型				GE-SL951A GE-SL951 GE-SL951-W	GE-SL951PA GE-SL951P GE-SL951-W
F型	对射型 (凹槽形) Through-beam (With slot)	5mm (槽宽slot width )	标准导线 Standard cable ( 2m )	GE-SF952A GE-SF952 GE-SF952-W	GE-SF952PA GE-SF952P GE-SF952-W
R型				GE-SR953A GE-SR953 GE-SR953-W	GE-SR953PA GE-SR953P GE-SR953-W
U型				GE-SU954A GE-SU954 GE-SU954-W	GE-SU954PA GE-SU954P GE-SU954-W

注明:1.以上型号中体现的都是标准导线;  
2.耐弯曲导线可以定制，在型号尾端部分加“R”

## 额定规格/性能 Ratings and Specifications

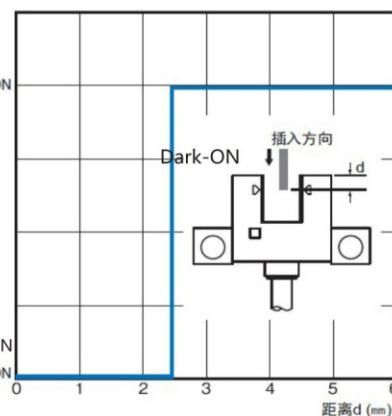
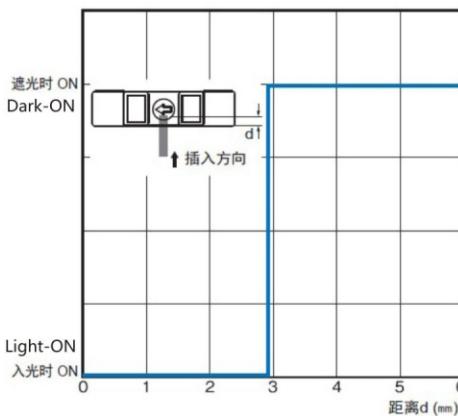
## 标准型 Standard

型号 Model	标准型 Standard	L型 L-shaped	F型 L-shaped	R型 L-shaped	U型 L-shaped
	GE-SX950□□	GE-SL951□□	GE-SF952□□	GE-SR953□□	GE-SU954□□
输出类型 Output type	A:NPN-NO; N/A无:NPN-NC PA:PNP-NO, P:PNP-NC, WR:NO/NC				
检测距离 Sensing distance	5mm ( groove )				
检测物体 Sensing material	不透明体 $2 \times 0.8\text{mm}$ 以上 > $2 \times 0.8\text{mm}$ Opaque object				
回差范围 Hysteresis error	0.025mm				
光源 Light source	红外发光二极管 Infrared emitting diode				
电源电压 Power supply	DC12~24V 脉动(P-P)10%以下(DC10~30V) DC12~24V, Impulse(P-P)<10%(DC10~30V)				
指示灯 Indicator light	红色指示灯 RED LED				
消费电流 Current consumption	< 15mA				
控制输出 Output control	NPN open-collector output DC12~24V Residual voltage<1.3V(load current 80mA) NPN集电极开路输出 DC10~24V 残留电压1.3V以下(负荷电流 80mA时) Residual voltage<0.4V(load current 40mA) 留电压0.4V以下(负荷电流 40mA时)				
回路保护 Circuit protection	逆接极性保护 ( 残留电压1.3V以下 ) Reverse polarity protection(residual voltage<1.3V)				
响应频率 Response frequency	>1000HZ以上 ( 平均值3000HZ ) 1000HZ ( AVG 3000HZ )				
环境照明 Ambient illumination	受光面照度 荧光灯 : <3000lx Intensity of illumination fluorescent lamp:<3000lx				
环境温度 Ambient temperature	使用时 : -10°C~+55°C 保存时 : -25°C~+80°C , 不结冰 Work: -10°C~+55°C store:-25°C~+80°C iced forbidden				
环境湿度 Ambient humidity	使用时 : 35%~85%RH 保存时 : 35%~95%,不结露Work: 35%~85%RH store: 35%~95%,dewde forbidden				
耐振动 Anti-vibration	20~2000HZ ( 最大加速度100m/S <sup>2</sup> ), 复振幅1.5mm , X,Y,Z各方向 ( 2h ) 4min周期 20~2000HZ(Max-acceleration100m/S <sup>2</sup> ,double-amplitude1.5mmX,Y,Z(2h)4min/Period)				
耐冲击 Anti-impact	500m/S <sup>2</sup> , X,Y,Z各方向3次500m/S <sup>2</sup> , X,Y,Z 3 times				
耐压 Withstand voltage	1000VAC,50/60Hz 1min充电部整体与外壳间1000VAC,50/60Hz 1min				
防护等级 Protection degree	IEC IP50				
连接方式 Connection	标准导线长2米PVC-可配端子Cable2m-PVC-terminal				
材质 Housing material	壳体 : 聚碳酸酯合金料Hosing:PC+ABS				
	发射管/接收管 : 聚碳酸酯光学料Emitter/receiver:PC				

## 工程数据 Performance data

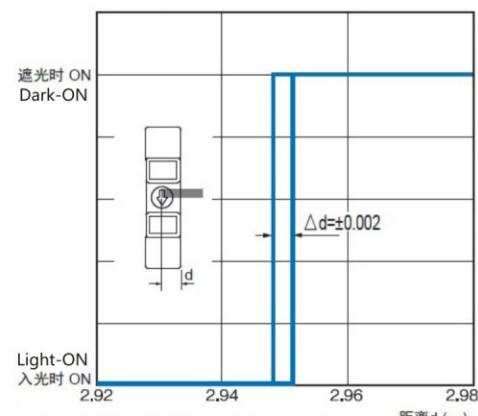
## 检测位置特性

## Position Characteristics



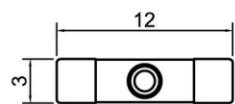
## 检测位置特性

## Position Characteristics

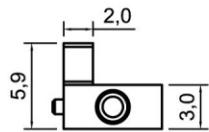


注明:以上为暗状态下的数据,由于外部干扰光、或受检物体透光时,可能会受影响;

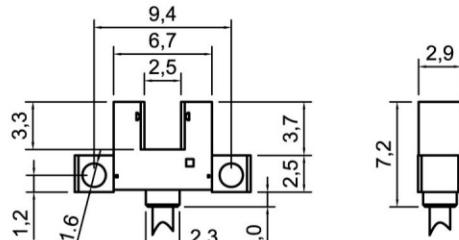
Note:The data applies to dark status.Operation maybe affected by external light interference or light coming through the sensing object.



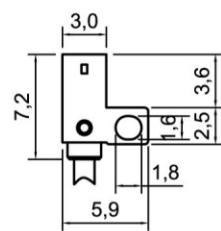
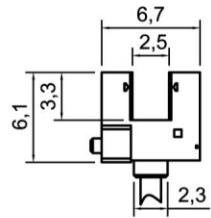
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GE-SX950  
GE-SX950PA  
GE-SX950P  
GE-SX950-WR  
GE-SX950P-WR



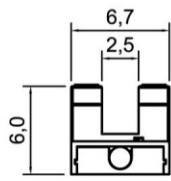
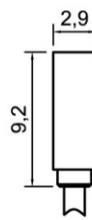
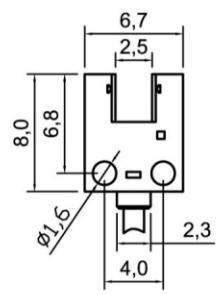
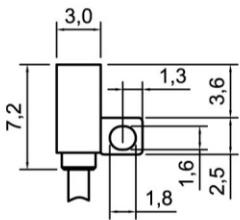
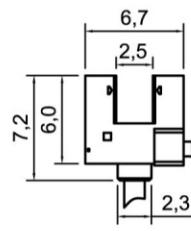
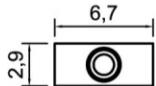
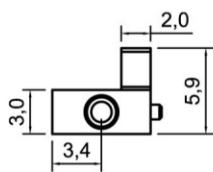
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GE-SX952P  
GE-SX952-WR  
GE-SX952P-WR



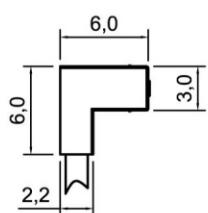
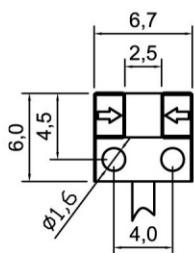
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GE-SX954A  
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GE-SX954P-WR



GE-SX951A  
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## 产品特点

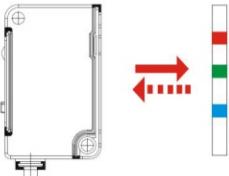
采用先进的包胶工艺,IP67设计结构  
R.G.B三色自动识别，满足各方面检测要求  
色标、颜色二种检测模式，最快速度45us  
极细光点，可实现高精度检测  
按键示教设置，使用简单方便



## Product Features

Advanced encapsulation process, IP67 design structure  
R.G.B three-color automatic identification to meet all aspects of testing requirements  
Color mark, color two detection modes, the fastest speed 45us  
Extremely fine spot for high precision detection  
Key teaching settings, easy to use

## 选型表 Ordering Information

检测方式 Sensing mode	形状 Appearance	类型type	检测距离 Sensing distance	型号Model	
				NPN	PNP
同轴反射 Coaxial reflective		导线引出型 Pre-wired type	(10±3)mm	PC35-D10BNS	PC35-D10BPS
		插件式 Connector	(10±3)mm	PC35-D10BNS-E	PC35-D10BPS-E
凹槽型 Grooved-type		导线引出型 Pre-wired type	2mm	PC42-T2BNO	PC42-T2BPO

## 标签传感器 Label Sensor

### 产品特点

高反应速度:10KHz  
可检测非透明标签  
可检测标记在透明胶带上的有色标记

### Product Features

High speed response:10KHz  
label Non-transparent tape detectable  
mark on transparent tape detectable



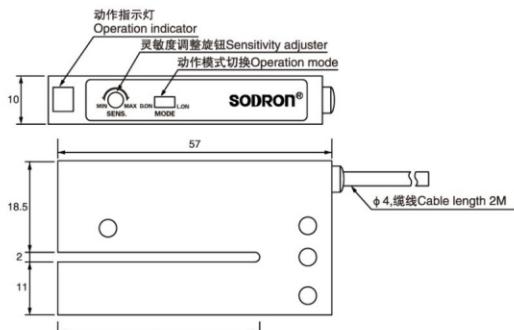
## 额定规格/性能 Ratings and Specifications

## 标准型Standard

Sensing mode(检测方式)	Diffuse reflection漫反射	
Specification(尺寸)	PC35	
Model(型号)	PC35-D10BNS(-E)	PC35-D10BPS(-E)
Sensing distance(检测距离)	(10±3)mm	
Optical spot diameter (投光点直径)	1*5mm(Sensing distance检测距离10mm)	
Output mode(输出方式)	NPN	PNP
Switch mode(切换模式)	色标模式Color mark mode: Low:0~+2V 输入阻抗约Output Resistance 10KΩ 彩色模式Color mode : Hight:+5V~+V或断开Or break	彩色模式Color mark mode: Hight:+5V~+V 输入阻抗约Output Resistance 10KΩ 色标模式Color mode : Low:0~+0.6V/或断开Or break
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% (DC10-30V)/DC12~24V脉动(P-P)10%以下 (DC10-30V)	
Residual voltage(残留电压)	<1.5V DC ( load current<100mA ) /<1.5V DC以下 ( 负载电流低于100mA时 )	
Current consumption (消费电流)	30mA max	
Load current(负载电流)	≤100mA	
Circuit protection(回路保护)	Short-circuit protection, reverse connection protection/短路保护,电源逆接极性保护	
Response Time(响应时间)	色标模式Color mark mode :<60us 彩色模式 Color mode:< 150us	
Light Source(光源)	Red/Green/Blue Composite LED(红色/绿色/蓝色复合LED) Projection peak wavelength : 640nm/525nm/470nm 投光波峰波长 : 640nm/525nm/470nm	
Connection(连接方式)	Cable 2m-PVC标准导线长2米	M12 Connector PVC-M12连接器
Ambient temperature (环境温度)	Work:-10°C~+55°C,store:-25°C~+70°C,with no icing or condensation/(使用时:-10°C~+55°C 保存时:-25°C~+70°C,不结冰不结露)	
Ambient humidity (环境湿度)	Work:35~85%RH store:35~85%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~85%RH,不结露)	
Withstand voltage(耐压)	AC1000V,50/60Hz 1min	
Insulation resistance (绝缘电阻)	>50MΩ ( DC500V megger ) /500MΩ以上(DC500V摇表)充电部整体与外壳间	
Anti-vibration(耐振动)	10~55 Hz, double-amplitude 1.5mm ,X,Y,Z( 2H )/10~55 Hz, 复振幅 1.5mm ,X,Y,Z( 2H )	
Protection degree(防护等级)	IEC IP67	
Housing material(材质)	Hosing壳体: PBT Lens透镜 : PC	
Dimension(尺寸图) (Unit/单位:mm)	<p>PC35导线引出型Wire</p> <p>CAD数据</p>	<p>PC35接插座型Connector</p> <p>CAD数据</p>

## 额定规格/性能 Ratings and Specifications

## 标准型Standard

Sensing mode(检测方式)	SLOT(槽型)	
Specification(尺寸)	PC42	
Model(型号)	PC42-T2BNO	PC42-T2BPO
Output mode(输出方式)	NPN	PNP
Output state(输出状态)	NO	
Sensing distance(检测距离)	2mm(groove)/(凹槽宽)	
Sensing material(检测物体)	Non-transparent object不透明体(对应不同大小物体的灵敏度可调Sensitivity Adjustable)	
Hysteresis error(回差范围)	0.025mm	
Light source(光源)	Infrared emitting diode(红外发光二极管)	
Power supply(电源电压)	DC10-30V	
Indicator light(指示灯)	Output:Red LED, Power:Green LED(动作指示:红色指示灯;电源指示:绿色指示灯)	
Current consumption (消费电流)	40mA max	
Output control(控制输出)	黑色线 Black wire:NPN输出output,白色线White wire:PNP输出output	
Response frequency (响应频率)	10KHz	
Ambient temperature (环境温度)	Work:-10°C~+70°C,store:-25°C~+75°C,with no icing or condensation/(使用时:-10°C~+70°C 保存时:-25°C~+75°C,不结冰不结露)	
Ambient humidity (环境湿度)	Work:35~85%RH store:35~85%RH,dewde forbidden/(使用时:35~85%RH 保存时:35~85%RH,不结露)	
Ambient illumination (环境照明)	太阳光Sunlight:5000Lx max;白炽灯Incandescent lamp:3000Lx max	
Withstand voltage(耐压)	AC500V,50/60Hz 1min	
Insulation resistance (绝缘电阻)	20MΩ min.(DC500V)	
Anti-vibration(耐振动)	10 ~ 500Hz 双振幅 1.5mm ,X,Y,Z(2h) double amplitude for 2 hours each in X, Y and Z directions	
Anti-impact(耐冲击)	500m/S <sup>2</sup> ,X,Y,Z(3 times)(500m/S <sup>2</sup> ,X,Y,Z各方向3次)	
Protection degree(防护等级)	IEC IP64	
Connection(连接方式)	Cable 2m-PVC-terminal/标准导线长2米PVC-可配端子	
Housing material(材质)	Hosing壳体 :PC	
Dimension(尺寸图) (Unit/单位:mm)	 <p>CAD数据</p>	

## 产品特点

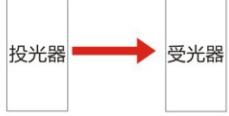
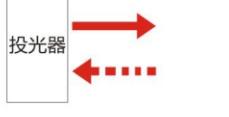
- 自动敏感度跟踪功能
- 大功率，多种模式
- 简便易用的双重数字显示标准
- 全新概念，一键设置按钮



## Product Features

- Automatic sensitivity tracking
- High power, various modes
- Double digital display standard for easy operation
- New concept, one-click setting button

## 选型表 Ordering Information

检测方式 Sensing mode	形状 Appearance	类型type	检测距离 Sensing distance	型号Model	
光纤放大器 optical fiber amplifier				PE21VN	PE21VP
对射型 (投光器+受光器) Through beam reflection Emitter + Receiver		光纤放大器 optical fiber amplifier	1100mm	PE21-T46	
漫反射 (扩散型) Diffuse reflection		光纤模块 Fiber Sensor Module	270mm	PE21-D33G	
			270mm	PE21-D43G	
			500mm	PE21-D65	

注明:光纤模块的型号种类很多，以上只是代表型号，具体可以定制;

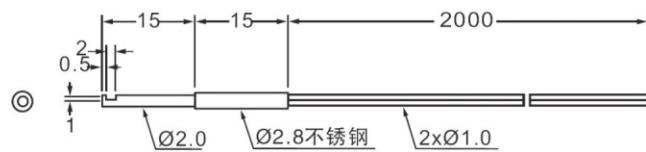
Note: There are many types of fiber optic modules. The above is just representation models and other model can be customized.

## 额定规格/性能 Ratings and Specifications

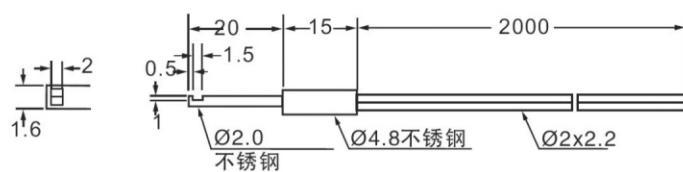
## 标准型 Standard

Sensing mode(检测方式)	Reflection(反射型)	
Specification(尺寸)	30.3mmx9.8mmx71.8mm	
Model(型号)	PE21VN	PE21VP
Output mode(输出方式)	NPN	PNP
Light source(光源)	Red 660nm(红色发光二极管)	
Response time(响应时间)	100μs(HIGH SPEED)/250μs(FINE)/1ms(TURBO)16ms(MEGA)	
Output Option(输出选择)	LIGHT-ON/DARK-ON(开关选择)	
Sensing mode(检测方式)	光强度(区域检测, 自动敏感度跟踪功能) Optical intensity(detection,automatic sensitivity tracking function)	
Output control(控制输出)	NPN开放式集电器24V,最大100mA,剩余电压:最大1V NPN Open Couector24V,Maximum 100mA, Residual Voltage:Maximum 1V	PNP开放式集电器24V,最大100mA,剩余电压:最大1V PNP Open Couector24V,Maximum 100mA, Residual Voltage:Maximum 1V
Power supply(电源电压)	DC12~24V,impulse(P-P) <10% /DC12~24V脉动(P-P)10%以下	
Current consumption (消费电流)	最大750mW(最大电流24V,31mA,最大电流12V:40mA) 节电模式:最大580mW(最大电流:24V:24mA;最大电流12V:28mA) Maximum 750mW(Maximum current 24V,31mA,Maximum current12V:40mA) Power-down mode:Maximum current:580mW (Maximum current:24V,24mA;Maximum Current:12V,28mA)	
Ambient temperature (环境温度)	-10°C~+55°C,with no icing or condensation/(使用时:-10°C~+55°C不结冰不结露)	
Ambient humidity (环境湿度)	35~85%RH dewde forbidden/(35~85%RH 不结露)	
Ambient illumination (环境照明)	太阳光Sunlight:30000Lux max; 白炽灯Incandescent lamp:20000Lux	
Anti-vibration(耐振动)	10~55Hz 双振幅 1.5mm ,X,Y,Z(2h) double amplitude for 2 hours each inX,Y and Z directions	
Anti-impact(耐冲击)	500m/S <sup>2</sup> ,X,Y,Z(3 times)(500m/S <sup>2</sup> ,X,Y,Z各方向3 次)	
Housing material(材质)	PC	
Connection(连接方式)	Cable2m-PU/标准导线长2米U	
(Weight)重量	80g	
Dimension(尺寸图) (Unit/单位:mm)	<p>SDM-E21 Wired(导线引出型)</p> <p>SDM-E21C M8-Connector(接插件型) <a href="#">CAD数据</a></p>	

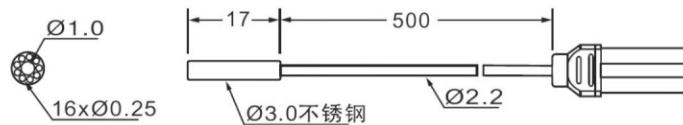
型号Model	PE21-D049
检测距离 Sensing distance	20mm~50mm
最小弯曲半径 Minimum bending radius	R11
耐温 Temperature Resistant	-40°C~+70°C



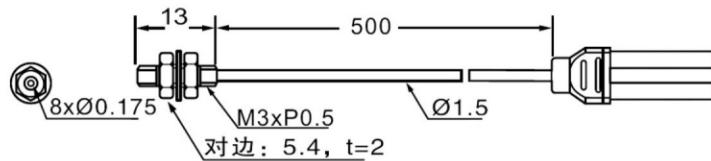
型号Model	PE21-D051
检测距离 Sensing distance	25mm~80mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-20°C~+70°C



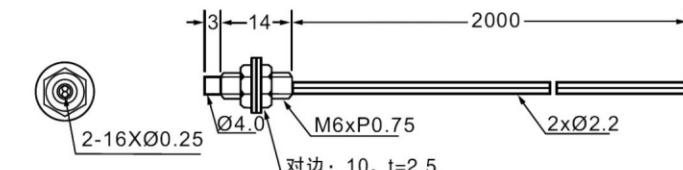
型号Model	PE21-D064
检测距离 Sensing distance	13mm~75mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~+70°C



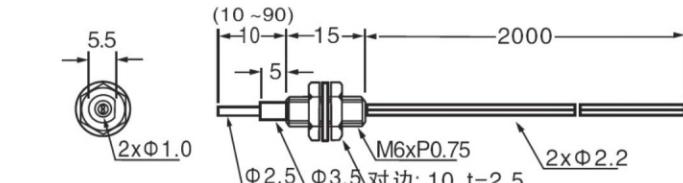
型号Model	PE21-D071
检测距离 Sensing distance	15mm
最小弯曲半径 Minimum bending radius	R10
耐温 Temperature Resistant	-40°C~+70°C



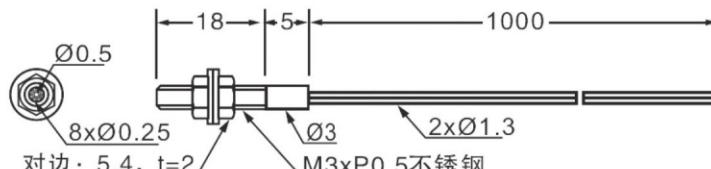
型号Model	PE21-D073
检测距离 Sensing distance	6mm~48mm
最小弯曲半径 Minimum bending radius	R4
耐温 Temperature Resistant	-40°C~+70°C



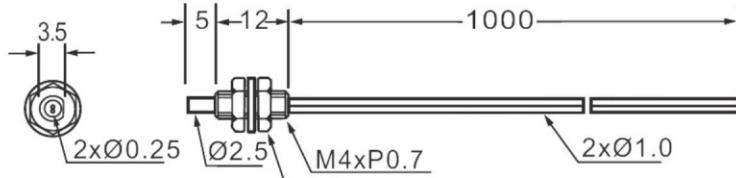
型号Model	PE21-D078
检测距离 Sensing distance	6mm~55mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~+70°C

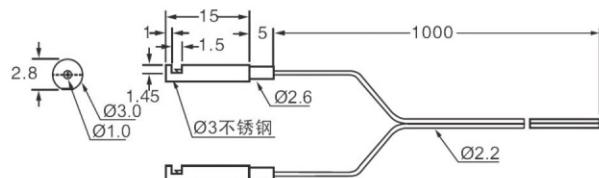


型号Model	PE21-D110
检测距离 Sensing distance	22mm~150mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~+70°C

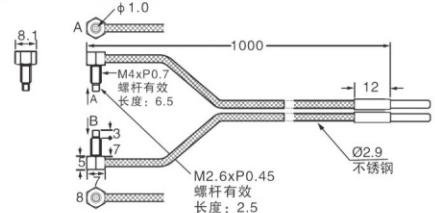


型号Model	PE21-D105
检测距离 Sensing distance	10mm~20mm
最小弯曲半径 Minimum bending radius	R5
耐温 Temperature Resistant	-40°C~+70°C

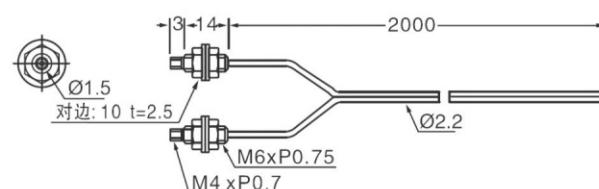




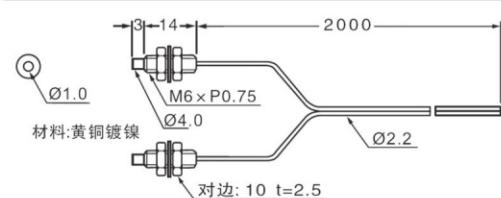
型号Model	PE21-T052
检测距离 Sensing distance	600mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-55°C~ +105°C



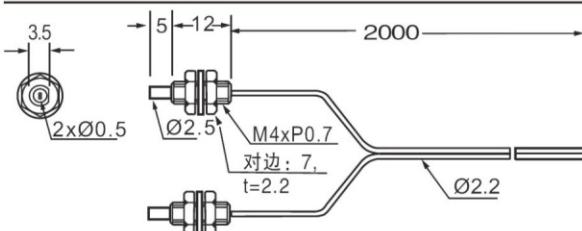
型号Model	PE21-T056
检测距离 Sensing distance	170mm ~ 1400mm
最小弯曲半径 Minimum bending radius	R10
耐温 Temperature Resistant	-40°C~ +70°C



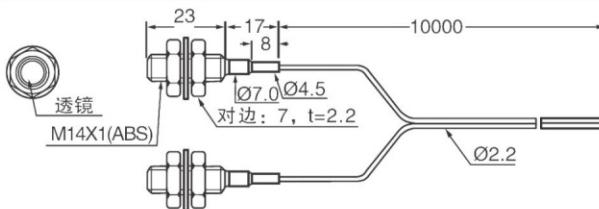
型号Model	PE21-T058
检测距离 Sensing distance	350mm~2500mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~ +70°C



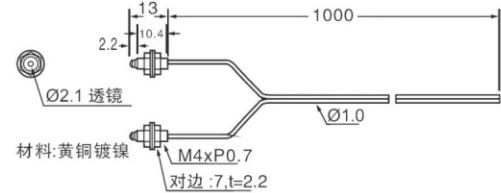
型号Model	PE21-T059
检测距离 Sensing distance	1500mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~ +70°C



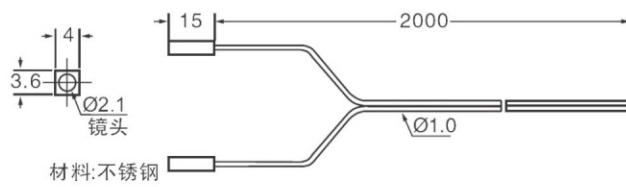
型号Model	PE21-T060
检测距离 Sensing distance	200mm~1800mm
最小弯曲半径 Minimum bending radius	R10
耐温 Temperature Resistant	-40°C~ +70°C



型号Model	PE21-T061
检测距离 Sensing distance	4000mm~19600mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~ +70°C



型号Model	PE21-T062
检测距离 Sensing distance	850mm~1800mm
最小弯曲半径 Minimum bending radius	R25
耐温 Temperature Resistant	-40°C~ +70°C



型号Model	PE21-T063
检测距离 Sensing distance	1500mm~3600mm
最小弯曲半径 Minimum bending radius	R2
耐温 Temperature Resistant	-40°C~ +70°C

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

PG 20 X - 04 S B N O - 8 L3

① Type Code (产品类型)

PG:Universal light curtain(泛用型光幕)

② Beam Pitch (光轴间距)

20:20mm

25:25mm

40:40mm

③ Light Ordering Information  
(光种类)

N/A:Parallel Light(无:平行光)

X:Cross Light(交叉光)

④ Sensing Range  
(检测距离)

04:4m

03:3m

10:10m

⑤ Range Set  
(距离是否设定)

N/A: NO Setting

(无:距离不可设定)

S:Can Be Set

(可设定距离范围)

⑩ Connection (连接方式)

N/A:Cable 2m(无:标配2米)

L3:3m(3米)

E:M12 Connector  
(E:M12连接器)

⑨ Number of Optical axis  
(光轴数量)

5:5 Optical axis(5光轴)

8:8 Optical axis(8光轴)

12:12 Optical axis(12光轴)

16:16 Optical axis(16光轴)

20:20 Optical axis(20光轴)

⑧ Output Status  
(输出状态)

O:NO

C:NC

S:NO + NC

⑦ Output Way  
(输出方式)

N:NPN

P:PNP

K:Control the output  
(可控制输出)

T:NPN / PNP

⑥ Operation Voltage  
(工作电压)

A:24V DC

B:10~30V DC

## 产品特点

光同步技术，实时A/D技术，系统自适用，在各种工况运行稳定;

20mm/40mm两种光轴间距,光幕内部自检；

高速响应,每束只需0.25ms

工作状态指示,对准不良指示;

自带晶体管输出,也可配套控制器提供继电器输出;

## Product Features

Optical synchronization technology, real-time A/D technology, auto-adaptation system, stable operation in various working conditions;

20/40mm beam pitch optional, internal self-inspection;

High speed response, 0.25ms needed for each beam

Operation status indication, imperfect alignment indication;

Transistor output, also can provides relay output together with controller;



## 选型表 Ordering Information

PG20-03			PG40-03		
保护高度 Protection height	外壳高度 Shell height	光栅型号Raster model	保护高度 Protection height	外壳高度 Shell height	光栅型号Raster model
100mm	158mm	PG20-03ANO-04 PG20-03APO-04	80mm	138mm	PG40-03ANO-02 PG40-03APO-02
150mm	208mm	PG20-03ANO-06 PG20-03APO-06	160mm	218mm	PG40-03ANO-04 PG40-03APO-04
200mm	258mm	PG20-03ANO-08 PG20-03APO-08	240mm	298mm	PG40-03ANO-06 PG40-03APO-06
250mm	308mm	PG20-03ANO-10 PG20-03APO-10	320mm	378mm	PG40-03ANO-08 PG40-03APO-08
300mm	358mm	PG20-03ANO-12 PG20-03APO-12	400mm	458mm	PG40-03ANO-10 PG40-03APO-10
350mm	408mm	PG20-03ANO-14 PG20-03APO-14	480mm	538mm	PG40-03ANO-12 PG40-03APO-12
400mm	458mm	PG20-03ANO-16 PG20-03APO-16	560mm	618mm	PG40-03ANO-14 PG40-03APO-14
450mm	508mm	PG20-03ANO-18 PG20-03APO-18	640mm	698mm	PG40-03ANO-16 PG40-03APO-16
500mm	558mm	PG20-03ANO-20 PG20-03APO-20	720mm	778mm	PG40-03ANO-18 PG40-03APO-18
550mm	608mm	PG20-03ANO-22 PG20-03APO-22	800mm	858mm	PG40-03ANO-20 PG40-03APO-20
600mm	658mm	PG20-03ANO-24 PG20-03APO-24	880mm	938mm	PG40-03ANO-22 PG40-03APO-22
650mm	708mm	PG20-03ANO-26 PG20-03APO-26	960mm	1018mm	PG40-03ANO-24 PG40-03APO-24
700mm	758mm	PG20-03ANO-28 PG20-03APO-28	1040mm	1098mm	PG40-03ANO-26 PG40-03APO-26
750mm	808mm	PG20-03ANO-30 PG20-03APO-30	1120mm	1178mm	PG40-03ANO-28 PG40-03APO-28
800mm	858mm	PG20-03ANO-32 PG20-03APO-32	1200mm	1258mm	PG40-03ANO-30 PG40-03APO-30
850mm	908mm	PG20-03ANO-34 PG20-03APO-34	1280mm	1338mm	PG40-03ANO-32 PG40-03APO-32
900mm	958mm	PG20-03ANO-36 PG20-03APO-36	1360mm	1418mm	PG40-03ANO-34 PG40-03APO-34
950mm	1008mm	PG20-03ANO-38 PG20-03APO-38	1440mm	1498mm	PG40-03ANO-36 PG40-03APO-36
1000mm	1058mm	PG20-03ANO-40 PG20-03APO-40	1520mm	1578mm	PG40-03ANO-38 PG40-03APO-38
1050mm	1108mm	PG20-03ANO-42 PG20-03APO-42	1600mm	1658mm	PG40-03ANO-40 PG40-03APO-40
1100mm	1158mm	PG20-03ANO-44 PG20-03APO-44	1680mm	1738mm	PG40-03ANO-42 PG40-03APO-42
1150mm	1208mm	PG20-03ANO-46 PG20-03APO-46	1760mm	1818mm	PG40-03ANO-44 PG40-03APO-44
1200mm	1258mm	PG20-03ANO-48 PG20-03APO-48	1840mm	1898mm	PG40-03ANO-46 PG40-03APO-46
1250mm	1308mm	PG20-03ANO-50 PG20-03APO-50	1920mm	1978mm	PG40-03ANO-48 PG40-03APO-48

注明:其它型号也可以定制 Note: other models can also be customized

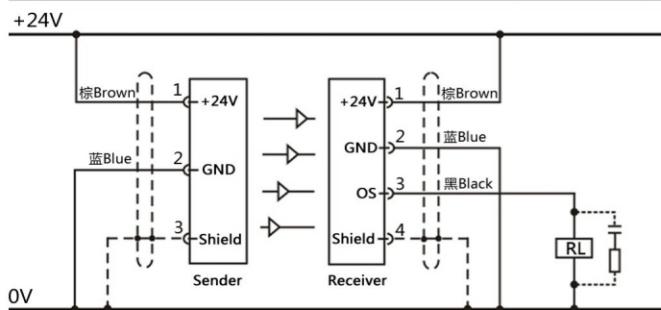
## 额定规格/性能 Ratings and specifications

保护高度(按光轴间距而定)Protection height(pitch optional by resolution)	80mm~2080mm
25mm	100mm~1550mm
45mm	80mm~2080mm
保护范围(Protection range)	0.3m~3m
光轴间距(Pitch optional)	25mm,40mm
工作电压(Operating voltage)	24V DC±10%
同步类型(Synchronization Type)	光学同步(Optical synchronization)
响应时间(Response Time)	4~34ms
消耗电流(Current Consumption)	发射器，接收器各3W(3W each for emitter)
输出信号(Output signal)	PNP/NPN
信号类型(Signal types)	LO
内部保护(Internal protection)	电源逆接保护,输出短路保护,输出过载保护(reverse connection protection,short circuit protection,overload protection)
最大输出电流(Output current max)	100mA
防护等级(Protection grade)	IP65
工作温度(Working temperature)	-10°C~+55°C
储存温度(Storage temperature)	-25°C~+70°C
系统连接类型(System connection type)	3针,4针接插件(3Pin,4pin connector)

\*注明:保护范围可根据客户需求定制,输出信号可根据客户需求加装Test功能

## 输出回路 output circuits

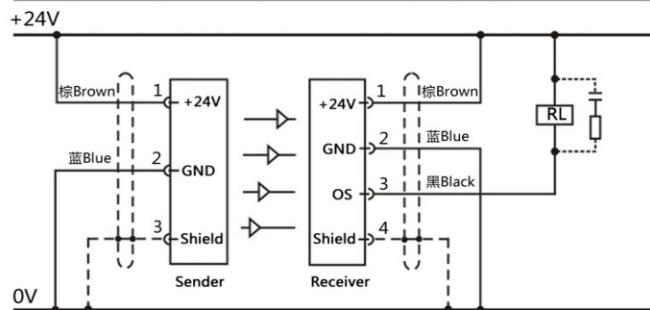
PG25/40-PJ接线图(Connection)



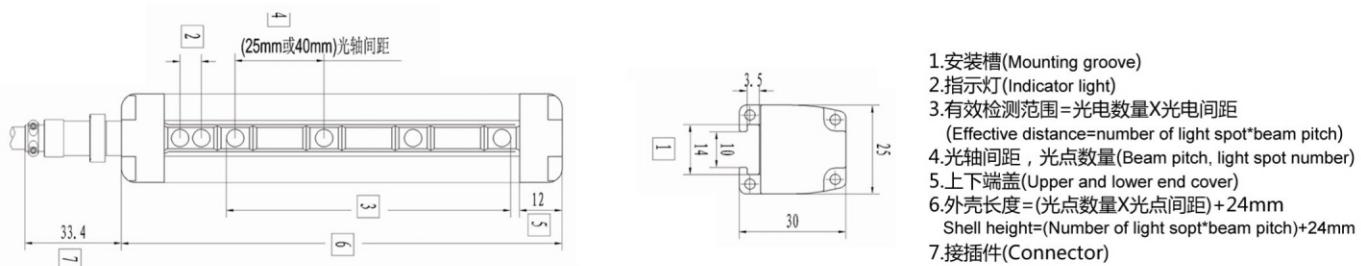
注:屏蔽线通常不接,如果现场干扰比较大,可在确保光栅本体绝缘的情况下接0V

(only connect the shielded wire to 0V when strong interference at site, whereas on condition the light curtain insulating)

PG25/40-NJ接线图(Connection)



## 外形尺寸 Dimensions



1. 安装槽(Mounting groove)
2. 指示灯(Indicator light)
3. 有效检测范围=光电数量X光轴间距  
(Effective distance=number of light spot\*beam pitch)
4. 光轴间距,光点数量(Beam pitch, light spot number)
5. 上下端盖(Upper and lower end cover)
6. 外壳长度=(光点数量X光点间距)+24mm  
Shell height=(Number of light spot\*beam pitch)+24mm
7. 接插件(Connector)

## 附件信息 Attachment information

安装滑片(Install the sliding vane)	标配(Standard)
发射部分电缆(Emitter some cable)	3米标配 (3m Standard)
接收部分电缆(Receiver some cable)	3米标配 (3m Standard)
L型绝缘支架(L insulation bracket)	选配(Options)
I型绝缘支架(I insulation bracket)	选配(Options)

## 产品特点

- 无触点磁式感应
- 两种连接方式可选: 插件式和引线式
- 符合ENP ISO 14119和ENP ISO 1849标准的TUV认证



## Product Features

- Non-Contact magnetic detection
- Cable/connector connection optional
- TUV certified, according to ENP ISO 14119 and ENP ISO 1849 standard

## 选型表 Ordering Information

常开接点数量 Normal open contacts	安全接通距离 switch on safety distance	安全断开距离 Switch off safety disconnect	连接方式 connection method	型号Model
2PCS	7mm	20mm	接插件 connector	BT36-20BLA2-E BT36-MT
			导线引出型 pre-wired models	BT36-20BLA2/2M BT36-MT

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

Model(型号)	BT36-20BLA
Specification(尺寸)	36*36*13
Output mode(输出方式)	Reed pipe contact(舌簧管接点式)
Normal open contacts (常开接点数量)	2 PCS
Switch on safety distance (安全接通距离)	7mm
Switch off safety disconnect (安全断开距离)	20mm
Switching Voltage(开关电压)	10-30V DC
Switching current(开关电流)	100mA Max
Contact capacity(接点容量)	10W max
Mechanical life(机械寿命)	2X10 <sup>7</sup> switching operations(开关操作)
Structure Type(结构型式)	Structure Type结构型式4(EN ISO14119)
Actuator coding level (激励元件的编码级次)	Low coding level低级编码标准 (EN ISO14119)
Safe state in the event of a fault (故障安全状态)	The switch has no internal fault detection and is unable to assume a safe state in the event of a fault. Fault detection is performed by the connected safety-related logic unit. 发生故障时，开关不能进行故障检测，无法确保安全模式，故障情况由连接的安全逻辑单元诊断。
Type of connection (连接方式)	M8 Connectors(插件), 4Pin
Ambient temperature (环境温度)	Work&store:-20°C~+60°C/(使用时及保存时 : -20°C~+60°C)
Ambient humidity(环境湿度)	Work&store:35~95%/(使用时及保存时:35~95%)
Anti-vibration(耐振动)	10~50Hz, Amplitude 1.5mm,X,Y,Z(2H)/(10~50Hz上下振幅1.5mm X,Y,Z各向2H)
Anti-impact(耐冲击)	30G,11ms(EN60947-5-3)
Insulation resistance (绝缘强度)	>100MΩ ( DC500V )
Protection degree(防护等级)	IP67 (IEC 60529)
Housing Material(外壳材质)	PPS+20%GF
Dimension(尺寸图) (Unit/单位:mm)	<p style="text-align: right;">Induction magnetic base (感应磁座) <span style="border: 1px solid black; padding: 2px;">CAD数据</span></p>

## 产品特点

双轴倾角测量量程 :  $\pm 15^\circ$ 、 $\pm 90^\circ$ 、 $\pm 180^\circ$

单轴倾角测量量程 :  $360^\circ$

高分辨率  $0.02^\circ$  . 宽温  $-40^\circ\text{C} \sim +80^\circ\text{C}$

防护等级 IP67

广泛应用于医疗设备角度控制、工程机械倾角测量、

地质设备倾斜检测、铁路机车监

## Product Features

Dual-axis angle range :  $\pm 15^\circ$ 、 $\pm 90^\circ$ 、 $\pm 180^\circ$

single axis angle range :  $360^\circ$

High resolution  $0.02^\circ$  . Temperature range  $-40^\circ\text{C} \sim +80^\circ\text{C}$

Protection grade Ip67

Widely used on medical equipment ,engineering machinery . geological equipment, railway equipment for angle /tilt detection



## 选型表 Ordering Information

轴数 Axis Number	形状 Appearance	类型type	型号Model
1轴Axis	塑壳结构 Plastic shell structure	导线引出型 Pre-wire	DA-360-1BV
	金属结构 Metal structure		DT-360-1BV
		CAN	DT-360-1B-CAN
2轴Axis	塑壳结构 Plastic shell structure	导线引出型 Pre-wire	DA- $\pm 15$ -2BV
	金属结构 Metal structure		DT- $\pm 15$ -2BV
		CAN	DT- $\pm 15$ -2B-CAN

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

型号(Model)	DA-360-1BV	DA-±15-2BV
轴数(Axis number)	1轴axis	2轴axis
量程(Range)①	0°~ 360°	X/Y轴axis:±15°
输出信号(Output signal)②	0.5~4.5V	
分辨率(Resolution)	0.01°	
精度(Accuracy)	±0.2°	
温度系数 (Temperature coefficient)	±0.01°/°C	
供电电压(Power supply)	10~30 VDC	
综合误差 (Comprehensive error)	±0.5%FS	
工作温度(Work temperature)	-40°C~+85°C	
存储温度(Store temperature)	-40°C~+125°C	
电气接口(Connection)	Cable(2m)标配2米导线	
外壳材料(Housing material)	ABS	
防护等级 (Protection degree)	IP67	
长期稳定性 (Long term stability)	±0.25%FS/1年(Year)	
耐振动(Anti-vibration)	9.8g(30HZ)	

①双轴角度量程0°~±180°范围可定制 Dual-axis angle 0°~180°customizable

②电流、电压输出可选 Current or voltage output optional

<p>Dimension(尺寸图) (Unit/单位:mm)</p>	<span style="border: 1px solid black; padding: 2px;">CAD数据</span>

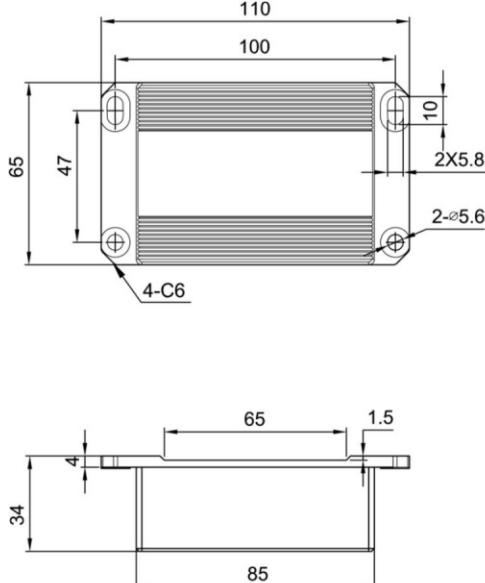
## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

型号(Model)	DT-360-1B-CAN	DT-360-1BV	DT-±15-2B-CAN	DT-±15-2BV
轴数(Axis number)	1轴axis		2轴axis	
量程(Range) <sup>①</sup>	0°~ 360°		X/Y轴axis:±15°	
输出信号(Output signal) <sup>②</sup>	CAN2.0B	0.5~4.5V	CAN2.0B	0.5~4.5V
分辨率(Resolution)		0.01°		
精度(Accuracy)		±0.2°		
温度系数 (Temperature coefficient)		±0.01°/°C		
供电电压(Power supply)		10~30 VDC		
综合误差 (Comprehensive error)		±0.5%FS		
工作温度(Work temperature)		-40°C~+85°C		
存储温度(Store temperature)		-40°C~+125°C		
电气接口(Connection)	标配2米导线或M12X1插座(2m cable/M12X1 socket optional)			
外壳材料(Housing material)	铝合金(aluminium alloy)			
防护等级 (Protection degree)	IP67			
长期稳定性 (Long term stability)	±0.25%FS/1年(Year)			
耐振动(Anti-vibration)	9.8g(30HZ)			

①双轴角度量程0°~±180°范围可定制 Dual-axis angle 0°~180°customizable

②电流、电压输出可选 Current or voltage output optional

Dimension(尺寸图) (Unit/单位:mm)	 <div style="text-align: right;">CAD数据</div>	Induction magnetic base (感应磁座)
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① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

S

N

30

E

15

D

N

A

- E1

## ① Type Code (产品类型)

S:Inductive(S:电感式)

F:Hall(F:霍尔式)

B:Reed(B:干簧管)

M:Analog(M:模拟量)

N:Namur(N:防爆型)

## ⑩ Connection (连接方式)

N/A:Cable 2m(无:标配2米)

0.5m:0.5米

E:M12 Connector

(E:M12插件式)

E1:M8 Connector

(E1:M8插件式)

## ② Shape Code (外型)

S:Rectangular(S:方型)

P:Flat(P:扁平型)

N:Threaded Cylindrical(N:螺纹圆柱)

R:Non-threaded(R:无螺纹圆柱型)

T:Special(T:特殊型)

## ⑨ Output Status (输出状态)

A:NO

B:NC

C:NO+NC

## ③ Shape Code (产品外形)

N/A:Standard(无:标准型)

H:Short(H:超短型)

F:Separating(F:分离型)

## ⑧ Output Way (输出方式)

N:NPN

P:PNP

R:NPN+PNP

L:DC 2 wire(L:直流两线)

A:AC 2 wire(A:交流两线)

J:Relay Output(J:继电器输出)

LU:Voltage(U:电压输出)

LI:Current(I:电流输出)

LUI:Voltage + Current

(UI:电压+电流)

## ④ Size Code (产品尺寸)

N30:M30X1.5

Threaded Cylindrical

(M30:M30X1.5 螺纹圆柱型)

R6.5:Φ6.5 Smooth Cylindrical

(R6.5:Φ6.5 无螺纹圆柱)

F31:31mm Rectangular

(F31:31mm 方型外壳)

## ⑦ Mounting (安装方式)

B:Flushed(B:埋入)

D:Non-flushed(D:非埋入)

## ⑤ Special Function (特殊功能)

N/A:Standard(无:普通型或标配的)

B:High pressure Resistant(B:耐高压)

E:Extended Sensing Distance(E:增强距离)

T1:High Temperature Resistant(T1:耐高温120°C)

T2:Low Temperature Resistant(T2:耐低温-40°C)

J:Full Metal Housing(F:全金属)

K:Welding-Immune(K:抗磁场干扰)

R:Ring LED(R:环形灯系列)

X:utility model(X:实用新型)

H:Front(前端感应)

F:Apical(顶端感应)

## ⑥ Sensing Distance (感应距离)

10=10mm

05=5mm

(+)2-times sensing distance/(++)3-times sensing distance can be customized

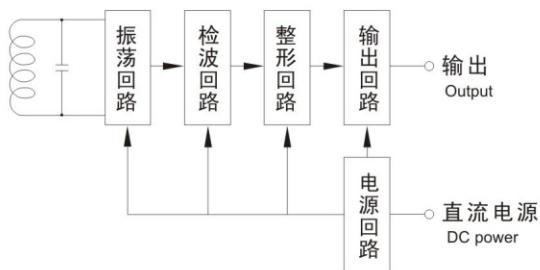
(+)2倍距离及(++)3倍距离可以定制

<p><b>检测距离Sn</b> Sensing distance</p> <p>Also named rated operation distance, it tested out with standard target and regarded as standard value or labeled value.</p> <p>亦称额定动作距离。是用标准检测体所测定的接近传感器动作距离的标准值。也就是传感器铭牌标定值。</p>	<p><b>齐平</b> Flushed</p> <p>Shielded installation that sensor features not affected when metal material equipped around detection plane.</p> <p>带屏蔽的传感器为齐平安装式传感器(亦称埋入式)。当金属材料设置在检测平面的四周，而传感器的性能不受影响。</p>
<p><b>设定距离 S</b> Set distance</p> <p>Also named operation range. In general equal to 0.8 Sn. There will no miss operation during this range even when temperature / voltage drift. The installation distance between sensor and target should be within this range.</p> <p>亦称工作距离。一般为检测距离的0.8倍，在此距离内接近传感器工作应不受温度、电压波动的影响而产生误动作。传感器与检测体的间距在安装时必须控制在这个数值内。</p>	<p><b>非齐平</b> Non-flushed</p> <p>Non-shielded installation that need space to avoid effect from sensor features.</p> <p>不带屏蔽的传感器为非齐平安装式传感器(亦称非埋入式)。安装时检测面周围需要有一个不影响传感器性能的自由空间。</p>
<p><b>标准检测体</b> Standard target</p> <p>Object with rated material,size,shape to test basic features of sensor. Chose Q235A square steel plate with thickness 1 mm,side length equal to 1.5 Sn.</p> <p>指规定材料、尺寸、形状，用来检测接近传感器基本性能的检测物体。选用厚度1mm、边长为1.5倍检测距离的正方形Q235A钢板。</p>	<p><b>响应时间</b> Response time</p> <p>Target Yes 检测体有 Target No 检测体无 Load on 负载动作 Load reset 负载复位 <math>t</math></p> <p>Time interval of instant flip between sensor and target when target in place or dislocated .</p> <p>检测体的到位或离位的瞬间与传感器相应发生翻转的时间间隔。</p>
<p><b>回差 H</b> Hysteresis error</p> <p>Absolute value of difference between sensing distance and reset distance.</p> <p>亦称动作滞差。是指检测距离与复位距离之差的绝对值。</p>	<p><b>漏电流 Ir</b> Leakage current</p> <p>The max current through load when operation off.</p> <p>接近传感器处于截止状态时，通过负载的最大电流。</p>
<p><b>频率 F</b> Frequency</p> <p>Max operation times in one second as shown.</p> <p>如图所示，测量出传感器每秒钟稳定的最大动作次数。</p>	<p><b>电压降 Ud</b> Voltage drop</p> <p>Voltage value as shown when output current reach rated value</p> <p>当传感器输出电流达到额定值时，如图所示测出的电压值。</p>

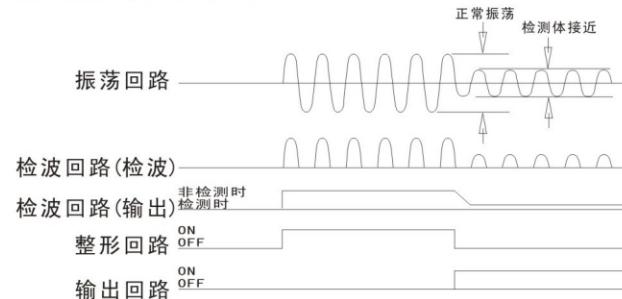
<h3>消耗电流 Consumption current</h3> <p>Current that don't through load when power voltage reach max rated value 2-wire sensor means leakage current.</p> <p>即非通过负载的电流，当电源电压处于额定最大值时，不管传感器处于导通或截止状态时通过电流表的值，对两线制而言相当于漏电流。</p>	<h3>温度特性 Temperature drift</h3> <p>Sensing distance will be different as temperature change, described as <math>\pm A/B * 100\%</math> if the sensing distance regarded as 100% when temperature is 20.</p> <p>指传感器工作环境温度在允许范围内变化而使动作距离改变，通常是以20°C时的检测距离为100%，而以正负A/B*100%表示。</p>												
<h3>检测体大小与检测距离的关系 Target size effect/ sensing distance</h3> <p>Set square target with 1 mm thickness, and test the sensing distance while change the side length, there will be different values, but no change when target is bigger than standard target.</p> <p>设定正方形检测体的厚度为1mm，然后改变其边长，来测定动作距离，结果所得出不同的数值，当检测体大于标准检测体时，检测距离几乎不变。</p>	<h3>检测体厚度与检测距离的关系 Target thickness effect-sensing distance</h3> <p>Sensing distance will be different when thickness change. Generally no difference for magnetic metal (such as Iron) when thickness overpass 1 mm,for non-magnetic metal the distance value will be same as magnetic metal if with 0.01mm thickness</p> <p>是指改变标准检测体的厚度而测得的动作距离，一般情况下检测体为磁性金属时（如铁等），当其厚度超过1mm时，其检测距离基本不变。当非磁性金属厚度在0.01mm左右时，其检测距离几乎与磁性金属一致。</p>												
<h3>重复精度 Repeat accuracy</h3> <p>On condition that temperature 15~30°C ,power supply voltage <math>\pm 5\%</math> within rated value,switch-on for 8 hours, test 10 times for 10 values,then pick out max value as d1,min value as d2.Repeat accuracy:<math>A=d_2-d_1</math>.</p> <p>传感器在环境温度15°C—30°C之间，供电电压在额定值的±5%内，并连续通电8小时后，用标准检测体测得10次动作距离其最大值为d<sub>2</sub>，最小值为d<sub>1</sub>，则重复精度为：<math>\Delta=d_2-d_1</math></p>	<h3>检测体材质与检测距离的关系 Target material effect-sensing distance</h3> <p>Material 材料      检测距离 Sensing distance</p> <table border="1"> <thead> <tr> <th>Material</th> <th>Sensing distance (%)</th> </tr> </thead> <tbody> <tr> <td>Iron 铁</td> <td>100%</td> </tr> <tr> <td>Stainless steel 不锈钢</td> <td>60%</td> </tr> <tr> <td>Brass 黄铜</td> <td>40%</td> </tr> <tr> <td>Aluminium 铝</td> <td>30%</td> </tr> <tr> <td>Copper 铜</td> <td>28%</td> </tr> </tbody> </table> <p>Sensing distance changed when tested with different material.</p> <p>以标准检测体测得的动作距离，而对其他材质却有不同差异。</p>	Material	Sensing distance (%)	Iron 铁	100%	Stainless steel 不锈钢	60%	Brass 黄铜	40%	Aluminium 铝	30%	Copper 铜	28%
Material	Sensing distance (%)												
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Copper 铜	28%												

## 电子接近开关电路原理 Circuit Principle

### 电路的构成 Circuit construction

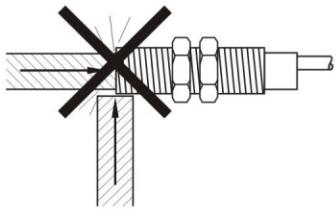


### 各回路波形图 Oscillation circuit waveform

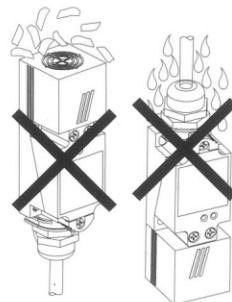
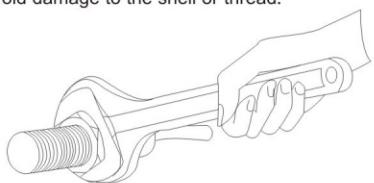


## 安装要点 Notification

开关的感应部要严防碰撞,以免损坏开关。  
No impacting in order to avoid damage



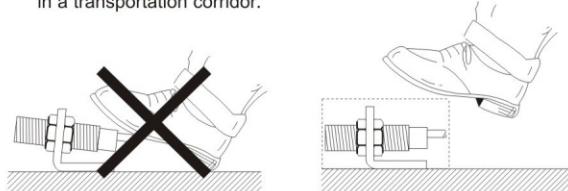
开关的外壳均有黄铜或塑料制成。在安装时必须用力适当,以免损坏外壳或螺纹。  
Shell made from brass/plastic. Appropriate action to avoid damage to the shell or thread.



开关的感应面不可含金属的粉末或碎片堆积,以免引起开关的误动作。  
No metal dust/fragment piled up in case misoperation.

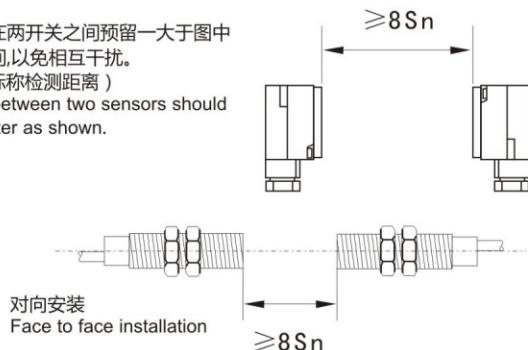
开关的接线出口要防止水及其他液体的入侵。  
Avoid water and liquid infiltration.

安装在交通过道中的开关,必须加装防护装置,以确保设备及人身安全。  
Equipped with protection device to ensure safety when installed in a transportation corridor.

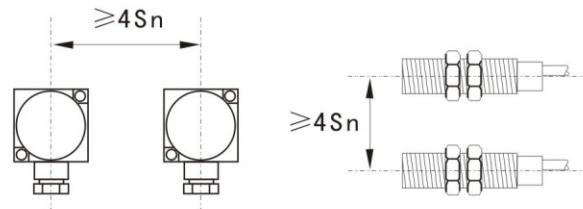


## 相互干扰 Mutual interference

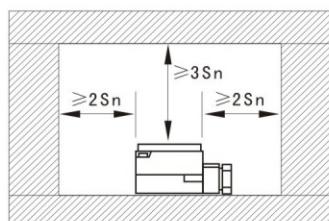
请务必在两开关之间预留一大于图中所示空间,以免相互干扰。  
( Sn=标称检测距离 )  
Space between two sensors should be greater as shown.



平行安装  
Parallel installation

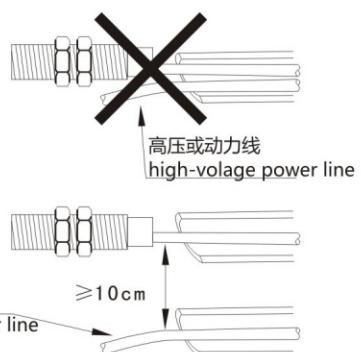
金属结构件对开关的影响  
Metal component effect

如果开关的周围存在金属构件时,请预留如图所示空间,以免影响开关的性能。  
Keep space as in diagram when there is other metal component around



## 使用金属导管 Metal tube usage

如果接近开关电缆线附近有高压或动力线存在时,请将其电缆线单独装于金属导管内,或隔开一定的距离,以免该开关受损或产生误动作。  
keep sensor cable alone in metal tube or keep appropriate distance when there is high-voltage power line around.



## 产品特点

- 小径型产品使用安装更方便
- 专用IC,稳定的检测距离 , 定位调整轻松
- 采用耐油,耐折型导线;
- 检测面采用耐油 , 耐腐蚀材质 , 耐环境性能优越



## Product Features

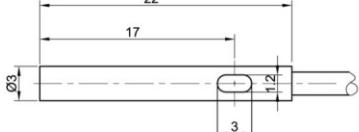
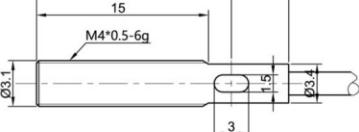
- Small size product,convenient to use and install
- Dedicated IC,stable sensing distance,easy to adjust orientation
- Oil-resistance、folded resistance cable
- Sensing surface use Oil resistance and corrosion resistance material
- ambient resistance performance is excellent

## 选型表 Ordering Information

形状 Shape	检测距离 Sensing distance	连接方式 Connection method	动作模式 Action mode	接线颜色 Cable colour	型号 Model	
					NPN	PNP
屏蔽 Flushed						
Φ3	0.8mm	单倍距离 Single Distance  导线引出型 (2m) Pre-wire(2m)	A:NO B:NC  棕: +V , 黑:输出 蓝: 0V Brown:+V Black:Output Blue:0V	SR03-0B8NA SR03-0B8NB	SR03-0B8PA SR03-0B8PB	
Φ4	0.8mm					
M4	0.8mm			SR04-0B8NA SR04-0B8NB	SR04-0B8PA SR04-0B8PB	
M5	0.8mm					
Φ6.5	1.5mm			SN04-0B8NA SN04-0B8NB	SN04-0B8PA SN04-0B8PB	
M8	1.5mm					
M5	1.2mm	两倍距离 2-times sensing distance	A:NO B:NC  棕: +V , 黑:输出 蓝: 0V Brown:+V Black:Output Blue:0V	SN05-0B8NA SN05-0B8NB	SN05-0B8PA SN05-0B8PB	
SR6.5	2mm					
M8	2mm			SR6.5-1B5NA SR6.5-1B5NB	SR6.5-1B5PA SR6.5-1B5PB	
形状 Shape	检测距离 Sensing distance	连接方式 Connection method	动作模式 Action mode	接线颜色 Cable colour		
非屏蔽 Non-Flushed						
Φ6.5	2mm	单倍距离 Single Distance  导线引出型 (2m) Pre-wire(2m)	A:NO B:NC  棕: +V , 黑:输出 蓝: 0V Brown:+V Black:Output Blue:0V	SR6.5-02DNA SR6.5-02DNB	SR6.5-02DPA SR6.5-02DPB	
M8	2mm					
Φ6.5	4mm			SN08-02DNA SN08-02DNB	SN08-02DPA SN08-02DPB	
M8	4mm					

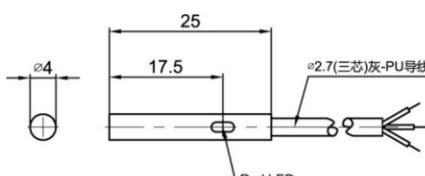
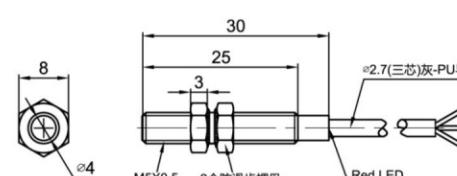
## 额定规格/性能 Ratings and Specifications

## 导线引出型 Pre-Wired

尺寸Specification	SR03		SN04	
安装方式Mounting	屏蔽 Screened Flushed		屏蔽 Screened Flushed	
型号Model	SR03-0B8NA/2M	SR03-0B8PA/2M	SN04-0B8NA/2M	SN04-0B8PA/2M
	SR03-0B8NB/2M	SR03-0B8PB/2M	SN04-0B8NB/2M	SN04-0B8PB/2M
输出方式Output mode	NPN/PNP			
输出状态Output state	NO/NC			
检测距离Sensing distance	SN: 0.8mm±10%			
设定距离Set distance	0~0.64mm			
回差范围Hysteresis error	检测距离的1%~10% 1%~10% of sensing distance			
重复精度Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance			
响应频率Response frequency	4000Hz			
标准检测体Standard target	5*5*1t(Q235A钢板) 5*5*1t(Q235A steel plate)			
电源电压Power supply	DC12~24V脉动 ( p-p)10%以下(DC10~30V) DC12~24V impulse ( p-p) less than 10% (DC10~30V)			
消费电流Current consumption	< 10mA			
泄漏电流Leakage current	< 100uA			
残留电压Residual voltage	2V以下 ( 负载电流100mA时) Less than 2V( load current at 100mA)			
负载电流Load current	<100mA			
电路保护Circuit protection	短路保护，逆极性保护，过载保护 Short-circuit protection, reverse connection protection			
显示灯Indicator light	红色LED Red LED			
连接方式Connection	标准导线长2m Standard cable 2m			
环境温度Ambient temperature	使用时及保存时 : -25°C ~ + 70°C work and store: -25°C ~ + 70°C			
温度影响Temperature effect	-25°C ~ + 70°C 温度范围内 , + 23°C时检测距离的15%以内 Between -25°C ~ + 70°C, less than 15% of sensing distance at + 23°C			
环境湿度Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%			
电压影响Voltage effect	< 3%			
振动耐久Anti-vibration	10 ~ 50 Hz复振幅1.5mm X,Y,Z各方向 2H 10 to 50 Hz with a 1.5 mm double amplitude for 2H each in X, Y, and Z directions			
耐电压Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间			
绝缘电阻Insulation resistance	>500MΩ ( DC500V ) 充电部整体与外壳间			
保护结构Protection degree	IEC规格 IP67			
外壳Housing	不锈钢 Stainless steel			
外观尺寸图 Outline dimension	 <span>CAD数据</span>		 <span>CAD数据</span>	

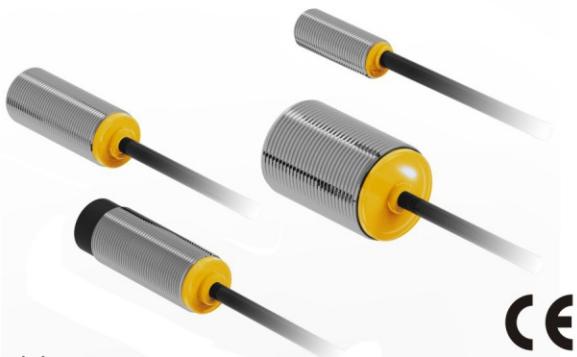
## 额定规格/性能 Ratings and Specifications

## 导线引出型 Pre-Wired

尺寸Specification	SR04		SN05	
安装方式Mounting	屏蔽	Flushed	屏蔽	Flushed
型号Model	SR04-0B8NA	SR04-0B8PA	SN05-0B8NA	SN05-0B8PA
	SR04-0B8NB	SR04-0B8PB	SN05-0B8NB	SN05-0B8PB
输出方式Output mode	NPN	PNP	NPN	PNP
输出状态Output state	NO/NC			
检测距离Sensing distance	Sn: 0.8mm±10%			
设定距离Set distance	0~0.64mm			
回差范围Hysteresis error	检测距离的1%~10% 1%~10% of sensing distance			
重复精度Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance			
响应频率Response frequency	2000Hz			
标准检测体Standard target	5*5*1t(Q235A钢板) 5*5*1t(Q235A steel plate)			
电源电压Power supply	DC12~24V脉动 ( p-p)10%以下(DC10-30V) DC12~24V impulse ( p-p) less than 10% (DC10-30V)			
消费电流Current consumption	<10mA			
泄漏电流Leakage current	< 100uA			
残留电压Residual voltage	2V以下 ( 负载电流100mA时) Less than 2V( load current at 100mA)			
负载电流Load current	<100mA			
电路保护Circuit protection	逆极性保护 Reverse connection protection			
显示灯Indicator light	黄色LED Yellow LED			
连接方式Connection	标准导线长2m Standard cable 2m			
环境温度Ambient temperature	使用时及保存时 : -25°C ~ + 70°C work and store: -25°C ~ + 70°C			
温度影响Temperature effect	-25°C ~ + 70°C 温度范围内 , + 23°C时检测距离的15%以内 Between -25°C ~ + 70°C, less than 15% of sensing distance at + 23°C			
环境湿度Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%			
电压影响Voltage effect	< 3%			
振动耐久Anti-vibration	10 ~ 50 Hz复振幅1.5mm X,Y,Z各方向 2H 10 to 50 Hz with a 1.5 mm double amplitude for 2H each in X, Y, and Z directions			
耐电压Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间			
绝缘电阻Insulation resistance	> 500MΩ ( DC500V ) 充电部整体与外壳间			
保护结构Protection degree	IEC规格 IP67			
外壳Housing	不锈钢 Stainless steel			
外观尺寸图Outline dimension	 <b>CAD数据</b>		 <b>CAD数据</b>	

## 产品特点

产品后盖特殊光学设计，360度-环视可见指示灯  
专用IC，稳定的检测距离，产品规格型号丰富  
采用耐折型导线；耐油导线可以定制  
检测面采用耐油，耐腐蚀材质，耐环境性能优越



## Product Features

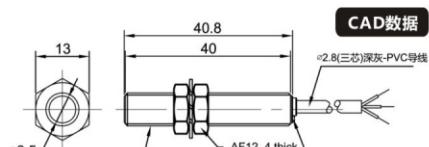
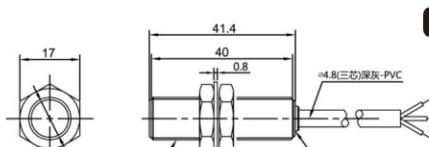
the special optical design of the rear cover of the product ,  
the 360 degree of the circular visible indicator light.  
Dedicated IC,stable sensing distance,easy to adjust orientation  
Oil-resistance folded-resistance cable  
Sensing surface use Oil resistance and corrosion resistance material  
ambient resistance performance is excellent

## 选型表 Ordering Information

形状 Shape	检测距离 Sensing distance	连接方式 Connection method	动作模式 Action mode	接线颜色 Cable colour	型号 Model	
					NPN	PNP
屏蔽 Flushed						
M12	2mm	单倍距离 Single Distance	导线引出型 (2m) Pre-wire(2m)	A:NO B:NC  棕: +V , 黑:输出 蓝 : 0V Brown:+V Black:Output Blue:0V	SN12-02BNA SN12-02BNB	SN12-02BPA SN12-02BPB
M18	5mm				SN18-05BNA SN18-05BNB	SN18-05BPA SN18-05PB
M30	10mm				SN30-10BNA SN30-10BNB	SN30-10BPA SN30-10PB
M12	4mm				SN12E-04BNA SN12E-04BNB	SN12E-04BPA SN12E-04PB
M18	8mm				SN18E-08BNA SN18E-08BNB	SN18E-08BPA SN18E-08PB
M30	15mm				SN30E-15BNA SN30E-15BNB	SN30E-15BPA SN30E-15PB
形状 Shape	检测距离 Sensing distance	连接方式 Connection method	动作模式 Action mode	接线颜色 Cable colour	型号 Model	
非屏蔽 Non-Flushed						
M12	4mm	单倍距离 Single Distance	导线引出型 (2m) Pre-wire(2m)	A:NO B:NC  棕: +V , 黑:输出 蓝 : 0V Brown:+V Black:Output Blue:0V	SN12-04DNA SN12-04DNB	SN12-04DPA SN12-04DPB
M18	8mm				SN18-08DNA SN18-08DNB	SN18-08DPA SN18-08DPB
M30	15mm				SN30-15DNA SN30-15DNB	SN30-15DPA SN30-15DPB
M12	8mm				SN12E-08DNA SN12E-08DNB	SN12E-08DPA SN12E-08DPB
M18	12mm				SN18E-12DNA SN18E-12DNB	SN18E-12DPA SN18E-12DPB
M30	22mm				SN30E-22DNA SN30E-22DNB	SN30E-22DPA SN30E-22DPB

## 额定规格/性能 Ratings and Specifications

## 导线引出型 Pre-Wired

尺寸Specification	单倍距离single distance							
	SN08		SN12					
安装方式 Mounting	屏蔽 Flushed	非屏蔽 Non-Flushed	屏蔽 Flushed	非屏蔽 Non-Flushed				
型号 Model	SN08-1B5□		SN12-02B□		SN12-04D□			
检测距离Sensing distance	1.5mm±10%		2mm±10%		4mm±10%			
设定距离Set distance	0~1.2mm		0~1.6mm		0~3.2mm			
响应频率Response frequency	2000Hz		1000Hz		1500Hz			
标准检测体Standard target	8*8*1t(Q235A)			12*12*1t(Q235A)				
两倍距离2-times sensing distance								
型号 Model	SN08E-02B□	SN08E-04D□	SN12E-04B□	SN12E-08D□				
检测距离Sensing distance	2mm±10%		4mm±10%		8mm±10%			
设定距离Set distance	0~1.6mm		0~3.2mm		0~6.4mm			
响应频率Response frequency	1500Hz		800Hz		500Hz			
标准检测体Standard target	8*8*1t(Q235A)		12*12*1t(Q235A)		24*24*1t(Q235A)			
输出类型Output type	N: NPN, NA: NPN-NO, NB: NPN-NC, P:PNP, PA: PNP-NO, PB: PNP-NC							
回差范围Hysteresis error	检测距离的1%~15% 1%~15% of sensing distance							
重复精度Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance							
电源电压Power supply	DC12~24V脉动 ( p-p)10%以下(DC10-30V) DC12~24V impulse ( p-p) less than 10% (DC10-30V)							
消费电流Current consumption	<10mA							
泄漏电流Leakage current	< 100uA							
残留电压Residual voltage	2V以下 ( 负载电流100mA及 导线长2m时 ) Less than 2V( load current at 100mA &cable 2m)	2.5V以下 ( 负载电流200mA及导线长2m时 ) Less than 2.5V( load current at 200mA &cable 2m)						
负载电流Load current	<100mA		<200mA					
回路保护Circuit protection	逆极性保护 输出短路保护 浪涌吸收 reverse connection protection, short circuit protection, electrical surge absorption							
指示灯Indicator light	黄色LED Yellow LED							
连接方式Connection	标准导线长2m Standard cable 2m							
环境温度Ambient temperature	使用时及保存时 : -25°C ~ +70°C work and store: -25°C ~ +70°C							
温度影响Temperature effect	-25°C ~ +70°C 温度范围内 , +23°C时检测距离的15%以内 Between -25°C ~ +70°C, less than 15% of sensing distance at +23°C							
环境湿度Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%							
电压影响Voltage effect	< 3%							
振动耐久Anti-vibration	10~50 Hz复振幅1.5mm X,Y,Z各方向 2H 10 to 50 Hz with 1.5 mm double amplitude for 2 hrs each in X, Y, and Z directions							
耐电压Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间							
绝缘电阻Insulation resistance	>500MΩ ( DC500V ) 充电部整体与外壳间							
保护结构Protection degree	IEC规格 IP67							
外壳Housing	不锈钢 Stainless steel			黄铜镀镍 Nickel-copper alloy				
外观尺寸图Outline dimension								

## 额定规格/性能 Ratings and Specifications

## 导线引出型 Pre-Wired

单倍距离single distance						
尺寸Specification	SN18		SN30			
安装方式 Mounting	屏蔽 Flushed	非屏蔽 Non-Flushed	屏蔽 Flushed	非屏蔽 Non-Flushed		
型号 Model	SN18-05B□	SN18-08D□	SN30-10B□	SN30-15D□		
检测距离Sensing distance	5mm±10%	8mm±10%	10mm±10%	15mm±10%		
设定距离Set distance	0~4mm	0~6.4mm	0~8mm	0~12mm		
响应频率Response frequency	1000Hz	800Hz	1000Hz	800Hz		
标准检测体Standard target	18*18*1t(Q235A)	24*24*1t(Q235A)	30*30*1t(Q235A)	45*45*1t(Q235A)		
两倍距离2-times sensing distance						
型号 Model	SN18E-08B□	SN18E-12D□	SN30E-15B□	SN30E-22D□		
检测距离Sensing distance	8mm±10%	12mm±10%	15mm±10%	22mm±10%		
设定距离Set distance	0~6.4mm	0~9.6mm	0~12mm	0~17.64mm		
响应频率Response frequency	300Hz	150Hz	300Hz	150Hz		
标准检测体Standard target	24*24*1t(Q235A)	36*36*1t(Q235A)	45*45*1t(Q235A)	66*66*1t(Q235A)		
输出类型Output type	N: NPN, NA: NPN-NO, NB: NPN-NC, P:PNP, PA: PNP-NO, PB: PNP-NC					
回差范围Hysteresis error	检测距离的1%~15% 1%~15% of sensing distance					
重复精度Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance					
电源电压Power supply	DC12~24V脉动 ( p-p)10%以下(DC10-30V) DC12~24V impulse ( p-p) less than 10% (DC10-30V)					
消费电流Current consumption	<15mA		<20mA			
泄漏电流Leakage current	< 100uA					
残留电压Residual voltage	2.5V以下 ( 负载电流200mA及导线长2m时 ) Less than 2.5V( load current at 200mA &cable 2m)					
负载电流Load current	<200mA					
回路保护Circuit protection	逆极性保护 输出短路保护 浪涌吸收 reverse connection protection, short circuit protection, electrical surge absorption					
指示灯Indicator light	黄色LED Yellow LED					
连接方式Connection	标准导线长2m Standard cable 2m					
环境温度Ambient temperature	使用时及保存时 : -25°C ~ + 70°C work and store: -25°C ~ + 70°C					
温度影响Temperature effect	-25°C ~ + 70°C 温度范围内 , + 23°C时检测距离的15%以内 Between -25°C ~ + 70°C, less than 15% of sensing distance at + 23°C					
环境湿度Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%					
电压影响Voltage effect	< 3%					
振动耐久Anti-vibration	10~50 Hz复振幅1.5mm X,Y,Z各方向 2H	10 to 50 Hz with 1.5 mm double amplitude for 2 hrs each in X, Y, and Z directions				
耐电压Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间					
绝缘电阻Insulation resistance	>500MΩ ( DC500V ) 充电部整体与外壳间					
保护结构Protection degree	IEC规格 IP67					
外壳Housing	黄铜镀镍 Nickel-copper alloy					
外观尺寸图 Outline dimension	<p>CAD数据</p>		<p>CAD数据</p>			

## 产品特点

采用非接触式检测方式,安全可靠,无磨损  
内置公司专用芯片,抗干扰性强,性能稳定  
超远的检测距离更易于位置的设定  
防护等级IP67;



## Product Features

Non-contact detection,safe and reliable,non-abrasion  
Built-in company dedicated chip,Strong anti-interference,  
stable performance  
Ultra-long detection distance is easier to set position  
Protection degree:IECIP67

## 选型表 Ordering Information

形状 Shape	检测距离 Sensing distance	动作模式 Action mode	接线颜色 Cable colour	型号 Model	
				PNP	NPN
屏蔽 Flushed					
SR04	0.8mm	单倍距离 Single distance	A : NO B : NC	① : +V, ②: out NC ④: out NO ③: 0V	SR04-0B8PA-E1 SR04-0B8PB-E1
M5	0.8mm				SN05-0B8PA-E1 SN05-0B8PB-E1
M8	1.5mm				SN08-1B5PA-E SN08-1B5PB-E
M12	2mm				SN12-02BPA-E SN12-02BPB-E
M18	5mm				SN18-05BPA-E SN18-05PB-E
M30	10mm				SN30-10BPA-E SN30-10PB-E
SR04	1.2mm				SR04-1B2PA-E SR04-1B2PB-E
M5	1.2mm				SN05-1B2PA-E SN05-1B2PB-E
M8	2mm				SN08-02BPA-E SN08-02PB-E
M12	4mm				SN12E-04BPA-E SN12E-04PB-E
M18	8mm	两倍距离 2-times sensing distance	A : NO B : NC		SN18E-08BPA-E SN18E-08PB-E
M30	15mm				SN30E-15BPA-E SN30E-15PB-E
形状 Shape	检测距离 Sensing distance	动作模式 Action mode	接线颜色 Cable colour	型号 Model	
				PNP	NPN
非屏蔽 Non-Flushed					
M8	2mm	单倍距离 Single distance	A : NO B : NC		SN08-02DPA-E SN08-02DPB-E
M12	4mm				SN12-04DPA-E1 SN12-04DPB-E1
M18	8mm				SN18-08DPA-E1 SN18-08DPB-E1
M30	15mm				SN30-15DPA-E1 SN30-15DPB-E1
M8	8mm				SN08-04DPA-E1 SN08-04DPB-E1
M12	12mm				SN12E-08DPA-E1 SN12E-08DPB-E1
M18	15mm				SN18E-12DPA-E1 SN18E-12DPB-E1
M30	22mm				SN30E-22DPA-E1 SN30E-22DPB-E1

## 额定规格/性能 Ratings and Specifications

## 连接器式 Connector connection

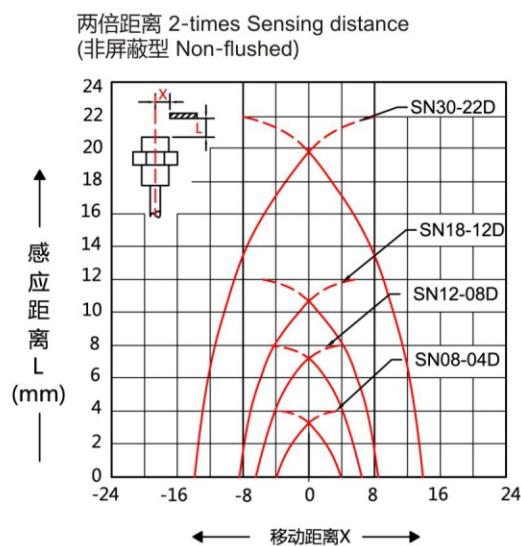
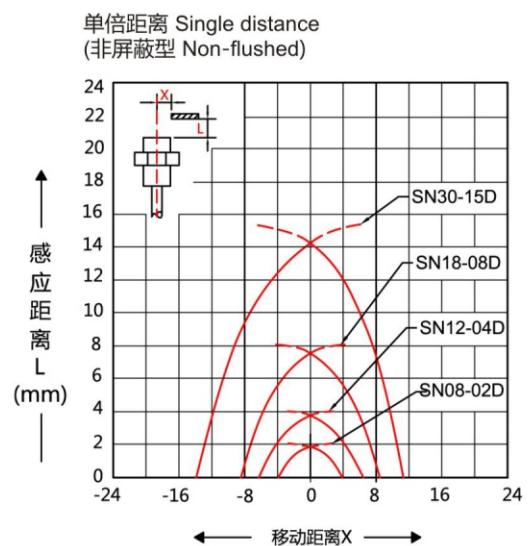
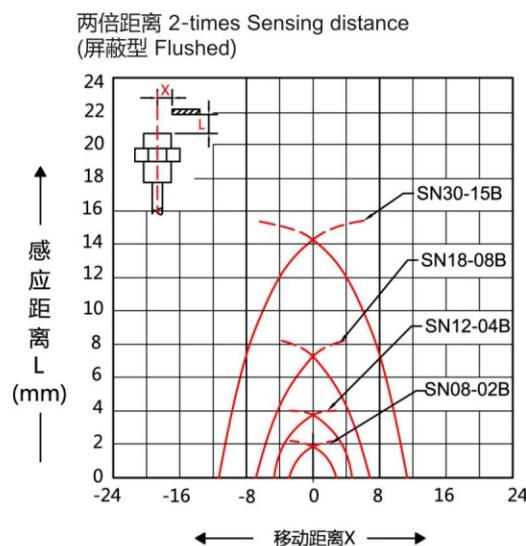
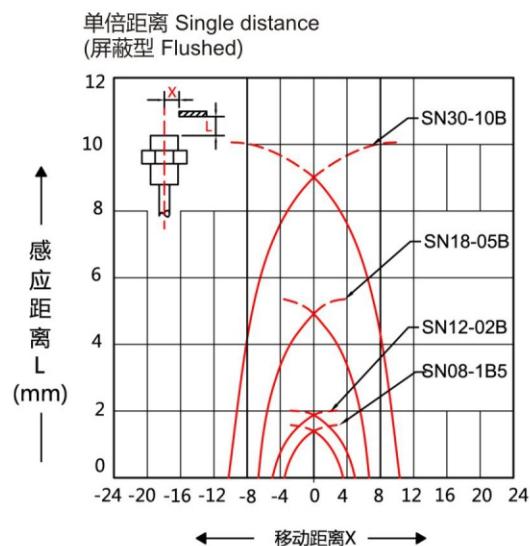
尺寸 Specification	SR04	SN05	SN08			
安装方式 Mounting	屏蔽 Flushed	屏蔽 Flushed	屏蔽 Flushed	非屏蔽 Non-Flushed		
型号 Model	SR04-0B8□-E1	SN05-0B8□-E1	SN08-1B5□-E	SN08-02D□-E		
检测距离 Sensing distance	0.8mm±10%		1.5mm±10%	2mm±10%		
设定距离 Set distance	0~0.64mm		0~1.2mm	0~1.6mm		
响应频率 Response frequency	2000Hz		1500Hz	1000Hz		
标准检测体 Standard target	5*5*1t(Q235A)		8*8*1t(Q235A)			
输出类型 Output type	N: NPN, NA: NPN-NO, NB: NPN-NC, P:PNP, PA: PNP-NO, PB: PNP-NC					
回差范围 Hysteresis error	检测距离的1%~15% (1%~15% of sensing distance)		检测距离的1%~15% (1%~15% of sensing distance)			
重复精度 Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance					
电源电压 Power supply	DC12~24V脉动 ( p-p)10%以下(DC10-30V) DC12~24V impulse ( p-p) less than 10% (DC10-30V)					
消费电流 Current consumption	<10mA					
泄漏电流 Leakage current	< 100uA					
残留电压 Residual voltage	2V以下 ( 负载电流200mA及导线长2m时 ) Less than 2V( load current at 200mA &cable 2m)					
负载电流 Load current	<100mA					
回路保护 Circuit protection	逆极性保护 输出短路保护 浪涌吸收 reverse connection protection, short circuit protection, electrical surge absorption					
指示灯 Indicator light	黄色LED Yellow LED					
连接方式 Connection	M12接插件 Connector					
环境温度 Ambient temperature	使用时及保存时 : -25°C ~ + 70°C work and store: -25°C ~ + 70°C					
温度影响 Temperature effect	-25°C ~ + 70°C 温度范围内 , + 23°C时检测距离的15%以内 Between -25°C ~ + 70°C, less than 15% of sensing distance at + 23°C					
环境湿度 Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%					
电压影响 Voltage effect	<3%					
振动耐久 Anti-vibration	10~50 Hz复振幅1.5mm X,Y,Z各方向 2H	10 to 50 Hz with 1.5 mm double amplitude for 2 hrs each in X, Y, and Z directions				
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间					
绝缘电阻 Insulation resistance	>500MΩ ( DC500V ) 充电部整体与外壳间					
保护结构 Protection degree	IEC规格 IP67					
外壳 Housing	不锈钢 Stainless steel					
外观尺寸图 Outline dimension	SR04(屏蔽/Flushed) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>	SN05(屏蔽/Flushed) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>	SN08(屏蔽/Flushed) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>	SN08(非屏蔽/None-Flushed) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>		

## 额定规格/性能 Ratings and Specifications

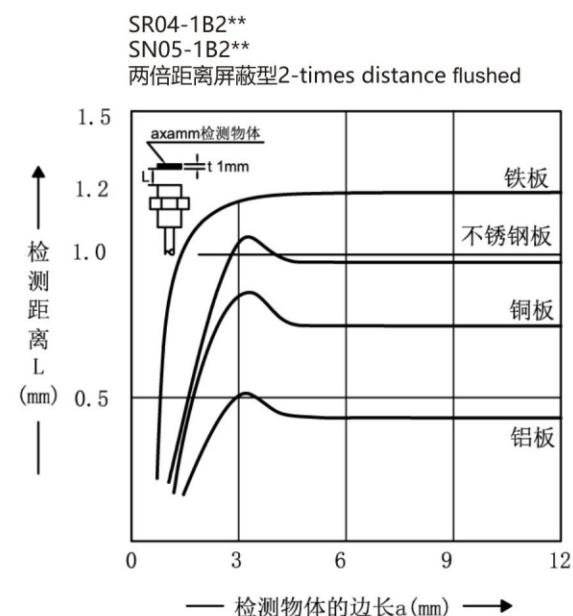
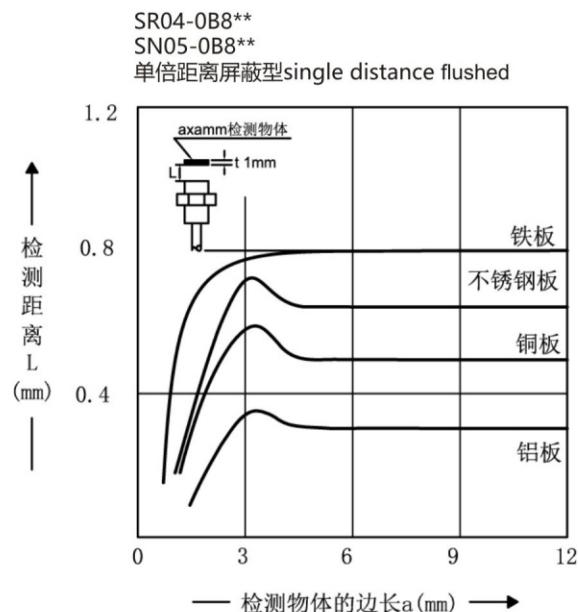
## 连接器式 Connector connection

尺寸 Specification	SN12		SN18		SN30	
安装方式 Mounting	屏蔽 Flushed	非屏蔽 Non-Flushed	屏蔽 Flushed	非屏蔽 Non-Flushed	屏蔽 Flushed	非屏蔽 Non-Flushed
型号 Model	SN12-02B□-E	SN12-04D□-E	SN18-05B□-E	SN18-08D□-E	SN30-10B□-E	SN30-15D□-E
检测距离 Sensing distance	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
设定距离 Set distance	0~1.6mm	0~3.2mm	0~4mm	0~6.4mm	0~8mm	0~12mm
响应频率 Response frequency	1500Hz	1000Hz	1000Hz	800Hz	1000Hz	800Hz
标准检测体 Standard target	12*12*1t(Q235A)	12*12*1t(Q235A)	18*18*1t(Q235A)	24*24*1t(Q235A)	30*30*1t(Q235A)	45*45*1t(Q235A)
输出类型 Output type	N: NPN, NA: NPN-NO, NB: NPN-NC, P:PNP, PA: PNP-NO, PB: PNP-NC					
回差范围 Hysteresis error	检测距离的1%~15% 1%~15% of sensing distance					
重复精度 Repeat accuracy	小于检测距离的3% Less than 3% of sensing distance					
电源电压 Power supply	DC12~24V脉动 ( p-p)10%以下(DC10-30V) DC12~24V impulse ( p-p) less than 10% (DC10-30V)					
消费电流 Current consumption	< 100uA					
泄漏电流 Leakage current	<10mA					
残留电压 Residual voltage	2.5V以下 ( 负载电流200mA及导线长2m时 ) Less than 2.5V( load current at 200mA &cable 2m)					
负载电流 Load current	<200mA					
回路保护 Circuit protection	逆极性保护 输出短路保护 浪涌吸收 reverse connection protection, short circuit protection, electrical surge absorption					
指示灯 Indicator light	黄色LED Yellow LED					
连接方式 Connection	M12接插件 Connector					
环境温度 Ambient temperature	使用时及保存时 : -25°C ~ + 70°C work and store: -25°C ~ + 70°C					
温度影响 Temperature effect	-25°C ~ + 70°C 温度范围内 , + 23°C时检测距离的15%以内 Between -25°C ~ + 70°C, less than 15% of sensing distance at + 23°C					
环境湿度 Ambient humidity	使用及保存时 : 35~95% work and store: 35~95%					
电压影响 Voltage effect	<3%					
振动耐久 Anti-vibration	10~50 Hz复振幅1.5mm X,Y,Z各方向 2H 10 to 50 Hz with 1.5 mm double amplitude for 2 hrs each in X, Y, and Z directions					
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min充电部整体与外壳间					
绝缘电阻 Insulation resistance	>500MΩ ( DC500V ) 充电部整体与外壳间					
保护结构 Protection degree	IEC规格 IP67					
外壳 Housing	黄铜镀镍 Nickel-copper alloy					
外观尺寸图 Outline dimension	SN12(屏蔽/Flushed) 	CAD数据	SN18(屏蔽/Flushed) 	CAD数据	SN30(屏蔽/Flushed) 	CAD数据
	SN12(非屏蔽/None-Flushed) 		SN18(非屏蔽/None-Flushed) 		SN30(非屏蔽/None-Flushed) 	

## 感应领域特性 Induction Features

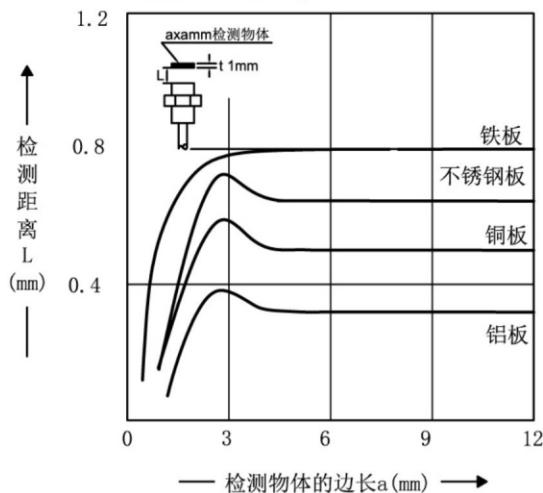


## 动作范围和材质的影响 Sensing Target Size &amp; Material Effect

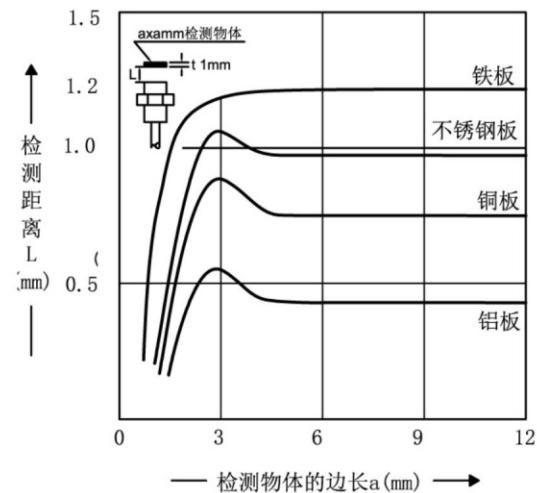


## 动作范围和材质的影响sensing target size&amp;material effect

SR03-0B8\*\*  
SN04-0B8\*\*  
单倍距离屏蔽型single distance

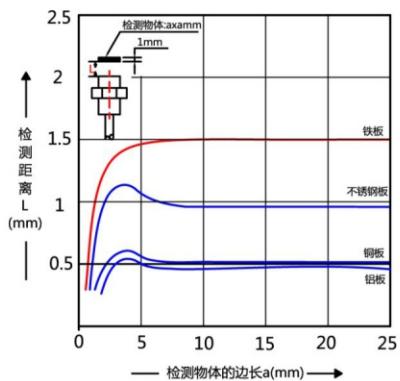


SR03-1B2\*\*  
SN04-1B2\*\*  
两倍距离屏蔽型2-times distance

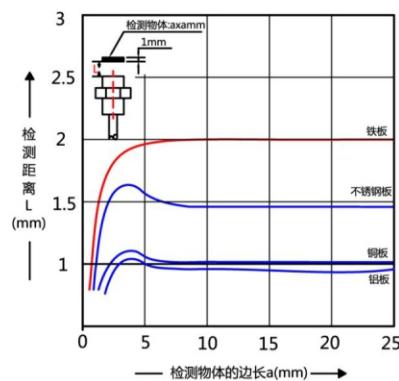


注明: 当检测物体尺寸小于标准尺寸(8\*8\*1),其检测距离如对应的上图所示;  
Note: When the detected object size is smaller than the standard size (8\*8\*1),  
the sensing distance is as shown in the corresponding figure above;

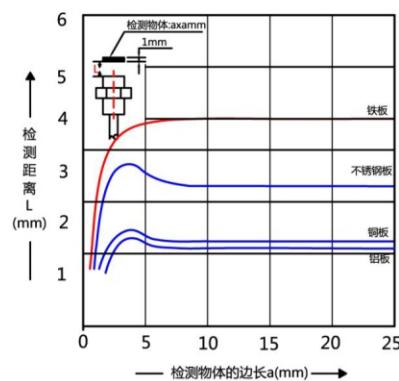
SN08-1B5□□



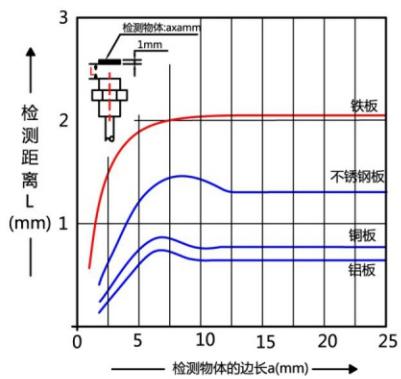
SN08-02□□□



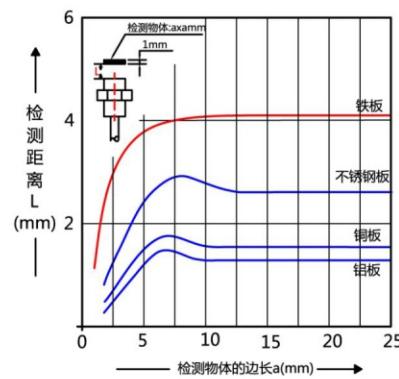
SN08-04□□□



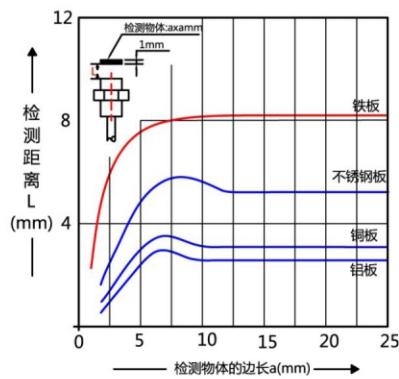
SN12-02□□□



SN12-04□□□

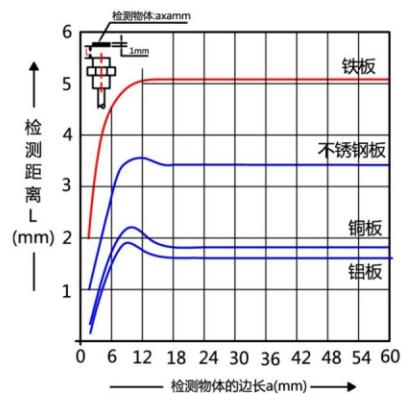


SN12-08□□□

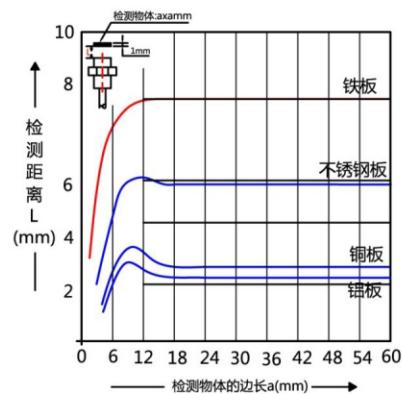


## 动作范围和材质的影响sensing target size&amp;material effect

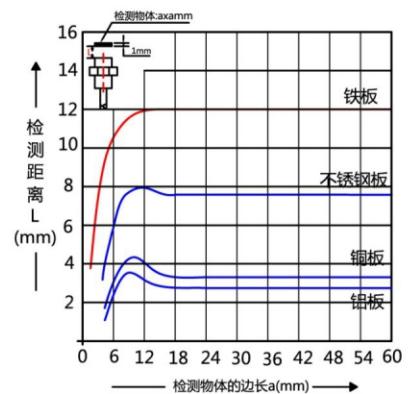
SN18-05 □□□



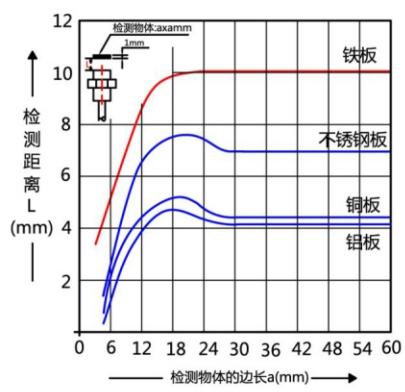
SN18-08 □□□



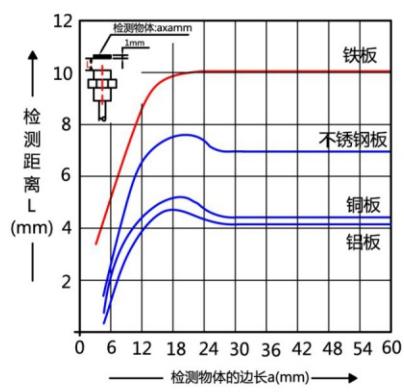
SN18-12 □□□



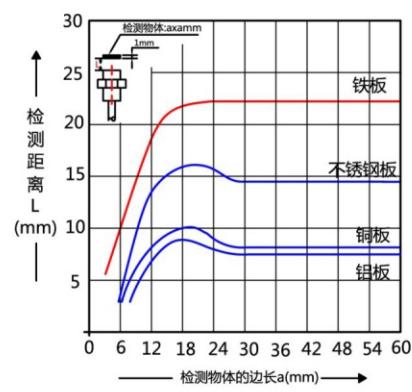
SN30-10 □□□



SN30-15 □□□



SN30-22 □□□



## 产品特点

SP系列接近开关设计简单，安装便捷。尺寸小巧，性能卓越，应用广泛

采用真空含浸灌注设备封灌

部分采用低压注塑包胶，属于国际领先生产工艺

具备短路保护，浪涌吸收，电源逆接保护功能



## Product Features

Simple design, convenient installation, small size, excellent performance, widely used

Vacuum impregnation

Low-pressure injection molding and rubber coating

Short circuit protection, electrical surge absorption, reverse connection protection

## 选型表 Ordering Information

形状Shape		检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model			
					NPN	PNP		
SP05	SP05F	1.5mm		Flushed屏蔽 A:NO B:NC	SP05F-1B5NA SP05F-1B5NB	SP05F-1B5PA SP05F-1B5PB		
	SP05H				SP05H-1B5NA SP05H-1B5NB	SP05H-1B5PA SP05H-1B5PB		
Sp08	SP08	2.5mm		非屏蔽 Non-Flushed	SP08-2D5NA SP08-2D5NB	SP08-2D5PA SP08-2D5PB		
	SP08F	2mm			SP08F-02DNA SP08F-02DNB	SP08F-02DPA SP08F-02DPB		
	SP08H				SP08H-02DNA SP08H-02DNB	SP08H-02DPA SP08H-02DPB		
SP10		2.5mm		非屏蔽 Non-Flushed	SP10-2D5NA SP10-2D5NB	SP10-2D5PA SP10-2D5PB		
SP11	SP11F	4mm		非屏蔽 Non-Flushed	SP11F-04DNA SP11F-04DNB	SP11F-04DPA SP11F-04DPB		
	SP11H				SP11H-04DNA SP11H-04DNB	SP11H-04DPA SP11H-04DPB		
SP12	SP12	4mm		非屏蔽 Non-Flushed	SP12-04DNA SP12-04DNB	SP12-04DPA SP12-04DPB		
	SP12H				SP12H-04DNA SP12H-04DNB	SP12H-04DPA SP12H-04DPB		
SP18		5mm		Flushed屏蔽	SP18-05BNA SP18-05BNB	SP18-05BPA SP18-05BPB		

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

	尺寸 Specification	SP05F	SP05H	SP08	SP08H	SP08F				
项目 Project	安装方式 Mounting	Flushed(屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Non-Flushed(非屏蔽)	Non-Flushed(非屏蔽)				
	型号 Model	SP05F-1B5□A	SP05H-1B5□A	SP08-2D5□A	SP08H-02D□A	SP08F-02D□A				
检测距离 Sensing distance	1.5mm±10%		2.5mm±10%		2mm±10%					
设定距离 Set distance	0~1.2mm		0~2mm		0~1.6mm					
回差范围 Hysteresis error	1~15% ( sensing distance ) / ( 检测距离的1~15%)									
重复精度 Repeat accuracy	< 5% ( sensing distance ) / ( 小于检测距离的5%)									
输出方式 Output mode	N : NPN      P : PNP									
输出状态 Output state	NO/NC									
响应频率 Response frequency	1.5KHZ		1KHZ							
标准检测体 Standard target	5X5X1t(Q235A steel plate)		8X8X1t(Q235A steel plate)							
温度影响 Temperature effect	-25°C~70°C,within±10% ( +25°C sensing distance ) / ( 温度范围-25~70°C , +25°C时检测距离±10%)									
电源电压 Power supply	DC12~24V impulse(p-p)<10%(DC10~30V)DC12~24V 脉动 ( p-p ) <10% ( DC10~30V )									
消费电流 Current consumption	< 10mA									
电压影响 Voltage effect	< 3%									
残留电压 Residual voltage	< 1.5V(load current 100mA&cable 2m) / 1.5V以下 ( 负载电流 100mA及导线2米 )									
负载电流 Load current	< 100mA									
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)									
指示灯 Indicator light	Red LED / ( 红色LED )									
泄漏电流 Leakage currmt	< 100uA									
连接方式 Connection	Cable ( 2m ) or Connection terminal/标准导线长2米或带端子									
环境温度 Ambient temperature	Work&store : -25°C~70°C / ( 使用时及保存时 : -25°C~70°C )									
环境湿度 Ambient humidity	Work&store : 35°C~95% / ( 使用时及保存时 : 35~95% )									
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10 ~ 50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )									
耐电压 Withstanding voltage	500V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )									
绝缘电阻 Insulation resistance	> 100MΩ ( DC500V megger ) / 100MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间									
保护结构 protection degree	IEC IP67									
外壳材质 Housing material	PC									
Dimension(尺寸图)	SP08F导线引出型(wire) <span style="float:right">CAD数据</span>		SP08导线引出型(wire) <span style="float:right">CAD数据</span>		SP08H导线引出型(wire) <span style="float:right">CAD数据</span>					
	SP05H导线引出型(wire)		SP08F导线引出型(wire) <span style="float:right">CAD数据</span>							

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

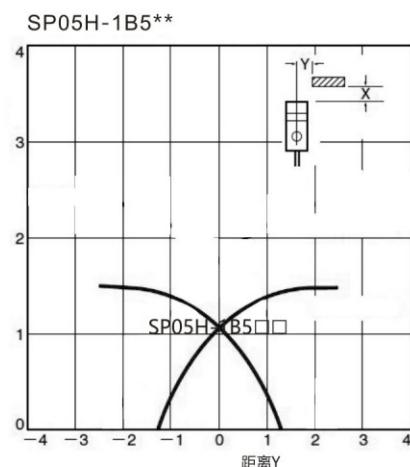
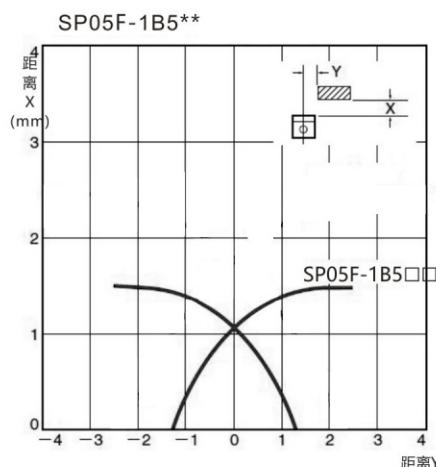
项目 Project	尺寸 Specification	SP10				SP11F		SP11H									
	安装方式 Mounting	Non-Flushed(非屏蔽)				Non-Flushed(非屏蔽)		Non-Flushed(非屏蔽)									
	型号 Model	SP10-2D5NA	SP10-2D5NB	SP10-2D5PA	SP10-2D5PB	SP11F-04D□A	SP11F-04D□B	SP11H-04D□A	SP11H-04D□B								
输出方式 Output mode	NPN		PNP		N : NPN P : PNP												
输出状态 Output state	NO	NC	NO	NC	NO	NC	NO	NC									
检测距离 Sensing distance	2.5mm±10%				4mm±10%												
设定距离 Set distance	0~2mm				0~3.2mm												
回差范围 Hysteresis error	1~15% ( sensing distance ) /(检测距离的1~15%)																
重复精度 Repeat accuracy	< 5% ( sensing distance ) /(小于检测距离的5%)																
响应频率 Response frequency	1KHZ				500KHZ												
标准检测体 Standard target	8X8X1t(Q235A steel plate)/ ( 8X8X1t的Q235A钢板 )				12X12X1t(Q235A steel plate)/ ( 12X12X1t的Q235A钢板 )												
温度影响 Temperature effect	-25°C~70°C,within±10% (+ 23°C sensing distance) /(温度范围-25~70°C , +23°C时检测距离±10%以内)																
电源电压 Power supply	DC12-24V impulse(p-p) < 10%(DC10-30V)DC12-24V 脉动 ( p-p ) < 10% ( DC10-30V )																
消费电流 Current consumption	< 10mA																
电压影响 Voltage effect	< 3%																
残留电压 Residual voltage	< 1.5V(load current 100mA&cable 2m) /1.5V以下 ( 负载电流 100mA及导线2米 )																
负载电流 Load current	< 100mA																
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)																
指示灯 Indicator light	Red LED / ( 红色LED )																
泄漏电流 Leakage currmt	< 100uA																
连接方式 Connection	Cable ( 2m ) or Connection terminal/标准导线长2米或带端子																
环境温度 Ambient temperature	Work&store : -25°C~70°C)/(使用时及保存时 : -25°C~70°C )																
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)																
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )																
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间)																
绝缘电阻 Insulation resistance	> 100MΩ ( DC500V megger ) /100MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间																
保护结构 protection degree	IEC IP67																
外壳材质 Housing material	ABS				PC												
Dimension(尺寸图) unit/单位 : mm	SP10导线引出型(wire)				CAD数据		SP11F导线引出型(wire)				CAD数据						
					<a href="#">CAD数据</a>						<a href="#">CAD数据</a>						
SP11H导线引出型(wire)										<a href="#">CAD数据</a>							
										<a href="#">CAD数据</a>							

## 额定规格/性能 Ratings and Specifications

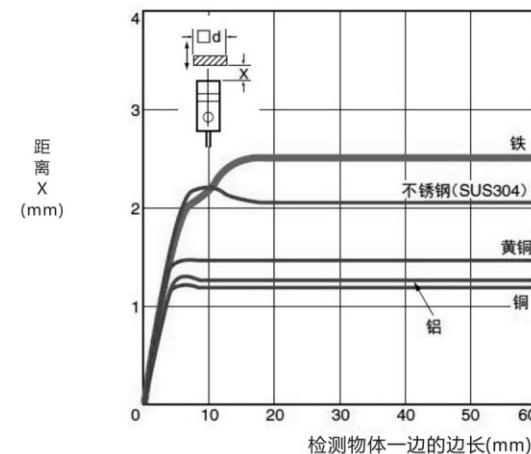
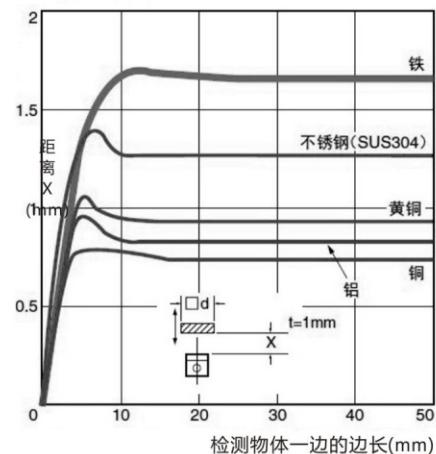
## 标准型 Standard

项目 Project	尺寸 Specification	SP12		SP12H		SP18										
	安装方式 Mounting	Non-Flushed(非屏蔽)		Non-Flushed(非屏蔽)		Flushed屏蔽 ( Non-Flushed optional 非屏蔽可选 )										
	型号 Model	SP12-04D□A	SP12-04D□B	SP12H-04D□A	SP12H-04D□B	SP18-05BNA	SP18-05BNB	SP18-05BPA	SP18-05BPB							
输出方式 Output mode	N : NPN		P : PNP		NPN				PNP							
输出状态 Output state	NO/NC		NO		NC	NO	NC	NO	NC							
检测距离 Sensing distance	4mm±10%				5mm±10%											
设定距离 Set distance	0~3.2mm				0~4mm											
回差范围 Hysteresis error	1~15% ( sensing distance ) /(检测距离的1~15%)															
重复精度 Repeat accuracy	< 5% ( sensing distance ) /(小于检测距离的5%)															
响应频率 Response frequency	500KHZ															
标准检测体 Standard target	12X12X1t(Q235A steel plate)/ ( 12X12X1t的Q235A钢板 )				18X18X1t(Q235A steel plate)/ ( 18X18X1t的Q235A钢板 )											
温度影响 Temperature effect	-25°C~70°C,within±10% (+23°C sensing distance) /(温度范围-25~70°C , +23°C时检测距离±10%以内)															
电源电压 Power supply	DC12-24V impulse(p-p) < 10% (DC10-30V) DC12-24V 脉动 ( p-p ) < 10% ( DC10-30V )															
消费电流 Current consumption	< 10mA															
电压影响 Voltage effect	< 3%															
残留电压 Residual voltage	< 1.5V (load current 100mA & cable 2m) / 1.5V以下 (负载电流 100mA 及导线2米)				< 1.5V (load current 200mA & cable 2m) / 1.5V以下 (负载电流 200mA 及导线2米)											
负载电流 Load current	< 100mA				< 200mA											
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)															
指示灯 Indicator light	Red LED/ ( 红色LED )															
泄漏电流 Leakage currnt	< 100uA															
连接方式 Connection	Cable ( 2m ) or Connection terminal/标准导线长2米或带端子															
环境温度 Ambient temperature	Work&store : -25°C~70°C/(使用时及保存时 : -25°C~70°C )															
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)															
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )															
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )															
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) /500MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间															
保护结构 protection degree	IEC IP67															
外壳材质 Housing material	PC				ABS											
Dimension(尺寸图) unit/单位 : mm	SP12导线引出型(wire)				CAD数据		SP18导线引出型(wire)									
					<a href="#">CAD数据</a>											
	SP12H导线引出型(wire)				CAD数据											

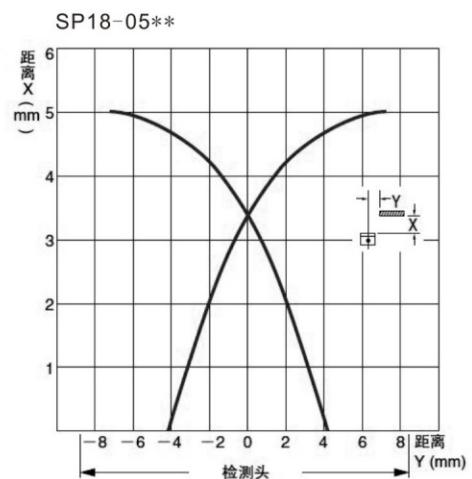
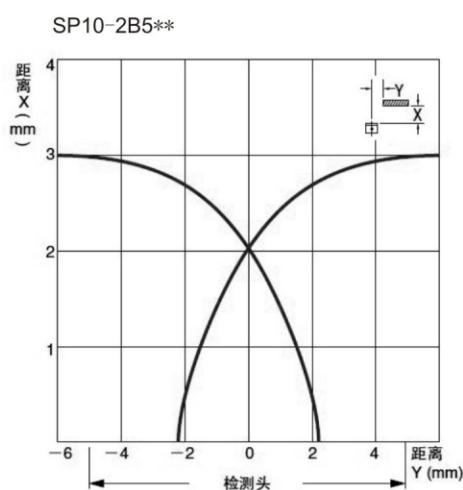
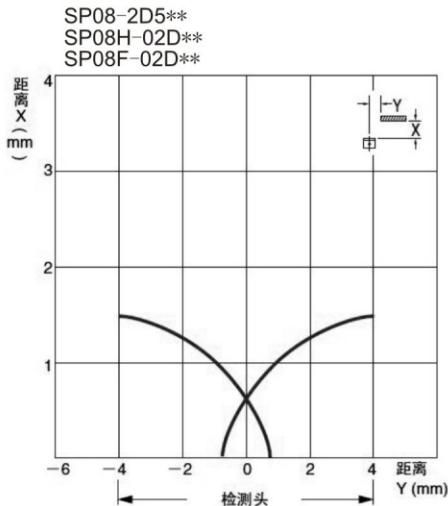
## 感应领域特性 Induction Features



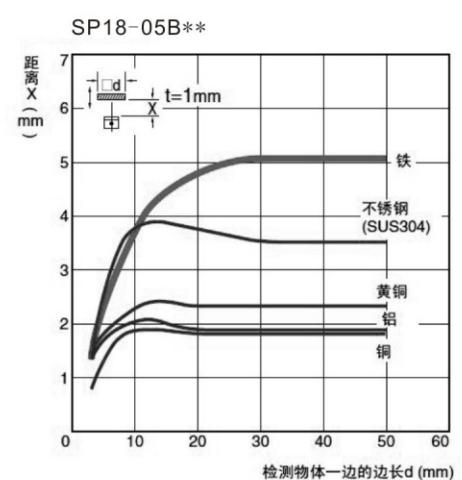
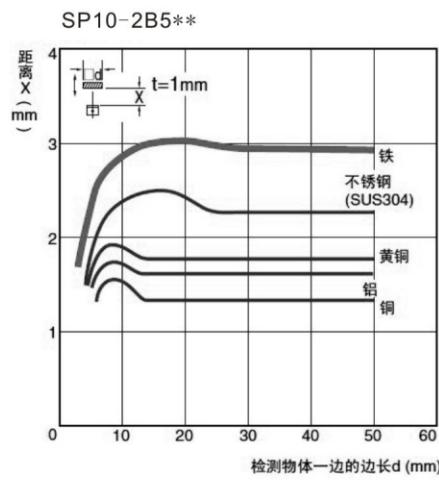
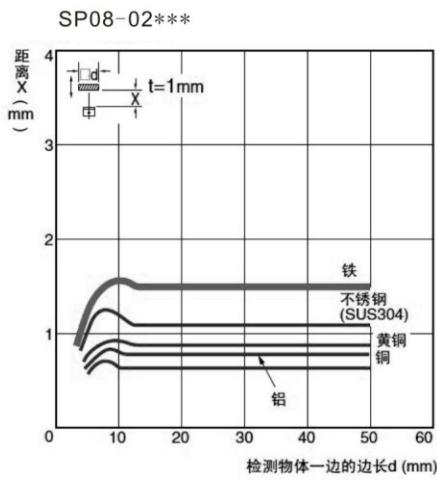
## 动作范围和材质的影响 Sensing Target Size &amp; Material Effect



## 感应领域特性 Induction Features



## 动作范围和材质的影响 Sensing Target Size &amp; Material Effect



## 产品特点

使用方便，性能稳定，客户信赖  
 SS系列接近开关，在原有型号上新增多种机型，  
 传统方型设计，便于安装  
 多种机型，型号齐全，有短路保护和逆接保护功能



## Product Features

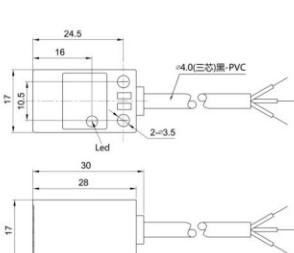
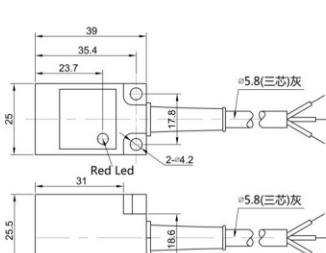
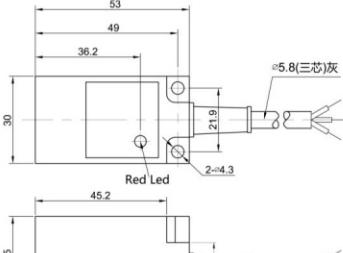
Easy to use,stable performance, customer trust  
 SS series proximity switches, add a variety of models to t  
 Convenient installation  
 Complete types,with function of short circuit protection  
 and reverse connection protection

## 选型表 Ordering Information

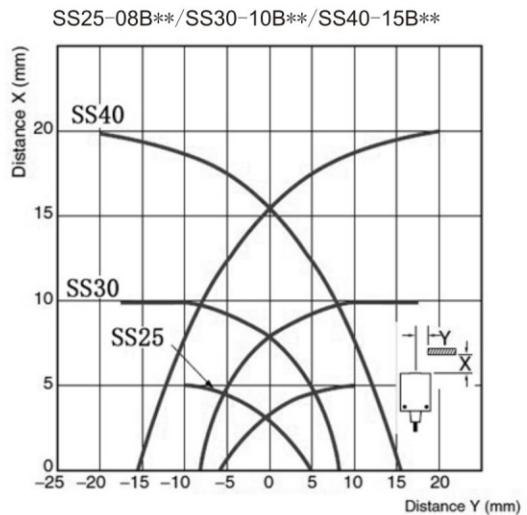
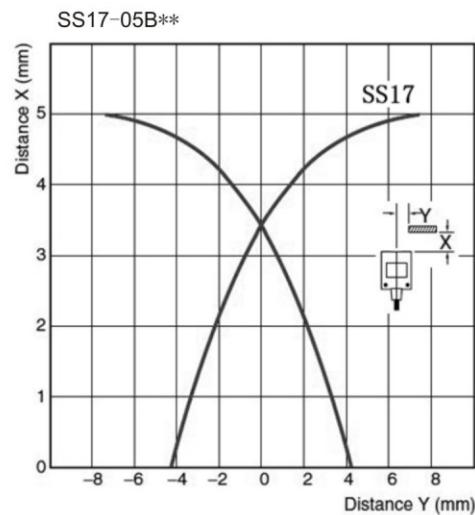
形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
SS17	5mm	A:NO B:NC	Flushed屏蔽	SS17-05BNA SS17-05BNB	SS17-05BPA SS17-05BPB
	8mm		Non-Flushed非屏蔽	SS17-08DNA SS17-08DNB	SS17-08DPA SS17-08DPB
SS25	8mm	A:NO B:NC	Flushed屏蔽	SS25-08BNA SS25-08BNB	SS25-08BPA SS25-08BPB
	10mm		Non-Flushed非屏蔽	SS25-10DNA SS25-10DNB	SS25-10DPA SS25-10DPB
SS30	10mm	A:NO B:NC	Flushed屏蔽	SS30-10BNA SS30-10BNB	SS30-10BPA SS30-10BPB
	15mm		Non-Flushed非屏蔽	SS30-15DNA SS30-15DNB	SS30-15DPA SS30-15DPB

## 额定规格/性能 Ratings and Specifications

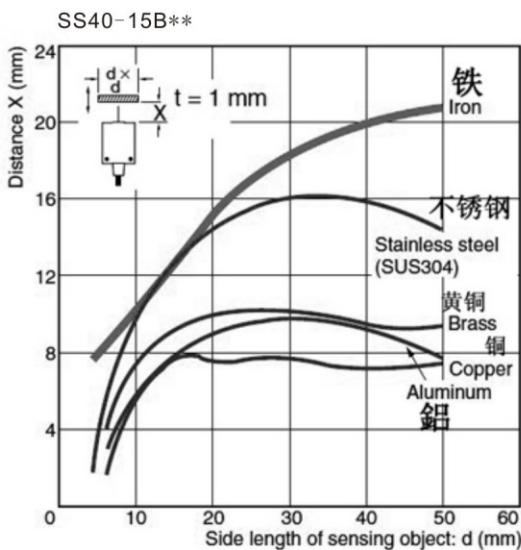
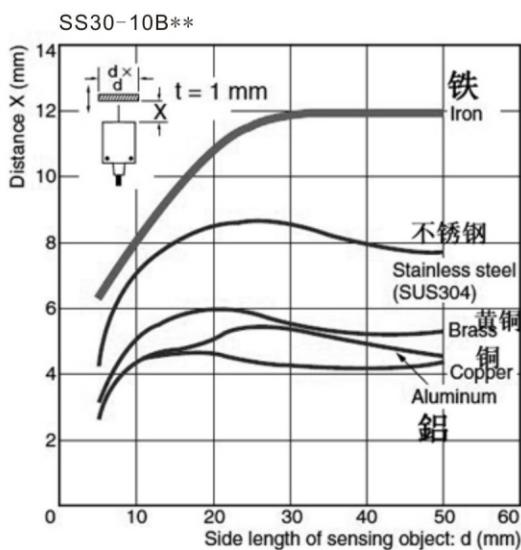
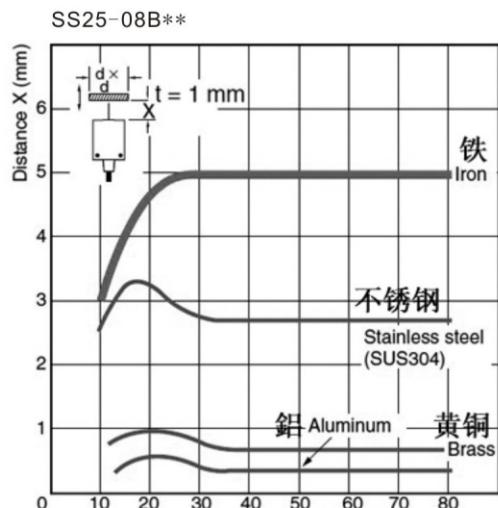
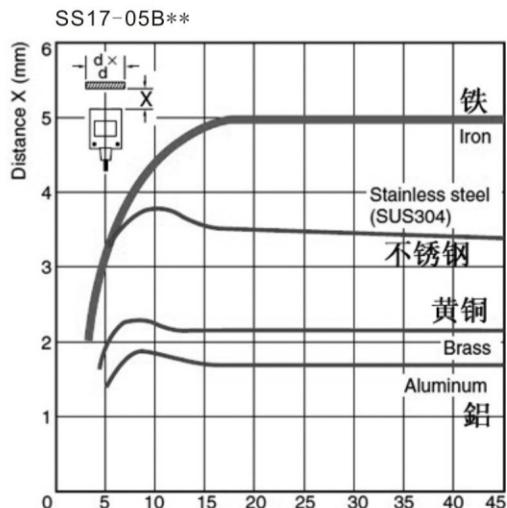
## 标准型 Standard

项目 Project	尺寸 Specification	SS17		SS25		SS30	
	安装方式 Mounting	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)
	型号 Model	SS17-05B□	SS17-08D□	SS25-08B□	SS25-10D□	SS30-10B□	SS30-15D□
检测距离 Sensing distance	5mm±10%		8mm±10%	8mm±10%	10mm±10%	10mm±10%	15mm±10%
设定距离 Set distance	0~4mm		0~6.4mm	0~6.4mm	0~8mm	0~8mm	0~12mm
回差范围 Hysteresis error	1~15% ( sensing distance ) /(检测距离的1~15%)						
重复精度 Repeat accuracy	< 3% ( sensing distance ) /(小于检测距离的3%)						
输出类型 Output type	N : NPN	NA : NPN-NO	NB : NPN-NC	P : PNP	PA : PNP-NO	PB : PNP-NC	
响应频率 Response frequency	600HZ	400HZ	500HZ	300HZ	500HZ	300HZ	
标准检测体 Standard target	17X17X1t	24X24X1t	24X24X1t	30X30X1t	45X45X1t		
温度影响 Temperature effect	-25°C~70°C,within±15% (+23°C sensing distance) /(温度范围-25~70°C , +23°C时检测距离±15%以内)						
电源电压 Power supply	DC12~24V impulse(p-p)<10%(DC10~30V)/DC12~24V 脉动 ( p-p ) <10% ( DC10~30V )						
消费电流 Current consumption	< 10mA						
电压影响 Voltage effect	< 3%						
残留电压 Residual voltage	< 2.5V(load current 200mA&cable 2m) /2.5V以下 ( 负载电流 200mA及导线2米 )						
负载电流 Load current	< 200mA						
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 短路保护 浪涌吸收)						
指示灯 Indicator light	Red LED / ( 红色指示灯 )						
泄漏电流 Leakage currnt	< 100uA						
连接方式 Connection	Cable ( 2m ) /标准导线长2米						
环境温度 Ambient temperature	Work&store : -25°C~70°C/(使用时及保存时 : -25°C~70°C )						
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)						
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )						
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )						
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) /500MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间						
保护结构 protection degree	IEC IP67						
外壳材质 Housing material	PBT+ABS						
Dimension(尺寸图) unit/单位 : mm	SS17导线引出型(wire)	CAD数据	SS25导线引出型(wire)	CAD数据	SS30导线引出型(wire)	CAD数据	
							

## 感应领域特性 Induction Features



动作范围和材质的影响 sensing target size&material effect



## 产品特点

确保电压变化对检测精度和稳定性无影响

具有浪涌、逆极性保护



## Product Features

Ensure that voltage changes have no effect on sensing accuracy and stability

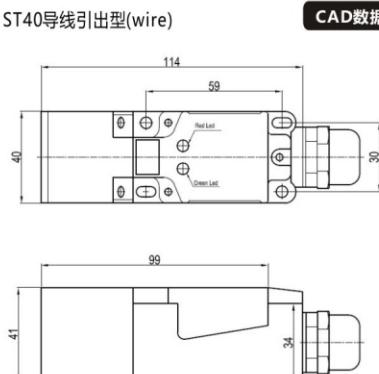
Surge、reverse connection protection

## 选型表

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
ST40	15mm	A:NO B:NC C:NO+NC	Flushed屏蔽	ST40-15BNA ST40-15BNB	ST40-15BPA ST40-15BPB
	20mm		Non-Flushed非屏蔽	ST40-20DNA ST40-20DNB	ST40-20DPA ST40-20DPB
ST41	20mm	A:NO B:NC C:NO+NC	Flushed屏蔽	ST41-20BNC-E2	ST41-20BPC-E2
	40mm		Non-Flushed非屏蔽	ST41-40DNC-E2	ST41-40DPC-E2
ST80	40mm	A:NO B:NC C:NO+NC	Flushed屏蔽	ST80-40BNC	ST80-40BPC
	50mm		Non-Flushed非屏蔽	ST80-50DNC	ST80-50DPC

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	ST40		ST41		ST80										
	安装方式 Mounting	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)									
	型号 Model	ST40-15B□A	ST40-20D□A	ST41-20B□C-E2	ST41-40D□C-E2	ST80-40BNC	ST80-50DNC									
检测距离 Sensing distance	15mm±10%		20mm±10%		20mm±10%		40mm±10%									
设定距离 Set distance	0~12mm		0~16mm		0~32mm		0~32mm									
回差范围 Hysteresis error	1~15% ( sensing distance ) /(检测距离的1~15%)				检测距离的1~20%											
重复精度 Repeat accuracy	< 3% ( sensing distance ) /(小于检测距离的3%)		< 5% ( sensing distance ) /(小于检测距离的5%)													
输出方式 Output mode	N : NPN      P : PNP															
输出状态 Output state	NO/NC		NO+NC													
响应频率 Response frequency	500HZ	300HZ	200HZ	100HZ	300HZ	150HZ										
标准检测体 Standard target	45X45X1t	60X60X1t	60X60X1t	120X120X1t	120X120X1t	150X150X1t										
温度影响 Temperature effect	-25°C~70°C,within±20% (+ 23°C sensing distance) /(温度范围-25~70°C , + 23°C时检测距离±20%以内)															
电源电压 Power supply	DC12~24V impulse(p-p)<10%(DC10~30V)DC12~24V 脉动 ( p-p ) <10% ( DC10~30V )															
消费电流 Current consumption	< 10mA				< 15mA											
电压影响 Voltage effect	< 3%															
残留电压 Residual voltage	< 2.5V(load current 200mA&cable 2m) /2.5V以下 ( 负载电流 200mA及导线2米 )															
负载电流 Load current	< 200mA															
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 短路保护 浪涌吸收)															
指示灯 Indicator light	Work(动作):Red LED / ( 红色指示灯 )		Power(电源):Green LED / ( 绿色指示灯 )													
泄漏电流 Leakage currmt	< 100uA															
连接方式 Connection	Cable ( 2m ) /标准导线长2米	M12接插件/(M12 connector)		Cable ( 2m ) /标准导线长2米												
环境温度 Ambient temperature	Work&store : -25°C~70°C)/(使用时及保存时 : -25°C~70°C )															
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)															
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10 ~ 50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )															
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )															
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) /500MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间															
保护结构 protection degree	IEC IP67															
外壳材质 Housing material	ABS+PBT		PBT													
Dimension(尺寸图) unit/单位 : mm		ST40导线引出型(wire)      CAD数据		ST41接插座型(connector)      CAD数据		ST80导线引出型(wire)      CAD数据										
																

## 产品特点

适用于机械手臂等狭小空间中  
支架外形结构多样化  
多款安装方式可供选择  
抗强磁干扰>100mT

## Product Features

Suitable to use in narrow space  
Diversified shapes for structure  
Multiple installation  
Anti-magnetic interference

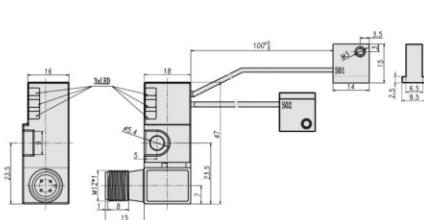
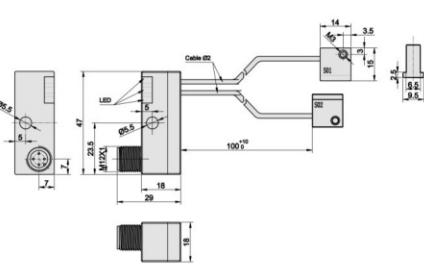


## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
ST18X	2mm	A:NO B:NC	Non-flushed 非屏蔽	ST18X-02DNA ST18X-02DNB	ST18X-02DPA ST18X-02DPB
				ST18Y-02DNA ST18Y-02DNB	ST18Y-02DPA ST18Y-02DPB

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	ST18X	ST18Y
	安装方式 Mounting	Non-flushed(S01,S02 two sensing point) 非屏蔽(S01,S02两个感应头)	
	型号 Model	ST18X-02D□A	ST18Y-02D□A
检测距离 Sensing distance	2mm±10%		
设定距离 Set distance	0~1.6mm		
回差范围 Hysteresis error	3~10% ( sensing distance ) /(检测距离的3~10%)		
重复精度 Repeat accuracy	< 5% ( sensing distance ) /(小于检测距离的5%)		
输出方式 Output mode	PA:PNP-NO, PB:PNP-NC, NA:NPN-NO, NB:NPN-NC		
输出状态 Output state	NO/NC		
响应频率 Response frequency	1000HZ		
标准检测体 Standard target	Φ12X1t Q235A Steel plate(FE360)/Φ12X1t Q235A钢板 ( FE360 )		
温度影响 Temperature effect	-40°C~+85°C,within±10% ( +23°C sensing distance ) /(温度范围-40~+85°C, +23°C时检测距离±10%以内)		
电源电压 Power supply	DC12-24V impulse(p-p) <10%(DC10-30V)/DC12-24V 脉动 ( p-p ) <10% ( DC10-30V )		
消费电流 Current consumption	<15mA		
残留电压 Residual voltage	<2V DC(load current 150mA&cable 2m) /2V以下 ( 负载电流 150mA及导线长2米时 )		
负载电流 Load current	<150mA		
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,150mA min/(逆向连接保护 输出短路保护150mA以上)		
指示灯 Indicator light	LED power:green, OUT1:yellow, OUT2:red/电源显示灯 : 绿色 , 输出1 : 黄色 , 输出2 : 红色		
泄漏电流 Leakage currnt	抗强磁干扰Anti-Magnetic Interference >100mT		
连接方式 Connection	S01,S02 wire(0.1m), power module connector(M12X1)/S01,S02 导线引出 ( 0.1米 ), 电源模块接插件M12X1		
环境温度 Ambient temperature	Work&store : -40°C~80°C/(使用时及保存时 : -40°C~80°C )		
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)		
振动-耐久 Anti-vibration	10~50Hz,Fluctuation amplitude 1.5mm,2H each for X,Y,Z direction/ ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )		
绝缘电阻 Insulation resistance	>500MΩ ( DC500V megger ) /500MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间		
保护结构 protection degree	IEC IP67		
外壳材质 Housing material	PA66+20%GF		
Dimension(尺寸图) (Unit/单位:mm)	 		

## 产品特点

抗磁场干扰，高开关频率，宽温度范围

通过自补偿的预阻尼保护

不锈钢材料耐腐蚀及抗机械碰撞;

## Product Features

Withstand magnetic field interference, high switching frequency, wide temperature range

Realize damping protection through self compensation

Stainless steel of corrosion resistance and mechanical impact resistance



## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
SN12J	2mm	A:NO B:NC	Flushed屏蔽	SN12J-02BNA SN12J-02BNB	SN12J-02BPA SN12J-02BPB
SN18J	5mm			SN18J-05BNA SN18J-05BNB	SN18J-05BPA SN18J-05PB
SN30J	10mm			SN30J-10BNA SN30J-10BNB	SN30J-10BPA SN30J-10PB

## 额定规格/性能 Ratings and Specifications

### 标准型 Standard

项目 Project	尺寸 Specification	SN12J	SN18J	SN30J		
	安装方式 Mounting	Flushed(屏蔽)	Flushed(屏蔽)	Flushed(屏蔽)		
	型号 Model	SN12J-02B□A SN12J-02B□B	SN18J-05B□A SN18J-05B□B	SN30J-10B□A SN30J-10B□B		
检测距离 Sensing distance	2mm±10%		5mm±10%			
设定距离 Set distance	0~1.6mm		0~4mm			
回差范围 Hysteresis error	1~20% ( sensing distance ) / ( 检测距离的1~20%)					
重复精度 Repeat accuracy	< 3% ( sensing distance ) / ( 小于检测距离的3%)					
输出方式 Output mode	N : NPN		P : PNP			
输出状态 Output state	NO/NC					
响应频率 Response frequency	80HZ	50HZ	30HZ			
标准检测体 Standard target	12X12X1t	18X18X1t	30X30X1t			
温度影响 Temperature effect	-25°C~70°C, within±10% ( +23°C sensing distance ) / ( 温度范围 -25~70°C , +23°C 时检测距离±15% 以内 )					
电源电压 Power supply	DC12~24V impulse(p-p) < 10% (DC10~30V) DC12~24V 脉动 ( p-p ) < 10% ( DC10~30V )					
消费电流 Current consumption	< 15mA					
电压影响 Voltage effect	< 3%					
残留电压 Residual voltage	< 2.5V (load current 200mA&cable 2m) / 2.5V 以下 ( 负载电流 200mA 及导线2米 )					
负载电流 Load current	< 200mA					
回路保护 Circuit protection	Reverse Connection protection, Short circuit protection, electrical surge absorption / ( 逆向连接保护 输出短路保护 浪涌吸收 )					
指示灯 Indicator light	Yellow LED / ( 黄色指示灯 )					
泄漏电流 Leakage currmt	< 100uA					
连接方式 Connection	Cable ( 2m ) / 标准导线长2米					
环境温度 Ambient temperature	Work&store : -25°C~70°C / ( 使用时及保存时 : -25°C~70°C )					
环境湿度 Ambient humidity	Work&store : 35°C~95% / ( 使用时及保存时 : 35~95% )					
振动-耐久 Anti-vibration	10~50Hz, Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )					
耐电压 Withstanding voltage	1000V AC, 50/60Hz 1min / ( 1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )					
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) / 500MΩ 以上 ( DC500V 摆表 ) 充电部整体与外壳间					
保护结构 protection degree	IEC IP67					
外壳材质 Housing material	Stainless steel full metal housing ( 不锈钢全金属封装 )					
Dimension(尺寸图) unit/单位 : mm	SN12J导线引出型(Wire)	CAD数据	SN18J导线引出型(Wire)	CAD数据		

## 产品特点

- 耐环境高温高达120°C;
- 耐环境低温-40°C
- 采用进口导线，耐油，耐腐蚀
- 广泛应用与钢铁、冶金、玻璃等制造行业



## Product Features

- Withstand high temperature 120°C
- Withstand low temperature -40°C
- Imported wire, oil resistant, corrosion resistant
- Widely used in steel, metallurgy, glass and other manufacturing industries

## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号 Model		
				NPN	PNP	
SN12T	2mm	A: NO B: NC	Flushed 屏蔽	SN12T-02BNA SN12T-02BNB	SN12T-02BPA SN12T-02PB	
			Non-Flushed 非屏蔽	SN12T-04DNA SN12T-04DNB	SN12T-04DPA SN12T-04DPB	
	5mm		Flushed 屏蔽	SN18T-05BNA SN18T-05BNB	SN18T-05BPA SN18T-05PB	
			Non-Flushed 非屏蔽	SN18T-08DNA SN18T-08DNB	SN18T-08DPA SN18T-08DPB	
	10mm		Flushed 屏蔽	SN30T-10BNA SN30T-10BNB	SN30T-10BPA SN30T-10PB	
			Non-Flushed 非屏蔽	SN30T-15DNA SN30T-15DNB	SN30T-15DPA SN30T-15DPB	

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	SN12T		SN18T		SN30T	
	安装方式 Mounting	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)
	型号 Model	SN12T-02B□A	SN12T-04D□A	SN18T-05B□A	SN18T-08D□A	SN30T-10B□A	SN30T-15D□A
检测距离 Sensing distance	2mm±10%		4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
设定距离 Set distance	0~1.6mm		0~3.2mm	0~4mm	0~6.4mm	0~8mm	0~12mm
回差范围 Hysteresis error	1~20% ( sensing distance ) /(检测距离的1~20%)						
重复精度 Repeat accuracy	< 3% ( sensing distance ) /(小于检测距离的3%)						
输出方式 Output mode	N : NPN      P : PNP						
输出状态 Output state	NO/NC						
响应频率 Response frequency	1200HZ	800HZ	800HZ	500HZ	500HZ	300HZ	
标准检测体 Standard target	12X12X1t		18X18X1t	24X24X1t	30X30X1t	45X45X1t	
温度影响 Temperature effect	-40°C~120°C,within±15% (+23°C sensing distance) /(温度范围-40~120°C , +23°C时检测距离±15%以内)						
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V 脉动 ( p-p ) <10% ( DC10-30V )						
消费电流 Current consumption	< 15mA						
电压影响 Voltage effect	< 3%						
残留电压 Residual voltage	< 2.5V(load current 200mA&cable 2m) /2.5V以下 ( 负载电流 200mA及导线2米 )						
负载电流 Load current	< 200mA						
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)						
显示灯 Indicator light	—						
泄漏电流 Leakage currnt	< 100uA						
连接方式 Connection	Cable ( 2m ) /标准导线长2米-特氟龙						
环境温度 Ambient temperature	Work&store : -40°C~120°C/(使用时及保存时 : -40°C~120°C )						
环境湿度 Ambient humidity	Work&store : 35°C~95%/(使用时及保存时 : 35~95%)						
振动-耐久 Anti-vibration	10~50Hz,Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅1.5mm X,Y,Z各向 2小时 )						
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/(1000V AC , 50/60Hz 1分钟充电部整体与外壳间 )						
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) /500MΩ以上 ( DC500V 摆表 ) 充电部整体与外壳间						
保护结构 Protection degree	IEC IP67						
外壳材质 Housing material	Nickel-copper alloy(黄铜镀镍)						
检测面 Sensing face	PTFE(特氟龙)						
Dimension(尺寸图) unit/单位 : mm	SN12T导线引出型(Wire)	CAD数据	SN18T导线引出型(Wire)	CAD数据	SN30T导线引出型(Wire)	CAD数据	

## 产品特点

适用于汽车生产线，焊接工业，化工行业等恶劣环境;  
表面喷涂特氟龙，防止焊渣堆积和溅射，耐腐蚀  
耐候性强，-40°C~120°C工作正常，性能可靠，安装方便  
抗强磁场干扰



## Product Features

Suitable for auto production line, welding industry, chemical industry and other severe environment  
Surface coat with Teflon, prevent welding slag accumulation and sputtering, corrosion resistance  
Strong weather resistance, reliable performance, easy installation, -40°C~120°C workable  
Anti-magnetic interference

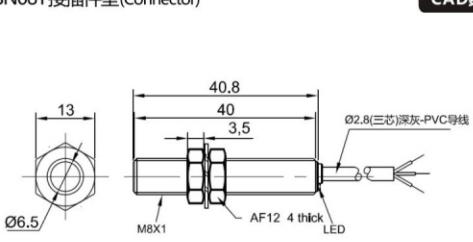
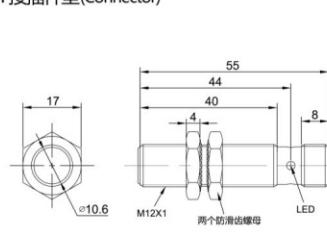
## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	连接方式 Connection method	安装方式 Installation method	型号Model	
					NPN	PNP
SN08Y	1.5mm	A:NO B:NC	导线式 Pre-wire	Flushed屏蔽	SN08Y-1B5NA SN08Y-1B5NB	SN08Y-1B5PA SN08Y-1B5PB
SN08Y	2mm			Non-Flushed非屏蔽	SN08Y-02DNA SN08Y-02DNB	SN08Y-02DPA SN08Y-02DPB
SN12Y	2mm			Flushed屏蔽	SN12Y-02BNA SN12Y-02BNB	SN12Y-02BPA SN12Y-02PB
SN12Y	4mm			Non-Flushed非屏蔽	SN12Y-04DNA SN12Y-04DNB	SN12Y-04DPA SN12Y-04DPB

形状Shape	检测距离 Sensing distance	输出方式 Output method	连接方式 Connection method	安装方式 Installation method	型号Model	
					NPN	PNP
SN08Y	1.5mm	A:NO B:NC	插件式 Connector	Flushed屏蔽	SN08Y-1B5NA-E SN08Y-1B5NB-E	SN08Y-1B5PA-E SN08Y-1B5PB-E
SN08Y	2mm			Non-Flushed非屏蔽	SN08Y-02DNA-E SN08Y-02DNB-E	SN08Y-02DPA-E SN08Y-02DPB-E
SN12Y	2mm			Flushed屏蔽	SN12Y-02BNA-E SN12Y-02BNB-E	SN12Y-02BPA-E SN12Y-02PB
SN12Y	4mm			Non-Flushed非屏蔽	SN12Y-04DNA-E SN12Y-04DNB-E	SN12Y-04DPA-E SN12Y-04DPB-E

## 额定规格/性能 Ratings and Specifications

标准型 Standard

尺寸 Specification		SN08Y		SN12Y					
安装方式 Mounting		Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)				
型号 Model	导线式 Pre-wire	SN08Y-1B5□A SN08Y-1B5□B	SN08Y-02D□A SN08Y-02D□B	SN12Y-02B□A SN12Y-02B□B	SN12Y-04D□A SN12Y-04D□B				
	插件式 Connector	SN08Y-1B5□A-E SN08Y-1B5□B-E	SN08Y-02D□A-E SN08Y-02D□B-E	SN12Y-02B□A-E SN12Y-02B□B-E	SN12Y-04D□A-E SN12Y-04D□B-E				
检测距离 Sensing distance		1.5mm±10%		2mm±10%					
设定距离 Set distance		0~1.2mm		0~1.6mm					
回差范围 Hysteresis error									
< 3% ( sensing distance ) / ( 小于检测距离的 3% )									
输出类型 Output type		N : NPN NA : NPN-NO	NB : NPN-NC	P : PNP PA : PNP-NO	PB : PNP-NC				
响应频率 Response frequency		1500HZ	1000HZ	1200HZ	800HZ				
标准检测体 Standard target		8X8X1t		12X12X1t					
温度影响 Temperature effect									
-40°C~120°C, within ±15% ( +23°C sensing distance ) / ( 温度范围 -40~120°C , +23°C 时检测距离 ±15% 以内 )									
电源电压 Power supply		DC12-24V impulse(p-p) < 10% (DC10-30V)/DC12-24V 脉动 ( p-p ) < 10% ( DC10-30V )							
消费电流 Current consumption									
		< 10mA							
电压影响 Voltage effect		< 3%							
残留电压 Residual voltage		< 2.5V (load current 200mA&cable 2m) / 2.5V 以下 ( 负载电流 200mA 及导线 2 米 )							
负载电流 Load current		< 200mA							
回路保护 Circuit protection		Reverse Connection protection, Short circuit protection, electrical surge absorption / ( 逆向连接保护 输出短路保护 浪涌吸收 )							
指示灯 Indicator light		Yellow LED(黄色指示灯)							
泄漏电流 Leakage currmt		< 100uA							
连接方式 Connection		无N/A: 标准导线2米cable		E:M12接插件 connector					
环境温度 Ambient temperature		Work&store : -40°C~120°C / ( 使用时及保存时 : -40°C~120°C )							
环境湿度 Ambient humidity		Work&store : 35°C~95% / ( 使用时及保存时 : 35~95% )							
振动-耐久 Anti-vibration		10~50Hz, Amplitude 1.5mm,X,Y,Z(2H) ( 10~50 Hz , 上下振幅 1.5mm X,Y,Z 各向 2 小时 )							
耐电压 Withstanding voltage		1000V AC, 50/60Hz 1min / ( 1000V AC , 50/60Hz 1 分钟充电部整体与外壳间 )							
绝缘电阻 Insulation resistance		> 500MΩ ( DC500V megger ) / 500MΩ 以上 ( DC500V 摆表 ) 充电部整体与外壳间							
保护结构 Protection degree		IEC IP67							
外壳材质 Housing material		PTFE-copper alloy(黄铜镀特氟龙)							
检测面 Sensing face		PBT							
Dimension(尺寸图) unit/单位 : mm		 <p>SN08Y接插件型(Connector)</p> <p>40.8 40 3.5 Ø6.5 M8X1 Ø2.8(三芯)深灰-PVC导线 AF12 4 thick LED</p>		 <p>SN12Y接插件型(Connector)</p> <p>55 44 40 17 Ø10.6 M12X1 两个防滑齿螺母 LED</p>					
		<a href="#">CAD数据</a>		<a href="#">CAD数据</a>					

## 额定规格/性能 Ratings and Specifications

标准型 Standard

尺寸 Specification		SN18Y		SN30Y		
安装方式 Mounting		Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	
型号 Model	导线式 Pre-wire	SN18Y-05B□A SN18Y-05B□B	SN18Y-08D□A SN18Y-08D□B	SN30Y-10B□A SN30Y-10B□B	SN30Y-15D□A SN30Y-15D□B	
	插件式 Connector	SN18Y-05B□A-E SN18Y-05B□B-E	SN18Y-08D□A-E SN18Y-08D□B-E	SN30Y-10B□A-E SN30Y-10B□B-E	SN30Y-15D□A-E SN30Y-15D□B-E	
检测距离 Sensing distance		5mm±10%	8mm±10%	10mm±10%	15mm±10%	
设定距离 Set distance		0~4mm	0~6.4mm	0~8mm	0~12mm	
回差范围 Hysteresis error		1~20% ( sensing distance ) / ( 检测距离的1~20%)				
重复精度 Repeat accuracy		< 3% ( sensing distance ) / ( 小于检测距离的3%)				
输出类型 Output type	N : NPN NA : NPN-NO	NB : NPN-NC	P : PNP PA : PNP-NO	PB : PNP-NC		
响应频率 Response frequency	800HZ	500HZ	500HZ	300HZ		
标准检测体 Standard target	18X18X1t	24X24X1t	30X30X1t	45X45X1t		
温度影响 Temperature effect	-40°C~120°C, within ±15% (+23°C sensing distance) / ( 温度范围 -40~120°C , +23°C 时检测距离 ±15% 以内 )					
电源电压 Power supply	DC12-24V impulse(p-p) < 10% (DC10-30V)/DC12-24V 脉动 ( p-p ) < 10% ( DC10-30V )					
消费电流 Current consumption	< 15mA					
电压影响 Voltage effect	< 3%					
残留电压 Residual voltage	< 2.5V (load current 200mA&cable 2m) / 2.5V 以下 ( 负载电流 200mA 及导线 2 米 )					
负载电流 Load current	< 200mA					
回路保护 Circuit protection	Reverse Connection protection, Short circuit protection, electrical surge absorption / ( 逆向连接保护 输出短路保护 浪涌吸收 )					
指示灯 Indicator light	Yellow LED( 黄色指示灯 )					
泄漏电流 Leakage currnt	< 100uA					
连接方式 Connection	无N/A: 标准导线 2米 cable	E:M12接插件 connector				
环境温度 Ambient temperature	Work & store : -40°C~120°C / ( 使用时及保存时 : -40°C~120°C )					
环境湿度 Ambient humidity	Work & store : 35°C~95% / ( 使用时及保存时 : 35~95% )					
振动-耐久 Anti-vibration	10~50Hz, Amplitude 1.5mm, X,Y,Z(2H) ( 10~50 Hz , 上下振幅 1.5mm X,Y,Z 各向 2 小时 )					
耐电压 Withstanding voltage	1000V AC, 50/60Hz 1min / ( 1000V AC , 50/60Hz 1 分钟 充电部整体与外壳间 )					
绝缘电阻 Insulation resistance	> 500MΩ ( DC500V megger ) / 500MΩ 以上 ( DC500V 摆表 ) 充电部整体与外壳间					
保护结构 Protection degree	IEC IP67					
外壳材质 Housing material	PTFE-copper alloy ( 黄铜镀特氟龙 )					
检测面 Sensing face	PBT					
Dimension(尺寸图) unit/单位 : mm	SN18Y接插件型(Connector)		CAD数据	SN30Y接插件型(Connector)		CAD数据

## 产品特点

- 耐受压力达500Bar或以上，具有耐高压耐腐蚀特性；
- SN12B氧化锆材质感应面，抗高强度冲击，高强度不锈钢壳体；
- SN14B全金属封装，高强度钢结构；
- 抗机械撞击，同时延长流体压力冲击寿命；



## Product Features

- 500Bar or above pressure resistance, corrosion resistance
- SN12B zirconia material induction surface, high strength impact resistance, high strength stainless steel housing
- SN14B full metal housing, high strength steel structure
- Mechanical impact resistance, extend the life of fluid pressure impact

## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
SN12B	1.5mm	A:NO B:NC	Flushed屏蔽	SN12B-1B5NA-E SN12B-1B5NB-E	SN12B-1B5PA-E SN12B-1B5PB-E
SN14B	3mm			SN14B-03BNA-E2 SN14B-03BNB-E2	SN14B-03BPA-E2 SN14B-03BPB-E2
SN18B	3mm			SN18B-03BNA-E SN18B-03BNB-E	SN18B-03BPA-E SN18B-03BPB-E

## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

项目 Project	尺寸 Specification	SN12B	SN14B	SN18B
	安装方式 Mounting	Flushed(屏蔽)	Flushed(屏蔽)	Flushed(屏蔽)
	型号 Model	SN12B-1B5□A-E	SN14B-03B□A-E2	SN18B-03B□A-E
检测距离 Sensing distance	1.5mm±10%	3mm±10%	3mm±10%	
设定距离 Set distance	0~1.2mm	0~2.4mm	0~2.4mm	
回差范围 Hysteresis error	1~20% ( sensing distance ) /(检测距离的1~20%)			
重复精度 Repeat accuracy	< 5% ( sensing distance ) /(小于检测距离的5%)			
输出方式 Output mode	N : NPN		P : PNP	
输出状态 Output state	NO/NC			
响应频率 Response frequency	800HZ	500HZ	500HZ	
标准检测体 Standard target	12X12X1t	12X12X1t	18X18X1t	
温度影响 Temperature effect	-40~80°C,within±20% (+23°C sensing distance) /(温度范围-40~80°C , +23°C时检测距离±20%以内)			
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V 脉动 ( p-p ) < 10% ( DC10-30V )			
消费电流 Current consumption	< 10mA			
残留电压 Residual voltage	< 2.5V(load current 200mA&cable 2m) /2.5V以下 ( 负载电流 200mA及导线2米 )			
负载电流 Load current	≤200mA			
回路保护 Circuit protection	Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)			
泄漏电流 Leakage currnt	< 100uA%			
连接方式 Connection	NO N/A:Cable ( 2m ) E : M12 connector/无N/A : 标准导线2米 E : M12接插件			
环境温度 Ambient temperature	Work & store : -40°C~80°C)/(使用时及保存时 : -40°C~80°C )			
保护结构 protection degree	IEC IP67			
外壳材质 Housing material	Stainless steel/不锈钢			
Dimension(尺寸图) (Unit/单位:mm)	SN12B接插件型(Connector) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>		SN14B接插件型(Connector) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>	
	SN18B导线引出型(Wire) SN18B接插件型(connector) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>			

## 产品特点

实现了安装和使用的便捷性

金属外观可直接定制

电容式传感器可用来检测包括金属物体和非金属物体在内的所有物体，

其中包含液体以及颗粒物的位置控制



## Product Features

Convenient installation and operation

Metal appearance can be customized directly

Detect metal objects and non-metallic objects, including position control for liquid and particulate matter

## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model	
				NPN	PNP
CN12P	2mm	A:NO B:NC	Flushed屏蔽	CN12P-02BNA CN12P-02BNB	CN12P-02BPA CN12P-02BPB
	4mm		Non-Flushed非屏蔽	CN12P-04DNA CN12P-04DNB	CN12P-04DPA CN12P-04DPB
CN18P	5mm	A:NO B:NC	Flushed屏蔽	CN18P-05BNA CN18P-05BNB	CN18P-05BPA CN18P-05BPB
	8mm		Non-Flushed非屏蔽	CN18P-08DNA CN18P-08DNB	CN18P-08DPA CN18P-08DPB
CN30P	10mm	A:NO B:NC	Flushed屏蔽	CN30P-10BNA CN30P-10BNB	CN30P-10BPA CN30P-10BPB
	15mm		Non-Flushed非屏蔽	CN30P-15DNA CN30P-15DNB	CN30P-15DPA CN30P-15DPB
CN12	2mm	A:NO B:NC	Flushed屏蔽	CN12-02BNA CN12-02BNB	CN12-02BPA CN12-02BPB
	4mm		Non-Flushed非屏蔽	CN12-04DNA CN12-04DNB	CN12-04DPA CN12-04DPB
CN18	5mm	A:NO B:NC	Flushed屏蔽	CN18-05BNA CN18-05BNB	CN18-05BPA CN18-05BPB
	8mm		Non-Flushed非屏蔽	CN18-08DNA CN18-08DNB	CN18-08DPA CN18-08DPB
CN30	10mm	A:NO B:NC	Flushed屏蔽	CN30-10BNA CN30-10BNB	CN30-10BPA CN30-10BPB
	15mm		Non-Flushed非屏蔽	CN30-15DNA CN30-15DNB	CN30-15DPA CN18-15DPB
CS10	10mm	A:NO B:NC	Non-Flushed非屏蔽	CS10P-10DNA CS10P-10DNB	CS10P-10DPA CS10P-10DPB

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	CN12P		CN18P		CN30P	
	安装方式 Mounting	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)
	型号 Model	CN12P-02B□	CN12P-04D□	CN18P-05B□	CN18P-08D□	CN30P-10B□	CN30P-15D□
检测距离 Sensing distance	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%	
设定距离 Set distance	0~1.6mm	0~3.2mm	0~4mm	0~6.4mm	0~8mm	0~12mm	
回差范围 Hysteresis error	3~20% ( sensing distance ) / ( 检测距离的3~20% )						
重复精度 Repeat accuracy	< 5% ( sensing distance ) / ( 小于检测距离的5% )						
输出类型 Output type	N:NPN, NA:NPN-NO, NB:NPN-NC, P:PNP, PA:PNP-NO, PB:PNP-NC						
响应频率 Response frequency	50HZ						
标准检测体 Standard target	12X12X1t	18X18X1t	24X24X1t	30X30X1t	45X45X1t		
温度影响 Temperature effect	$\leq 20\%$ , within $\pm 20\%$ ( +23°C sensing distance ) / ( $\leq 20\%$ , +23°C时检测距离 $\pm 20\%$ 以内 )						
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V脉动(p-p)<10%(DC10-30V)						
消费电流 Current consumption	< 20mA						
电压影响 Voltage effect	< 3%						
残留电压 Residual voltage	< 2.5V ( load current 200mA&cable 2m ) / 2.5V以下 ( 负载电流200mA及导线2米时 )						
负载电流 Load current	<200mA						
回路保护 Circuit protection	Reverse Connection protection, Short circuit protection, electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)						
指示灯 Indicator light	Red LED/红色指示灯						
泄漏电流 Leakage currnt	< 100uA						
连接方式 Connection	Cable ( 2m ) 标准导线长2米						
环境温度 Ambient temperature	Work : -25°C~70°C store : -30°C~80°C / ( 使用时 : -25°C~70°C 保存时 : -30°C~80°C )						
环境湿度 Ambient humidity	Work&store : 35%~95% / ( 使用时及保存时 : 35%~95% )						
振动-耐久 Anti-vibration	10~50Hz, Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz,上下振幅 1.5mm,X,Y,Z各向2小时						
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/1000V AC,50/60Hz 1分钟充电部整体与外壳间						
绝缘电阻 Insulation resistance	>500MΩ ( DC500V megger ) />500MΩ ( DC500V 摆表 ) 充电部整体与外壳间						
保护结构 protection degree	IEC IP67						
外壳材质 Housing material			ABS				
Dimension(尺寸图) (Unit/单位:mm)	CN12P导线引出型(Wire) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>		CN18P导线引出型(Wire) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>		CN30P导线引出型(Wire) <span style="border: 1px solid black; padding: 2px;">CAD数据</span>		

## 额定规格/性能 Ratings and Specifications

标准型Standard

项目 Project	尺寸 Specification	CN12		CN18		CN30								
	安装方式 Mounting	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)							
型号 Model	CN12-02B□	CN12-04D□	CN18-05B□	CN18-08D□	CN30-10B□	CN30-15D□								
检测距离 Sensing distance	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%								
设定距离 Set distance	0~1.6mm	0~3.2mm	0~4mm	0~6.4mm	0~8mm	0~12mm								
回差范围 Hysteresis error	3~15% ( sensing distance ) / 检测距离的3~15%				3~20% ( sensing distance ) / 检测距离的3~20%									
重复精度 Repeat accuracy	< 5% ( sensing distance ) / ( 小于检测距离的5% )				< 3% ( sensing distance ) / 小于检测距离的3%									
输出方式 Output mode	NPN/NA(NPN常开)				NPN/NO									
响应频率 Response frequency	50HZ													
温度影响 Temperature effect	-25°C~70°C within ±20% ( +23°C sensing distance ) / ( -25°C~70°C, +23°C 时检测距离±20%以内 )													
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V脉动(p-p)<10%(DC10-30V)													
消费电流 Current consumption	< 10mA				< 15mA									
电压影响 Voltage effect	< 3%													
残留电压 Residual voltage	<2.5V ( load current 200mA&cable 2m ) 2.5V以下 ( 负载电流200mA及导线2米时 )	<2.5V ( load current 200mA) 2.5V以下 ( 负载电流200mA )		<2.5V ( load current 200mA&cable 4m ) 2.5V以下 ( 负载电流200mA及导线4米时 )										
负载电流 Load current	<200mA													
回路保护 Circuit protection	Without short circuit protection/无短路保护		Short circuit protection/有短路保护			Reverse Connection protection, Short circuit protection, electrical surge absorption 逆向连接保护 输出短路保护 浪涌吸收								
指示灯 Indicator light	Red LED/红色指示灯													
泄漏电流 Leakage currnt	< 100uA													
连接方式 Connection	Wire with connection terminal(cable 15cm) 导线引出型带连接端子 ( 导线长15cm )	connection terminal/连接端子		Wire(cable 2m)/导线引出型 ( 标准导线长2米 )										
环境温度 Ambient temperature	Work : -25°C~70°C store: : -30°C~80°C/( 使用时 : -25°C~70°C 保存时 : -30°C~80°C )													
环境湿度 Ambient humidity	Work : 45%~85% store : 35%~95% / 使用时 : 45%~85% 保存时 : 35%~95%				Work&store : 35%~95% 使用及保存时 : 35%~95%									
振动-耐久 Anti-vibration	10~50Hz , Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz,上下振幅 1.5mm,X,Y,Z各向2小时													
绝缘电阻 Insulation resistance	>500MΩ ( DC500V megger ) />500MΩ ( DC500V 摆表 ) 充电部整体与外壳间													
保护结构 protection degree	IEC IP65				IEC IP67									
外壳材质 Housing material	Nickel-copper alloy/黄铜镀镍	plastic/塑料		ABS										
Dimension(尺寸图) (Unit/单位:mm)														

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	CS10P			
	安装方式 Mounting	Non-Flushed(非屏蔽)			
	型号 Model	CS10P-10DNA	CS10P-10DNB	CS10P-10DPA	CS10P-10DPB
检测距离 Sensing distance			10mm±10%		
设定距离 Set distance			0~8mm		
回差范围 Hysteresis error		3~20% ( sensing distance ) / ( 检测距离的3~20% )			
重复精度 Repeat accuracy		< 5% ( sensing distance ) / ( 小于检测距离的5% )			
输出方式 Output mode		NPN/PNP			
输出状态 Output state		NO/NC			
响应频率 Response frequency		50HZ			
标准检测体 Standard target		30X30X1t			
温度影响 Temperature effect		≤20%,within ±20% ( +23°C sensing distance ) / ( ≤20%,+23°C时检测距离±20%以内 )			
电源电压 Power supply		DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V脉动(p-p)<10%(DC10-30V)			
消费电流 Current consumption		< 20mA			
电压影响 Voltage effect		< 3%			
残留电压 Residual voltage		<2.5V ( load current 200mA&cable 2m ) / 2.5V以下 ( 负载电流200mA及导线2米时 )			
负载电流 Load current		<200mA			
回路保护 Circuit protection		Reverse Connection protection,Short circuit protection,electrical surge absorption/(逆向连接保护 输出短路保护 浪涌吸收)			
指示灯 Indicator light		Red LED/红色指示灯			
泄漏电流 Leakage currmt		< 100uA			
连接方式 Connection		Cable ( 2m ) / 标准导线长2米			
环境温度 Ambient temperature		Work : -25°C~70°C store : -30°C~80°C/(使用时 : -25°C~70°C 保存时 : -30°C~80°C )			
环境湿度 Ambient humidity		Work&store : 35%~95%/(使用时及保存时 : 35%~95% )			
振动-耐久 Anti-vibration		10~50Hz , Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz,上下振幅 1.5mm,X,Y,Z各向2小时			
耐电压 Withstanding voltage		1000V AC,50/60Hz 1min/1000V AC,50/60Hz 1分钟充电部整体与外壳间			
绝缘电阻 Insulation resistance		>500MΩ ( DC500V megger ) />500MΩ ( DC500V 摆表 ) 充电部整体与外壳间			
保护结构 protection degree		IEC IP67			
外壳材质 Housing material		ABS			
Dimension(尺寸图) (Unit/单位:mm)					
		CAD数据			

## 产品特点

输出信号与被测的距离有良好的线性,标准模拟量信号输出  
 精确测量控制的首选，广泛应用于距离测量，厚度测量，选择测量等  
 专用IC芯片，在各种工作环境的高可靠性和高精度



## Product Features

Output signal and sensing distance with good linearity,  
 standard analogous signal output  
 Best choice for accurate sensing, widely used for distance  
 sensing, thickness detection etc  
 Equipped with professional IC, high stability and accuracy under  
 different working conditions

## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	安装方式 Installation method	型号Model
MN12	2mm	0-10v	Flushed屏蔽	MN12-02BLU/I
MN18	5mm			MN18-05BLU/I
MN30	10mm			MN30-10BLU/I
MN12	4mm		Non-Flushed非屏蔽	MN12-04DLU/I
MN18	8mm			MN18-08DLU/I
MN30	15mm			MN30-15DLU/I
MN12	2mm	0-20mA	Flushed屏蔽	MN12-02BLUI
MN18	5mm			MN18-05BLUI
MN30	10mm			MN30-10BLUI
MN12	4mm		Non-Flushed非屏蔽	MN12-04DLUI
MN18	8mm			MN18-08DLUI
MN30	15mm			MN30-15DLUI

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification 安装方式 Mounting 型号 Model	MN12		MN18		MN30	
		Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)	Flushed(屏蔽)	Non-Flushed(非屏蔽)
		MN12-02BLU/I MN12-02BLUI	MN12-04DLU/I MN12-04DLUI	MN18-05BLU/I MN18-05BLUI	MN18-08DLU/I MN18-08DLUI	MN30-10BLU/I MN30-10BLUI	MN30-15DLU/I MN30-15DLUI
检测距离 Sensing distance	0.4……2mm	0.8……4	1……5	2……8	2……10	3……15	
回差范围 Hysteresis error			±5%				
重复精度 Repeat accuracy			< 3% ( sensing distance ) / ( 小于检测距离的3%)				
输出方式 Output mode			0-10V, 0-20mA或 (0-10V) + (0-20mA) 可选 optional				
响应频率 Response frequency	200HZ	100HZ	200HZ	100HZ	200HZ	100HZ	
标准检测体 Standard target	12X12X1t		18X18X1t	24X24X1t	30X30X1t	45X45X1t	
温度影响 Temperature effect			-25~70°C, within ±20% ( +23°C sensing distance ) / ( 温度范围 -25~70°C , +23°C 时检测距离 ±20% 以内 )				
电源电压 Power supply			15-30V DC				
消费电流 Current consumption			< 20mA				
电压影响 Voltage effect			< 3%				
负载电流 Load current			电压输出 ( Voltage output ) R1≥4.7KΩ ; 电流输出 ( Current output ) R1≤470Ω				
回路保护 Circuit protection			Reverse Connection protection, electrical surge absorption / ( 逆向连接保护 浪涌吸收 )				
指示灯 Indicator light			Yellow LED/黄色指示灯				
泄漏电流 Leakage currnt			< 100uA				
连接方式 Connection			Cable ( 2m ) 标准导线长2米				
环境温度 Ambient temperature			Work & store : -25°C~70°C / ( 使用时及保存时 : -25°C~70°C )				
环境湿度 Ambient humidity			Work & store : 35%~95% / ( 使用时及保存时 : 35%~95% )				
振动·耐久 Anti-vibration			10~50Hz , Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz, 上下振幅 1.5mm,X,Y,Z各向2小时				
耐电压 Withstanding voltage			1000V AC, 50/60Hz 1min/1000V AC, 50/60Hz 1分钟充电部整体与外壳间				
绝缘电阻 Insulation resistance			>500MΩ ( DC500V megger ) />500MΩ ( DC500V 摆表 ) 充电部整体与外壳间				
保护结构 protection degree			IEC IP67				
外壳材质 Housing material			Nickel-copper alloy/黄铜镀镍				
检测面 Sensing face			PBT				
Dimension(尺寸图) (Unit/单位:mm)	MN12导线引出型(Wire) CAD数据		MN18导线引出型(Wire) CAD数据		MN30导线引出型(Wire) CAD数据		

## 产品特点

结构简单，安装方便，对并排安装没有要求；

部分型号感应面是由金属制成；

多种规格可选择，性价比高



## Product Features

Simple structure, easy to instal,

no requirement for installing abreast;

The sensing surface of some models is made of metal;

Different specification optional, high cost performance

## 选型表 Ordering Information

连接方式 Connection method	输出节点形式 Output contact	开关逻辑 Switch logic	使用电压范围 Use voltage range	型号Model
两线式 2 wire	触点Contact	SPST常开型 SPST normally open type	5~120V DC/AC	BT-06R
			5~120V DC/AC	BT-07R
			5~240V DC/AC	BT-20R
			5~240V DC/AC	BT-21R
			5~240V DC/AC	BT-24R
			5~240V DC/AC	BT-30R

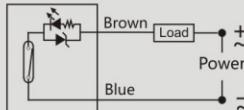
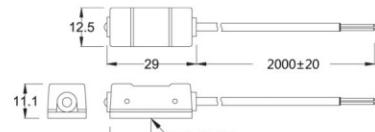
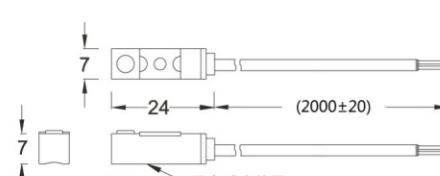
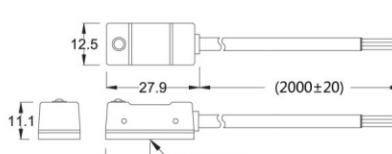
## 额定规格/性能 Ratings and Specifications

## 标准型 Standard

尺寸Specification	25.5X4X4	25.5X4X4.5	29.5X6.5X5.5		
型号Model	BT-06R	BT-07R	BT-30R		
接线图connection					
输出接点型式Output contact	有接点(contact)				
输出状态 Output state	DC/AC 2 Wire(两线式)				
开关逻辑 Switching logic	SPST NO(常开型)				
电源电压 Power supply	5~240V DC/AC				
负载电流 Load current	100mA max				
接点容量 Contact capacity	10W max(不可超过接点容量/non-overpassed capacity P=Vx1)				
消费电流 Current consumption	—				
内部电压降 voltage drop	3.5V max				
指示灯 Indicator light	Red LED/ ( 红色LED)				
连接方式 Connection	Cable ( 2m ) /标准导线2米,Φ2.8,2C,PVC)				
最大切换工作效率 Max frequency	200Hz				
感应磁场强度 Magnetic field strength	70高斯 ( 量测使用标准磁铁:Φ15.5xΦ8x5t異方性橡胶磁铁 ) 70 gauss(standard magnet:Φ15.5xΦ8x5t Anisotropic rubber magnet)	50高斯/gauss			
环境温度 Ambient temperature	-10°C~70°C				
耐冲击 Impact resistance	正弦波/X,Y,Z 3轴向/每一轴向3回/每一回时间11ms.(Sine wave/X,Y,Z axis/3 times each axis/11ms each time)				
耐震动 Anti-vibration	复振幅1.5mm/10Hz-55Hz-10Hz扫频 ,持续1分钟/每次X,Y,Z轴向操作1小时 Amplitude 1.5mm/10Hz-55Hz-10Hz sweep frequency , last 1 min each timeX,Y,Z(1H)				
泄漏电流 Leakage current	—				
保护结构 Protection degree	IEC 529 IP67				
回路保护 Circuit protection	—				
外壳材质 Housing material	PBT		黄铜镀镍 ( Nickel-copper alloy )		
Dimension(尺寸图) unit/单位 : mm	<p>BT-06R导线引出型(wire)</p> <p>CAD数据</p> <p>BT-07R导线引出型(wire)</p> <p>CAD数据</p>	<p>BT-30R导线引出型(wire)</p> <p>CAD数据</p>			

## 额定规格/性能 Ratings and Specifications

## 标准型Standard

尺寸Specification	29X12.5X11	27.9X12.5X11	27X7X7		
型号Model	BT-20R	BT-21R	BT-24R		
接线图connection					
输出接点型式Output contact	有接点(contact)				
输出状态 Output state	DC/AC 2 Wire(两线式)				
开关逻辑Switching logic	SPST NO(常开型 )				
电源电压Power supply	5~240V DC/AC				
负载电流Load current	100mA max				
接点容量Contact capacity	10W max(不可超过接点容量/non-overpassed capacity P=Vx1)				
消费电流Current consumption	—				
内部电压降voltage drop	3.5V max		3.0V max		
指示灯Indicator light	Green LED / ( 绿色LED)		Red LED / ( 红色LED)		
连接方式Connection	Cable ( 2m ) /标准导线2米,Φ2.8,2C,PVC)				
最大切换工作效率Max frequency	200Hz				
感应磁场强度Magnetic field strength	70高斯 ( 量测使用标准磁铁:Φ15.5xΦ8x5t異方性橡胶磁铁 ) 70 gauss(standard magnet:Φ15.5xΦ8x5t Anisotropic rubber magnet)	50高斯/gauss			
环境温度Ambient temperature	-10°C~70°C				
耐冲击Impact resistance	正弦波/X,Y,Z 3轴向/每一轴向3回/每一回时间11ms.(Sine wave/X,Y,Z axis/3 times each axis/11ms each time)				
耐震动Anti-vibration	复振幅1.5mm/10Hz-55Hz-10Hz扫频 ,持续1分钟/每次X,Y,Z轴向操作1小时 Amplitude 1.5mm/10Hz-55Hz-10Hz sweep frequency , last 1 min each time X,Y,Z(1H)				
泄漏电流Leakage current	—				
保护结构Protection degree	IEC 529 IP67				
回路保护Circuit protection	—				
外壳材质Housing material	壳体 ( Shell ) :黄铜镀镍(Nickel-copper alloy) 盖板 ( Cover plate ) :PBT	PBT			
Dimension(尺寸图) unit/单位 : mm	BT-20R导线引出型(wire)	CAD数据	BT-24R导线引出型(wire)		
					
	BT-21R导线引出型(wire)				
					

## 产品特点

响应快，频率高；

检测距离长



## Product Features

Fast response and high frequency

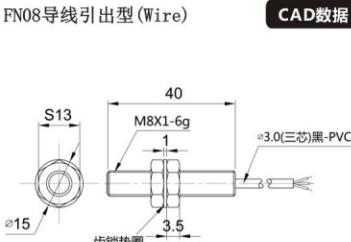
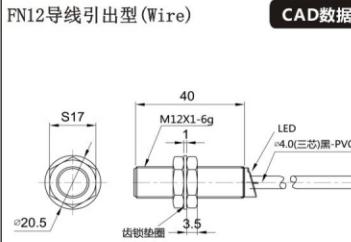
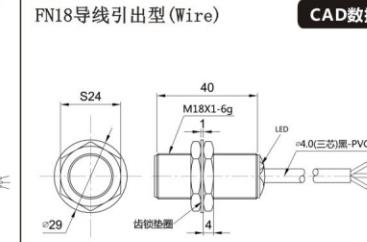
Long sensing distance

## 选型表 Ordering Information

形状Shape	检测距离 Sensing distance	输出方式 Output method	标准检测体 Standard sensing material	型号Model	
				NPN	PNP
FN08	10mm	A:NO B:NC	Φ6x3标准磁铁 Standard magnet	FN08-10BNA FN08-10BNB	FN08-10BPA FN08-10BPB
FN12				FN12-10BNA FN12-10BNB	FN12-10BPA FN12-10PB
FN18				FN18-10BNA FN18-10BNB	FN18-10BPA FN18-10PB
FP08				FP08-10BNA FP08-10BNB	FP08-10BPA FP08-10PB

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	FN08	FN12	FN18
	型号 Model	FN08-10B□A	FN12-10B□A	FN18-10B□A
		FN08-10B□B	FN12-10B□B	FN18-10B□B
检测距离 Sensing distance	10mm ( 检测距离大小主要取决于磁钢的磁力 magnetic strength effect )			
感应极性 Sensing polarity	对磁极S感应/Induction on S polarity			
回差范围 Hysteresis error	3~20% ( sensing distance ) / 检测距离的3~20%			
重复精度 Repeat accuracy	< 5% ( sensing distance ) / ( 小于检测距离的5% )			
输出类型 Output type	N:NPN, P:PNP, A:NO, B:NC			
响应频率 Response frequency	3KHZ(平均Average)			
标准检测体 Standard target	Φ6X3标准磁铁/standard magnet			
冲击电压 Impulse voltage	100V50ms			
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V 脉动(p-p)<10%(DC10-30V)			
消费电流 Current consumption	<10mA	<15mA	<20mA	
电压影响 Voltage effect	< 3%			
残留电压 Residual voltage	<1.5V(load current 100mA)/<1.5V以下 ( 负载电流100mA )			
负载电流 Load current	<100mA	<200mA		
回路保护 Circuit protection	Reverse Connection protection, Short circuit protection(> 200mA)/极性保护 输出短路保护(200mA以上)			
指示灯 Indicator light	Red LED/红色指示灯			
泄漏电流 Leakage currnt	< 100uA			
连接方式 Connection	Cable ( 2m ) or Connection protection/ 标准导线长2米或带端子			
环境温度 Ambient temperature	Work : -25°C~70°C store:-30°C~80°C / 使用时 : -25°C~70°C 保存时 : -30°C~80°C			
环境湿度 Ambient humidity	Work&store : 35%~95%/使用时及保存时 : 35%~95%			
振动-耐久 Anti-vibration	10~50Hz , Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz,上下振幅 1.5mm,X,Y,Z各向2小时			
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/1000V AC,50/60Hz 1分钟充电部整体与外壳间			
绝缘电阻 Insulation resistance	>100MΩ ( DC500V megger ) />100MΩ ( DC500V 摆表 ) 充电部整体与外壳间			
保护结构 protection degree	IEC IP67			
外壳材质 Housing material	Nickel-copper alloy/黄铜镀镍			
Dimension(尺寸图) (Unit/单位:mm)	 <p>FN08 导线引出型(Wire) CAD数据</p>	 <p>FN12 导线引出型(Wire) CAD数据</p>	 <p>FN18 导线引出型(Wire) CAD数据</p>	

## 额定规格/性能 Ratings and Specifications

标准型 Standard

项目 Project	尺寸 Specification	FP08	
	型号 Model	FP08-10B□A	FP08-10B□B
检测距离 Sensing distance	10mm ( 检测距离大小主要取决磁钢的磁力 magnetic strength effect )		
感应极性 Sensing polarity	对磁极N感应/Induction on N polarity		
回差范围 Hysteresis error	3~20% ( sensing distance ) / 检测距离的3~20%		
重复精度 Repeat accuracy	< 5% ( sensing distance ) / ( 小于检测距离的5% )		
输出类型 Output type	N:NPN, P:PNP, A:NO, B:NC		
响应频率 Response frequency	1KHZ(平均Average)		
标准检测体 Standard target	Φ6X3标准磁铁/standard magnet		
冲击电压 Impulse voltage	100V50ms		
电源电压 Power supply	DC12-24V impulse(p-p)<10%(DC10-30V)/DC12-24V 脉动(p-p)<10%(DC10-30V)		
消费电流 Current consumption	< 15mA		
电压影响 Voltage effect	< 3%		
残留电压 Residual voltage	<1.5V(load current 100mA) / <1.5以下 ( 负载电流100mA )		
负载电流 Load current	<200mA		
指示灯 Indicator light	Red LED/红色指示灯		
泄漏电流 Leakage currnt	< 100uA		
连接方式 Connection	Cable ( 2m ) or Connection protection/ 标准导线长2米或带端子		
环境温度 Ambient temperature	Work&store:-20°C~80°C / 使用时及保存时 : -20°C~80°C		
环境湿度 Ambient humidity	Work&store : 35%~95% / 使用时及保存时 : 35%~95%		
振动-耐久 Anti-vibration	10~50Hz , Amplitude 1.5mm,X,Y,Z(2H)/10~50Hz,上下振幅 1.5mm,X,Y,Z各向2小时		
耐电压 Withstanding voltage	1000V AC,50/60Hz 1min/1000V AC,50/60Hz 1分钟充电部整体与外壳间		
绝缘电阻 Insulation resistance	>100MΩ ( DC500V megger ) />100MΩ ( DC500V 摆表 ) 充电部整体与外壳间		
保护结构 protection degree	IEC IP67		
外壳材质 Housing material	PC		
Dimension(尺寸图) (Unit/单位:mm)	<span style="float: right;">CAD数据</span>		

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

M12- 3 F U L -02 A Y P

## ①连接器规格

M8接插件connector  
M12接插件connector

## ②芯数

3:3芯  
4:4芯  
5:5芯  
8:8芯

## ⑨输出方式

P:PNP  
N : NPN

## ③连接器类型

F:母插座  
M:公插头

## ⑧指示灯LED

N/A : 默认  
Y:有

## ④电缆材质

U:PUR  
V:PVC  
T:PTFE

## ⑦输出状态

A:NO  
B:NC  
C:NO + NC

## ⑤引出形状

N/A:默认接线盒  
L:弯头90°  
R:直头

## ⑥电缆线长度

02=2米  
10=10米  
15=15米

注明：标准导线长度1米，其余的长度可以定制

## 产品特点

实现了一根电线上传输多个信号,同时又为多个传感器供电

简化系统结构,节约硬件设备,节约连接电缆以及各种安装检修维护费用

提高系统工作的可靠性和准确性,设备和连线减少,减少信号往返传送的误差,

提高测量和控制的精确度

## Product Features

Realize multiple signals transmitting through one cable, and powersupply for multiple sensors

Simplify the system structure, save hardware devices, save link connecting cable and a variety of installation and maintenance costs

Improve the working reliability and accuracy, reduce equipment and connection, reduced the error during signal transmitting, improve the accuracy of the measurement and control



## 选型表 Ordering Information

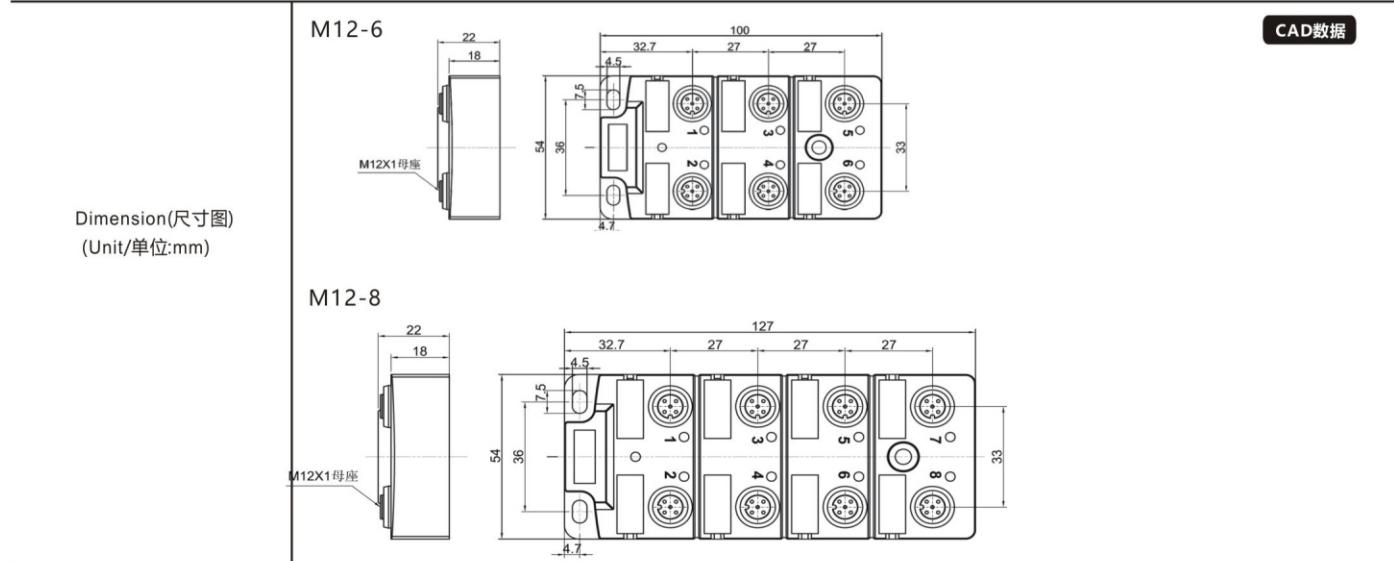
形状Shape	输出方式Output method	连接方式Connection	型号Model	
			NPN	PNP
M12-6	A:NO B:NC C:NO+NC	导线引出型(1米) Pre-wired	M12-15FVR-02A-N M12-15FVR-02B-N M12-15FVR-02C-N	M12-15FVR-02A-P M12-15FVR-02B-P M12-15FVR-02C-P
			M12-19FVR-02A-N M12-19FVR-02B-N M12-19FVR-02C-N	M12-19FVR-02A-P M12-19FVR-02B-P M12-19FVR-02C-P
			M12X-15FVR-02A-N M12X-15FVR-02B-N M12X-15FVR-02C-N	M12X-15FVR-02A-P M12X-15FVR-02B-P M12X-15FVR-02C-P
M12X-8	A:NO B:NC C:NO+NC	接插件型 Connector	M12X-19FVR-02A-N M12X-19FVR-02B-N M12X-19FVR-02C-N	M12X-19FVR-02A-P M12X-19FVR-02B-P M12X-19FVR-02C-P

## 额定规格/性能 Ratings and Specifications

导线引出型 Pre-Wired

Model(型号)	M12-15F□R-02□	M12-19F□R-02□
	M12X-15F□R-02□	M12X-19F□R-02□
Output mode(输出方式)*	PNP/NPN	
Power supply(电源电压)	DC12-24V impulse(p-p) <10% (DC10-30V)/DC12-24V 脉动(p-p) <10% (DC10-30V)	
LED colour(指示灯颜色)	Power:Green led/(电源:绿色指示灯);	
Output led(输出指示灯)	Without (with/without LED optional)	
Max load current of cable (电缆最大负载电流)	12A	
Max load current of each plug port (每个接插端口最大负载电流)	4A	
Ambient temperature(环境温度)	Work&store:-25°C~70°C/(使用时及保存时 : -25°C~70°C)	
Protection degree(防护等级)	IEC IP67	
Connectors(接插件)	M12 Connectors	
Plug port number(端口数)	6 Port	8Port
Contact PIN material (触电材质)	Gold-plated copper(铜镀金)	
Terminal material(外壳材质)	PA66+20%GF	
Knurl nut tightening torque (滚花螺帽锁紧扭矩Nm)	0.8-1.5Nm	
Interface wire(接口导线)	Φ8-9芯wire,PUR Cable(电缆),2m;6X0.34mm <sup>2</sup> (43X0.1mm)+3X1mm <sup>2</sup> (55X0.15mm)	

\*注:可定制带I/O Link功能的产品 I O-Link function customized





型号 Model	M12-3F□L-02A-*				
	M12-4F□L-02C-*				
	M12-5F□L-02C-*				
	M12-8F□L-02C-*				
额定电压(最大电压) Rated voltage (maximum voltage)	3 , 4 5 8	250V 60V 30V			
电流负荷(最大电流) Current load (maximum current)	3,4,5 8	4A 2A			
绝缘电阻 Insulation resistance	$\geq 10^8 \Omega$				
材质 Material	压头Indenter	TPU(黑色.棕色等) .PP白色/TPU Black, Brown, etc.PP white			
	触头载体Contact carrier	PA(黑色.棕色等) .PP白色/PA Black, Brown, etc.PP white			
	密封圈Sealing ring	FPM/FKM			
	触点Contact point	铜锌.镀金Copper zinc. Gold plated			
	锁紧机构Locking mechanism	铜锌.镀镍.不锈钢Copper zinc. Nickel plated. Stainless steel			
环境温度 Ambient temperature	标准型 : -25°C/+70°C 耐温型 : -40°C/+150°C				
防护等级 (拧紧状态) Protection level (tightened state)	IP67				
机械寿命周期 Mechanical cycle	>150拔插次数 > 150 pull outs				
孔头(母头)编码 Hole(female connector)coding	1.棕色2.白色3.蓝色4.黑色(粉红色)5.灰色6.黄色7.绿色8.红色 1. brown 2. white 3. blue 4. Black(pink)5.gray6.yellow7.green8.red				
排列图	3针  1:BN 3:BU 4:BK	4针  1:BN 2:WH 3:BU 4:BK	4针+PE  1:BN 2:WH 3:BU 4:BK 5:GNYE	5针  1:BN 2:WH 3:BU 4:BK 5:GY	8针  1:WH 2:BN 3:GN 4:YE 5:GY 6:PK 7:BU 8:RD
Dimension(尺寸图)					



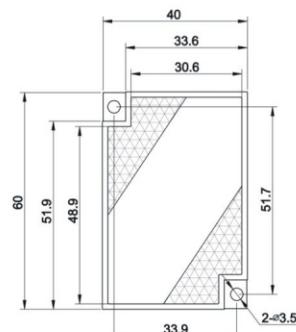
型号 Model	M12-3F□L-02AY-*	
	M12-4F□L-02CY-*	
	M12-5F□L-02CY-*	
	M12-8F□L-02CY-*	
额定电压(最大电压) Rated voltage (maximum voltage)	3 , 4 , 4+PE	24VDC
电流负荷(最大电流) Current load (maximum current)	3 , 4 , 4+PE	4A
绝缘电阻 Insulation resistance	$\geq 10^8 \Omega$	
材质 Material	压头Indenter	TPU(黑色.棕色等).PP白色/TPU Black, Brown, etc.PP white
	触头载体Contact carrier	PA(黑色.棕色等).PP白色/PA Black, Brown, etc.PP white
	密封圈Sealing ring	FPM/FKM
	触点Contact point	铜锌.镀金Copper zinc. Gold plated
	锁紧机构Locking mechanism	铜锌.镀镍.不锈钢Copper zinc. Nickel plated. Stainless steel
环境温度 Ambient temperature	标准型 : -25°C/+70°C 耐温型 : -40°C/+150°C	
防护等级 (拧紧状态) Protection level (tightened state)	IP67	
机械寿命周期 Mechanical cycle	>150拔插次数> 150 pull outs	
孔头 (母头) 编码 Hole(female connector) coding	1.棕色2.白色3.蓝色4.黑色5.灰色 1. brown 2. white 3. blue 4. Black 5.gray	
排列图	<p>3针                  4针                  4针+PE</p> <p>1:BN 3:BU 4:BK</p> <p>1:BN 2:WH 3:BU 4:BK</p> <p>1:BN 5:GNYE 2:WH 3:BU 4:BK</p>	
Dimension(尺寸图)		



型号 Model	M12-3M□L-02AY-*																																																																																																										
	M12-4M□L-02CY-*																																																																																																										
	M12-5M□L-02CY-*																																																																																																										
	M12-8M□L-02CY-*																																																																																																										
额定电压 (最大电压) Rated voltage(maximum voltage)	3 , 4 4+PE,5 8	250V 60V 30V																																																																																																									
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防护等级 (拧紧状态) Protection level (tightened state)	IP67,IP69																																																																																																										
机械寿命周期 Mechanical cycle	>150拔插次数 >150 pull outs																																																																																																										
孔头 (母头) 编码 Hole(female connector)coding	1.棕色2.白色3.蓝色4.黑色 (粉红色) 5.灰色6.黄色7.绿色8.红色 1. brown 2. white 3. blue 4. Black(pink)5.gray6.yellow7.green8.red																																																																																																										
排列图 Pinout diagram	<table border="1"> <thead> <tr> <th>针数</th> <th>1:BN</th> <th>2:WH</th> <th>3:BU</th> <th>4:BK</th> <th>1:BN</th> <th>2:WH</th> <th>3:BU</th> <th>4:BK</th> <th>1:BN</th> <th>2:WH</th> <th>3:BU</th> <th>4:BK</th> <th>1:WH</th> <th>2:BN</th> <th>3:GN</th> <th>4:YE</th> <th>5:GY</th> <th>6:PK</th> <th>7:BU</th> <th>8:RD</th> </tr> </thead> <tbody> <tr> <td>3针</td> <td>3</td> <td>2</td> <td>1</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>4针</td> <td></td> </tr> <tr> <td>5针</td> <td></td> </tr> <tr> <td>8针</td> <td></td> </tr> </tbody> </table>	针数	1:BN	2:WH	3:BU	4:BK	1:BN	2:WH	3:BU	4:BK	1:BN	2:WH	3:BU	4:BK	1:WH	2:BN	3:GN	4:YE	5:GY	6:PK	7:BU	8:RD	3针	3	2	1	4	3	2	1	4	3	2	1	4	3	2	1	4	5	6	7	8	4针																					5针																					8针																					
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8针																																																																																																											
Dimension(尺寸图) Dimensions																																																																																																											

## 反光板60X40

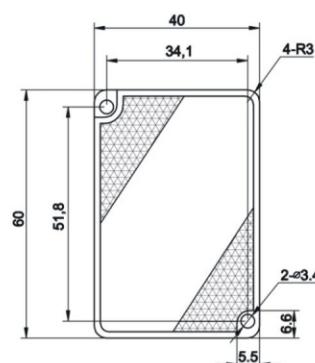
大菱镜(黑色)

材质: 丙烯-(反射镜)  
ABS-(基座)

CAD数据

## 反光板60X40

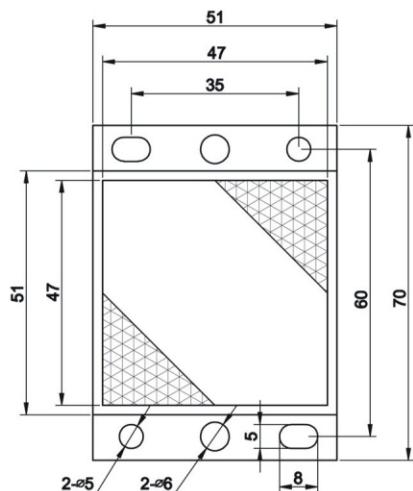
小菱镜(黑色)

材质: 丙烯-(反射镜)  
ABS-(基座)

CAD数据

## 反光板 51X51

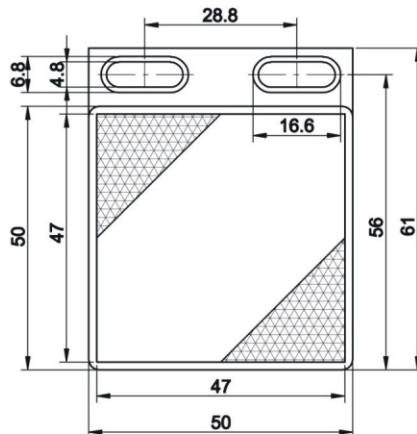
大菱镜(黑色)

材质: 丙烯-(反射镜)  
ABS-(基座)

CAD数据

## 反光板 50X50

小菱镜(黑色)

材质: 丙烯-(反射镜)  
ABS-(基座)

CAD数据

## Output circuit(产品接线示意图)

DC 3Line/DC 3线	NPN-NO	NPN-NC	PNP-NO	PNP-NC	
Connection (引线式)					
M8 Connector (M8 连接器)					
M12 Connector (M12 连接器)					
DC 2Line/DC 2线	NO	NC			
Connection (引线式)					
M8 Connector (M8 连接器)					
M12 Connector (M12 连接器)					
DC 4Line/DC 4线	NPN-NO+NC	PNP-NO+NC			
Connection (引线式)					
M12 Connector (M12 连接器)					