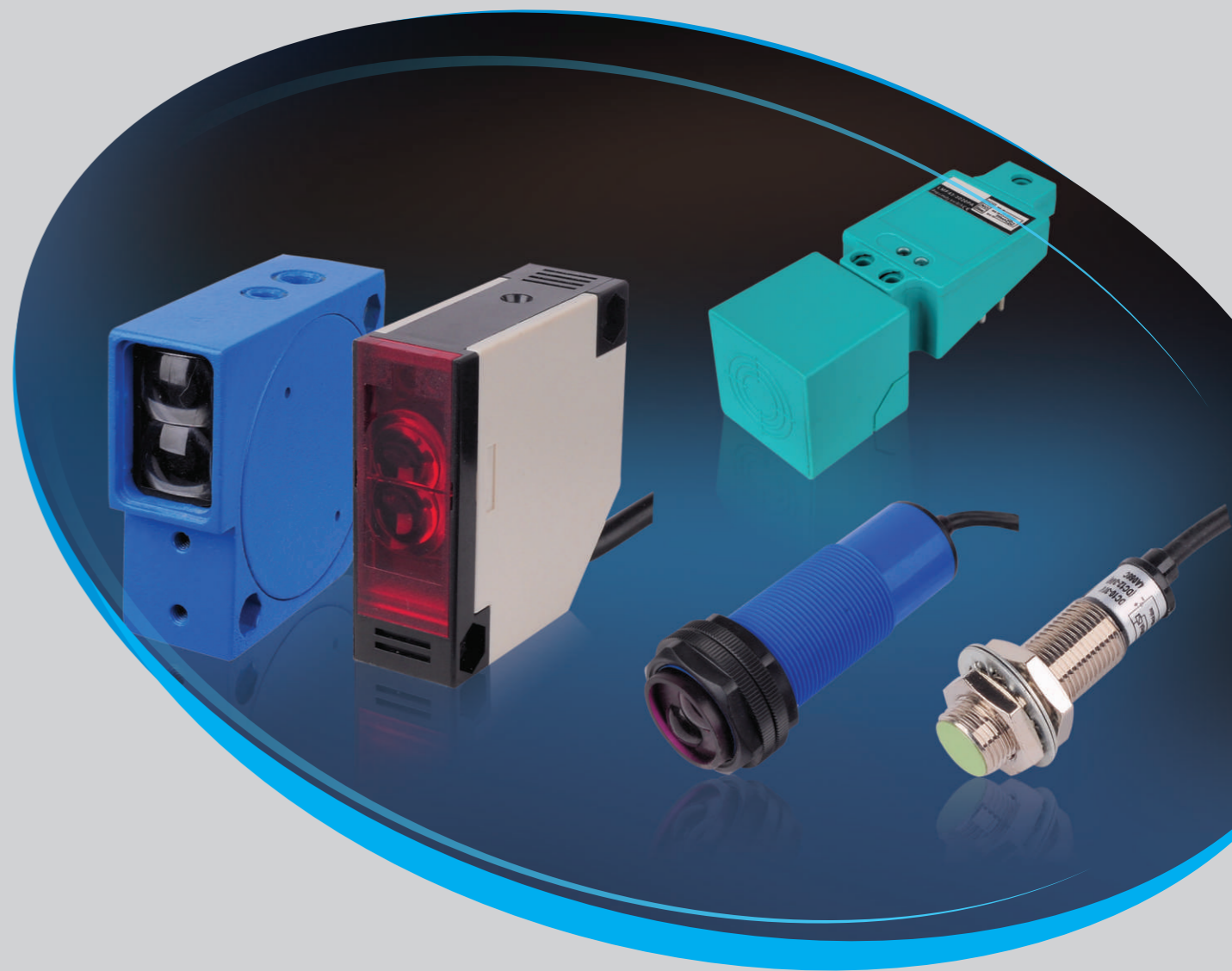


YUMO 传感器产品

自动化综合选型手册
SENSOR PRODUCTS



乐清市应氏进出口有限公司

YUEQING YUMO ELECTRIC CO.,LTD

地址：浙江省乐清市朝阳工业区柳阳路126号

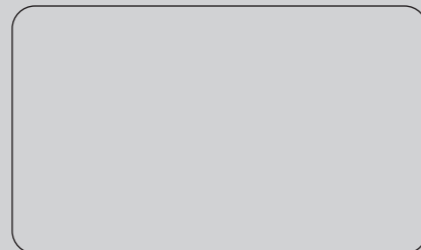
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乐清市应氏进出口有限公司
YUEQING YUMO ELECTRIC CO.,LTD

企业简介



乐清应氏电气有限公司位于中国电器之都-柳市方斗岩工业区，北倚雁荡山风景区，西临国家级风景区楠溪江，104国道空境而过，距温州机场仅20公里，交通便利，环境优越。

我公司生产的产品主要应用于下列行业：汽车工业、电力工业、食品加工业、采矿业、化学工业、冶金工业、航天工业、机器制造业、纺织纺织工业、电线及电缆制造业、造纸工业、水泥厂、造船、钢铁制造业、地铁、铁路及交通等。其中接近开关类传感器，主要用于目标和物体位置的检测，分为电感式、电容式、磁感就式、光电式、超声波式等多种形式数千个品种，可以检测金属、非金属、液体多种材质。

公司的产品具有出口大部分国家的条件,如欧盟体系所需要的“CE”证书，我们是业内最早通过“CE”认证的企业之一。公司产品具有短路保护,过载保护,逆极性保护,浪涌保护,并获得由质检局颁发的先进企业,优质品质荣誉证书,并被国内大型贸易平台阿里巴巴和中国制造网评为优质供应商,本公司产品配套国内知名企业,并成为国外著名品牌OEM合作伙伴,畅销全国远扬海外。

公司本着：以“更高品质的产品和服务，赢利客户最大的满意”为宗旨，依靠先进的现代企业管理不断深化企业内部改革，全国推行质量保证体系。



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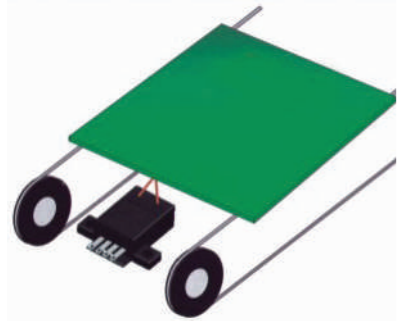
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检查·测量 Inspection·measurement

液位检查 liquid position checking

用光纤，微型光电开关，静电容量型接近传感器，超声波位移，智能传感器等多种检查方法检查各种液位！
Use optical fiber, micro-optical switch, capacitance proximity sensors, ultrasonic sensors, intelligent sensors and other inspection methods to examine various positions

检测流水线移动物体有无盖子
Detecting the covers on moving objects in the product lines



镜面反射单元 ES2系列
Retro-reflective reflection unit ES2 Series

对流水线通过的板材进行测量和计数
Measuring and counting the plates in the product lines



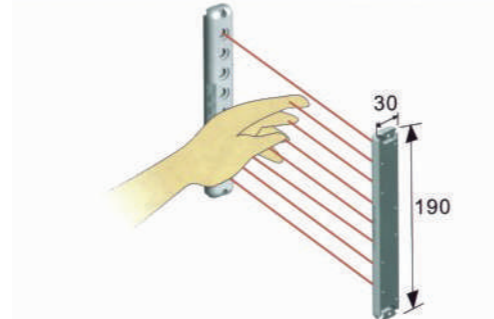
扩散反射式红外线传感器 PTQ18系列
Diffuse reflective infrared sensors PTQ18 Series

对穿越的螺丝进行计数
Counting the screws that are going through a Ring Sensor



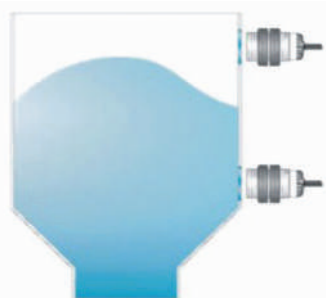
环形接近开关 SIR30-KP2系列
Ring Proximity Switches SIR30-KP2 Series

适用于危险禁区物体侵入时输出停止信号进行安全保护
Output a stop signal and provide security when objects invade the restricted dangerous areas



安全光幕传感器 GM-系列
Safety Light Curtain GM-Series

静电电容式接近开关
Level control for metal containers with plastic or glass windows



电容式接近开关 CM30系列
Capacitance Proximity Switch CM30 Series

用反射板将光线反射给传感器，当瓶子经过传感器和反射板之间，因切断反射光束进行检测。
With a reflector to reflect the light to the sensor, the objects are detected while passing between the sensor and the reflector and cutting the beam.

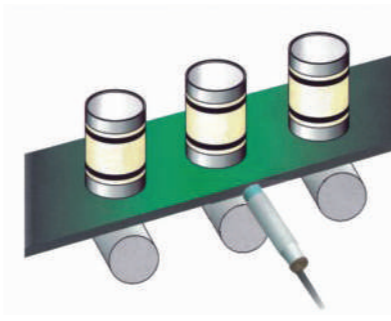


智能传感器(镜面反射型) E18系列
Intelligent Sensor E18 Series

检查 测量 Inspection measurement

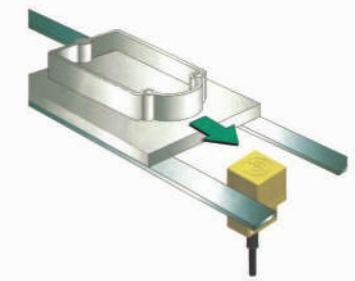
用光纤传感器，智能传感器(激光型，直线接近型)等多种检查方式检查各种工件的2层重叠！
With fiber-optic sensors, smart sensors (laser type, linear type I) and other inspection methods to examine the various parts of the two-layer overlap

对电机转数进行脉冲频率检测
To detect the motor rotation pulsing frequency



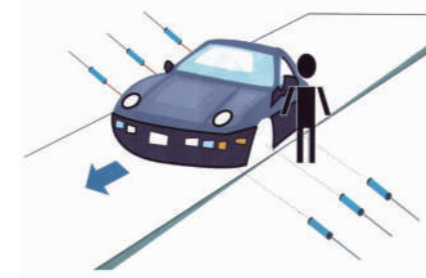
速度传感器 SDM系列
Speed sensor SDM Series

利用电感式原理对流水线金属物体平移过程进行限位
With the inductive principles to limit the position of metal objects when they are moved horizontally in product lines



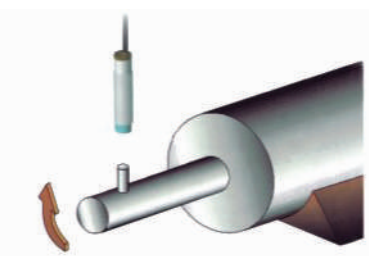
脚柱型接近开关 LMF1系列
Cylindrical-footed proximity switch LMF1 Series

能利用对射型的遮光量的差进行检查
With the emit-recv type of sensor to do inspection taking advantage of the difference of shading



智能传感器(激光型) ZX-L-N系列
Intelligent sensors (laser type) ZX-L-N Series

用直线距离增强型接近传感器检查流水线上有无电子元件经过，进行识别检测或计数
Use range-enhanced proximity sensors to check whether there are electronic components passing through the product lines, or to identify, detect and count components.



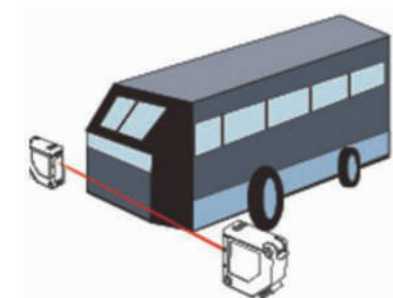
距离增强型接近开关 LM12系列
Range-enhanced proximity sensors LM12 Series

自动识别有无汽车经过通道，将数据传输到综控室进行控制
Automatically identify whether there are cars going through the channel and transfer the data to the integrated control room.



红外线对射式传感器 G70系列
infrared-beam sensors G70 Series

安全检查汽车车身是否完全驶出车库
Security check to make sure that the car body completely comes out of the garage.

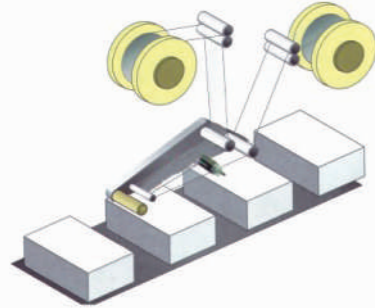


红外线对射式传感器 E3GM系列
infrared-beam sensors E3GM Series

检查·测量 Inspection·measurement

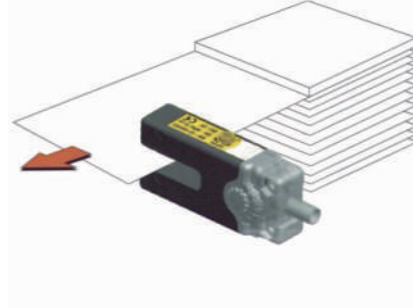
用光纤，微型光电开关，静电容量型接近传感器，超声波位移，智能传感器等多种检查方法检查各种液位！
Use optical fiber, micro-optical switch, capacitance proximity sensors, ultrasonic sensors, intelligent sensors and other inspection methods to examine various positions

槽型光电传感器
U-shaped photoelectric sensor



SU07-N

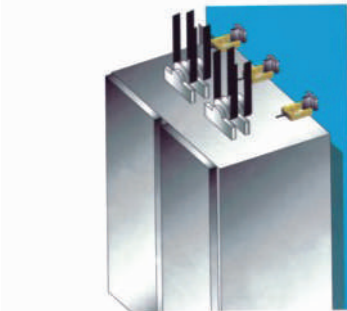
槽型光电传感器
U-shaped photoelectric sensor



U型红外线传感器
U-shaped infrared sensor

SU07-N系列
SU07-N Series

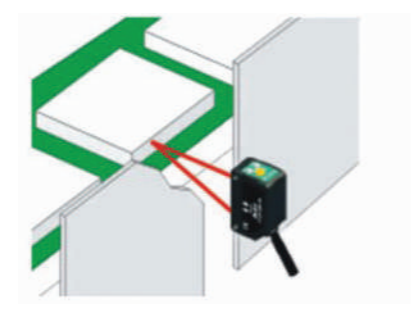
由于能从槽的上方进行检查，在必须进行更加严格的检查时，红外线传感器能检查槽内有无物体经过。
In situations that require more rigorous examinations, infrared sensors can check in there are objects coming through the slot from above the slot.



U型红外线传感器
U-shaped infrared sensor

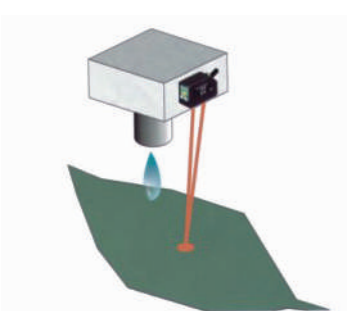
G63系列
G63 Series

方形光电传感器
Rectangular photoelectric sensor



PK3-DU30N

方形光电传感器
Rectangular photoelectric sensor



PK3-QM1N

可见红光/ visible red light

方形光电传感器
Rectangular photoelectric sensor



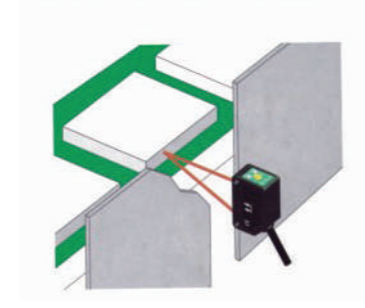
PK3-V30N

限定反射式/ limited reflective type

检查·测量 Inspection·measurement

用光纤传感器，智能传感器(激光型，直线接近型)等多种检查方式检查各种工件的2层重叠！
With fiber-optic sensors, smart sensors (laser type, linear type I) and other inspection methods to examine the various parts of the two-layer overlap

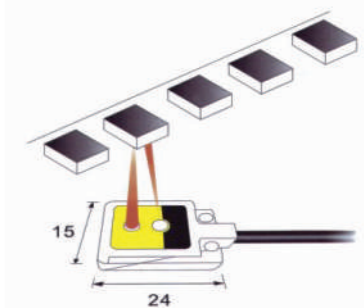
方形光电传感器
Rectangular photoelectric sensor



PK3-V30N

限定反射式/ limited reflective type

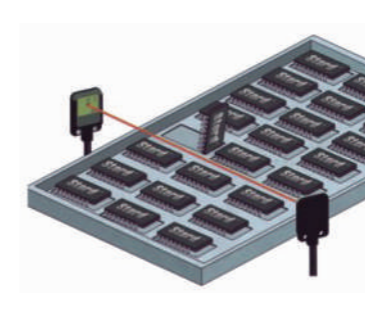
微型扁平光电传感器
Micro-sized flat photoelectric sensor



PK5-DU03N

体积超薄 ultra-thin body

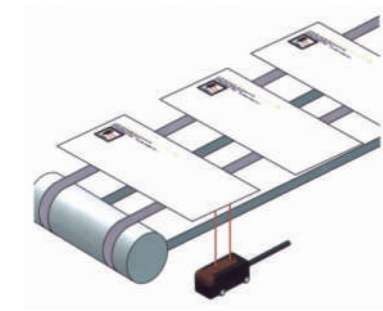
微型扁平光电传感器
Micro-sized flat photoelectric sensor



PK5-1N

体积超薄 ultra-thin body

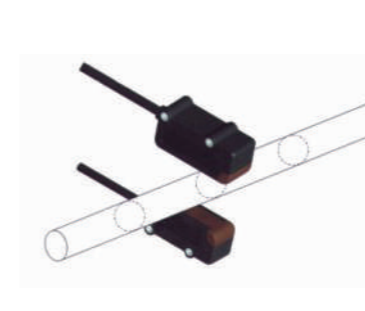
微型方形光电传感器
Micro-sized square photoelectric sensor



PM6-DU05N

体积小 Small size

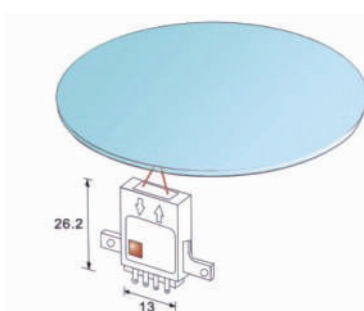
微型方形光电传感器
Micro-sized square photoelectric sensor



PM6-T50N

体积小 Small size

微型光电传感器
Micro photoelectric sensor



SPR-402-N

应用图示 APPLICATION DIAGRAM

检查·测量 Inspection·measurement

各种工件的计数 Counting various parts

用微小光点光电传感器，金属通过传感器，智能传感器等多种检查方法对各种工件进行计数。
Use Micro photoelectric sensors, proximity sensors, and intelligent sensors to check and count various parts.

利用声波原理对前方透明物体进行监测，并进行数据传输。
Use ultrasonic waves to monitor the transparent objects in front and transmit data.



超声波传感器
Ultrasonic sensor

RU18系列
RU18 Series

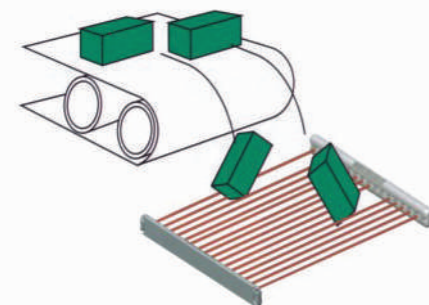
将被测物体放在B点，然后长按设定按钮(约1秒)，等LED灯亮起，即B点设定完成。
A到B点的距离即为感应距离。
Put the object at point B, then press and hold the set button (1 second). The point B was set when the LED light on. The distance from point B to point A is the sensing distance.



超声波传感器
Ultrasonic sensor

RU18系列
RU18 Series

适用于自动化流水线，电梯，危险禁区，锻压机，冲压机，切纸机等安全检测，起保护作用。
Suitable for security protection for automated assembly line, lift, dangerous restricted area, forging machine, punching machine, paper cutter and other facilities.



超薄型安全光幕
Ultra-thin safety curtain

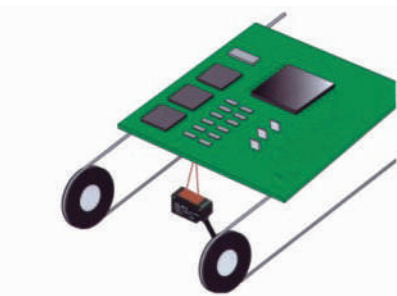
GM系列
GM Series

威卡炉灶节能器具有环保，操作方便，性能稳定，使用寿命长，连续点燃150万次无故障等优点。节能效果高达40-50%。
Weika stove energy-saving device is environmentally friendly, and easily operational. It has stable performance and long life and can continuously light up to 1.5 million times without failure. Energy could be saved by 40-50%.



智能炉灶传感器
Intelligent stove sensor

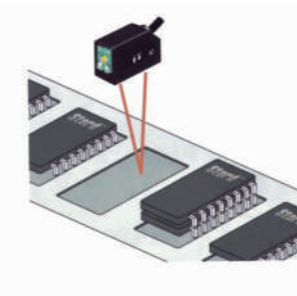
用CCD摄像机智能传感器检查孔的个数，由于进行的是面监测，即使工件位置有偏移，也能进行检查。
Use a CCD camera-based intelligent sensor to check out the number of holes, as a result of the face detection, even if there is a shift of the position of parts, the check can be done.



智能传感器--(超高速CCD摄像机型)
Intelligent sensor (ultra-high-speed CCD camera-based type)

ZFV系列
ZFV Series

由于进行的是面监测，即使工件位置有偏移，也能进行检查。
As a result of the face detection, even if there is a shift of the position of parts, the check can be done.



检测有无IC
Check whether is IC

PK3-V03NFV

接近开关 PROXIMITY SWITCH



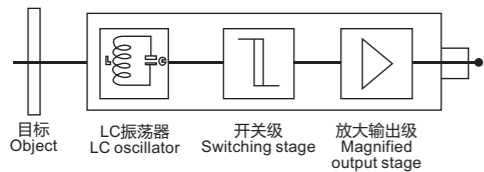
接近开关 PROXIMITY SWITCH

接近开关型号说明 Model explanation of proximity switch

LM 18 _ 30 05 N A □ / L
1 2 3 4 5 6 7 8

开关类别 Switch category	输出形式 Output form
Lm: 电感式 Inductance type Cm: 电容式 Capacitance type Sm: 霍尔式 Hall type Am: 安全防爆式 Safety Explosion-proof type Xm: 模拟线性式 Mimic Linear type Hm: 舌簧式 Reed type Ru: 超声波 Ultrasonic type	N: 三线直流 NpN负逻辑输出 Three-wire Dc NpN Output P: 三线直流 PnP正逻辑输出 Three-wire Dc PnP Output L: 二线直流输出 Two-wire Dc Output : 交流二线输出 Ac Two-wire Output J: 继电器触点输出 Relay Contact Output Np: NpN+PnP 双输出 NpN+PnP Double Output
外形代号 Outward appearance code	输出状态 Output state
□: 圆柱型 Cylinder type F□: 角柱型及平面安装型 Angular Column Type And Plane Installation Type	A: 常开(no) normally Open (no) B: 常闭(nc) Normally Close (nc) C: 一开一闭(no-nc) normally Open-Normally Close(no+nc) Mu: 模拟电压 Mimic Voltage Mi: 模拟电流 Mimic Current Mui: 电压+电流 双输出 Voltage+Current
工作电压 Working voltage	附属功能 Subsidiary functions
30:6-36VDC 310:5-24VDC 320:12-60VDC 330:10-30VDC 340:10-55VDC 350:10-60VDC 360:5-36VDC 20:90-250VAC 210:24-250VAC 220:380VAC40:12-240VDC/24-240AC 50:特殊电压: Special voltage	T: 带航空插座 with aviation connector Y: 防水、防油 water proof, oil proof I: 特殊要求 special requirement H: 耐高温 high temp resistance R: 环形 ring type
检测距离 Detection distance	远距离 Long-distance
01:1mm 05:5mm 10:10mm	L: 远距离型 Long-distance

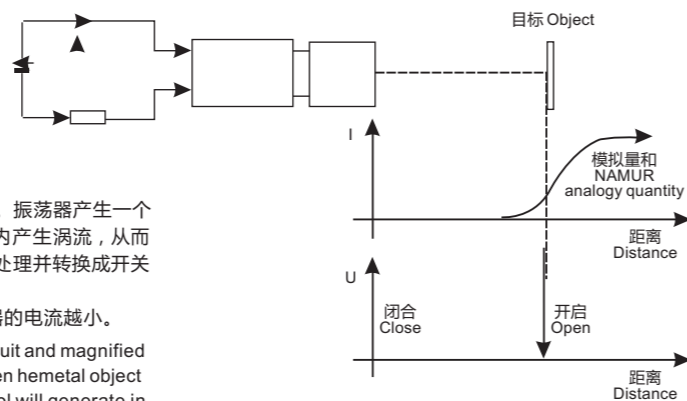
电感式接近开关工作原理 Working principle inductive proximity switch



电感式接近开关由三大部分组成: 振荡器、开关电路及放大输出电路。振荡器产生一个交变磁场。当金属目标接近这一磁场, 并达到感应距离时, 在金属目标内产生涡流, 从而导致振荡器衰减, 以至停振。振荡器振荡及停振的变化被后级放大电路处理并转换成开关信号, 触发驱动控制器件, 从而达到非接触式之检测目的。

目标离传感器越近, 线圈内的阻抗就越大, 阻抗越大, 传感器振荡器的电流越小。

Inductive proximity switch is composed of three parts: oscillator, switch circuit and magnified output circuit. The oscillator will generate an alternating electric field. When metal object approaches this electric field and reaches the induction distance, whirlpool will generate in metal object, resulting in attenuation of vibration and then stop. The change of vibration and stop of oscillator is treated by begid stage magnified circuit and converted to switching sign, triggering driving con-contact detection.



电感式接近开关的电流损耗, 随着与金属目标距离的减小而减小。Current consumption of inductive proximity switch decreases proportional to the metal object distance.

接近开关应用图例 Application illustration of proximity switch

机加工中心的各种位置检测 Various location detection of machinery process center	瓶盖检测 Bottle lid detection	磨床的档块检测 Stopper detection of grinding machine	机器人手臂位置检测 Arm location detection of robot	检测纸包装内有无牛奶 Inspection of the existing of milk inside the paper package	限位检测 Spacing detection

接近开关 PROXIMITY SWITCH

接近开关的特性 Features of proximity switch

主要特性 Main features

以高频振荡型接近传感器(前面检测器)为代表例, 概略说明接近传感器的一般特性。

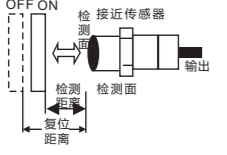
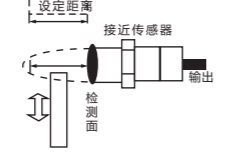

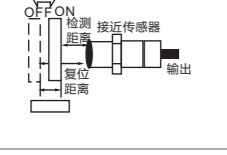
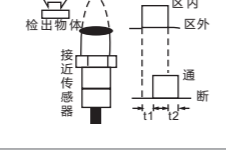
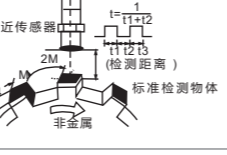
Take high frequency oscillation type proximity sensor (front detector) as representative example to briefly explain features of proximity switch

项目/Item	说明/Explanation	特性/Features	◆关于检测物体 / About detected object
检测物体的大小和检测距离 the size of detected object and detection distance	检测物体为正方形金属板, 厚度恒定(t=1mm), 改变其边长dmm时的检测距离X进行测定。 If the detected object is square metal sheet with constant thickness(t=1mm), detect at detection distance X when change its side length dmm.	<ul style="list-style-type: none"> 检测物体为大于标准检测物体时, 检测距离基本上恒定。 根据机种的不同, 有时和左边特性不同。 贯通型等, 以圆柱状金属棒为检测物体。 When the detected object is bigger than standard detected object, on the main, the detection distance is constant. According to different machine type, sometimes the features will be different with that mentioned on the left. To through type, the detection object is like cylinder metal bar. 	<ul style="list-style-type: none"> 检测物体的材料是非磁性金属时, 动作的距离要下降。但厚度为大于0.01mm左右的箔材料时, 会获得和磁性物体相同的检测距离, 而镀膜等级其薄时及无导电性时, 则不能检测。 镀层的影响检测物体具有镀层时, 请注意其检测距离就变了。 When the material of detected object is non magnetic metal, the distance of action should deseend. But when the foil material is approximately thicker than a.01mm, the detection distance will be the same as that of magnetic object. If the film plating is extremely thin or non-conductive, detection cannot be conducted. The effect of cladding material, when detected object has cladding material, take note of the changing of detection dinstance.
检测物体的厚度和检测距离 the thickness of detected object and detection distance	测定改变指定的标准检测物体形状的厚1mm时的检测距离Xmm(前面检测型) Detect at detection distance Xmm (front detector) when change the thickn ess of the assigned standard detected object 1mm.	<ul style="list-style-type: none"> 磁性金属(铁等)时, 厚度在1mm以上时, 检测距离基本上没有变化 For more than 1mm thick magnetic metal like iron, on the main, the detection distance will not chaneg. 	<ul style="list-style-type: none"> 为保护动作的可靠和寿命长, 请避免在有关规定以外的温度外界(户外)条件下使用, 接近传感器虽为防水结构, 若装上罩使用, 勿使水和水性切削油等淋到, 则可更好地提高可靠性及寿命。还请避免在有化学药剂, 特别是在强碱、酸、硝酸、铬酸、热浓硫酸等气候中使用。 In order to maintain reliable action and long service life, please avoid the (outdoor) occasion beond the stiplated ambient temperature. Do not drench it with water-soluble cutting lubricant when it is used with cover, althouth the proximity sensor is waterproof. Do not use in the occasion with chemical agents, especially strong base, acid, nitric acid, hot strong sulfuric acid and so on .
检测物体材料和镀层等造成的影响 the effects resulted from the thickness of detected object and cladding material	标准检测物体的由于形状、尺寸因具材料。或各种镀引起的影响, 用检测距离Xmm的测定加以确认。 Because the detection to standard detected object will be effected by its shape, size, material, and various caldding material, confirm through detection distance Xmm measurement.	<ul style="list-style-type: none"> 铁以外的金属造成的检测距离及镀层的影响, 根据不同的机种而不同。 检测所有金属的机种时, 基本上不受镀层的影响。 The effects resulted from detection distance and cladding material of the metal excluded iron will be different according to different machine type. On the main, the machine type which detects all the metals will not be effected by cladding material. 	<ul style="list-style-type: none"> 为使接近传感器长期稳定工作, 和一般的控制器一样请实行下列定期检查。 1.被检测物体及接近传感器的安装位置, 偏移、松动, 变形的有无。 2.配线, 连接部位有无松动, 接触, 不良, 断线。 3.有无粘附金属粉末等积物。 4.使用温度条件, 周围环境条件有无异常。 5.检查距离有无异常。 In order to keep the proximity sensor to work stably for long time, the ollowing regular examinations should be performed just like general control. 1.Check the installation position of detected object and proximity sensor if any deviation, loosening of deformation exists. 2.Check the attached wires and connecting parts if any loosening, bad contact or wire breaking off exists. 3.Check if there is any metallic powder accumulation or not. 4.Chck if the temperature condition and surrounding environment condition are normal or not. 5.Chck if the detection distance is normal or not.

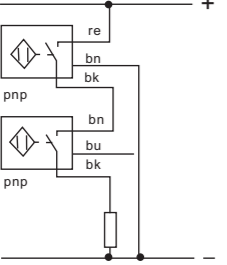
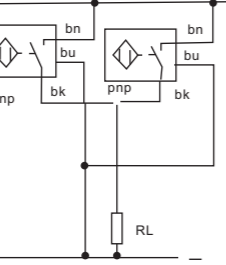
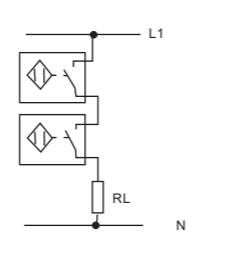
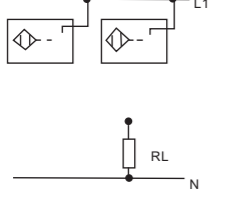
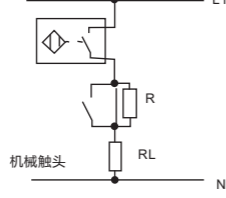
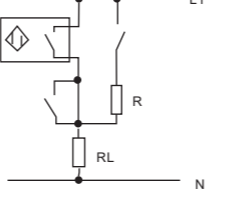
材料	检测距离
铁	100%
不锈钢	60%
黄铜	约40%
铝	约30%
铜	约28%

接近开关 PROXIMITY SWITCH

技术用词的说明 EXPLANATION OF TECHNICAL TERMS

检测距离 Detection distance	设定距离 Setting distance	标准检测物体 Standard detected object
 <p>按指定方法移动检测物体，从基准位置(基准面)到测定动作复位的距离。 Move the detected object according to assigned method, the distance from the reference position (reference plane) to the detecting action(resetting)</p>	 <p>包括温度、电压影响在内，没有误动作从能实用的检测面到检测物体通过位置的距离。 Including the effects like temperature and voltage, without erroraction, the distance passed through from the practical detection surface to the objected objest.</p>	 <p>为测定基本性能作为标准的检测物体，形状尺寸、材料已决定的 Take as standard detected object to detect the basi erformance. The shape, size and material have be de terminated.</p>
差动距离 Differential distance	响应时间 Response time	响应效率 Response frequency
 <p>到动作的距离和到复位的距离之差的绝对值。 The absolute value of the distance difference between the distance to action and the distance to resetting</p>	 <p>T1:检测物体进入动作区内，从接近传感器成为动作状态到出现输出的时间。 T2:从离开动作区到输出消失为止的时间。 T1: When the objected object enters the action zone, the time from proximity sensor being in action state to output appearance. T2: The time from leaving action zone to output disappearance.</p>	 <p>反复接近检测物体时，能得出跟踪它的输出每秒次数。测定方法概略如上图。 Work out the tracking output times per second repeatedly approaching the detected object, Brief detection method sees the above diagram.</p>

串联、并联 SERIES CONNECTION AND PARALLEL CONNECTION

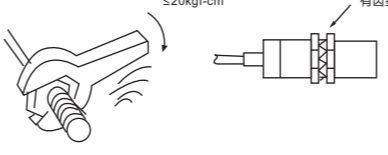
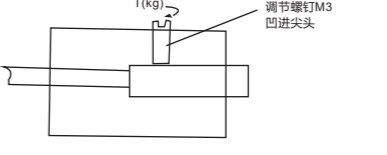
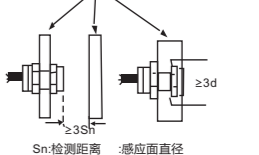
<p>★ 三线电流与三线直流传感器的串联 Series connection of three-wire DC and therr-wire DC sensor</p> 	<p>★ 三线电流与三线直流传感器的并联 Parallel connection of three-wire DC and therr-wire DC sensor</p> 	<p>★ 两线交流传感器的串联 Series connection of two-wire AC sensor</p> 
<p>◆ 两线交流传感器的并联 Parallel connection of two-wire AC sensor</p> 	<p>◆ 机械开关与交流传感器的串联 Series connection of machinery switch and AC sensor</p> 	<p>◆ 机械开关与交流传感器的并联 Parallel connection of machinery switch and AC sensor</p> 

接近开关 PROXIMITY SWITCH

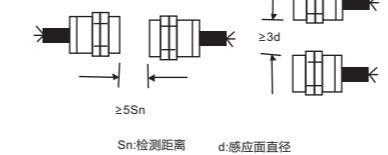
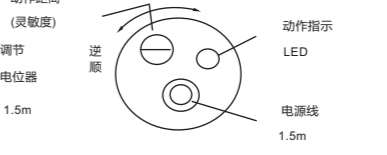
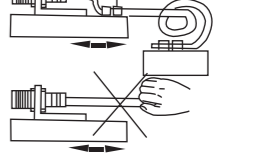
主要特征 Main features

- ✦ 体积小 Compact volume
- ✦ 重复定位精度高 High precision of repeated location
- ✦ 外形结构多样 Diversified exterior structures
- ✦ 抗干扰性能好 Good performance of anti-interference
- ✦ 输出形式多 Many output forms
- ✦ 开关频率高 High on-off frequency
- ✦ 电压范围宽 Wide voltage range
- ✦ 防尘、防震、防水、防油 Dust proof, vibration proof, water proof and oil proof
- ✦ 具备短路保护，反连接保护 With short-circuit protection and inverted connecting protection
- ✦ 使用寿命长 Long service life

正确使用和安装及注意事项 Correct use, installation and cautions

 <p>✦ 螺纹式开关的安装 Mounting screw switch</p> <p>✦ 安装开关时不可采用过大力距紧固，紧固时请务必采用齿垫圈 Do not tighten with over-torque when mounting the switch, Adopt toothed washer then tightening</p>	 <p>✦ 无螺纹式柱型开关的安装 Mounting non screw type pillar switch</p> <p>✦ 采用调节螺钉时，紧固力矩请用2-4kgf-cm以下安装 When adopt adjusting screw, the tightening torque should be within 2-4kgf-cm.</p>	 <p>✦ 防止非检测物体的干扰 Protection against the interference of non detected object</p> <p>✦ 在金属件上安装接近开关时，请务必参照下图，所示预留一定空间，以避免开关产生误动作 When mounting the proximity switch in the metal part, do refer ti the following diagram. Remain acertain space in svdnce according to the shown diagram so as to prevent the switch from error action</p>
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正确使用和安装及注意事项 Correct use, installation and cautions

 <p>✦ 螺纹式开关的安装 Mounting screw switch</p> <p>✦ 安装开关时不可采用过大力距紧固，紧固时请务必采用齿垫圈 Do not tighten with over-torque when mounting the switch, Adopt toothed washer then tightening</p>	 <p>✦ 开关动作距离(灵敏度)可调节 Adjustable switch actiondistance (sensitivity)</p> <p>✦ 接近开关可通过微调电位器调节动作距离(灵敏度)。顺时针动作距离增大(灵敏度减低)，逆时针，反之，切忌在动作距离最大临界状态下使用 The action distance (sensitivity) of proximity switch can be adjusted by the means oltrimming potentiometer, increase the action distance and reduce sensitivity when turnclockwise, vice versa. Do not use in thecritical state of max. Action distance.</p>	 <p>✦ 开关引线的防护 Gusrd of switch lead-wire</p> <p>✦ 按装开关时，请将离开开关10cm左右引线位置用线夹固定，防止开关引线受外力的作用损坏。 When mount switch, fix the lead-wire at a distomce anpit 10cm from the switch with wire clip so as to prevent the switch lead wire from damage from outer force.</p>
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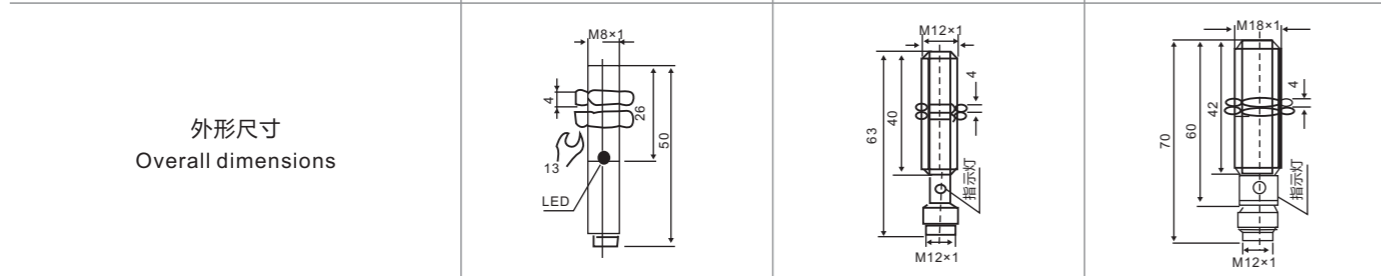
注意事项 Cautions

- ✦ 直流开关应使用绝缘变压器，并确保稳压电源纹波。
- ✦ 如有电力线动力线通过开关引线周围时，防止开关损坏或误动作，将金属管套在开关引线上并接地。
- ✦ 开关使用距离请设定在额定距离以内，以免受温度和电压影响。
- ✦ 严禁通电接线，应严格按接线图输出回路原理图接线。
- ✦ 用户如需要防水、防油、耐酸、碱、耐高温开关等特殊要求或其他规格应在订货时说明，并给定定做。
- ✦ Dc switch should adopt insulation transformer and ensure stabc voltage mains corrugation.
- ✦ If any electric power line or dynamic line passes through the surrounding of switch lead-wire, in order ot precent the switch from damage or error action ,cover the metal bushing on the switch lead-wire and ground it to the earth.
- ✦ Set the switch use distance within the rated distance to avoid the effects from temperature and voltage.
- ✦ Wiring while power-on is strictly prohibited. connecting the wires strictly according to the wiring diagram and output return elementary diagram.
- ✦ If there areany special requirements to the switch like water proof, oil proof, acid proof, base proof, high temperature proof of with any other specifications, the users are required togive clear indication when placing an order. we can produce according to the requirements of the user.

接近开关 PROXIMITY SWITCH

结构分类 Structural category 圆柱型 Cylinder type 插件型 Connector type

外形编号 Outward Appearance code LM8-□□T / LM8-□□T3 LM12-□T / LM12-□T3 LM18-□T

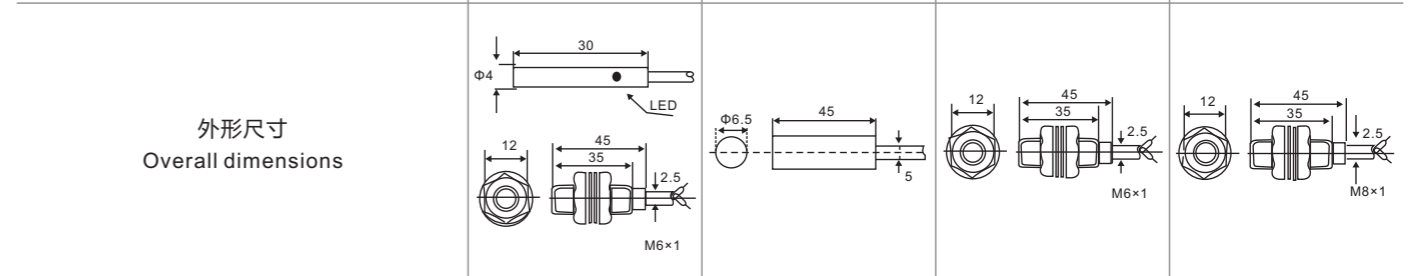


		检测距离 DETECTION DISTANCE				
		1mm	2mm	5mm		
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LM8-3001NAT	LM12-3002NAT	LM18-3005NAT
			NC	LM8-3001NBT	LM12-3002NBT	LM18-3005NBT
			NO+NC			
		PNP	NO	LM8-3001PAT	LM12-3002PAT	LM18-3005PAT
			NC	LM8-3001PBT	LM12-3002PBT	LM18-3005PBT
			NO+NC			
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM8-3001LAT	LM12-3002LAT	LM18-3005LAT
			NC	LM8-3001LBT	LM12-3002LBT	LM18-3005LBT
			NO+NC			
		SCR 可控硅 Control- lable silicon	NO		LM12-2002AT	LM18-2005AT
			NC		LM12-2002BT	LM18-2005BT
			NO+NC			
继电器输出 Relay output						
		检测距离 DETECTION DISTANCE				
		2mm	4mm			
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LM8-3002NAT	LM12-3004NAT	LM18-3008NAT
			NC	LM8-3002NBT	LM12-3004NBT	LM18-3008NBT
			NO+NC			
		PNP	NO	LM8-3002PAT	LM12-3004PAT	LM18-3008PAT
			NC	LM8-3002PBT	LM12-3004PBT	LM18-3008PBT
			NO+NC			
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM8-3002LAT	LM12-3004LAT	LM18-3008LAT
			NC	LM8-3002LBT	LM12-3004LBT	LM18-3008LBT
			NO+NC			
		SCR 可控硅 Control- lable silicon	NO	LM8-2002AT	LM12-2004AT	LM18-2008AT
			NC		LM12-2004BT	LM18-2008BT
			NO+NC			
继电器输出 Relay output						
输出电流 Control output		DC	150mA	200mA	300mA	
		SCR/继电器 Relay				
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V				
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA				
标准检测物体 Standard detected object		8×8×1(A3铁iron)	12×12×1(A3铁iron)	18×18×1(A3铁iron)		
重复精度 Repeated precision		0.01	0.01	0.02		
响应频率 DC/AC		500Hz/10Hz	400Hz/10Hz	200Hz/10Hz		
工作环境温度 Working environment temperature		-25°C~+70°C	-25°C~+70°C	-25°C~+70°C		
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ		
外壳材料 Shell material		金属 Metal	金属 Metal	金属 Metal		
防护等级 Protection grade		IP67	IP67	IP67		
可替代国内型号 Alyemative model at home and abroad		E2E-X1R5-M1	E2E-X2E1-M1	E2E-X5E5-M1		

接近开关 PROXIMITY SWITCH

结构分类 Structural category 圆柱型 Cylinder type

外形编号 Outward Appearance code LM4/LM5 LM6 LM06 LM8



		检测距离 DETECTION DISTANCE					
		0.8mm/1mm	1mm	1mm	1mm	1mm	
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LM4-300.8NA/LM5-3001NA	LM6-3001NA	LM06-3001NA	LM8-3001NA
			NC		LM6-3001NB		LM8-3001NB
			NO+NC				LM8-3001NC
		PNP	NO	LM4-300.8PA/LM5-3001PA	LM6-3001PA	LM06-3001PA	LM8-3001PA
			NC		LM6-3001PB		LM8-3001PB
			NO+NC				LM8-3001PC
	交流 AC 90-250 VAC	二线制 two wire system	NO		LM6-3001LA		LM8-3001LA
			NC		LM6-3001LB		LM8-2001LB
			NO+NC				
		SCR 可控硅 Control- lable silicon	NO		LM6-2001A		LM8-2001A
			NC		LM6-2001B		LM8-2001B
			NO+NC				
继电器输出 Relay output							
		检测距离 DETECTION DISTANCE		1.5mm	2mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO		LM6-3002NA	LM8-3002NA	
			NC		LM6-3002NB	LM8-3002NB	
			NO+NC				
		PNP	NO		LM6-3002PA	LM8-3002PA	
			NC		LM6-3002PB	LM8-3002PB	
			NO+NC				
	交流 AC 90-250 VAC	二线制 two wire system	NO		LM6-3002LA	LM8-3002LA	
			NC		LM6-3002LB	LM8-3002LB	
			NO+NC				
		SCR 可控硅 Control- lable silicon	NO		LM6-2002A	LM8-2002A	
			NC		LM6-2002B	LM8-2002B	
			NO+NC				
继电器输出 Relay output							
输出电流 Control output		DC	200mA	200mA	200mA	200mA	
		SCR/继电器 Relay					
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		6×6×1(A3铁iron)	8×8×1(A3铁iron)	8×8×1(A3铁iron)	8×8×1(A3铁iron)		
重复精度 Repeated precision		0.01	0.01	0.01	0.01		
响应频率 DC/AC		500Hz	500Hz	500Hz	500Hz/25Hz		
工作环境温度 Workong environment temperature		-25°C~+70°C	-25°C~+75°C	-25°C~+70°C	-25°C~+75°C		
绝缘电阻 Insulation resistance		50MΩ	≥30MΩ	50MΩ	≥50MΩ		
外壳材料 Shell material		金属 Metal	不锈钢 Stainless steel	金属 Metal	金属 Metal		
防护等级 Protection grade		IP67	IP67	IP67	IP67		
可替代国内型号 Alyemative model at home and abroad					E2E-X1R5□□		

接近开关 PROXIMITY SWITCH

结构分类 Structural category

圆柱型 Cylinder type

外形编号 Outward Appearance code		LM12	LM14	LM18	LM20		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		2mm	3mm	5mm			
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LM12-3002NA	LM14-3003NA	LM18-3005NA	
			NC	LM12-3002NB	LM14-3003NB	LM18-3005NB	
			NO+NC	LM12-3002NC	LM14-3003NC	LM18-3005NC	
		PNP	NO	LM12-3002PA	LM14-3003PA	LM18-3005PA	
			NC	LM12-3002PB	LM14-3003PB	LM18-3005PB	
			NO+NC	LM12-3002PC	LM14-3003PC	LM18-3005PC	
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM12-3002LA	LM14-3003LA	LM18-3005LA	
		NC	LM12-2002LB	LM14-2003LB	LM18-3005LB		
		SCR 可控硅 Control- lable silicon	NO	LM12-2002A	LM14-2003A	LM18-2005A	
		NC	LM12-2002B	LM14-2003B	LM18-2005B		
	NO+NC			LM18-2005C			
继电器输出 Relay output							
检测距离 DETECTION DISTANCE		4mm	5mm	8mm	10mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LM12-3004NA	LM14-3005NA	LM18-3008NA	LM20-3010NA
			NC	LM12-3004NB	LM14-3005NB	LM18-3008NB	LM20-3010NB
			NO+NC	LM12-3004NC	LM14-3005NC	LM18-3008NC	LM20-3010NC
		PNP	NO	LM12-3004PA	LM14-3005PA	LM18-3008PA	LM20-3010PA
			NC	LM12-3004PB	LM14-3005PB	LM18-3008PB	LM20-3010PB
			NO+NC	LM12-3004PC	LM14-3005PC	LM18-3008PC	LM20-3010PC
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM12-3004LA	LM14-3005LA	LM18-3008LA	LM20-3010LA
		NC	LM12-3004LB	LM14-3005LB	LM18-2008LB	LM20-3010LB	
		SCR 可控硅 Control- lable silicon	NO	LM12-2004A	LM14-2005A	LM18-2008A	LM20-2010A
		NC	LM12-2004B	LM14-2005B	LM18-2008B	LM20-2010B	
	NO+NC			LM18-2008C	LM20-2010C		
继电器输出 Relay output							
输出电流 Control output	DC	200mA	200mA	200mA	200mA		
	SCR/继电器 Relay	300mA	300mA	300mA	300mA/1A		
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		15×15×1(A3铁iron)	15×15×1(A3铁iron)	18×18×1(A3铁iron)	20×20×1(A3铁iron)		
重复精度 Repeated precision		0.01	0.02	0.02	0.05		
响应频率 DC/AC		400Hz/25Hz	300Hz/25Hz	200Hz/25Hz	200Hz/25Hz		
工作环境温度 Working environment temperature		-25°C~+75°C	-25°C~+75°C	-25°C~+75°C	-25°C~+75°C		
绝缘电阻 Insulation resistance		≥50MΩ	≥50MΩ	50MΩ	50MΩ		
外壳材料 Shell material		金属 Metal	金属 Metal	金属 Metal	ABS树脂 Resin		
防护等级 Protection grade		IP67	IP67	IP67	IP67		
可替代国内型号 Aiyemative model at home and abroad		E2E-X5□□	LJ14A3-□□	LJ18A3-8-□□			

接近开关 PROXIMITY SWITCH

圆柱型 Cylinder type

外形编号 Outward Appearance code		LM24	LM30	LM34	LM35	LM38		
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 DETECTION DISTANCE		8mm	10mm	17mm	17mm	18mm		
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LM24-3008NA	LM30-3010NA		LM38-3012NA	
			NC	LM24-3008NB	LM30-3010NB		LM38-3012NB	
			NO+NC	LM24-3008NC	LM30-3010NC		LM38-3012NC	
		PNP	NO	LM24-3008PA	LM30-3010PA		LM38-3012PA	
			NC	LM24-3008PB	LM30-3010PB		LM38-3012PB	
			NO+NC	LM24-3008PC	LM30-3010PC		LM38-3012PC	
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM24-3008LA	LM30-3010LA		LM38-3012LA	
		NC	LM24-3008LB	LM30-3010LB		LM38-3012LB		
		SCR 可控硅 Control- lable silicon	NO	LM24-2008A	LM30-2010A		LM38-2012A	
		NC	LM24-2008B	LM30-2010B		LM38-2012B		
	NO+NC				LM38-2012C			
继电器输出 Relay output			LM30-2010JC					
检测距离 DETECTION DISTANCE		10mm	15mm	17mm	17mm	18mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LM24-3010NA	LM30-3015NA	LM34-3017NA	LM35-3017NA	LM38-3018NA
			NC	LM24-3010NB	LM30-3015NB	LM34-3017NB	LM35-3017NB	LM38-3018NB
			NO+NC	LM24-3010NC	LM30-3015NC	LM34-3017NC	LM35-3017NC	LM38-3018NC
		PNP	NO	LM24-3010PA	LM30-3015PA	LM34-3017PA	LM35-3017PA	LM38-3018PA
			NC	LM24-3010PB	LM30-3015PB	LM34-3017PB	LM35-3017PB	LM38-3018PB
			NO+NC	LM24-3010PC	LM30-3015PC	LM34-3017PC	LM35-3017PC	LM38-3018PC
	交流 AC 90-250 VAC	二线制 two wire system	NO	LM24-3010LA	LM30-3015LA	LM34-3017LA	LM35-3017LA	LM38-3018LA
		NC	LM24-3010LB	LM30-3015LB	LM34-3017LB	LM35-3017LB	LM38-3018LB	
		SCR 可控硅 Control- lable silicon	NO	LM24-2010A	LM30-2015A	LM34-2017A	LM35-2017A	LM38-2018A
		NC	LM24-2010B	LM30-2015B	LM34-2017B	LM35-2017B	LM38-2018B	
	NO+NC					LM38-2018C		
继电器输出 Relay output			LM30-2015JC	LM34-2017JC	LM35-2017JC	LM38-2018JC		
输出电流 Control output	DC	200mA	200mA	200mA	200mA	200mA		
	SCR/继电器 Relay	300mA	300mA/1A					
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V						
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA						
标准检测物体 Standard detected object		24×24×1(A3铁iron)	30×30×1(A3铁iron)	34×34×1(A3铁iron)	40×40×1(A3铁iron)	40×40×1(A3铁iron)		
重复精度 Repeated precision		0.05	0.05		0.1			
响应频率 DC/AC		200Hz/25Hz	200Hz/25Hz		100Hz/15Hz			
工作环境温度 Working environment temperature		-25°C~+75°C	-25°C~+75°C		-25°C~+75°C			
绝缘电阻 Insulation resistance		50MΩ	50MΩ		50MΩ			
外壳材料 Shell material		金属 Metal	金属 Metal	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin		
防护等级 Protection grade		IP67	IP67		IP67			
可替代国内型号 Aiyemative model at home and abroad		LJ24A3-10-□□	E2E-X18M□			LJ38A4-18-□□		

接近开关 PROXIMITY SWITCH

结构分类 Structural category

圆柱型 Cylinder type

外形编号 Outward Appearance code		LM39	LM40	LM480	LM36		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE							
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO				
			NC				
			NO+NC				
		PNP	NO				
			NC				
	交流 AC 90-250 VAC	二线制 two wire system	NO				
			NC				
		SCR 可控硅 Control- lable silicon	NO				
			NC				
			NO+NC				
继电器输出 Relay output							
检测距离 DETECTION DISTANCE							
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LM39-3015NA	LM40-3020NA	LM480-3025NA	LM36-3015NA
			NC	LM39-3015NB	LM40-3020NB	LM480-3025NB	LM36-3015NB
			NO+NC	LM39-3015NC	LM40-3020NC	LM480-3025NC	LM36-3015NC
		PNP	NO	LM39-3015PA	LM40-3002PA	LM480-3025PA	LM36-3015PA
			NC	LM39-3015PB	LM40-3002PB	LM480-3025PB	LM36-3015PB
	交流 AC 90-250 VAC	二线制 two wire system	NO+NC	LM39-3015PC	LM40-3020PC	LM480-3025PC	LM36-3015PC
			NO	LM39-3015LA	LM40-3002LA	LM480-3025LA	LM36-3015LA
		SCR 可控硅 Control- lable silicon	NC	LM39-3015LB	LM40-3002LB	LM480-3025LB	LM36-2015LB
			NO	LM39-2015A	LM40-2002A	LM480-2025A	LM36-2015A
			NC	LM39-2015B	LM40-2020B	LM480-2025B	LM36-2015B
继电器输出 Relay output			LM40-2020JC				
输出电流 Control output		DC	200mA	200mA	200mA	200mA	
		SCR/继电器 Relay	300mA/1A	300mA/1A	300mA	300mA	
输出电压降 Output voltage drop DC/AC							
直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V							
消耗电流 Consumption current							
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA							
标准检测物体 Standard detected object							
		45×45×1(A3铁iron)	45×45×1(A3铁iron)	50×50×1(A3铁iron)	45×45×1(A3铁iron)		
重复精度 Repeated precision							
			0.1		0.05		
响应频率 DC/AC							
			100Hz/25Hz		200Hz/10Hz		
工作环境温度 Working environment temperature							
			-25°C~+75°C				
绝缘电阻 Insulation resistance							
			50MΩ				
外壳材料 Shell material							
		金属 Metal	金属 Metal	金属 Metal	ABS树脂 Resin		
防护等级 Protection grade							
			IP67				
可替代国内型号 Aiyemative model at home and abroad							
		SC-□□	SC-□□	SFE-□□			

接近开关 PROXIMITY SWITCH

平面安装型 Plane installation type

角柱型 Angular column type

外形编号 Outward Appearance code		LM42	LM48	LM55	LMF1	LMF2		
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 DETECTION DISTANCE					5mm	5mm		
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO					
			NC					
			NO+NC					
		PNP	NO					
			NC					
	交流 AC 90-250 VAC	二线制 two wire system	NO					
			NC					
		SCR 可控硅 Control- lable silicon	NO					
			NC					
			NO+NC					
继电器输出 Relay output								
检测距离 DETECTION DISTANCE								
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LM42-3020NA	LM48-3020NA	LM55-3025NA		
			NC	LM42-3020NB	LM48-3020NB	LM55-3025NB		
			NO+NC	LM42-3020NC	LM48-3020NC	LM55-3025NC		
		PNP	NO	LM42-3020PA	LM48-3020PA	LM55-3025PA		
			NC	LM42-3020PB	LM48-3020PB	LM55-3025PB		
	交流 AC 90-250 VAC	二线制 two wire system	NO+NC	LM42-3020PC	LM48-3020PC	LM55-3025PC		
			NO	LM42-3020LA	LM48-3020LA	LM55-3025LA		
		SCR 可控硅 Control- lable silicon	NC	LM42-2020LB	LM48-2020LB	LM55-2025LB		
			NO	LM42-2020A	LM48-2020A	LM55-2025A	LMF1-2005A	LMF2-2005A
			NC	LM42-2020B	LM48-2020B	LM55-2025B	LMF1-2005B	LMF2-2005B
继电器输出 Relay output			LM48-2020C	LM55-2025C				
输出电流 Control output		200mA	200mA	200mA	200mA	200mA		
		300mA	300mA	300mA	300mA	300mA		
输出电压降 Output voltage drop DC/AC								
直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V								
消耗电流 Consumption current								
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA								
标准检测物体 Standard detected object								
		25×25×1(A3铁iron)	60×60×1(A3铁iron)	55×55×1(A3铁iron)	20×20×1(A3铁iron)	20×20×1(A3铁iron)		
重复精度 Repeated precision								
		0.2	0.2	0.2	0.02	0.02		
响应频率 DC/AC								
		200Hz/10Hz	200Hz/10Hz	200Hz/10Hz	400Hz/25Hz	400Hz/25Hz		
工作环境温度 Working environment temperature								
		-25°C~+75°C	-25°C~+75°C	-25°C~+75°C	-25°C~+75°C	-25°C~+75°C		
绝缘电阻 Insulation resistance								
		50MΩ	50MΩ	50MΩ	50MΩ	50MΩ		
外壳材料 Shell material								
		ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin		
防护等级 Protection grade								
		IP67	IP67	IP67	IP67	IP67		
可替代国内型号 Aiyemative model at home and abroad								
			SD-□□	SE-□□	SN04-N	TL-Q5MC1		

接近开关 PROXIMITY SWITCH

结构分类 Structural category

角柱型 Angular column type

外形编号 Outward Appearance code		LMF3	LMF4	LMF5	LMF6		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		5mm	5mm	2mm	8mm		
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LMF3-3005NA	LMF4-3005NA	LMF5-3002NA	LMF6-3008NA
			NC	LMF3-3005NB	LMF4-3005NB	LMF5-3002NB	LMF6-3008NB
			NO+NC		LMF4-3005NC	LMF5-3002NC	LMF6-3008NC
		PNP	NO	LMF3-3005PA	LMF4-3005PA	LMF5-3002PA	LMF6-3008PA
			NC	LMF3-3005PB	LMF4-3005PB	LMF5-3002PB	LMF6-3008PB
			NO+NC		LMF4-3005PC	LMF5-3002PC	LMF6-3008PC
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF3-3005LA	LMF4-3005LA	LMF5-3002LA	LMF6-3008LA
			NC	LMF3-3005LB	LMF4-3005LB	LMF5-3002LB	LMF6-3008LB
		SCR 可控硅 Control- lable silicon	NO				LMF6-2008A
			NC				LMF6-2008B
继电器输出 Relay output							
检测距离 DETECTION DISTANCE				4mm	10mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO		LMF5-3004NA	LMF6-3010NA	
			NC		LMF5-3004NB	LMF6-3010NB	
			NO+NC		LMF5-3004NC	LMF6-3010NC	
		PNP	NO		LMF5-3004PA	LMF6-3010PA	
			NC		LMF5-3004PB	LMF6-3010PB	
			NO+NC		LMF5-3004PC	LMF6-3010PC	
	交流 AC 90-250 VAC	二线制 two wire system	NO		LMF5-3004LA	LMF6-3010LA	
			NC		LMF5-3004LB	LMF6-3010LB	
		SCR 可控硅 Control- lable silicon	NO	LMF3-2005A			LMF6-2010A
			NC	LMF3-2005B			LMF6-2010B
继电器输出 Relay output							
输出电流 Control output		DC 200mA	200mA	200mA	200mA		
SCR/继电器 Relay			300mA/1A		300mA		
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		20×20×1(A3铁iron)	20×20×1(A3铁iron)	15×15×1(A3铁iron)	30×30×1(A3铁iron)		
重复精度 Repeated precision		0.02	0.03	0.03	0.05		
响应频率 DC/AC		400Hz/25Hz	300Hz	400Hz	200Hz/10Hz		
工作环境温度 Working environment temperature		-25℃~+75℃	-25℃~+75℃		-25℃~+75℃		
绝缘电阻 Insulation resistance		50MΩ	50MΩ		50MΩ		
外壳材料 Shell material		ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin		
防护等级 Protection grade		IP67	IP67		IP67		
可替代国内型号 Aiyemative model at home and abroad		PS17-5PN	PS05-N、PS05-P		TL-N5ME□□		

接近开关 PROXIMITY SWITCH

角柱型 Angular column type

外形编号 Outward Appearance code		LMF7	LMF8	LMF10	LMF11	LMF12	
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		10mm	10mm	15mm	5mm		
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO	LMF7-3010NA	LMF8-3010NA	LMF10-3015NA	LMF11-3005NA
			NC	LMF7-3010NB	LMF8-3010NB	LMF10-3015NB	LMF11-3005NB
			NO+NC		LMF8-3010NC	LMF10-3015NC	LMF11-3005NC
		PNP	NO	LMF7-3010PA	LMF8-3010PA	LMF10-3015PA	LMF11-3005PA
			NC	LMF7-3010PB	LMF8-3010PB	LMF10-3015PB	LMF11-3005PB
			NO+NC		LMF8-3010PC	LMF10-3015PC	LMF11-3005PC
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF7-3010LA	LMF8-3010LA	LMF10-3015LA	LMF11-3005LA
			NC	LMF7-3010LB	LMF8-3010LB	LMF10-3015LB	LMF11-3005LB
		SCR 可控硅 Control- lable silicon	NO	LMF7-2010A	LMF8-2010A	LMF10-2015A	
			NC	LMF7-2010B	LMF8-2010B	LMF10-2015B	
继电器输出 Relay output							
检测距离 DETECTION DISTANCE		15mm	15mm	20mm		8mm	
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF7-3015NA	LMF8-3015NA	LMF10-3020NA	LMF12-3008NA
			NC	LMF7-3015NB	LMF8-3015NB	LMF10-3020NB	LMF12-3008NB
			NO+NC	LMF7-3015NC	LMF8-3015NC	LMF10-3020NC	LMF12-3008NC
		PNP	NO	LMF7-3015PA	LMF8-3015PA	LMF10-3020PA	LMF12-3008PA
			NC	LMF7-3015PB	LMF8-3015PB	LMF10-3020PB	LMF12-3008PB
			NO+NC	LMF7-3015PC	LMF8-3015PC	LMF10-3020PC	LMF12-3008PC
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF7-3015LA	LMF8-3015LA	LMF10-3020LA	LMF12-3008LA
			NC	LMF7-3015LB	LMF8-3015LB	LMF10-3020LB	LMF12-3008LB
		SCR 可控硅 Control- lable silicon	NO	LMF7-2015A	LMF8-2015A	LMF10-2020A	LMF12-2008A
			NC	LMF7-2015B	LMF8-2015B	LMF10-2020B	LMF12-2008B
继电器输出 Relay output							
输出电流 Control output		200mA 300mA	200mA	200mA 500mA	200mA	200mA 500mA	
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		35×35×1(A3铁iron)	40×40×1(A3铁iron)	45×45×1(A3铁iron)	20×20×1(A3铁iron)	25×25×1(A3铁iron)	
重复精度 Repeated precision		0.05	0.05	0.05	0.05	0.04	
响应频率 DC/AC		200Hz/15Hz	200Hz/15Hz	100Hz/15Hz	500Hz	200Hz/15Hz	
工作环境温度 Working environment temperature		-25℃~+75℃	-25℃~+75℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ	50MΩ	
外壳材料 Shell material		ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin	
防护等级 Protection grade		IP67	IP67	IP67	IP67	IP67	
可替代国内型号 Aiyemative model at home and abroad		TL-N10M		TL-N20M□	PL-05N PL-05P	LJ1A-24	

接近开关 PROXIMITY SWITCH

结构分类 Structural category

角柱型 Angular column type

外形编号 Outward Appearance code		LMF13	LMF14	LMF15	LMF16		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		2mm					
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO		LMF15-3002NA		
			NC		LMF15-3002NB		
			NO+NC		LMF15-3002NC		
	PNP	NO		LMF15-3002PA			
		NC		LMF15-3002PB			
		NO+NC		LMF15-3002PC			
	交流 AC 90-250 VAC	二线制 two wire system	NO		LMF15-3002LA		
			NC		LMF15-3002LB		
		SCR 可控硅 Control- lable silicon	NO		LMF15-2002A		
			NC		LMF15-2002B		
继电器输出 Relay output							
检测距离 DETECTION DISTANCE		8mm	5mm	4mm	15mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF13-3008NA	LMF14-3005NA	LMF15-3004NA	LMF16-3015NA
			NC	LMF13-3008NB	LMF14-3005NB	LMF15-3004NB	LMF16-3015NB
			NO+NC	LMF13-3008NC	LMF14-3005NC	LMF15-3004NC	LMF16-3015NC
	PNP	NO	LMF13-3008PA	LMF14-3005PA	LMF15-3004PA	LMF16-3015PA	
		NC	LMF13-3008PB	LMF14-3005PB	LMF15-3004PB	LMF16-3015PB	
		NO+NC	LMF13-3008PC	LMF14-3005PC	LMF15-3004PC	LMF16-3015PC	
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF13-3008LA	LMF14-3005LA	LMF15-3004LA	LMF16-3015LA
			NC	LMF13-3008LB	LMF14-3005LB	LMF15-3004LB	LMF16-3015LB
		SCR 可控硅 Control- lable silicon	NO	LMF13-2008A	LMF14-2005A	LMF15-2004A	LMF16-2015A
			NC	LMF13-2008B	LMF14-2005B	LMF15-2004B	LMF16-2015B
继电器输出 Relay output					LMF16-2015C	LMF16-2015JC	
输出电流 Control output	DC	200mA	200mA	200mA	200mA		
SCR/继电器 Relay		300mA/1A			300mA		
输出电压降 Output voltage drop DC/AC	直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V						
消耗电流 Consumption current	直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA						
标准检测物体 Standard detected object	25×25×1(A3铁iron)	18×18×1(A3铁iron)	15×15×1(A3铁iron)	45×45×1(A3铁iron)			
重复精度 Repeated precision	0.04	0.05	0.02	0.05			
响应频率 DC/AC	200Hz/15Hz	500Hz/10Hz	100Hz/Hz				
工作环境温度 Working environment temperature	-25°C~+70°C		-25°C~+70°C				
绝缘电阻 Insulation resistance	50MΩ	50MΩ	≥50MΩ				
外壳材料 Shell material	ABS树脂 Resin	ABS塑料 Plastiil	ABS树脂 Resin				
防护等级 Protection grade	IP67	IP67	IP67				
可替代国内型号 Aiyemative model at home and abroad	LJD-□□		ST-F-□	LJ2-□□/□□□			

接近开关 PROXIMITY SWITCH

角柱型 Angular column type

平面安装型 Plane installation type

外形编号 Outward Appearance code		LMF17	LMF21	LMF22	LMF23	LMF24		
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 DETECTION DISTANCE		4mm		2mm	4mm			
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO		LMF22-3002NA	LMF24-3004NA		
			NC		LMF22-3002NB	LMF24-3004NB		
			NO+NC					
	PNP	NO		LMF22-3002PA	LMF24-3004PA			
		NC		LMF22-3002PB	LMF24-3004PB			
		NO+NC						
	交流 AC 90-250 VAC	二线制 two wire system	NO		LMF22-3002LA	LMF24-3004LA		
			NC		LMF22-3002LB	LMF24-3004LB		
		SCR 可控硅 Control- lable silicon	NO					
			NC					
继电器输出 Relay output								
检测距离 DETECTION DISTANCE		20mm	4mm	4mm	5mm	5mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF17-3020NA	LMF21-3004NA	LMF22-3004NA	LMF23-3005NA	LMF24-3005NA
			NC	LMF17-3020NB	LMF21-3004NB	LMF22-3004NB	LMF23-3005NB	LMF24-3005NB
			NO+NC	LMF17-3020NC	LMF21-3004NC	LMF22-3004NC	LMF23-3005NC	LMF24-3005NC
	PNP	NO	LMF17-3020PA	LMF21-3004PA	LMF22-3004PA	LMF23-3005PA	LMF24-3005PA	
		NC	LMF17-3020PB	LMF21-3004PB	LMF22-3004PB	LMF23-3005PB	LMF24-3005PB	
		NO+NC	LMF17-3020PC	LMF21-3004PC	LMF22-3004PC	LMF23-3005PC	LMF24-3005PC	
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF17-3020LA	LMF21-3004LA	LMF22-3004LA	LMF23-3005LA	LMF24-3005LA
			NC	LMF17-3020LB	LMF21-3004LB	LMF22-3004LB	LMF23-3005LB	LMF24-3005LB
		SCR 可控硅 Control- lable silicon	NO	LMF17-2020A				
			NC	LMF17-2020B				
继电器输出 Relay output		LMF17-2020C						
继电器输出 Relay output		LMF17-2020JC						
输出电流 Control output	DC	200mA	200mA	200mA	200mA	200mA		
SCR/继电器 Relay		200mA			200mA	200mA		
输出电压降 Output voltage drop DC/AC	直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V							
消耗电流 Consumption current	直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA							
标准检测物体 Standard detected object	50×50×1(A3铁iron)	12×12×1(A3铁iron)	15×15×1(A3铁iron)	20×20×1(A3铁iron)	12×12×1(A3铁iron)			
重复精度 Repeated precision	0.2	0.01	0.05	0.05	0.05			
响应频率 DC/AC	200Hz/15Hz	500Hz/5Hz	300Hz	500Hz	500Hz/5Hz			
工作环境温度 Working environment temperature	-25°C~+70°C		-25°C~+70°C					
绝缘电阻 Insulation resistance	≥50MΩ	50MΩ	≥50MΩ					
外壳材料 Shell material	ABS树脂 Resin	ABS树脂 Resin		ABS塑料 Plastiil				
防护等级 Protection grade	IP67	IP67	IP67	IP67	IP67			

接近开关 PROXIMITY SWITCH

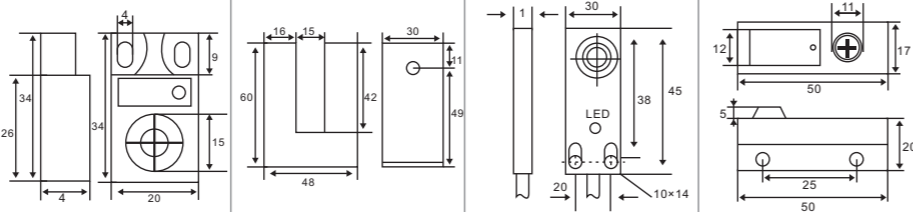
结构分类 Structural category 平面安装型 Plane installation type 角柱型 Angular column type

外形编号 Outward Appearance code LMF25 LMF27 LMF29 LMF30

外形图例
Outward appearance illustration



外形尺寸
Overall dimensions

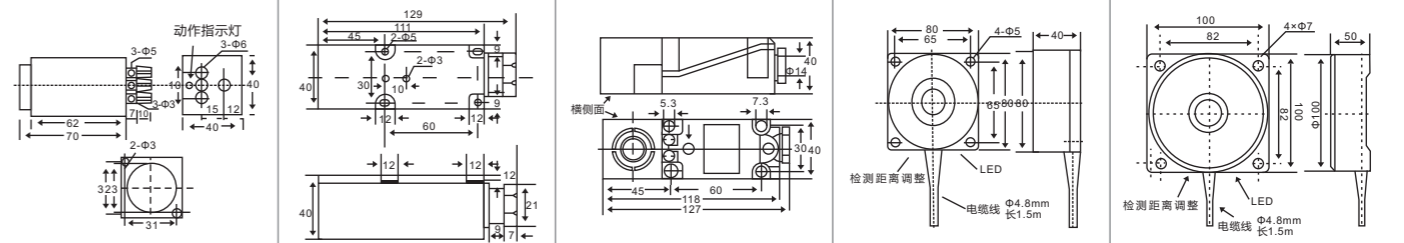


		检测距离 DETECTION DISTANCE					
		5mm					
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO		LMF29-3005NA		
			NC		LMF29-3005NB		
			NO+NC		LMF29-3005NC		
		PNP	NO		LMF29-3005PA		
			NC		LMF29-3005PB		
	交流 AC 90-250 VAC	二线制 two wire system	NO		LMF29-3005PC		
			NC		LMF29-3005LA		
		SCR 可控硅 Control- lable silicon	NO		LMF29-2005A		
			NC		LMF29-2005B		
			NO+NC				
继电器输出 Relay output							
		检测距离 DETECTION DISTANCE					
		5mm	15mm	8mm	4mm		
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF25-3005NA	LMF27-3015NA	LMF29-3008NA	LMF30-3004NA
			NC	LMF25-3005NB	LMF27-3015NB	LMF29-3008NB	LMF30-3004NB
			NO+NC	LMF25-3005NC	LMF27-3015NC	LMF29-3008NC	LMF30-3004NC
		PNP	NO	LMF25-3005PA	LMF27-3015PA	LMF29-3008PA	LMF30-3004PA
			NC	LMF25-3005PB	LMF27-3015PB	LMF29-3008PB	LMF30-3004PB
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF25-3005PC	LMF27-3015PC	LMF29-3008PC	LMF30-3004PC
			NC	LMF25-3005LA	LMF27-3015LA	LMF29-3008LA	LMF30-3004LA
		SCR 可控硅 Control- lable silicon	NO	LMF25-3005LB		LMF29-3008LB	
			NO	LMF25-2005A	LMF27-2015A	LMF29-2008A	LMF30-2004A
			NC	LMF25-2005B	LMF27-2015B	LMF29-2008B	LMF30-2004B
继电器输出 Relay output							
输出电流 Control output	DC	200mA	200mA	200mA	200mA		
	SCR/继电器 Relay	500mA	300mA	300mA	300mA		
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		18×18×1(A3铁iron)	30×30×1(A3铁iron)	25×25×1(A3铁iron)	15×15×1(A3铁iron)		
重复精度 Repeated precision		0.05	0.05	0.05	0.05		
响应频率 DC/AC		500Hz/10Hz	300Hz/10Hz	300Hz	300Hz/10Hz		
工作环境温度 Working environment temperature		-25°C~+70°C	-25°C~+70°C	-25°C~+70°C	-25°C~+70°C		
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ		
外壳材料 Shell material		ABS塑料 Plastil		ABS树脂 Resin			
防护等级 Protection grade		IP67	IP67	IP67	IP67		
可替代国内型号 Alyemative model at home and abroad							

接近开关 PROXIMITY SWITCH

角柱型 Angular column type 平面安装型 Plane installation type

LMF35 LMF36 LMF37 LMF38 LMF39



		检测距离 DETECTION DISTANCE					
		15mm					
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO		LMF37-3015NA		
			NC		LMF37-3015NB		
			NO+NC		LMF37-3015NC		
		PNP	NO		LMF37-3015PA		
			NC		LMF37-3015PB		
	交流 AC 90-250 VAC	二线制 two wire system	NO		LMF37-3015PC		
			NC		LMF37-3015LA		
		SCR 可控硅 Control- lable silicon	NO		LMF37-2015A		
			NC		LMF37-2015B		
			NO+NC		LMF37-2015C		
继电器输出 Relay output							
		15mm	1-20mm	20mm	1-40mm	1-50mm	
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	LMF35-3015NA	LMF36-3020NA	LMF37-3020NA	LMF38-3040NA	LMF39-3050NA
			LMF35-3015NB	LMF36-3020NB	LMF37-3020NB	LMF38-3040NB	LMF39-3050NB
			LMF35-3015NC	LMF36-3020NC	LMF37-3020NC	LMF38-3040NC	LMF39-3050NC
		PNP	LMF35-3015PA	LMF36-3020PA	LMF37-3020PA	LMF38-3040PA	LMF39-3050PA
			LMF35-3015PB	LMF36-3020PB	LMF37-3020PB	LMF38-3040PB	LMF39-3050PB
	交流 AC 90-250 VAC	二线制 two wire system	LMF35-3015PC	LMF36-3020PC	LMF37-3020PC	LMF38-3040PC	LMF39-3050PC
			LMF35-3015LA	LMF36-3020LA	LMF37-3020LA	LMF38-3040LA	LMF39-3050LA
		SCR 可控硅 Control- lable silicon	LMF35-3015LB	LMF36-3020LB	LMF37-3020LB	LMF38-3040LB	LMF39-3050LB
			LMF35-2015A	LMF36-2020A	LMF37-2020A	LMF38-2040A	LMF39-2050A
			LMF35-2015B	LMF36-2020B	LMF37-2020B	LMF38-2040B	LMF39-2050B
继电器输出 Relay output							
输出电流 Control output	DC	200mA	200mA	200mA	200mA	200mA	
	SCR/继电器 Relay	500mA	300mA/2A	300mA/2A	300mA/2A	300mA/2A	
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		40×40×1(A3铁iron)	50×50×1(A3铁iron)	50×50×1(A3铁iron)	100×100×1(A3铁iron)	120×120×1(A3铁iron)	
重复精度 Repeated precision		0.05	0.2	0.2	0.5	0.5	
响应频率 DC/AC		200Hz/15Hz	500Hz/15Hz	200Hz/15Hz	50Hz/10Hz	50Hz/10Hz	
工作环境温度 Working environment temperature		-25°C~+70°C	-25°C~+70°C	-25°C~+70°C	-25°C~+75°C	-25°C~+75°C	
绝缘电阻 Insulation resistance		≥50MΩ	50MΩ	≥50MΩ	50MΩ	50MΩ	
外壳材料 Shell material		ABS树脂 Resin	ABS树脂 Resin	ABS树脂 Resin			
防护等级 Protection grade		IP67	IP67	IP67	IP67	IP67	
可替代国内型号 Alyemative model at home and abroad		JDK-2正负		HY-A20□	TCD-2040□	TCD-2050□	

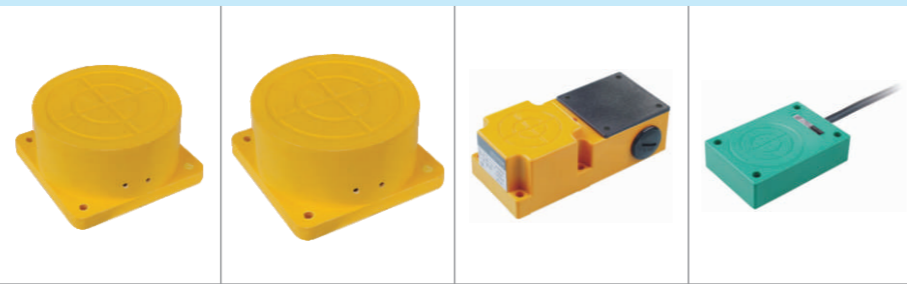
接近开关 PROXIMITY SWITCH

结构分类 Structural category

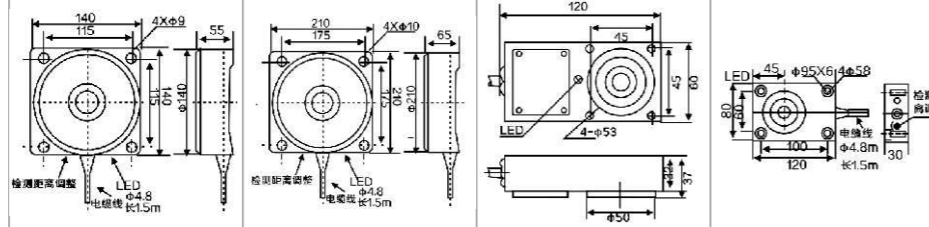
平面安装型 Plane installation type

外形编号 Outward Appearance code LMF40 LMF41 LMF42 LMF43

外形图例
Outward appearance illustration



外形尺寸
Overall dimensions

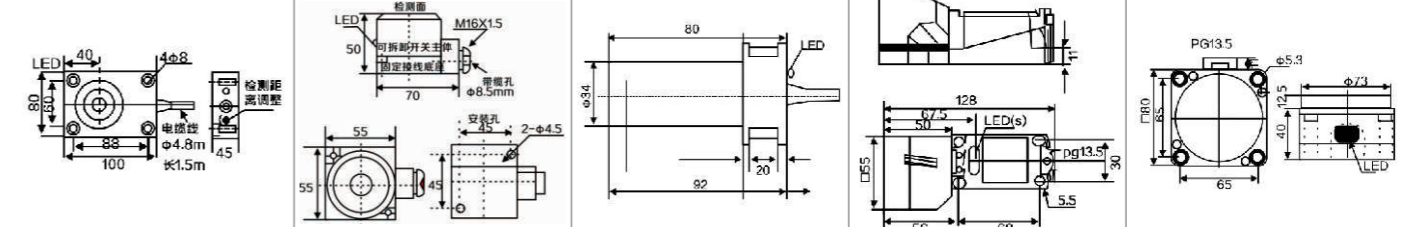


		检测距离 DETECTION DISTANCE					
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO				
			NC				
			NO+NC				
		PNP	NO				
			NC				
	交流 AC 90-250 VAC	二线制 two wire system	NO				
			NC				
		SCR 可控硅 Control- lable silicon	NO				
			NC				
			NO+NC				
继电器输出 Relay output							
		检测距离 DETECTION DISTANCE	80mm	0-120mm	0-25mm	40mm	
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF40-3080NA	LMF41-30120NA	LMF42-3025NA	LMF43-3040NA
			NC	LMF40-3080NB	LMF41-30120NB	LMF42-3025NB	LMF43-3040NB
			NO+NC	LMF40-3080NC	LMF41-30120NC	LMF42-3025NC	LMF43-3040NC
		PNP	NO	LMF40-3080PA	LMF41-30120PA	LMF42-3025PA	LMF43-3040PA
			NC	LMF40-3080PB	LMF41-30120PB	LMF42-3025PB	LMF43-3040PB
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF40-3080LA	LMF41-30120LA	LMF42-3025LA	LMF43-3040LA
			NC	LMF40-3080LB	LMF41-30120LB	LMF42-3025LB	LMF43-3040LB
		SCR 可控硅 Control- lable silicon	NO	LMF40-2080A	LMF41-20120A	LMF42-2025A	LMF43-2040A
			NC	LMF40-2080B	LMF41-20120B	LMF42-2025B	LMF43-2040B
			NO+NC	LMF40-2080C	LMF41-20120C	LMF42-2025C	LMF43-2040C
	继电器输出 Relay output			LMF40-2080JC	LMF41-20120JC	LMF42-2025JC	LMF43-2040JC
	输出电流 Control output		DC	200mA	200mA	200mA	200mA
			SCR/继电器 Relay	300mA/3A	300mA/5A	300mA/2A	300mA/2A
	输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V				
	消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA				
标准检测物体 Standard detected object		160×160×1(A3铁iron)	250×250×1(A3铁iron)	80×80×1(A3铁iron)	100×100×1(A3铁iron)		
重复精度 Repeated precision		0.5	0.5	0.05	0.05		
响应频率 DC/AC		10Hz/5Hz	10Hz/5Hz	50Hz/10Hz	30Hz/10Hz		
工作环境温度 Working environment temperature		-25°C~+75°C	-25°C~+75°C	-25°C~+70°C	-25°C~+70°C		
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ		
外壳材料 Shell material				ABS树脂 Resin	ABS树脂 Resin		
防护等级 Protection grade		IP67	IP67	IP65	IP65		
可替代国内型号 Alyemative model at home and abroad		TCB-2080□	TCC-2120□				

接近开关 PROXIMITY SWITCH

平面安装型 Plane installation type

外形编号 Outward Appearance code LMF45 LMF55 LMF340 LMF370 LMF380



		检测距离 DETECTION DISTANCE						
埋入式 Flush	直流 DC 10-30 VDC	NPN	NO					
			NC					
			NO+NC					
		PNP	NO					
			NC					
	交流 AC 90-250 VAC	二线制 two wire system	NO					
			NC					
		SCR 可控硅 Control- lable silicon	NO					
			NC					
			NO+NC					
继电器输出 Relay output								
		检测距离 DETECTION DISTANCE	0-50mm	25mm	20mm	40mm	40mm	
非埋入式 Non-Flush	直流 DC 10-30 VDC	NPN	NO	LMF45-3050NA	LMF55-3025NA	LMF340-3020NA	LMF370-3040NA	LMF380-3040NA
			NC	LMF45-3050NB	LMF55-3025NB	LMF340-3020NB	LMF370-3040NB	LMF380-3040NB
			NO+NC	LMF45-3050NC	LMF55-3025NC	LMF340-3020NC	LMF370-3040NC	LMF380-3040NC
		PNP	NO	LMF45-3050PA	LMF55-3025PA	LMF340-3020PA	LMF370-3040PA	LMF380-3040PA
			NC	LMF45-3050PB	LMF55-3025PB	LMF340-3020PB	LMF370-3040PB	LMF380-3040PB
	交流 AC 90-250 VAC	二线制 two wire system	NO	LMF45-3050LA	LMF55-3025LA	LMF340-3020LA	LMF370-3040LA	LMF380-3040LA
			NC	LMF45-3050LB	LMF55-3025LB	LMF340-3020LB	LMF370-3040LB	LMF380-3040LB
		SCR 可控硅 Control- lable silicon	NO	LMF45-2050A	LMF55-2025A	LMF340-2020A	LMF370-2040A	LMF380-2040A
			NC	LMF45-2050B	LMF55-2025B	LMF340-2020B	LMF370-2040B	LMF380-2040B
			NO+NC	LMF45-2050C	LMF55-2025C	LMF340-2020C	LMF370-2040C	LMF380-2040C
	继电器输出 Relay output							
	输出电流 Control output		DC	200mA	200mA	200mA	200mA	200mA
			SCR/继电器 Relay	500mA	300mA/2A	300mA	500mA	500mA
	输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
	消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		80×80×1(A3铁iron)	70×70×1(A3铁iron)	35×35×1(A3铁iron)	55×55×1(A3铁iron)	50×50×1(A3铁iron)		
重复精度 Repeated precision		0.5	0.2	0.05	0.5	0.05		
响应频率 DC/AC		200Hz/5Hz	200Hz/10Hz	300Hz/10Hz	200Hz/10Hz	500Hz/10Hz		
工作环境温度 Working environment temperature		-25°C~+70°C	-25°C~+70°C	-25°C~+70°C	-25°C~+70°C	-25°C~+70°C		
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ	50MΩ		
外壳材料 Shell material		塑料 Plastil	ABS树脂 Resin		塑料 Plastil	ABC塑料 Plastil		
防护等级 Protection grade		IP67	IP67	IP67	IP67	IP67		
可替代国内型号 Alyemative model at home and abroad			HE-/HD-				NJ40P-FP-A2-P1	

接插件式接近开关 STRAIGHT CONNECTOR SWITCH

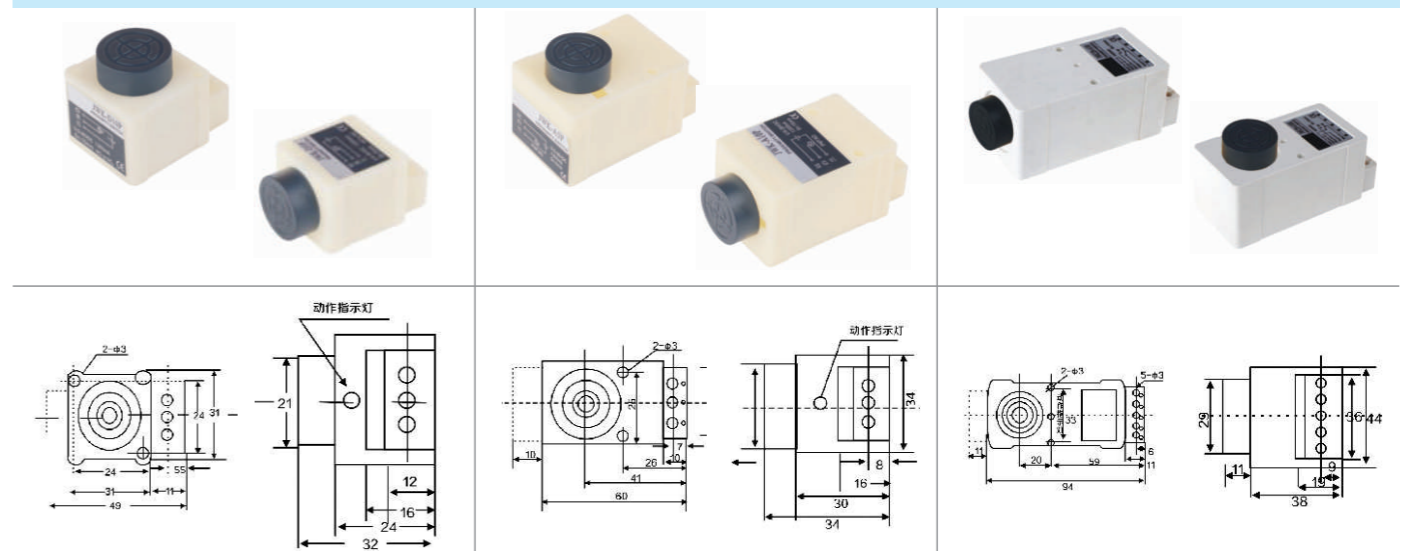
结构分类 Structural category

接插件型 Connector type

外形编号 Outward Appearance code		LM30-□T/LM30-□T3	LMF31	LMF32	LMF33		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		10mm	15mm	内环20mm	5mm		
埋入式 Flush	直流 DC 6-36 VDC	NPN	NO	LM30-3010NAT	LMF31-3015NA	LMF32-3020NA	LMF33-3005NA
			NC	LM30-3010NBT	LMF31-3015NB	LMF32-3020NB	LMF33-3005NB
			NO+NC	LM30-3010NCT	LMF31-3015NC	LMF32-3020NC	LMF33-3005NC
		PNP	NO	LM30-3010PAT	LMF31-3015PA	LMF32-3020PA	LMF33-3005PA
			NC	LM30-3010PBT	LMF31-3015PB	LMF32-3020PB	LMF33-3005PB
			NO+NC	LM30-3010PCT	LMF31-3015PC	LMF32-3020PC	LMF33-3005PC
	交流 AC 90- 250 VAC	二线制 two wire system	NO	LM30-3010LAT	LMF31-3015LA	LMF32-3020LA	LMF33-3005LA
			NC	LM30-3010LBT	LMF31-3015LB	LMF32-3020LB	LMF33-3005LB
			NO+NC	LM30-3010LCT	LMF31-3015LC	LMF32-3020LC	LMF33-3005LC
		SCR 可控硅 Control- lable silicon	NO	LM30-2010AT	LMF31-2015A	LMF32-2020A	LMF33-2005A
			NC	LM30-2010BT	LMF31-2015B	LMF32-2020B	LMF33-2005B
			NO+NC				
继电器输出 Relay output							
检测距离 DETECTION DISTANCE		15mm	20mm	8mm			
非埋入式 Non-Flush	直流 DC 10- 30 VDC	NPN	NO	LM30-3015NAT	LMF31-3020NA	LMF33-3008NA	
			NC	LM30-3015NBT	LMF31-3020NB	LMF33-3008NB	
			NO+NC	LM30-3015NCT	LMF31-3020NC	LMF33-3008NC	
		PNP	NO	LM30-3015PAT	LMF31-3020PA	LMF33-3008PA	
			NC	LM30-3015PBT	LMF31-3020PB	LMF33-3008PB	
			NO+NC	LM30-3015PCT	LMF31-3020PC	LMF33-3008PC	
	交流 AC 90- 250 VAC	二线制 two wire system	NO	LM30-3015LAT	LMF31-3020LA	LMF33-3008LA	
			NC	LM30-3015LBT	LMF31-3020LB	LMF33-3008LB	
			NO+NC	LM30-3015LCT	LMF31-3020LC	LMF33-3008LC	
		SCR 可控硅 Control- lable silicon	NO	LM30-2015AT	LMF31-2020A	LMF33-2008A	
			NC	LM30-2015BT	LMF31-2020B	LMF33-2008B	
			NO+NC				
继电器输出 Relay output							
输出电流 Controloutput	DC	200mA	200mA				
	SCR/继电器 Relay	300mA	300mA				
输出电压降 Output voltage drop DC/AC	直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V						
消耗电流 Consumption current	直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA						
标准检测物体 Standard detected object							
重复精度 Repeated precision	0.5						
响应频率 DC/AC	200Hz/10Hz						
工作环境温度 Working environment temperature	-25℃~+65℃						
绝缘电阻 Insulation resistance	50MΩ						
外壳材料 Shell material	金属 Metal						
防护等级 Protection grade	IP67						
可替代国内型号 Aiyemative model at home and abroad	EZE-X18ME1-M1						

接近开关 PROXIMITY SWITCH

JWK系列接近开关 JWK series proximity switch



参数 Parameters 型号 Type	工作电压 Working voltage	输出电压降 Output voltage drop	输出电流 Controloutput	检测距离 Detection distance	响应频率 Response frequency	输出形式 Output form	壳体材料及防护等级 Shell material and protection grade
JWK-A5P	DC:6~36V	≤1V	200mA	5mm	200Hz	三线常开或常闭 three-wire NO or NC	塑料 Plastil ABS IP67
JWK-D5P						二线的常开或常闭 two-wire NO or NC	
JWK-A5PJ		≤3V	100mA			三线常开或常闭 three-wire NO or NC	
JWK-D5PJ						二线的常开或常闭 two-wire NO or NC	
JWK-A10P	DC:6~36V	≤1V	200mA	10mm	200Hz	三线常开或常闭 three-wire NO or NC	塑料 Plastil ABS IP67
JWK-D10P						二线的常开或常闭 two-wire NO or NC	
JWK-A10PJ		≤3V	100mA			三线常开或常闭 three-wire NO or NC	
JWK-D10PJ						二线的常开或常闭 two-wire NO or NC	
JWK200-A10J	AC:220V	≤7V	3A	10mm	≥15Hz	一组常开或常闭 Single NO or NC	塑料 Plastil ABS IP67
JWK220-D10J						一组常开或常闭 Single NO or NC	
JWK220-A10JK						一组常开或常闭 Single NO or NC	
JWK220-D10JK						一组常开或常闭 Single NO or NC	

LXJo-1A、1B、2D系列接近开关 LXJo-1A、1B、2D series proximity switch

用途 Application

LXJo系列接近开关(又称无触点行程开关)的作用是在接近金属时就动作。它在机床及其它设备中作无接触、无压力的行程监测和控制之用,也可以用来液面控制,转动机构的转速,转数控制装置中作位置检测变送器。

The function of LXJo series proximity switch (alias non-contact travel switch) is to act while approaching metal. It is used in machine tools and other equipments for travel supervision and control with out any contact or pressure. In addition, it is used as position detection transducer in the equipments like liquid level control, speed and revolution control of rotation gear, etc.

主要参数 Main parameters

1. 供电电源 Power supply mains: AC172V、AC220V、AC380V
2. 输出方式 Output way: 一开一闭
3. 输出电流 Output current: 127V、220V、1A、380V、500mA
4. 检测距离 Detection distance: 2-10mm±%
5. 开关频率 ON-OFF frequency: 5Hz

接近开关 PROXIMITY SWITCH

特点 Characteristic

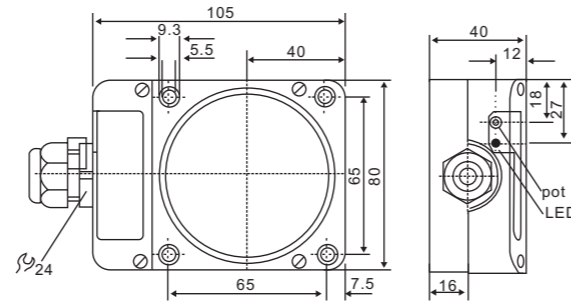
ID000A
IDE2060-FBOA/3D

电感式传感器
Inductive sensor
矩形塑料
Rectangular, plastics
接线端子
Terminals

感应距离 60mm [nf]
Sensing range 60mm [nf]
可设定
adjustable
非齐平安装
non-flush mountable



外形尺寸 Overall dimensions



电气设计 Electrical design

AC/DC

输出功能 Output	常开/常闭可选 normally open / closed programmable
工作电压(V) Operating voltage(V)	20...250 AC/DC
负载电流(持续的)(mA) Current rating (continuous)(mA)	200 AC, 100 DC *
负载电流(最大值)(mA) Current rating (peak)(mA)	1:2.2A (20ms / 0.5Hz)
最小的负载电流(mA) Minumum load current(mA)	5
短路保护 Short circuit proof	否 no
反极性保护 Reverse polarity protection	否 no
过载保护 Overload protection	否 no
电压降(V) Voltage drop(V)	<AC6.5 / <DC6
漏电流(mA) Leakage current (mA)	<2.5(AC 250V) / <1.3(AC 110V) / <0.8(DC 24V)
实际感应电流(mm) Real sensing range(Sn)(mm)	60±10%
工作距离(mm) Operating distance(mm)	0...48.6
开关点偏移(Sr的百分比) Hysteretic(% of Sn)	-10...10
迟滞(Sr的百分比) HSwitch-point drift(% of Sr)	1...15
开关频率(Hz) Switching frequency(Hz)	4
修正系数 Correction factors	钢(St37)=1 / 不锈钢约0.7 / 黄铜约0.4 / Al约0.3 / Cu约0.2 mild steel=1 / stainless steel approx. 0.7 / brass approx. 0.4 / aluminum approx. 0.3 / copper approx. 0.2
环境温度(°C) Ambient temperature (°C)	-20...60**
防护等级 Protection	IP65, II
EMC电磁兼容 EMC	EN60947-5-2
产品标记 Marking of the unit	II 3D Ex tD A22 IP65 T90° C X
外壳材料 Housing materials	460
功能显示 Function display	PPE
开关状态LED Switching status LED	黄色 yellow
接口 Connection	接线端子至2.5mm ² ; 电缆直径5.5...13mm, 电缆螺旋套管接头M20×1.5 terminals up to 2.5mm ² ; cable diameter 5.5...13mm, cable gland M20×1.5
用于电缆螺旋套管接头的拧紧扭矩(Nm) tightening torque for cable gland(Nm)	3.5
重量(kg) Weight (kg)	0.454
注释 Remarks	*)AC:350 mA (...50°C) / DC:250mA(...80°C),如果该产品在易爆区域外使用。 **) -25...80 °C 如果在易爆区域外使用。建议:短路后请一定检查该产品的安全功能。 *)AC:350 mA (...50°C) / DC:250mA(...80°C) when used outside the hazardous area **) -25...80 °C when used outside the hazardous area. Recommendation: check the unit for reliable function after a short circuit.
配件(同时供货) Accessories (included)	螺丝刀 screwdriver

接近开关 PROXIMITY SWITCH

结构分类 Structural category

接插件型 Connector type

外形编号 Outward Appearance code	PR08	PR12	PR18	PR30			
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE	1.5mm	2mm	5mm	10mm			
埋入式 Flush	直流 DC 6-36 VDC	NPN	NO	PR08-1.5DN	PR12-2DN	PR18-5DN	PR30-10DN
			NC	PR08-1.5DN2	PR12-2DN2	PR18-5DN2	PR30-10DN2
	PNP	NO+NC	PR08-1.5DN3	PR12-2DN3	PR18-5DN3	PR30-10DN3	
		NO	PR08-1.5DP	PR12-2DP	PR18-5DP	PR30-10DP	
	交流 AC 90- 250 VAC	二 线 制 two wire system	NC	PR08-1.5DP2	PR12-2DP2	PR18-5DP2	PR30-10DP2
			NO+NC	PR08-1.5DP3	PR12-2DP3	PR18-5DP3	PR30-10DP3
	SCR 可控硅 Control- lable silicon	NO	PR08-1.5DO	PR12-2DO	PR18-5DO	PR30-10DO	
		NC	PR08-1.5DC	PR12-2DC	PR18-5DC	PR30-10DC	
	继电器输出 Relay output	NO+NC	NO	PR08-1.5AO	PR12-2AO	PR18-5AO	PR30-10AO
			NC	PR08-1.5AC	PR12-2AC	PR18-5AC	PR30-10AC
非埋入式 Non-Flush	直流 DC 10- 30 VDC	NPN	NO	PR08-2DN	PR12-4DN	PR18-8DN	PR30-15DN
			NC	PR08-2DN2	PR12-4DN2	PR18-8DN2	PR30-15DN2
	PNP	NO+NC	PR08-2DN3	PR12-4DN3	PR18-8DN3	PR30-15DN3	
		NO	PR08-2DP	PR12-4DP	PR18-8DP	PR30-15DP	
	交流 AC 90- 250 VAC	二 线 制 two wire system	NC	PR08-2DP2	PR12-4DP2	PR18-8DP2	PR30-15DP2
			NO+NC	PR08-2DP3	PR12-4DP3	PR18-8DP3	PR30-15DP3
	SCR 可控硅 Control- lable silicon	NO	PR08-2DO	PR12-4DO	PR18-8DO	PR30-15DO	
		NC	PR08-2DC	PR12-4DC	PR18-8DC	PR30-15DC	
	继电器输出 Relay output	NO+NC	NO	PR08-2AO	PR12-4AO	PR18-8AO	PR30-15AO
			NC	PR08-2AC	PR12-4AC	PR18-8AC	PR30-15AC
输出电流 Control output	DC	200mA	200mA				
SCR/继电器 Relay	300mA	300mA					
输出电压降 Output voltage drop DC/AC	直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V						
消耗电流 Consumption current	直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA						
标准检测物体 Standard detected object							
重复精度 Repeated precision	0.5	0.5					
响应频率 DC/AC	200Hz/10Hz	200Hz/10Hz					
工作环境温度 Working environment temperature	-25°C~+65°C	-25°C~+65°C					
绝缘电阻 Insulation resistance	50MΩ	50MΩ					
外壳材料 Shell material	金属 Metal	金属 Metal					
防护等级 Protection grade	IP67	IP67					
可替代国内型号 Alyemative model at home and abroad	EZE-X18ME1-M1						

接近开关 PROXIMITY SWITCH

结构分类 Structural category

接插件型 Connector type

外形编号 Outward Appearance code

E2E

外形图例
Outward appearance illustration



外形尺寸
Overall dimensions

		检测距离 DETECTION DISTANCE		2mm	4mm	8mm	10mm
埋入式 Flush	直流 DC 6-36 VDC	NPN	NO	E2E-X2E1	E2E-X4E1	E2E-X8E1	E2E-X10E1
			NC	E2E-X2E2	E2E-X4E2	E2E-X8E2	E2E-X10E2
			NO+NC	E2E-X2E3	E2E-X4E3	E2E-X8E3	E2E-X10E3
		PNP	NO	E2E-X2F1	E2E-X4F1	E2E-X8F1	E2E-X10F1
			NC	E2E-X2F2	E2E-X4F2	E2E-X8F2	E2E-X10F2
			NO+NC	E2E-X2F3	E2E-X4F3	E2E-X8F3	E2E-X10F3
	交流 AC 90- 250 VAC	二线制 two wire system	NO	E2E-X2D1	E2E-X4D1	E2E-X8D1	E2E-X10D1
			NC	E2E-X2D2	E2E-X4D2	E2E-X8D2	E2E-X10D2
		SCR 可控硅 Control- lable silicon	NO	E2E-X2Y1	E2E-X4Y1	E2E-X8Y1	E2E-X10Y1
			NC	E2E-X2Y2	E2E-X4Y2	E2E-X8Y2	E2E-X10Y2
继电器输出 Relay output							
		检测距离 DETECTION DISTANCE		4mm	5mm	10mm	18mm
非埋入式 Non-Flush	直流 DC 10- 30 VDC	NPN	NO	E2E-X4ME1	E2E-X5ME1	E2E-X10ME1	E2E-X18ME1
			NC	E2E-X4ME2	E2E-X5ME2	E2E-X10ME2	E2E-X18ME2
			NO+NC	E2E-X4ME3	E2E-X5ME3	E2E-X10ME3	E2E-X18ME3
		PNP	NO	E2E-X4MF1	E2E-X5MF1	E2E-X10MF1	E2E-X18MF1
			NC	E2E-X4MF2	E2E-X5MF2	E2E-X10MF2	E2E-X18MF2
			NO+NC	E2E-X4MF3	E2E-X5MF3	E2E-X10MF3	E2E-X18MF3
	交流 AC 90- 250 VAC	二线制 two wire system	NO	E2E-X4MD1	E2E-X5MD1	E2E-X10MD1	E2E-X18MD1
			NC	E2E-X4MD2	E2E-X5MD2	E2E-X10MD2	E2E-X18MD2
		SCR 可控硅 Control- lable silicon	NO	E2E-X4MY1	E2E-X5MY1	E2E-X10MY1	E2E-X18MY1
			NC	E2E-X4MY2	E2E-X5MY2	E2E-X10MY2	E2E-X18MY2
继电器输出 Relay output							
输出电流 Control output		DC	200mA	200mA			
		SCR/继电器 Relay	300mA	300mA			
输出电压降 Output voltage drop DC/AC		直流(NPN PNP)型3V以下、二线型:3.9V以下、交流AC 10V以下 DC<3V、AC<10V					
消耗电流 Consumption current		直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下 DC<15mA、AC<10mA					
标准检测物体 Standard detected object		0.5					
重复精度 Repeated precision		0.5					
响应频率 DC/AC		200Hz/10Hz					
工作环境温度 Working environment temperature		-25°C~+65°C					
绝缘电阻 Insulation resistance		50MΩ					
外壳材料 Shell material		金属 Metal					
防护等级 Protection grade		IP67					
可替代国内型号 Alternative model at home and abroad		EZE-X18ME1-M1					

接近开关 PROXIMITY SWITCH

特点 Characteristic

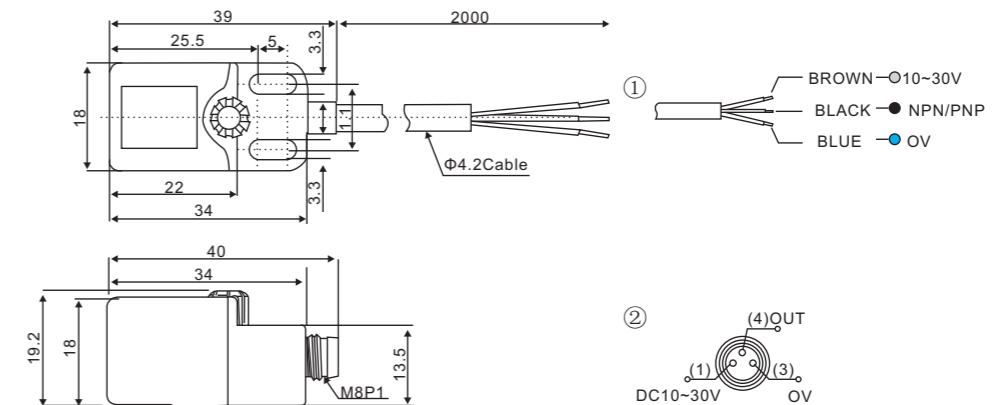
- 保护结构达到IP67的规格，能有效的防水
The IP67 rating is designed to the effective waterproof
- 具有双LED，检测操作更方便
Build-in twin LED, convenient for checking the operation
- 插入式接线，安装更换很容易
Plug-in connector type is available, easy to connect, anyone can replace the new sensor in a minute.
- 具有长形孔，可容易微调安装
Oval hole for easy installation and adjustment.



规格表 Specifications

	NPN N.O	RN04-N	RN04-ND1
输出模式 Output method	NPN N.C	RN04-N2	—
	PNP N.O	RN04-P	RN04-PD1
	PNP N.C	RN04-P2	—
检测方向 Sensng Surface	前方 Top surface		
标准检测物体 Standard detected object	Iron 18*18*1mm		
检测距离 Sensung distance	5mm		
建议距离 Secure sensing distance	0 to 4mm		
迟滞 Hysteresis	≤10% of sensing distance		
反应时间 Response time	2ms Max		
工作电压 Operating voltage	DC10~30V		
消耗电流 Current consumption	≤8mA no-load		
负载电流 Load current	100mA Max. at DC30V		
漏电流 Leakage current	≤1.1mA no-load		
残余电压 Residual voltage	≤DC1.5V		
隔离阻抗 Insulation resistance	20mΩ min. (DC500V)		
绝缘耐压 Voltage withstandability	AC1000V 60Hz for 60 secretary		
工作温度范围 Operating temperature	-20°C~+60°C		
防水等级 Protection degree	IP64/IP67(Option)		
出线方式 Wiring method	Φ4.2*2M/3wires	M8接头 connector	
重量 Weight	Approx.60g	Approx.12g	

尺寸图 Dimensions



接近开关 PROXIMITY SWITCH

特点 Characteristic

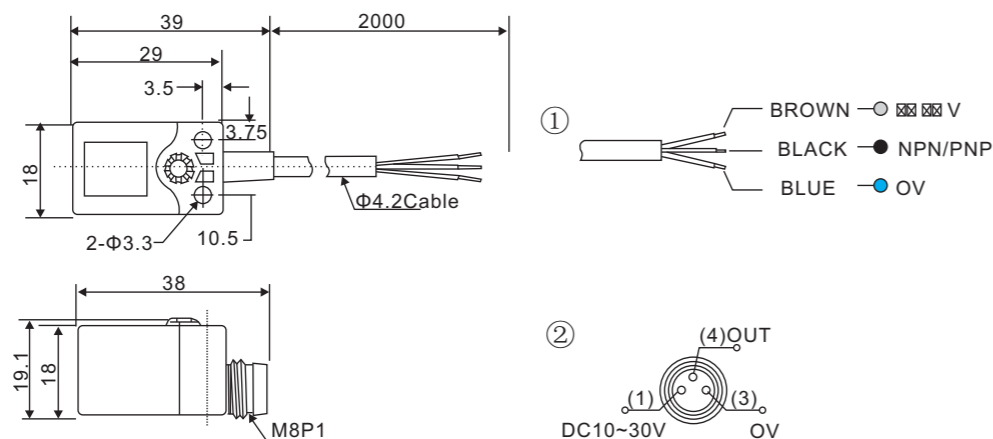
- 具有双LED，检测操作更方便
Build-in twin LED, convenient for checking the operation
- 插入式接线，安装更换很容易
Plug-in connector type is available, easy to connect, anyone can replace the new sensor in a minute.



规格表 Specifications

输出模式 Output method	NPN N.O	RN05-N	RN05-ND1
	NPN N.C	RN05-N2	—
	PNP N.O	RN05-P	RN05-PD1
	PNP N.C	RN05-P2	—
检测方向 Sensng Surface	前方 Top surface		
标准检测物体 Standard detected object	Iron 18*18*1mm		
检测距离 Sensung distance	5mm		
建议距离 Secure sensing distance	0 to 4mm		
迟滞 Hysteresis	≤10% of sensing distance		
反应时间 Response time	2ms Max		
工作电压 Operating voltage	DC10~30V		
消耗电流 Current consumption	≤8mA no-load		
负载电流 Load current	100mA Max. at DC30V		
漏电流 Leakage current	≤1.1mA no-load		
残余电压 Residual voltage	≤DC1.5V		
隔离阻抗 Insulation resistance	20mΩ min. (DC500V)		
绝缘耐压 Voltage withstandabiligy	AC1000V 60Hz for 60 secretary		
工作温度范围 Operating temperature	-20°C~+60°C		
防水等级 Protection degree	IP64/IP67 (Option)		
出线方式 Wiring method	Φ4.2*2M/3wires	M8接头 connector	
重量 Weight	Approx.60g	Approx.12g	

尺寸图 Dimensions



传感器插头线 SENSOR PLUG WIRE

类型 Structural category	直形孔座接插电缆 接插件M8×1		弯形孔座接插电缆 接插件M8×1		弯形孔座接插电缆 接插件M8×1		直形孔座接插电缆 接插件M12×1
外形编号Outward Appearance code	RK01-1-2	RK01-1-3	RK01-2-2	RK01-2-3	RK01-2-2-4	RK01-2-3-4	RK02-1-2
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
接插外形 CONTACT VIEW							
应用 APPLICATION	DC二线 AC二线 NO/NC	NPN/PNP NO/NC	DC二线 AC二线 NO/NC	NPN/PNP NO/NC	DC二线 AC二线 NO/NC	NPN/PNP NO/NC	DC二线 AC二线 NO/NC
接插件 Connector							
外套颜色 Skind color							
连接螺母材料 Coupling nut material							
接触负载 Contact load	黑Black Cuzn, nickel plated						
过流值 Over-current value(A)							
额定电压 Rated voltage(V)	4.0						
电缆 Wire 长度 Length	250						
电缆外皮材料 Cable jacket material	2m PVC						
绝缘体颜色 insulator color							
输出显示 (LED) output diaplay (LED)	bu,bu,bk 3×0.5	bu,bu 2×0.5	Black,bu,bu 2×0.5	bu,bu,bk,wh 4×0.34			
通电指示 power indicator	1						
一般数据 common data	-						
绝缘电阻 insulation resistance	≥10 ⁹ Ω						
环境温度范围:接插件 environment temperature scope(°C)	-25...+80						
环境温度范围:电缆 environment temperature scope(°C)	-25...+80						
防护等级 (DIN 40 050) protection level	IP67 250VAC/300VDC,Gr.C						
电容量 Capacotance							

传感器插头线 SENSOR PLUG WIRE

类型 Structural category	直形孔座接插电缆 接插件M12×1				弯形孔座接插电缆 接插件M12×1				
型号 Type	RK02-1-3	RK02-1-4	RK02-2-2	RK02-2-3-N	RK02-2-3-P	RK02-2-4-N	RK02-2-4-P	RK03-3	RK03-4
外形图例 Outward appearance illustration									
外形尺寸 Overall dimensions									
接插外形 CONTACT VIEW									
应用 APPLICATION	NPN/PNP NO/NC	NPN/PNP NO/NC	DC二线 AC二线 NO/NC	NPN NO/NC	PNP NO/NC	NPN NO/NC	PNP NO/NC	NPN/PNP NO/NC	NPN/PNP NO/NC
接插件 Connector	M12x1								
外套颜色 Skind color	黑Black								
连接螺母材料 Coupling nut material	Cuzn, nickel plated								
接触负载 Contact load	4.0								
过流值 Over-current value(A)	250								
额定电压 Rated voltage(V)	2m								
电缆 Wire 长度 Length	PVC								
电缆外皮材料 Cable jacket material									
绝缘体颜色 insulator color									
输出显示 (LED) output display (LED)	bu, bu, bk 3×0.5	bu, bu, bk, wh 4×0.34	YES	YES	YES	YES	YES	YES	YES
通电指示 power indicator	-								
一般数据 common data	-								
绝缘电阻 insulation resistance	≥10 ⁹ Ω								
环境温度范围:接插件 environment temperature scope(°C)	-25...+65								
环境温度范围:电缆 environment temperature scope(°C)	-25...+65								
防护等级 (DIN 40 050) protection level	IP67								
电容量 Capacitance	250VAC/300VDC, Gr.C								

交直流通用型接近开关 AC-DC UNIVERSAL APPRIACH SWITCH

结构分类 Structural category	圆柱型 Cylindrical type					
外形编号 Outward Appearance code	LM12		LM18		LM24	
外形图例 Outward appearance illustration						
外形尺寸 Overall dimensions						
安装方式 installation	2mm Flush	4mm non-Flush	5mm Flush	8mm non-Flush	8mm Flush	10mm non-Flush
AC/DC	常开 normally open LM12-4002A	常开 normally open LM12-4004A	常开 normally open LM18-4005A	常开 normally open LM18-4008A	常开 normally open LM24-4008A	常开 normally open LM24-4010A
	常闭 normally close LM12-4002B	常闭 normally close LM12-4004B	常闭 normally close LM18-4005B	常闭 normally close LM18-4008B	常闭 normally close LM24-4008B	常闭 normally close LM24-4010B
工作电压 working voltage	30-240V DC/AC					
输出电流 output current	100-300mA					
开关频率 switching frequency	15Hz					
工作温度 Working temperature	-25°C~+70°C					
防护等级 Protection level	IP67					

结构分类 Structural category	圆柱型 Cylindrical type	角柱型 Angular column type	平面安装型 Plane installation type	
外形编号 Outward Appearance code	LM30	LMF37	LMF38	
外形图例 Outward appearance illustration				
外形尺寸 Overall dimensions				
安装方式 installation	10mm Flush	15mm non-Flush	20mm non-Flush	40mm non-Flush
AC/DC	常开 normally open LM30-4010A	常开 normally open LM30-4014A	常开 normally open LMF37-4020A	常开 normally open LMF38-4040A
	常闭 normally close LM30-4010B	常闭 normally close LM30-4014B	常闭 normally close LMF37-4020B	常闭 normally close LMF38-4040B
工作电压 working voltage	30-240V DC/AC			
输出电流 output current	100-300mA			
开关频率 switching frequency	15Hz			
工作温度 Working temperature	-25°C~+70°C			
防护等级 Protection level	IP67			

安全防爆型接近开关 SAFETY EXPLOSION-PROOF PROXIMITY SWITCH

结构分类 Structural category		防爆传感器 Namur sensor			
外形编号 Outward Appearance code	AM8-3001LB	AM8-3002LB	AM8-3005LB	AM8-3008LB	AM8-3008LB
外形图例 Outward appearance illustration					
外形编号 Outward Appearance code	AM12-3002LB	AM12-3004LB	AM30-3010LB	AM30-3015LB	AM30-3015LB
外形图例 Outward appearance illustration					
额定检测距离 Rated sensing distance					

安全防爆型接近开关 Safety explosion-proof proximity switch

- 因NAMUR传感器为低电压供电，微电流输出，体积小等等，所以在具有防爆要求的特殊场合应用。
- With low-voltage power supply, micro-current output, small volume and other advantages, Namur sensors can be applied for special places with requirements of explosion proof.

标准检测体Q235(mm) standard detecting object Q235 steel(mm)		12×12×1t	12×12×1t	18×18×1t	30×30×1t
具备型号 Model	二线常闭 埋入 Two-wire normally close	AM8-3001LB	AM12-3002LB	AM18-3005LB	AM30-3010LB
	二线常闭 非埋 Two-wire normally close	AM8-3002LB	AM12-3004LB	AM18-3008LB	AM30-3015LB
技术参数 specifications	额定电压 rated voltage	8.2V	8.2V	8.2V	8.2V
	振荡电流 / 停荡电流 oscillating current / stop pscillating current	≥2.2mA/≤1mA	≥2.2mA/≤1mA	≥2.2mA/≤1mA	≥2.2mA/≤1mA
	负载电阻 load resistance	1KΩ	1KΩ	1KΩ	1KΩ
	开关频率: 埋入 / 非埋 switch frequency, flusn / non-fish	1.5Hz/1KHz	1.5Hz/1KHz	1Hz/700KHz	300Hz/200KHz
	外壳材料 shell material	黄铜镀镍 Nickel-plated brass	黄铜镀镍 Nickel-plated brass	黄铜镀镍 Nickel-plated brass	黄铜镀镍 Nickel-plated brass
	防护等级 protection level	IP67	IP67	IP67	IP67
	工作环境温度 protection level	-20°C~70°C	-20°C~70°C	-20°C~70°C	-20°C~70°C
外接线圈 external wiring diagram					

电容式接近开关 CAPACITANCE PROXIMITY SWITCH

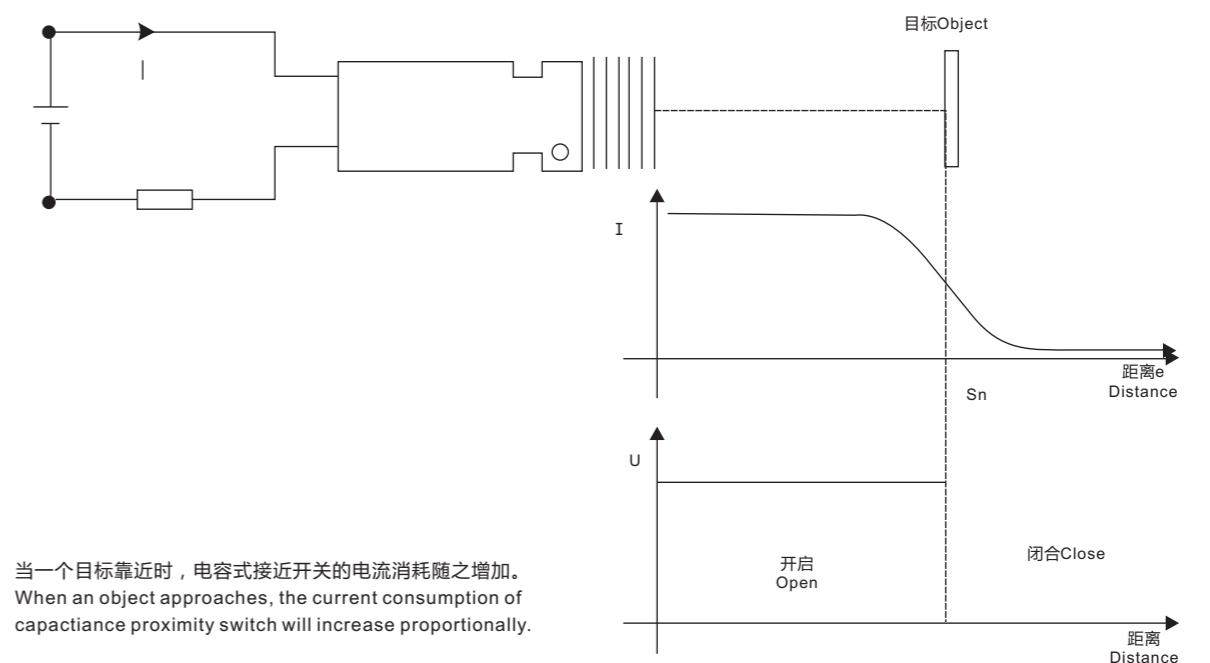
电容式接近开关的工作原理 Working principle of capacitance proximity switch

结构分类 Structural category	目标 Object	感应面 Inductive surface	RC振荡器 RC oscillator	开关级 switching stage	输出级 magnified output stage
外形图例 Outward appearance illustration					

电容式接近开关 Capacitance proximity switch

- 电容式传感器的感应面由两个同轴金属电极构成，很象“打开的”电容电极，该两个电极构成一个电容，串接在RC震荡回路中。
- 电源接通时，RC振荡器不振荡，当一个目标朝着电容器的电极靠近时，电容器的容量增加，使振荡器开始振荡。通过后级电路的处理，将振荡和振荡两种信号转换成开关信号，从而起到了检测有无物体存在的目的。该传感器能检测金属物体，也能检测非金属物体，对金属物体可以获得最大的动作距离，对非金属物体动作距离决定于材料的介电常数 ϵ ，材料的介电常数越大，可获得的动作距离越大。
- The induction surface of capacitance sensor is composed of two coaxial metal electrodes, which form a capacitor and connected on RC oscillation circuit, just like an open capacitor electrode.
- When connecting to power supply, RC oscillator does not work. When an object is close to capacitor electrode, the capacitor capacity will increase, and the oscillator will vibrate. Through the treatment of behind stage circuit, both signals of stop oscillation and oscillation will be converted to switch signs for checking the existence of object. this distance can be obtained, but to nonmetal object, the action distance is determined by material dielectric constant, the more dielectric constant, the more action distance will be obtained.

外形图例 Outward appearance illustration



当一个目标靠近时，电容式接近开关的电流消耗随之增加。When an object approaches, the current consumption of capacitance proximity switch will increase proportionally.

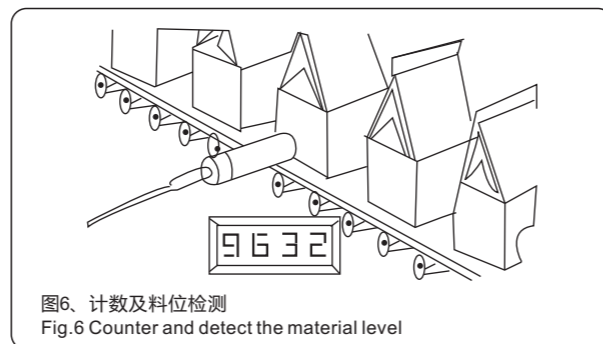
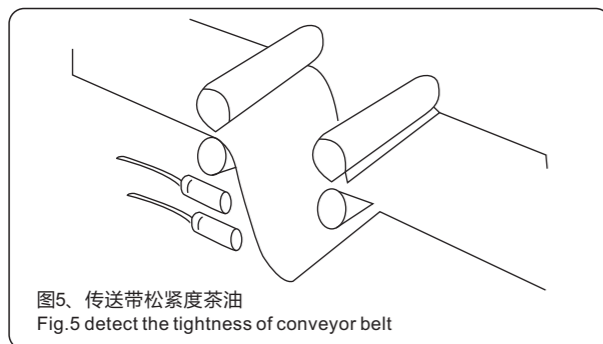
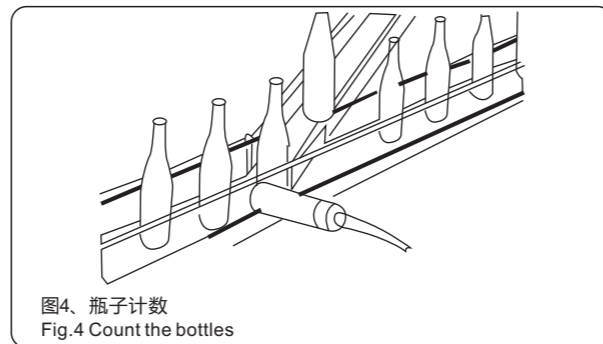
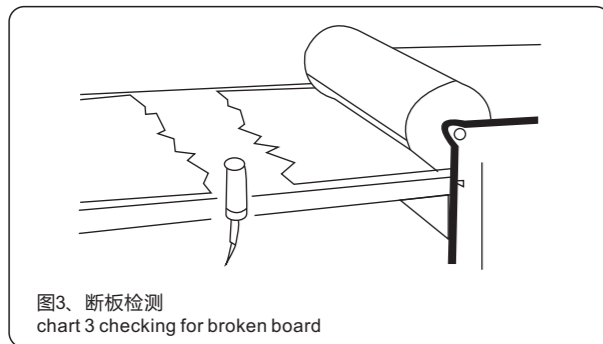
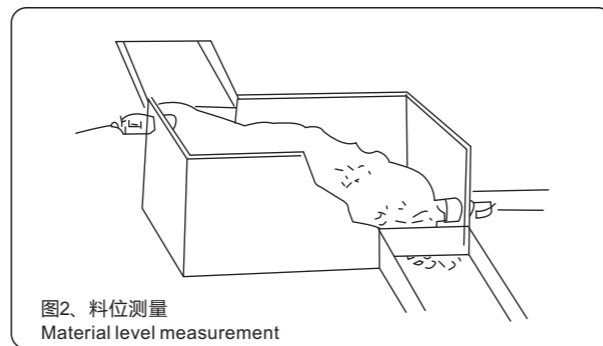
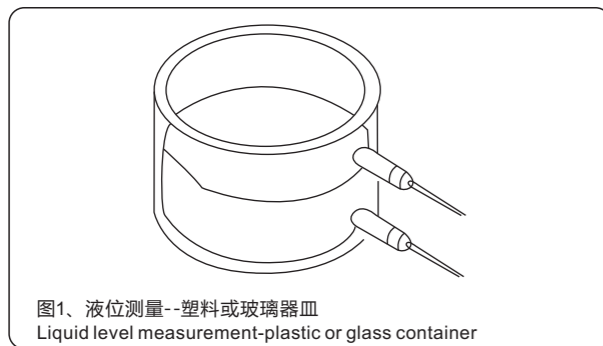
电容式接近开关 CAPACITANCE PROXIMITY SWITCH

一些重要材料的介电常数如下表:

The dielectric constants for some important materials are as listed as below:

材料 Materials	介电常数 Dielectric constant	材料 Materials	介电常数 Dielectric constant	材料 Materials	介电常数 Dielectric constant	材料 Materials	介电常数 Dielectric constant
合成树脂粘接剂 Synthetic resin adhesive	3.6	苯乙烯 Styrene	3	酒精 Alcohol	25.8	聚乙烯化合物 Polyvinyl	2.9
云母 Mica	6	陶瓷 Porcelain	4.4	玻璃 Glass	5	石英玻璃 Quartz glass	3.7
硬橡胶 Ebonite	4	石蜡 Petrolin	2.2	硬纸 Cardboard	4.5	硅 Silicon	2.8
大理石 Marble	8	石英沙 Quartz sand	4.5	电缆胶皮化合物 Cable rubber compound	2.5		
纸 Paper	2.3	软橡胶 Soft rubber	2.5	汽油 Gasoline	2.2		
有机玻璃 Organic glass	3.2	水 Water	80	木材 Wood	2.7		

应用图例 application illustration








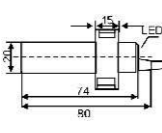
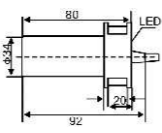
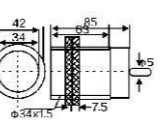
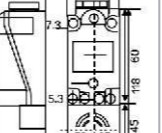
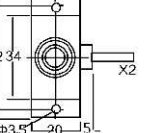
电容式接近开关 CAPACITANCE PROXIMITY SWITCH

结构分类 Structural category

电容式接近开关 Capacitance proximity switch

外形编号 Outward Appearance code		CM12	CM18	CM24	CM30		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 DETECTION DISTANCE		0-2mm	0-5mm	0-8mm	0-10mm		
埋入式 Flush	直流 DC 6-36 VDC	NPN	NO	CM12-3002NA	CM18-3005NA	CM24-3008NA	CM30-3010NA
			NC	CM12-3002NB	CM18-3005NB	CM24-3008NB	CM30-3010NB
			NO+NC	CM12-3002NC	CM18-3005NC	CM24-3008NC	CM30-3010NC
	交流 AC 90- 250 VAC	PNP	NO	CM12-3002PA	CM18-3005PA	CM24-3008PA	CM30-3010PA
			NC	CM12-3002PB	CM18-3005PB	CM24-3008PB	CM30-3010PB
			NO+NC	CM12-3002PC	CM18-3005PC	CM24-3008PC	CM30-3010PC
SCR 可控硅 Control- lable silicon	NO	CM12-2002A	CM18-2005A	CM24-2008A	CM30-2010A		
	NC	CM12-2002B	CM18-2005B	CM24-2008B	CM30-2010B		
检测距离 DETECTION DISTANCE		0-4mm	0-8mm	0-12mm	0-15mm		
非埋入式 Non-Flush	直流 DC 6-36 VDC	NPN	NO	CM12-3004NA	CM18-3008NA	CM24-3012NA	CM30-3015NA
			NC	CM12-3004NB	CM18-3008NB	CM24-3012NB	CM30-3015NB
			NO+NC	CM12-3004NC	CM18-3008NC	CM24-3012NC	CM30-3015NC
	交流 AC 90- 250 VAC	PNP	NO	CM12-3004PA	CM18-3008PA	CM24-3012PA	CM30-3015PA
			NC	CM12-3004PB	CM18-3008PB	CM24-3012PB	CM30-3015PB
			NO+NC	CM12-3004PC	CM18-3008PC	CM24-3012PC	CM30-3015PC
SCR 可控硅 Control- lable silicon	NO	CM12-2004A	CM18-2008A	CM24-2012A	CM30-2015A		
	NC	CM12-2004B	CM18-2008B	CM24-2012B	CM30-2015B		
可检测体 Detectable object		导体及介电体 conductor and dielectric body					
消耗电流 Consumption current		直流(NPN PNP)型 DC12V时8mA 24V时15mA、交流型: 10mA以下、DC<15mA、AC<10mA					
输出电流 Output current		直流:200mA, 交流型:300mA					
可输出电压降 Output voltage drop DC/AC		直流(NPN PNP)3V以下, 交流型:7V以下、DC<3V、AC<7V					
响应频率 DC/AC Response frequency		直流:50Hz, 交流型:10Hz					
外壳材料 Shell material		金属 Metal	ABS树脂/金属 Resin, Metal	金属 Metal	金属 Metal/ABS树脂 Resin		
工作环境温度 Working environment temperature		-25°C~70°C					
绝缘电阻 Insulation resistance		50MΩ					
防护等级 Protection grade		IEC标准IP54 IEC standard IP54					
可替代国内型号 Aiyemative model at home and abroad		LJC18A3-□□	LJC24A3-□□	E2K-X15M□			

电容式接近开关 CAPACITANCE PROXIMITY SWITCH

结构分类 Structural category		电容式接近开关 Capacitance proximity switch						
外形编号 Outward Appearance code		CM20	CM34	CM35	CMF37	E2K		
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 DETECTION DISTANCE								
埋入式 Flush	直流 DC 6-36 VDC	NPN	NO					
			NC					
			NO+NC					
	交流 AC 90- 250 VAC	PNP	NO					
			NC					
			NO+NC					
	SCR 可控硅 Control- lable silicon	NO						
		NC						
检测距离 DETECTION DISTANCE								
			0-10mm	0-20mm	0-25mm	0-25mm	0-10mm	
非埋入式 Non-Flush	直流 DC 6-36 VDC	NPN	NO	CM20-3010NA	CM34-3020NA	CM35-3025NA	CM37-3025NA	E2K-F10MC1
			NC	CM20-3010NB	CM34-3020NB	CM35-3025NB	CM37-3025NB	E2K-F10MC2
			NO+NC	CM20-3010NC	CM34-3020NC	CM35-3025NC	CM37-3025NC	E2K-F10MC3
	交流 AC 90- 250 VAC	PNP	NO	CM20-3010PA	CM34-3020PA	CM35-3025PA	CM37-3025PA	E2K-F10MF1
			NC	CM20-3010PB	CM34-3020PB	CM35-3025PB	CM37-3025PB	E2K-F10MF2
			NO+NC	CM20-3010PC	CM34-3020PC	CM35-3025PC	CM37-3025PC	E2K-F10MF3
	SCR 可控硅 Control- lable silicon	NO	CM20-2010A	CM34-2020A	CM35-2025A	CM37-2025A	E2K-F10MA0	
		NC	CM20-2010B	CM34-2020B	CM35-2025B	CM37-2025B	E2K-F10MAC	
可检测体 Detectable object		导体及介电体 conductor and dielectric body						
消耗电流 Consumption current		直流(NPN PNP)型 DC12V时8mA 24V时15mA、交流型: 10mA以下、DC<15mA、AC<10mA						
输出电流 Output current		直流:200mA, 交流型:300mA						
可输出电压降 Output voltage drop DC/AC		直流(NPN PNP)3V以下, 交流型:7V以下、DC<3V、AC<7V						
响应频率 DC/AC Response frequency		直流(NPN-PNP) 50Hz, 交流型:10Hz						
外壳材料 Shell material		ABS树脂 Resin	ABS塑料 Plastic	ABS塑料 Plastic	ABS塑料 Plastic	ABS塑料 Plastic		
工作环境温度 Working environment temperature		-25°C~70°C						
绝缘电阻 Insulation resistance		50MΩ						
防护等级 Protection grade		IEC标准IP54 IEC standard IP54						
可替代国内型号 Aiyemative model at home and abroad			E2K-C25□□					

霍尔传感器 HALL SENSOR

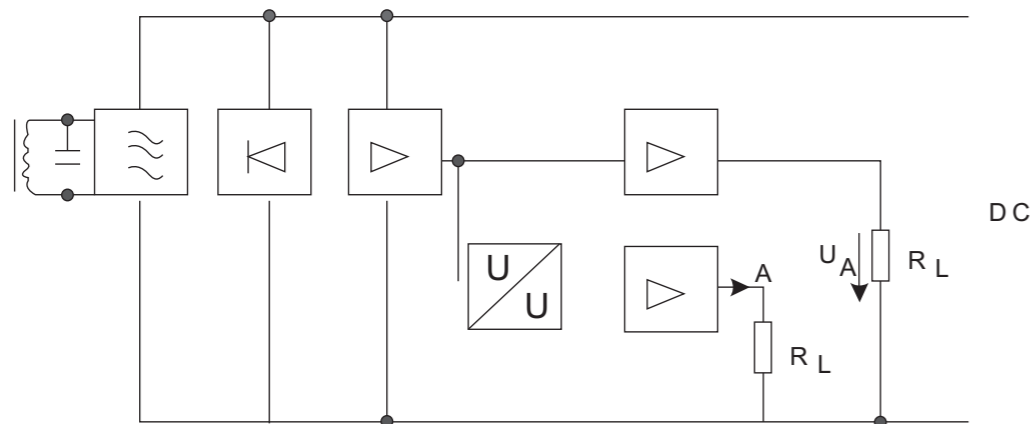
简介 Brief Introduction					
<ul style="list-style-type: none"> SM系列霍尔传感器是由电压调整器, 霍尔电压发生器, 差分放大器, 施密特触发器和集电极开路的输出级组成的磁敏传感器, 其输入为磁感应强度、输出是一个数字电压讯号。 SM series Hall sensor is a kind of magnet-sensitive sensor consisting of voltage regulator, Hall voltage generator, differential amplifier, Schmidt trigger and the output pole of collector open circuit. Its input is the magnetic flux density. The output is a digital voltage signal. 					
特点 Features					
<ul style="list-style-type: none"> 电源电压范围宽 频率高 寿命长, 体积小, 安装方便 能直接和晶体管及TTL、MOS等逻辑电路接口 Wide mains voltage range High frequency Long service life, compact volume, and convenient installation Directly connect to transistor and logic circuit pore like, TTL、MOS 					
型号及参数 Model and parameters					
外形编号 Outward Appearance code		SM8	SM12	SM14	SM18
外形图例 Outward appearance illustration					
外形尺寸 Overall dimensions					
检测距离 Detection distance		10mm	10mm	10mm	10mm
电源电压 Mains voltage		5~24VDC	5~24VDC	5~24VDC	5~24VDC
可检测物体 Detectable object		永磁体 Permanent magnet	永磁体 Permanent magnet	永磁体 Permanent magnet	永磁体 Permanent magnet
输出低电平电压 Output low level voltage		200mV	200mV	200mV	200mV
输出高电平电流 Output high level current		0.1uA	0.1uA	0.1uA	0.1uA
电源电流 Mains current		8mA	8mA	8mA	8mA
开关频率 ON-OFF frequency		320KHz			
工作点磁强度 Working point magnetic density		22mT			
外壳材料 Shell materia		金属 Metal			
环境温度 Ambient temperature		-25°C~70°C			
防护等级 Protection structure		IEC标准 IP67 standard IP67			
具备型号 Model available	NPN	SM8-31010NA	SM12-31010NA	SM14-31010NA	SM18-31010NA
	NO				
	PNP NO	SM8-31010PA	SM12-31010PA	SM14-31010PA	SM18-31010PA
	PNP NC		SM12-31010NB	SM14-31010NB	SM18-31010NB
	PNP NC		SM12-31010PB	SM14-31010PB	SM18-31010PB

电感式线性传感器 INDUCTIVE LINEAR SENSOR

工作原理 work principle

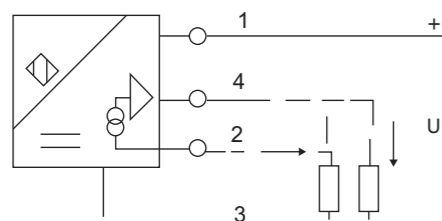
- 带模拟量输出的电感式接近开关与普通电感式接近开关的工作原理相同，当一个金属物体靠近传感器的感应面时，振荡器系统的能量减小，能量减小的程度是物体和传感器之间距离的尺寸标志，在一个附加电器中能量损耗被转换成测量信号，经线性化处理后被放大。(图5)
- 在输出端提供一个标志模拟信号(0...5V或4-20mA...)
- Inductive proximity switch with analog quantity output has the similar work principle with general inductive proximity switch. The energy of oscillator system decreases when a metal object approaches the inductive side. The energy decrease degree indicates the distance between the metal object and the sensor. The energy consumption is transformed into measuring signal and magnified through linear treatment. (Fig.5) Provide a standard analog signal at output terminal(0...5V or 4-20mA...)

带模拟量输出的电感式接近开关的工作原理
Work principle of inductive proximity switch with analog quantity

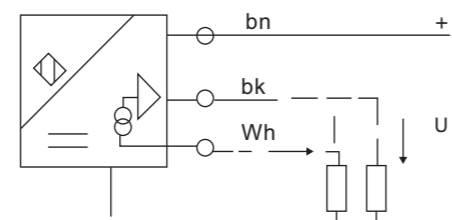


接线示意图 Installation and connection

用连接端子引出
lead out with connecting terminal



用导线引出
lead out with conductor



注芯线颜色BN=棕、BK=黑、BU=蓝、WH=白
Note: the color of core line BN=brown, BK=black, BU=blue, and YE=yellow

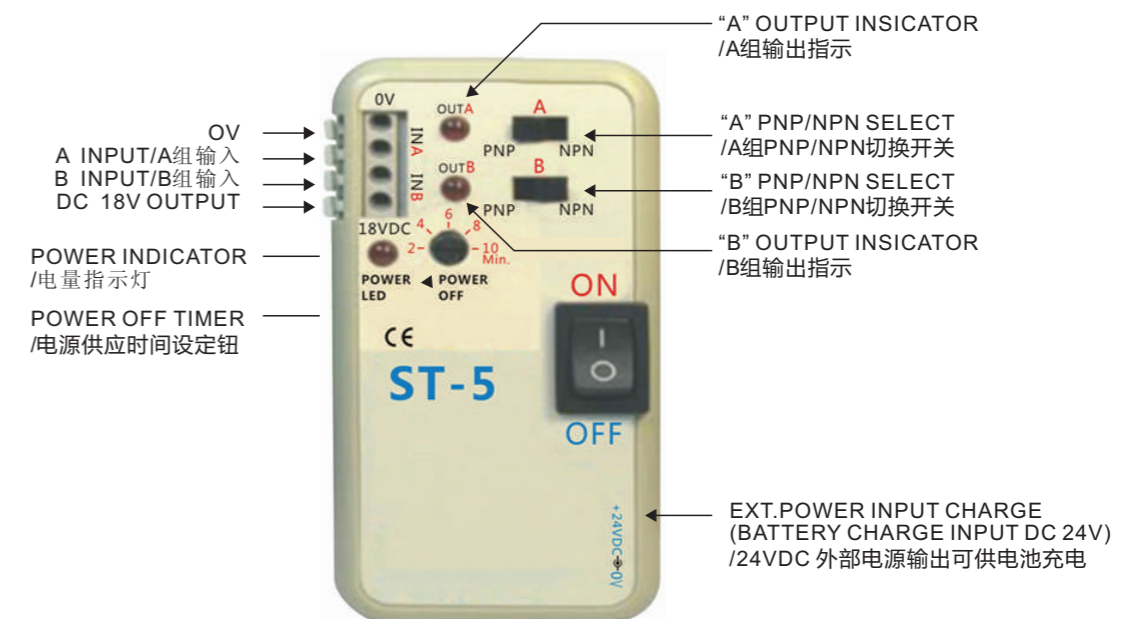
传感器测试仪 SENSOR TESTERS

TYPE:ST-1

- 具有AC/DC/NPN/PNP/接插件/LED指示灯等多功能微型传感器测试仪
- Multi-functional Micro-sensor tester with AC/DC/NPN/PNP/connector/led indicator and other functions



TYPE:ST-5

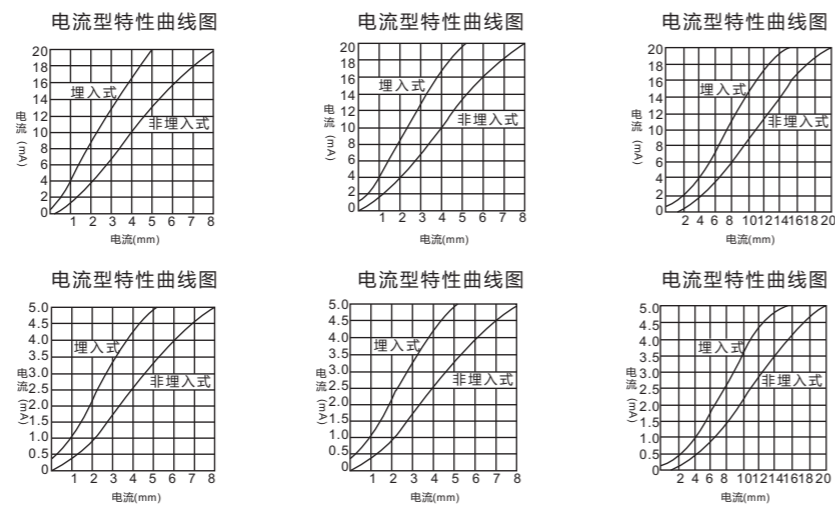


电感式线性传感器 INDUCTIVE LINEAR SENSOR

结构分类 Structural category	电感式位移量线性传感器 inductive linear displacement sensor		
外形编号 Outward Appearance code	XM12	XM18	XM30
外形图例 Outward appearance illustration			


可检测物体 Detectable object		金属 Metal		金属 Metal		金属 Metal	
检测距离 Detection distance		埋入式: 2mm Flush type: 2mm	非埋入式: 4mm Non-Flush: 4mm	埋入式: 5mm Flush type: 5mm	非埋入式: 8mm Non-Flush: 8mm	埋入式: 10mm Flush: 10mm	非埋入式: 15mm Non-Flush: 15mm
具备型号 Model available	电流型 Current type	XM12-3002PMI	XM12-3004PMI	XM18-3005PMI	XM18-3008PMI	XM30-3010PMI	XM30-3015PMI
	电压型 Voltage type	XM12-3002PMU	XM12-3004PMU	XM18-3005PMU	XM18-3008PMU	XM30-3010PMU	XM30-3015PMU
电压范围 Voltage range		15~30VDC					
功耗 Consumption	检测时 at the time of detection	$\leq 200\text{mA} \dots < 4\text{mA}$					
	无检测时 at the time of non-detection	$\leq 20\text{mA}$					
负载电阻 Loading resistance	电流型 Current type	0~300Ω					
	电压型 Voltage type	$\geq 2.2\text{K}\Omega$					
输出 Output	电流型 Current type	4~20mA					
	电压型 Voltage type	0-5V/0-10Vz					

输出特性图
Output characteristic diagram



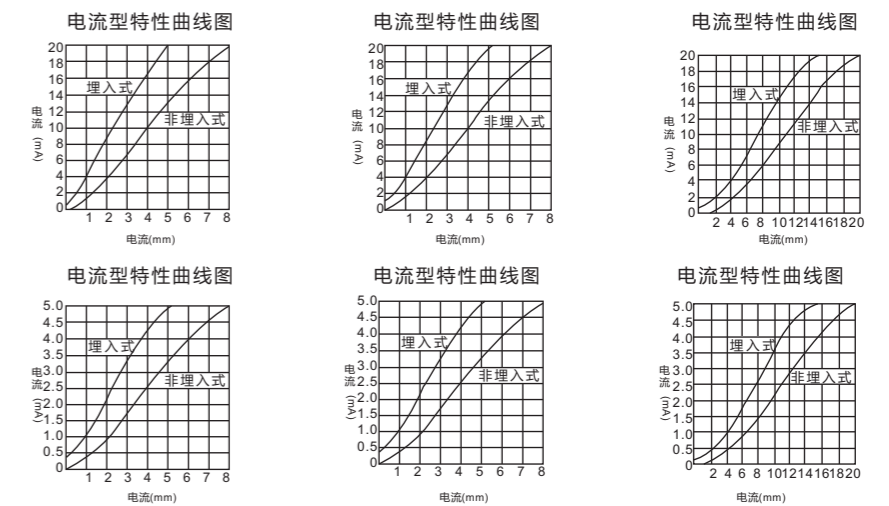
电压波动 Voltage fluctuation	$\leq 5\%$
输出信号 Output signal	PNP 模拟 PNP Simulation
线性误差 Linear deviation	$\pm 5\%$
环境温度 Ambient temperature	-10°C ~ +70°C
外壳材料 Shell material	塑料、金属 Plastic, Metal
防护等级 Protection grade	IP54

电感式线性传感器 INDUCTIVE LINEAR SENSOR

结构分类 Structural category	电感式位移量线性传感器 inductive linear displacement sensor		
外形编号 Outward Appearance code	XMF10	XMF37	XMF38
外形图例 Outward appearance illustration			

可检测物体 Detectable object		金属 Metal		金属 Metal		金属 Metal	
检测距离 Detection distance		埋入式: 15mm Flush: 15mm	非埋入式: 20mm Non-Flush: 20mm	埋入式: 15mm Flush: 15mm	非埋入式: 20mm Non-Flush: 20mm	埋入式: 40mm Flush: 40mm	非埋入式: 50mm Non-Flush: 50mm
具备型号 Model available	电流型 Current type	XMF10-3015PMI	XMF10-3020PMI	XMF37-3015PMI	XMF37-3020PMI	XMF38-3040PMI	XMF38-3050PMI
	电压型 Voltage type	XMF10-3015PMU	XMF10-3020PMU	XMF37-3015PMU	XMF37-3020PMU	XMF38-3040PMU	XMF38-3050PMU
电压范围 Voltage range		15~30VDC					
功耗 Consumption	检测时 at the time of detection	$\leq 200\text{mA} \dots < 4\text{mA}$					
	无检测时 at the time of non-detection	$\leq 20\text{mA}$					
负载电阻 Loading resistance	电流型 Current type	0~300Ω					
	电压型 Voltage type	$\geq 2.2\text{K}\Omega$					
输出 Output	电流型 Current type	4~20mA					
	电压型 Voltage type	0-5V/0-10V					

输出特性图
Output characteristic diagram



电压波动 Voltage fluctuation	$\leq 5\%$
输出信号 Output signal	PNP 模拟 PNP Simulation
线性误差 Linear deviation	$\pm 5\%$
环境温度 Ambient temperature	-10°C ~ +70°C
外壳材料 Shell material	塑料、金属 Plastic, Metal
防护等级 Protection grade	IP54

速度传感器 SPEED SENSOR

XSAV11801旋转检测器 Rotation detector

用途和适用范围 Purpose and scope

- 自抑制监测旋转速度开关简称速度开关，适用于皮带运输，吊桶提升，螺旋推进，研磨机，破碎机，泵，离心干火机，搅拌机监测打滑，皮带断裂，动轴剪切和过载等。
- Self-inhibition rotation speed detecting sensor, referred to as speed sensor, is used for belt transporting, lifting bucket, screw propeller, grinders, crushers, pumps, centrifugal machine, mixer slip-monitoring, belt breakage detecting, drive shaft cutting and overloading.

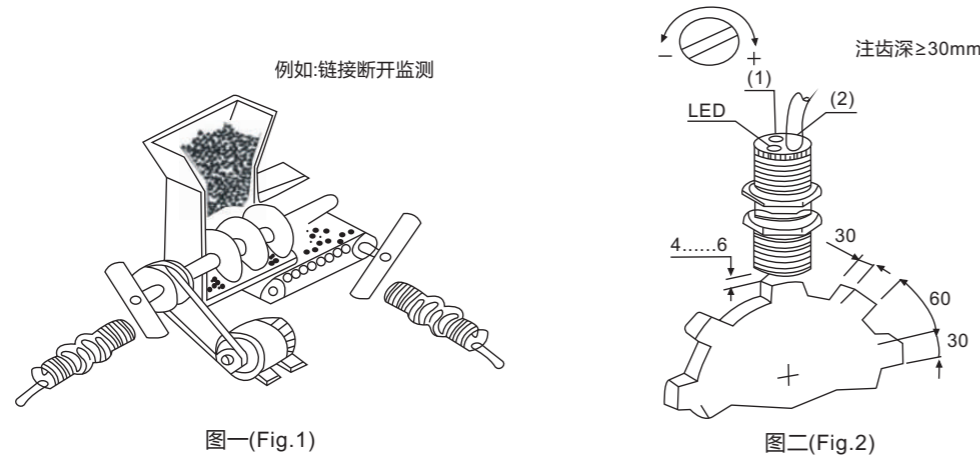
动作原理 Working principle

- 开关输出一个信号经比较器处理，而被测物体的运动也产生一个震荡频率进入比较器，当被测物体的频率震荡频率小于速度开关设定频率是开关为打开状态；当被测物体的振动频率大于速度开关设定频率时开关为闭合状态。SD30-KA一般适合检测低速物体，当物体运动速度低于预置速度时，开关输出为打开状态。
注:所有速度开关须通电后延时9秒才能使监测机器和设备起动作一致。图1为链接断开监测。

- The sensor output a frequency signal to be processed in the comparator, while a vibration frequency originated by the detected running object also enter the comparator. The switch will be off if the vibration frequency is lower than the sensor's rated frequency, and the s will be on if the vibration frequency is higher than the sensor's rated frequency. SD30- KA is usually used to detect object with lower speed. When the speed of the object is lower than the rated speed, the sensor output an open signal.
Note: When the power is supplied, it takes around 9 seconds for every kind of speed sensor to enable the detector to keep pace with the detected machine. In fig. 1 it is detecting the broken link.

调整 Adjustment

- 开关使多圈电位器进行调整，顺时针旋转频率增加，逆时针旋转频率减少。
- The sensor uses a multi-turn potentiometer to do adjustment, clockwise turning to increase the frequency and counterclockwise turning to decrease the frequency.



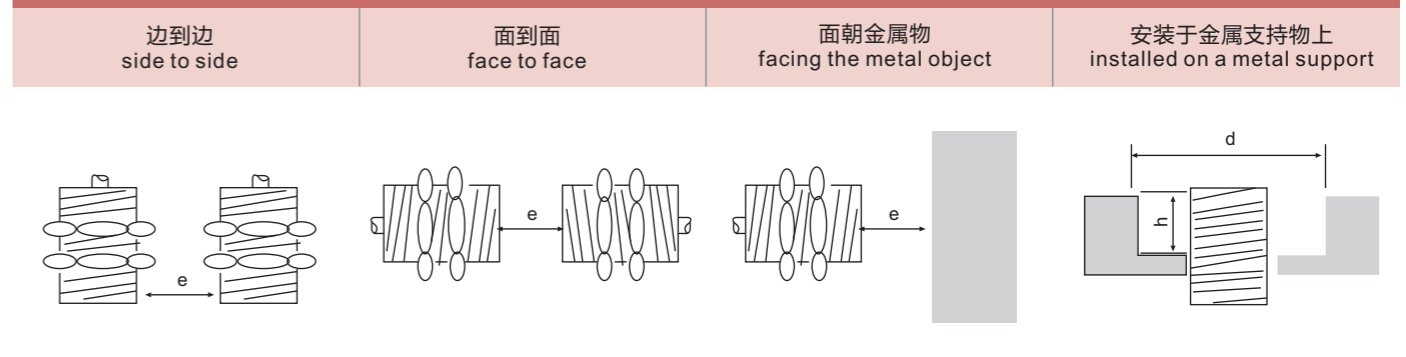
图一(Fig.1)

图二(Fig.2)

品牌 Brand	旋转探测仪(速度开关)rotation detector(speed sensor)
型号 Model	XSA-V11801
种类 Species	速度
材料 Material	金属
材料物理性质 Physical properties of materials	其他
材料晶体结构 Crystal structure of materials	其他
制作工艺 Production process	集成
输出信号 Output signal	开关型
防护等级 Protection class	IP66
线性度 Linearity	1(%F.S.)
迟滞 Sluggish	1(%F.S.)
重复性 Repeatability	1(%F.S.)
灵敏度 Sensitivity	3
漂移 Drift	1
分辨率 Resolution	1

速度传感器 SPEED SENSOR

最小安装距离 the least installation distance



迟滞曲线 delay curve: 5...15% of Fr

功率传输时滞 power transmission delay: $9s \pm 20\% + 1/Fr$

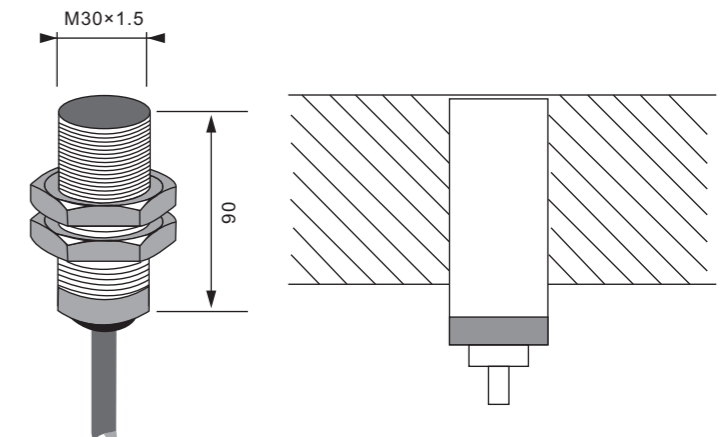
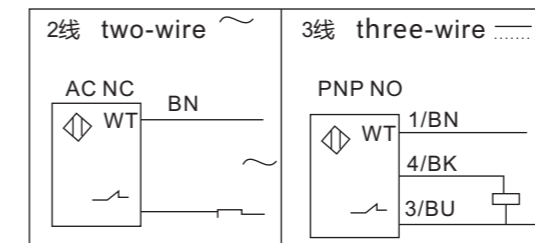
工作环境温度 working environment temperature: $-25^{\circ}\text{C} \dots +70^{\circ}\text{C}$

连接方式 connection: 预置2mPUR 电缆 Preset 2mPUR cable

动作指示 action indicating: LED

防护等级 protection level: IP66

符合标准 standard: GB/T14084.10



技术参数 technical parameters

3线(wire)DC PNP	6...150	SD30-1210PA		
脉冲/分 pulse/min	120...3000	SD30-1210PB		SD30-2410KB
2线(wire)AC			SD30-4810KA	SD30-1210KA
脉冲/分 pulse/min			SD30-4810 KB	SD30-1210KB
感应距离 sensing distance	10mm			
设定距离 setdistance				
工作电压 working voltage	DC12...48V	DC 24...220V(50/60Hz)	AC 110...120V(50/60Hz)	DC24...240V(50/60Hz)
电压极限(包括波纹) voltage limit (including fluctuation)	DC 10...48V	AC 20...60V	AC 93...132V	AC 187...264V
开关容量switch capacity	0...200mA(过载短路保护)	40...300mA(2A流涌电流)	20...300mA(2A流涌电流)	20...300mA(2A流涌电流)
电压降(闭合状态)voltage drop(closed)	$\leq 1.8\text{V}$		$\leq 4.5\text{V}$	
防护等级protection level	IP66			
输出状态output state	PNP三线常开	交流两线常开		
环境温度ambient temperature	$-25^{\circ}\text{C} \dots +70^{\circ}\text{C}$			

舌簧传感器 REED SENSOR

舌簧传感器 Reed sensor

- 舌簧传感器又称磁性开关，适用于气动、液动、气缸和活塞泵的位置测定亦可作限位开关用。当磁性目标接近时，舌簧合经放大输出开关信号。与电感式传感器比较有以下优点，能安装在金属中可并排紧密安装，可穿过金属进行检测。其检测距离随检测体磁场的强弱而变化。舌簧传感器不适用于强烈震动的场合。
- Also called magnetic switch, reed sensor is applicable for position determination of pneumatic and/or hydraulic cylinder and piston pump. It also can be used as limit switch. When the magnetic object approaches, the reed closes and sends out switch signal through magnification. Compared with inductive sensor, it has the following strongpoints: can be installed in metal closely and side by side and detect through metal object. Its detection distance subjects to the intensity of magnetic field of detected object. Reed sensor is not applicable in the occasion of severe vibration.



光电开关 PHOTOELECTRIC SWITCH

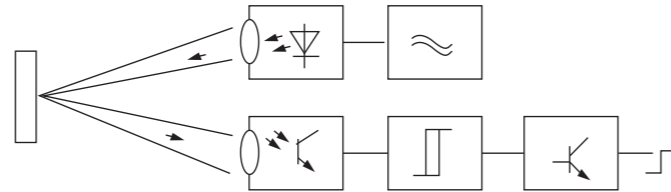


光电开关 PHOTOELECTRIC SWITCH

结构分类 Structural category

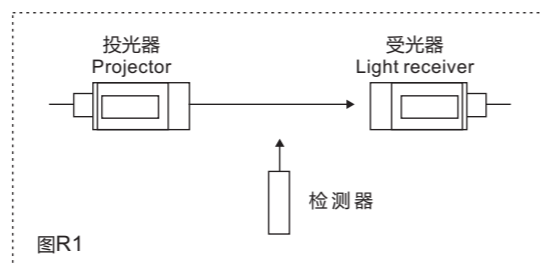
光电开关工作原理 Photoelectric switch Principle of photoelectric switch

光电开关的原理是根据投光器发射的光束，被物体阻断或部分反射，受光器最终据此做出判断反应。
The working principle of the photoelectric switch is that when the beam emitted by the emitter is blocked or partly reflected by the object, the beam receiver whereby makes a judgment and reacts.



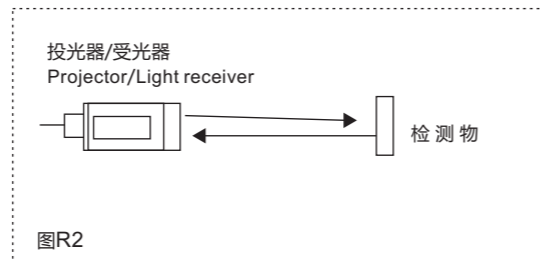
类型说明 Description Througt-beam type

对射式(透射型) Diact type (through type) 对射式光电开关是将投光器与受光器置于相对的两个装置，光束也是在相对的两个装置之间，穿达投光器与受光器之间的物体会阻断光束并启动受光器。(图R1)
Through-beam type photoelectric switch is designed that via the light beam between opposite-mounted transmitter and receiver, the object passing through these two devices will interrupt the light beam and start the receiver.(Fig.R1)



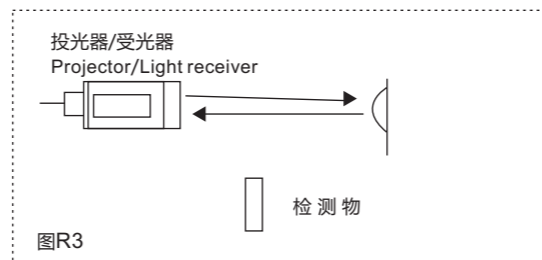
扩散反射型(漫反射型) Diffuse type

扩散反射型光电开关将投光器与受光器置于一体，光电开关反射的光被检测物体反射回受光器。(图R2)
Diffuse reflection type photoelectric switch integrates the transmitter and the reciver. Light reflected by the photoelectric switch is reflected back to the receiver by the detected object.(Fig.R2)



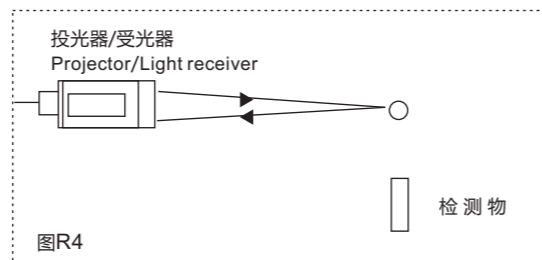
镜面反射型(反馈反射型) Retroreflective type

镜面反射型的反射式光电开关也将投光器与受光器置于一体，它不同于其它模式是它采用反射板将光线反射型光电开关，光电开关于反射板之间的物体虽然也反射光线，但其效率远低于反射板，因而切断反射光束。(图R3)
Retroreflective type photoelectric switch also integrates the transmitter and the receiver, Its difference from other models is that reflector is used to reflect light to the photoelectric switch. Though the object between the photoelectric switch and reflector can reflect the light, it is much less efficient than the reflector so as to cut down reflected light.(Fig.R3)



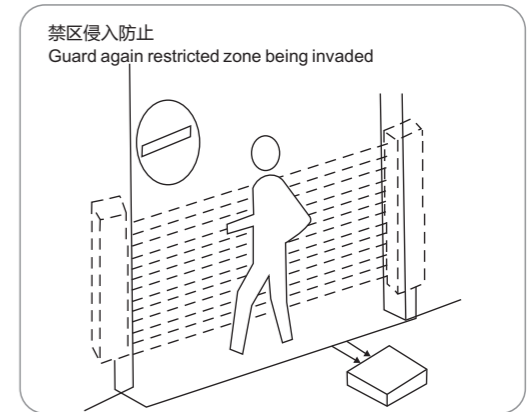
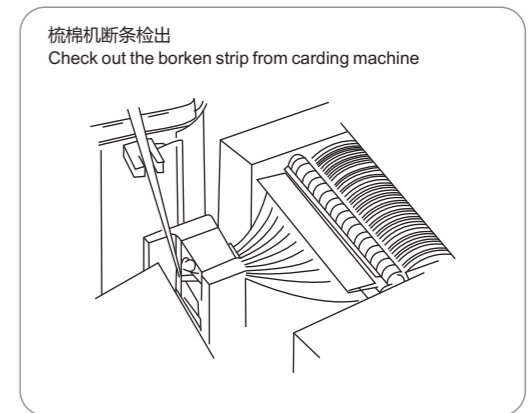
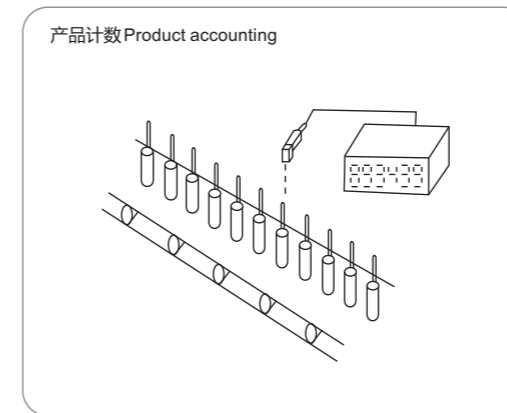
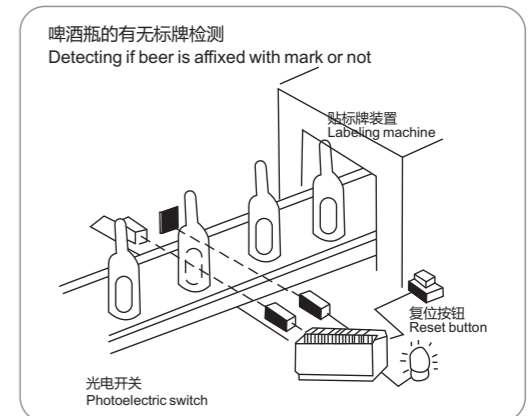
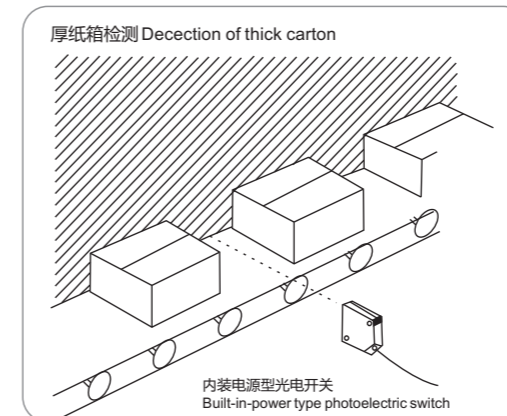
会聚型反射型(聚光型) Convergence reflection type (condensation type)

会聚型反射式的光电开关的工作原理类似于直接反射式光电开关，然而其投光器与受光器聚焦于物距离，只有当物体出现在聚焦时，光电开关才有动作。(图R4)
The working principle of convergence reflection type photoswitch is similar to that of direct reflection type one, while its projector and light receiver focus on object distance, only when the object presents to the focus can the photoswitch actuate.(Fig.R4)



光电开关 PHOTOELECTRIC SWITCH

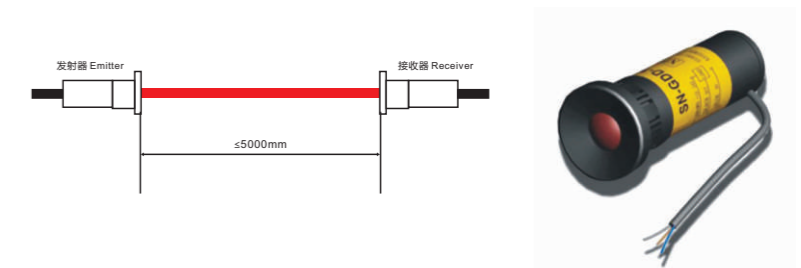
光电开关应用图例 Application illustration or photoelectric switch



产品简介 Introduction

- SN-GDD-1型对射/漫反射红外线光电开关由一对红外线发射器和接收器相对安装构成电路。产品接通电源后，当来自发射器的红外线光束被物体阻断时，接收器就输出一个电信号(NPN/PNP)给需要控制的设备及系统。
- SN-GDD-1 beam/diffused infrared photoelectric sensor consist of a pair of emitter and receiver installed face to face which compose a circuit. After power is supplied, the receiver will send out an electric signal (NPN/PNP) to the controlled equipment and system when the infrared beam from emitter is blocked by an object.

外形尺寸 Dimension



光电开关 PHOTOELECTRIC SWITCH

光电开关型号构成及含义 Model composition and definition of infrared ray photoelectric switch.

G 18 3 A 10 N A □
1 2 3 4 5 6 7 8

编号 No	构成 Composition	代码及含义 Code and definition
1	基本形式 Basic form	G:塑料壳体红外线光电开关 E:金属红外线光电开关 infrared ray photoelectric switch
2	外形编号 Outward appearance code	18,50,76.....
3	工作电压 Working voltage	2.90-250VAC 3:10-30VDC 4:12-240VDC/24~240VAC 5:特殊电压 Special voltage
4	检测方式 Detection way	A:漫反射型(扩散反射型) B:反馈反射型(镜面反射型) C:透过型(对射型) D:标记检测型 G:光纤型 F:槽型 A:diffused reflection type(scattered reflection type) B:feedback reflection type mirror(mirror reflection type) C:penetration type(correlation type) D:marking detection type G:optical fiber type
5	检测距离 Detection distance	05:5cm 10:10cm 30:30cm 101:10cm
6	输出形式 Output form	N:NPN直流负逻辑输出 P:PNP直流正逻辑输出 J:继电器触点输出 L:交流二线输出 S:具备NPN和PNP二种输出 N:PNP transistor output P:PNP transistor output J: Relay contact output L:AC two-wire output S:With two outputs: NPN and PNP
7	输出状态 Output state	A:常开(入光NO) B:常闭(遮光NC) C:一开一闭 Z:常开常闭可逆 A: Normally open(light entering NO) B:Normally close(light sheltering NC) C: normally open+normally close
8	附属功能 Subsidiary	T1:前延时 front delay T2:后延时 rear delay Y:防油型 oil proof T:带航空插件 with aviation connector I:特殊要求 special requirement

例: G18-3A10NA For example:G18-3A10NA

- 表示: M18圆柱形, DC10-30V工作电压, 漫反射型, 检测距离为10cm, NPN(负逻辑)常开式的红外线光电开关。
- That indicates the infrared ray photoelectric switch of M18 cylinder, DC10-30V working voltage, diffused reflection type, detection distance 10cm, and NPN normally open type.

技术参数 Technical parameters

检测方式 Detection way	5000mm(对射 beam)	输出电流 Output current	≤80mA(DC12V)
检测距离 Detection distance	800mm(反射 reflection)	环境温度 Ambient temperature	使用时In use-25°C----+55°C
	红外线infrared(920mm)		存储时At stock-4°C----+70°C
光源(波长) Light source(wavelength)	≤30度 degree	引线长度 Lead length	发射器, 接收器个2米 Emitter, receiver both 2m
指向角 Point angle	6-36VDC	输出方式 Output	NPN或PNP晶体管输出 NPN or PNP transistor output
电源电压 Supply voltage	对射型或反射型Beam type of reflective type	防护等级 Protection level	IP67(IEC60529)
残留电压 Residual voltage	DC三线式(3-wire):≤1.5VDC AC二线式(2-wire):≤12VDC	耐压 Withstanding voltage	1500VAC 50/60Hz一分钟(one minute)
绝缘电阻 Insulation resistance	≥50MΩ Min (500VDC Mega 基准)	抗冲击 Impact resistance	500M/S(50G ³)X、Y、Z各方向3次 (3 times in each direction)
温度影响 Temperature effect	在-25°C~+70°C范围内, 对在+25°C时的检测距离是在10%以下 Within -25°C~+70°C, less than 10% compared with the detection range at+25°C	抗振动 Vibration resistance	10-55Hz(周期每分钟cycles per min.) 复振幅(complex amplitude)1mm,X、Y、Z各方向2小时(2 hours in each direction)

光电开关 PHOTOELECTRIC SWITCH

长距离反射型 Long distance reflection type

- 外形尺寸虽小, 检测距离可远
- Small dimensions, long distance detection

特点 Characteristics

- 通过特殊的光学设计, 可使漫反射方式下检测距离达到2m
With special optic design, detection distance is improved to 2m for diffuse type
- 内置稳定的动作指示灯
With stable built-in cation indicator light
- 灵敏度调整功能
With sensitivity adjustment
- 双色LED显示
With 2-color LED indication

使用前请仔细阅读操作手册中的安全注意事项
Please read carefully the safety cautions in the operation manual before use

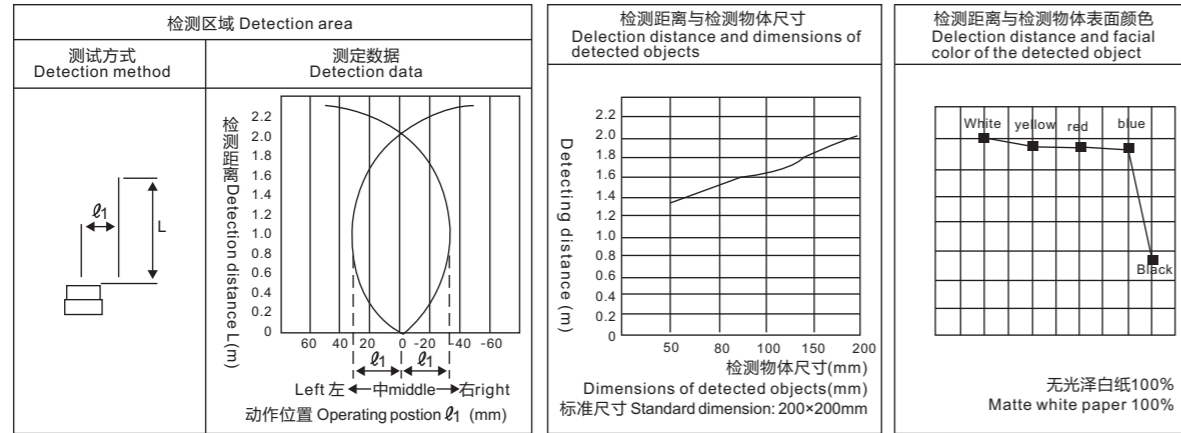


规格参数 Specifications

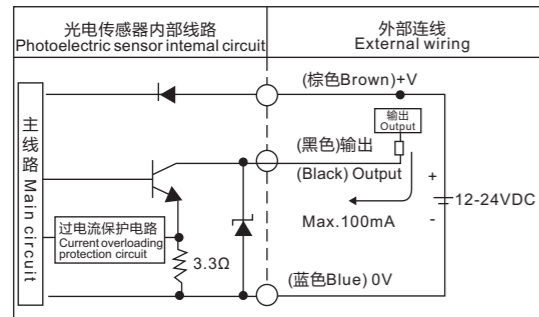
型号 Type	BA2M-DDT
检测模式 Detection method	漫反射型 Diffuse type
检测距离 Detection distance	2m
检测物体 Detection object	透明, 半透明, 不透明物体 Transparent, translucent, opaque objects
回差值 Difference in value	不超过标检测距离的20% Less than 20% of the standard detection distance
响应时间 Response time	大约approx 1ms
电源电压 Supply voltage	12-24VDC±10%(Ripple P-P:Max.10%)
电流消耗 Current consumption	Max.15mA(Max.30mA 输出 Output On)
光源 Light source	红外光 Infrare(850mm 调制光 Modulated light)
灵敏度调节 Sensitivity adjustment	内置可调 Built-in adjustable VR
动作模式 Action pattern	Light ON (Dark On 为可选项 Optional)
控制输出 Output control	NPN开路集电极输出: 负载电压DC30V 以下负载电流100mA以下, 残留电压1V以下 NPN open-collector output: loading voltage below DC30V, loading current below 100mA, residual voltage below 1V
保护电路 Protection circuit	内置电压波动, 电源反向连接, 过流保护电路 Built-in protection circuit for voltage fluctuation, reverse connection, and current overloading
受光元素 Photosensitive element	光电感应二极管(内置IC) Photoelectric sensor diode
指示灯 Indicator light	双色LED灯(动作时: 红色, 稳定时: 黄色 (红色+绿色)Two-color LED(action: red, stable: yellow(red+green))
绝缘阻抗 Insulation resistance	不小于No less than 20MΩ(500VDC)
抗噪声强度 Noise resistance	±240V噪音发生器产生脉动宽度1的方波 Noise generator produces a square wave pulse of 1**wide
耐电压 Withstanding voltage	1000VAC 50/60Hz 1分钟 minute
抗振动 Vibration resistance	1.5mm振幅, 10-55频率, X,Y,Z各方向2小时 Amplitude 1.5mm, frequency 10-55, 2 hours in each direction
抗冲击 Impact resistance	100/s ² (10G) in X,Y,Z方向3次(3 times in each direction)
环境光照 Ambient illumination	太阳光: 最强10,000/lx, 白炽灯: 最强3,000/lx In sunlight: utmost 10,000/lx, Incandescent light: utmost 3,000/lx
使用环境温度 Ambient temperature	-25S~+55°C(非结冰状态 Non-frozen), 存储温度 Storage temperature:-25S~70°C
使用环境湿度 Ambient humidity	35~80%RH
防护等级 Protection level	IP50(IEC标准 IEC standatd)
材质 Material	外壳: PBT, 透镜: PMMA Shell: PBT, lens: PMMA
连接电缆 Connection cable	3P, Φmm, 长度Length: 2m
附件 Accessories	灵敏度调节工具 Sensitivity adjustment tool
认证 Certification	CE
质量 Weight	大约50g Approx. 50g.

光电开关 PHOTOELECTRIC SWITCH

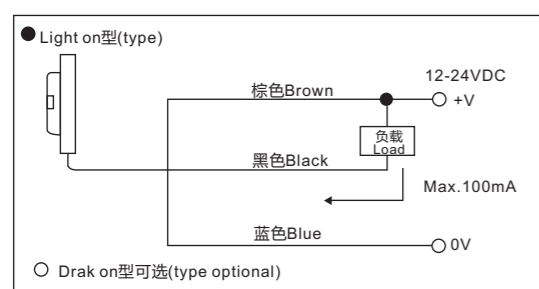
特性参数 Specifications



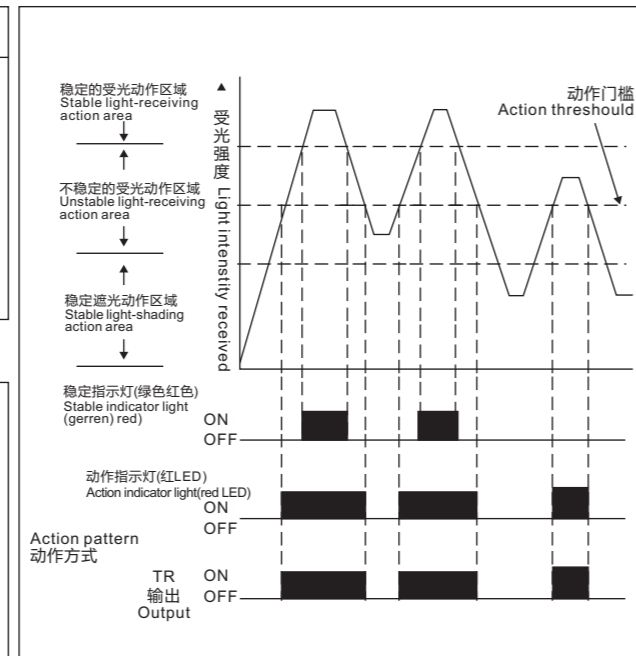
控制输出线路图 Control output circuit diagram



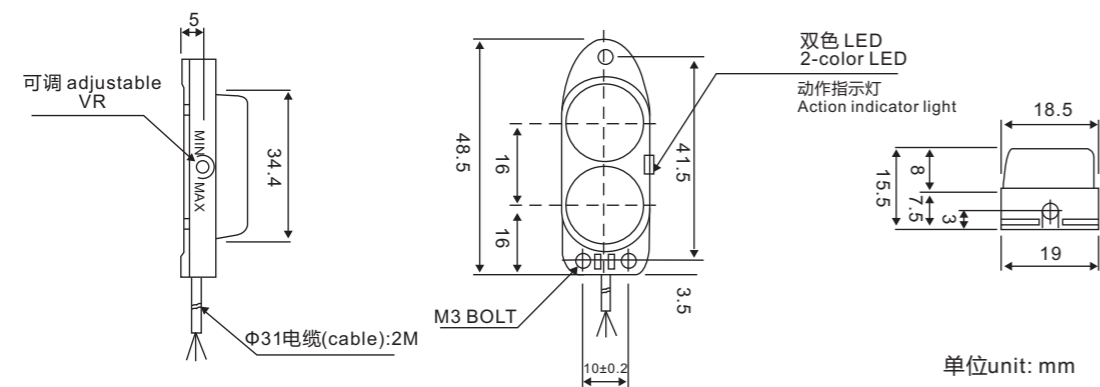
控制图 Control diagram



动作模式 Action pattern



外形尺寸 Dimension



光电开关 PHOTOELECTRIC SWITCH

光电开关术语解释 Explanntion of technical terms of photoelectric switch

术语 Technical terms	解释 Explanation	术语 Technical terms	解释 Explanation
光芒光轴 Optic axis of radiance		标准被测物体 Standard detected object	指在反射型传感器中为决定基本规定面作为标准的被测物体。一般是白色无光,对专用传感器使用相应的被测物体。(例如薄片) That indicates the standard detected object, which is to determine the basic specifications in the reflection type sensor. Generally, it is white and lusterless. Use relevant detected object (for example, the slice) to the sensor for special purpose
检测轴 Detection axis		最小被测物体 Min detected object	指在一定条件下传感器能测出的最小物体。对射型、镜面反射型是指不透明体(完全遮光),对反射型是指铁丝或铜丝相应的值。 That indicates the smallest object, which can be detected by sensor under a certain condition. To correlation type and mirror reflection type, that indicates opaque body (wholly light sheltering). To reflection type, that indicated the corresponding value of iron wire or copper wire.
检测距离 Detection distance	<p>对射型 Correlation type</p> <ul style="list-style-type: none"> 可稳定设定的投光器和受光器之间的距离 Stably set distance between light projector and photoreceptor <p>反馈反射型 Feedback reflection type</p> <ul style="list-style-type: none"> 标准设定的传感器和反射之间的距离(0的场合将“0”省略) Standard setting distance between sensor and reflection mirror (omit "0" on the occasion with "0") <p>漫反射型 Diffused reflection type</p> <ul style="list-style-type: none"> 可稳定被测物体(通常是白色无光纸)能被稳定检测的最大距离("0"的场合半"0"省略) The max stable detectable distance of detected object, generally white matte paper (omit "0" on the occasion with "0") 	重复精度 Repeated precision	指在一定条件下,重复动作时响应位置的误差。 That indicates the error of response position when repeating action under a certain condition.
		响应时间 Response time	检测状态变化后到输出ON或OFF信号的延迟时间。 The time delay from the change of detection state to the output of ON or OFF signal
		使用环境照度(耐杂散光) Intensity of illumination of operating environment (resistance to mixed astigmatism)	指不引起误动作的极限照度用光接收器光面照度表示。 That indicates max, intensity of illumination, which doesn't result in error action, expressed by intensity of illumination of photoreceptor photic surface.

光电开关 PHOTOELECTRIC SWITCH

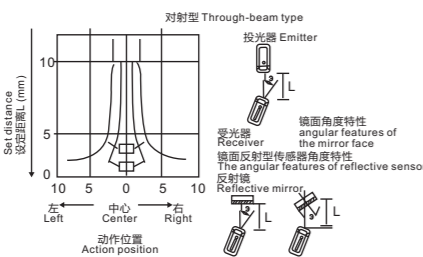
术语 Technical terms

解释 Explanation

使用注意事项 Cautions

角度特性
Angel characteristic

在对射型以及反馈反射型中，在各设定距离内，从右方在左方向中心线移动，使角度逐渐变小，以传感器动作响应的角度为轨迹所表示的图(灵敏度最大状态下)。
To correlation type and feedback reflection type, move from right to the centering of left direction within each setting distance to gradually reduce the angle. That is shown by locus diagram of sensor action response angle (under max sensitivity state)



对射型 反馈反射型 To correlation type and feedback reflection type
距离设定 Distance equipment

✦ 设定距离应小于说明书上规定的检测距离。由于留有余量，大于所规定的检测距离虽也能工作。但性能不能保证。另外，在有垃圾和尘埃的恶劣环境中，距离设定时，请保证一定的余量。

✦ The set distance should be less than the detection distance stipulated in the operation instruction. Because of keeping a room, although it can work when the set distance is bigger than the stipulated detection distance, the performance cannot be guaranteed. In addition, please make sure to keep certain room in the bad environment with rubbish and dust when setting a distance.

漫反射型 To diffused reflection type

✦ 规格书上登出的检测距离是相对于标准被测物体而言的。实际的检测距离，因被测物体大小，颜色及表面的凹凸状况不同，会有所变化。距离设定时，请保证规定的余量。

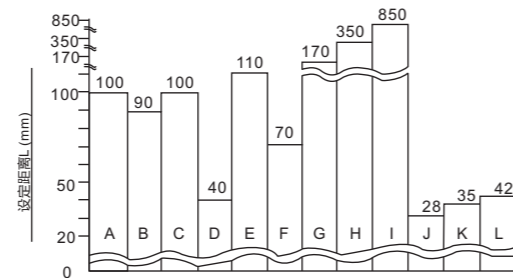
✦ 随被测物体的大小变化，检测距离的变化规律被测物体越大，反光量越大，检测距离越长。但是，当物体的受光面的大小已大于受光的检测，物体大小再增大，检测距离也不会增大。

✦ The detection distance shown in the specification manual is in accordance with standard detected object. Actual detection distance will change in pace with the change of the size, color, surface evenness of detected object. Please ensure the stipulated room when set distance.

✦ According to the change of detected object size and variation regulation regulation of detection distance, bigger detected object, bigger reflection volume, longer detection distance. But when the size of optic receiving surface is bigger than the size of the detected object, the detection distance won't increase even if the object size increases again.

被测物体不同检测距离的差异(适用于漫反射型)

The difference between different detection distances of the detected object (Apply to scattered reflection type)



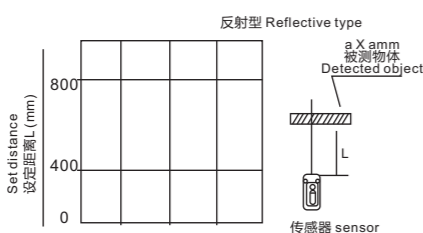
白色无光纸(基准) B、自然色的纸箱 C、胶合板 D、黑色无光纸(三级光泽度) E、有光泽的胶合板(自然的米黄饭，褐色丙烯饭，红色乙烯合成革) F、灰色乙烯合成革 G、有绿色光泽橡胶板 H、铝板 I、反射型或反射板 J、Φ10的锈铁棒 K、黑布 L、深蓝色布

- A、White matt paper(reference)
- B、Natural color carton
- C、Veneer
- D、Black matt paper(Grade 3 glossiness)
- E、Glossy veneer(Natural cream-colored board, brown propyledne board, red ethylene synthetic board)
- F、Grey ethylene synthetic board
- G、Green glossy rubber board
- H、Alboard
- I、Reflector or reflecting board
- J、Rusty iron iron barΦ10
- K、Black cloth
- L、Dark blue cloth

表示在反射型中，因被物体大小对检测距离影响的规律。此图对根据被测物体大小决定能稳定检测的距离有用。带有灵敏度旋钮的传感器是将灵敏度调到与刚好能检测标准被测物体的最大检测距离响应的位置。

Toreflexion type, because the size of detected object affects detection distance, this diagram is useful to determine the stable detection distance according to the size of detected object, the sensor with sensitivity button is to turn the sensitivity to therelevant position of max. detection distance where exactly etecting the standard detected object

被检测物体大小和检测距离特性
The characteristic of detected object size and detection distance



光电开关 PHOTOELECTRIC SWITCH

防止相互干扰的方法及注意事项 Method of anti mutual-interference and cautions

把光电传感器接近设置时，另一个传感器的光入射时造成的不稳定动作，叫做相互干扰。

The unstable action resulted from the entrance light from another sensor while the photoelectric sensor is approaching the equipment is called mutual interference.

✦ 投光器、受光器相互交叉安装。
Mutual cross installation of optic projector and photoreceptor

✦ 反射式并列使用时，相互间隔须维持设定距离在检测距离的1.4倍以上。
When using reflection type in parallel, the mutual spacing should be kept at over 1.4 times detection distance.

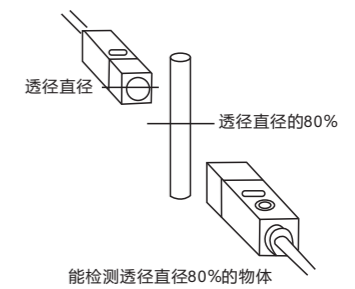
✦ 对射式并列使用时，相互间隔须维持设定距离在检测距离的0.4倍以上。
When using correlation type in parallel, the mutual spacing should be kept at over 0.4 times detection distance.

✦ 电源电压请在使用电源电压范围内使用。
The mains voltage should be within the range of operating mains voltage.

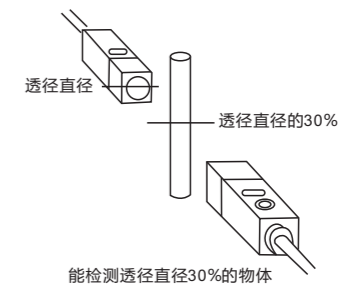
✦ 下列安装场所会造成误动作原因，请注意：
The following installation occasions will result in error action, take note of

- ① 灰尘较多场所
 - ② 腐蚀性气体较多的场所
 - ③ 水、油、药剂直接溅散的场所
 - ④ 室外或太阳光等有强光直射的场所
- ① Dusty occasion
 - ② The occasion with corrosive gas
 - ③ The occasion directly spattered with water, oil and agent, etc
 - ④ Outdoor or the occasion directly shine by hard light like, sunlight

灵敏度电位器Max时 At the time of max sensitivity potentiometer

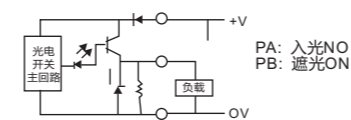


若调节灵敏度 If adjust the sensitivity

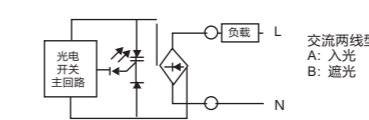


光电开关输出回路图 Output retrun diagram of photoelectric switch

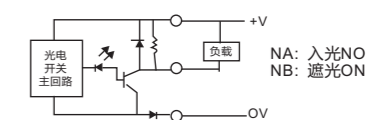
PA、PB型输出回路图



SCR(可控硅)型输出回路图(二线)

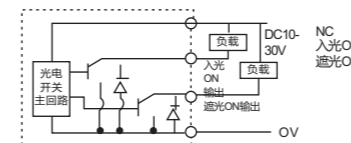


NA、NB型输出回路图



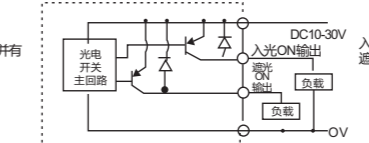
NC型输出回路图

NC type output circuit diagram

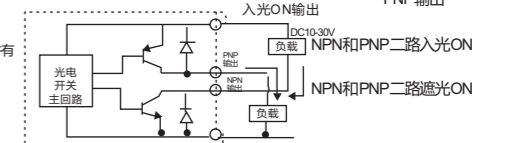


PC型输出回路图

PC type output circuit diagram

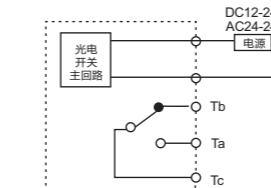


NPN、PNP同时具备型输出回路图
NPN、PNP type output circuit diagram

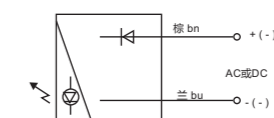


JC型输出回路图

JC type output circuit diagram



红外发射器二线型
IR emitter 2-wire type



光电开关 PHOTOELECTRIC SWITCH

结构分类 Structural category

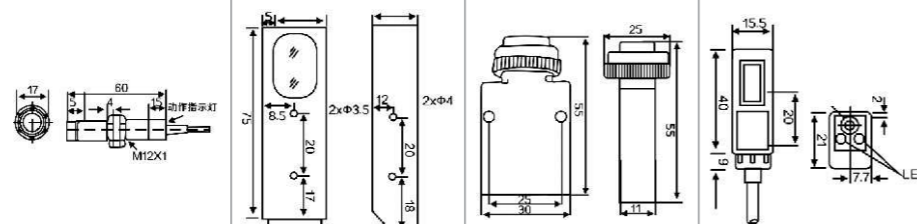
光电开关 Photoelectric switch

外形编号 Outward appearance code G12 G13 G14 G15

外形图例
Outward appearance illustration



外形尺寸
Overall dimensions



		检测距离 DETECTION DISTANCE		7cm	10cm	10cm	10cm	
漫反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G12-3A07NA	G13-3A10NA	G14-3A10NA	G15-3A10NA	
			常闭NC	G12-3A07NB	G13-3A10NB	G14-3A10NB	G15-3A10NB	
			一开一闭NO+NC	G12-3A07NC	G13-3A10NC	G14-3A10NC	G15-3A10NC	
	交流 AC 90- 250 VAC	正逻辑 PNP	常开NO	G12-3A07PA	G13-3A07PA	G14-3A07PA	G15-3A07PA	
			常闭NC	G12-3A07PB	G13-3A07PB	G14-3A07PB	G15-3A07PB	
			一开一闭NO+NC	G12-3A07PC	G13-3A07PC	G14-3A07PC	G15-3A07PC	
	SCR可挂硅 Control Hable silicon	常开NO						
	常闭NC							
	继电器输出 Relay output		检测距离 DETECTION DISTANCE		1m	1m	1m	1m
	反馈反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G12-3B1NA	G13-3B1NA	G14-3B1NA	G15-3B1NA
常闭NC				G12-3B1NB	G13-3B1NB	G14-3B1NB	G15-3B1NB	
一开一闭NO+NC				G12-3B1NC	G13-3B1NC	G14-3B1NC	G15-3B1NC	
交流 AC 90- 250 VAC		正逻辑 PNP	常开NO	G12-3B1PA	G13-3B1PA	G14-3B1PA	G15-3B1PA	
			常闭NC	G12-3B1PB	G13-3B1PB	G14-3B1PB	G15-3B1PB	
			一开一闭NO+NC	G12-3B1PC	G13-3B1PC	G14-3B1PC	G15-3B1PC	
SCR可挂硅 Control Hable silicon		常开NO						
常闭NC								
继电器输出 Relay output		检测距离 DETECTION DISTANCE		3m	3m	3m	3m	
对射型 Through beam		直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G12-3C3NA	G13-3C3NA	G14-3C3NA	G15-3C3NA
	常闭NC			G12-3C3NB	G13-3C3NB	G14-3C3NB	G15-3C3NB	
	一开一闭NO+NC			G12-3C3NC	G13-3C3NC	G14-3C3NC	G15-3C3NC	
	交流 AC 90- 250 VAC	正逻辑 PNP	常开NO	G12-3C3PA	G13-3C3PA	G14-3C3PA	G15-3C3PA	
			常闭NC	G12-3C3PB	G13-3C3PB	G14-3C3PB	G15-3C3PB	
			一开一闭NO+NC	G12-3C3PC	G13-3C3PC	G14-3C3PC	G15-3C3PC	
	SCR可挂硅 Control Hable silicon	常开NO						
	常闭NC							
	继电器输出 Relay output		检测距离 DETECTION DISTANCE		3m	3m	3m	3m
	输出电流 DC/SCR 继电器 Control output				DC:200mA			
消耗电流 DC/AC Consumption current				DC<15mA				
响应时间 DC/AC Response time				DC<2ms				
指向角 Directional angle				3°-10°				
检测物体 Detected object				透明或不透明体 transparent or opaque body				
工作环境温度 Working environment temperature				-25°C~+55°C				
工作环境照度 Intensity of illumination of working environment				太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX				
外壳材料 Shell materia		金属Metal	金属Metal	塑料Plastic	塑料Metal	塑料Plastic, Metal	塑料Plastic, Metal	
防护等级 Protection grade		IP54	IP54	IP54	IP54	IP54	IP54	

光电开关 PHOTOELECTRIC SWITCH

结构分类 Structural category

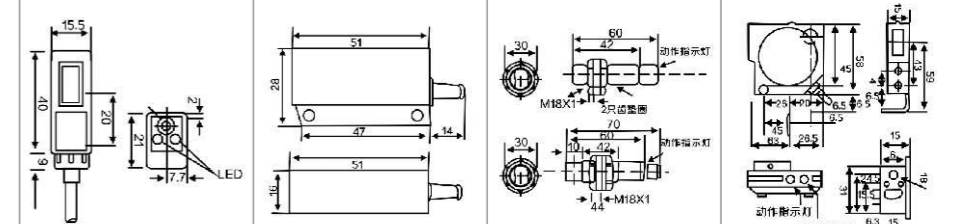
光电开关 Photoelectric switch

外形编号 Outward Appearance code G16 G17 G18 G23

外形图例
Outward appearance illustration



外形尺寸
Overall dimensions



		检测距离 DETECTION DISTANCE		10cm	30cm	10-30cm	10-50cm	
漫反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G16-3A10NA	G17-3A30NA	G18-3A10NA	G23-3A10NA	
			常闭NC	G16-3A10NB	G17-3A30NB	G18-3A10NB	G23-3A10NB	
			一开一闭NO+NC	G16-3A10NC	G17-3A30NC	G18-3A10NC	G23-3A10NC	
	交流 AC 90- 250 VAC	正逻辑 PNP	常开NO	G16-3A10PA	G17-3A30PA	G18-3A10PA	G23-3A10PA	
			常闭NC	G16-3A10PB	G17-3A30PB	G18-3A10PB	G23-3A10PB	
			一开一闭NO+NC	G16-3A10PC	G17-3A30PC	G18-3A10PC	G23-3A10PC	
	SCR可挂硅 Control Hable silicon	常开NO			G18-2A10LA			
	常闭NC			G18-2A10LB				
	继电器输出 Relay output		检测距离 DETECTION DISTANCE		1m	2m	2m	2m
	反馈反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G16-3B1NA	G17-3B2NA	G18-3B2NA	G23-3B2NA
常闭NC				G16-3B1NB	G17-3B2NB	G18-3B2NB	G23-3B2NB	
一开一闭NO+NC				G16-3B1NC	G17-3B2NC	G18-3B2NC	G23-3B2NC	
交流 AC 90- 250 VAC		正逻辑 PNP	常开NO	G16-3B1PA	G17-3B2NA	G18-3B2PA	G23-3B2PA	
			常闭NC	G16-3B1PB	G17-3B2NB	G18-3B2PB	G23-3B2PB	
			一开一闭NO+NC	G16-3B1PC	G17-3B2NC	G18-3B2PC	G23-3B2PC	
SCR可挂硅 Control Hable silicon		常开NO			G18-2B2LA			
常闭NC				G18-2B2LB				
继电器输出 Relay output		检测距离 DETECTION DISTANCE		5m	3m	5m	5m	
对射型 Through beam		直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G16-3C5NA	G17-3C3NA	G18-3C5NA	G23-3C5NA
	常闭NC			G16-3C5NB	G17-3C3NB	G18-3C5NB	G23-3C5NB	
	一开一闭NO+NC			G16-3C5NC	G17-3C3NC	G18-3C5NC	G23-3C5NC	
	交流 AC 90- 250 VAC	正逻辑 PNP	常开NO	G16-3C5PA	G17-3C3PA	G18-3C5PA	G23-3C5PA	
			常闭NC	G16-3C5PB	G17-3C3PB	G18-3C5PB	G23-3C5PB	
			一开一闭NO+NC	G16-3C5PC	G17-3C3PC	G18-3C5PC	G23-3C5PC	
	SCR可挂硅 Control Hable silicon	常开NO			G18-2C5LA			
	常闭NC			G18-2C5LB				
	继电器输出 Relay output		检测距离 DETECTION DISTANCE		5m	3m	5m	5m
	输出电流 DC/SCR 继电器 Control output				DC:200mA, AC:300mA			
消耗电流 DC/AC Consumption current				DC<15mA, AC<10mA				
响应时间 DC/AC Response time				DC<2ms, AC<2ms				
指向角 Directional angle				3°-10°				
检测物体 Detected object				透明或不透明体 transparent or opaque body				
工作环境温度 Working environment temperature				-25°C~+55°C				
工作环境照度 Intensity of illumination of working environment				太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX				
外壳材料 Shell materia			塑料Plastic	塑料Plastic	塑料Plastic	金属Metal	金属Metal	
防护等级 Protection grade		IP54	IP54	IP54	IP54	IP54	IP54	

光电开关 PHOTOELECTRIC SWITCH

结构分类 Structural category

光电开关 Photoelectric switch

外形编号 Outward Appearance code		G24	G30	G33	G35		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Retroreflective	检测距离 DETECTION DISTANCE	50cm		50cm	50cm		
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G24-3A50NA	常开NO G30-3A70NA	常开NO G33-3A10NA	常开NO G35-3A50NA	
			常闭NC G24-3A50NB	常闭NC G30-3A70NB	常闭NC G33-3A10NB	常闭NC G35-3A50NB	
			一开一闭NO+NC G24-3A50NC	一开一闭NO+NC G30-3A70NC	一开一闭NO+NC G33-3A10NC	一开一闭NO+NC G35-3A50NC	
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO G24-3A50PA	常开NO G30-3A70PA	常开NO G33-3A10PA	常开NO G35-3A50PA	
			常闭NC G24-3A50PB	常闭NC G30-3A70PB	常闭NC G33-3A10PB	常闭NC G35-3A50PB	
			一开一闭NO+NC G24-3A50PC	一开一闭NO+NC G30-3A70PC	一开一闭NO+NC G33-3A10PC	一开一闭NO+NC G35-3A50PC	
		SCR可挂硅 Control Hable silicon	常开NO G30-2A70LA	常开NO G30-2A70LB	常开NO G35-2A50LA		
		继电器输出 Relay output		常闭NC G30-2A70LC	常闭NC G35-2A50LB		
		检测距离 DETECTION DISTANCE	4m		1m	3m	
	反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G24-3B4NA	常开NO G30-3B3NA	常开NO G33-3B1NA	常开NO G35-3B3NA
				常闭NC G24-3B4NB	常闭NC G30-3B3NB	常闭NC G33-3B1NB	常闭NC G35-3B3NB
			一开一闭NO+NC G24-3B4NC	一开一闭NO+NC G30-3B3NC	一开一闭NO+NC G33-3B1NC	一开一闭NO+NC G35-3B3NC	
交流 AC 90-250 VAC		正逻辑 PNP	常开NO G24-3B4PA	常开NO G30-3B3PA	常开NO G33-3B1PA	常开NO G35-3B3PA	
			常闭NC G24-3B4PB	常闭NC G30-3B3PB	常闭NC G33-3B1PB	常闭NC G35-3B3PB	
			一开一闭NO+NC G24-3B4PC	一开一闭NO+NC G30-3B3PC	一开一闭NO+NC G33-3B1PC	一开一闭NO+NC G35-3B3PC	
		SCR可挂硅 Control Hable silicon	常开NO G30-2B3LA	常开NO G30-2B3LB	常开NO G35-2B3LA		
		继电器输出 Relay output		常闭NC G30-2B3JC	常闭NC G35-2B3LB		
		检测距离 DETECTION DISTANCE	5m		3m	5m	
对射型 Through beam		直流 DC 10-30 VDC	负逻辑 NPN	常开NO G24-3C5NA	常开NO G30-3C101NA	常开NO G33-3C3NA	常开NO G35-3C5NA
				常闭NC G24-3C5NB	常闭NC G30-3C101NB	常闭NC G33-3C3NB	常闭NC G35-3C5NB
				一开一闭NO+NC G24-3C5NC	一开一闭NO+NC G30-3C101NC	一开一闭NO+NC G33-3C3NC	一开一闭NO+NC G35-3C5NC
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO G24-3C5PA	常开NO G30-3C101PA	常开NO G33-3C3PA	常开NO G35-3C5PA	
			常闭NC G24-3C5PB	常闭NC G30-3C101PB	常闭NC G33-3C3PB	常闭NC G35-3C5PB	
			一开一闭NO+NC G24-3C5PC	一开一闭NO+NC G30-3C101PC	一开一闭NO+NC G33-3C3PC	一开一闭NO+NC G35-3C5PC	
		SCR可挂硅 Control Hable silicon	常开NO G30-2C101LA	常开NO G30-2C101LB	常开NO G35-2C5LA		
		继电器输出 Relay output		常闭NC G30-2C101JC	常闭NC G35-2C5LB		
		输出电流 DC/SCR 继电器 Control output	DC:200mA, AC:300mA				
		消耗电流 DC/AC Consumption current	DC<15mA, AC<10mA				
		响应时间 DC/AC Response time	DC<2ms, AC<2ms				
		指向角 Directional angle	3°-10°				
	检测物体 Detected object	透明或不透明体 transparent or opaque body					
	工作环境温度 Working environment temperature	-25°C~+55°C					
	工作环境照度 Intensity of illumination of working environment	太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX					
	外壳材料 Shell materia	塑料Plastic	塑料Plastic	塑料Plastic	金属Metal		
	防护等级 Protection grade		IP66	IP54	IP54		

光电开关 PHOTOELECTRIC SWITCH





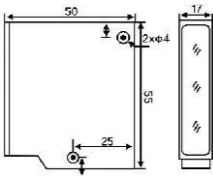
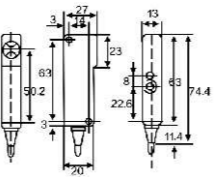
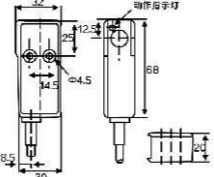
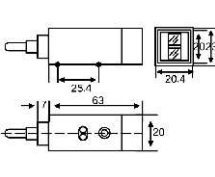
光电开关 Photoelectric switch

外形编号 Outward Appearance code		G36	G40	G44	G50	G54		
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
漫反射型 Retroreflective	检测距离 DETECTION DISTANCE	20cm	10-30cm	30cm	30-50cm	20cm		
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G36-3A20NA	常开NO G40-3A10NA	常开NO G44-3A30NA	常开NO G50-3A30NA	常开NO G54-3A20NA	
			常闭NC G36-3A20NB	常闭NC G40-3A10NB	常闭NC G44-3A30NB	常闭NC G50-3A30NB	常闭NC G54-3A20NB	
			一开一闭NO+NC G36-3A20NC	一开一闭NO+NC G40-3A10NC	一开一闭NO+NC G44-3A30NC	一开一闭NO+NC G50-3A30NC	一开一闭NO+NC G54-3A20NC	
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO G36-3A20PA	常开NO G40-3A10PA	常开NO G44-3A30PA	常开NO G50-3A30PA	常开NO G54-3A20PA	
			常闭NC G36-3A20PB	常闭NC G40-3A10PB	常闭NC G44-3A30PB	常闭NC G50-3A30PB	常闭NC G54-3A20PB	
			一开一闭NO+NC G36-3A20PC	一开一闭NO+NC G40-3A10PC	一开一闭NO+NC G44-3A30PC	一开一闭NO+NC G50-3A30PC	一开一闭NO+NC G54-3A20PC	
		SCR可挂硅 Control Hable silicon						
		继电器输出 Relay output						
		检测距离 DETECTION DISTANCE	2m	3m	3m	G50-2A30JC 4m	2m	
	反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G36-3B2NA	常开NO G40-3B3NA	常开NO G44-3B30NA	常开NO G50-3B4NA	常开NO G54-3B2NA
				常闭NC G36-3B2NB	常闭NC G40-3B3NB	常闭NC G44-3B30NB	常闭NC G50-3B4NB	常闭NC G54-3B2NB
			一开一闭NO+NC G36-3B2NC	一开一闭NO+NC G40-3B3NC	一开一闭NO+NC G44-3B30NC	一开一闭NO+NC G50-3B4NC	一开一闭NO+NC G54-3B2NC	
交流 AC 90-250 VAC		正逻辑 PNP	常开NO G36-3B2PA	常开NO G40-3B3PA	常开NO G44-3B30PA	常开NO G50-3B4PA	常开NO G54-3B2PA	
			常闭NC G36-3B2PB	常闭NC G40-3B3PB	常闭NC G44-3B30PB	常闭NC G50-3B4PB	常闭NC G54-3B2PB	
			一开一闭NO+NC G36-3B2PC	一开一闭NO+NC G40-3B3PC	一开一闭NO+NC G44-3B30PC	一开一闭NO+NC G50-3B4PC	一开一闭NO+NC G54-3B2PC	
		SCR可挂硅 Control Hable silicon						
		继电器输出 Relay output						
		检测距离 DETECTION DISTANCE	5m	4m	5m	G50-2B4JC 5m	5m	
对射型 Through beam		直流 DC 10-30 VDC	负逻辑 NPN	常开NO G36-3C5NA	常开NO G40-4C4NA	常开NO G44-3C5NA	常开NO G50-3C5NA	常开NO G54-3C5NA
				常闭NC G36-3C5NB	常闭NC G40-4C4NB	常闭NC G44-3C5NB	常闭NC G50-3C5NB	常闭NC G54-3C5NB
				一开一闭NO+NC G136-3C5NC	一开一闭NO+NC G40-4C4NC	一开一闭NO+NC G44-3C5NC	一开一闭NO+NC G50-3C5NC	一开一闭NO+NC G54-3C5NC
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO G36-3C5PA	常开NO G40-4C4PA	常开NO G44-3C5PA	常开NO G50-3C5PA	常开NO G54-3C5NC	
			常闭NC G36-3C5PB	常闭NC G40-4C4PB	常闭NC G44-3C5PB	常闭NC G50-3C5PB	常闭NC G54-3C5PA	
			一开一闭NO+NC G36-3C5PC	一开一闭NO+NC G40-4C4PC	一开一闭NO+NC G44-3C5PC	一开一闭NO+NC G50-3C5PC	一开一闭NO+NC G54-3C5PB	
		SCR可挂硅 Control Hable silicon						
		继电器输出 Relay output						
		输出电流 DC/SCR 继电器 Control output	DC:200mA, AC:300mA relay:2A					
		消耗电流 DC/AC Consumption current	DC<15mA, AC<10ms					
		响应时间 DC/AC Response time	DC<2ms, AC<20mA					
		指向角 Directional angle	3°-10°					
	检测物体 Detected object	透明或不透明体 transparent or opaque body						
	工作环境温度 Working environment temperature	-25°C~+55°C						
	工作环境照度 Intensity of illumination of working environment	太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX						
	外壳材料 Shell materia	金属Metal	金属Metal	金属Metal	塑料Plastic	塑料Plastic		
	防护等级 Protection grade	IP54	IP50	IP54	IP54	IP54		

光电开关 PHOTOELECTRIC SWITCH






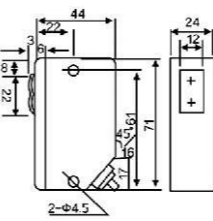
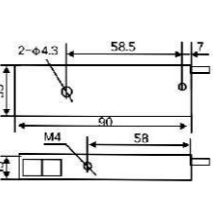
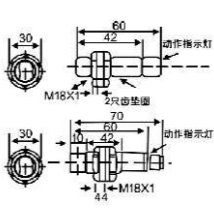
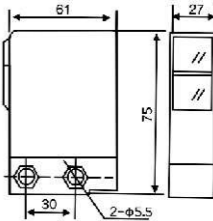
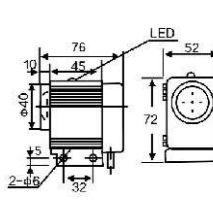
结构分类 Structural category

光电开关 Photoelectric switch

外形编号 Outward Appearance code		G55	G64	G68	G70				
外形图例 Outward appearance illustration									
外形尺寸 Overall dimensions									
漫反射型 Retroreflective	检测距离 DETECTION DISTANCE	20cm	10cm	30cm	20-100cm				
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G55-3A20NA	常闭NC G55-3A20NB	常开NO G55-3A20NC	常开NO G55-3A20PA			
		交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G55-3A20PB	常开NO G55-3A20PC	常开NO G55-3A20PA	常开NO G55-3A20PA		
			继电器输出 Relay output	常开NO G55-3A20PC	常闭NC G55-3A20PC	常开NO G55-3A20PC	常开NO G55-3A20PC		
	反射型 Retroreflective	检测距离 DETECTION DISTANCE	2m	1.5-2m	2m	2m			
		直流 DC 10-30 VDC	负逻辑 NPN	常开NO G55-3B2NA	常闭NC G55-3B2NB	常开NO G55-3B2NC	常开NO G55-3B2PA		
			交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G55-3B2PB	常开NO G55-3B2PC	常开NO G55-3B2PA	常开NO G55-3B2PA	
				继电器输出 Relay output	常开NO G55-3B2PC	常闭NC G55-3B2PC	常开NO G55-3B2PC	常开NO G55-3B2PC	
		对射型 Through beam	检测距离 DETECTION DISTANCE	4m	3m	5m	5m		
			直流 DC 10-30 VDC	负逻辑 NPN	常开NO G55-3C4NA	常闭NC G55-3C4NB	常开NO G55-3C4NC	常开NO G55-3C4PA	
				交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G55-3C4PB	常开NO G55-3C4PC	常开NO G55-3C4PA	常开NO G55-3C4PA
					继电器输出 Relay output	常开NO G55-3C4PC	常闭NC G55-3C4PC	常开NO G55-3C4PC	常开NO G55-3C4PC
输出电流 DC/SCR 继电器 Control output			DC:200mA, AC:300mA						
消耗电流 DC/AC Consumption current			DC<15mA, AC<10ms						
响应时间 DC/AC Response time			DC<2ms, AC<20mA						
指向角 Directional angle			3°-10°						
检测物体 Detected object	透明或不透明体 transparent or opaque body								
工作环境温度 Working environment temperature	-25°C~+55°C								
工作环境照度 Intensity of illumination of working environment	太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX								
外壳材料 Shell material	金属 Metal		塑料 Plastic	塑料 Plastic	塑料 Plastic				
防护等级 Protection grade	IP54	IP66	IP54	IP54					

光电开关 PHOTOELECTRIC SWITCH





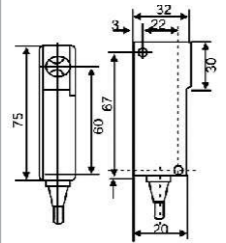
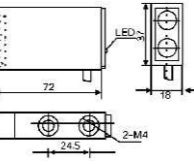
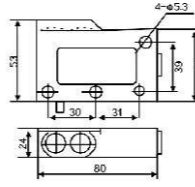
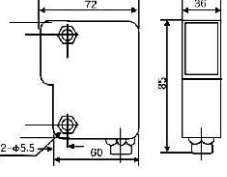
光电开关 Photoelectric switch

外形编号 Outward Appearance code		G71	G72	G180	G75	G76			
外形图例 Outward appearance illustration									
外形尺寸 Overall dimensions									
漫反射型 Retroreflective	检测距离 DETECTION DISTANCE	50cm	40cm	10cm	80cm	1m			
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO G71-3A50NA	常闭NC G71-3A50NB	常开NO G71-3A50NC	常开NO G71-3A50PA	常开NO G71-3A50PA		
		交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G71-3A50PB	常开NO G71-3A50PC	常开NO G71-3A50PA	常开NO G71-3A50PA		
			继电器输出 Relay output	常开NO G71-3A50PC	常闭NC G71-3A50PC	常开NO G71-3A50PC	常开NO G71-3A50PC		
	反射型 Retroreflective	检测距离 DETECTION DISTANCE	2m	3m	2m	3m	5m		
		直流 DC 10-30 VDC	负逻辑 NPN	常开NO G71-3B2NA	常闭NC G71-3B2NB	常开NO G71-3B2NC	常开NO G71-3B2PA	常开NO G71-3B2PA	
			交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G71-3B2PB	常开NO G71-3B2PC	常开NO G71-3B2PA	常开NO G71-3B2PA	
				继电器输出 Relay output	常开NO G71-3B2PC	常闭NC G71-3B2PC	常开NO G71-3B2PC	常开NO G71-3B2PC	
		对射型 Through beam	检测距离 DETECTION DISTANCE	5m	5m	5m	8m	10-50m	
			直流 DC 10-30 VDC	负逻辑 NPN	常开NO G71-3C5NA	常闭NC G71-3C5NB	常开NO G71-3C5NC	常开NO G71-3C5PA	常开NO G71-3C5PA
				交流 AC 90-250 VAC	正逻辑 PNP	常闭NC G71-3C5PB	常开NO G71-3C5PC	常开NO G71-3C5PA	常开NO G71-3C5PA
					继电器输出 Relay output	常开NO G71-3C5PC	常闭NC G71-3C5PC	常开NO G71-3C5PC	常开NO G71-3C5PC
输出电流 DC/SCR 继电器 Control output			DC:200mA, AC:300mA relay:2A						
消耗电流 DC/AC Consumption current			DC<15mA, AC<10mA						
响应时间 DC/AC Response time			DC<2ms, AC<20ms						
指向角 Directional angle			3°-10°						
检测物体 Detected object	透明或不透明体 transparent or opaque body								
工作环境温度 Working environment temperature	-25°C~-55°C								
工作环境照度 Intensity of illumination of working environment	太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX								
外壳材料 Shell material	金属 Metal		塑料 Plastic	塑料 Plastic	金属 Metal	塑料 Plastic			
防护等级 Protection grade	IP54	IP54	IP66	IP54	IP54				

光电开关 PHOTOELECTRIC SWITCH






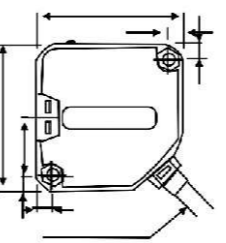
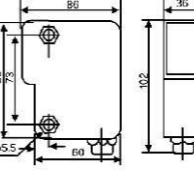
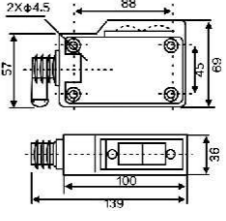
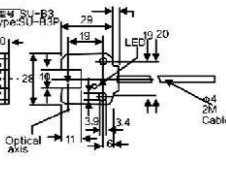
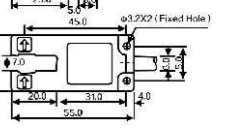
结构分类 Structural category

光电开关 Photoelectric switch

外形编号 Outward Appearance code		G77	G78	G80	G85		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Retroreflective	检测距离 DETECTION DISTANCE	30cm	40cm	80cm	1m		
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G77-3A30NA	G78-3A40NA	G80-3A80NA	G85-3A1NA
			常闭NC	G77-3A30NB	G78-3A40NB	G80-3A80NB	G85-3A1NB
			一开一闭NO+NC	G77-3A30NC	G78-3A40NC	G80-3A80NC	G85-3A1NC
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO	G77-3A30PA	G78-3A40PA	G80-3A80PA	G85-3A1PA
			常闭NC	G77-3A30PB	G78-3A40PB	G80-3A80PB	G85-3A1PB
			一开一闭NO+NC	G77-3A30PC	G78-3A40PC	G80-3A80PC	G85-3A1PC
	SCR可挂硅 Control Hable silicon	常开NO	G77-2A30LA	G78-2A40LA	G80-2A80LA	G85-2A1LA	
		常闭NC	G77-2A30LB	G78-2A40LB	G80-2A80LB	G85-2A1LB	
	继电器输出 Relay output				G80-2A80JC	G85-2A1JC	
反馈反射型 Retroreflective	检测距离 DETECTION DISTANCE	3m	2m	3m	5m		
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G77-3B3NA	G78-3B2NA	G80-3B3NA	G85-3B5NA
			常闭NC	G77-3B3NB	G78-3B2NB	G80-3B3NB	G85-3B5NB
			一开一闭NO+NC	G77-3B3NC	G78-3B2NC	G80-3B3NC	G85-3B5NC
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO	G77-3B3PA	G78-3B2PA	G80-3B3PA	G85-3B5PA
			常闭NC	G77-3B3PB	G78-3B2PB	G80-3B3PB	G85-3B5PB
			一开一闭NO+NC	G77-3B3PC	G78-3B2PC	G80-3B3PC	G85-3B5PC
	SCR可挂硅 Control Hable silicon	常开NO	G77-2B3LA	G78-2B2LA	G80-2B3LA	G85-2B5LA	
		常闭NC	G77-2B3LB	G78-2B2LB	G80-2B3LB	G85-2B5LB	
	继电器输出 Relay output				G80-2B3JC	G85-2B5JC	
对射型 Through beam	检测距离 DETECTION DISTANCE	5m	5m	5m	10m		
	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	G77-3C5NA	G78-3C5NA	G80-3C5NA	G85-3C101NA
			常闭NC	G77-3C5NB	G78-3C5NB	G80-3C5NB	G85-3C101NB
			一开一闭NO+NC	G77-3C5NC	G78-3C5NC	G80-3C5NC	G85-3C101NC
	交流 AC 90-250 VAC	正逻辑 PNP	常开NO	G77-3C5PA	G78-3C5PA	G80-3C5PA	G85-3C101PA
			常闭NC	G77-3C5PB	G78-3C5PB	G80-3C5PB	G85-3C101PB
			一开一闭NO+NC	G77-3C5PC	G78-3C5PC	G80-3C5PC	G85-3C101PC
	SCR可挂硅 Control Hable silicon	常开NO	G77-2C5LA	G78-2C5LA	G80-2C5LA	G85-2C101LA	
		常闭NC	G77-2C5LB	G78-2C5LB	G80-2C5LB	G85-2C101LB	
	继电器输出 Relay output				G80-2C5JC	G85-2C101JC	
输出电流 DC/SCR 继电器 Control output	DC:200mA, AC:300mA						
消耗电流 DC/AC Consumption current	DC<15mA, AC<10mA						
响应时间 DC/AC Response time	DC<2ms, AC<20ms						
指向角 Directional angle	3°-10°						
检测物体 Detected object	透明或不透明体 transparent or opaque body						
工作环境温度 Working environment temperature	-25°C~+55°C						
工作环境照度 Intensity of illumination of working environment	太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX						
外壳材料 Shell materia	塑料 Plastic	塑料 Plastic	塑料 Plastic	金属 Metal			
防护等级 Protection grade	IP54	IP54	IP54	IP54			

光电开关 PHOTOELECTRIC SWITCH

光电开关 Photoelectric switch

GEN	G100	G139	G51	G56	
					
					
检测距离 DETECTION DISTANCE	30cm	1m	1m		
漫反射型 diffuse type	GEN300-DDT NPN/PNP	集电极开路输出 open-collector output 12-24VDC	G100-3A1NA	G139-3A1NA	
		漫反射型 diffuse type 300MM	G100-3A1NB	G139-3A1NB	
			G100-3A1NC	G139-3A1NC	
	GEN300-PFR 继电器输出 Relay output 24-240VAC/24-240VDC	漫反射型 diffuse type 300MM	G100-3A1PA	G139-3A1PA	
			G100-3A1PB	G139-3A1PB	
			G100-3A1PC	G139-3A1PC	
	漫反射型 diffuse type 300MM		G100-2A1LA	G139-2A1LA	
			G100-2A1LB	G139-2A1LB	
			G100-2A1JC	G139-2A1JC	
	镜面反射型 retro-reflective type	GEN5M-MDT NPN/PNP	集电极开路输出 Open-collector output 12-24VDC	5m	5m
镜面反射型 retro-reflective type 0.1-5m			G100-3B5NA	G139-3B5NA	
			G100-3B5NB	G139-3B5NB	
GEN5M-MFR 继电器输出 Relay output 24-240VAC/24-240VDC		镜面反射型 retro-reflective type 0.1-5m	G100-3B5PA	G139-3B5PA	
			G100-3B5PB	G139-3B5PB	
			G100-3B5PC	G139-3B5PC	
镜面反射型 retro-reflective type 0.1-5m			G100-2B5LA	G139-2B5LA	
			G100-2B5LB	G139-2B5LB	
			G100-2B5JC	G139-2B5JC	
对射型 through-beam type		GEN10M-TDT NPN/PNP	集电极开路输出 Open-collector output 12-24VDC	10m	10m
	对射型 through-beam type 10m		G100-3C101NA	G139-3C101NA	G51-3E01NA
			G100-3C101NB	G139-3C101NB	G56-3E01NB
	GEN10M-TFR 继电器输出 Relay output 24-240VAC/24-240VDC	对射型 through-beam type 10m	G100-3C101NC	G139-3C101NC	G51-3E01NC
			G100-3C101PA	G139-3C101PA	G51-3E01PA
			G100-3C101PB	G139-3C101PB	G51-3E01PB
	对射型 through-beam type 10m		G100-3C101PC	G139-3C101PC	G51-3E01PC
			G100-2C101LA	G139-2C101LA	
			G100-2C101LB	G139-2C101LB	
	继电器输出 Relay output				
输出电流 DC/SCR 继电器 Control output		DC:200mA, AC:300mA relay:2A			
消耗电流 DC/AC Consumption current		DC<15mA, AC<10mA			
响应时间 DC/AC Response time		DC<2ms, AC<20ms			
指向角 Directional angle		3°-10°			
检测物体 Detected object		透明或不透明体 transparent or opaque body			
工作环境温度 Working environment temperature		-25°C~+55°C			
工作环境照度 Intensity of illumination of working environment		太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX			
外壳材料 Shell materia	塑料 Plastic	金属 Metal	铝壳/塑料 Aluminum/Plastic	塑料 Plastic	
防护等级 Protection grade	IP54	IP54	IP54	IP54	

光电开关 PHOTOELECTRIC SWITCH

结构分类 Structural category

光电开关 Photoelectric switch

外形编号 Outward Appearance code		G115	G63	G65	G57			
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 DETECTION DISTANCE								
漫反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO					
			常闭NC					
			一开一闭NO+NC					
		正逻辑 PNP	常开NO					
			常闭NC					
			一开一闭NO+NC					
	交流 AC 90- 250 VAC	SCR可挂硅 Control Hable silicon	常开NO					
			常闭NC					
			继电器输出 Relay output					
		反馈反射型 Retroreflective	直流 DC 10-30 VDC	负逻辑 NPN	常开NO			
					常闭NC			
					一开一闭NO+NC			
正逻辑 PNP	常开NO							
	常闭NC							
	一开一闭NO+NC							
交流 AC 90- 250 VAC	SCR可挂硅 Control Hable silicon	常开NO						
		常闭NC						
		继电器输出 Relay output						
	对射型 Through beam	直流 DC 10-30 VDC	负逻辑 NPN	常开NO	25m	3m	1cm	1.5cm
				常闭NC	G115-3E25NB	G63-3E03NB	G65-3E01NB	G57-3E1.5NB
				一开一闭NO+NC	G115-3E25NC	G63-3E03NC	G65-3E01NC	G57-3E1.5NC
正逻辑 PNP			常开NO	G115-3E25PA	G63-3E03PA	G65-3E01PA	G57-3E1.5PA	
			常闭NC	G115-3E25PB	G63-3E03PB	G65-3E01PB	G57-3E1.5PB	
			一开一闭NO+NC	G115-3E25PC	G63-3E03PC	G65-3E01PC	G57-3E1.5PC	
交流 AC 90- 250 VAC		SCR可挂硅 Control Hable silicon	常开NO					
			常闭NC					
			继电器输出 Relay output					
		输出电流 DC/SCR 继电器 Control output		DC:200mA, AC:300mA				
		消耗电流 DC/AC Consumption current		DC<15mA, AC<10mA				
		响应时间 DC/AC Response time		DC<2ms, AC<20ms				
指向角 Directional angle		3°~10°						
检测物体 Detected object		透明或不透明体 transparent or opaque body						
工作环境温度 Working environment temperature		-25°C~+55°C						
工作环境照度 Intensity of illumination of working environment		太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX						
外壳材料 Shell material		金属 Metal	金属或塑料 Metal, Plastic	塑料 Plastic	塑料 Plastic			
防护等级 Protection grade		IP64	IP54					

光电开关(PTQ18) PHOTOELECTRIC SWITCH

特点 Characteristic

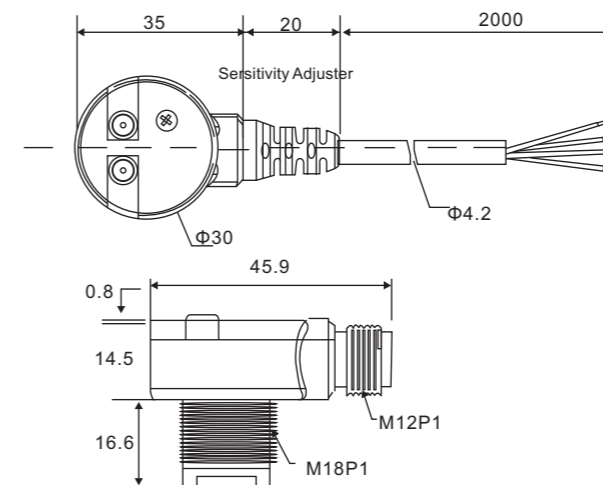
- T型设计可省空间
T-shaped housing design, saving space.
- N.O./N.I.C.可用选择线切换
N.O./N.C.function swithable by different wires.
- 体积小, 安装容易
Easy to install.(30*45.9*31.9mm)
- 接线使用特殊材质耐弯曲
Special design for bending resistance.
- Superior waterproof IP67



规格表 Specifications

型号 Model	NPN L.on/D.on	PTQ18-DU10/40N	PTQ18-DU10/40NK1
	PNP L.on/D.on	PTQ18-DU10/40P	PTQ18-DU10/40PK1
检出方式 Sensing type	扩散反射式 Diffuse reflection		
检出距离 Sensing distance	10cm/40cm, white paper 10*10(10/40cm)		
发光源 Emitting light	Infrared LED 850nm		
工作电压 Operating voltage	DC12~24V		
消耗电流 Current Consumption	20mA Max		
负载电流 Load current	100mA Max.at DC20V		
反应时间 Response time	1.5ms Max.		
隔离阻抗 Insulation resistance	20MΩmin.(DC500V)		
绝缘耐压 Voltage withstandability	AC1000V 60Hz for 60 Sec		
工作温度 Operating temperature	-25°C~+60°C		
工作湿度 Ambient humidity	35%~85%RH		
防水等级 Protection degree	IP67		
外观材质 Material	ABS		
出线方式 Wiring method	M12接头 M12 plug-in connector type	Pre-wiredΦ4.2*2M/3-wires出线	
重量 Weight	Approx.68.5g		Approx.18g

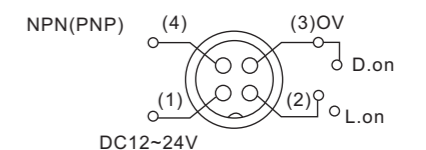
尺寸图 Dimensions



PTQ18-DU□

- BROWN ● 12~24V
- BLACK ● OUTPUT
- WHITE ○ L.ON
- BLUE ○ D.ON

PTQ18-DU□1



光电开关(PTQ18) PHOTOELECTRIC SWITCH

特点 Characteristic

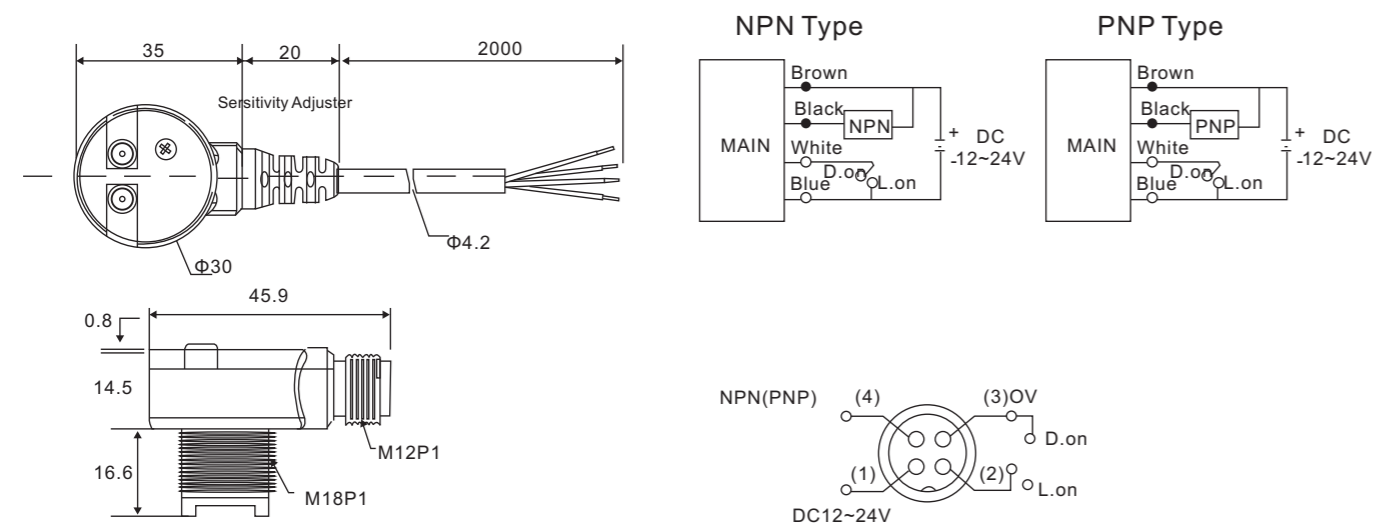
- 有L.on/D.on两种输出型能的选择
L.on/D.on switches function.
- 体积小, 安装容易
Easy to install. (30*45.9*31.9mm)
- 接线使用特殊材质耐弯曲
Special design for bending resistance.
- Superior waterproof IP67



规格表 Specifications

型号 Model	NPN L.on/D.on	PTQ18-QR2N	PTQ18-QR2NK1	PTQ18-PRI1N	PTQ18-PRIPK1
	PNP L.on/D.on	PTQ18-QR2P	PTQ18-QR2PK1	PTQ18-PRIP	PTQ18-PRIPK1
检出方式 Sensing type	镜片反射式 Retroreflective		偏光镜反射式 Polarizing Retroreflective		
检出距离 Sensing distance	2M		1M		
发光源 Emitting light	Infrared LED 650nm		Red LED 650nm		
工作电压 Operating voltage	DC12~24V				
消耗电流 Current Consumption	20mA Max				
负载电流 Load current	100mA Max.at DC24V				
反应时间 Response time	1.5ms Max.				
隔离阻抗 Insulation resistance	20MΩmin.(DC500V)				
绝缘耐压 Voltage withstandability	AC1000V 60Hz for 60 Sec				
工作温度 Operating temperature	-20°C~+60°C				
工作湿度 Ambient humidity	35%~85%RH				
防水等级 Protection degree	IP67				
外观材质 Material	ABS				
出线方式 Wiring method	Pre-wired Φ4.2*2M/4-wires	M12接头 M12 plug-in connector type	Pre-wired Φ4.2*2M/4-wires	M12接头 M12 plug-in connector type	
重量 Weight	Approx.68.5g	Approx.17.5g	Approx.68.5g	Approx.17.5g	

尺寸图 Dimensions



光电开关(TQ18) PHOTOELECTRIC SWITCH

特点 Characteristic

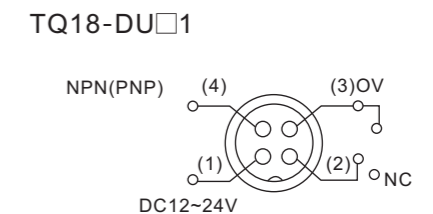
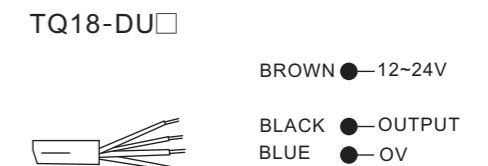
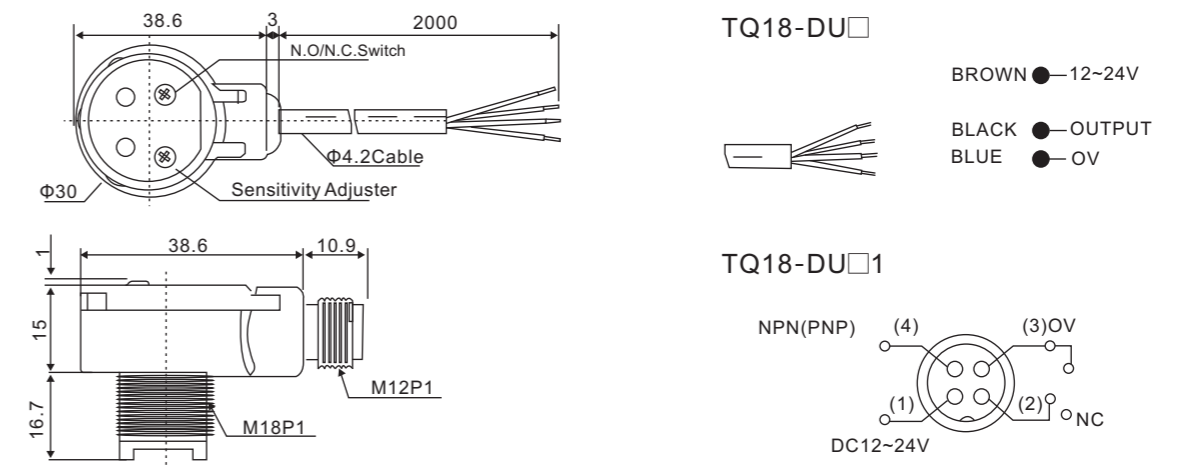
- 晶体输出, 反应快
Elbow housing design, space saving.
- 输出之NO/NC可用VR调整, 无需重新配线(N.C.:VR转至最左; N.O.:VR转至最右)
N.O./N.C.function can be adjusted by N.O./N.C.Switch.
(N.C.(D.on):Turn the switch to the end of left side.
(N.O.(L.on):Turn the switch to the end of right side.)
- 体积小, 安装容易
Easy to install.(30*49.5*32.7mm)
- 具有防尘盖, 可防水、防油
Prevent from water and oil,dust cover attached.



规格表 Specifications

型号 Model	NPN L.on/D.on	TQ18-DU10/40N	TQ18-DU10/40NK1
	PNP L.on/D.on	TQ18-DU10/40P	TQ18-DU10/40PK1
检出方式 Sensing type	扩散反射式 Diffuse reflection		
检出距离 Sensing distance	10cm/40cm, white paper 100*100(10/40cm)		
发光源 Emitting light	Infrared LED 850nm		
工作电压 Operating voltage	DC12~24V		
消耗电流 Current Consumption	34mA Max		
负载电流 Load current	100mA Max.at DC24V		
反应时间 Response time	1.5ms Max.		
隔离阻抗 Insulation resistance	20MΩmin.(DC500V)		
绝缘耐压 Voltage withstandability	AC1000V 60Hz for 60 Sec		
工作温度 Operating temperature	-25°C~+60°C		
工作湿度 Ambient humidity	35%~85%RH		
防水等级 Protection degree	IP66		
外观材质 Material	ABS		
出线方式 Wiring method	Pre-wiredΦ4.2*2M/3-wires出线	M12接头 M12 plug-in connector type	
重量 Weight	Approx.65g	Approx.18g	

尺寸图 Dimensions



光电开关(TQ18) PHOTOELECTRIC SWITCH

特点 Characteristic

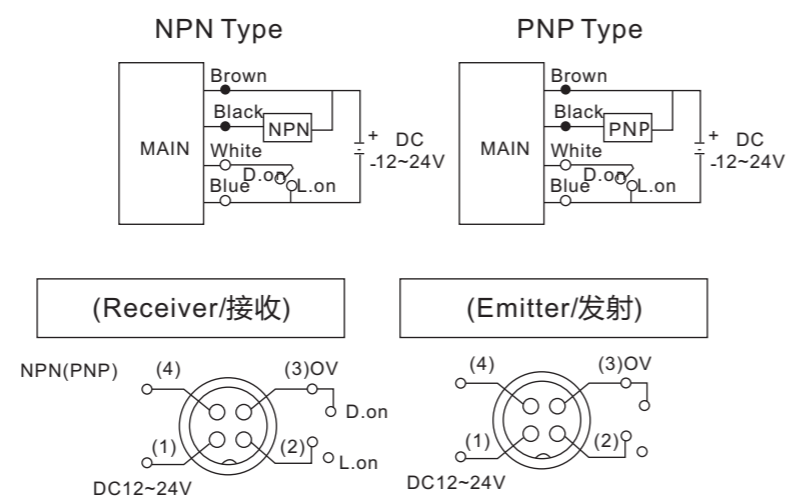
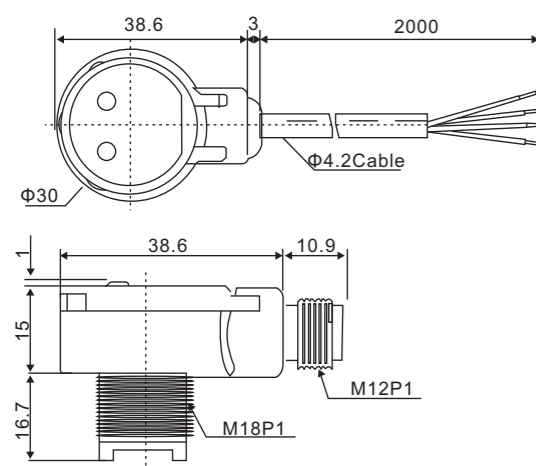
- 高亮度双LED指示灯, 让您以很快的了解感应器的使用状态
High brightness dual LED makes you easy to know the current operating situation.
- 有L.on/D.on两种输出型的选择。
L.on/D.on Switch function.
- 体积小, 安装容易
Easy to install.(30*49.5*32.7mm)
- 具有防尘盖, 可防水、防油
Prevent from water and oil, dust cover attached.



规格表 Specifications

型号 Model	NPN L.on/D.on	TQ18-10/20N	TQ18-10/20NK1
	PNP L.on/D.on	TQ18-10/20P	TQ18-10/20PK1
检出方式 Sensing type	扩散反射式 Diffuse reflection		
检出距离Sensing distance	10cm/40cm, white paper 100*100(10/40cm)		
发光源Emitting light	Infrared LED 850nm		
工作电压 Operating voltage	DC12~24V		
消耗电流Current Consumption	34mA Max		
负载电流 Load current	100mA Max.at DC24V		
反应时间 Response time	1.5ms Max.		
隔离阻抗 Insulation resistance	20MΩmin.(DC500V)		
绝缘耐压Voltage withstandability	AC1000V 60Hz for 60 Sec		
工作温度Operating temperature	-25°C~+60°C		
工作湿度 Ambient humidity	35%~85%RH		
防水等级Protection degree	IP66		
外观材质Material	ABS		
出线方式Wiring method	PX:Pre-wiredΦ4.22M/4-wires PX:Pre-wiredΦ4.22M/2-wires	M12接头 M12 plug-in connector type	
重量 Weight	Approx.130g		Approx.3.5g

尺寸图 Dimensions



光纤放大器 FIBER OPTIC AMPLIFIER

E3X-A11光纤放大器 Fiber optic amplifier

主要特点 Main features

- 用8回转调整旋钮可进行微调的通用型。
Universal type with 8-shaped rotated adjusting knob to do micro-adjustment
- 是传统产品检测距离的2倍。
Double detection distance of traditional product
- 带有应差可变旋钮
With a variable knob
- 使用脉冲亮灯进行20uS的超高速应答。
With pulsing light to respond within an ultra-short time of 20
- 以绿色光源可检测微妙的色差。
Can detect delicate aberration with green light source



主要参数 The main parameters

项目Project	通用型NPN输出 General-purpose NPN output	型号Model: E3X-A11
光源(发光波长) light source(light-emitting wavelength)		红色发光二极管 Red light-emitting diode(660nm)
电源电压 Voltage		DC10~30v[含脉动 (p-p)10%] DC10~30v[with the pulse(p-p)10%]
消耗电流 Current consumption		35mA以下 The following 35mA
控制输出 Output Control		负荷电源电压DC35以下, 负荷电流100mA以下(留电压1v以下)集电极开路输出形(NPN/PNP)的输出因形式不同而异入光时ON/遮光时ON开关转换式 Main voltage of load is below DC35v, load current is below 100mA(residual voltage below 1v), open-collector output type(NPN or PNP output varies in different state), on when
应答时间 Response time		动作·复位、各200us以下Reset action, the following 200us
灵敏度调整 Sensitivity adjustment		8旋转无终端旋钮(带有指示器) 8 rotary knob without end(with indicator)
保护电路 Protection circuit		保护电源逆接线, 保护输出短路, 防止相互干扰功能 Protection against the power connection ,output short circuit protection to prevent interference function
照明 Lighting		受光面的光照度, 白炽灯; 3000rx以下, 太阳光10000rx以下 Smooth by the light ,incandescent 3000rx below ,following the sun 10000rx
周围温度 Ambient temperature		动作时; -25~+55°C, 保存时; 40~70°C(不能有结冰, 结露现象) When action:-25~+55°C,save time:40~70°C(there can not be frozen, the phenomenon of condensation)
周围湿度 Surrounding humidity		35~85%RH, 保存时: 35~95%RH(不能有结露现象) 35~85%RH,Save: Save time:35~95%RH(can not have the phenomenon of condensation)
绝缘电阻 Insulation resistance		20mΩ 以下(DC500MV)以兆计(20mΩ above(DC500MV to trillion dollars)
耐电压 Voltage resistance		AC1,000V 50/60Hz 1min
振动(耐久) Vibration(durable)		10~55Hz复振幅1.5mm X、Y、Z各方向2h 10~55Hz complex amplitude 1.5mm X, Y, Z direction of the 2h
冲击(耐久) Shock (durable)		500m/s ² X、Y、Z各方向3次 500/s ² X、Y、Zdirection of the 3rd
保护构造 Protection structure		IBC规格IP50(安装保护盖时)IBC standard IP50(when the installation of protective cover)
连接方式 Connection		导线引出开型(标准线长2m)Open-wire lead (standard long line 2m)
质量(以包装情况下) Weight(in cases)		100g
材料 Materials	外壳 Shell	耐热 ABS Heat-resistant ABS
	保护罩 The protective shield	聚酯Polyester
附属品 Accessories		金属安装配件, 调整用螺丝刀, 操作说明 The installation of metal accessories used to adjust screwdriver, operation manuals

光纤放大器 FIBER OPTIC AMPLIFIER

E3X-DA11-N光纤放大器 Fiber optic amplifier

主要特点 Main features

- ✦ 用新型的接插件可以省配线省空间，提高保养性能。
Use new-style connector to save wiring space and make it more maintainable.
- ✦ 采用自动电源控制电路的超级数字显示。
Adopt the super digital display of the Automatic power control circuit.
- ✦ 消耗电力量最多可省70%。
Power saving up to 70%.
- ✦ 可以在运行中把数字显示关掉或变暗。
Be able to shut off or dim the digital display while in working.
- ✦ 移动电话大小的新时代的手机式控制器，全力发掘光纤放大器功能。
Use a controller of modern mobile style to explore the functions of Fiber Optic Amplifier



主要参数 The main parameters

项目Project	通用型NPN输出 General-purpose NPN output	型号Model: E3X-D11-N
光源(发光波长) light source(light-emitting wavelength)		红色发光二极管 Red light-emitting diode(660nm)
电源电压 Voltage		DC12~24V±10%(含脉动(P-P))10%LXT DC12~324V±10%pulse(P-P)10% of the following
控制输出NO/OFF输出 Control output NO/OFF output		负荷电源50mA(残留电压NPN/PNP, 备以1V以下), 开放式集电极输出型(NPN/PNP输出, 根据形式而各异)入光时ON/遮光时ON开关转换 Power load 50mA(residual current voltage NPN/PNP, each of the following 1V) open-collector output(NPN/PNP output, according to the different forms)into the light when ON/ switch switch shade when ON
保护回路 Protection of the loop		电源连接保护, 输出短路保护, 相互干涉防止功能 Power connection protection, output short-circuit protection features to prevent interference in each other
应答时间 Response time		超高速模式(动作-复位:各0.25ms)标准模式(动作-复位:各1ms)超长距离模式(动作-复位:各4ms) Ultra-high-speed mode (reset action:0.25ms)standard mode(reset action:1ms)ultra-long-range model (reset action:4ms)
灵敏度设定 Sensitivity settings		示教和操作规程调整 Teaching and procedures adjusting
表示灯indication lamp		动作表示灯(橙色), 7级数字光量表示(红色), 7级数字光量百分比表示(红色), 光量和门限值双光亮级数条表示(绿、红2色), 7级数字门限值表示(红色) Light said that the action(orange), 7 figures, said the amount of light(red), 7 figures expressed as a percentage of the amount of light(red), the amount of light and bright dual-threshold level that Article (green, red color 2), 7 digital threshold that (Red)
表示计时 Time indicator		可以再通常/保持峰值/保持低值之间切换 Can usually/maintain peak/low to keep switching between the
表示方向 Direction indicator		通常/逆向切换 Usually/reverse switch
使用环境照度 The use of environmental illumination		受光面照度:白炽灯; 10,000lx以下, 太阳光20,000lx以下 Smooth by irradiation:incandescent: 10,000lx under the sun: 20,000lx following
环境温度 Ambient temperature		动作时:1~3台连接时-25~+55°C、4~11台连接时-25~+50°C、12~16台连接时-25~+45°C、, 保存时:-30~+70°C(但不可接冰、接露的情况) Action: 1to3 connection -25~+45°C, 4~11, when connected -25~+50°C, 12~16°C, when connected -25~+45°C, save time: -30~+70°C (but not ice pick, then open the case)
环境湿度 Environmental humidity		工作时, 保存时:各35~85%RH(但不可结成水珠) Work, save time: 35~85%RH (but not to form water)
绝缘电阻 Insulation resistance		20mΩ 以上(DC500V) 20mΩ above(DC500V)
耐电压 Voltage		AC1,000V 50/60Hz 1min
振动(耐久)Vibration(durable)		10~55Hz双振幅1.5mm X、Y、Z各方向2h 10~55Hz complex amplitude 1.5mm X, Y, Z direction of the 2h
冲击(耐久)The impact of(durable)		50m/s ² X、Y、Z各方向2次 50m/s ² X、Y、Z direction of the 2h
连接方式Connection		导线引出型(标准导线长2m) Lead-wire(standard wire length 2m)
质量(包装状态)Weight(packaged state)		100g
材料Materials	外壳 Shell	聚丁烯对苯二酸盐PB-II of salt
	保护罩 The protective shield	聚脂Polyester
附件 Annex		使用说明书Manua

光纤放大器 FIBER OPTIC AMPLIFIER

E3X-NT11光纤放大器 Fiber optic amplifier

主要特点 Main features

- ✦ 超薄、仅为10mm的ICH型，节省机器空间。
Ultra-thin, is only 10mm thick and ICH based, saving spaces for machines
- ✦ 只需按一次按钮既可轻轻松松进行示教。
Push one button to easily carry out teaching process
- ✦ 即便4根光纤单元紧密安装也不会产生相互干扰(同行首创)
Four fiber-optic modules can be closely installed together without interfering each other
- ✦ 即可遇水也可以放心的防护构造IP66
With the protection structure of IP66, can be safely used even in the humid environment
- ✦ 运用工件示教功能，来减少调整的工时。
The working hours for adjustment are reduced by using the teaching function



主要参数 The main parameters

项目Project	通用型NPN输出 General-purpose NPN output	型号Model: E3X-NT11
光源(发光波长) light source(light-emitting wavelength)		红色发光二极管(380nm) Red light-emitting diode(380nm)
电源电压 Voltage		DC12~24V±10%波纹(P-P) 10%以下DC12~24V±10% of corrugated(P-P)10% of the following
消耗电流 Current consumption		50mA以下 The following 50mA
控制输出 Output Control		负荷电流100mA以下(留电压1V以下)根据NPN/PNP输出的形式不同 Following is a 100mA load current (voltage of 1V to stay below) show the root NPN/PNP output in the form of different and
保护电路 Protection circuit		电源逆接保护, 输出短路保护, 相互干涉功能 Then reverse power protection, output short-circuit protection, mutual interference function.
应答时间 Response time		动作, 复位: 各500uS以下(在客定检测距离方面) Action, reversion, the following 500uS (set off in the distance detection)
示教确认功能 Teach-in function to confirm		表示灯(红色、绿色、2色, 蜂鸣器) That light (red, green, 2-color, Ming-feng)
照明 Lighting		受光面的光照度, 白炽灯; 3000lx以下, 太阳光1000lx以下 Smooth by the light, incandescent 3000lx below, following the sun 1000lx
周围温度 Ambient temperature		动作时: -2~+55°C, 保存时: 40~70°C(不能有结冰, 结露现象) When action: -2~+55°C, save time: 40~70°C (there can not be frozen, the phenomenon of condensation)
周围湿度 Surrounding humidity		34~85%RH, 保存时: 35~95%RH(不能有结露现象) 34~85%RH, Save: Save time: 35~95%RH (can not have the phenomenon of condensation)
绝缘电阻 Insulation resistance		20mΩ 以上(DC500MV)以兆计(20mΩ above(DC500MV to trillion dollars))
耐电压 Voltage resistance		AC1,000V 50/60Hz 1min
振动(耐久) Vibration(durable)		10~50Hz复振幅1.5mm或者300m/s ² X、Y、Z各方向2h 10~50Hz complex amplitude 1.5mm or 300m/s ² X, Y, Z direction of the 2h
冲击(耐久) Shock (durable)		500m/s ² X、Y、Z各方向3回 500m/s ² X、Y、Z direction of the 3back
保护构造 Protection structure		IBC规格IP50(安装保护盖时)IBC standard IP50 (when the installation of protective cover)
连接方式 Connection		引出线型(标准线长2m)Lead-based (standard long line 2m)
质量(以包装情况下) Weight(in cases)		100g
材料 Materials	外壳 Shell	乙烯对苯二酸盐 P-ethylene salt II
	保护罩 The protective shield	聚脂Polyester
附属品 Accessories		金属安装配件, 操作说明书 The installation of metal parts, operating manuals

色标开关 COLOR CODE SWITCH



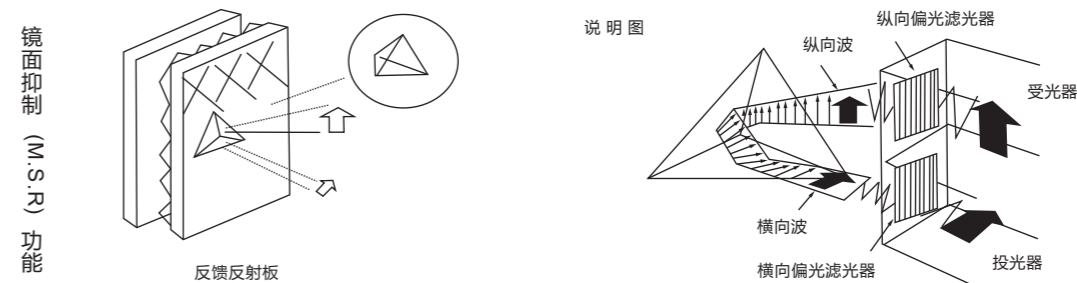
电源内藏型光电开关 POWER BUILT-IN TYPE PHOTOELECTRIC SWITCH

光电传感器G50系列 Photo sensor (G50 series)

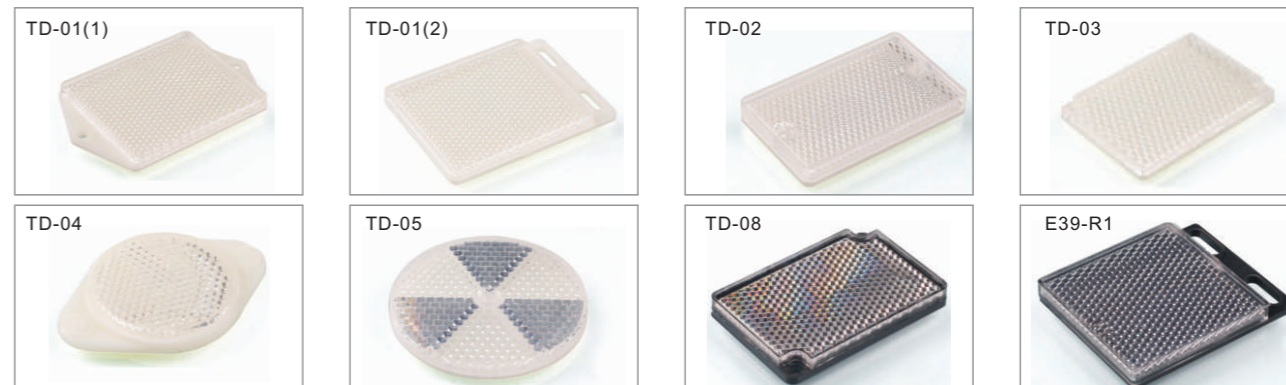
种类 Type	任意电源、继电器接点输出型 Free voltage, Relay contact output		
型号 Model	透过型Trough beam BX15M-TFR	镜面反射型(*1)Retroreflective(*1) BX5M-MFR	漫反射型Diffuse BX700-DFR
外形尺寸 Overall dimensions & dimensions			
检测距离 Detection distance	15m	0.1m-5m	700mm(200×200mm白色无光纸) 700mm(200×200mm Non glossy white paper)
检测物体 Detecting distance	Φ15mm以上的非透明体 Opaque material of Min.Φ15mm	Φ60mm以上的非透明体 Opaque material of Min.Φ60mm	非透明体、半透明体、透明体 Transpquent, Translucent, Opaque distance
滞后距离 Response distance			不大于检测距离的15% Max.15% at detecting distance
滞后速度 Response speed	20mS以下 Max:20mS		
电源电压 Power supply voltage	AC24-240V±10% 50/60Hz, DC24-240V±10%(波纹P-P:10%以下) 24 to 240VAC±10% 50/60Hz, 24 to 240VDC±10%(Pipple P-P:Max10%)		
调节灵敏度 Sensitivity	内置调节灵敏度的VR Adjustable by VR		
工作模式 Operating Mode	通过切换开关选择 Light ON/Dark ON模式 Selectable Light ON/D or Dark ON bu slide switch		
控制输出 Control output	继电器输出 Relay output	接点容量: DC 30V 3A阻抗负载、AC250V 3A 阻抗负载 Capacity: 30VDC 3A Resistive load, 250VAC 3A Resistive load 接点组成: 1C Contact orde: 1C	
自动诊断输出 Self-diagnostic Outpue	光传感器开关不稳定时, 绿色LED亮 Green LED turns on at unstable operation		
计时功能 Timer function	可根据开关切换选择 ON Delay, ONE Shot Delay 延迟时间:0.1-5秒(调节VR) ON Delay, OFF Delay, Selectable one shot delay by slide switch Delay time: 0.1 to 5sec adjustable by VR		
集中营护结构 Protection	IP54(IEC规格) IP54(IEC Standard)		

TD镜面反射板及其工作原理 TD MIRROR REFLECTOR PLATE AND WORKING PRINCIPLR

- ◆ 反馈反射光电开关是利用内装的偏光滤器和反馈反射型特点, 只接收来自回归发射板的光束功能。
- ◆ Taking advatage of the built-in polarization liter and the characteristic of feedback reflection type feedback reflection type photoelectric switch has the function of only receiving the beam returned from the reflector plate.



TD镜面反射板 TD mirror reflector plate



电源内藏型光电开关 POWER BUILT-IN TYPE PHOTOELECTRIC SWITCH

GT系列通用放大器内藏型光电开关 GT SERIES GENERAL AMPLIFIER BUILT-IN PHOTOELECTRIC SWITCH

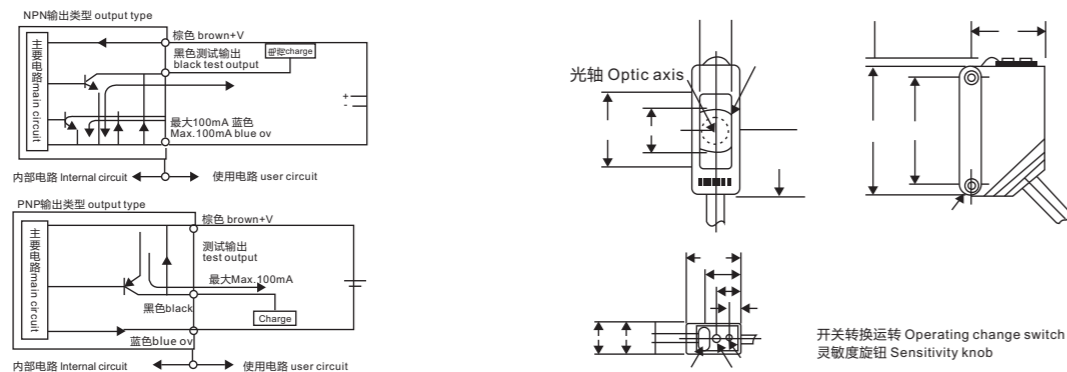
- ✦ 最适用于物流装置的通用光电开关
Most suitable for general photoelectric switch
- ✦ 标准偏光的镜片反射型
Standard Polarized lenses reflective type
- ✦ 长距离检测对照型:10m反射型:0.8偏光镜片反射型:2m
Long-distance scanning contrast type:10m
Diffused reflection:0.8m polarized lenses reflective type:2m
- ✦ 全球范围(EN规格产品)(备有PNP,PNP)适用
Suitable for EN product (with PNP and NPN)in the world
- ✦ CRA-30国内制造,更有价格优势
CRA-30 domestic manufacturing, and more price advantage



技术参数 The main parameters

检测方式 Test type	长距离对照型 Long-distance contrast type	对照型 Contrast type	短距离反射型 Short-distance contrast type	漫反射型 Diffuse reflection	宽光束漫反射型 Wide beam diffused reflection type	长距离对照型 Long-distance contrast type
型号 Model	GT-1000/GT-1000P	GT-500/GT-500P	GT-200/GT-200P	GT-10/GT-10P	GT-40/GT-40P	GT-80/GT-80P
电源电压 Power supply	10-24V ±10%的波动 10-24V ±10%Fluctuation					
消耗电流 Consumption current	Below 55 mA light receiver 30mA, Receiver.25mA		<30mA Less than 30mA	<30mA Less than 30mA	<30mA Less than 30mA	<30mA Less than 30mA
检测距离 Scanning distance	10m	5m	2m 反射型 (reflective type)	1-100mm	400mm	800mm
标准检测物 Standard sensing object	Φ9mm		Φ60mm(反射型 reflective type)			
指向角 Angle of direction	—		—	10×10cm白纸 (white paper)	20×20cm 白纸 (white paper)	20×20cm 白纸 (white paper)
响应输出 Response Output	移动和复位小于1ms Movement and reposition less than 1ms					
受光面照度 Smooth the illumination	白炽灯:小于5000Lux 阳光: 小于2000Lux Incandescent lamp:less than 5,000Lux;sunlight:less than 20,000Lux					
使用湿度范围 Use of humidity range	-20~+70℃没有结冰和结露 no frosting and condensation					
使用湿度范围 Use of humidity range	35-85%RH					
绝缘电阻 Insulated resistance	>20MΩ					
耐电压 Voltage resistance	AC1000V 50/60Hz					
抗振动 Vibration resistance	10-55hz 高峰1.5毫米对x,y和z分别为2小时 10-55Hz peak1.5mmto wards X,Y and Z respectively for 2 hours					
抗冲击 Concussion resistance	500m/s ² 分别对x、y、z towards X,Y and Z respectively					
保护等级 Protection level	IP66 (IEC specification)					
电路保护 Circuit protection	防止错误输出时,电源供应器储备连接的保护,通过/截止(约100ms) Prevent error output when power supply is reserve connecting protection,through/cutoff(approximately 100ms)					

产品说明图 Explanation of the product



光幕传感器 AREA SECURE SENSOR

安全可靠的光幕传感器 Safe and reliable optic screen sensor

- ✦ 适用于自动化流水线、电梯、危险禁区、锻压机、冲剪机床、切纸机等安全检测、起保护作用。
Applicable for the safely detection of automatic assemble line. Elevator,danger restricted zone,metal forming machine,punching&shearing machine tool,paper cutter and so on and has protection function.
- ✦ 采用同步扫描技术,光路密集,无工作盲区,抗干扰能力强,安装方便。
Adopting synchronism scanning technology,concentrated beam path,non working blind area,strong anti-interference ability,and convenient installation.
- ✦ 具备抗相互干扰功能,可以2套以上紧贴安装。
Resistance to mutual interference function it is possible to closely mount more than 2 sets of devices.
- ✦ 具有故障自检功能、掉电停止、内部器件失灵停止、连接失灵停止、物体入侵停止信号输出。
Fault self-check,function,power failure stoop,inner component fault stop, connection fault stop,object invading stop signal output.
- ✦ 配套专用控制器,提供强大的控制功能。
Attached with specific control supplying powerful control function.
- ✦ 可与SICK、STI、KEYENCE、Honeywell等公司同类产品互换。
Replaceable for similar products made by SICK,STI,KEYENCE,Honeywell Corp.



检测方式 Detection way	型号 Model	控制输出 Control output	检测距离 Detection distance	光轴距 Optic axis distance	光轴数 Optic axis number	检测幅宽 Detection width	最小可检出物体 Min.detectable object							
对射式 Trough-beam 4CM间距	GM40-4N	N:NPN集电极开路输出 P:NPN集电极开路输出 J:继电器触点输出	≤3m	40mm	4	120mm	Φ50mm							
	GM40-4J				J:继电器触点输出	≤3m		40mm	6	200mm				
	GM40-6N								8	280mm				
	GM40-6J								10	360mm				
	GM40-8N								12	440mm				
	GM40-8J								16	600mm				
	GM40-10N								20	760mm				
	GM40-10J								24	920mm				
	GM40-12N								N:NPN集电极开路输出 P:NPN集电极开路输出 J:继电器触点输出	≤3m	20mm	4	60mm	Φ30mm
	GM40-12J											6	100mm	
	GM40-16N											8	140mm	
	GM40-16J											10	180mm	
	GM40-20N											12	220mm	
	GM40-20J											16	300mm	
GM40-24N	20	380mm												
GM40-24J	24	460mm												

光幕传感器 AREA SECURE SENSOR

GM光幕传感器GM OPTIC SCREEN SENSOR

性能 Performance

电源电压 Mains voltage	N:12-24VDC J:10-48VDC/VAC
消耗电流 Consumption current	100mA以下 Under 100mA
响应时间 Response time	200mS以下 Under 200mS
输出形式 Output form	集电极开路NPN型;灌电流mA,残余电压1.6v Collector open circuit NPN type:current 100mA,residual voltage 1.6v
输出状态 Output state	所有光轴受光时 ON ON when all the optic axis is photic
光源 Optic source	红外线 LED Infrared ray LED
连接方式 Connection way	配专用电缆连接器 With specific cable connector
壳体材料 Shell material	外壳: 铝合金,滤色罩:PMMA Shell:Alalloy,color filter cover:PMMA
耐环境光 Environment-resisting light	白炽灯: 受光面照度3000Lx,太阳光: 受光面照度10000Lx Incandescent lamp:intensity of illumination of photic surface 3000Lx,sunlight:intensity of illumination of photic surface 10000Lx.
环境温度 Ambient temperature	工作时:-10~50°(但不结冰),存储时:-40~70°-10~55°
环境湿度 Environment humidity	工作时:35-85RH, 存储时:35-95%RH
振动 Vibration	振动频率:10-50Hz,振动幅度:1.5mm, X、Y、Z方向各2小时 Vibration frequency:10-50Hz,Vibration range:1.5mm,each direction of X、Y、Z for 2hours
冲击 Shock	加速度:500/s2(约50g)X、Y、Z方向各3次 Acceleration:500/s (about 50g)each direction of X、Y、Z for 3 hours

控制器性能

型号 TYPE	GMK 光幕控制器
电源电压 Mains voltage	200-220VAC±10%;50/60Hz,3.5VA
消耗电流 Consumption current	100mA以下
响应时间 Response time	20mS以下
输出 Output	触点: COSΦ-1,AC250V5A,常开常闭
光源Optic source	红外LED
延时功能Delayed function	0.01-5S延时接通,接通延时
指示灯Indicator light	电源指示灯(G),动作指示灯(R)
壳体材料 Shell material	ABS
环境温度Ambient temperature	工作时: 35~55°(但不结冰),存储时: -40~70°
环境湿度 Environment humidity	工作时: 35-85RH,存储时: 35-95%RH
振动 Vibration	振动频率: 10-55Hz,振动幅度: 1.5mm,X、Y、Z方向各2小时
冲击Shock	加速度: 500/s(约50g)X、Y、Z方向各3次 Acceleration:500/s(about 50g),3 times for X、Y、Z each.

性能 Performance

外型 Overall	型号 Type	长度	用途 Application
	GML-4-4	5m	四芯受光器使用 For four-core projector
	GML-4-3	5m	三芯受光器使用 Three our-core projector

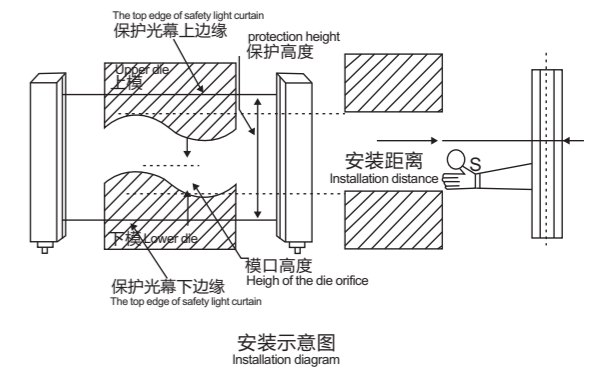
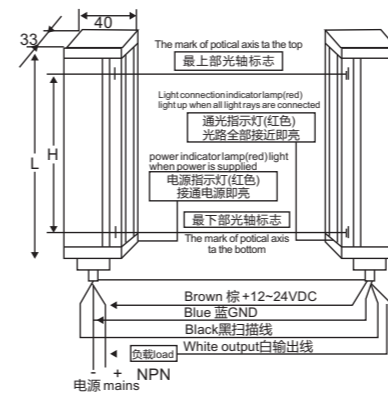
型号 Type	A	B	C	D
GM40-4	120	180	30	40
GM40-6	200	260	30	40
GM40-8	280	340	30	40
GM40-10	360	420	30	40
GM40-12	440	500	30	40
GM40-16	600	660	30	40
GM40-20	760	820	30	40
GM40-24	920	980	30	40
GM40-32	1240	1300	30	40
GM40-40	1560	1620	30	40
GM40-56	2200	2260	30	40
GM40-64	2520	2580	30	40

型号 Type	A	B	C	D
GM40-4	60	120	30	20
GM40-6	100	160	30	20
GM40-8	140	200	30	20
GM40-10	180	240	30	20
GM40-12	220	280	30	20
GM40-16	300	360	30	20
GM40-20	380	440	30	20
GM40-24	460	520	30	20
GM40-32	620	680	30	20
GM40-40	780	840	30	20
GM40-50	1100	1160	30	20
GM40-60	1260	1320	30	20

光幕传感器 AREA SECURE SENSOR

接线方式 Wiring Mode

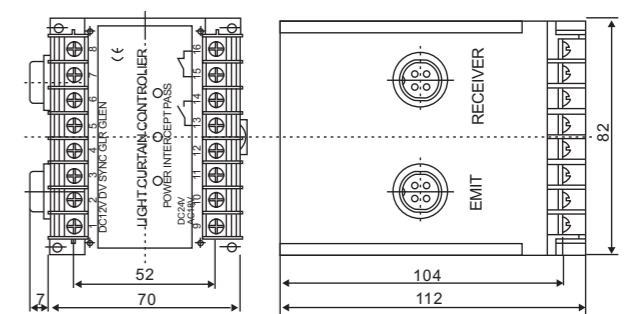
接线示意图 Wiring diagram



应用图例 Application illustration

- 自动装配机的侵入检测**
Protect personnel from invading the automatic assembling machine
- 机器人工作区安全检测**
Provide safeguarding for the robot working area
- 车库门车辆通过检测**
Check if car go through the garage door or not
- 上料机和卸料机的侵入检测**
Protect a loader or unloader from damage by invading object
- 电动器件的取件确认**
Confirm a unit-taking from the electric device
- 贴片机的侵入检测**
Protect chip moulder from damage by invading objects

光幕控制器 Light curtain controller GLC-2B



光幕传感器 AREA SECURE SENSOR

选择方便的光幕控制器 Selection Of Convenient light curtain controller

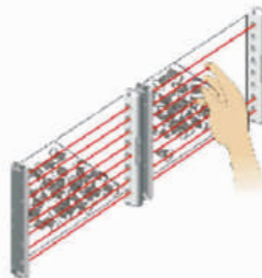
- ✦ 连接方便 Easy to connect
通过专用连接线直接与光幕传感器连接,也可以选用接线端子进行连接。
Directly connected to a light curtain sensor with a special connecting cable, or optionally using a terminal block
- ✦ 双继电器输出 Two-relay output
双继电器输出,相互监测,提供常开、常闭各一组供选择。
Two-relay output, monitor mutually, provide a set of NO or NC contacts for choice
- ✦ 简单实用 Simple and practical
体积小,功耗低,导轨式安装。
Compact size, low power consumption, rail installation



电源电压 Supply voltage	AC220V ±10%
功耗 power consumption	10VA
响应时间	30ms以下 below 30ms
输出电压Output voltage	DC12V-24V
输入信号 Input signal	NPN集电极开路输入 NPN open collector input
输出 Output	双继电器输出,常开、常闭各一组 AC250V 2A (COSΦ=1) two-relay output, a set of NO contacts and a set of NC ones
指示灯 Indication lamp	约200ms approx.200ms
复位时间 Recovery time	遮断(红色),通过(绿色),电源(黄色) shaded(red), pass (green), power(yellow)
环境温度 Ambient temperature	工作时at work; -5~+40°C(但不结冰 non frozen),保存时 in storage; -25~+55°C
壳体材料 Shell material	ABS 工程塑料 industrial plastic
工作寿命 Service life	内部继电器不小于10万次,电气1万小时 internal relays operate no less than 100,000times, electrical work for 10,000hours
防护等级 Protection level	IEC IP20

产品介绍 introduction

- ✦ 安全光幕,又称为光电保护装置、安全光栅、光电保护器、区域传感器,是通过发射红外光线,产生保护光栅,当光栅被遮挡时,装置发出遮光信号,控制具有潜在危险的机械设备停止工作,以降低作业人员在作业环境中受到伤害的可能性,有效保护作业人员的人身安全。
- ✦ 威卡品牌的GB系列安全光幕传感器系统是一种新开发的集以前各厂家光幕技术和特点之所长的高品质自动控制产品。运用红外线扫描探测技术。发射装置和接收装置安装于两侧,内部由单片机和微处理器进行数字程序控制,使红外线收发单元在高速扫描状态下,形成红外线光幕警戒屏障,当人和物体进入光幕屏障区内,控制系统迅速转换输出电平信号,使负载动作,当人和物体离开光幕警戒区域,则负载正常自动关闭,从而达到安全保护的目的。
- ✦ GB系列安全光幕实际应用时不需要控制器,仅需发射器和接收器,使用时通过航空插头插座或者电缆线连接,输出可直接外接继电器或者各类计算机数字接口。
- ✦ 安全光幕是目前保护冲压机械操作者人身安全和各类机械防护的一种最有效的安全保护装置,它比防护栅栏、机械拉手、机械拔手等保护装置的保护效果更好,避免在生产过程中因操作不当或机器出现故障而导致安全事故的发生。适用于普通冲床、高性能冲床、机械压力机、液压式压力机、层压机、压膜机、剪板机、工业机械手、包装设备以及其他自动化设备,也可用于多面区域保护或防盗。
- ✦ Safety light curtains, also called photoelectric safeguarding device, photoelectric protector, or area interrupted by an object, the device sends out a signal to stop the operating machinery and equipments, lowering the possibility of personal being and effectively safeguarding the workers.
- ✦ Taking advantage of the other brand and adopting the infrared scanning technology, the stord's safety light curtain of GB series is a new-developed automation-controlling product with reliable quality. The emitter light curtain and receiver are installed at two sides, while a SCM and a microprocessor are put inside to digital program the device, forming a safeguarding shield of infrared light rays and the keeping the emitter and receiver in the state of high-velocity scanning. When personnel or objects invade the security area, the control system quickly respond and send out a electric signal to make the load act and when the personnel or objects leave the area, the load automatically closes, so as to project the equipments and personnel from injuries.
- ✦ The safety light curtain of GB series only contains a set of emitter and receiver without extra controller. It can be directly connected to rays or other kinds of computer numerical ports with aviation connectors or cables.
- ✦ Safety light curtain is the most effective device in protecting operating personnel punching machines and is better than safety fence, machine handles, mechanical dial hands and other mechanical protective devices, effectively avoiding safety accidents which result from error operations or machine problems during producing. It can be used for general machine tool, high-performance punching machine, mechanical press, Hydraulic press, laminating machine, laminator, plate shearing machine, packaging machine and other automatic equipments, and can also be used for protection and



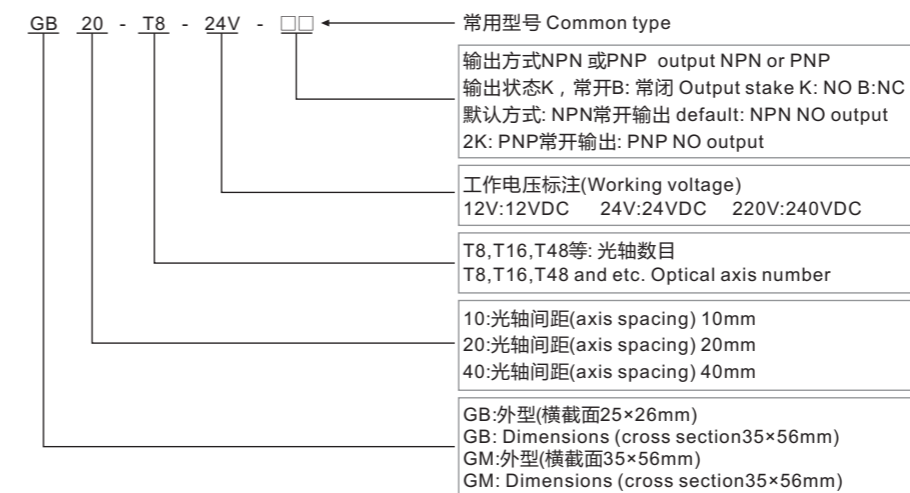
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具备特点

- ✦ 符合国际电工会IEC61496-1/2标准
Accord with IEC61496-1/2 standard
- ✦ 采用技术成熟的同步红外线扫描,优异的光学性能和2.5°的发散角,容易对准和维护
Adopt advanced infrared synchro-scanning technology, excellent optical performance and divergence angle of 2.5 degree, easy to align and maintain
- ✦ 外型小巧,采用铝铸合金外壳,非常坚固,轻巧
Small overall dimensions, aluminum alloy shell, strong and lightweight
- ✦ 10、20、40MM的多种规格分辨率
Various specifications and resolutions of 10/20/40MM
- ✦ 电气连接,4针M12接头
Electric connection: 4-point M12 connector
- ✦ 保护高度范围宽4-128CM
Protective width of 4-128CM
- ✦ 紧凑的尺度,GB系列产品的横截面积仅为25*25MM
Compact size, cross sectional area of 25*25MM for GB series
- ✦ 可定制分辨率和保护幅宽,以及其它各类接口和扩展功能
Resolution and protective width can be design by customer order, and some other various connectors and extra functions available by order



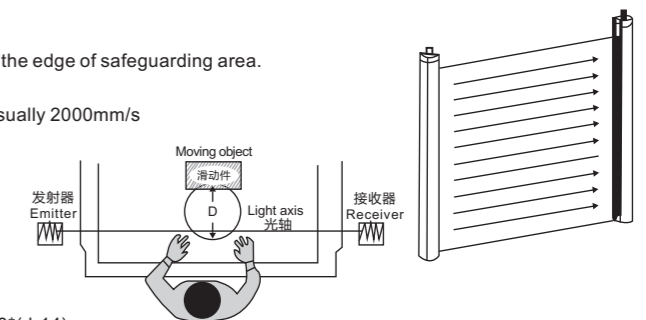
型号定义 Model definition



GB光幕 GB light curtain

术语解释 Explanation

- ✦ 光轴间距:指两个光点中心线间的距离
Optical spacing: refer to the distance between the centerlines of two light points
- ✦ 分辨率的含义:指光幕可靠保护的物体的最小尺寸,其尺寸为光轴间隔加上一个透镜的宽度。
Resolution: the minimal size can be protected by the light curtain, approx. optical spacing plus the width of the optical lens.
- ✦ 最小可检测物体:指在光点的中心遮挡位置,能使光幕输出信号的最小直径物体。
The minimal detectable object: the minimal object that can make the light curtain send out signal by entering the safeguarded area.
- ✦ 安全距离:安全距离是当人体向传感器的监测区域作垂直移动(通常情况下),根据下列公式计算的
Safe distance: when a body is moving vertically toward the safeguarding area (under common situation), safe distance can be calculated by the following formula:
公式 $D=K \cdot T+C$
- ✦ D:安全距离(mm)检测区域表面与机器的危险部分之间所需的最小距离
D: safe distance(mm) the minimal distance necessary from the dangerous part to the edge of safeguarding area.
- ✦ K:操作者身体(手,手指等)的进入速度(mm/s)。通常以2000mm/s计算
K: the speed of the operator's body (hands, fingers etc.) entering the area (mm/s), usually 2000mm/s
- ✦ T:全部设备的反应时间(S) $T=TM+TB$
T: the response time of the whole device (s) $T=TM+TB$
- ✦ TM:设备的最大停止时间(S)
TM: the maximum stop time of the machinery
- ✦ GB: GB系列光幕的反应时间(S)
GB: the response time of GB series light curtain
- ✦ C:由传感器最小检测物体尺寸计算出来的额外距离(mm) $C=8 \cdot (d-14)$
C: extra distance calculated with the size of the minimal detectable object (mm) $C=8 \cdot (d-14)$
- ✦ d:最小检测物体直径(按32mm)计
d: the diameter of the minimal detectable object (usually 32mm)



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安全光幕级别定义 Definition of the safety light curtain's ratings

- ⚡ B级：**设计中采用最基础的技术保证其可靠性，没有使用安全技术，任何失效都会导致安全功能的丧失，不是安全产品。
 Grade B: Use the basic technology for reliability in design, no use of safe technology, any fault may lead to security defect, are not safe products.
- ⚡ 1级：**使用有保障的(well tried)安全器件和技术以确保产品的安全性能。安全功能丧失的可能性比B级小。安全性能依赖元器件和所采用的安全原理。可靠的元器件和技术，单回路无自检测。
 Grade 1: use well tried safe parts and technologies to ensure the safety of products. The possibility of safety failing is less than Grade B, Safety performance is dependent on the components and the working principle. Has reliable components and technology. contains a single loop without self detection.
- ⚡ 2级：**以周期性自检的方式达到安全要求。一个故障可能体导致安全功能的丧失，但在下一个工作循环中可以被检测出来。周期性自检单回路。
 Grade 2: meet the safety requirements bu periodic self detection. One fault may lead to safety fail of the whole system, but the fault be detected during the next working cycle. Has the loop of periodic self detection.
- ⚡ 3级：**使用有保障的(well tried)安全器件和技术，一个失效不会导致安全功能的丧失。但故障累积可能会导致安全功能的丧失。无自检双回路。
 Grade 3: Use well tried safe parts and technologies to meet the safety requirements. One fault will not lead to the safety failing of the system, but accumulation of faults may lead to the system failing. Has no self detection double-loop.
- ⚡ 4级：**使用有保障的(well tried)安全器件和技术，一个失效不会导致安全功能的丧失。安全功能永远存在。实时自检测双回路。
 Grade 4: Use well tried safe parts and technologies to meet the safety requirements. One fault will not lead to the safety failing of the system and the system and the safety function will exist with a real-time self-detection double-loop.

常用规格对照表 Specification

检测距离 Detection distance	0.3-10m均可靠动作(with reliable operation)	工作电压Supply voltage	直流型DC type:12VDC
静态电流 Quiescent current	1≤100mA		直流型DC type:24VDC
输出电流 Output current	1≤300mA		
回差值 Difference value	不大于检测距离10%No more than 10%of the detection distance	响应时间Response time	≤30ms
光轴直径 Shaft diameter	5mm	角度误差Effective aperture angle	±5°以内(≥3米)
光源 Sight source	红外发光二极管(950nm调制光)Infrared Emitting Diode(950modulated light)	防护等级Protection rating	IP64(IEC标准 standard)
外壳结构 Shell structure	外壳: 铝合金 端盖: ABS工程塑料 支架: 冷轧钢板 shell:aluminum alloy shell cover:ABS industrial plastic holder:cold-roll stell sheets		
输出形式 Output form	NPN或者PNP输出, 电脑及其他设备串口通讯 NPN or PNP output,serial communication with computer and other devices		
残留电压 Residual voltage	DC三线式: ≤1.5VDC DC 3-wire type		
抗光干扰 Light immunity	环境光最大(ambient light up to):10000Lx 白炽灯(incandescent light): 3000Lx		
温度影响 Temperature effect	在-25°C到+70°C范围内, 对在+25°C时的检测距离是在10%以下 from -25°C to +70°C, less than 10%of the detection distance at 25°C		
绝缘电阻 Insulation resistance	≥20MΩ Min (500VDC Mega基准(reference))		
耐压 Voltage resistance	1500VAC 50/60Hz(周期每分钟cycles per min.)复振幅(complex amplitude)1mm,X、Y、Z各方向2小时(2 hours at each direction)		
抗振动 Vibration resistance	抗振动(vibration resistance): 10-55Hz(周期每分钟cycles per min.) 复振幅(complex amplitude)1mm,X、Y、Z各方向2小时(2 hours at each direction)		
抗冲击 Shock resistance	抗冲击(shock resistance): 500M/S ² (50G)X、Y、Z各方向3次(3 time at each direction)		
环境温度 Ambient temperature	工作时(During working):-10 to 55°C(未结冰状态下non-frozen)		
	储存时Storage time:-30 to 80°C(未结冰状态下non-frozen)		
环境湿度 Ambient humidity	工作时During working:15 to 85RH		
指示灯 Status indicator	动作显示(红色LED)action(red LED)	连接方式 Connection	电缆插件 Cable connector
连接线长 Cable length	发射器emitter0.3+3m,接收器0.3+7m采用插件连接 connected with a connector		

常用规格对照表 Specification

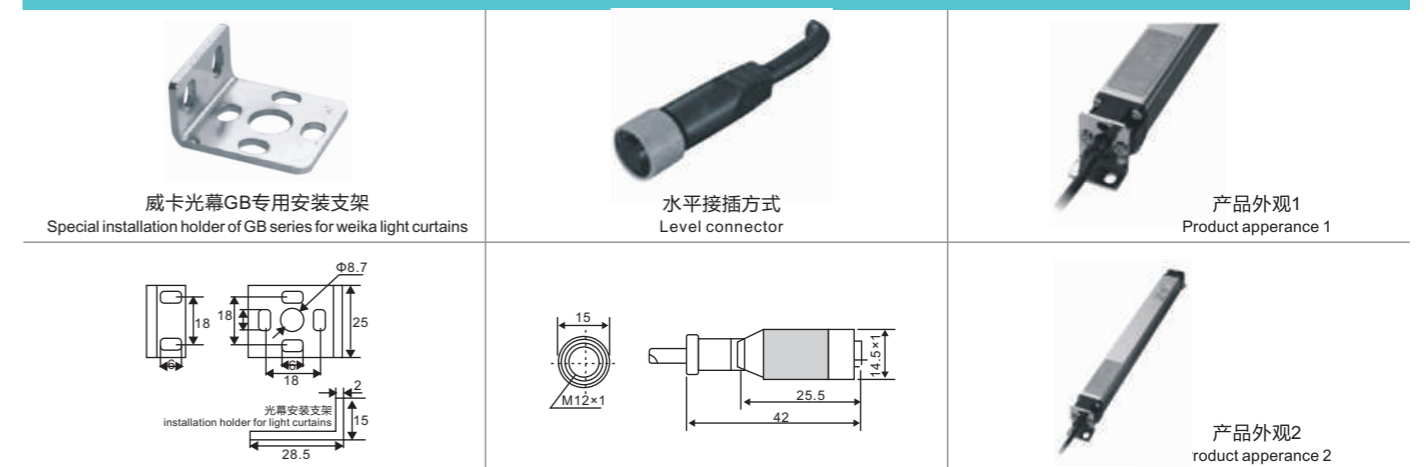
型号 Model	光源 Light source	工作方式	测距 Range	探测方式 Detection mode	光轴间距 Spacing of axis	分辨率 Resolution	响应速度 Response time	静态电流(8点) Quiescent current
GB10	红外(860nm)	入光	2m	对射	10mm	Φ17mm	35ms	<220mA
GB20	红外(950nm)	入光	10m	对射	20mm	Φ32mm	15ms	<170mA
GB40	红外(950nm)	入光	10m	对射	40mm	Φ52mm	10ms	<110mA

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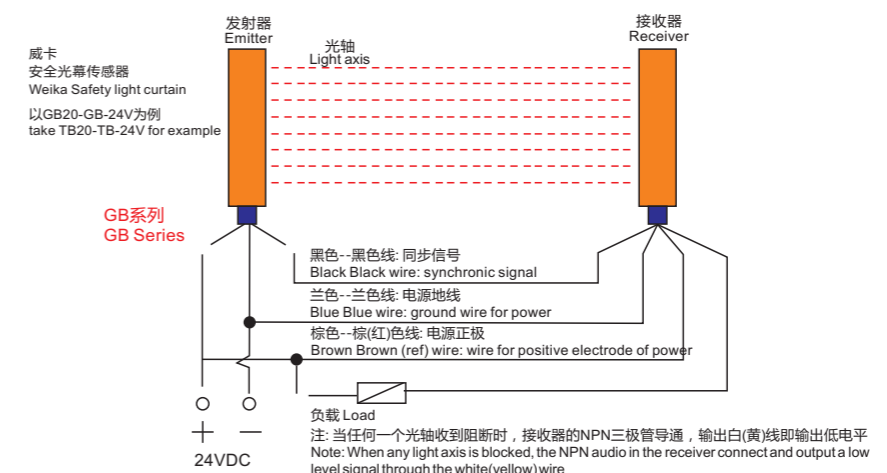
常用规格对照表 Specification

型号 Model	光轴间距 spacing of axis	光轴数 axis number	保护幅宽protective width(cm)
GB10	10mm	16	15
		24	23
		32	31
		40	39
		48	47
		56	55
		64	63
		72	71
		80	79
		88	87
GB20	20mm	8	14
		12	22
		16	30
		20	38
		24	46
		32	62
		40	78
		48	94
		4	12
		6	20
GB40	40mm	8	28
		10	36
		12	44
		16	60
		20	76
		24	92

安装支架外形及尺寸 The overall sizes of the installation holder 引出接线插座外形与尺寸 The overall sizes of connector socket



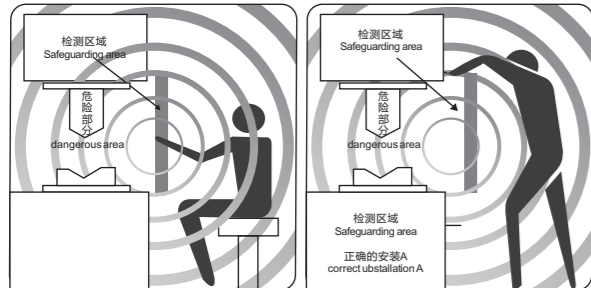
GB 安全光幕输出接线图 wiring diagram of safety light curtain



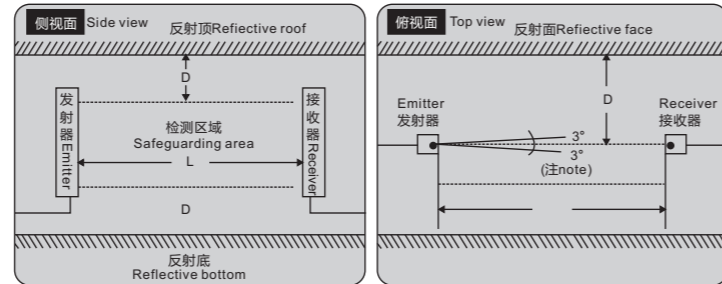
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GB安全光幕安装说明 Installation instructions for GB Series safety light curtain

1 正确安装示意图 correct installation



2 注意光滑表面的反射干扰 pay attention to the reflection interference of the smooth face



- ✦ 威卡光幕附近存在反射面的干扰时，可能导致内部传感器无法检测，以至于无法完成保护工作。当发射器与接收器距离在0-3米时，D不小于0.16m；当间距3-5米时， $D=LX \tan O(0.052)$
- ✦ When light interference from the reflective face exists, the internal sensors may stop detection, so as to stop safeguarding. When the distance between emitter and receiver is in the range from 0-3 meters, D is no less than 0.16m; and in the range from 3-5 meters, $D=LX \tan O(0.052)$

注：威卡牌的安全光幕装备优良的透镜系统，传感器的光轴开口角为 $\pm 2.5^\circ$ ，符合IEC61496-2要求，安装时 $O=3^\circ$
 Note: Weika safety light curtain is equipped with excellent lens system. The effective aperture angle of light axis is $\pm 2.5^\circ$, meeting the requirements per IEC61496-2. $O=3^\circ$ during installation.

GB安全光幕安装调试 Installation and commissioning of GB series safety light curtain

安全检查 Safety check

- ✦ 当安全光幕传感器开机进入工作状态后，每次实际使用之前，为了人身和设备的安全，必须进行安全检测，严格按照步骤操作，并做好记录，登记在册；检测方法按调试最后两个步骤进行。
- ✦ To effectively protect the personnel and machinery, after the light curtain sensor starts working, as safety check should be executed strictly step by step every time before starting the protected equipments and make notes on a notebook. The safety check is same as the final two steps in commissioning.



光幕传感器 AREA SECURE SENSOR

安装高度操作方法 Installation instructions

- ✦ 检查GB系列安全光幕是否牢固的固定在需装备的设备上，GB系列光幕传感器的发射器和接收器是否在同一平面内，且以发射器和接收器为边界的保护区域应为该平面内的一个矩形。
- ✦ 检查GB系列安全光幕的发射器和接收器，是否和各自的电缆准确的装配到位，以及电缆的接线端是否与电源和控制单元准确，牢固的连接。
- ✦ 给GB系列安全光幕传感器接通电源，此时光幕传感器开始自检，同步及自校准，约1秒钟后，发射器黄色指示灯稳定，接收器指示灯全部熄灭，表示光幕传感器进入正常工作状态。
- ✦ GB系列安全光幕传感器工作状态下：
 1. 当保护区域内无侵入物体时，传感器的接收器处于受光状态，此时接收器的通讯指示灯(红色)应熄灭，发射指示灯(黄色)点亮，这时按下被保护设备的工作开关，设备可正常运转。
 2. 当有物体(不小于最小可检测物体或者分辨率)侵入保护区域时，接收器的红色指示灯被点亮(可能是接收器处于遮光状态，也可能是光通讯被遮断)，此时被保护设备受控，处于强制停顿状态。
 3. 当侵入物体撤出保护区域后，光幕传感器将返回1.状态，设备将继续工作。
- ✦ 在安全光幕传感器开机进入工作状态后，使用直径为最小检测体尺寸的测试棒(或同等直径的不透明物体，垂直侵入保护区域，分别按顺时针和逆时针方向在保护区域内做平移运动，此时光幕传感器应一直有红色指示灯被点亮，受控设备无法工作)
- ✦ Check if the GB series safety light curtain is firmly fixed on the equipments or not, and check if the emitter and receiver are in the same level, and also make sure that safeguarding area with emitter and receiver in a line as the boundary be a rectangle in a level plane.
- ✦ Check if the emitter and receiver are connected with cables right in place, and check if the terminals are rightly and firmly connected to power and control units.
- ✦ Supply the safety light curtain with power, and the light curtain sensors will start self-checking, synchronization, and calibration. After around 1 second, the yellow indicator of the emitter stay stable and all the indicators of the receiver go out, indicating that the light curtain start working.
- ✦ The operating mode of GB series safety light curtain:
 1. when no object invades the safeguarding area, the receiver is receiving light rays, the indicator of receiver is out, and yellow indicator of the emitter keeping lighting. Start the safeguarded equipments, the equipments work well.
 2. When some object (no smaller than the minimal detectable object or resolution) invade the safeguarding area, the red indicator of the receiver lights up (the receiver is in shaded state or the light rays are blocked), and the protected equipments are forcedly stopped.
 3. When the invading object quit the safeguarding area, the light curtain sensor recover to the state 1, and protected equipments continue working.
- ✦ After the light curtain sensor start working, uses a testing stick of the size of minimal detectable object or some other opaque object of the same diameter to invade vertically into the protected area and to horizontally move in the area clockwise and counter clockwise. The red indicator of the receiver should keep lighting and the protected equipments do not work.

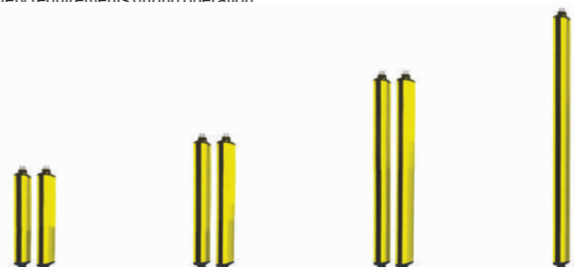
光幕光轴间隔的确定 the choice of light curtain axis spacing

- ✦ 备有手指检测用、手掌检测用、手、腕、人体检测用3个系列，与危险源距离较近时，可选用手指检测型的，与危险源有一定的距离，设备停止时间有余余地时，可选经济的手腕检测型，可以根据客户的实际需要选用不同的型号。
- ✦ With finger detecting type, hand detecting type, wrist and other body part detecting type available for selection, choose the finger detecting type if the dangerous source is close to the light curtain and choose the economic wrist detecting type if the dangerous source is relatively far from the curtain. Customer may choose different type according to own need.

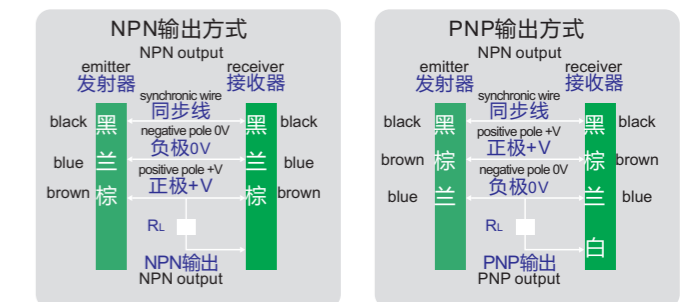


安全高度光轴数目选定 The choice of installation height and axis number

- ✦ 威卡安全光幕具备不同的安装高度，用户可根据实际保护需要选用不同的高度，以满足工人操作的安全性。
- ✦ Weika safety light curtain has many installation heights available for choice to meet the safety requirements during operation.



光幕的输出接口接线 Output and wiring of safety light curtain



色标传感器 COLOR MARK SENSOR

Z3N系列色标传感器 Series of color-sensor

主要特点Main Features

- ✦ Z3N系列标志检测光电开关是通过其本身发出之光源扫描在被检纸表面上。因表面颜色的不同而使反射回的光量不同,从而达到对颜色标记的识别。
Z3N series color mark sensor will emit light rays to scan the detected surface, and can identify the different color marks through receiving different intensity of light reflected back from different colors on the surface.
- ✦ 同轴光路设计, 对高反射系数纸面(如铝箔等)适应性更强。
Coaxial optical design, more adaptable to surfaces of high-reflectance (such as Aluminum foil)
- ✦ 具有蓝、绿、红等多种光源可选, 对分辨各种颜色带来方便。
With light sources of blue, green, red, and various other colors for selection, more accurately to identify various colors.
- ✦ 光电细小, 分辨率极高。
Small light spot, excellent resolution.
- ✦ 0.1~1ms的高响应速度、能适应各种包装机、制袋机和印刷机械的控制需要。
Short response time of 0.1-1ms, can adapt to control demand of various packaging machines, bagging machines and printing machines.
- ✦ 优异的内电路设计、抗各种电磁、杂光干扰性能优良、操作稳定、无误动作。
Outstanding internal circuit design that can resist various electromagnetic and optical interference, has stability and no error action
- ✦ 具有灵敏度调节旋钮、不须使用工具即可调节。
With sensitivity adjustment knob, need no tool to adjust.



型号表 Model List

型号 Type	光源 Light source	引出线 Cable	型号 Type	光源 Light source	引出线 Cable
TR22	红色Red	四芯 Four wire	TR2	红色Red	三芯 Three wire
RG22	绿色Green	四芯 Four wire	RG2	绿色Green	三芯 Three wire
T22	红绿Red+green	四芯 Four wire	T2	红绿Red+green	三芯 Three wire
TB22	绿蓝Green+blue	四芯 Four wire	TB2	绿蓝Green+blue	三芯 Three wire
TW22	绿白Green+white	四芯 Four wire	TW2	绿白Green+white	三芯 Three wire

主要技术参数 Main technical parameters

检测方式 Test type	同轴反射式 Coaxial election	负载电流 Load current	200Ma(max)
检测距离 Scanning distance	10mm±2mm	电路保护装置 Circuit protection device	Vs 电压有反极性保护, 输出有短路保护。当负载电流L>200mA时开关自动跳开, 而在L≤200mA时信号又自动回复。同时具有任意按错线保护。 With power reverse protection, has short-circuited protection. When loading current L mA, the sensor automatically turns off, and the sensor automatically recovers when L200mA, Has self-protection for any error-wiring.
供电电压 Supply voltage	DC10-30V±10%波纹(Bellows)<10%		
消耗电流 Current: consumption	<45mA		
光源色谱 Source chromatography	红、绿、蓝(根据型号表选择) Red, green, blue(select according to the model list)	灵敏度 Sensitivity	单圈可调Single cycle adjustable
光点 Spot	Φ0.5~ Φ1.5	抗环境光 Anti-environment Light	白炽灯(incandescent)<3000LX 太阳光(Sunlight)10000LX
检测角度 Detection of perspective	光线与被测体表面垂直 允许仿差±15° Light rays should be vertical to the detected surface, a variance of ±15 is allowed	防护等级 Protection Level	IP67(防潮防尘 moisture-proof and dust-proof)
响应时间 Response time	0.1~1ms	环境温度 Temperature	操作(Operation)-15°C-65°C保存(Save)-15°C-80°C
输出方式 Output	亮动、暗动可选 act when light up/act when darken optional	外壳材料 Case material	金属 Metal
输出指示 Output instructions	红色(Red)LED	引出线 Raises thread	Φ5.4PVC四芯护套屏蔽电缆 标准2m Φ5.4PVC four-core shield and sheathed cable, standard length of 2m
输出电压 Output voltage	高电平(high)VS-(≤1.5)低电平(low)(≤1.2V)	重量 Weight	大约(About)500g

色标传感器 COLOR MARK SENSOR

KS系列色标传感器 Series of color-sensor

主要特点Main Features

- ✦ Ks系列标志检测光电开关是通过其本身发出之光源扫描在被检纸表面上。因表面颜色的不同而使反射回的光量不同,从而达到对颜色标记的识别。
KS series color mark sensor will emit light rays to scan the detected surface, and can identify the different color marks through receiving different intensity of light reflected back from different colors on the surface.
- ✦ 同轴光路设计, 对高反射系数纸面(如铝箔等)适应性更强。
Coaxial optical design, more adaptable to surfaces of high-reflectance (such as Aluminum foil)
- ✦ 具有白、蓝、绿、红等多种光源可选, 对分辨各种颜色带来方便。
With light sources of blue, green, red, and various other colors for selection, more accurately to identify various colors.
- ✦ 光电细小, 分辨率极高。
Small light spot, excellent resolution.
- ✦ 0.1~1ms的高响应速度、能适应各种包装机、制袋机和印刷机械的控制需要。
Short response time of 0.1-1ms, can adapt to control demand of various packaging machines, bagging machines and printing machines.
- ✦ 优异的内电路设计、抗各种电磁、杂光干扰性能优良、操作稳定、无误动作。
Outstanding internal circuit design that can resist various electromagnetic and optical interference, has stability and no error action
- ✦ 具有灵敏度调节旋钮、不须使用工具即可调节。
With sensitivity adjustment knob, need no tool to adjust.



型号表 Model List

型号 Type	光源 Light source	引出线 Cable	型号 Type	光源 Light source	引出线 Cable
TR22	红色Red	四芯 Four wire	TR2	红色Red	三芯 Three wire
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T22	红绿Red+green	四芯 Four wire	T2	红绿Red+green	三芯 Three wire
C2(C22)	绿蓝Green+blue	四芯 Four wire	TB2	绿蓝Green+blue	三芯 Three wire
TW22	绿白Green+white	四芯 Four wire	TW2	绿白Green+white	三芯 Three wire

主要技术参数 Main technical parameters

检测方式 Test type	同轴反射式 Coaxial election	负载电流 Load current	200mA(max)
检测距离 Scanning distance	10mm±2mm	电路保护装置 Circuit protection device	Vs 电压有反极性保护, 输出有短路保护。当负载电流L>200mA时开关自动跳开, 而在L≤200mA时信号又自动回复。同时具有任意按错线保护。 With power reverse protection, has short-circuited protection. When loading current L mA, the sensor automatically turns off, and the sensor automatically recovers when L200mA, Has self-protection for any error-wiring.
供电电压 Supply voltage	DC10-30V±10%波纹(Bellows)<10%		
消耗电流 Current: consumption	<45mA		
光源色谱 Source chromatography	红、绿、蓝(根据型号表选择) Red, green, blue(select according to the model list)	灵敏度 Sensitivity	单圈可调Single cycle adjustable
光点 Spot	Φ0.5~ Φ1.5	抗环境光 Anti-environment Light	白炽灯(incandescent)<3000LX 太阳光(Sunlight)10000LX
检测角度 Detection of perspective	光线与被测体表面垂直 允许仿差±15° Light rays should be vertical to the detected surface, a variance of ±15 is allowed	防护等级 Protection Level	IP67(防潮防尘 moisture-proof and dust-proof)
响应时间 Response time	0.1~1ms	环境温度 Temperature	操作(Operation)-15°C-65°C保存(Save)-15°C-80°C
输出方式 Output	亮动、暗动可选 act when light up/act when darken optional	外壳材料 Case material	工程塑料 Engineering Plastics
输出指示 Output instructions	红色(Red)LED	引出线 Raises thread	Φ5.4PVC四芯护套屏蔽电缆 标准2m Φ5.4PVC four-core shield and sheathed cable, standard length of 2m
输出电压 Output voltage	高电平(high)VS-(≤1.5)低电平(low)(≤1.2V)	重量 Weight	大约(About)300g

