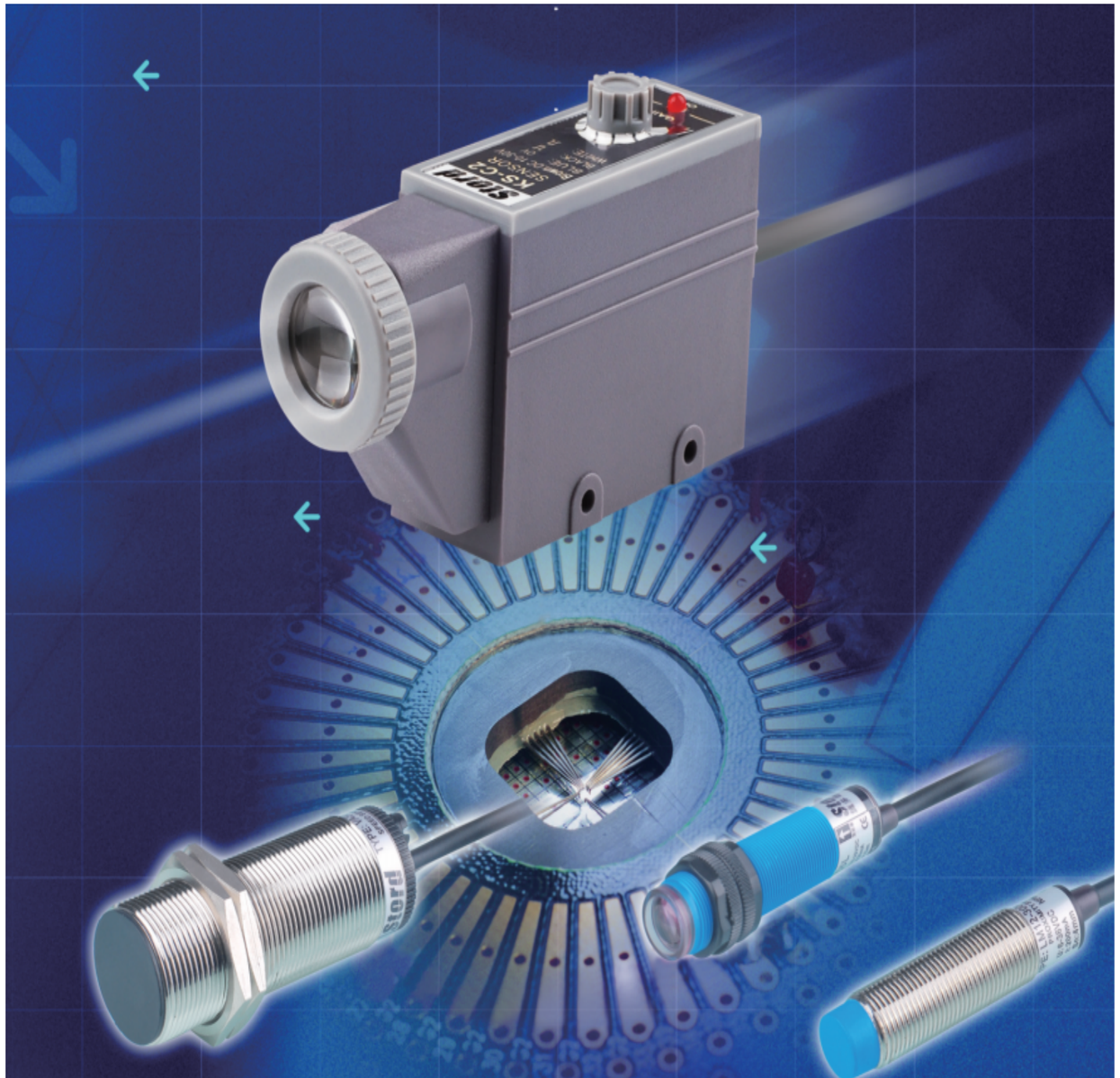
SCHWAHR
solutuion for industrial and electric

SCHWAHR SENSOR COMPREHENSIVE CATALOG



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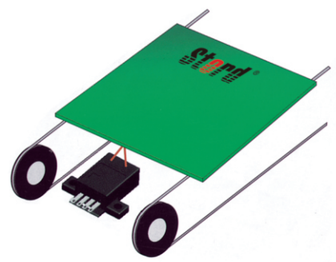
应用图示
APPLICATION DIAGRAM

检查·测量 Inspection·measurement　液位检查 liquid position checking

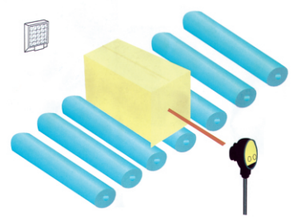
用光纤，微型光电开关，静电容量型接近传感器，超声波位移，智能传感器等多种检查方法检查各种液位！
Use Optical fiber, micro-optical switch, capacitance proximity sensors, ultrasonic sensors, intelligent sensors and other inspection methods to examine various positions

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 Retro-reflective reflection unit　ES2系列 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

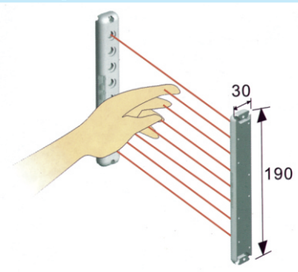


扩散反射式红外线传感器 Diffuse reflective infrared sensors　PTQ18系列 PTQ18 Series

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

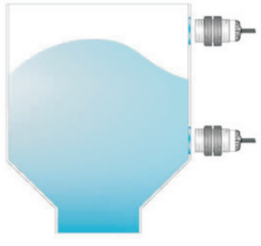
环形接近开关 Ring Proximity Switches　SIR30-KP2系列 SIR30-KP2 Series

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



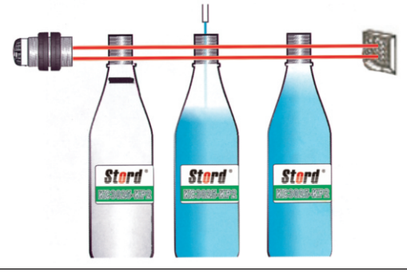
安全光幕传感器 Safety Light Curtain　GM-系列 GM-Series

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 Capacitance Proximity Switch　CM30系列 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.



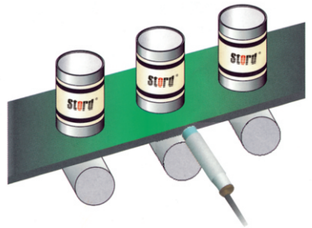
智能传感器（镜面反射型） Intelligent Sensor　E18系列 E18 Series

应用图示
APPLICATION DIAGRAM

检查·测量 Inspection·measurement

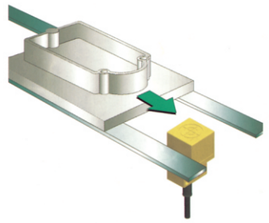
用光纤传感器，智能传感器(激光型，直线接近型)等多种检查方法检查各种工件的2层重叠！
With fiber-optic sensors, smart sensors (laser type, linear type I) and other inspection methods to examine the various parts of the two-layer overlap

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



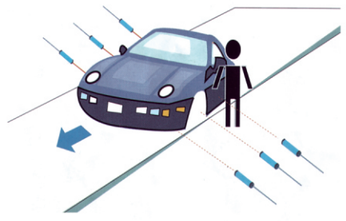
速度传感器 Speed sensor　SDM系列 SDM series

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



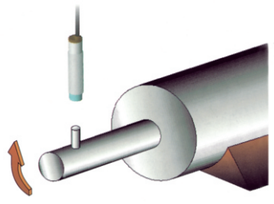
脚柱型接近开关 Cylindrical-footed proximity switch　LMF1系列 LMF1 Series

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



智能传感器(激光型) Intelligent sensors (laser type)　ZX-L-N系列 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器件经过，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.

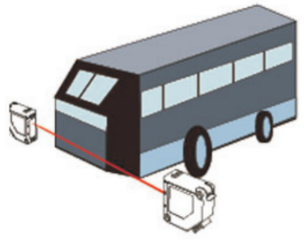


距离增强型接近开关 Range-enhanced proximity sensors　LM12系列 Lm12 series

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 infrared-beam sensors　G70系列 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.



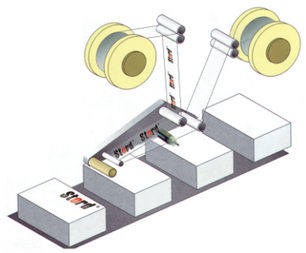
红外线对射式传感器 infrared-beam sensors　E3GM系列 E3GM series

应用图示
APPLICATION DIAGRAM

检查·测量 Inspection·measurement

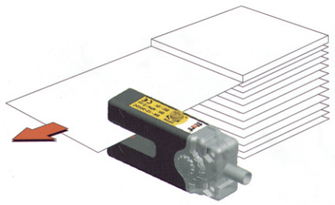
用光纤，微型光电开关，静电容量型接近传感器，超声波位移，智能传感器等多种检查方法检查各种液位！
Use Optical fiber, micro-optical switch, capacitance proximity sensors, ultrasonic sensors, intelligent sensors and other inspection methods to examine various positions

槽型光电传感器
U-shaped photoelectric sensor



SU07-N

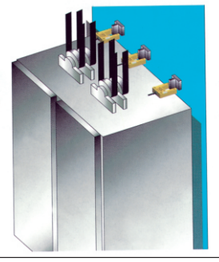
槽型光电传感器
U-shaped photoelectric sensor



U型红外线传感器
U-shaped infrared sensor

SU07-N 系列
SU07-N Series

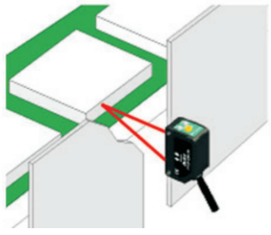
由于能从槽的上方进行检查，在必须进行更加严格的检查时，红外线传感器能检查槽内有无物体经过。
In situations that require more rigorous examinations, infrared sensors can check if there are objects coming through the slot from above the slot.



U型红外线传感器
U-shaped infrared sensor

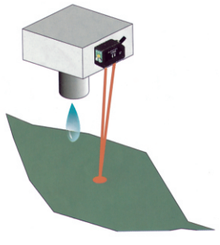
G63 系列
G63 Series

方形光电传感器
Rectangular photoelectric sensor



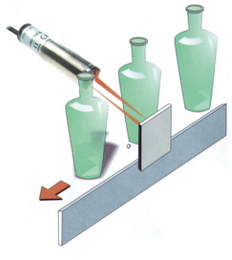
PK3-DU30N

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



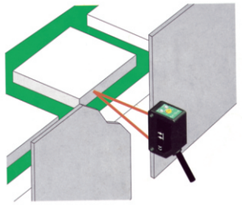
PK3-V03N　　限定反射式 limited reflective type

应用图示
APPLICATION DIAGRAM

检查·测量 Inspection·measurement

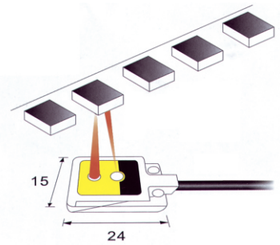
用光纤传感器，智能传感器（激光型，直线接近型）等多种检查方法检查各种工件的2层重叠！
With fiber-optic sensors, smart sensors (laser type, linear type I) and other inspection methods to examine the various parts of the two-layer overlap

方形光电传感器
Rectangular photoelectric sensor



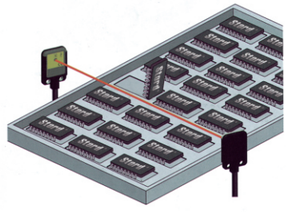
PK3-V03N　　限定反射式 limited reflective type

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



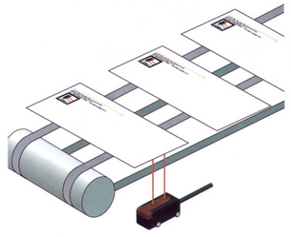
PK5-DU03N　　体积超薄 ultra-thin body

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



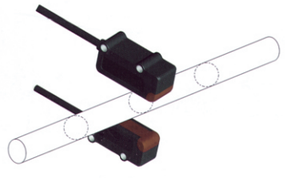
PK5-1N　　体积超薄 ultra-thin body

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



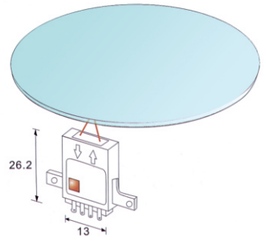
PM6-DU05N　　体积小 Small size

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

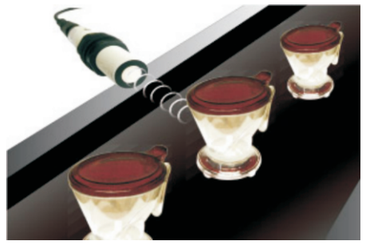
应用图示
APPLICATION DIAGRAM

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.

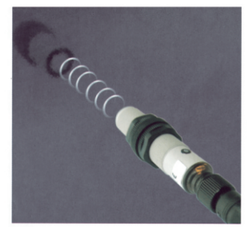
利用声波原理对前方透明物体进行监测，并进行数据传输。
Use ultrasonic waves to monitor the transparent objects in front and transmit data.



超声波传感器
Ultrasonic sensor

RU18 系列
Ru18 series

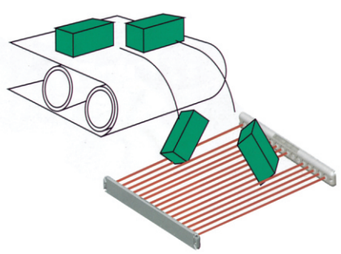
将被测物体放在B点，然后长按设定按钮（约1秒），等LED灯亮起，即B点设定完成。
A到B点的距离即为感应距离。
Put the object at point B, then press and hold the set button (1 second). The point B was set when the LED light on. The distance from point B to point A is the sensing distance.



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，冲剪机床，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.



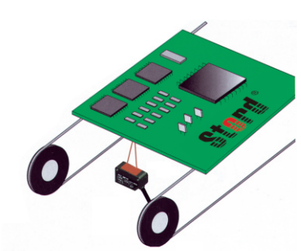
超簿型安全光幕
Ultra-thin safety curtain

GM系列
GM series

施多德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%
Stord 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

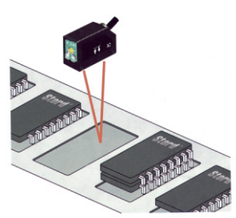
用CCD摄像机型智能传感器检查列孔的个数，由于进行的是面监测，即使工件位置有偏移，也能进行检查。
Use a CCD camera-based intelligent sensor to check out the number of holes, as a result of the face detection; even if there is a shift of the position of parts, the check can be done.



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 there is IC

PK3-V03NFV

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

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

输出形式 OUTPUT FORM

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

□：圆柱型 Cylinder type
F□：角柱型及平面安装型 Angular Column Type And Plane Installation Type

输出状态 OUTPUT STATE

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

30:6-36VDC 310:5-24VDC 320:12-60VDC 330:10-30VDC
340:10-55VDC350:10-60VDC 360:5-36VDC 20:90-250VAC
210:24-250VAC 220:380VAC40:12-240VDC/24-240AC
50:特殊电压：Special voltage

附属功能 SUBSIDIARY FUNCTIONS

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：环型 ring type

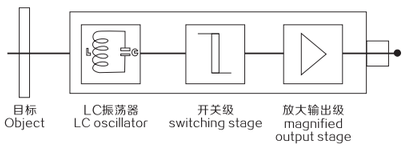
检测距离 DETECTION DISTANCE

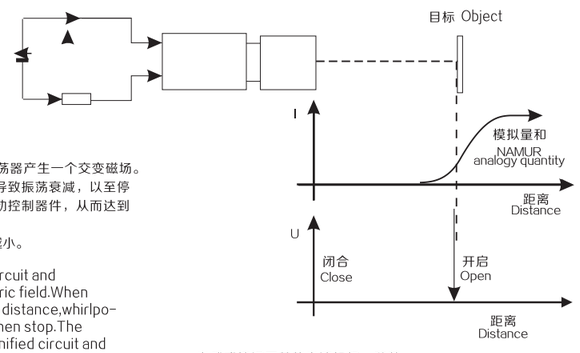
01:1mm 05:5mm 10:10mm ……

远距离 LONG-DISTANCE

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。

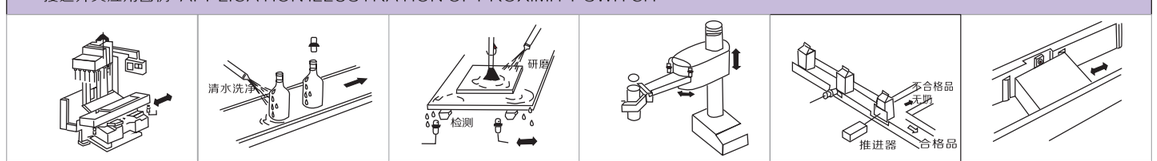
目标离传感器越近，线圈内的阻尼就越大，阻尼越大，传感器振荡器的电流越小。

Inductive proximity switch is composed of three parts:oscillator,swich circuit and magnified output circuit.The oscillator will generate an alternating electric field.When hemetal object approaches this electric field and reaches the induction distance,whirlpo-ol will generate in metal object,resulting in attenuation of vibrati on and then stop.The changeof vibration and stop of oscillator is treated by behind stage magnified circuit and convertedto 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 proxi mity switch decreases proportional to the metal object distance.

接近开关应用图例 APPLICATION ILLUSTRATION OF PROXIMITY SWITCH

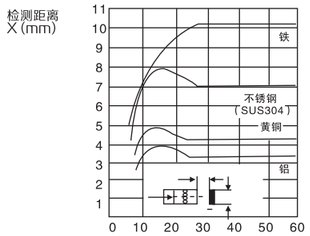
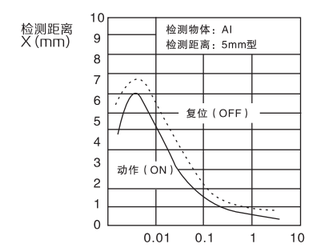
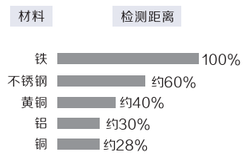


机加工中心的各种位置检测 Various location detection of machinery process center	瓶盖检测 Bottle lid detection	磨床的档块检测 Stopper detection of grinding machine	机器人手臂位置检测 Arm location detection of robot	检测纸包装内有无牛奶 Inspection of the exiating of milk inside the paper package	限位检测 Spacing detection

接近开关的特性 Features of proximity switch

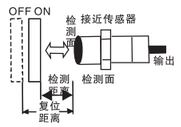
主要特性 Main features

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 repesentative example to briefly explain general 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	⊙检测物体为正方型金属板，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.  	● 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.	●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 willbe 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 distance.
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 X mm (front detector) when change the thickness of the assigned standard detected object 1mm.  	●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.	◆ 关于环境气候 About ambient weather ●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，接近传感器虽为耐水结构，若装上罩使用，勿使水和水容性切削油等淋到，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 stipulatedambient temperature.Do not drench it with water or water-soluble cutting lubricant when it is used with cover, althoutheproximity sensor is waterproof. Do not use in the occasionswith 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 cladding material, confirm through detection distance Xmm measurement.  	●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.	◆ 关于维护检修 About maintenance and overhaul ●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、有无附粘金属粉末等积物。 4、使用温度条件，周围环境条件有无异常。 5、检测距离有无异常。 ●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 proximitysensor if any deviation,loosening or 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.Check if the temperature condition and surrounding environment condition are normal or not. 5.Check if the detection distance is normal or not.

技术用词的说明 EXPLANATION OF TECHNICAL TERMS

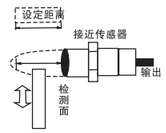
检测距离 Detection distance



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 toassigned method, thedistance from the reference position (refernce plane)to the detecting action (resetting)

设定距离 Setting distance



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。

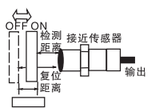
Ncluding the effects like temperature and voltage,without erroraction,the distance passed through from the practical detection surface to the objected object.

标准检测物体 Standard detected object

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 termined.

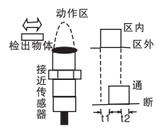
差动距离 Differential distance



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

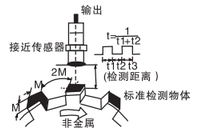
响应时间 Response time



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.

响应频率 Response frequency

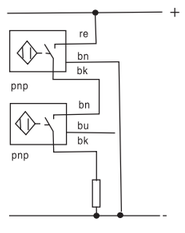


反复接近检测物体时，能得出跟踪它的输出每秒次数。
测定方法概略见上图。

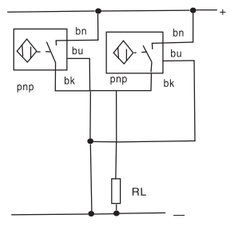
work out the tracking output times per second I repeatedly approaching the detected object.
Brief detection method sees the above diagram.

串联、并联 SERIES CONNECTION AND PARALLEL CONNECTION

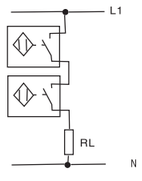
★三线直流与三线直流传感器的串联
Series connection of three-wire DC and therr-wire DC sensor



★三线直流与三线直流传感器的并联
Parallel connection of three-wire DC and therr-wire DC sensor



★两线交流传感器的串联
Series connection oftwo-wire Ac sensor



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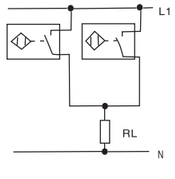
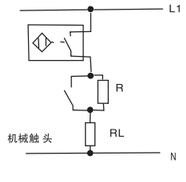


◆机械开关与交流传感器的串联
Series connection of machinery switch and AC sensor



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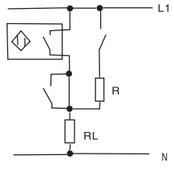
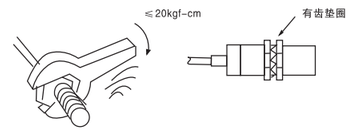


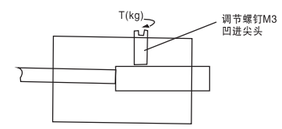
主要特征 Main features

- ◆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

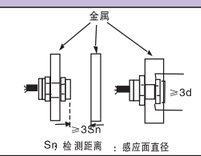
正确使用和安装及注意事项：Correct use,installation and cautons



★螺纹式开关的安装 Mounting screw switch
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 t he switch,Adopt toothed washer when tightening

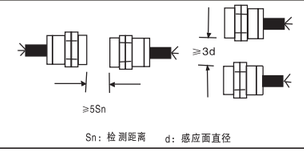


★无螺纹式柱型开关的安装
Mounting non screw type pillar switch
采用调节螺钉时，紧固力矩请用2-4kgf-cm以下安装：
★When adopt adjusting screw,the tightening torque should be within 2-4kgf-cm.



★防止非检测物体的干扰
Protection against the interference of non detected object
在金属件上接装接近开关时，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 on the metal part,do refer to the following diagram.Remain acertain space in advance according to the shown diagram so as to prevent the switch from error action.

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



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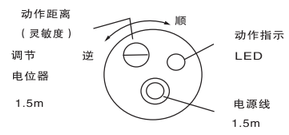
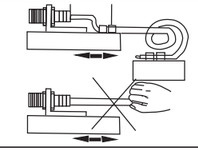


•开关动作距离(灵敏度)可调节Adjustable swicth actiondistance (sensitivity)接近开关可通过微调电位器调节动作距离(灵敏度)。顺时针动作距离增大(灵敏度减低)，逆时针，反之，切忌在动作距离最大临界状态下使用。
•The action distance (sensitivity)of proximity switch can be adjusted by the means ottrimming potentiometer, Increase the action distance and reduse sensitivity when turnclockwise,vice versa. Do not use in the critical state of max. Action distance .

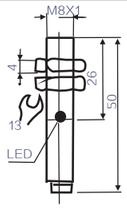
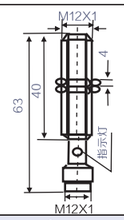
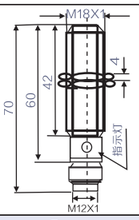


•开关引线的防护Gusrd of switch lead-wire
按装开关时，请将离开关10cm左右引线位置用线夹固定，防止开关引线受外力的作用损坏。
•When mount switch,fix the lead-wire at a dostamce anpit 10cm from the switch with wire clip so as to prevent the switch lead wire from damage from outer force.

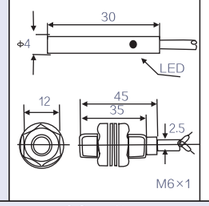
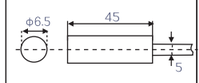
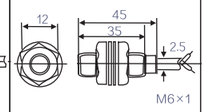
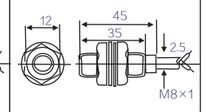
注意事项 Cautions

- ◆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，并给予定做。

◆dc switch should adopt insulation transformer and ensure stablc voltage mains corrugation.
◆if any electric power line or dynamic line passes through the surrounding of switch lead-wire,in order ot prevent 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 elmentary diagram.
◆if there areany special requirements tothe switch like water proof, oil proof,acid proof, base proof, high temperature proof or with any other specfications, the users are required togive clear indication when placing an order.we can produce according to the requirements of the user.

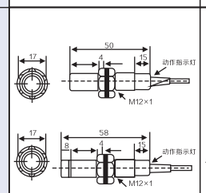
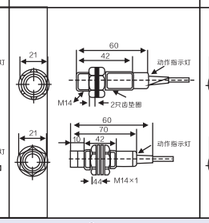
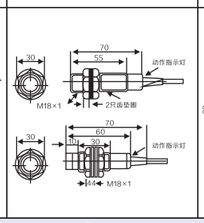
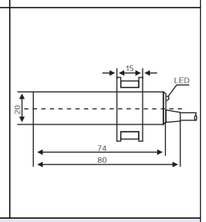
结构分类 Structural category	圆柱型 Cylinder type		接插件型 Connector type
外型编号 Outward Appearance code	LM8-□□T /LM8-□□T3	LM12-□T/LM12-□T3	LM18-□T
外形图例 OUTWARD APPEARANCE ILLUSTRATION			
外形尺寸 OVERALL DIMENSIONS			

	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		LM12-3002NCT	LM18-3005NCT
		PNP	NO	LM8-3001PAT	LM12-3002PAT	LM18-3005PAT
			NC	LM8-3001PBT	LM12-3002PBT	LM18-3005PBT
			NO+NC		LM12-3002PCT	LM18-3005PCT
	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
		SCR 可控硅 Controllable 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		LM12-3004NCT	LM18-3008NCT
		PNP	NO	LM8-3002PAT	LM12-3004PAT	LM18-3008PAT
			NC	LM8-3002PBT	LM12-3004PBT	LM18-3008PBT
			NO+NC		LM12-3004PCT	LM18-3008PCT
	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
		SCR 可控硅 Controllable 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 Controloutput		DC		150mA	200mA	
		SCR/继电器 Relay				300mA
输出电压降 Output voltagc dropDC/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				8X8X1(A3铁iron)	12X12X1(A3铁iron)	18X18X1(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℃~+70℃	-25℃~+70℃	-25℃~+65℃
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 Alternative model at home and abroad				E2E-X1R5-M1	E2E-X2E1-M1	E2E-X5E1-M1

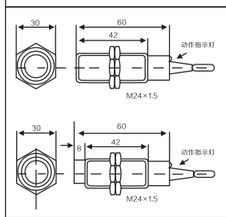
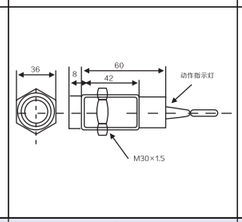
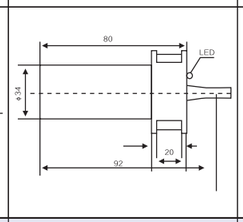
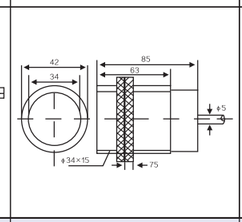
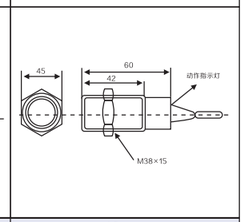
结构分类 Structural category	圆柱型 Cylinder type			
外型编号 Outward Appearance code	Lm4/Lm5	Lm6	Lm06	Lm8
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				

	检测距离 DETECTION DISTANCE			0.8mm/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		LM8-3001LB
		SCR 可控硅 Controllable 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
		SCR 可控硅 Controllable silicon	NO		LM6-2002A		LM8-2002A
			NC		LM6-2002B		LM8-2002B
			NO+NC				
		继电器输出Relay output					
输出电流 Controloutput		DC		200mA	200mA	200mA	200mA
		SCR/继电器 Relay					
输出电压降 Output voltagc dropDC/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				6X6X1(A3铁iron)	8X8X1(A3铁iron)	8X8X1(A3铁iron)	8X8X1(A3铁iron)
重复精度 Repeated precision				0.01	0.01	0.01	0.01
响应频率DC/AC Response frequency				500Hz	500Hz	500Hz	500Hz/25Hz
工作环境温度 Working environment temperature				-25℃~+70℃	-25℃~+75℃	-25℃~+70℃	-25℃~+75℃
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 Alternative model at home and abroad							E2E-X1R5□□

接近开关
PROXIMITY SWITCH

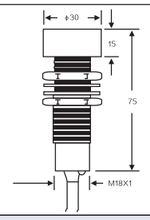
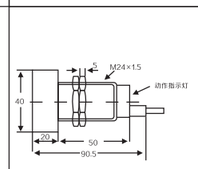
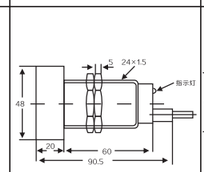
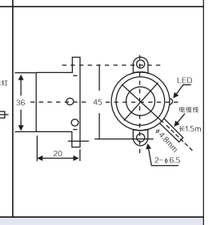
结构分类 Structural category	圆柱型 Cylinder type			
外型编号 Outward Appearance code	LM12	LM14	LM18	LM20
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				

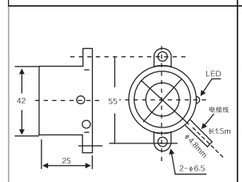
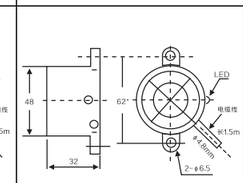
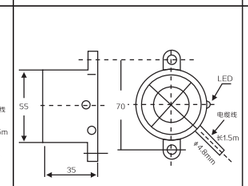
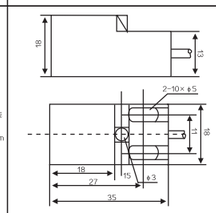
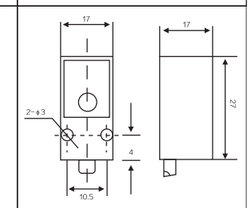
				LM12	LM14	LM18	LM20
	检测距离 DETECTION DISTANCE			2mm	3mm	5mm	
埋入式Flush	直流 DC 10-30 VDC	NPN	NO	LM12-3002NA	LM14-3003NA	LM18-3005NA	
			NC	LM12-3002NB	LM14-3003NB	LM18-3005NB	
			NO+NC	LM12-3002NC	LM14-3003NC	LM18-3005NC	
		PNP	NO	LM12-3002PA	LM14-3003PA	LM18-3005PA	
			NC	LM12-3002PB	LM14-3003PB	LM18-3005PB	
			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	LM12-3002LB	LM14-3003LB	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	LM18-3008LB	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 Controloutput		DC		200mA	200mA	200mA	200mA
		SCR/继电器 Relay		300mA	300mA	300mA	300mA/1A
输出电压降 Output voltagc dropDC/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				15X15X1(A3铁iron)	15X15X1(A3铁iron)	18X18X1(A3铁iron)	20X20X1(A3铁iron)
重复精度 Repeated precision				0.01	0.02	0.02	0.05
响应频率DC/AC Response frequency				400Hz/25Hz	300Hz/25Hz	200Hz/25Hz	200Hz/25Hz
工作环境温度 Working environment temperature				-25℃~+75℃	-25℃~+75℃	-25℃~+75℃	-25℃~+75℃
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 Altemative model at home and abroad				E2E-X5□□	LJ14A3-□□	LJ18A3-8-□□	

圆柱型 Cylinder type				
LM24	LM30	LM34	LM35	LM38
				
				

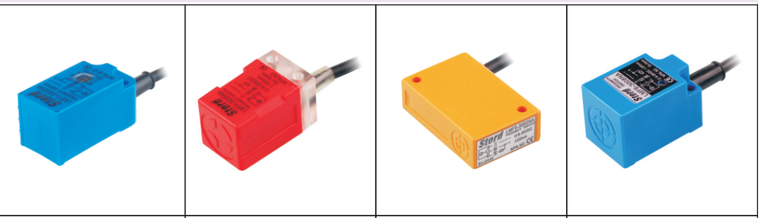
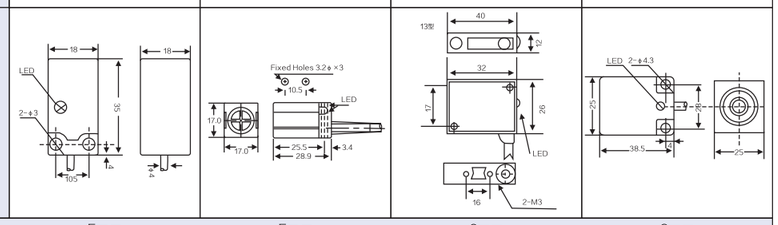
LM24	LM30	LM34	LM35	LM38
8mm	10mm			12mm
LM24-3008NA	LM30-3010NA			LM38-3012NA
LM24-3008NB	LM30-3010NB			LM38-3012NB
LM24-3008NC	LM30-3010NC			LM38-3012NC
LM24-3008PA	LM30-3010PA			LM38-3012PA
LM24-3008PB	LM30-3010PB			LM38-3012PB
LM24-3008PC	LM30-3010PC			LM38-3012PC
LM24-3008LA	LM30-3010LA			LM38-3012LA
LM24-3008LB	LM30-3010LB			LM38-3012LB
LM24-2008A	LM30-2010A			LM38-2012A
LM24-2008B	LM30-2010B			LM38-2012B
LM24-2008C	LM30-2010C			LM38-2012C
	LM30-2010JC			
10mm	15mm	17mm	17mm	18mm
LM24-3010NA	LM30-3015NA	LM34-3017NA	LM35-3017NA	LM38-3018NA
LM24-3010NB	LM30-3015NB	LM34-3017NB	LM35-3017NB	LM38-3018NB
LM24-3010NC	LM30-3015NC	LM34-3017NC	LM35-3017NC	LM38-3018NC
LM24-3010PA	LM30-3015PA	LM34-3017PA	LM35-3017PA	LM38-3018PA
LM24-3010PB	LM30-3015PB	LM34-3017PB	LM35-3017PB	LM38-3018PB
LM24-3010PC	LM30-3015PC	LM34-3017PC	LM35-3017PC	LM38-3018PC
LM24-3010LA	LM30-3015LA	LM34-3017LA	LM35-3017LA	LM38-3018LA
LM24-3010LB	LM30-3015LB	LM34-3017LB	LM35-3017LB	LM38-3018LB
LM24-2010A	LM30-2015A	LM34-2017A	LM35-2017A	LM38-2018A
LM24-2010B	LM30-2015B	LM34-2017B	LM35-2017B	LM38-2018B
LM24-2010C	LM30-2015C	LM34-2017C	LM35-2017C	LM38-2018C
	LM30-2015JC	LM34-2017JC	LM35-2017JC	LM38-2018JC
200mA	200mA	200mA	200mA	200mA
300mA	300mA/1A			
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
24X24X1(A3铁iron)	30X30X1(A3铁iron)	34X34X1(A3铁iron)	40X40X1(A3铁iron)	40X40X1(A3铁iron)
0.05	0.05		0.1	
200Hz/25Hz	200Hz/25Hz		100Hz/15Hz	
-25℃~+75℃	-25℃~+75℃		-25℃~+75℃	
50MΩ	50MΩ		50MΩ	
金属Metal	金属Metal	ABS树脂Resin	ABS树脂Resin	ABS树脂Resin
IP67	IP67		IP67	
LJ24A3-10-□□	E2E-X18M□			LJ38A4-18-□□

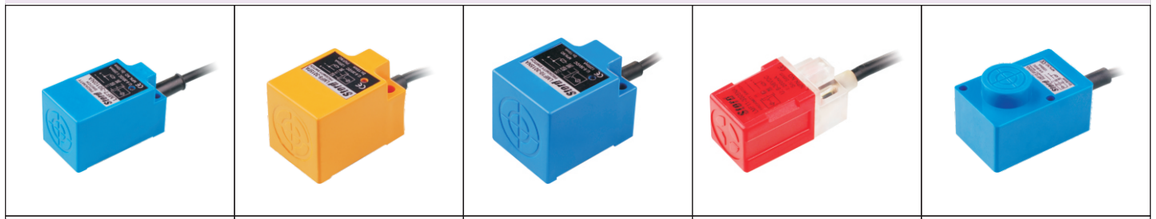
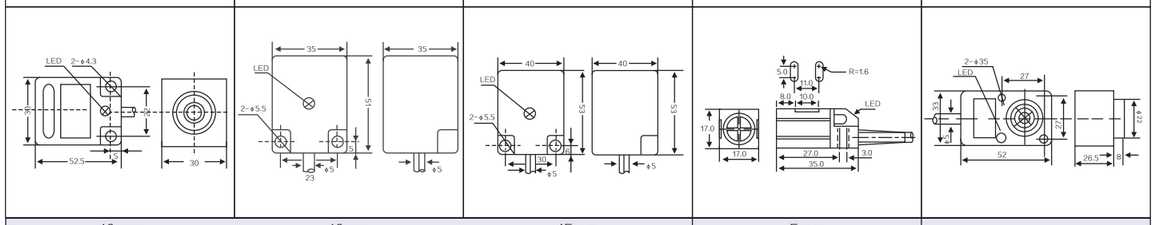
接近开关
PROXIMITY SWITCH

结构分类 Structural category	圆柱型 Cylinder type			
外型编号 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				
NO+NC				
交流AC 90-250 VAC 二线制two wire system NO				
NC				
SCR可控硅Controllable silicon NO				
NC				
NO+NC				
继电器输出Relay output				
检测距离 DETECTION DISTANCE	15mm	20mm	25mm	15mm
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	LM40-3020PA	LM480-3025PA	LM36-3015PA
NC	LM39-3015PB	LM40-3020PB	LM480-3025PB	LM36-3015PB
NO+NC	LM39-3015PC	LM40-3020PC	LM480-3025PC	LM36-3015PC
交流AC 90-250 VAC 二线制two wire system NO	LM39-3015LA	LM40-3020LA	LM480-3025LA	LM36-3015LA
NC	LM39-3015LB	LM40-3020LB	LM480-3025LB	LM36-3015LB
SCR可控硅Controllable silicon NO	LM39-2015A	LM40-2020A	LM480-2025A	LM36-2015A
NC	LM39-2015B	LM40-2020B	LM480-2025B	LM36-2015B
NO+NC	LM39-2015C	LM40-2020C	LM480-2025C	
继电器输出Relay output		LM40-2020JC		
输出电流 Controloutput DC	200mA	200mA	200mA	200mA
SCR/继电器 Relay	300mA/1A	300mA/1A		300mA
输出电压降 Output voltagc dropDC/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	45X45X1(A3铁iron)	45X45X1(A3铁iron)	50X50X1(A3铁iron)	45X45X1(A3铁iron)
重复精度 Repeated precision	0.1			0.05
响应频率DC/AC Response frequency	100Hz/25Hz			200Hz/10Hz
工作环境温度 Working environment temperature	-25℃~+75℃			
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 Altemative model at home and abroad	SC-□□	SC-□□	SFE-□□	

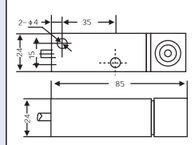
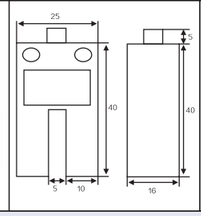
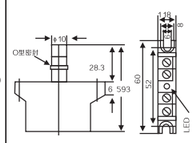
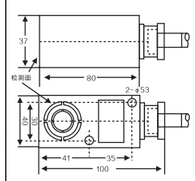
平面安装型 Plane installation type		角柱型 Angular column type		
LM42	LM48	LM55	LMF1	LMF2
				
				
			5mm	5mm
			LMF1-3005NA	LMF2-3005NA
			LMF1-3005NB	LMF2-3005NB
			LMF1-3005PA	LMF2-3005PA
			LMF1-3005PB	LMF2-3005PB
			LMF1-3005LA	LMF2-3005LA
			LMF1-3005LB	LMF2-3005LB
20mm	20mm	25mm		
LM42-3020NA	LM48-3020NA	LM55-3025NA		
LM42-3020NB	LM48-3020NB	LM55-3025NB		
LM42-3020NC	LM48-3020NC	LM55-3025NC		
LM42-3020PA	LM48-3020PA	LM55-3025PA		
LM42-3020PB	LM48-3020PB	LM55-3025PB		
LM42-3020PC	LM48-3020PC	LM55-3025PC		
LM42-3020LA	LM48-3020LA	LM55-3025LA		
LM42-3020LB	LM48-3020LB	LM55-3025LB		
LM42-2020A	LM48-2020A	LM55-2025A	LMF1-2005A	LMF2-2005A
LM42-2020B	LM48-2020B	LM55-2025B	LMF1-2005B	LMF2-2005B
	LM48-2020C	LM55-2025C		
200mA	200mA	200mA	200mA	200mA
300mA	300mA	300mA	300mA	300mA
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
25X25X1(A3铁iron)	60X60X1(A3铁iron)	55X55X1(A3铁iron)	20X20X1(A3铁iron)	20X20X1(A3铁iron)
0.2	0.2	0.2	0.02	0.02
200Hz/10Hz	200Hz/10Hz	200Hz/10Hz	400Hz/25Hz	400Hz/25Hz
-25℃~+75℃	-25℃~+75℃	-25℃~+75℃	-25℃~+75℃	-25℃~+75℃
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
ABS树脂Resin	ABS树脂Resin	ABS树脂Resin	ABS树脂Resin	ABS树脂Resin
IP67	IP67	IP67	IP67	IP67
	SD-□□	SE-□□	SN04-N	TL-Q5MC1

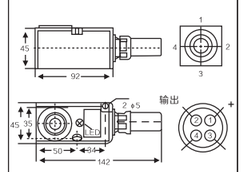
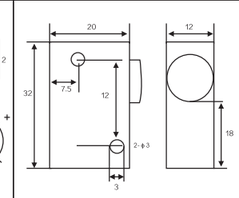
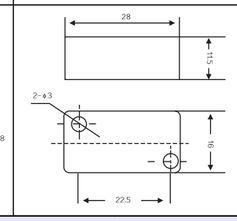
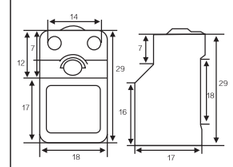
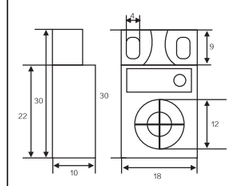
接近开关
PROXIMITY SWITCH

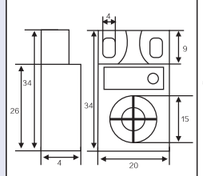
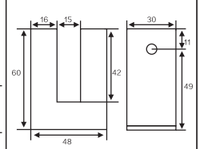
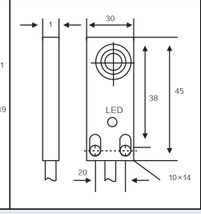
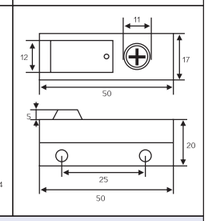
结构分类 Structural category	角柱型 Angular column type			
外型编号 Outward Appearance code	LMF3	LMF4	LMF5	LMF6
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				
检测距离 DETECTION DISTANCE	5mm	5mm	2mm	8mm
埋入式Flush 直流DC 10-30 VDC NPN NO	LMF3-3005NA	LMF4-3005NA	LMF5-3002NA	LMF6-3008NA
NPN NC	LMF3-3005NB	LMF4-3005NB	LMF5-3002NB	LMF6-3008NB
NPN NO+NC		LMF4-3005NC	LMF5-3002NC	LMF6-3008NC
PNP NO	LMF3-3005PA	LMF4-3005PA	LMF5-3002PA	LMF6-3008PA
PNP NC	LMF3-3005PB	LMF4-3005PB	LMF5-3002PB	LMF6-3008PB
PNP 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
二线制 two wire system NC	LMF3-3005LB	LMF4-3005LB	LMF5-3002LB	LMF6-3008LB
SCR 可控硅 Control-lable silicon NO				LMF6-2008A
SCR 可控硅 NC				LMF6-2008B
SCR 可控硅 NO+NC				
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
NPN NC			LMF5-3004NB	LMF6-3010NB
NPN NO+NC			LMF5-3004NC	LMF6-3010NC
PNP NO			LMF5-3004PA	LMF6-3010PA
PNP NC			LMF5-3004PB	LMF6-3010PB
PNP NO+NC			LMF5-3004PC	LMF6-3010PC
交流AC 90-250 VAC 二线制 two wire system NO			LMF5-3004LA	LMF6-3010LA
二线制 two wire system NC			LMF5-3004LB	LMF6-3010LB
SCR 可控硅 Control-lable silicon NO	LMF3-2005A			LMF6-2010A
SCR 可控硅 NC	LMF3-2005B			LMF6-2010B
SCR 可控硅 NO+NC				
继电器输出Relay output				
输出电流 Controloutput DC	200mA	200mA	200mA	200mA
输出电流 Controloutput SCR/继电器 Relay		300mA/1A		300mA
输出电压降 Output voltagc dropDC/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	20X20X1(A3铁iron)	20X20X1(A3铁iron)	15X15X1(A3铁iron)	30X30X1(A3铁iron)
重复精度 Repeated precision	0.02	0.03	0.03	0.05
响应频率DC/AC Response frequency	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Altemative model at home and abroad	PS17-5PN	PS05-N、PS05-P		TL-N5ME□□

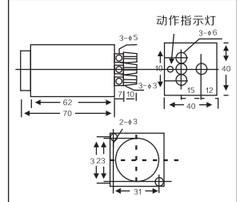
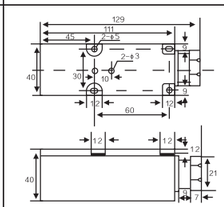
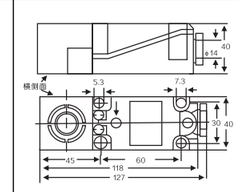
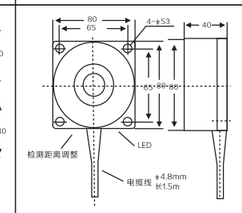
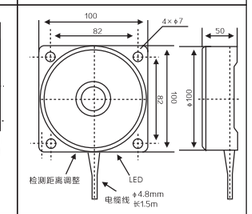
角柱型 Angular column type				
LMF7	LMF8	LMF10	LMF11	LMF12
				
				
10mm	10mm	15mm	5mm	
LMF7-3010NA	LMF8-3010NA	LMF10-3015NA	LMF11-3005NA	
LMF7-3010NB	LMF8-3010NB	LMF10-3015NB	LMF11-3005NB	
	LMF8-3010NC	LMF10-3015NC	LMF11-3005NC	
LMF7-3010PA	LMF8-3010PA	LMF10-3015PA	LMF11-3005PA	
LMF7-3010PB	LMF8-3010PB	LMF10-3015PB	LMF11-3005PB	
	LMF8-3010PC	LMF10-3015PC	LMF11-3005PC	
LMF7-3010LA	LMF8-3010LA	LMF10-3015LA	LMF11-3005LA	
LMF7-3010LB	LMF8-3010LB	LMF10-3015LB	LMF11-3005LB	
LMF7-2010A	LMF8-2010A	LMF10-2015A		
LMF7-2010B	LMF8-2010B	LMF10-2015B		
LMF7-2010C	LMF8-2010C	LMF10-2015C		
15mm	15mm	20mm		8mm
LMF7-3015NA	LMF8-3015NA	LMF10-3020NA		LMF12-3008NA
LMF7-3015NB	LMF8-3015NB	LMF10-3020NB		LMF12-3008NB
LMF7-3015NC	LMF8-3015NC	LMF10-3020NC		LMF12-3008NC
LMF7-3015PA	LMF8-3015PA	LMF10-3020PA		LMF12-3008PA
LMF7-3015PB	LMF8-3015PB	LMF10-3020PB		LMF12-3008PB
LMF7-3015PC	LMF8-3015PC	LMF10-3020PC		LMF12-3008PC
LMF7-3015LA	LMF8-3015LA	LMF10-3020LA		LMF12-3008LA
LMF7-3015LB	LMF8-3015LB	LMF10-3020LB		LMF12-3008LB
LMF7-2015A	LMF8-2015A	LMF10-2020A		LMF12-2008A
LMF7-2015B	LMF8-2015B	LMF10-2020B		LMF12-2008B
LMF7-2015C	LMF8-2015C	LMF10-2020C		
200mA	200mA	200mA	200mA	200mA
300mA		500mA		500mA
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
35X35X1(A3铁iron)	40X40X1(A3铁iron)	45X45X1(A3铁iron)	20X20X1(A3铁iron)	25X25X1(A3铁iron)
0.05	0.05	0.05	0.05	0.04
200Hz/15Hz	200Hz/15Hz	100Hz/15Hz	500Hz	200Hz/15Hz
-25℃~+75℃	-25℃~+75℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
ABS树脂Resin	ABS树脂Resin	ABS树脂Resin	ABS树脂Resin	ABS树脂Resin
IP67	IP67	IP67	IP67	IP67
TL-N10M□		TL-N20M□	PL-05N PL-05P	LJ1A-24

接近开关
PROXIMITY SWITCH

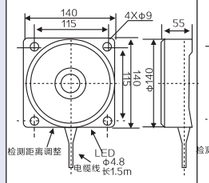
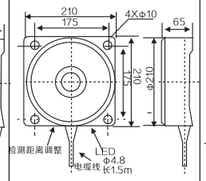
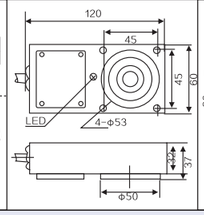
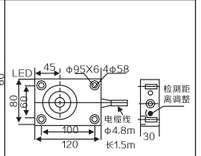
结构分类 Structural category	角柱型 Angular column type			
外型编号 Outward Appearance code	LMF13	LMF14	LMF15	LMF16
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				
检测距离 DETECTION DISTANCE			2mm	
埋入式Flush 直流DC 10-30 VDC NPN NO			LMF15-3002NA	
埋入式Flush 直流DC 10-30 VDC NPN NC			LMF15-3002NB	
埋入式Flush 直流DC 10-30 VDC NPN NO+NC			LMF15-3002NC	
埋入式Flush 直流DC 10-30 VDC PNP NO			LMF15-3002PA	
埋入式Flush 直流DC 10-30 VDC PNP NC			LMF15-3002PB	
埋入式Flush 直流DC 10-30 VDC PNP NO+NC			LMF15-3002PC	
埋入式Flush 交流AC 90-250 VAC 二线制 two wire system NO			LMF15-3002LA	
埋入式Flush 交流AC 90-250 VAC 二线制 two wire system NC			LMF15-3002LB	
埋入式Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NO			LMF15-2002A	
埋入式Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NC			LMF15-2002B	
埋入式Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NO+NC				
埋入式Flush 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
非埋入式Non-Flush 直流DC 10-30 VDC NPN NC	LMF13-3008NB	LMF14-3005NB	LMF15-3004NB	LMF16-3015NB
非埋入式Non-Flush 直流DC 10-30 VDC NPN NO+NC	LMF13-3008NC	LMF14-3005NC	LMF15-3004NC	LMF16-3015NC
非埋入式Non-Flush 直流DC 10-30 VDC PNP NO	LMF13-3008PA	LMF14-3005PA	LMF15-3004PA	LMF16-3015PA
非埋入式Non-Flush 直流DC 10-30 VDC PNP NC	LMF13-3008PB	LMF14-3005PB	LMF15-3004PB	LMF16-3015PB
非埋入式Non-Flush 直流DC 10-30 VDC PNP NO+NC	LMF13-3008PC	LMF14-3005PC	LMF15-3004PC	LMF16-3015PC
非埋入式Non-Flush 交流AC 90-250 VAC 二线制 two wire system NO	LMF13-3008LA	LMF14-3005LA	LMF15-3004LA	LMF16-3015LA
非埋入式Non-Flush 交流AC 90-250 VAC 二线制 two wire system NC	LMF13-3008LB	LMF14-3005LB	LMF15-3004LB	LMF16-3015LB
非埋入式Non-Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NO	LMF13-2008A	LMF14-2005A	LMF15-2004A	LMF16-2015A
非埋入式Non-Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NC	LMF13-2008B	LMF14-2005B	LMF15-2004B	LMF16-2015B
非埋入式Non-Flush 交流AC 90-250 VAC SCR 可控硅 Control-lable silicon NO+NC				LMF16-2015C
非埋入式Non-Flush 继电器输出Relay output				LMF16-2015JC
输出电流 Controloutput DC	200mA	200mA	200mA	200mA
输出电流 Controloutput SCR/继电器 Relay		300mA/1A		300mA
输出电压降 Output voltagc dropDC/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	25X25X1(A3铁iron)	18X18X1(A3铁iron)	15X15X1(A3铁iron)	45X45X1(A3铁iron)
重复精度 Repeated precision	0.04	0.05	0.02	0.05
响应频率DC/AC Response frequency	200Hz/15Hz	500Hz/10Hz		100Hz/Hz
工作环境温度 Working environment temperature	-25℃~+70℃	-25℃~+70℃		
绝缘电阻 Insulation resistance	50MΩ	50MΩ		
外壳材料 Shell material	ABS树脂Resin	ABS塑料 Plastil		
防护等级 Protection grade	IP67	IP67		
可替代国内型号 Altemative model at home and abroad	LJD-□□		ST-F-□	LJ2-□□/□□□

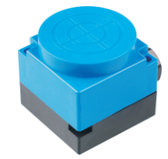
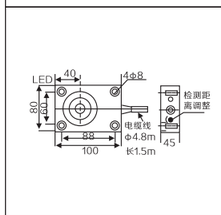
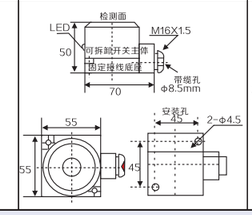
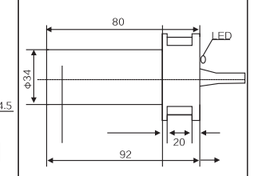
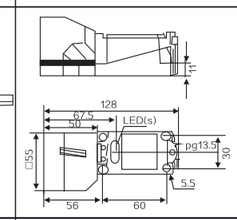
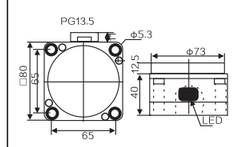
角柱型 Angular column type		平面安装型 Plane installation type		
LMF17	LMF21	LMF22	LMF23	LMF24
				
				
	4mm	2mm		4mm
		LMF22-3002NA		LMF24-3004NA
		LMF22-3002NB		LMF24-3004NB
		LMF22-3002PA		LMF24-3004PA
		LMF22-3002PB		LMF24-3004PB
		LMF22-3002LA		LMF24-3004LA
		LMF22-3002LB		LMF24-3004LB
20mm	4mm	4mm	5mm	5mm
LMF17-3020NA	LMF21-3004NA	LMF22-3004NA	LMF23-3005NA	LMF24-3005NA
LMF17-3020NB	LMF21-3004NB	LMF22-3004NB	LMF23-3005NB	LMF24-3005NB
LMF17-3020NC	LMF21-3004NC	LMF22-3004NC	LMF23-3005NC	LMF24-3005NC
LMF17-3020PA	LMF21-3004PA	LMF22-3004PA	LMF23-3005PA	LMF24-3005PA
LMF17-3020PB	LMF21-3004PB	LMF22-3004PB	LMF23-3005PB	LMF24-3005PB
LMF17-3020PC	LMF21-3004PC	LMF22-3004PC	LMF23-3005PC	LMF24-3005PC
LMF17-3020LA	LMF21-3004LA	LMF22-3004LA	LMF23-3005LA	LMF24-3005LA
LMF17-3020LB	LMF21-3004LB	LMF22-3004LB	LMF23-3005LB	LMF24-3005LB
LMF17-2020A				
LMF17-2020B				
LMF17-2020C				
LMF17-2020JC				
200mA	200mA	200mA	200mA	200mA
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
50X50X1(A3铁iron)	12X12X1(A3铁iron)	15X15X1(A3铁iron)	20X20X1(A3铁iron)	12X12X1(A3铁iron)
0.2	0.01	0.05	0.05	0.05
200Hz/15Hz	500Hz/5Hz	300Hz	500Hz	500Hz/5Hz
-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃
≥50MΩ	50MΩ	≥50MΩ	50MΩ	50MΩ
ABS树脂Resin		ABS树脂Resin	ABS塑料 Plastil	ABS塑料 Plastil
IP67	IP67	IP67	IP67	IP67

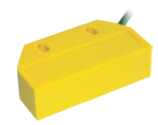
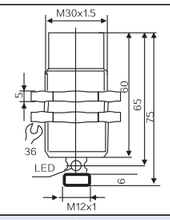
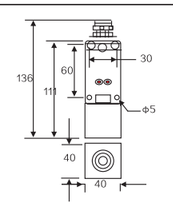
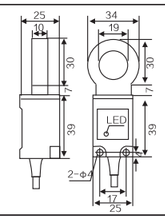
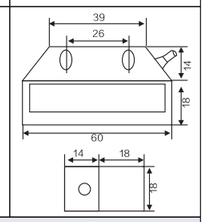
结构分类 Structural category				平面安装型 Plane installation type		角柱型 Angular column type	
外型编号 Outward Appearance code				LMF25	LMF27	LMF29	LMF30
外形图例 OUTWARD APPEARANCE ILLUSTRATION							
外形尺寸 OVERALL DIMENSIONS							
	检测距离 DETECTION DISTANCE			5mm			
埋入式Flush	直流DC 10-30 VDC	NPN	NO			LMF29-3005NA	
			NC			LMF29-3005NB	
			NO+NC			LMF29-3005NC	
		PNP	NO			LMF29-3005PA	
			NC			LMF29-3005PB	
			NO+NC			LMF29-3005PC	
	交流AC 90-250 VAC	二线制 two wire system	NO			LMF29-3005LA	
			NC				
		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
			NO+NC	LMF25-3005PC	LMF27-3015PC	LMF29-3008PC	LMF30-3004PC
	交流AC 90-250 VAC	二线制 two wire system	NO	LMF25-3005LA	LMF27-3015LA	LMF29-3008LA	LMF30-3004LA
			NC	LMF25-3005LB		LMF29-3008LB	
		SCR可控硅 Control-lable silicon	NO	LMF25-2005A	LMF27-2015A	LMF29-2008A	LMF30-2004A
			NC	LMF25-2005B	LMF27-2015B	LMF29-2008B	LMF30-2004B
			NO+NC				
		继电器输出Relay output					
输出电流 Controloutput		DC		200mA	200mA	200mA	200mA
		SCR/继电器 Relay		500mA	300mA	300mA	300mA
输出电压降 Output voltagc dropDC/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				18X18X1(A3铁iron)	30X30X1(A3铁iron)	25X25X1(A3铁iron)	15X15X1(A3铁iron)
重复精度 Repeated precision				0.05	0.05	0.05	0.05
响应频率DC/AC Response frequency				500Hz/10Hz	300Hz/10Hz	300Hz	300Hz /10Hz
工作环境温度 Working environment temperature				-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃
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Altemative model at home and abroad							

角柱型 Angular column type		平面安装型 Plane installation type		
LMF35	LMF36	LMF37	LMF38	LMF39
				
				
		15mm		
		LMF37-3015NA		
		LMF37-3015NB		
		LMF37-3015NC		
		LMF37-3015PA		
		LMF37-3015PB		
		LMF37-3015PC		
		LMF37-3015LA		
		LMF37-3015LB		
		LMF37-2015A		
		LMF37-2015B		
		LMF37-2015C		
15mm	1-20mm	20mm	1-40mm	1-50mm
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
LMF35-3015PA	LMF36-3020PA	LMF37-3020PA	LMF38-3040PA	LMF39-3050PA
LMF35-3015PB	LMF36-3020PB	LMF37-3020PB	LMF38-3040PB	LMF39-3050PB
LMF35-3015PC	LMF36-3020PC	LMF37-3020PC	LMF38-3040PC	LMF39-3050PC
LMF35-3015LA	LMF36-3020LA	LMF37-3020LA	LMF38-3040LA	LMF39-3050LA
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
LMF35-2015C	LMF36-2020C	LMF37-2020C	LMF38-2040C	LMF39-2050C
	LMF36-2020JC	LMF37-2020JC	LMF38-2040JC	LMF39-2050JC
200mA	200mA	200mA	200mA	200mA
	300mA/2A	300mA/2A	300mA/2A	300mA/2A
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
40X40X1(A3铁iron)	50X50X1(A3铁iron)	50X50X1(A3铁iron)	100X100X1(A3铁iron)	120X120X1(A3铁iron)
0.05	0.2	0.2	0.5	0.5
200Hz/15Hz	200Hz/15Hz	200Hz/15Hz	50Hz/10Hz	50Hz/10Hz
-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+75℃	-25℃~+75℃
≥50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
ABS树脂Resin	ABS树脂Resin	ABS树脂Resin		
IP67	IP67	IP67	IP67	IP67
JDK-2正负		HY-A20□	TCD-2040□	TCD-2050□

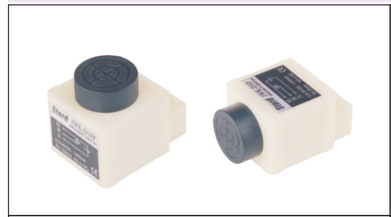
接近开关
PROXIMITY SWITCH

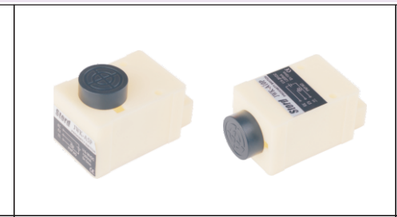
结构分类 Structural category	平面安装型 Plane installation type			
外型编号 Outward Appearance code	LMF40	LMF41	LMF42	LMF43
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				
检测距离 DETECTION DISTANCE				
埋入式Flush 直流DC 10-30 VDC NPN NO				
NC				
NO+NC				
PNP NO				
NC				
NO+NC				
交流AC 90-250 VAC 二线制 two wire system NO				
NC				
SCR可控硅 Controllable 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
NO+NC	LMF40-3080PC	LMF41-30120PC	LMF42-3025PC	LMF43-3040PC
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 Controllable 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 Controloutput DC	200mA	200mA	200mA	200mA
SCR/继电器 Relay	300mA/3A	300mA/5A	300mA/2A	300mA/2A
输出电压降 Output voltagc dropDC/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	160X160X1(A3铁iron)	250X250X1(A3铁iron)	80X80X1(A3铁iron)	100X100X1(A3铁iron)
重复精度 Repeated precision	0.5	0.5	0.05	0.05
响应频率DC/AC Response frequency	10Hz/5Hz	10Hz/5Hz	50Hz/10Hz	30Hz/10Hz
工作环境温度 Working environment temperature	-25℃~+75℃	-25℃~+75℃	-25℃~+70℃	-25℃~+70℃
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 Altemative model at home and abroad	TCB-2080□	TCC-2120□		

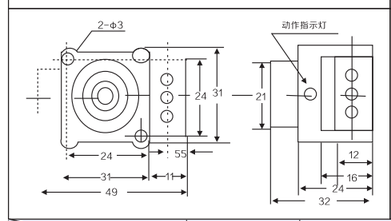
平面安装型 Plane installation type				
LMF45	LMF55	LMF340	LMF370	LMF380
				
				
0-50mm	25mm	20mm	40mm	40mm
LMF45-3050NA	LMF55-3025NA	LMF340-3020NA	LMF370-3040NA	LMF380-3040NA
LMF45-3050NB	LMF55-3025NB	LMF340-3020NB	LMF370-3040NB	LMF380-3040NB
LMF45-3050NC	LMF55-3025NC	LMF340-3020NC	LMF370-3040NC	LMF380-3040NC
LMF45-3050PA	LMF55-3025PA	LMF340-3020PA	LMF370-3040PA	LMF380-3040PA
LMF45-3050PB	LMF55-3025PB	LMF340-3020PB	LMF370-3040PB	LMF380-3040PB
LMF45-3050PC	LMF55-3025PC	LMF340-3020PC	LMF370-3040PC	LMF380-3040PC
LMF45-3050LA	LMF55-3025LA	LMF340-3020LA	LMF370-3040LA	LMF380-3040LA
LMF45-3050LB	LMF55-3025LB	LMF340-3020LB	LMF370-3040LB	LMF380-3040LB
LMF45-2050A	LMF55-2025A	LMF340-2020A	LMF370-2040A	LMF380-2040A
LMF45-2050B	LMF55-2025B	LMF340-2020B	LMF370-2040B	LMF380-2040B
LMF45-2050C	LMF55-2025C	LMF340-2020C	LMF370-2040C	LMF380-2040C
200mA	200mA	200mA	200mA	200mA
500mA	300mA/2A	300mA	500mA	500mA
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				
直流(NPN PNP)型DC 12V时8mA、24V时15mA、交流AC 10mA以下DC<15mA、AC<10mA				
80X80X1(A3铁iron)	70X70X1(A3铁iron)	35X35X1(A3铁iron)	55X55X1(A3铁iron)	50X50X1(A3铁iron)
0.5	0.2	0.05	0.5	0.05
200Hz/5Hz	200Hz/10Hz	300Hz/10Hz	200Hz/10Hz	500Hz/10Hz
-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
塑料 Plastil	ABS树脂Resin		塑料 Plastil	ABC 塑料 Plastil
IP67	IP67	IP67	IP67	IP67
HE-/HD-				NJ40P-FP-A2-P1

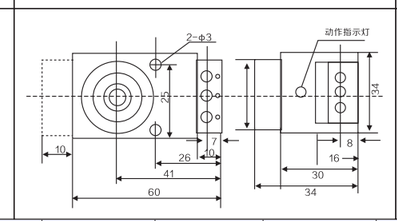
结构分类 Structural category				接插件型 Connector type		
外型编号 Outward Appearance code LM30-□T/LM30-□T3				LMF31	LMF32	LMF33
外形图例 OUTWARD APPEARANCE ILLUSTRATION							
外形尺寸 OVERALL DIMENSIONS							
	检测距离 DETECTION DISTANCE			10mm	15mm	内环20mm	5mm
埋入式Flush	直流 DC 6-36 VDC	NPN	NO	LM30-3010NAT	LMF31-3015NA	LMF32-3020NA	LMF33-3005NA
			NC	LM30-3010NBT	LMF31-3015NB	LMF32-3020NB	LMF33-3005NB
			NO+NC	LM30-3010NCT	LMF31-305NC	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
		SCR 可控硅 Controlable 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 6-36 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
		SCR 可控硅 Controlable 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 voltagc dropDC/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 Response frequency				200Hz/10Hz	200Hz/10Hz		
工作环境温度 Working environment temperature				-25℃~+65℃	-25℃~+65℃		
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Alternative model at home and abroad				EZE-X18ME1-M1			

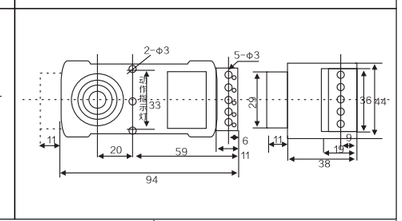
■JWK 系列接近开关 JWK series proximity switch











参数 Parameters / 型号 Type	工作电压 Workingvoltage	输出电压降 Outputvoltagedrop	输出电流 Outputcurrent	检测距离 Detectiondistance	响应频率 Response frequency	输出形式 Outputform	壳体材料及防护等级 Shellmaterialand protectiongrade
JWK-A5P	DC:6~36V	≤1V	200mA	5mm	200Hz	三线常开或常闭 three-wire NOor NC	塑料 Plastic ABS Ip67
JWK-D5P							
JWK-A5PJ		≤3V	100mA			二线常开或常闭 two-wire NOor NC	
JWK-D5PJ							
JWK-A10P	DC:6~36V	≤1V	200mA	10mm	200Hz	三线常开或常闭 three-wire NOor NC	塑料 Plastic ABS Ip67
JWK-D10P							
JWK-A10PJ		≤3V	100mA			二线常开或常闭 two-wire NOor NC	
JWK-D10PJ							
JWK200-A10J	AC:220V	≤7V	3A	10mm	≥15Hz	一组常开或常闭 SingleNO+NC	塑料 Plastic ABS Ip67
JWK220-D10J							
JWK220-A10JK						一组常开或常闭 SingleNO+NC	
JWK220-D10JK							

■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 without any contact or pressure.In addition ,it is used as position deteetion transducer in the equipmemts 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:AC127V、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

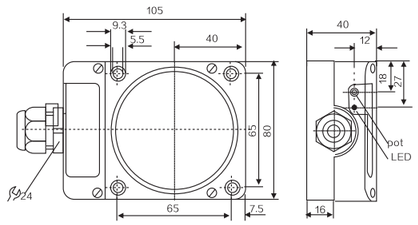
Characteristic/特点:

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

外形尺寸



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]	I: 2.2 A (20 ms / 0.5 Hz)
最小的负载电流[mA] Minimum 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]	< AC 6.5 / < DC 6
漏电流 [mA] Leakage current [mA]	< 2.5 (AC 250 V) / < 1.3 (AC 110 V) / < 0.8 (DC 24 V)
实际感应距离 [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] Switch-point drift [% of Sn]	-10...10
迟滞 [Sr的百分比] Hysteretic [% 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	IP 65, II
EMC电磁兼容 EMC	EN 60947-5-2
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2.5 mm^2; 电缆直径5.5...13 mm, 电缆螺旋套管接头M20 x 1.5 terminals up to 2.5 mm^2; cable diameter 5.5...13 mm, cable gland M20 x 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: 250 mA (...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: 短路后请一定检查产品的安全功能。 *) AC: 350 mA (...50° C) / DC: 250 mA (...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

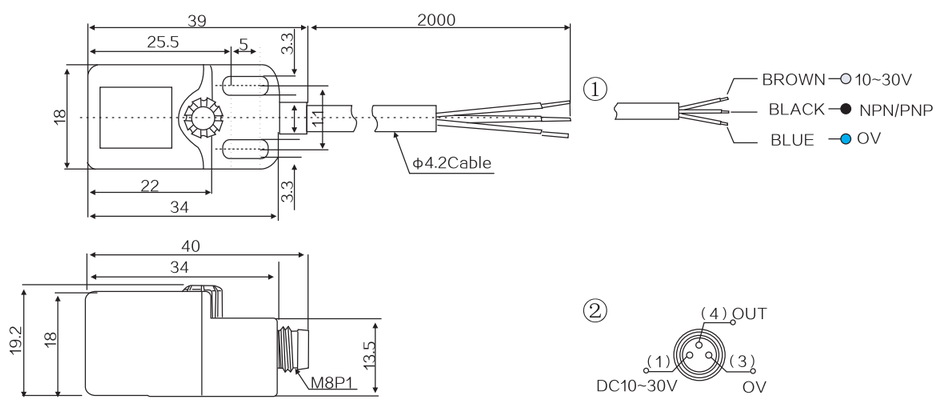
Characteristic/特点:

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

Specifications/规格表:

Output Method / 输出模式	NPN N.O	RN04-N	RN04-ND1
	NPN N.C	RN04-N2	——
	PNP N.O	RN04-P	RN04-PD1
	PNP N.C	RN04-P2	——
Sensing Surface/检测方向		Top surface/前方	
Standard sensing object/标准检测物		Iron 18*18*1mm	
Sensing distance/检测距离		5mm	
Secure sensing distance/建议距离		0to4mm	
Hysteresis/迟带		≤10%of sensing distance	
Response time/反应时间		2ms Max	
Operating voltage/工作电压		DC10~30V	
Current Consumption/消耗电流		≤8mA no-load	
Load current/负载电流		100mA Max. at DC30V	
Leakage current/漏电流		≤1.1mA no-load	
Residual voltage/残余电压		≤DC1.5V	
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)	
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 secretary	
Operating temperature/工作温度范围		-20℃~+60℃	
Protection degree/防水等级		IP64/IP67(Option)	
Wiring method/出线方式		Φ4.2 *2M/3wires	M8 connector/M8接头
Weight/重量		Approx.60g	Approx.12g

Dimensions/尺寸图:



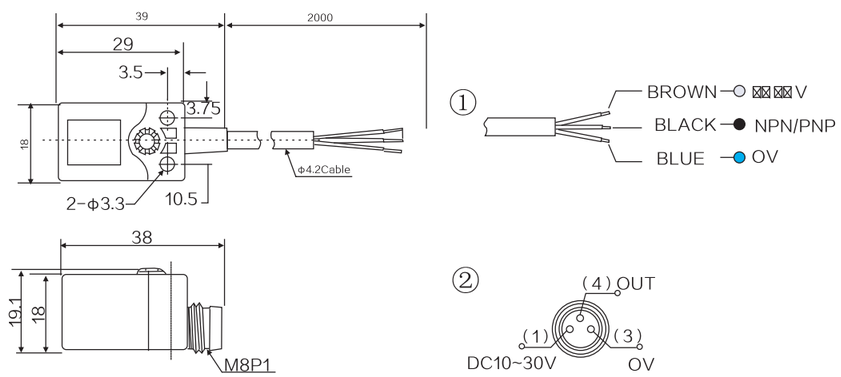
Characteristic/特点:

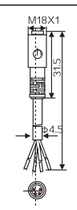
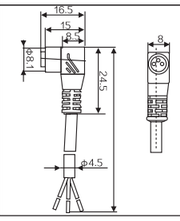
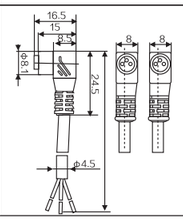
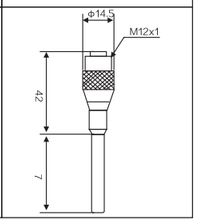
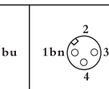
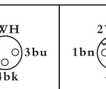
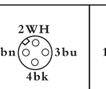
●Build-in twin LED, convenient for checking the operation.
/具有双LED， 检测操作更方便
●Plug-in connector type is available, easy to connect, anyone can replace the new sensor in a minute./插入式接线，安装更换很容易

Specifications/规格表:

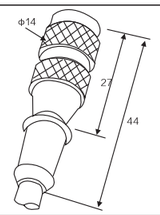
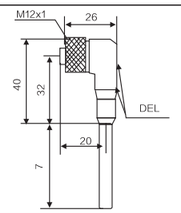
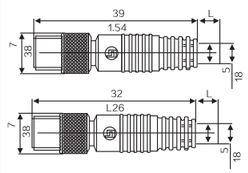
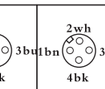
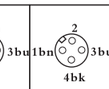
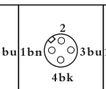
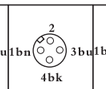
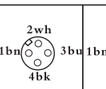
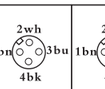
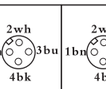
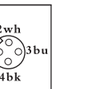
Output Method / 输出模式	NPN N.O	RN05-N	RN05-ND1
	NPN N.C	RN05-N2	——
	PNP N.O	RN05-P	RN05-PD1
	PNP N.C	RN05-P2	——
Sensing Surface/检测方向		Top surface/前方	
Standard sensing object/标准检测物		Iron 18*18*1mm	
Sensing distance/检测距离		5mm	
Secure sensing distance/建议距离		0to4mm	
Hysteresis/迟带		≤10%of sensing distance	
Response time/反应时间		2ms Max	
Operating voltage/工作电压		DC10~30V	
Current Consumption/消耗电流		≤8mA no-load	
Load current/负载电流		100mA Max. at DC30V	
Leakage current/漏电流		≤1.1mA no-load	
Residual voltage/残余电压		≤DC1.5V	
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)	
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 secretary	
Operating temperature/工作温度范围		-20℃~+60℃	
Protection degree/防水等级		IP64/IP67(Option)	
Wiring method/出线方式		Φ4.2 *2M/3wires	M8 connector/M8接头
Weight/重量		Approx.60g	Approx.12g

Dimensions/尺寸图:

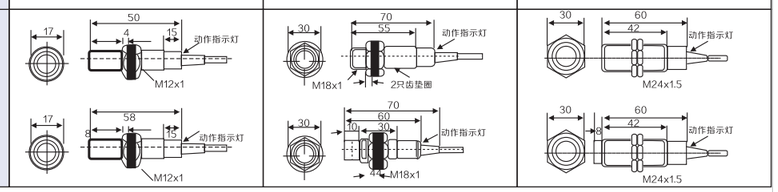


类型 Structural category	直形孔座接插电缆 接插件M8X1		弯形孔座接插电缆 接插件M8X1		弯形孔座接插电缆 接插件M8X1		直形孔座接插电缆 接插件M12X1
外型编号 Outward Appearance code	RK01-1-2	RK01-1-3	RK01-2-2	RK 01-2-3	RK01-2-2-4	RK 01-2-3-4	RK 02-1-2
外形图例 OUTWARD APPEARANCE ILLUSTRATION							
外形尺寸 OVERALL DIMENSIONS							
接插外形 CONTACT VIEW							
应用 APPLICATION	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	NPN/PNP NO/NC	DC二线 AC二线 NO/NC
接插件 Connector	黑black						
外套颜色 Skin color	Cuzn,nickel plated						
连接螺母材料 Coupling nut material							
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]	bn,bu,bk 3x0.5	bn,bu 2x0.5	Black bn,bu 2X0.51	bn,bu,bk.wh 4x0.34			
通电指示 power indicator			1				
一般数据 common data	–						
绝缘电阻 insulation resistance	–						
环境温度范围：接插件 environment temperature scope[℃]	–						
环境温度范围：电缆 environment temperature scope[℃]	≥10^9Ω						
防护等级（DIN 40 050）protection level	-25…+80						
电容量 Capacitance	-25…+80						
	IP67						
	250VAC/300VDC,Gr.C						

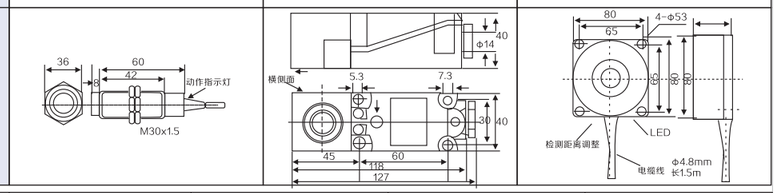
传感器插头线
SENSOR PLUG WIRE

类型 Structural category	直形孔座接插电缆 接插件M12X1				弯形孔座接插电缆 接插件M12X1			
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	黑black								
外套颜色 Skin color	Cuzn,nickel plated								
连接螺母材料 Coupling nut material									
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]	bn,bu,bk 3x0.5	bn,bu,bk,wh 4x0.34	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	–								
环境温度范围：接插件 environment temperature scope[℃]	≥10^9Ω								
环境温度范围：电缆 environment temperature scope[℃]	-25…+65								
防护等级（DIN 40 050）protection level	-25…+65								
电容量 Capacitance	IP67								
	250VAC/300VDC,Gr.C								

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

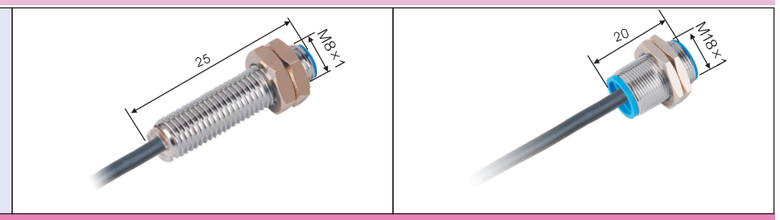
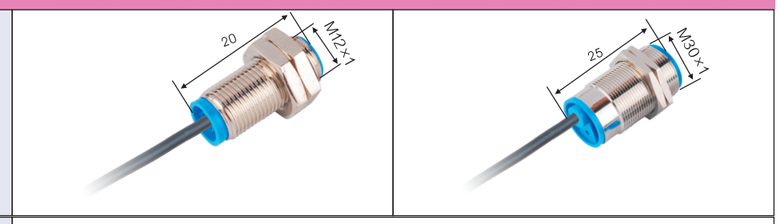
结构分类 Structural category	圆柱型 Cylinder type		
外型编号 Outward Appearance code	LM12	LM18	LM24
外形图例 OUTWARD APPEARANCE ILLUSTRATION			
外形尺寸 OVERALL DIMENSIONS			

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	LM12-4004A	LM18-4005A	LM18-4008A	LM24-4008A	LM24-4010A
	常闭 Normally Close	LM12-4002B	LM12-4004B	LM18-4005B	LM18-4008B	LM24-4008B	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℃~+70℃					
防护等级 protection level		IP67					

结构分类 Structural category	圆柱型 Cylinder type	角柱型 Angular column type	平面安装型
外型编号 Outward	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	LM30-4014A	LMF37-4020A	LMF38-4040A
	常闭 Normally Close	LM30-4010B	LM30-4014B	LMF37-4020B	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℃~+70℃			
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	AM18-3005LB	AM18-3008LB
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形编号 outward appearance code	AM12-3002LB	AM12-3004LB	AM30-3010LB	AM30-3015LB
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
额定检测距离 Rated sensing distance	1 2	2 4	5 8	10 15

■安全防爆型接近开关

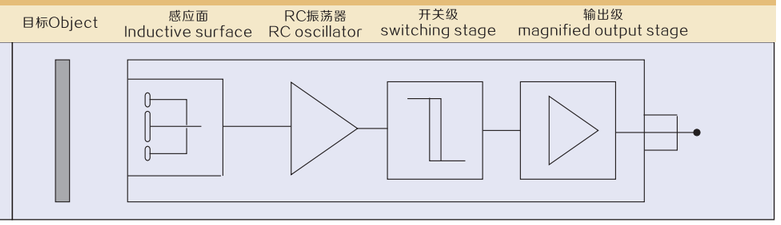
因NAMUR传感器为低电压供电，微电流输出，体积小等等，所以在具有防爆要求的特殊场合应用。
With low-voltage power supply, micro-current output, small volume and other advantages, Namur sensors can be applied for special places with requirements of explosion proof.

标准检测体Q235(mm) standard detecting object Q235 steel(mm)		12X12X1t	12X12X1t	18X18X1t	30X30X1t
具备型号 M odel	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	AM18-3015LB
技术参数 specifications	额定电压 rated Vollage	8.2V	8.2V	8.2V	8.2V
	振荡电流/停荡电流 oscillating current/stop oscillating 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-flsh	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 working environment temperature	-20℃~70℃	-20℃~70℃	-20℃~70℃	-20℃~70℃
	外接线图 external wiring diagram				

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

结构分类 Structural category

外形图例
OUTWARD APPEARANCE ILLUSTRATION



电容式接近开关 capacitance proximity switch

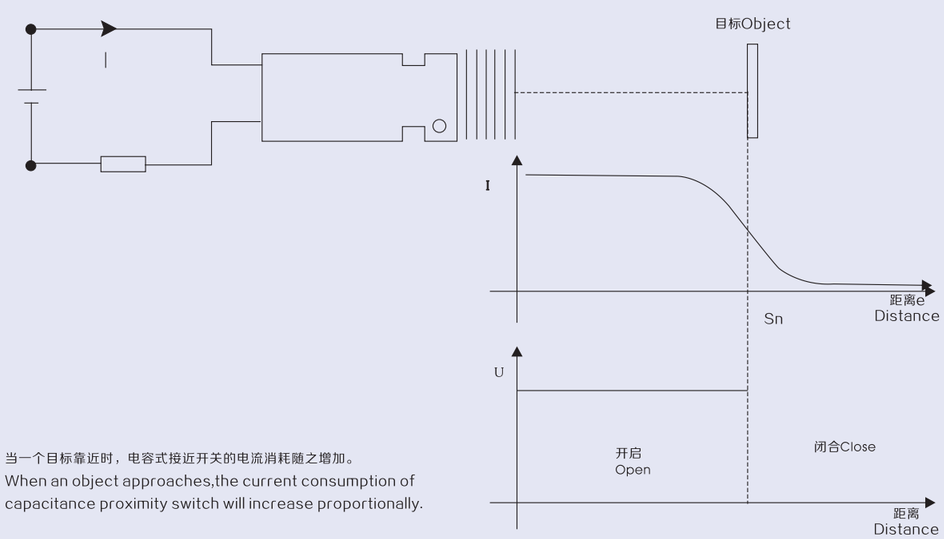
电容式传感器的感应面由两个同轴金属电极构成，很象“打开的”电容电极，该两个电极构成一个电容，串接在RC振荡回路内。

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，将停振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 mental electctrodes,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 clos eto 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 d etermined 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 ;osted 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
合成树脂粘结剂 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

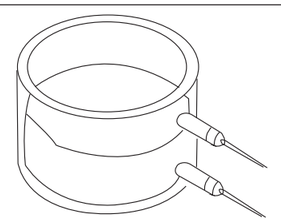


图1、液位测量－－塑料或玻璃器皿
Liquid level measurement-plastic or glass container

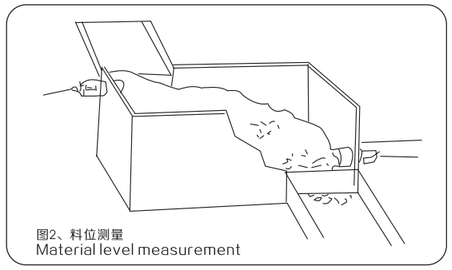


图2、料位测量
Material level measurement

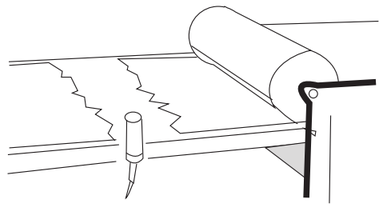


图3、断板检测
chart 3 checking for broken board

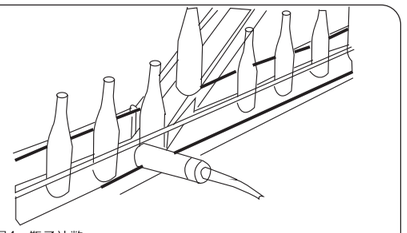


图4、瓶子计数
Fig.4 Count the bottles

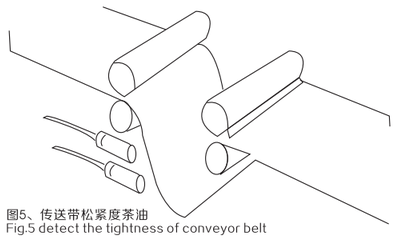


图5、传送带松紧度茶油
Fig.5 detect the tightness of conveyor belt

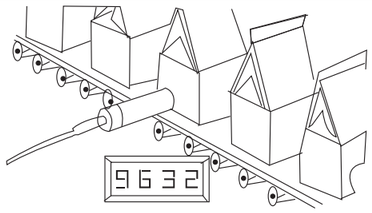
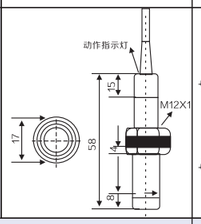
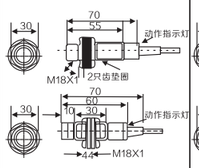
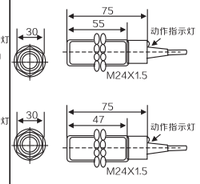
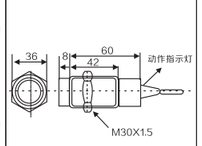
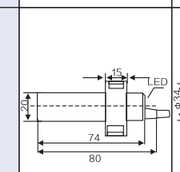
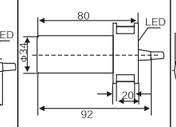
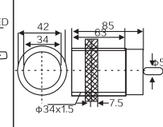
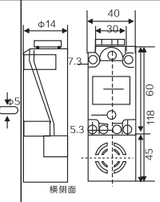
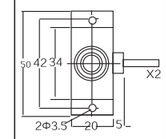


图6、计数及料位检测
Fig.6 Counter and detect the material level

结构分类 Structural category				电容式接近开关			
外型编号 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
		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
	交流 AC 90~250 VAC	SCR 可控硅 Controllable 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
		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
	交流 AC 90~250 VAC	SCR 可控硅 Controllable 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			
输出电压降 Output voltagc dropDC/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℃~70℃			
绝缘电阻 Insulation resistance				50MΩ			
防护结构 Protection structure				IEC标准IP54 IECstandard Ip54			
可替代国内型号 Altemative 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				
外型编号 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					
		PNP	NO					
			NC					
			NO+NC					
	交流 AC 90~250 VAC	SCR 可控硅 Controllable 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
		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
	交流 AC 90~250 VAC	SCR 可控硅 Controllable silicon	NO	CM20-2010A	CM34-2020A	CM35-2025A	CM37-2025A	E2K-F10MAO
			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				
输出电压降 Output voltagc dropDC/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℃~70℃				
绝缘电阻 Insulation resistance				50MΩ				
防护结构 Protection structure				IEC标准IP54 IECstandard IP54				
可替代国内型号 Altemative model at home and abroad					E2K-C25□□			

一、简介 BriefIntroduction

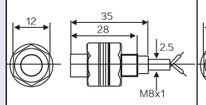
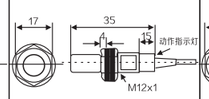
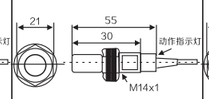
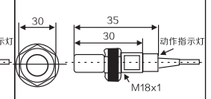
Sm系列霍尔传感器是由电压调整器，霍尔电压发生器，差分放大器，施密特触发器和集电极开路的输出级组成的磁敏传感器，其输入为磁感应强度、输出是一个数字电压讯号。

SM series Hall sensor is a kind of magnct-sensitive scnsor 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 adigital voltage signal.

二、特点 Features

- 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 port like, TTL.MOS

三、型号及参数 Model and parameters

外型编号 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 material	金属 Metal			
环境温度 Ambient temperature	~25℃~70℃			
防护等度 Protection structure	IEC 标准 Ip67 standard Ip67			
具备型号 Model available NPN NO	SM8-31010NA	SM12-31010NA	SM14-31010NA	SM18-31010NA
PNP NO	SM8-31010PA	SM12-31010PA	SM14-31010PA	SM18-31010PA
NPN NC		SM12-31010NB	SM14-31010NB	SM18-31010NB
PNP NC		SM12-31010PB	SM14-31010PB	SM18-31010PB

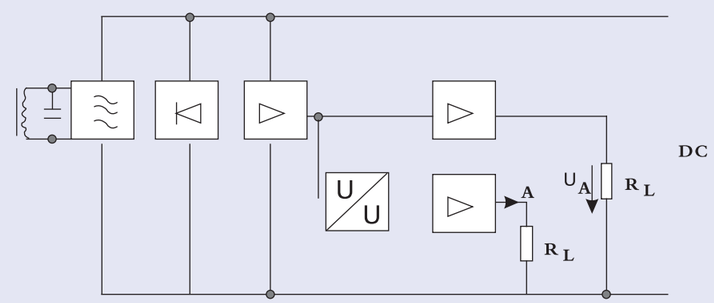
■ 工作原理 work principle

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准模拟信号（0…5V或4-20mA…）

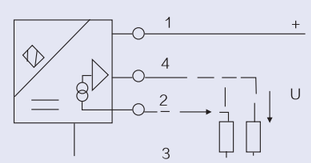
Inductive proximity switch with analog quantity output has the similar work principle with general inductive proximity switch.The energy ofoscillator syst-em decreases when a metal object approaches the inductive side.The energy decrease degree indic ates the distance between the metal object and thesensor. The energy consumption is transformed into measuring sign inan additional device and magnified through linear treatment.(Fig.5)Provide astandard 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 proximiy switch with analog quantity

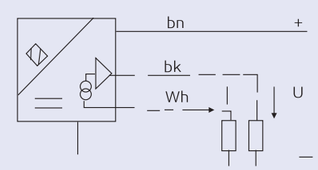


■ 接线示意图 Installation and connection

用连接端子引出
lead out with connecting terminal



用导线引出
lead out with conductor



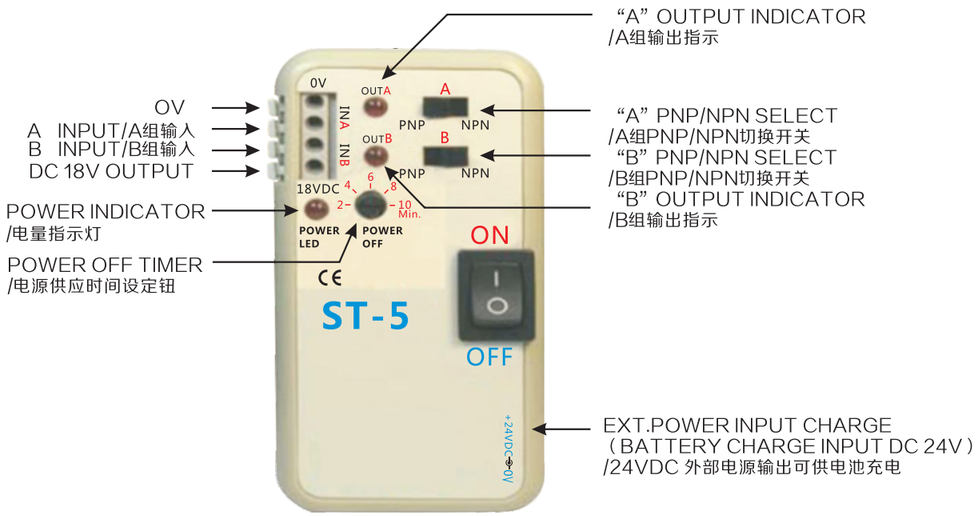
注芯线颜色BN=棕、BK=黑、BU=兰、WH=白
Note:the color of core line BN=brown,BK=black,BU=blue,and YE=yellow

传感器测试仪
SENSOR TESTERS

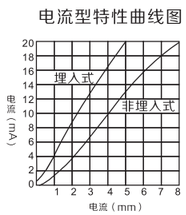
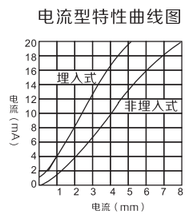
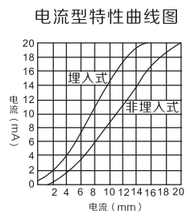
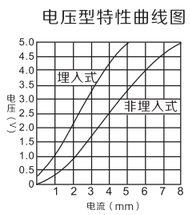
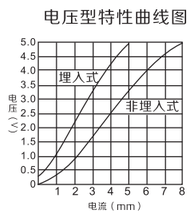
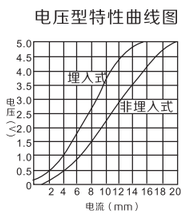
TYPE:ST-1

具有AC/DC/NPN/PNP/接插件/LED灯指示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

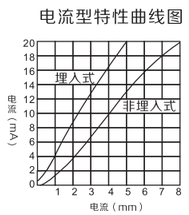
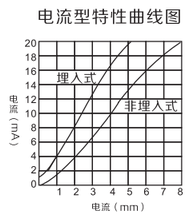
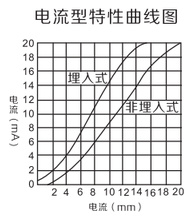
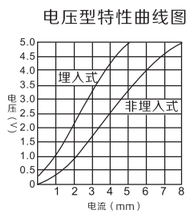
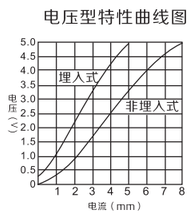
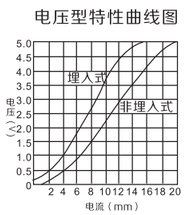
TYPE:ST-5



分类 Category	电感式位移量线性传感器 inductive linear displacement sensor		
外型编号 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	≤200mA··· <4mA					
	无检测时 at the time of non-detection	≤20mA					
负载电阻 Loading resistance	电流型 Current type	0~300Ω					
	电压型 Voltage type	≥2.2KΩ					
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		≤5%					
输出信号 Output signal		PNP 模拟PNP Simulation					
线性误差 Linear deviation		±5%					
环境温度 Ambient temperature		-10℃~+70℃					
外壳材料 Shell material		塑料、金属 Plastic,Metal					
防护等级 Protection grade		Ip54					

分类 Category	电感式位移量线性传感器 inductive linear displacement sensor		
外型编号 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	XM38-3050PMI
	电压型 Voltage type	XMF10-3015PMU	XMF10-3020PMU	XMF37-3015PMU	XMF37-3020PMU	XMF38-3040PMU	XM38-3050PMU
电压范围 Voltage range		15~30VDC					
功 耗 Consumption	检测时 at the time of detection	≤200mA··· <4mA					
	无检测时 at the time of non-detection	≤20mA					
负载电阻 Loading resistance	电流型 Current type	0~300Ω					
	电压型 Voltage type	≥2.2KΩ					
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		≤5%					
输出信号 Output signal		PNP 模拟PNP Simulation					
线性误差 Linear deviation		±5%					
环境温度 Ambient temperature		-10℃~+70℃					
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

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。

Purpose and scope:

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

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一致。图1为链接断开监测。

Working principle:

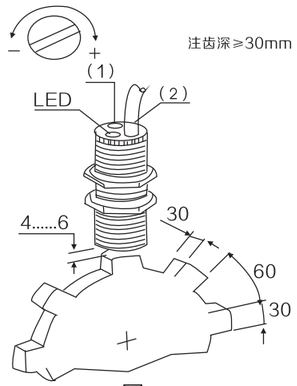
The sensor output a frequency signal to be processed in the comparator, while a vibration frequency originated by the detected running object also enter the comparator. The switch will be off if the vibration frequency is lower than the sensor’s rated frequency, and the s will be on if the vibration 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.

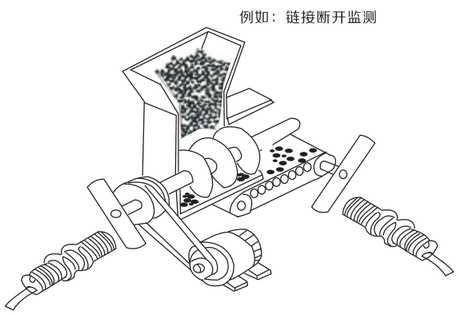
调整

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。

Adjustment

The sensor uses a multi-turn potentiometer to do adjustment, clockwise turning to increase the frequency and counterclockwise turning to decrease the frequency.



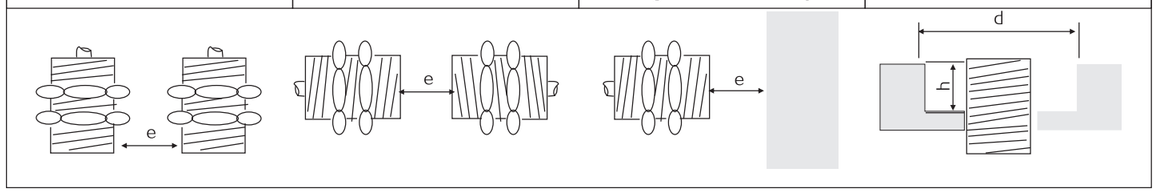


图一 (Fig. 1)　　图二(Fig. 2)

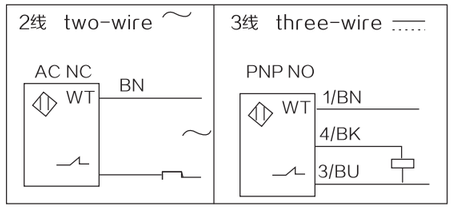
品牌 Brand	旋转探测仪(速度开关) rotation detector (speed sensor)
型号 Model	XSA-V11801
种类 Species	速度
材料 Material	金属
材料物理性质 Physical properties of materials	其他
材料晶体结构 Crystal structure of materials	其他
制作工艺 Production process	集成
输出信号 Output signal	开关型
防护等级 Protection class	IP66
线性度 Linearity	1 (%F.S.)
迟滞 Sluggish	1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

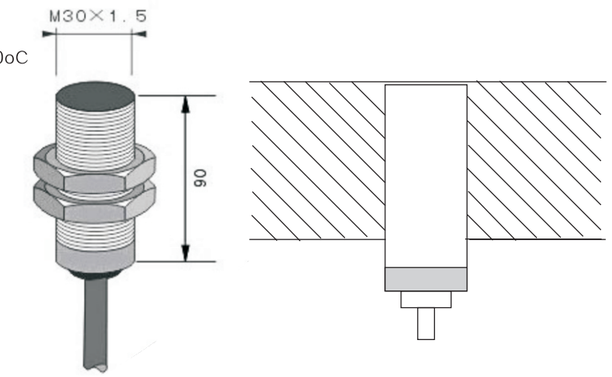
最小安装距离 the least installation distance

边到边 side to side	面到面 face to face	面朝金属物 facing the metal object	安装于金属支持物上 installed on a metal support



迟滞曲线 delay curve: 5...15% of Fr
功率传输时滞 power transmission delay: 9s±20%+ 1/Fr
工作环境温度 working environment temperature: -25oC...+70oC
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	SD30-2410KA
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		DC 12...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)		≤1.8V	≤4.5V		
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℃~+70℃			

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。其检测离随检测体磁场的强弱的变化而变化。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 usedslinit switch. When the magnetic object approaches, the reed closes and sends out switch signal through magnificatio. Compared with inductive sensor, it h the following strongpoints: can be installed in metal colsely and side by side and detect through met al object. Its detection distance subjects to the intensity of magnetic field of detected object. Reed sensor is not applicable in the occasi on of sevee vibration.

D-SM2C

34×9×7×10

CK3-J,CK-4

23×10×7×5

TAIY0-YR101

27×10×9

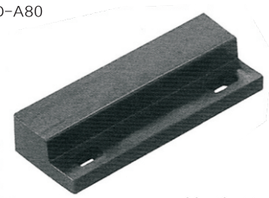
HWK23（GH1）

34×16×6

D-K59

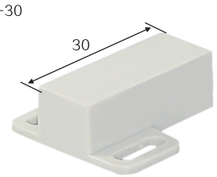
33×15×12

D-A80



33×12×14

HL-30

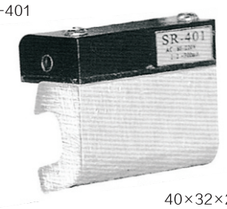


30×12×12

TCS1-F

26×12×10

SR-401

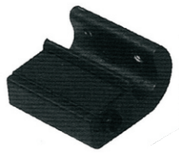


40×32×20

TCS1-E

26×12×10

SR-402



34×35×10

SD-62

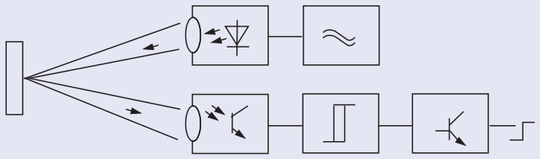
光电开关
PHOTOELECTRIC SWITCH

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，受光器最终据此作出判断反应。

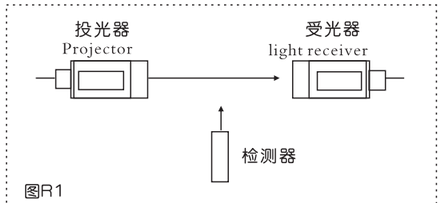
The working principle of the photoelectric switch is that when the beam emitted by the emitter is blocked or partly reflected by the object, the beam receiver whereby makes a judgment and reacts.



类型说明Description
Throuht-beam type

对射式（透过型）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 bype 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)

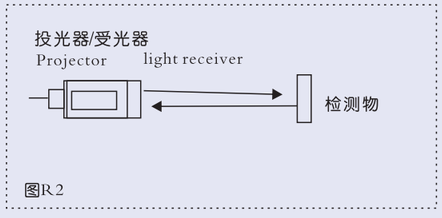


图R1

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内，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)

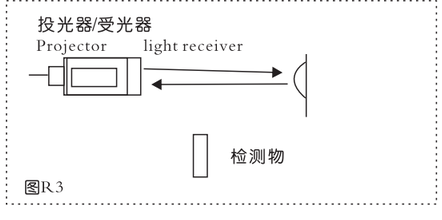


图R.2

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，光电开关与反射板之间的物体虽然也反反射光线，但其效率远低于反射板，因而切断反射光束。（图R 3）

Retroreflective type photoelectric switch also integrates the transmitter and the receiver. Its difference from other models is that reflector is used to ref lect 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)

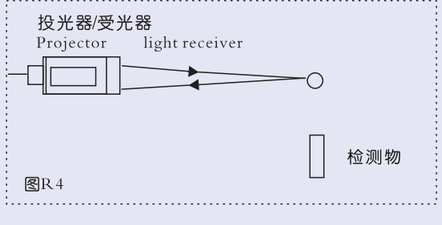


图R.3

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）

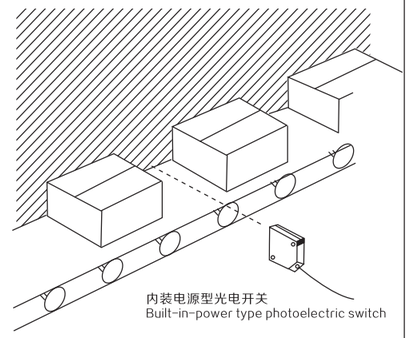
The working principle of convergence reflection type photoswitch is similar to that of direct reflection type one , while its projector and light receiver focus on boject distance, only when the object presents to the focus can the photoswitch actuate.(Fig.R4)



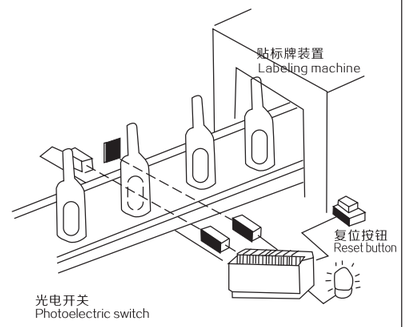
图R.4

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

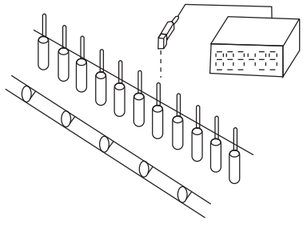
厚纸箱检测 Decection of thick carton



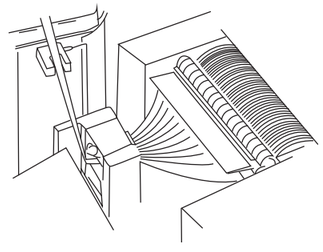
啤酒瓶的有无标牌检测
Detecting if beer bottle is affixed with mark or not



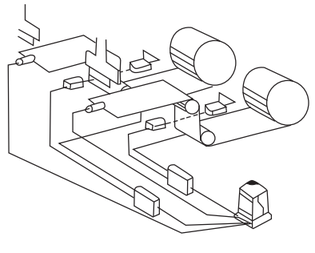
产品计数 Product accounting



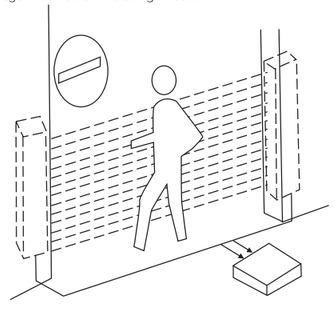
梳棉机断条检出
Check out the borken strip from carding machine



烟草卷纸断裂、隔层检出
Check out the broken or faulted tobacco rolling paper



禁区侵入防止
Guard again restricted zone being invaded



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 E:槽型 A: diffused reflection type(scattered reflection type) B: feedbace 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　101:10m
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:继电流触点输出　L: 交流二线输出 S: 具备NPN 和PNP二种输出 N: NPN 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:G18-3A 10NA

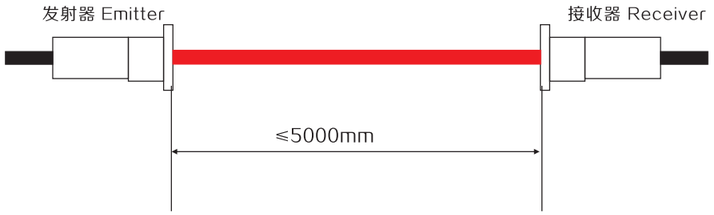
表示：M18圆柱形 DC10-30V工作电压，漫反射型，检测距离为10cm，NPN(负逻辑)常开式的我红外线光电开关。
That indicates the infrared ray photoelectric switch of M18 cylinder, DC 10-30V working voltage, diffused reflection type, detection distance 10cm, and NPN normally open type.

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



技术参数 Technical parameters

检测方式 Detection method	5000mm(对射 beam)	输出电流 Output current	≤80mA(DCl2V)
检测距离 Detecting distance	800mm(反射 reflection)	环境温度 Ambient temperature	使用时In use-25℃----+55℃
	红外线 infrared (920mm)		储存时At stock-4℃---+70℃
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 or 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(2-wire)：≤12VAC	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（$50G^2$）X、Y、Z各方向3次 (3 times in each direction)
温度影响 Temperature effect	在-25℃-+70℃范围内，对在+25℃时的检测距离是在10%以下 Within -25-+70℃, less than 10% compared with the detection range at +25℃	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：

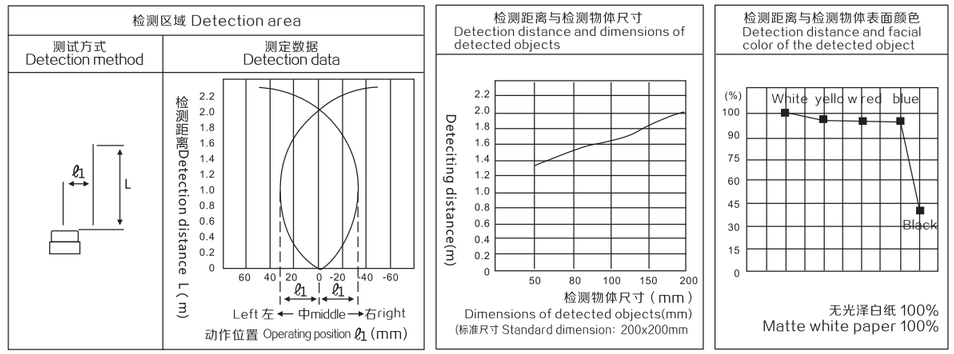
1.通过特殊的光学设计，可使漫反射方式下检测距离达到2m
1.With special optic design, detection distance is improved to 2m for diffuse type
2.内置稳定的动作指示灯
2.With stable built-in action indicator light
3.灵敏度调整功能
3.With sensitivity adjustment
4.双色LED显示
4.With 2-color LED indication

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

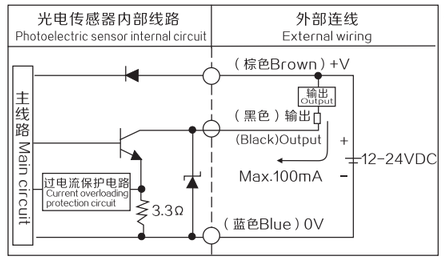
规格参数Specifications

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 Detected 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Infrared（850nm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）
抗噪音强度 Noise resistance	±240V 噪音发生器产生脉冲宽度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/s2（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3,000lx In sunlight: utmost 10,000/lx, Incandescent light: utmost 3,000lx
使用环境温度 Ambient temperature	-25S~+55℃（非结冰状态Non-frozen），存储温度Storage temperature:-25~70℃
使用环境湿度 Ambient humidity	35~85%RH
防护等级 Protection level	IP50（IEC标准 IEC standard）
材质 Material	外装：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
重量 Weight	大约50g Approx. 50 g.

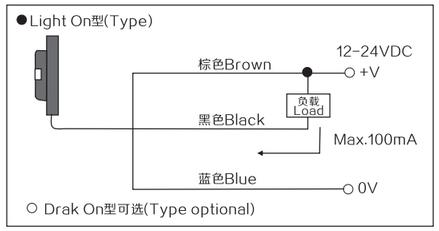
特性参数 Specifications



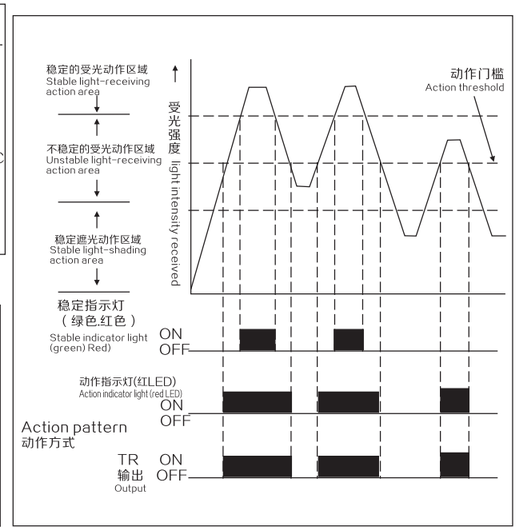
控制输出线路图 Control output circuit diagram



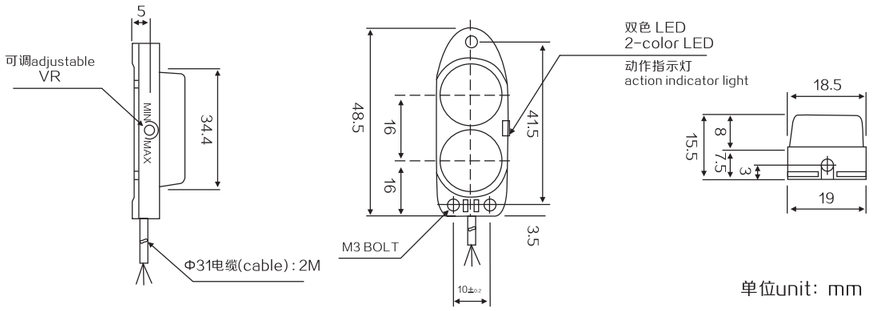
控制图Control diagram



动作模式 Action pattern



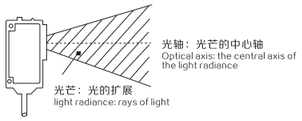
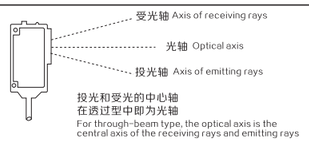
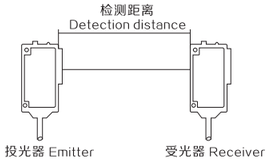
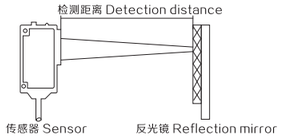
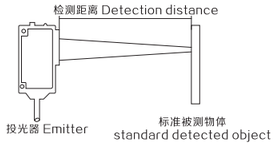
外形尺寸图 dimensions diagram

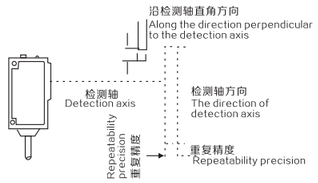
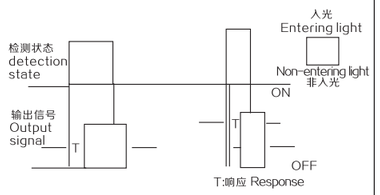
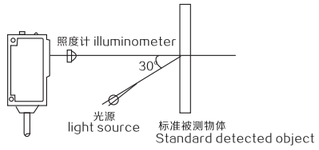


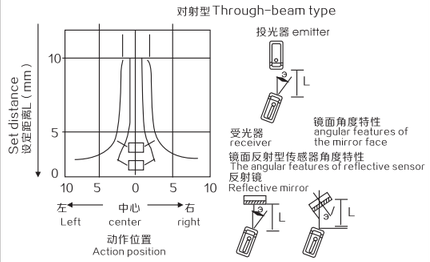
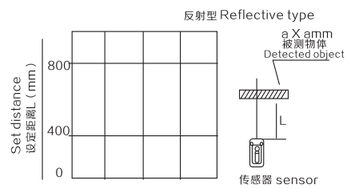
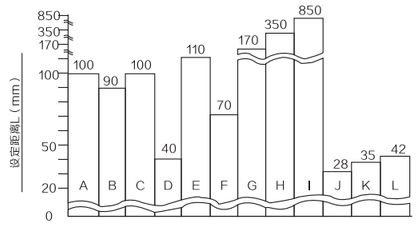
单位unit：mm

光电开关
PHOTOELECTRIC SWITCH

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

术语 Technical terms	解释 Explanation
光芒光轴 Optic axis of radiance	
检测轴 Detection axis	
检测距离 Detection distance	对射型 可稳定设定的投光器和受光器之间的距离 Correlation type Stably set distance between light projector and photoreceptor  反馈反射型 标准设定的传感器和反射之间的距离（0的场合将“0”省略） Feedback reflection type Standard setting distance between sensor and reflection mirror (omit “0” on the occasion with “0”)  漫反射型 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的场合将“0”的场合半“0”省略) Diffused reflection type The max stable detectable distance of detectable object, generally white matt paper (omit “0” on the occasion with “0”) 

术语 Technical terms	解释 Explanation
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检测物体。一般是白色无光，对专用传感器使用相应的被测物体（列如薄片） 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.
最小被测物体 Min detected object	指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.
重复精度 Repeated precision	指一定条件下，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信号的迟延时。 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 photorecetor photic surface. 

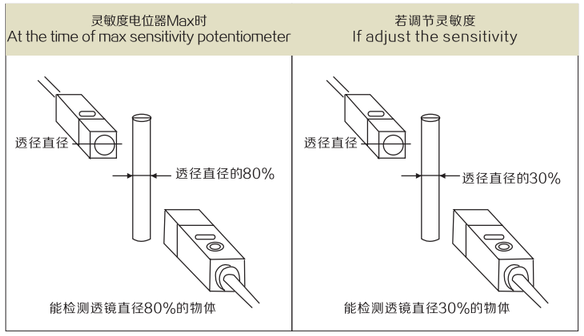
术语 Technical Terms	解释 Explanation	使用注意事项 Cautions
角度特性 Angel characteristic	在对射型以及反馈反射型中，在各设定距离内，从右方在左方向中心线移动，使角度逐渐变小，以传感器动作响应的角度为轨迹所表示的图（灵敏度最大状态下）。 To correlation type and feedback reflection type, move from right to the centerling of left direction within each setting distance to gradually reduce the angle. That is shown by locus diagram of sensor action response angle(under max sensitivity state) 	对射型 反馈反射型 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。 To correlation type and feedback reflection type 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 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。 随背侧物体的大小变化，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，当物体的受光面得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。 To diffused reflection type The detection distance shown in the specification manual is in accordance with stan dard 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.
被检测物体大小和检测距离特性 The characteristic of detected object size and detection distance	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。 To reflection 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, thesensor with sensitivity button is to turn the sensitivity to therelevant position of max. detection distance where exactlydetecting the standard detected object. 	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、胶会 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的修铁棒 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 vener (Natural cream-colored board, brown propylene 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 bar Φ 10 K、Black cloth L、Dark blue cloth

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 thephotoelectric sensor is approaching the equipment is called mutual interference.

- 投光器、受光器相互交叉安装。
- 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。
- 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。
- Mutual cross installation of optic projector and photoreceptor
- When using reflection type in parallel, the mutual spacing should be kept at over 1.4 times detection distance.
- 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。
- 下列安装场所会造成误动作原因，请注意：

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

- The mains voltage should be within the range of operating mains voltage.
- The following installation occasions will result in error action,take note of .

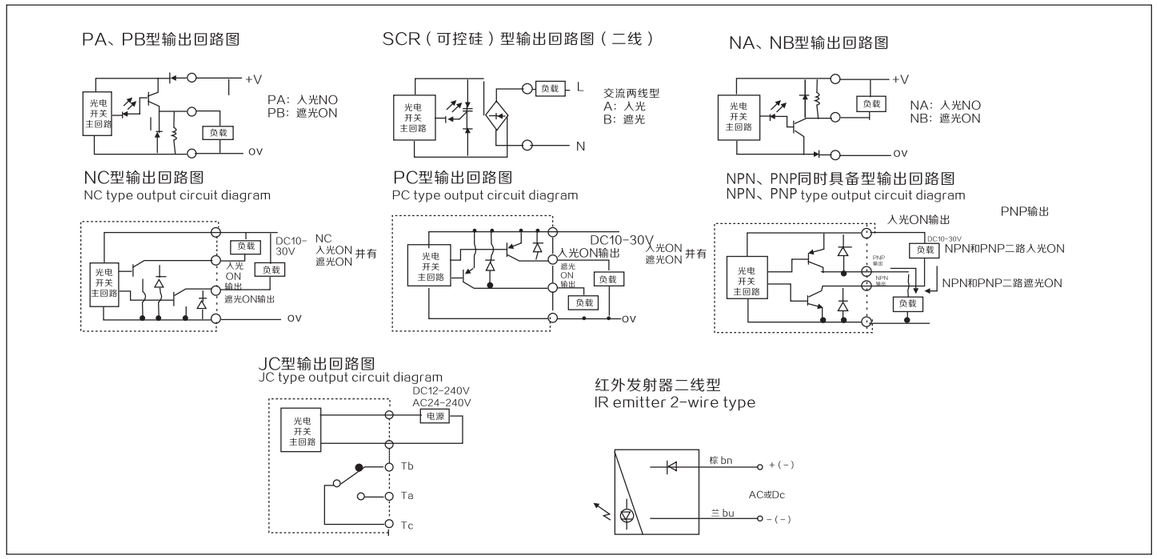
①Dusty occasion

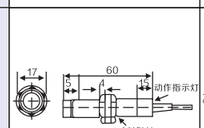
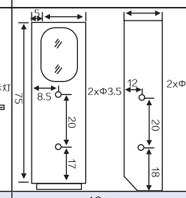
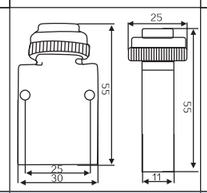
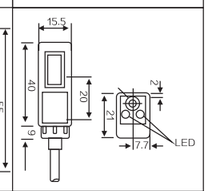
②The occasion with corrosive gas

③The occasion directly spattered with water, oil and agent, etc

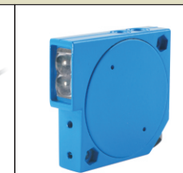
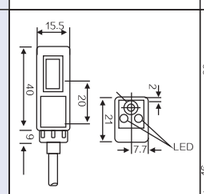
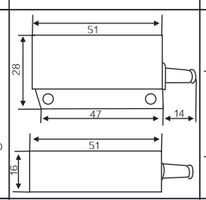
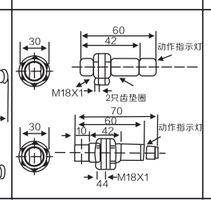
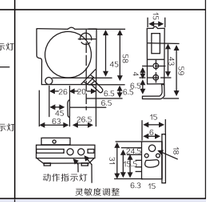
④Outdoor or the occasion directly shine by hard light like, sunlight

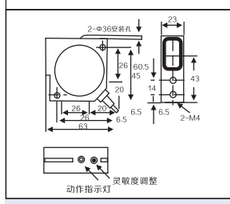
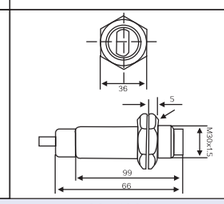
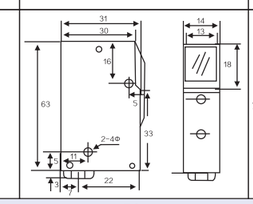
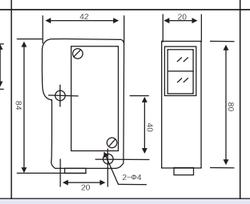
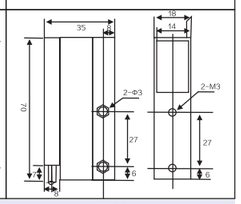
光电开关输出回路图 Output retrun diagram of photoelectric switch



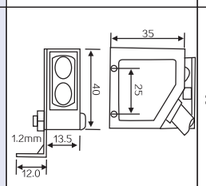
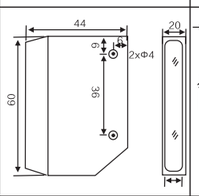
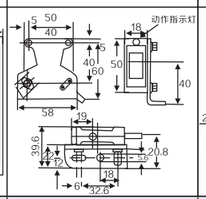
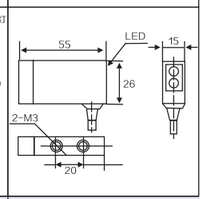
结构分类 Structural category				光电开关 Photoelectric switch			
外型编号 Outward appearance code				G12	G13	G14	G15
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Diffuse Type		检测距离Detection distance		7cm	10cm	10cm	10cm
	直流10-30 VDC	负逻辑 NPN	常开NO	G12-3A07NA	G13-3A10NA	G14-3A10NA	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
		正逻辑 PNP	常开NO	G12-3A07PA	G13-3A07PA	G14-3A07PA	G15-3A07PA
	交流90~250 AVC		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 Controlable silicon	常开NO				
			常闭NC				
		继电器输出 Relay output					
反馈反射型 Retroreflictive		检测距离Detection distance		1m	1m	1m	1m
	直流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
		正逻辑 PNP	常开NO	G12-3B1PA	G13-3B1PA	G14-3B1PA	G15-3B1PA
	交流90~250 AVC		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 Controlable silicon	常开NO				
			常闭NC				
		继电器输出 Relay output					
对射型 Trough beam		检测距离Detection distance		3m	3m	3m	3m
	直流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
		正逻辑 PNP	常开NO	G12-3C3PA	G13-3C3PA	G14-3C3PA	G15-3C3PA
	交流90~250 AVC		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 Controlable 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			
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℃~+55℃			
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 Metal	塑料 Plastic	塑料・金属 Plastic,Metal
防护等级 Protection grade				IP54	IP54	IP54	IP54

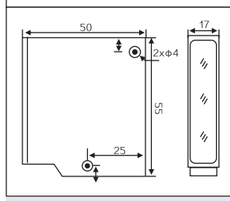
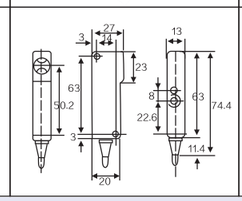
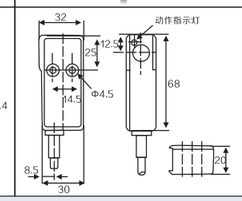
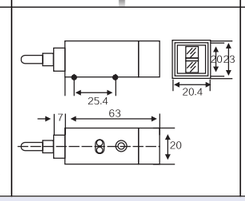
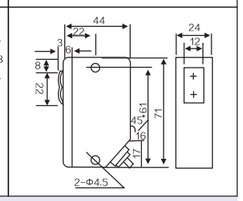
光电开关
PHOTOELECTRIC SWITCH

结构分类 Structural category				光电开关 Photoelectric switch			
外形编号 Outward appearance code				G16	G17	G18	G23
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Diffuse Type		检测距离Detection distance		10cm	30cm	10cm-30cm	10cm-50cm
	直流 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
		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
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO			G18-2A10LA	
			常闭NC			G18-2A10LB	
		继电器输出 Relay output					
反馈反射型 Retroreflictive		检测距离Detection distance		1m	2m	2m	2m
	直流 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
		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
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO			G18-2B2LA	
			常闭NC			G18-2B2LB	
		继电器输出 Relay output					
对射型 Trough beam		检测距离Detection distance		5m	3m	5m	5m
	直流 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
		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
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO			G18-2C5LA	
			常闭NC			G18-2C5LB	
		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<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℃~+55℃			
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					塑料 Plastic	塑料 Plastic	金属Metal
防护等级 Protection grade				IP54	IP54	IP54	IP54

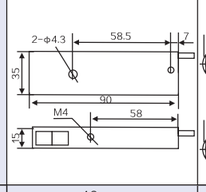
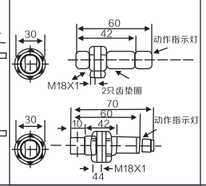
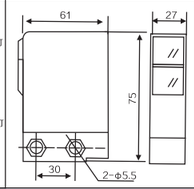
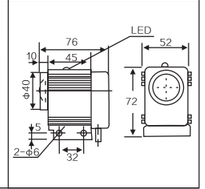
光电开关 Photoelectric switch					
G24	G30	G33	G35	G36	
					
					
50cm	20~100cm	50cm	50cm	20cm	
G24-3A50NA	G30-3A70NA	G33-3A10NA	G35-3A50NA	G36-3A20NA	
G24-3A50NB	G30-3A70NB	G33-3A10NB	G35-3A50NB	G36-3A20NB	
G24-3A50NC	G30-3A70NC	G33-3A10NC	G35-3A50NC	G36-3A20NC	
G24-3A50PA	G30-3A70PA	G33-3A10PA	G35-3A50PA	G36-3A20PA	
G24-3A50PB	G30-3A70PB	G33-3A10PB	G35-3A50PB	G36-3A20PB	
G24-3A50PC	G30-3A70PC	G33-3A10PC	G35-3A50PC	G36-3A20PC	
	G30-2A70LA		G35-2A50LA		
	G30-2A70LB		G35-2A50LB		
	G30-2A70LC		G35-2A50JC		
4m	3m	1m	3m	2m	
G24-3B4NA	G30-3B3NA	G33-3B1NA	G35-3B3NA	G36-3B2NA	
G24-3B4NB	G30-3B3NB	G33-3B1NB	G35-3B3NB	G36-3B2NB	
G24-3B4NC	G30-3B3NC	G33-3B1NC	G35-3B3NC	G36-3B2NC	
G24-3B4PA	G30-3B3PA	G33-3B1PA	G35-3B3PA	G36-3B2PA	
G24-3B4PB	G30-3B3PB	G33-3B1PB	G35-3B3PB	G36-3B2PB	
G24-3B4PC	G30-3B3PC	G33-3B1PC	G35-3B3PC	G36-3B2PC	
	G30-2B3LA		G35-2B3LA		
	G30-2B3LB		G35-2B3LB		
	G30-2B3JC		G35-2B3JC		
5m	10m	3m	5m	5m	
G24-3C5NA	G30-3C101NA	G33-3C3NA	G35-3C5NA	G36-3C5NA	
G24-3C5NB	G30-3C101NB	G33-3C3NB	G35-3C5NB	G36-3C5NB	
G24-3C5NC	G30-3C101NC	G33-3C3NC	G35-3C5NC	G36-3C5NC	
G24-3C5PA	G30-3C101PA	G33-3C3PA	G35-3C5PA	G36-3C5PA	
G24-3C5PB	G30-3C101PB	G33-3C3PB	G35-3C5PB	G36-3C5PB	
G24-3C5PC	G30-3C101PC	G33-3C3PC	G35-3C5PC	G36-3C5PC	
	G30-2C101LA		G35-2C5LA		
	G30-2C101LB		G35-2C5LB		
	G30-2C101JC		G35-2C5JC		
DC:200mA、AC:300mA					
DC<15mA、AC:<10mA					
Dc<2ms、AC<20ms					
3° -10°					
透明或不透明体 transparent or opaque body					
-25℃~+55℃					
太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX					
塑料 Plastic	塑料 Plastic	塑料 Plastic	金属 Metal	金属 Metal	
	IP66	IP54	IP54	IP54	

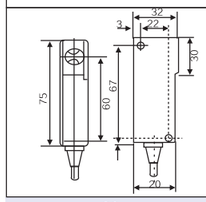
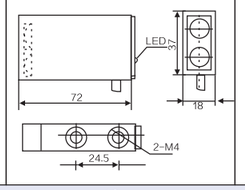
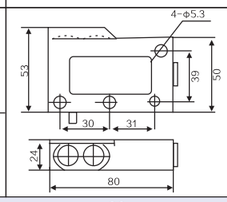
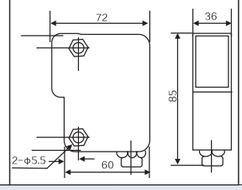
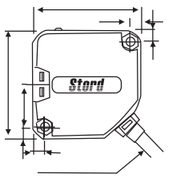
光电开关
PHOTOELECTRIC SWITCH

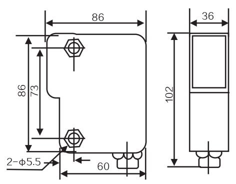
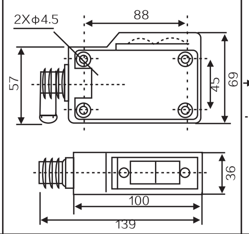
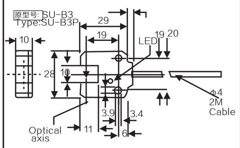
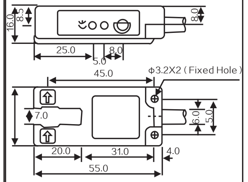
结构分类 Structural category				光电开关 Photoelectric switch			
外形编号 Outward appearance code				G40	G44	G50	G54
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Diffuse Type		检测距离Detection distance		10cm-30cm	30cm	30cm 50cm	20cm
	直流 10-30 VDC	NPN	NO	G40-3A10NA	G44-3A30NA	G50-3A30NA	G54-3A20NA
			NC	G40-3A10NB	G44-3A30NB	G50-3A30NB	G54-3A20NB
			NO+NC	G40-3A10NC	G44-3A30NC	G50-3A30NC	G54-3A20NC
		PNP	NO	G40-3A10PA	G44-3A30PA	G50-3A30PA	G54-3A20PA
			NC	G40-3A10PB	G44-3A30PB	G50-3A30PB	G54-3A20PB
			NO+NC	G40-3A10PC	G44-3A30PC	G50-3A30PC	G54-3A20PC
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	NO				
			NC				
		继电器输出 Relay output				G50-2A30JC	
反馈反射型 Retroreflective		检测距离Detection distance		3m	3m	4m	2m
	直流 10-30 VDC	NPN	NO	G40-3B3NA	G44-3B30NA	G50-3B4NA	G54-3B2NA
			NC	G40-3B3NB	G44-3B30NB	G50-3B4NB	G54-3B2NB
			NO+NC	G40-3B3NC	G44-3B30NC	G50-3B4NC	G54-3B2NC
		PNP	NO	G40-3B3PA	G44-3B30PA	G50-3B4PA	G54-3B2PA
			NC	G40-3B3PB	G44-3B30PB	G50-3B4PB	G54-3B2PB
	交流 90~250 VAC		NO+NC	G40-3B3PC	G44-3B30PC	G50-3B4PC	G54-3B2PC
		SCR 可挂硅 Controllable silicon	NO				
			NC				
		继电器输出 Relay output				G50-2B4JC	
对射型 Trough beam		检测距离Detection distance		4m	5m	5m	5m
	直流 10-30 VDC	NPN	NO	G40-4C4NA	G44-3C5NA	G50-3C5NA	
			NC	G40-4C4NB	G44-3C5NB	G50-3C5NB	G54-3C5NA
			NO+NC	G40-4C4NC	G44-3C5NC	G50-3C5NC	G54-3C5NB
		PNP	NO	G40-4C4PA	G44-3C5PA	G50-3C5PA	G54-3C5NC
			NC	G40-4C4PB	G44-3C5PB	G50-3C5PB	G54-3C5PA
			NO+NC	G40-4C4PC	G44-3C5PC	G50-3C5PC	G54-3C5PB
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	NO			G50-2C5LA	G54-3C5PC
			NC				
		继电器输出 Relay output				G50-2C5JC	
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℃~-55℃			
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 Metal	塑料 Plastic	塑料 Plastic
防护等级 Protection grade				IP50	IP54	IP54	IP54

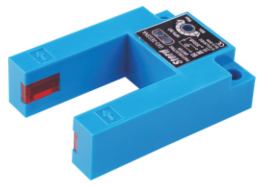
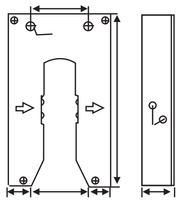
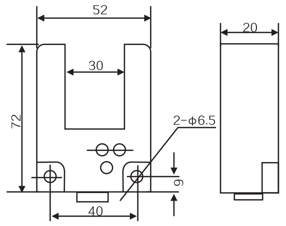
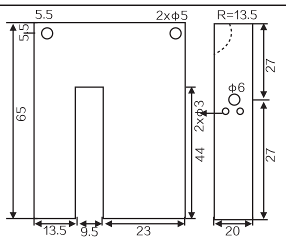
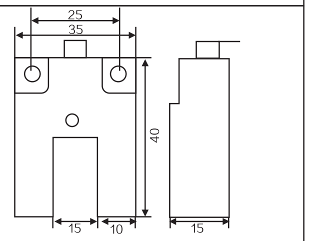
光电开关 Photoelectric switch							
G55			G64	G68		G70	G71
							
							
20cm			10cm	30cm		20~100cm	50cm
G55-3A20NA			G64-3A10NA	G68-3A30NA		G70-3A20NA	G71-3A50NA
G55-3A20NB			G64-3A10NB	G68-3A30NB		G70-3A20NB	G71-3A50NB
G55-3A20NC			G64-3A10NC	G68-3A30NC		G70-3A20NC	G71-3A50NC
G55-3A20PA			G64-3A10PA	G68-3A30PA		G70-3A20PA	G71-3A50PA
G55-3A20PB			G64-3A10PB	G68-3A30PB		G70-3A20PB	G71-3A50PB
G55-3A20PC			G64-3A10PC	G68-3A30PC		G70-3A20PC	G71-3A50PC
2m			1.5m-2m	2m		2m	2m
G55-3B2NA			G64-3B2NA	G68-3B2NA		G70-3B2NA	G71-3B2NA
G55-3B2NB			G64-3B2NB	G68-3B2NB		G70-3B2NB	G71-3B2NB
G55-3B2NC			G64-3B2NC	G68-3B2NC		G70-3B2NC	G71-3B2NC
G55-3B2PA			G64-3B2PA	G68-3B2PA		G70-3B2PA	G71-3B2PA
G55-3B2PB			G64-3B2PB	G68-3B2PB		G70-3B2PB	G71-3B2PB
G55-3B2PC			G64-3B2PC	G68-3B2PC		G70-3B2PC	G71-3B2PC
4m			3m	5m		5m	5m
G55-3C4NA			G64-3C3NA	G68-3C5NA		G70-3C5NA	G71-3C5NA
G55-3C4NB			G64-3C3NB	G68-3C5NB		G70-3C5NB	G71-3C5NB
			G64-3C3NC	G68-3C5NC		G70-3C5NC	G71-3C5NC
G55-3C4PA			G64-3C3PA	G68-3C5PA		G70-3C5PA	G71-3C5PA
G55-3C4PB			G64-3C3PB	G68-3C5PB		G70-3C5PB	G71-3C5PB
			G64-3C3PC	G68-3C5PC		G70-3C5PC	G71-3C5PC
DC:200mA、AC:300mA							
DC<15mA、AC:<10mA							
Dc<2ms、AC<20ms							
3° -10°							
透明或不透明体 transparent or opaque body							
-25℃~+55℃							
太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX							
金属 Metal			塑料 Plastic	塑料 Plastic		塑料 Plastic	
IP54			IP66	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				G72	G180	G75	G76
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Diffuse Type		检测距离Detection distance		40cm	10cm	80cm	1m
	直流 10-30 VDC	负逻辑 NPN	常开NO	G72-3A40NA	G180-3A10NA	G75-3A80NA	G76-3A1NA
			常闭NC	G72-3A40NB	G180-3A10NB	G75-3A80NB	G76-3A1NB
			一开一闭NO+NC	G72-3A40NC	G180-3A10NC	G75-3A80NC	G76-3A1NC
		正逻辑 PNP	常开NO	G72-3A40PA	G180-3A10PA	G75-3A80PA	G76-3A1PA
			常闭NC	G72-3A40PB	G180-3A10PB	G75-3A80PB	G76-3A1PB
			一开一闭NO+NC	G72-3A40PC	G180-3A10PC	G75-3A80PC	G76-3A1PC
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO		G180-2A10LA	G75-2A80LA	G76-2A1LA
			常闭NC		G180-2A10LB	G75-2A80LB	G76-2A1LB
		继电器输出 Relay output				G75-2A80JC	G76-2A1JC
反馈反射型 Retroreflective		检测距离Detection distance		3m	2m	3m	5m
	直流 10-30 VDC	负逻辑 NPN	常开NO	G72-3B3NA	G180-3B2NA	G75-3B3NA	G76-3B5NA
			常闭NC	G72-3B3NB	G180-3B2NB	G75-3B3NB	G76-3B5NB
			一开一闭NO+NC	G72-3B3NC	G180-3B2NC	G75-3B3NC	G76-3B5NC
		正逻辑 PNP	常开NO	G72-3B3PA	G180-3B2PA	G75-3B3PA	G76-3B5PA
			常闭NC	G72-3B3PB	G180-3B2PB	G75-3B3PB	G76-3B5PB
			一开一闭NO+NC	G72-3B3PC	G180-3B2PC	G75-3B3PC	G76-3B5PC
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO		G180-2B2LA	G75-2B3LA	G76-2B5LA
			常闭NC		G180-2B2LB	G75-2B3LB	G76-2B5LB
		继电器输出 Relay output				G75-2B3JC	G76-2B5JC
对射型 Trough beam		检测距离Detection distance		5m	5m	8m	10m~50m
	直流 10-30 VDC	负逻辑 NPN	常开NO	G72-3C5NA	G180-3C5NA	G75-3C8NA	G76-3C101NA
			常闭NC	G72-3C5NB	G180-3C5NB	G75-3C8NB	G76-3C101NB
			一开一闭NO+NC	G72-3C5NC	G180-3C5NC	G75-3C8NC	G76-3C101NC
		正逻辑 PNP	常开NO	G72-3C5PA	G180-3C5PA	G75-3C8PA	G76-3C101PA
			常闭NC	G72-3C5PB	G180-3C5PB	G75-3C8PB	G76-3C101PB
			一开一闭NO+NC	G72-3C5PC	G180-3C5PC	G75-3C8PC	G76-3C101PC
	交流 90~250 VAC	SCR 可挂硅 Controllable silicon	常开NO		G180-2C5LA	G75-2C8LA	G76-2C101LA
			常闭NC		G180-2C5LB	G75-2C8LB	G76-2C101LB
		继电器输出 Relay output				G75-2C8JC	G76-2C101JC
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℃~-55℃			
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	金属 Metal	塑料 Plastic
防护等级 Protection grade				IP54	IP66	IP54	IP54

光电开关 Photoelectric switch				
G77	G78	G80	G85	GEN
				
				
30cm	40cm	80cm	1m	30cm
G77-3A30NA	G78-3A40NA	G80-3A80NA	G85-3A1NA	GEN300-DDT NPN/PNP 集电极开路输出 open-collector output 12-24VDC 漫反射型diffuse type ▬ 300MM
G77-3A30NB	G78-3A40NB	G80-3A80NB	G85-3A1NB	
G77-3A30NC	G78-3A40NC	G80-3A80NC	G85-3A1NC	
G77-3A30PA	G78-3A40PA	G80-3A80PA	G85-3A1PA	
G77-3A30PB	G78-3A40PB	G80-3A80PB	G85-3A1PB	G E N300 -PFR 继电器输出Relay output 24-240VAC/ 24-240VDC 漫反射型diffuse type ▬ 300MM
G77-3A30PC	G78-3A40PC	G80-3A80PC	G85-3A1PC	
G77-2A30LA	G78-2A40LA	G80-2A80LA	G85-2A1LA	
G77-2A30LB	G78-2A40LB	G80-2A80LB	G85-2A1LB	
		G80-2A80JC	G85-2A1JC	
3m	2m	3m	5m	5m
G77-3B3NA	G78-3B2NA	G80-3B3NA	G85-3B5NA	GEN5M-MDT NPN/PNP 集电极开路输出 Open-collector output 12-24VDC 镜面反射型retro-reflective type ▬ 0.1-5m
G77-3B3NB	G78-3B2NB	G80-3B3NB	G85-3B5NB	
G77-3B3NC	G78-3B2NC	G80-3B3NC	G85-3B5NC	
G77-3B3PA	G78-3B2PA	G80-3B3PA	G85-3B5PA	
G77-3B3PB	G78-3B2PB	G80-3B3PB	G85-3B5PB	G E N5M-MFR 继电器输出 Relay output 24-240VAC/ 24-240VDC 镜面反射型retro-reflective type ▬ 0.1-5m
G77-3B3PC	G78-3B2PC	G80-3B3PC	G85-3B5PC	
G77-2B3LA	G78-2B2LA	G80-2B3LA	G85-2B5LA	
G77-2B3LB	G78-2B2LB	G80-2B3LB	G85-2B5LB	
		G80-2B3JC	G85-2B5JC	
5m	5m	5m	10m	10m
G77-3C5NA	G78-3C5NA	G80-3C5NA	G85-3C101NA	G E N10M -TDT NPN/PNP 集电极开路输出 Open-collector output 12-24VDC 对射型through-beam type ▬ 10m
G77-3C5NB	G78-3C5NB	G80-3C5NB	G85-3C101NB	
G77-3C5NC	G78-3C5NC	G80-3C5NC	G85-3C101NC	
G77-3C5PA	G78-3C5PA	G80-3C5PA	G85-3C101PA	
G77-3C5PB	G78-3C5PB	G80-3C5PB	G85-3C101PB	G E N10M-TFR 继电器输出 Relay output 24-240VAC/ 24-240VDC 对射型through-beam type ▬ 10m
G77-3C5PC	G78-3C5PC	G80-3C5PC	G85-3C101PC	
G77-2C5LA	G78-2C5LA	G80-2C5LA	G85-2C101LA	
G77-2C5LB	G78-2C5LB	G80-2C5LB	G85-2C101LB	
		G80-2C5JC	G85-2C101JC	
DC:200mA、AC:300mA				
DC<15mA、AC:<10mA				
DC<2ms、AC<20ms				
3° -10°				
透明或不透明体 transparent or opaque body				
-25℃~+55℃				
太阳光10000LX以下 Sunlight under 10000LX 白炽灯3000LX以下 incandescent lamp under 3000LX				
塑料 Plastic	塑料 Plastic	塑料 Plastic	金属 Metal	塑料 Plastic
IP54	IP54	IP54	IP54	IP54

结构分类 Structural category				光电开关 Photoelectric switch			
外形编号 Outward appearance code				G100	G139	G51	G56
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
漫反射型 Diffuse Type		检测距离Detection distance		1m	1m		
	直流 10－30 VDC	负逻辑 NPN	常开NO	G100-3A1NA	G139-3A1NA		
			常闭NC	G100-3A1NB	G139-3A1NB		
			一开一闭NO+NC	G100-3A1NC	G139-3A1NC		
		正逻辑 PNP	常开NO	G100-3A1PA	G139-3A1PA		
	交流 90~ 250 VAC		常闭NC	G100-3A1PB	G139-3A1PB		
			一开一闭NO+NC	G100-3A1PC	G139-3A1PC		
		SCR 可挂硅 Controllable silicon	常开NO	G100-2A1LA	G139-2A1LA		
			常闭NC	G100-2A1LB	G139-2A1LB		
		继电器输出 Relay output		G100-2A1JC	G139-2A1JC		
反馈反射型 Retroreflictive		检测距离Detection distance		5m	5m		
	直流 10－30 VDC	负逻辑 NPN	常开NO	G100-3B5NA	G139-3B5NA		
			常闭NC	G100-3B5NB	G139-3B5NB		
			一开一闭NO+NC	G100-3B5NC	G139-3B5NC		
		正逻辑 PNP	常开NO	G100-3B5PA	G139-3B5PA		
	交流 90~ 250 VAC		常闭NC	G100-3B5PB	G139-3B5PB		
			一开一闭NO+NC	G100-3B5PC	G139-3B5PC		
		SCR 可挂硅 Controllable silicon	常开NO	G100-2B5LA	G139-2B5LA		
			常闭NC	G100-2B5LB	G139-2B5LB		
		继电器输出 Relay output		G100-2B5JC	G139-2B5JC		
对射型 Trough beam		检测距离Detection distance		10m	10m	1cm	1cm
	直流 10－30 VDC	负逻辑 NPN	常开NO	G100-3C101NA	G139-3C101NA	G51-3E01NA	G56-3E01NA
			常闭NC	G100-3C101NB	G139-3C101NB	G51-3E01NB	G56-3E01NB
			一开一闭NO+NC	G100-3C101NC	G139-3C101NC	G51-3E01NC	G56-3E01NC
		正逻辑 PNP	常开NO	G100-3C101PA	G139-3C101PA	G51-3E01PA	G56-3E01PA
	交流 90~ 250 VAC		常闭NC	G100-3C101PB	G139-3C101PB	G51-3E01PB	G56-3E01PB
			一开一闭NO+NC	G100-3C101PC	G139-3C101PC	G51-3E01PC	G56-3E01PC
		SCR 可挂硅 Controllable silicon	常开NO	G100-2C101LA	G139-2C101LA		
			常闭NC	G100-2C101LB	G139-2C101LB		
		继电器输出 Relay output		G100-2C101JC	G139-2C101JC		
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℃~+55℃			
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	铝壳/塑料 Aluminum/plastic	塑料 Plastic	塑料 Plastic
防护等级 Protection grade				IP54	IP54	IP54	IP54

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							
漫反射型 Diffuse Type		检测距离Detection distance					
	直流 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				
	交流 90~ 250 VAC		常闭NC				
			一开一闭NO+NC				
		SCR 可挂硅 Controllable silicon	常开NO				
			常闭NC				
		继电器输出 Relay output					
反馈反射型 Retroreflictive		检测距离Detection distance					
	直流 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				
	交流 90~ 250 VAC		常闭NC				
			一开一闭NO+NC				
		SCR 可挂硅 Controllable silicon	常开NO				
			常闭NC				
		继电器输出 Relay output					
对射型 Trough beam		检测距离Detection distance		25mm	3cm	1cm	1.5cm
	直流 10－30 VDC	负逻辑 NPN	常开NO	G115-3E25NA	G63-3E03NA	G65-3E01NA	G57-3E1.5NA
			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
	交流 90~ 250 VAC		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
		SCR 可挂硅 Controllable 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℃~+55℃			
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		

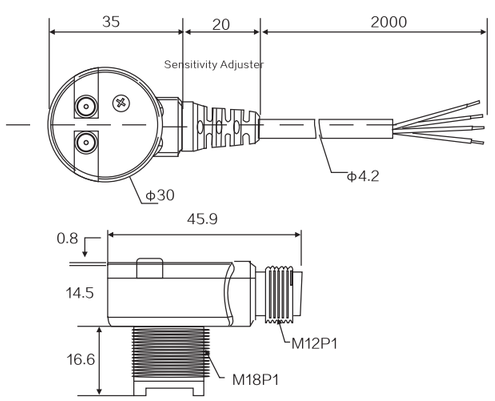
Characteristic/特点:

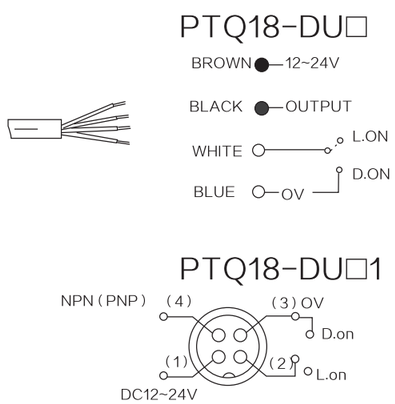
- ●T-shaped housing design, saving space./T型设计可省空间
- ●N.O./N.C.function swithable by different wires./N.O./N.C.可用选择线切换
- ●Easy to install./体积小（30*45.9*31.9mm）安装容易
- ●Special design for bending resistance./接线使用特殊材质耐弯曲
- ●Superior waterproof Ip67

Specifications/规格表:

Model/型号	NPN L.on/D.on	PTQ18-DU10/40N	PTQ18-DU10/40NK1
	PNP L.on/D.on	PTQ18-DU10/40P	PTQ18-DU10/40PK1
Sensing type/检出方式		Diffuse reflection/扩散反射式	
Sensing distance/检出距离		10cm/40cm, white paper 10*10(10/40cm)	
Emitting light/发光源		Infrared LED 850nm	
Operating voltage/工作电压		DC 12~24V	
Current Consumption/消耗电流		20mA Max	
Load current/负载电流		100mA Max. at DC20V	
Response time/反应时间		1.5ms Max.	
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)	
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 Sec	
Operating temperature/工作温度		-25℃~+60℃	
Ambient humidity/工作湿度		35%~85%RH	
Protection degree/防水等级		IP67	
Material/外观材质		ABS	
Wiring method/出线方式		M12 plug-in connector type/M12接头	Pre-wiredΦ4.2*2M/3-wires出线
Weight/重量		Approx.68.5g	Approx.18g

Dimensions/尺寸图:





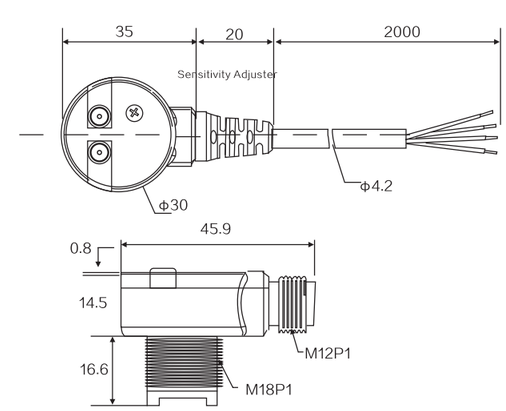
Characteristic/特点:

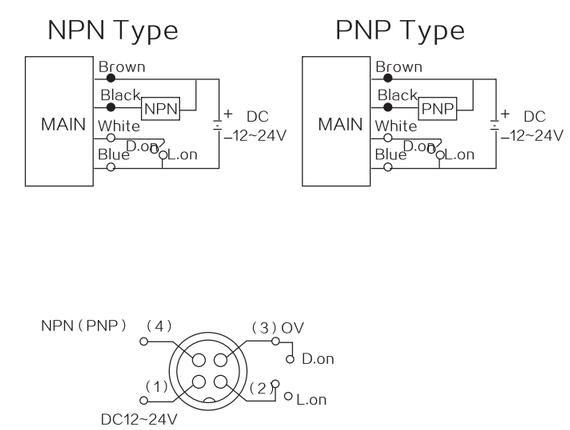
- ●L.on/D.on switches function./有L.on/D.on两种输出型能的选择
- ●Easy to install./体积小（30*45.9*31.9mm）安装容易
- ●Special design for bending resistance./接线使用特殊材质耐弯曲
- ●Superior waterproof Ip67

Specifications/规格表:

Model/型号	NPN L.on/D.on	PTQ18-QR2N	PTQ18-QR2NK1	PTQ18-PRI1N	PTQ18-PR1NK1
	PNP L.on/D.on	PTQ18-QR2P	PTQ18-QR2PK1	PTQ18-PRIP	PTQ18-PR1PK1
Sensing type/检出方式		Retroreflective/镜片反射式		Polarizing Retroreflective/偏光镜反射式	
Sensing distance/检出距离		2M		1M	
Emitting light/发光源		Infrared LED 650nm		Red LED 650nm	
Operating voltage/工作电压		DC 12~24V			
Current Consumption/消耗电流		20mA Max			
Load current/负载电流		100mA Max. at DC24V			
Response time/反应时间		1.5ms Max.			
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)			
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 Sec			
Operating temperature/工作温度		-20℃~+60℃			
Ambient humidity/工作湿度		35%~85%RH			
Protection degree/防水等级		IP67			
Material/外观材质		ABS			
Wiring method/出线方式		Pre-wired Φ4.2*2M/4-wires	M12 plug-in connector type/M12接头	Pre-wired Φ4.2*2M/4-wires	M12 plug-in connector type/M12接头
Weight/重量		Approx.68.5g	Approx.17.5g	Approx.68.5g	Approx.17.5g

Dimensions/尺寸图:





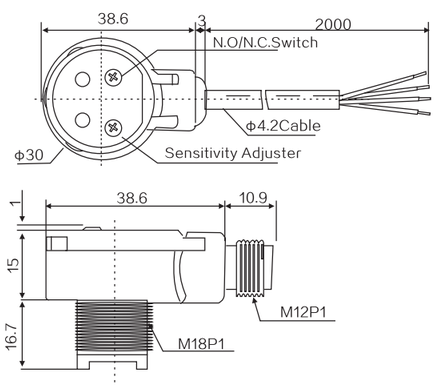
Characteristic/特点:

●Elbow housing design,space saving./晶体输出，反应快
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.)
/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）
●Easy to install./体积小（30*49.5*32.7mm）安装容易
●Prevent from water and oil,dust cover attached./具有防尘盖，可防水、防油

Specifications/规格表:

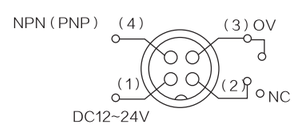
Model/型号	NPN L.on/D.on	TQ18-DU10/40N	TQ18-DU10/40NK1
	PNP L.on/D.on	TQ18-DU10/40P	TQ18-DU10/40PK1
Sensing type/检出方式		Diffuse reflection/扩散反射式	
Sensing distance/检出距离		10cm/40cm, white paper 100*100(10/40cm)	
Emitting light/发光源		Infrared LED 850nm	
Operating voltage/工作电压		DC 12~24V	
Current Consumption/消耗电流		34mA Max	
Load current/负载电流		100mA Max. at DC24V	
Response time/反应时间		1.5ms Max.	
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)	
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 Sec	
Operating temperature/工作温度		-25℃~+60℃	
Ambient humidity/工作湿度		35%~85%RH	
Protection degree/防水等级		Ip66	
Material/外观材质		ABS	
Wiring method/出线方式		Pre-wiredΦ4.2*2M/3-wires出线	M12 plug-in connector type/M12接头
Weight/重量		Approx.65g	Approx.18g

Dimensions/尺寸图:



TQ18-DU□

TQ18-DU□1



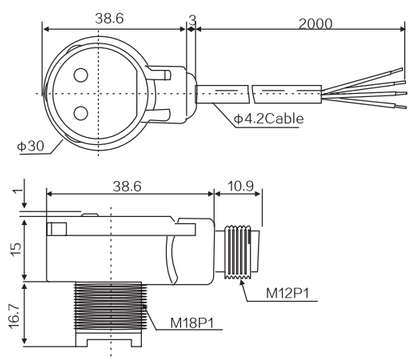
Characteristic/特点:

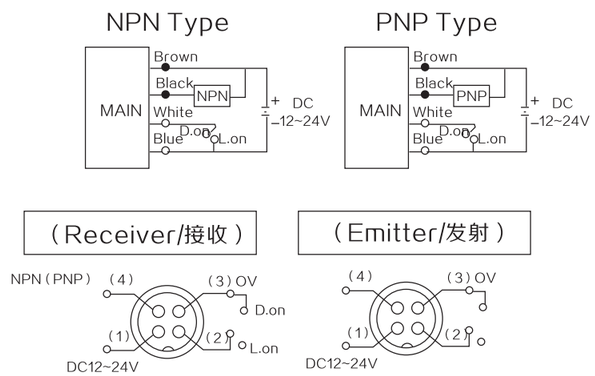
●High brightness dual LED makes you easy to know the current operating situation./高亮度双LED指示灯，让您可以很快的了解感应器的使用状态。
L.on/D.on Switch function.
/有L.on/D.on两种输出型的选择。
Easy to install./体积小（30*49.5*32.7mm）安装容易
Prevent from water and oil,dust cover attached./具有防尘盖，可防水、防油

Specifications/规格表:

Model/型号	NPN L.on/D.on	TQ18-10/20N	TQ18-10/20NK1
	PNP L.on/D.on	TQ18-10/20P	TQ18-10/20PK1
Sensing type/检出方式		Diffuse reflection/扩散反射式	
Sensing distance/检出距离		10cm/40cm, white paper 100*100(10/40cm)	
Emitting light/发光源		Infrared LED 850nm	
Operating voltage/工作电压		DC 12~24V	
Current Consumption/消耗电流		34mA Max	
Load current/负载电流		100mA Max. at DC24V	
Response time/反应时间		1.5ms Max.	
Insulation resistance/隔离阻抗		20MΩmin.(DC500V)	
Voltage withstandabiligy/绝缘耐压		AC1000V 60Hz for 60 Sec	
Operating temperature/工作温度		-25℃~+60℃	
Ambient humidity/工作湿度		35%~85%RH	
Protection degree/防水等级		Ip66	
Material/外观材质		ABS	
Wiring method/出线方式		PX:Pre-wiredΦ4.2 2M/4-wires PX:Pre-wiredΦ4.2 2M/2-wires	M12 plug-in connector type/M12接头
Weight/重量		Approx.130g	Approx.3.5g

Dimensions/尺寸图:





E3X-A11光纤放大器Fiber optic amplifier

一、主要特点 Main Features

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

二、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（ight-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200μs以下 Reset action ,the following 200μs
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℃，保存时；40~70℃（不能有给冰，结露现象） When action:-25~+55℃ ,save time:40~70℃ (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/s2 X,Y,Z 各方向3次500/s2 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	聚脂 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

E3X-DA11-N光纤放大器 Fiber optic amplifier

一、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。
- ●采用自动电源控制电路的超级数字显示。
- ●消耗电力量最多可省70%。
- ●可以在运行中把数字显示关掉或变暗。
- ●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 new-style connector to save wiring space and make it more maintainable.
- ●Adopt the super digital display of the Automatic power control circuit.
- ●Power saving up to 70%.
- ●Be able to shut off or dim the digital display while in working.
- ●Use a controller of modern mobile style to explore the functions of Fiber Optic Amplifier.

二、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
电源电压 Power supply		红色发光二极管 Red light-emitting diode(660nm)
光源（发光波长）Light source (light-emitting wavelength)		DC12~24v±10%（含脉动（P-P）10%以下 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），光量和门槛值双光亮级数条表示（绿、红2色），7级数字门槛值表示（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 am -ount 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		受光面照射度：白炽灯；10，000lx以下，太阳光20,000lx以下 Smooth by irradiation:incande scent: 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℃、4~11台连接时-25~+50℃、12~16台连接时-25℃+45℃、，保存时：-30~+70℃（但不可接冰、接露的情况）Action: 1to3 connection -25~+45℃,4~11,when connected -25~+50℃,12~16℃, when connected -25~+45℃, save time:-30~+70℃(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 double amplitude1.5mm X，Y，Z direction of the 2h
冲击（耐久）The impact of (durable)		50m/s2 X,Y,Z 各方向2h 50m/s2 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 (packed state)		100g
材质 Material	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 Manual

光纤放大器
FIBER OPTIC AMPLIFIER

E3X-NT11光纤放大器Fiber optic amplifier

一、主要特点 Main Features

- ●超薄、仅为10mm的ICH型，节省机器空间。
- ●只需按一次按钮既可轻轻松松进行示教。
- ●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）
- ●即可遇到水也可以放心的防护构造IP 66.
- ●运用工件示教功能，来减少调整的工时。
- ●Ultra-thin, is only 10mm thick and ICH based, saving spaces for machines..
- ●Push one button to easily carry out teaching process.
- ●Four fiber-optic modules can be closely installed together without interfering each other.
- ●With the protection structure of IP66, can be safely used even in the humid environment.
- ●The working hours for adjustment are reduced by using the teaching function.

二、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(380mm) Red light-emitting diode(380mm)
电源电压 Power supply		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 .
保护回路 Protection of the loop		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500μS以下（在客定检测距离方面）Action, reversion, the following 500μS(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，白炽灯；3000rx以下，太阳光1000rx以下 Smooth by the light ,incandescent ; 3000rx below ,following the sun 1000rx
周围温度 Ambient temperature		动作时；-2~+55℃，保存时；40~70℃（不能有结冰，结露现象）When action:-2~+55℃ ,save time:40~70℃ (there can not be frozen, the phenomenon of condensation)
周围湿度 Surrounding humidity		34~85%RH,保存: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（DC500V以兆计）20Ωm above(DC500V to trillion dollars)
耐电压 Voltage		AC1,000V 50/60Hz 1min
振动（耐久）Vibration(durable)		10~50Hz 复振幅1.5mm 或者300m/s2 X、Y、Z各方向2h 10~50Hz complex amplitude 1.5mm or 300m/s2 X，Y，Z direction of the 2h
冲击（耐久）The impact of (durable)		500m/s2 X、Y、Z各方向3回 500m/s2 X,Y,Z direction of the 3back
保护构造 Protection of the 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（包装状态情况下）Weight (in packing cases)		100g
材质 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

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

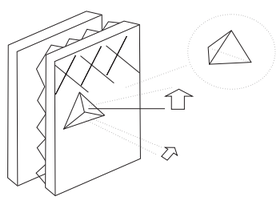
光电传感器G50系列 PHOTO SENSOR（G50 SERIES）

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	透过型 Trough beam 	镜面反射型 Retroreflective 	漫反射型 Diffuse 
检测距离Detection distance	15m	0.1m-5m	700mm (200X200mm白色无光纸) 700mm (200X200mmNon 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 Transpqrent,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,24to 240VDC±10%(Ripple 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 by 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:0.1to 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 PRINCIPLE

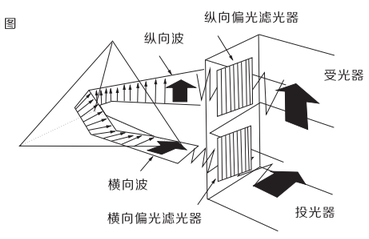
反馈反射光电开关是利用内装的偏光滤器和反馈反射型特点，只接收来自回归发射板的光束功能。
Taking advatage of the built-in polarization filter and the characteristic of feedback reflection typefeedback reflection type photoelecric switch has the function of only receiving the beam retrurned from the refector plate.

镜面抑制（M.S.R）功能



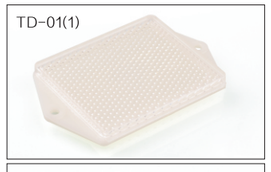
反馈反射板

说 明 图

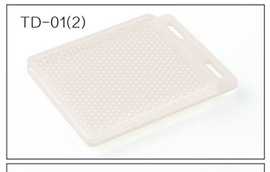


TD镜面反射板 TD mirror reflector plate

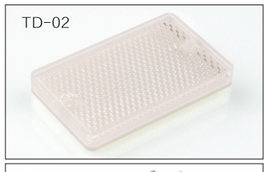
TD-01(1)



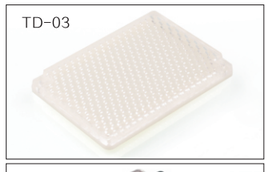
TD-01(2)



TD-02

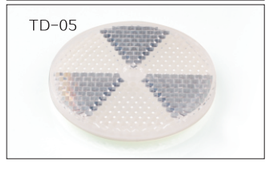


TD-03

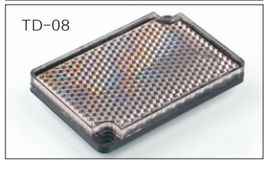


TD-04

TD-05



TD-08



E39-R1

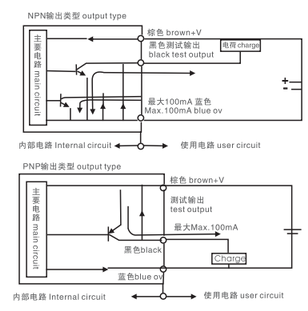
Gt系列通用放大器内藏型光电开关 GT SERIES GENERAL AMPLIFIER BUILT-IN PHOTOELECTRIC SWITCH

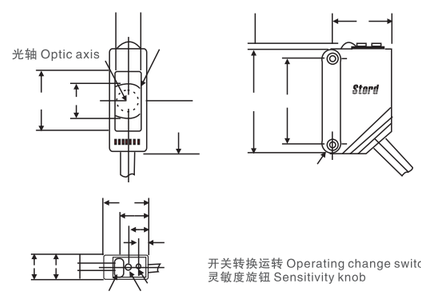
最适用于物流装置的通用光电开关
Most suitable for general photoelectric switch
标准偏光的镜片反射型
Standa rd Polarized lenses reflective type
长距离检测对照型：10m反射型：0.8m偏光镜片反射型：2m
Long-di stance scanning contrast type:10m
Diffused reflection:0.8m polarized lenses reflective type :2m
全球范围（EN规格产品）（备有NPN,PNP）适用
Suitable for EN product（with 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 Technical 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	宽光束漫反射开型 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 30 mA, Receiver.25mA		<30mA Less than 30 mA	<30mA Less than 30 mA	<30mA Less than 30 mA	<30mA Less than 30 mA
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	——		——	10X10cm白纸(white paper)	20X20cm白纸(white paper)	20X20cm白纸(white paper)
响应输出 Response Output	移动和复位小于1 ms Movement and reposition less than 1 ms					
受光面照度 Smooth the illumination	白炽灯：小于5000Lux 阳光：小于2000Lux　Incandescent lamp:less than 5,000 Lux;sunlight:less than 20,000Lux					
使用温度范围 use of humidity range	-20～+70℃没有结冰和结露 no frosting and condesation					
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 peak 1.5mmto wards X,Y and Z respectively for 2 hours					
抗冲击 concussion resistance	500m/s²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





安全可靠的光幕传感器

适用于自动化流水器、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。
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。
具备抗相互干扰功能，可以2套以上紧贴安装。
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。
配套专用控制器，提供强大的控制功能。
可与SICK、STI、KEYENCE、Honeywell等公司同类产品互换。

Safe and reliable optic screen sensor

Applicable for the safety 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.
Adopting synchronism scanning technology,concentrated beam path,non working blind area, strong anti-interference ability,and convenient installation.
Resistance to mutual interference function. It is possible to closely mount more than 2 sets of devices.
Fault self-check,function,power failure stoop,inner component fault stop,connection fault stop,object invading stop signal output.
Attached with specific control supplying powerful control function.
Replaceable for similar products made by SICK,STI,KEYENCE,Honeylell 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 Mindetectable 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 J:Realy output	≤3m	40mm	4	120mm	Φ50mm
	GM40-4J						
	GM40-6N				6	200mm	
	GM40-6J						
	GM40-8N				8	280mm	
	GM40-8J						
	GM40-10N				10	360mm	
	GM40-10J						
	GM40-12N				12	440mm	
	GM40-12J						
	GM40-16N				16	600mm	
	GM40-16J						
	GM40-20N				20	760mm	
	GM40-20J						
	GM40-24N				24	920mm	
	GM40-24J						
2CM间距 对射式 Trough-beam	GM20-4N	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 J:Realy output	≤3m	20mm	4	60mm	Φ30mm
	GM20-4J						
	GM20-6N				6	100mm	
	GM20-6J						
	GM20-8N				8	140mm	
	GM20-8J						
	GM20-10N				10	180mm	
	GM20-10J						
	GM20-12N				12	220mm	
	GM20-12J						
	GM20-16N				16	300mm	
	GM20-16J						
	GM20-20N				20	380mm	
	GM20-20J						
	GM20-24N				24	460mm	
	GM20-24J						

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: Al alloy，color filtre 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 illumiation 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:10-55Hz,Vibration range:1.5mm,each direction of X、Y、Z for 3 hours
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.

电缆连接器 Cable connector

外形 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	三芯投光器使用 Three our-core projector

单位: Unit:mm

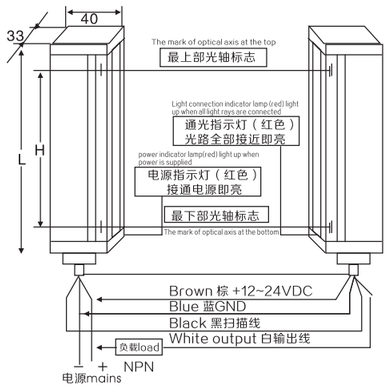
型号 Type	A	B	C	D
GM40-4	120	180	30	40
GM40-6	200	260	30	40
GM40-8	280	340	30	40
GM40-10	360	420	30	40
GM40-12	440	500	30	40
GM40-16	600	660	30	40
GM40-20	760	820	30	40
GM40-24	920	980	30	40
GM40-32	1240	1300	30	40
GM40-40	1560	1620	30	40
GM40-56	2200	2260	30	40
GM40-64	2520	2580	30	40

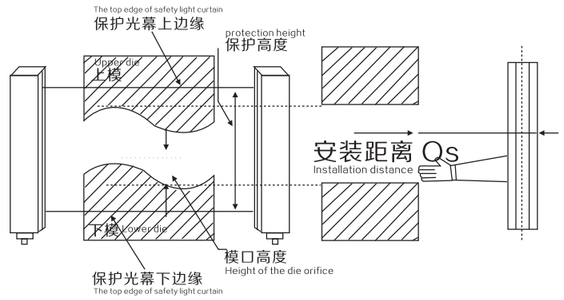
型号 Type	A	B	C	D
GM40-4	60	120	30	20
GM40-6	100	160	30	20
GM40-8	140	200	30	20
GM40-10	180	240	30	20
GM40-12	220	280	30	20
GM40-16	300	360	30	20
GM40-20	380	440	30	20
GM40-24	460	520	30	20
GM40-32	620	680	30	20
GM40-40	780	840	30	20
GM40-50	1100	1160	30	20
GM40-60	1260	1320	30	20

光幕传感器
AREA SECURE SENSOR

接线方式 Wiring Mode

接线示意图 Wiring diagram

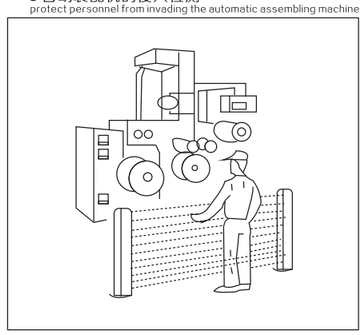




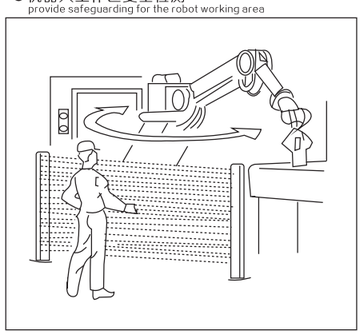
安装示意图
Installation diagram

应用图例 Application illustration

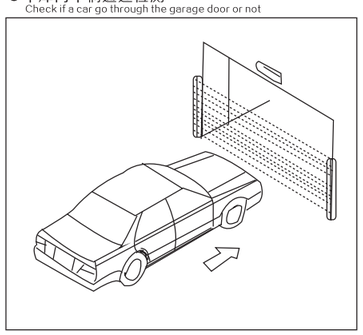
●自动装配机的侵入检测
protect personnel from invading the automatic assembling machine



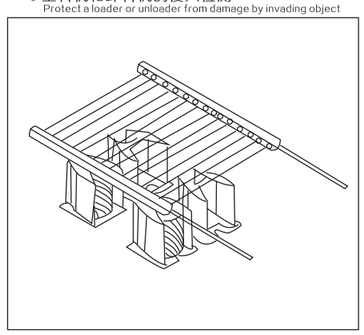
●机器人工作区安全检测
provide safeguarding for the robot working area



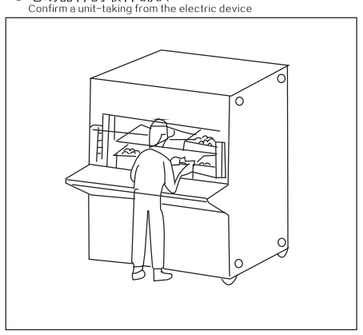
●车库门车辆通过检测
Check if a car go through the garage door or not



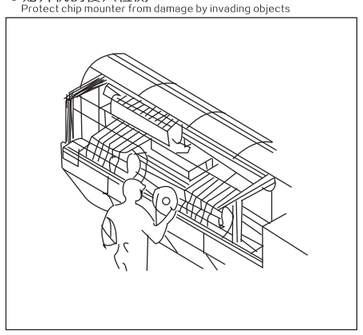
●上料机和卸料机的侵入检测
Protect a loader or unloader from damage by invading object



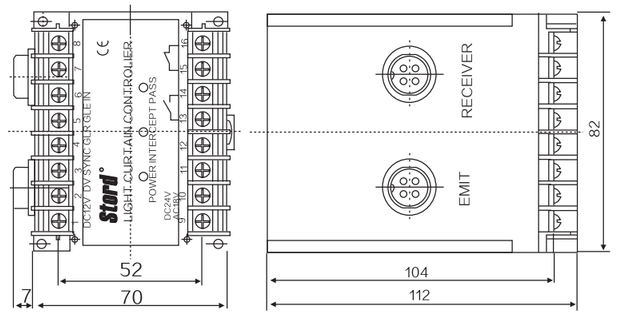
●电动器件的取件确认
Confirm a unit-taking from the electric device



●贴片机的侵入检测
Protect chip mounter from damage by invading objects



光幕控制器 Light curtain controller GLC-2B



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℃（但不结冰 non frozen），保存时 in storage；-25~+55℃
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 100,000 times, electrical work for 10,000 hours
防护等级	Protection level	IEC Ip20

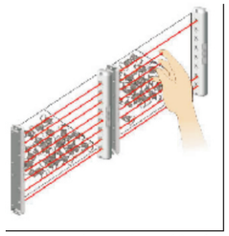
产品简介 Introduction

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，以降低作业人员在工作环境中受到伤害的可能性，有效保护作业人员的人身安全。

巨佳品牌的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与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、机械拨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 personnel being hurt and effectively safeguarding the workers.

Taking advantage of the other brands' characters 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 and receiver are installed at two sides, while a SCM and a microprocessor are put inside to digitally 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 protect 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 relays or other kinds of computer numerical ports with aviation connectors or cables.

Safety light curtain is the most effective device in protecting operating personnel of punching machineries and other machineries 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 security of multi-sided areas.

具备特点

▲符合国际电工学会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

▲外形小巧，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

▲紧凑的尺寸，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 decided by customer order, and some other various connectors and extra functions available by order

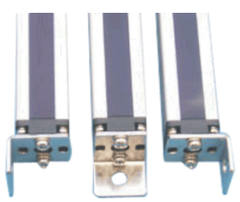
型号定义 Model definition

型号定义 Model definition

Common type 常用型号

GB 20 — T8 — 24V — □□

- GB: GM:外型（横截面35X56mm） GM:Dimensions (cross section35X56mm)；GB:外型（横截面25X25mm） GM:Dimensions (cross section25X25mm)
- 20: 10:光轴间距(axis spacing)10mm；20:光轴间距(axis spacing)20mm；40:光轴间距(axis spacing)40mm
- T8: T8,T16,T48等:光轴数目 T8,T16,T48and etc. Optical axis number
- 24V: 工作电压标注(Working voltage) 12V:12VDC；24V:24VDC；220V:220VAC
- □□: 输出方式NPN或PNP output NPN or PNP；输出状态K，常开B：常闭 output state K: NO B: NC；默认方式：NPN常开输出 default : NPN NO output；2K：PNP常开输出 2K: PNP NO output



GB光幕 GB light curtain

术语解释 Explanation of terms

1、光轴间距：指两个光点中心线间的距离
1.optical spacing: refer to the distance between the centerlines of two light points

2、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。
2.resolution: the minimal size that can be protected by the light curtain, approx. optical spacing plus the width of the optical Len

3、最小可检测体：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。
3.The minimal detectable object: the minimal object that can make the light curtain send out signal by entering the safeguarded area.

4、安全距离：安全距离是当人体向传感器的检测区域作垂直移动（通常情况下），根据下列公式计算的
4.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×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

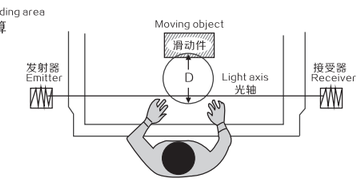
T：全部设备的反应时间（s）T=TM+TB
T: the response time of the whole device (s) T=TM+TB

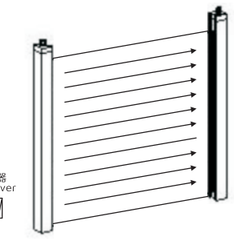
TM:设备的最大停止时间（s）
TM: the maximum stop time of the machinery

GB:GB系列光幕的反应时间（s）
TB: responding time of TB 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×（d-14）
C: extra distance calculated with the size of the minimal detectable object(mm) C=8×(d-14)

d:最小检测物体直径（按32mm）计。
D: the diameter of the minimal detectable object (usually use 32mm)





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丧失，不是安全产品。
Grade B: Use the most 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。一个故障可能体裁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 by periodic self detection. One fault may lead to safety fail of the whole system, but the fault will 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。但故障积累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：使用的保障的（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 safety function will exist with a real-time self-detection double-loop.

常用规格对照表 specifications：

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	I≤100mA		直流型DC type：24VDC
输出电流 Output current	I≤300mA		
回差值 Difference in 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） Lnfrared Emitting Diode (950 modulated 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 steel 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℃到+70℃范围内，对在+25℃时的检测距离是在10%以下 From -25℃ to +70℃, less than 10% of the detection distance at 25℃		
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/S²（50G）X、Y、Z各方向3次(3 times at each direction)		
环境温度 Ambient temperature	工作时(during working)：-10 to 55℃（未结冰状态下 non-frozen）		
	储存时storage time：-30 to 80℃（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receiver0.3+7m采用插件连接connected with a connector		

光幕传感器
AREA SECURE SENSOR

常用规格对照表specifications:

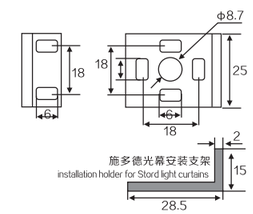
型号 model	光源 light source	工作方式	测距 Range	探测方式 Detection mode	光轴间距 Spacing of axis	分辨率 Resolution	响应速度 Response time	静态电流（8点） Quiescent current
GB10	红外（860nm）	入光	2m	对射	10mm	Φ17mm	35ms	<220mA
GB20	红外（950nm）	入光	10m	对射	20mm	Φ32mm	15ms	<170mA
GB40	红外（950nm）	入光	10m	对射	40mm	Φ52mm	10ms	<110mA

常用规格对照表specifications:

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
		96	95
GB20	20mm	8	14
		12	22
		16	30
		20	38
		24	46
		32	62
		40	78
		48	94
GB40	40mm	4	12
		6	20
		8	28
		10	36
		12	44
		16	60
		20	76
		24	92

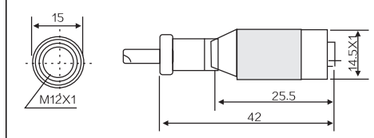
安装支架外形与尺寸the overall sizes of the installation holder

施多德光幕GB专用安装支架
special installation holder of GB series for Stord light curtains



引出接线插座外形与尺寸the overall sizes of connector socket

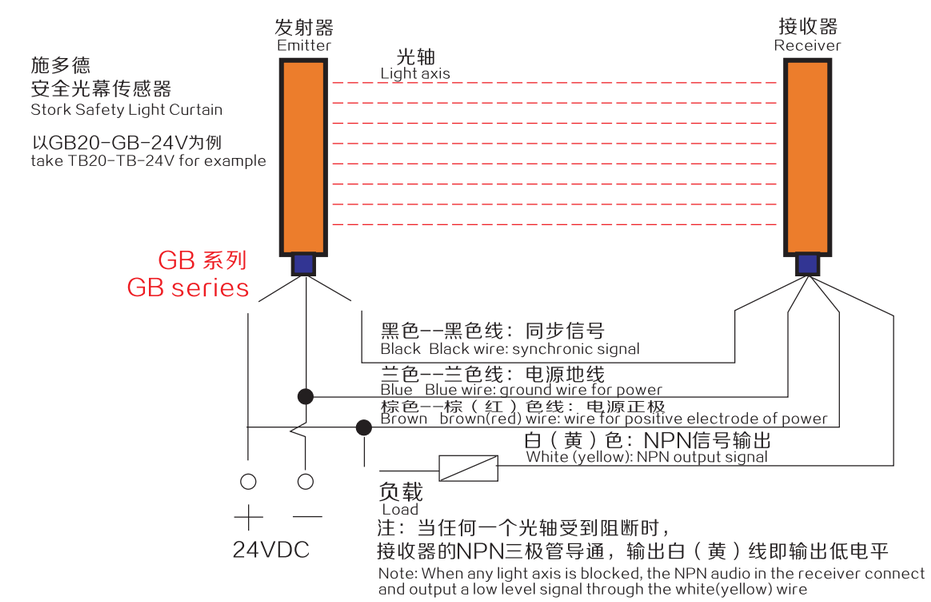
水平接插方式
Level connector



产品外观1
product appearance1

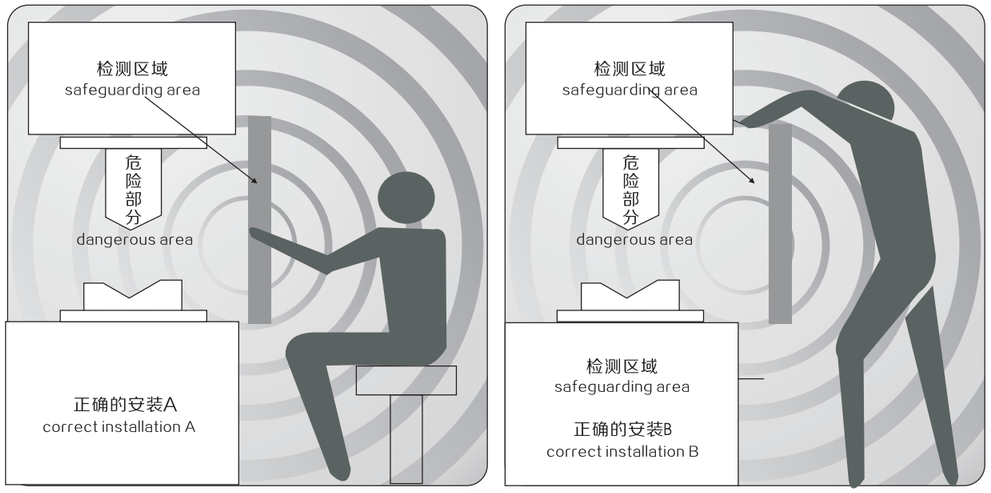
产品外观2
product appearance2

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

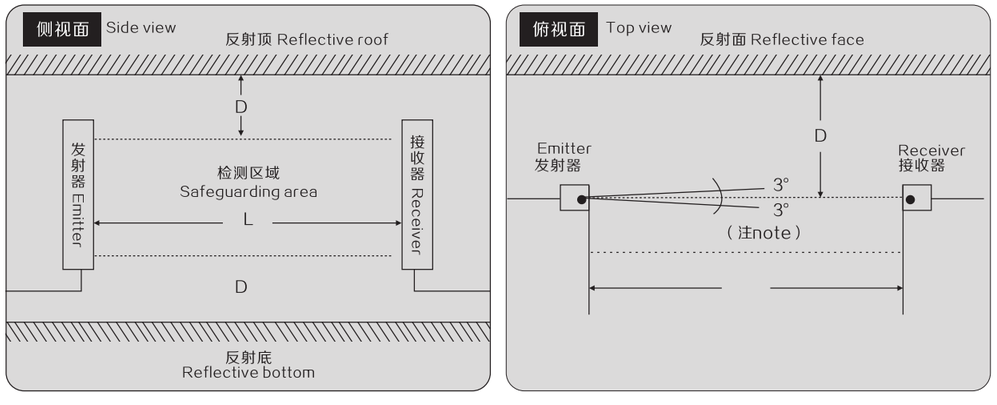


GB安全光幕安装说明 Installation instructions for GB series safety light curtain

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



施多德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，以致于无法完成保护工作。当发射器与接收器距离在0-3时，D不小于0.16m；当间距3-5时，D=LX tanO（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 tanO(0.052)

注：施多德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±2.5°，符合IEC61496-2要求，安装时O=3°

Note : Stord safety light curtain is equipped wit h excellent Len system. The effective aperture angle of light axis is +2.5 ， meeting the requirements per IEC61496-2. O=3 during installation.

光幕传感器
AREA SECURE SENSOR

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

安装高度操作方法 Installation instructions

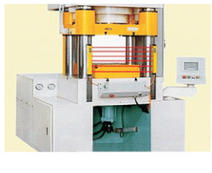
▲检查GB系列安全光幕是否牢固的固定在需装备的设备目，GB系列光幕传感器的发射器和接收器是否在一平面内，且以发射器和接收器为边界的保护区域应为该平面内的一个矩形。
▲检查GB系列安全光幕的发射器和接收器，是否和各自的电缆准确的装配到位，以及电缆的接线端是否与电源和控制单元准确、牢固的连接。
▲给GB系列安全光幕传感器接通电源，此时光幕传感器开始自检、同步及自校准，约1秒钟后，发射器黄色指示灯稳定，接收器指示灯全部熄灭，表示光幕传感器进入正常工作状态。
▲GB系列安全光幕传感器工作状态下：
1.当保护区域内无侵入物体时，传感器的接收器处于受光状态，此时接收器的通讯指示灯（红色）应熄灭，发射指示灯（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 the 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 cable 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 keep lighting. Start the safeguarded equipments, the equipments work well.
2.When some object(no smaller than the minimal detectable object or resolution) invade the safeguarded 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, use 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 counterclockwise. The red indicator of the receiver should keep lighting and the protected equipments do not work.

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, a 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

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

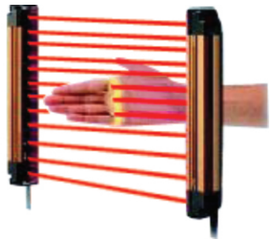
备有手指检测用、手掌检测用、手、腕、人体检测用3个系列，与危险源距离较近时，可选用手指检测型的，与危险源有一定距离，设备停止时间有余地时，可选经济的手腕检测型，可以根据客户的实际需要选用不同的型号。

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.

施多德GB系列安全光幕

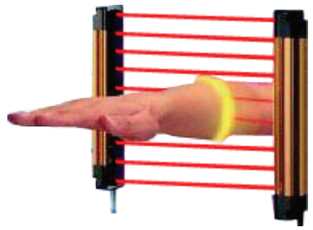
手指检测用最小检测物体光轴间隔10mm分辨率Φ17mm

The finger detecting type with axis spacing of 10mm and with 17mm resolution.



手掌检测用最小检测物体光轴间隔20mm分辨率Φ32mm

The hand detecting type with axis spacing of 20mm and with 32mm resolution.



手腕/人体检测用最小检测物体光轴间隔40mm分辨率Φ52mm

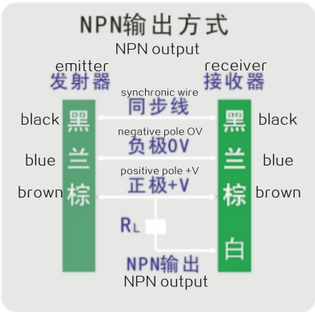
The wrist/other body parts detecting type with axis spacing of 40mm and with 52mm resolution

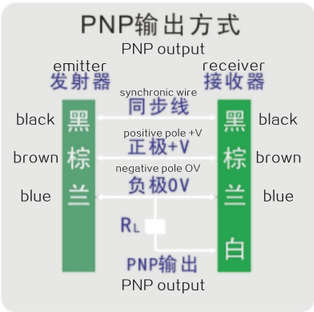
安全高度光轴数目选定 the choice of installation height and axis number

施多德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。

Stord 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

一、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。

●同轴光路设计，对高反射系数纸面（如铝箔等）适应性更强。

●具有蓝、绿、红等多种光源可选，对分辨各种颜色带来方便

●光电细小，分辨率极高。

●0.1~1ms的高响应速度、能适应各种包装机、制袋机和印刷机械这控制需要。

●优异的内电路设计、抗各种电磁、杂光干扰性有优良、操作稳定、无误动作。

●具有灵敏度调节旋钮、不须使用工具即可调节。

●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.

●Coaxial optical design, more adaptable to surfaces of high-reflectance (such as Aluminum foil)

●With light sources of blue, green, red, and various other colors for selection, more accurately to identify various colors.

●Small light spot, excellent resolution.

●Short response time of 0.1-1ms, can adapt to control demand of various packaging machines, bagging machines and printing machines.

●Outstanding internal circuit design that can resist various electromagnetic and optical interference, has stability and no error action

●With sensitivity adjustment knob, need no tool to adjust.

二、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

三、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 L 200mA. 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℃-65℃保存（Save）-15℃-80℃
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 标准长2m Φ5.4PVC four-core shielded 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

Ks系列色标传感器 series of color-sensor

一、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。
●同轴光路设计，对高反身系数纸面（如铝箔等）适应性更强。
●具有白、蓝、绿、红等多种光源可选，对分辨各种颜色带来方便
●光点细小，分辨率极高。
●0.1~1ms的高响应速度、能适应各种包装机、制袋机和印刷机械之控制需要。
●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。
●具有灵敏度调节旋钮、不须使用工具即可调节。

●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.
●Coaxial optical design, more adaptable to surfaces of high-reflectance (such as Aluminum foil)
●With light sources of blue, green, red, and various other colors for selection, more accurately to identify various colors.
●Small light spot, excellent resolution
●Short response time of 0.1-1ms, can adapt to control demand of various packaging machines, bagging machines and printing machines.
●Outstanding internal circuit design that can resist various electromagnetic and optical interference, has stability and no error action.
●With sensitivity adjustment knob, need no tool to adjust .

二、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
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

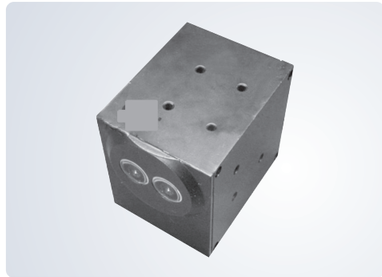
三、主要技术参数Main technical parameters

检测方式 Test type	同轴反射式coaxial reflection	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 L 200mA. 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℃-65℃保存（Save）-15℃-80℃
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 标准长2m Φ5.4PVC four-core shielded 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

色标传感器
COLOR MARK SENSOR

TSG-2系列色标传感器 series of color-sensor

一、主要特点 Main Features



●TSG-2系列套色对版光电传感器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。
●同轴光路，双光斑设计，对高反射系数物面（如铝箔等）适应性更强。
●具有蓝、绿、红等多种光源可选，对分辨各种颜色带来方便
●光0-500米/分的高应速度、能适应凹版全自动电脑套色印刷机等机械之控制需要。
●优异的内电路设计、抗各种电磁、杂光干扰性有优良、操作稳定、无误动作。
●长条光斑设计。使识别更稳定。

●TSG-2 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.
●Coaxial optical design, two light spot design, more adaptable to surfaces of high-reflectance (such as Aluminum foil)
●With light sources of blue, green, red, and various other colors for selection, more accurately to identify various colors.
●Fast response speed of 0-500meters/ per min., adaptable to all kinds of packing machines, bag-made machines, and printing machines in controlling.
●Outstanding internal circuit design that can resist various electromagnetic and optical interference, has stability and no error action.
●Design of long strip-shaped light spot, make identification more stable.
.

RG2C标志识别型光电开关series of color-sensor

一、主要特点Main Features

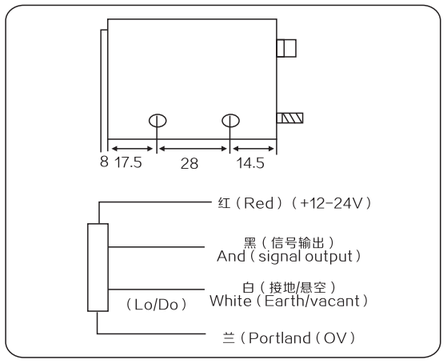
●细小光点，适应抖动离焦情况下的精确定位。
●高工作频率，满足高速动行标志的精确定位。
●采用同步技术，具很强的抗杂散光干扰能力。
●采用同轴设计，能可靠应用于铝箔等反射膜。
●高灵敏度，颜色分辨率达16级灰度以上。
●具有这动（接地）、暗动（悬动）切换功能。

●Small light spot, adapt to precise positioning in the case of defocusing and jittering.
●High working frequency, precise positioning for the fast moving marks.
●Use synchronic technology, strong ability to resist optical interference.
●With coaxial design, can be reliably used for aluminum foil and other reflective films
●High sensitivity, color resolution is above grayscale of grade 16.
●With act on lighting/ act on darken functions optional.

二、主要参数 The main parameters

型号 type	RS2C-N111
工作频率 Frequency	2000Hz
检测距离 Detection range	9mm
电源电压 Power supply	12-24v
光源 Source	红，绿、兰、白red, green, blue and white
光点 Spot	1.5mm
输出电源 Power output	NPN输出（Output）,100mA
电路保护 Circuit Protection	电源反接保护，输出短路保护 Power reverse connection protection, output short-circuit protection
使用温度 The use of temperature	保存（Save）-30-100℃,工作（Work）0-60℃
尺寸Size	68*50*16mm

三、外形尺寸 Size appearance



色标传感器
COLOR MARK SENSOR

BZJ系列色标传感器 series of color-sensor

一、主要特点Main Features

BZJ系列色标传感器采用光发射接收原理，发生调制光，接收被测物体的发射光，并根据接收信号的强弱来区分不同的颜色或判别物体的存在与否。在包装机械、印刷机械、纺织及造纸机械的自控系统中作为传感器与其仪表配套使用，对色标，或其他可作为标记的图案色块、线条、或物体的有无进行检测，可实现自动定位、辨色、纠编、对版、计数等功能。本系列传感器采用光学技术，半导体电子技术、调制解调技术，具有灵敏度高，响应速度快，抗背景光干扰能力强、结构紧凑，使用方便等特点。

1. General introduction

BZJ Series Color Code Sensor applies the light emitting and receiving principle. It will send out modulating light, receive the reflecting lights from detected object, and distinguishthe color or recognize the existence of objects according the intensity of the receiving signals. It can serve for sensor in the automatic control systemsfor packing machinery,printing machinery, texture and paper making machinery, etc and be used with other instruments to detect the existence of the object marked with color code, pattern code, line or others. It has the functions of self-locating, recognizing colors, rectifying deviation, pattern checking and countering. The sensor applies optical technique, semi-conductor electronic technique, and modulation demodulation, and has the features of high sensitivity, quick response speed, strong anti-background interference, compact structure and convenient opera ion, etc.

二、型号、技术参数 Model and technical parameters

BZJ - □ □ □ □ - □

- 逻辑分类：P-PNP Logic classification N-NPN
- 光源颜色：R表示白光Light source color R: white light
  G表示绿光G: green light
- 光源分类：1.单光源 Light source classification 1. single light source
  2.双光源 2.double light source
- 光路分类：1.同轴 Light path classification 1. coaxial
  2.非同轴 2. non coaxial
- 设计程序：1、2…design program
- 色标传感器 Color mark sensor

外型编号 Outward appearance code	BZJ-211	BZJ-311	BZJ-411	BZJ-511
外形图列 Outward appearance illustration				

外形尺寸mm Size(mm)	85x57x28	38x62x100	23x40x56	23x40x56
供电电压Supply Voltage	10-30VDC	10-30VDC	10-30VDC	10-30VDC
使用环境温度Ambient temperature	0-50℃	0-50℃	0-50℃	0-50℃
检测方式Detecting method	同轴的射式 Coaxial reflection	同轴的射式 Coaxial reflection	同轴的射式 Coaxial reflection	同轴的射式 Coaxial reflection
检测距离Sensing distance	10mm±2mm	9mm	9mm	9mm
光源色谱Chromatogram of light	红、绿、兰、白 red、green、blue、white	红、绿、兰、白 red、green、blue、white	红、绿、兰、白 red、green、blue、white	红、绿、兰、白 red、green、blue、white
光点 Facula	圆点circular	圆点circular	圆点circular	圆点circular
响应时间Response time	50us	50us	200uS/500uS	200uS/500uS
输出电流Output current	<200mA	<200mA	<200mA	<200mA
输出方式Output type	NPN	NPN、模拟量输出	NPN	NPN
外壳材料Shell material	金属metal	金属metal	金属metal	金属metal
引出线长度Cable Length	2m	2m	2m	2m
保护功能Protection	电源反相保护、负载短路保护 RP-power protection, load short-circuit protection			
重量Weight		500g	200g	180g

固态继电器简介
BRIEF INTRODUCTION OF SOLID STATE RELAY

一、概述

固态继电器英文名称为Solid state Relay,简称SSR，我公司生产的施多德牌ZG3系列SSR是采用国外先进技术和元器件制造的一种开关性能优良的新型无触点电子开关器件。它的输入端仅要求输入很小的控制电流，能与TTL、HTL、CMOS等集成电路较好地兼容，而输出回路则采用双向可控硅或大功率晶体管接通和断开负载电流。输入与输出之间采用光电耦合。

由于固态继电器是由固体元件组成的无触点开关元件，所以它较之电磁继电器具有工作可靠，寿命长，对外界干扰小，抗干扰能力强，开关速度快，使用方便等一系列优点。它有很宽广的应用领域，有逐步取代传统的电磁继电器之势，并且进一步扩展到传统的电磁继电器无法应用的领域，如计算机和可编程序控制器的输入输出接口，电炉加热恒温设备，数控机械，摇控系统，工业自动化装置，信号灯、交通灯、照明舞台灯光控制设备，仪器仪表，医疗器械，复印机、彩扩机、橡塑机械；在一些要求耐潮、防爆、防腐蚀的特殊装置和恶劣的工作环境中以及要求工作高可靠的场合中，SSR都较之传统的电磁继电器有无可比拟的优越性。它是继电器家族（EMR）的理想更新换代产品。

Solid state relay is called "SSR" for short.Stord Brand ZG3 series product made by our factory is the latest non-contact electronic switch device with good ON-OFF performance.Its input end only requires tinny control current and can be compatible with integrated circuit of TT land CMOS, etc.The output return circuit adopts twoway controlled silicon or big power transistor to cut on or cut off the loading current.The photoelectric coupler is adopted bbetween the input and output.

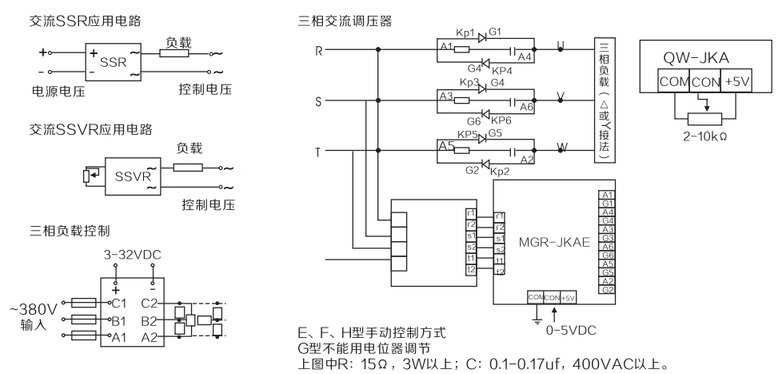
Because solid state relay is a non-contact switch element made up of solid state elements.Compared with electromagnetic relay,it is more reliable.It has series advantages,such as long service life, little disturbance to surrounding and strong anti-interference performance,etc.It has wide application fields.And it tends to replace the traditional electromagnetic relay and further expands to the fields which traditional electromagnetic relay is not applicable for, like input/output interface of computer and program control, equipment,instrument and meter, medical equipment, duplicator,color enlarger,and rubber & plastic machine,etc.In some special deviccs which require damp proof,fireproof and anti-corrosion,and undr bad working environment,SSR has incomparable superiority in comparison with tradition electromagnetic relay.It is an ideal product to replace the older generations of products in relay family (EMR).

二、固态继电器、固态调压器型号及含义 Model cxplantion of solid state relay solid state voltage regulator

ZG3 NC -2 10 B
1 2 3 4 5

编号NO.	构成 Composition	代码及含义 Codc and definition
1	基本型号 Basic	ZG3:固态继电器 Solid state ZG1:固态调压器Solid state voltage regulator ZG33:三相固态继电器 three phase solid state relay
2	外形编号 Outward appearance code	NA、NC、M、T…
3	负载电压 Load voltage	2：30-240VAC 3：90-480VAC 4：24-240VDC 40：5-60VDC 5：24-480VDC 50：110VDC 6：660VAC 7：1200VAC
4	负载电流 Load current	03：3A 10：10A 40：40A 100：100A
5	输入电压 Input voltage	B：3-32VDC A:90-250VAC C:560KΩ/2W 电位器potentiometer D:1-10VDC
6	特殊功能 Special Features	M:电机正反转 2H：二组输入输出 Kb：输出一开一闭

三、固态继电器的实用电路 Practical circuit for solid state relay



E、F、H型手动控制方式
G型不能用电位器调节
上图中R：15Ω，3W以上；C：0.1-0.17uf，400VAC以上。

四、SSR的分类 Assortment of SSR

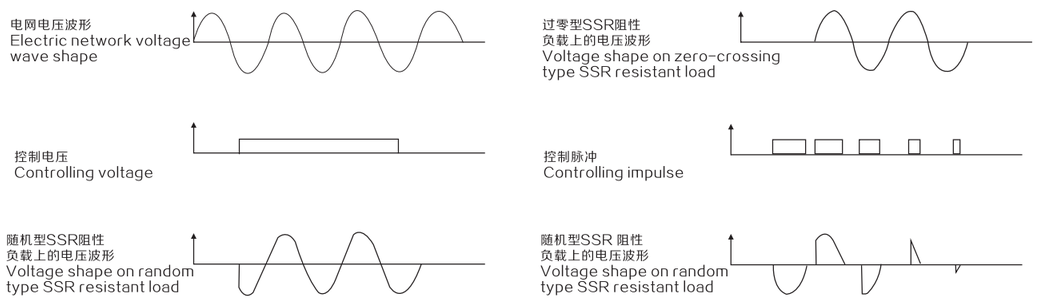
交流固体继电器按开关方式分有电压过零导通型（简称过零型）和随机导通型（简称随机型）；按输出开关元件分有双向可控硅输出型（普通型）和单向可控硅反并联型（增强型）；按安装方式分有印刷线路板上用的针插式（自然冷却，不必带散热器）和固定在金属底板上的装置式（靠散热器冷却）；另外输入端宽范围输入（DC3-32V）的恒流型和串电阻限流型等。

AC solid state relay can be divided into voltage zero-crossing conducting type(zero-crossing type for short)and random conducting type (random typer for short)by switching mode;bidirectional controllabie silicon output(normal type)and unidirectional controllable silicon antiparallel(strengthening type)by switching element;pin insert type(natural cooling,radiatorunnecessary)on printed-wiring board and installing type(cooled by radiator)fixed on metal motherboard by installing mode;and wide scope input(DC3-32V)constant current type and tandem resistance limiting current type by input mode etc.

五、过零型与随机型SSR的区别 The difference between zero-crossing type and ransom type

当输入端施加有效的控制信号时，随机型SSR输出端立即导通（速度为微秒级），而过零型SSR则要等要负载电压过零区域（约±15V）时才开启导通。当输入端撤消控制信号后。过零型和随机型SSR均在小于维持电流时关断。虽然过零型SSR有可能造成最大半个周期的延时，但却减少了对负载的冲击和产生射频干扰，成为理想的开关器件，在“单刀单掷”的开关场合中应用最为之泛。随机型SSR的特点是反应速度快，它可以的控制移相触发脉冲达到方便地改变交流电网电压，从而应用于精确地调温、调光等阻性负载及部分感性负载场场合。

When the input terminal is put on effective controlling signal,the output terminal of random type SSRconducts immediately(the speed class ismicroscond),but the zero-crossing type SSR should conduct until the load voltage(about 5V)crosses the zero zone When the controlling signal is canceled ,both the zero-crossing type and random type SSR will be off in the condition that the current is smaller than maintaining current.Although the zero-crossing type SSRcould make more than half cycle delay,but it reduces the impact to the load and the radio frequency disturbance,becoming perfect switchin element,it is widely used insing-pole single-throw switches.The characteristic of random type SSR is fast reaction,is can control phase-shifting spring impulse to Acelectric network and change its voltage easily,so it is usually used to accurately regulate the temperature and light in resistant load and part sensitive load occasions.

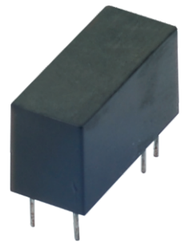


六、双向可控硅输出的普通型与单向可控硅反并联输出的增强型的区别

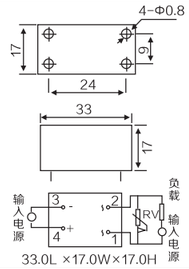
The difference between normal type of bi-directional controllable silicon output and strengthening type of unid-irectional controllable silicon anti-parallel output.

在感性负载的场合，当SSR由通态关断时，由于电流、电压的相位不一致，将产生一个很大的电压上升率dv/dt(换向dv/dt)加在双向可控硅两端，如此值超过双向可控硅的换向dv/dt向指标（典型值为10V/μs）则将导致延时关断，甚至失败。而单相可控硅为单极性工作状态，只受静态电压上升dv/dt（典型值为100V/μs）影响，由两只单向可控硅反并联构成的增强型SSR比由一只双向可控硅构成的普通型SSR的换向dv/dt有很大提高，因此在感性或容性负载场合宜选取增强型SSR。注：工作电流安全系数，阻性负载2-3倍，感性负载5-7倍。

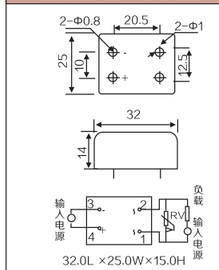
In the occasion of sensitive load,when the SSRis cut off from working condition,it will produce a quite big voltage ascending rate dv/dt(direction reverse dv/dt)for the different phase of current and voltage.Put it on the two terminals of bi-directional controllable silicon,if the value exceeds its directon reverse(dv/dt)index(the typical value is 10Vμs),the swi-tch off may be delayed or even failing,While the singlephase controllable silicon is in sing le working condition,and it is only affected by static state voltage ascending rate dv/dt(thetypical value is100Vμs),the direction reverse dv/dt of strengthening type SSR composed by two anti-paralleled unidirectional controllable silicon is more enhanced than normal type SSR composed by one bi-directional controllable silicon,so the strengthening type SSR should be chosen in the sensitive or resolvable load occasion.Note:working current safety factor,resistant load 2-3 times,sensitive load 5-7 times.



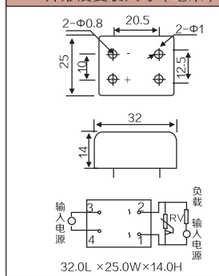
ZG3V-201B

外形及安装尺寸（毫米）		
	负载电压 Load Voltage	220VAC或380VAC
	负载电流 Load Current	1A
	控制电压 Control Voltage	DC3-14V或DC3-32V
	控制电流 Control Current	6-35mA
	通态压降 On Voltage	≤1.2V
	通态漏电流 Off Leakage Current	≤1.5mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	1500VAC
	绝缘电阻 Insulation Resistance	500mΩ/500VDC
	环境温度 Ambient Temperature	-25~+70℃
	安置方式 Mounting Methods	针插式 P、C、B
	工作指示 The word instructions	/
33.0L ×17.0W×17.0H	重量 Weight	14g

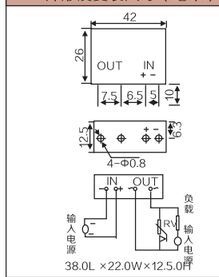
ZG3P-303B

外形及安装尺寸（毫米）		
	负载电压 Load Voltage	220VAC或380VAC
	负载电流 Load Current	3A、5A
	控制电压 Control Voltage	DC3-14V或DC3-32V
	控制电流 Control Current	6-35mA
	通态压降 On Voltage	≤1.2V
	通态漏电流 Off Leakage Current	≤1.5mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	1500VAC
	绝缘电阻 Insulation Resistance	500mΩ/500VDC
	环境温度 Ambient Temperature	-25~+70℃
	安置方式 Mounting Methods	印制版式 P、C、B
	工作指示 The word instructions	/
32.0L ×25.0W×15.0H	重量 Weight	18g

ZG3T-5A 208B

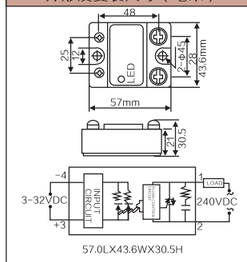
外形及安装尺寸（毫米）		
	负载电压 Load Voltage	220VAC或380VAC
	负载电流 Load Current	3A、5A
	控制电压 Control Voltage	DC3-14V或DC3-32V
	控制电流 Control Current	6-35mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤1.5mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	1500VAC
	绝缘电阻 Insulation Resistance	500mΩ/500VDC
	环境温度 Ambient Temperature	-25~+70℃
	安置方式 Mounting Methods	印制版式 PCB
	工作指示 The word instructions	/
32.0L ×25.0W×14.0H	重量 Weight	32g

ZG3M-305B

外形及安装尺寸（毫米）		
	负载电压 Load Voltage	220VAC或380VAC
	负载电流 Load Current	1A、3A、5A、8A
	控制电压 Control Voltage	DC3-14V或DC3-32V
	控制电流 Control Current	6-35mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤1.5mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	1500VAC
	绝缘电阻 Insulation Resistance	500mΩ/500VDC
	环境温度 Ambient Temperature	-25~+70℃
	安置方式 Mounting Methods	印制版式 P、C、B
	工作指示 The word instructions	/
38.0L ×22.0W×12.5.0H	重量 Weight	16g

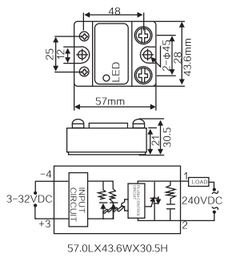
说明：常用于空调机、捆钞机、麻将机及其它家用电器。
Instruction: Applicable for air condition,bank note counter,majong machine and other domestic appliance.

ZG3NC-2□B基本型



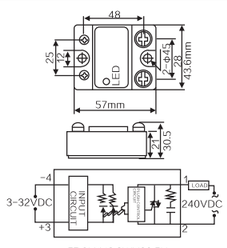
外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,20,25A,30A,40A,50A,60A,75A,80A,90A,100A,120A
	负载电压 Load Voltage	240VAC
	控制电压 Control Voltage	3-32V
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	90g以上（10A,25A）135g（40A以上）

ZG3NC-3□B高压型



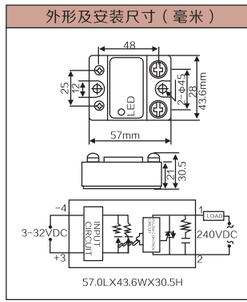
外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,20,25A,30A,40A,50A,60A,75A,80A,90A,100A,120A
	负载电压 Load Voltage	480VAC
	控制电压 Control Voltage	3-32V
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	90g（10A,25A）135g（40A以上）

ZG3NC-6□B增强型



外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,20,25A,30A,40A,50A,60A,75A,80A,90A,100A,120A
	负载电压 Load Voltage	660VAC
	控制电压 Control Voltage	3-32V
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	135g

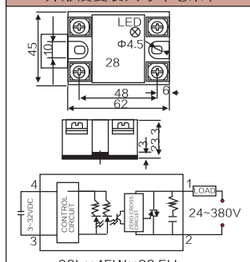
2G3NC-7□B增强型



外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,20,25A,30A,40A,50A,60A,75A,80A,90A,100A,120A
	负载电压 Load Voltage	1200VAC
	控制电压 Control Voltage	3-32V
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	135g

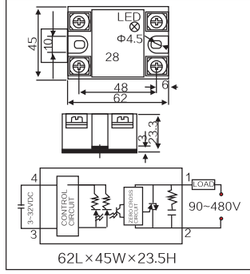
说明：1、负载10A，必须装散热器，40A以上加风扇强冷或水冷。
Instruction:1、load current 10A,should install radiator,upwards 40A should add fan for force cooling or water cooling.
2、使用感性负载时，请务必在输出端并接一压敏电阻，取值为载电压的1.6-1.9倍。
2、when using Inductive load,please add a varistor at the output side,the value is 1.6-1.9 mutiple of load voltage.

SSR-40DA基本型



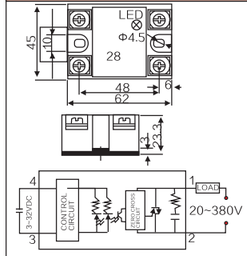
外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,25A,30A,40A
	负载电压 Load Voltage	24~380VAC
	控制电压 Control Voltage	3-32VDC
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	132g

SSR-40DA-II



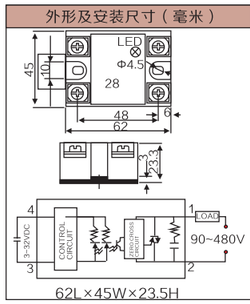
外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,25A,40A
	负载电压 Load Voltage	90~480VAC
	控制电压 Control Voltage	3-32VDC
	控制电流 Control Current	DC3-25mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	132g

SSR-40AA



外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,25A,40A
	负载电压 Load Voltage	24~380VAC
	控制电压 Control Voltage	80-250VDC
	控制电流 Control Current	AC≤12mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤2mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	132g

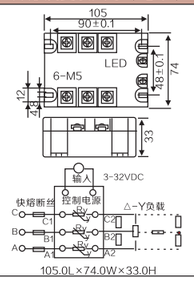
SSR-40AA-II



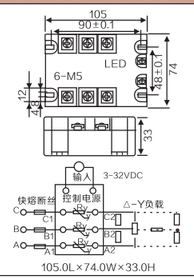
外形及安装尺寸（毫米）	负载电流 Load Current	10A,15A,25A,40A
	负载电压 Load Voltage	90~480VAC
	控制电压 Control Voltage	80-250VDC
	控制电流 Control Current	AC≤12mA
	通态压降 On Voltage	≤1.5V
	通态漏电流 Off Leakage Current	≤4mA
	断态时间 On-offTime	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000mΩ/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The word instructions	LED
	重量 Weight	132g

说明：1、负载10A，必须装散热器，40A以上加风扇强冷或水冷。
Instruction:1、load current 10A,should install radiator,upwards 40A should add fan for force cooling or water cooling.
2、使用感性负载时，请务必在输出端并接一压敏电阻，取值为载电压的1.6-1.9倍。
2、when using Inductive load,please add a varistor at the output side,the value is 1.6-1.9 mutiple of load voltage.

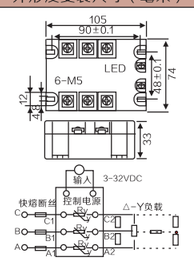
ZG33-3100B基本型

外形及安装尺寸（毫米）	负载电流 Load Current	10A, 15A, 20A, 25A,30A, 40A,50A ,60A, 75A, 80A, 100A, 120A
	负载电压 Load Voltage	480VAC
	控制电压 Control Voltage	3-32VDC
	控制电流 Control Current	10-68mA
	通态压降 On Voltage	≤1.8V
	通态漏电流 Off Leakage Current	≤10mA
	断态时间 On-off time	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000M Ω/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The work instruction	LED
	重量 Weight	450g

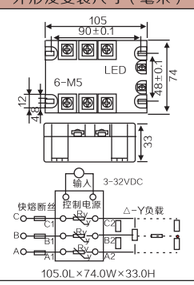
ZG33-6100B高压型

外形及安装尺寸（毫米）	负载电流 Load Current	10A, 15A, 20A, 25A,30A, 40A,50A ,60A, 75A, 80A, 100A, 120A
	负载电压 Load Voltage	660VAC
	控制电压 Control Voltage	3-32VDC
	控制电流 Control Current	10-68mA
	通态压降 On Voltage	≤2V
	通态漏电流 Off Leakage Current	≤10mA
	断态时间 On-off time	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000M Ω/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The work instruction	LED
	重量 Weight	450g

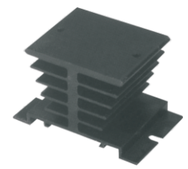
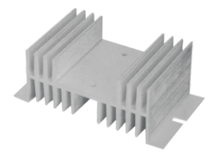
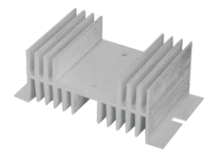
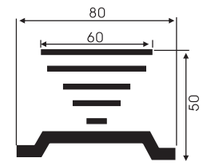
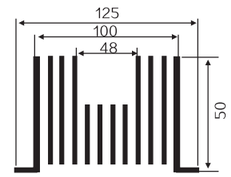
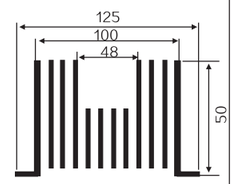
ZG33-7100B增强型

外形及安装尺寸（毫米）	负载电流 Load Current	10A, 15A, 20A, 25A,30A, 40A,50A ,60A, 75A, 80A, 100A, 120A
	负载电压 Load Voltage	1200VAC
	控制电压 Control Voltage	3-32VDC
	控制电流 Control Current	10-68mA
	通态压降 On Voltage	≤2V
	通态漏电流 Off Leakage Current	≤10mA
	断态时间 On-off time	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000M Ω/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The work instruction	LED
	重量 Weight	450g

ZG33-3100B基本型

外形及安装尺寸（毫米）	负载电流 Load Current	10A, 15A, 20A, 25A,30A, 40A,50A ,60A, 75A, 80A, 100A, 120A
	负载电压 Load Voltage	480VAC
	控制电压 Control Voltage	70-280VDC
	控制电流 Control Current	≤AC12mA
	通态压降 On Voltage	≤1.8V
	通态漏电流 Off Leakage Current	≤10mA
	断态时间 On-off time	≤10ms
	介质耐压 Dielectric Strength	2500VAC
	绝缘电阻 Insulation Resistance	1000M Ω/500VDC
	环境温度 Ambient Temperature	-30~+75℃
	安置方式 Mounting Methods	螺栓固定
	工作指示 The work instruction	LED
	重量 Weight	450g

说明：1负载10A，必须装散热器，40A以上加风扇强冷或水冷
instruction: 1, load current 10A, should install radiator, upwards 40A should add fan for force cooling or water cooling.
2,使用感性负载时，请务必在输出端并接一压敏电阻，取值为负载电压的1.6-1.9倍。
2，when using inductive load, please add a varistor at the output side, the value is 1.6-1.9 mutiple of load voltage

外型编号 Outward Appearance code	STORD-A型散热器系列	STORD-B型散热器系列	STORD-B型散热器系列
外形图例 OUTWARD APPEARANCE ILLUSTRATION			
外形尺寸 OVERALL DIMENSIONS			

固态散热器系列 SOLID STATE RADIATOR			
型号type	A-50	B-72	B-100
长X宽X高（mm） Length Xwidth Xheight(mm)	60X50X50	72X100X50	100X100X50
适用范围 Scope of application	适用于负载实际电流不大于15A的一只长方形单相固态继电器 applicable for single phase solid state relay of below 15A	适用于负载实际电流不大于20A的一只长方形单相固态继电器 applicable for single phase solid state relay of below 20A	适用于负载实际电流不大于26A的一只长方形单相固态继电器 applicable for single phase solid state relay of below 26A

一、概述

选用散热器除考虑上述因素外，还要考虑固态继电器或模块本身体积与散热器能否相配，以及散热器在机柜中的安装空间。但最终要保证使在最恶劣情况下固态继电器或模块的底板温度不得超过80℃。

本厂生产的散热器产品主要有以下规格:STORD-A、STORD-B、STORD-C、STORD-D、STORD-E、STORD-F六大系列，适用于各种单相固态继电器、单相交流调压模块、R系列固态调压器、工业级固态继电器及各种三相交流固态继电器。

What type of radiator does solid state relay or modules should equipped with? Actually,there is no fully consistent relationship between them, because the heating power of solid state relay or modules mostly related to the actual load current of the driven,but not the rating. Design formula of Heating:

1,Heating=actual load current(A)X1.5W/A

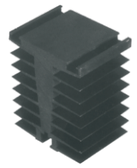
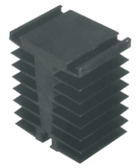
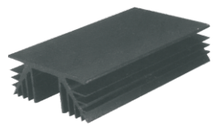
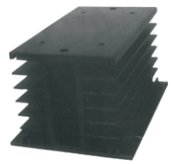
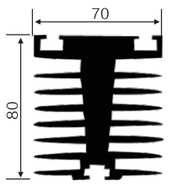
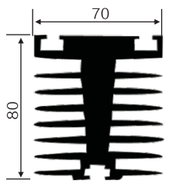
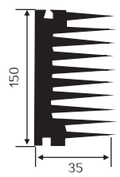
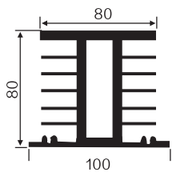
The formula applicable for single solid state relay,single AC booster modules and R series of solid state relay.but for three-phase solid state relay and three-phase AC booster modules,the actual load current is the blanket of three-phase actual load current.2,Heating=actual load current (A)X3.0W/A The formula applicable for single fully controlled modules.

The fuction of radiator is to emanate the heat produced by solid state relay or modules,but in fact,it is difficult to choose a radiator size.because the effect of radiator not only relevent to the size,but also ambient temperature(season),atmospheric conditions and installation density.the standard of radiator effect for reference:the tem-perature of motherboard must below 80℃. so in practical application,a 75℃ temperature switch (with normally closed contact)can be installed in the mounting sur-face which near to the edge(20mm)of solid state relay or modules.

When choose a radiator,besides these factors,it should also think about the size of solid state relay whether can it suit for the radiator or not.and radiator installspace in the machine must be considered too.Finally must ensure the temperature of motherborad of solid state relay or modules of below 80℃ in the worst condition.Our company manufacture types of radiator as following:

STORD-A、STORD-B、STORD-C、STORD-D、STORD-E、STORD-F6 series.applicable for single solid state relay,single AC booster modules, R series solid state booster,industry solid state relay and three-phase solid state relay.

固态继电器简介
BRIEF INTRODUCTION OF SOLID STATE RELAY

STORD-C型散热器系列	STORD-C型散热器系列	STORD-D型散热器系列	STORD-E型散热器系列
			
			

固态散热器系列 SOLID STATE RADIATOR			
C-80	C-115	D-150	E- 50
80X80X70	115X100X50	150X88X35	150X88X35
适用于负载实际电流不大于26A的一只单相长方形或长条形工业极固态继电器 applicable for single phase phase industry solid state relay of below 26A	适用于负载实际电流不大于33A的一只单相长方形或长条形工业极固态继电器 applicable for single phase phase industry solid state relay of below 33A	1、适用于实际电流（三相总和）不大于20A的一只三相固态继电器 1、applicable for three-phase solid state relay of below 20A 2、适用于实际电流不大于26A的一只长方形单相固态继电器 2、applicable for single phase solid state relay of below 26A	1、适用于实际电流（三相总和）不大于75A的一只三相固态继电器 1、applicable for three-phase solid state relay of below 75A 2、适用于实际电流不大于35A的一只长方形单相固态继电器 2、applicable for single phase solid state relay of below35A

说明

※装风扇后长度需要加上32mm，以下负载实际电流以STORD-H型散热器一端安装一只32mmX92mmX92mm (厚X长X宽)的冷却风扇计算。

There should lengthen 32mm when after complete the fan installation,theabove load current is counted at the base of install a 32mmX92mmX92mm(thickness*length*width)cooling fan on the STORD-H series radiator.

Customer Satisfaction Is The Eternal Pursuit.

开关电源 (S-15)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

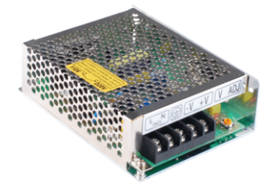
- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlyy
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-15-5	S-15-12	S-15-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	3A	1.3A	0.7A
输出电流范围 OUTPUT CURRENT RANGE	0-3A	1.3A	0-0.7A
纹波及噪音（注：3）Wave and noise（note:3）	50mVp-p	50mVp-p	100mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	15W	15.6W	16.8W
效率 EFFICIENCY (Typ.)	65%	68%	72%
直流电压可调范围 Adjustable range for DC voltage	+10,-5%	±10%	±10%
输入电压范围 AC input voltage range	85~132VAC/170~264VAC 由开关选择 47~63Hz;240~370VDC 85~132VAC/170~264VAC selected by switch 47~63Hz; 240~370VDC		
输入电流 Input current	0.5A/115V 0.25A/230V		
冲击电流 AC Inrush current	冷启动电流 15A/115V 30A/230V Cold-start current 15A/115V 30A/230V		
漏电流 LEAKAGE CURRENT	<0.5mA/240VAC		
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery		
过电压保护 Over-voltage protection	.....		
高温保护 High-temperature protection	.....		
温度系数 TEMP. COEFFICIENT	±0.02%/℃(0~50℃)		
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms		
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes		
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC		
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ		
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH		
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH		
外形尺寸DIMENSION	99X97X35mm		
重量 Weight	0.3Kgs		
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)		
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B		

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-35) 开关电源
SWITCH POWER SUPPLY



- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlyy
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-35-5	S-35-12	S-35-15	S-35-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	7A	3A	2.4A	1.5A
输出电流范围 OUTPUT CURRENT RANGE	0-7A	0-3A	0-2.4A	0-1.5A
纹波及噪音（注：3）Wave and noise（note:3）	75mVp-p	100mVp-p	100mVp-p	100mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	35W	36W	36W	36W
效率 EFFICIENCY (Typ.)	70%	76%	78%	78%
直流电压可调范围 Adjustable range for DC voltage	±10,-5%	±10%	±10%	±10%
输入电压范围 AC input voltage range	85~132VAC/170~264VAC 由开关选择 47~63Hz;255~370VDC 85~132VAC/180~264VAC Selected by switch 47~63Hz;255~370VDC			
输入电流 Input current	0.8A/115V 0.45A/230V			
冲击电流 AC Inrush current	启动电流 18A/115V 36A/230V Cold-start current 18A/115V 36A/230V			
漏电流 LEAKAGE CURRENT	<0.5mA/240VAC			
过载保护 OVERLOAD	105% ~ 150% 类型：切断输出 复位：自动恢复 105% ~ 150% Type:pulsing hiccup shutdown Reset::auto recovery			
过电压保护 Over-voltage protection	……			
高温保护 High-temperature protection	……			
温度系数 TEMP. COEFFICIENT	0.03%/℃ (0 ~ 50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	200ms, 100ms, 30ms at full load			
抗震性 VIBRATION	10 ~ 500Hz, 2G 10min,/1周期，时长60分，各轴 10 ~ 500Hz, 2G 10min,/1cycle, Period for 60 min ,Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出时间：1.5KvAC输入与外壳；1.5KvAC输出与外壳；0.5KvAC Input and output internal:1.5KvAC,Input and enclosre:1.5KvAC ,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出时间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output internal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10 ~ +60℃（参考输出特性图）20 ~ 90% RH -10 ~ +60℃（Refer to output derating curve）,20 ~ 90% RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
外形尺寸DIMENSION	129*98*38mm (L*W*H)			
重量 Weight	0.4Kgs			
安全标准 Safety standards	满足UL 1012 要求（不申请标记） Meet FCC PART 15 J Conduction class B			
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-50)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlyy
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-50-5	S-50-12	S-50-15	S-50-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	10A	4.2A	3.4A	2.1A
输出电流范围 OUTPUT CURRENT RANGE	0-10A	0-4.2A	0-3.4A	0-2.1A
纹波及噪音（注：3）Wave and noise（note:3）	75mVp-p	100mVp-p	100mVp-p	100mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±1%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	50W	50.4W	51W	50.4W
效率 EFFICIENCY (Typ.)	71%	78%	78%	78%
直流电压可调范围 Adjustable range for DC voltage	+10,-5%	±10%	±10%	±10%
输入电压范围 AC input voltage range	85~132VAC/170~264VAC 由开关选择 47~63Hz;240~370VDC 85~132VAC/170~264VAC selected by switch 47~63Hz; 240~370VDC			
输入电流 Input current	1.3A/115V 0.65A/230V			
冲击电流 AC Inrush current	冷启动电流 18A/115V 36A/230V Cold-start current 18A/115V 36A/230V			
漏电流 LEAKAGE CURRENT	<0.5mA/240VAC			
过载保护 OVERLOAD	105%~150%类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery			
过电压保护 Over-voltage protection	.....			
高温保护 High-temperature protection	.....			
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms			
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH			
外形尺寸DIMENSION	157X97X38mm			
重量 Weight	0.5Kgs			
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement (Not apply for the mark)			
EMC标准 EMC standards	.....			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-75) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlyy
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-75-5	S-75-12	S-50-15	S-75-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	12A	6A	5A	3.2A
输出电流范围 OUTPUT CURRENT RANGE	0-12A	0-6A	0-5A	0-3.2A
纹波及噪音（注：3）Wave and noise（note:3）	70mVp-p	120mVp-p	120mVp-p	100mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±1%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	60W	75W	75W	76.8W
效率 EFFICIENCY (Typ.)	71%	78%	78%	82%
直流电压可调范围 Adjustable range for DC voltage	+10,-5%	±10%	±10%	±10%
输入电压范围 AC input voltage range	85~264VAC 47~63Hz;120~370VDC			
输入电流 Input current	1.6A/115V 0.8A/230V			
冲击电流 AC Inrush current	冷启动电流 30A/115V60A/230V Cold-start current 30A/115V 60A/230V			
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC			
过载保护 OVERLOAD	105%~150%类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery			
过电压保护 Over-voltage protection	105%~135%			
高温保护 High-temperature protection	.....			
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms			
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH			
外形尺寸DIMENSION	157X97X38mm			
重量 Weight	0.5Kgs			
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement (Not apply for the mark)			
EMC标准 EMC standards	.....			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-100)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-100-3	S-100-5	S-100-7.5	S-100-12	S-100-15	S-100-24	S-100-27	S-100-48
直流输出电压 DC OUTPUT VOLTAGE	3V	5V	7.5V	12V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±2%	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	20A	20A	13.6A	8.5A	6.7A	4.5A	3.7A	2A
输出电流范围 OUTPUT CURRENT RANGE	0-20A	0-20A	0-13.6A	0-8.5A	0-6.7A	0-4.5A	0-3.7A	0-2A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
负载稳定度（注5）Load stability（note5）	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
直流输出功率 DC OUTPUT POWER	60W	100W	102W	102W	100.5W	108W	99.9W	96W
效率 EFFICIENCY (Typ.)	70%	78%	80%	81%	81%	84%	84%	84%
直流电压可调范围 Adjustable range for DC voltage	2.85~3V	4.75~5.5V	6.75~8.25V	10.8~13.2V	13.5~16.5V	21.6~26.4V	26~32V	43.2~52.8V
输入电压范围 AC input voltage range	85~132VAC/180~264VAC 由开关选择 47~63Hz;255~370VDC 85~132VAC/180~264VAC selected by switch 47~63Hz; 255~370VDC							
输入电流 Input current	2.4A/115V 1.2A/230V							
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 18A/115V 36A/230V							
漏电流 LEAKAGE CURRENT	<1mA/240VAC							
过载保护 OVERLOAD	105%~150%		150%~200%	105%~150%				
	类型：切断输出 复位：自动恢复 Type:pulsing hiccup shutdown Reset: auto recovery							
高温保护 High-temperature protection	.....							
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)							
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms							
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes							
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC							
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ							
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH							
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH							
外形尺寸DIMENSION	199X98X38mm							
重量 Weight	0.65Kgs							
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement (Not apply for the mark)							
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B							

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-120) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-120-3	S-120-5	S-120-7.5	S-120-12	S-120-15	S-120-24	S-120-27	S-100-48
直流输出电压 DC OUTPUT VOLTAGE	3V	5V	7.5V	12V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±2%	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	22A	20A	16A	10A	8A	5A	4.4A	2.5A
输出电流范围 OUTPUT CURRENT RANGE	0-22A	0-20A	0-16A	0-10A	0-8A	0-5A	0-4.4A	0-2A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
负载稳定度（注5）Load stability（note5）	±0.5%	±1%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
直流输出功率 DC OUTPUT POWER	66W	120W	120W	120W	120W	119W	119W	96W
效率 EFFICIENCY (Typ.)	70%	78%	80%	81%	81%	84%	84%	84%
直流电压可调范围 Adjustable range for DC voltage	2.85~3V	4.75~5.5V	6.75~8.25V	10.8~13.2V	13.5~16.5V	21.6~26.4V	26~32V	43.2~52.8V
输入电压范围 AC input voltage range	85~132VAC/180~264VAC 由开关选择 47~63Hz;255~370VDC 85~132VAC/180~264VAC selected by switch 47~63Hz; 255~370VDC							
输入电流 Input current	2.4A/115V 1.2A/230V							
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 18A/115V 36A/230V							
漏电流 LEAKAGE CURRENT	<1mA/240VAC							
过载保护 OVERLOAD	105%~150%		150%~200%	105%~150%				
	类型：切断输出 复位：自动恢复 Type:pulsing hiccup shutdown Reset: auto recovery							
高温保护 High-temperature protection	.....							
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)							
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms							
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes							
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC							
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ							
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH							
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH							
外形尺寸DIMENSION	199X98X38mm							
重量 Weight	0.66Kgs							
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement (Not apply for the mark)							
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B							

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-150)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-150-5	S-150-7.5	S-150-9	S-150-12	S-150-13.5	S-150-15	S-150-24	S-150-27	S-150-48
直流输出电压 DC OUTPUT VOLTAGE	5V	7.5V	9V	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	30A	20A	16.7A	12.5A	11.2A	10A	6.5A	5.6A	3.2A
输出电流范围 OUTPUT CURRENT RANGE	0-30A	0-20A	0-16.7A	0-12.5A	0-11.2A	0-10A	0-6.5A	0-5.6A	0-3.2A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	180mVp-p	180mVp-p	180mVp-p	180mVp-p	240mVp-p	240mVp-p	240mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
负载稳定度（注5）Load stability（note5）	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
直流输出功率 DC OUTPUT POWER	150W	150W	105.3W	150W	151.2W	150W	156W	151.2W	153.6W
效率 EFFICIENCY (Typ.)	70%	80%	80%	82%	83%	84%	85%	86%	87%
直流电压可调范围 Adjustable range for DC voltage	4.5~5.5V	6~8.3V	8~10.4V	10.6~13.2V	12~15V	13.5~16.5V	21~28V	24~30V	43~53V
输入电压范围 AC input voltage range	85~132VAC/176~264VAC 由开关选择 47~63Hz;248~370VDC 85~132VAC/176~264VAC selected by switch 47~63Hz; 248~370VDC								
输入电流 Input current	3.2A/115V 1.6A/230V								
冲击电流 AC Inrush current	冷启动电流35A Cold-start current 35A								
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC								
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery								
过电压保护 Over-voltage protection	115%~135%						125%~145%		115%~135%
高温保护 High-temperature protection	.....								
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)								
启动 上升保护时间 Setup ,rise ,hold up time	100ms,50ms,20ms								
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes								
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC								
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ								
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH								
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH								
外形尺寸DIMENSION	199X110X50mm								
重量 Weight	0.8Kgs								
安全标准 Safety standards	UL 1950 TUV按60950认证 UL 1950 TUVEN60590 Approved								
EMC标准 EMC standards	CLSPR22(按55022)，IEC1000-4-2，3，4，IEC100-3-2认证 CISPR22（EN55022），IEC100-4-2，3，4，5 IEX1000-3-2 Verification								

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-201) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-201-5	S-201-7.5	S-201-12	S-201-13.5	S-201-15	S-201-24	S-201-27	S-201-48
直流输出电压 DC OUTPUT VOLTAGE	3V	7.5V	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±2%	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	40A	26.5A	16.5A	14.7A	13A	8.3A	7.4A	4.2A
输出电流范围 OUTPUT CURRENT RANGE	0-40A	0-26.5A	0-16.5A	0-14.7A	0-13A	0-8.3A	0-7.4A	0-4.2A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	240mVp-p	200mVp-p	240mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±1%	±1%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	200W	198.75W	198W	198.45W	198W	199.2W	199.8W	201.6W
效率 EFFICIENCY (Typ.)	74%	79%	80%	80%	81%	83%	83%	84%
直流电压可调范围 Adjustable range for DC voltage	4.5~56V	6~9V	10~13.2V	12~15V	13.5~18V	20~26.4V	26~32V	41~56V
输入电压范围 AC input voltage range	90~132VAC/180~264VAC selected by switch 47~63Hz; 254~370VDC							
输入电流 Input current	3.6A/115V 1.8A/230V							
冲击电流 AC Inrush current	25A/115V 50A/230V							
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC							
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery							
过电压保护 Over-voltage protection	5.75~6.75V	9.4~10.9V	13.8~16.2V	15.5~18.2V	18~21V	27.6~32.4V	33.7~39.2V	57.6~67.2V
高温保护 High-temperature protection	ERH3≥90℃ 输出关闭 ERH3≥90℃ Output shutdown							
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)							
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,20ms							
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes							
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC							
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ							
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH							
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH							
外形尺寸DIMENSION	199X110X50mm							
重量 Weight	0.8Kgs							
安全标准 Safety standards	设计交付UL1950 Design refer to UL 1950							
EMC标准 EMC standards	设计表示FCC部分15J 条件等级A Design refer to FCC Part15 J Part15J class A							

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-250)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-250-12	S-250-13.5	S-250-15	S-250-24	S-250-27	S-250-48
直流输出电压 DC OUTPUT VOLTAGE	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	20A	18A	17A	10A	9A	5A
输出电流范围 OUTPUT CURRENT RANGE	0-20A	0-18A	0-17A	0-10A	0-9A	0-5A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	300W	297W	300W	300W	197W	312W
效率 EFFICIENCY (Typ.)	82%	83%	84%	86%	86%	87%
直流电压可调范围 Adjustable range for DC voltage	10~13.2V	12~15V	13.5~18V	20~26.4V	26~32V	41~56V
输入电压范围 AC input voltage range	88~132VAC/176~264VAC selected by switch 47~63Hz; 254~370VDC					
输入电流 Input current	6A/115V 3.5A/230V					
冲击电流 AC Inrush current	20A/115V 40A/230V					
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC					
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery					
过电压保护 Over-voltage protection	.....					
高温保护 High-temperature protection	.....					
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)					
启动 上升保护时间 Setup ,rise ,hold up time	2s,20ms,20ms					
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes					
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC					
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ					
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH					
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH					
外形尺寸DIMENSION	215X115X50mm					
重量 Weight	1.15Kgs					
安全标准 Safety standards	设计交付UL1950 Design refer to UL 1950					
EMC标准 EMC standards	.....					

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-350) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticlly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-350-5	S-350-7.5	S-350-12	S-350-13.5	S-350-15	S-350-24	S-350-27	S-350-48
直流输出电压 DC OUTPUT VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±2%	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	50A	40A	29A	25.8A	23.2A	14.6A	13A	7.3A
输出电流范围 OUTPUT CURRENT RANGE	0~50A	0~40A	0~29A	0~25.8A	0~23.2A	0~14.6A	0~13A	0~7.3A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±1%	±1%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	250W	300W	348W	348.3W	348W	350W	315W	350.4W
效率 EFFICIENCY (Typ.)	73%	76%	74%	79%	78%	81%	82%	83%
直流电压可调范围 Adjustable range for DC voltage	4.5~56V	6~9V	10~13.2V	12~15V	13.5~18V	20~26.4V	26~32V	41~56V
输入电压范围 AC input voltage range	90~132VAC/180~264VAC 由开关选择 47~63Hz; 254~370VDC 90~132VAC/180~264VAC selected by switch 47~63Hz; 254~370VDC							
输入电流 Input current	6.5A/115V 4A/230V							
冲击电流 AC Inrush current	25A/115V 50A/230V							
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC							
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery							
过电压保护 Over-voltage protection	5.75~6.75V	9.4~10.9V	13.8~16.2V	15.5~18.2V	18~21V	27.6~32.4V	33.7~39.2V	57.6~67.2V
高温保护 High-temperature protection	ERH3>65℃~70℃风扇起动，<=55℃~60℃ 风扇关闭，>=80℃~85℃，切断输出(5~15V)~(24~48V) ERH3>65℃~70℃ Fan on，<=55℃~60℃ Fan off，>=80℃~85℃，Cut off output(5~15V)~(24~48V)							
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)							
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,20ms							
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes							
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC							
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ							
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH							
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH							
外形尺寸DIMENSION	215X115X50mm							
重量 Weight	1.15Kgs							
安全标准 Safety standards	设计交付UL1950 Design refer to UL 1950							
EMC标准 EMC standards	设计表示FCC部分15J 条件等级A Design refer to FCC Part15 J Part15J class A							

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-400)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-400-9	S-400-12	S-400-13.5	S-400-24	S-400-48
直流输出电压 DC OUTPUT VOLTAGE	9V	12V	13.5V	24V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	43A	33A	29A	17A	8.3A
输出电流范围 OUTPUT CURRENT RANGE	0-43A	0-33A	0-29A	0-17A	0-8.3A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	387W	396W	400W	400W	400W
效率 EFFICIENCY (Typ.)	78%	83%	85%	85%	86%
直流电压可调范围 Adjustable range for DC voltage	±10%	±10%	±10%	±10%	±10%
输入电压范围 AC input voltage range	170~264VAC				
输入电流 Input current	5.6A/115V 2.8A/230V				
冲击电流 AC Inrush current	40A/230V(冷态时)				
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC				
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery				
过电压保护 Over-voltage protection	9.4~10.9V	13.8~16.2V	15.5~18.2V	18~21V	27.6~32.4V / 33.7~39.2V / 57.6~67.2V
高温保护 High-temperature protection	ERH3>65℃~70℃风扇起动，<=55℃~60℃ 风扇关闭，>=80℃~85℃，切断输出(5~15V)~(24~48V) ERH3>65℃~70℃ Fan on，<=55℃~60℃ Fan off，>=80℃~85℃，Cut off output(5~15V)~(24~48V)				
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)				
启动 上升保护时间 Setup ,rise ,hold up time	1.5s,50ms,20ms				
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes				
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC				
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ				
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH				
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH				
外形尺寸DIMENSION	241X124X65mm				
重量 Weight	1.2Kgs				
安全标准 Safety standards	UI1950 EN60950				
EMC标准 EMC standards	EN55022,EN1000-4,2,3,4,5,6,8,11, IEC1000-3-2				

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-500) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-500-12	S-500-13.5	S-500-15	S-500-24	S-500-27	S-500-48
直流输出电压 DC OUTPUT VOLTAGE	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	40A	36A	32A	20A	18A	10A
输出电流范围 OUTPUT CURRENT RANGE	0-40A	0-36A	0-32A	0-20A	0-18A	0-10A
纹波及噪音（注：3）Wave and noise（note:3）	240mVp-p	240mVp-p	240mVp-p	240mVp-p	200mVp-p	300mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±1%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	480W	486W	480W	480W	486W	480W
效率 EFFICIENCY (Typ.)	84%	84%	83%	85.5%	86.5%	87%
直流电压可调范围 Adjustable range for DC voltage	10~13.2V	12~15V	13.5~18V	20~26.4V	24~30V	41~56V
输入电压范围 AC input voltage range	88~264VAC 47~63Hz: 124~370VDC					
输入电流 Input current	7A/115V3.5A/230V					
冲击电流 AC Inrush current	18A/115V36A/230V					
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC					
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery					
过电压保护 Over-voltage protection	13.8~16.2V	15.5~18.2V	13.5~18V	20~26.4V	24~30V	57.6~67.2V
高温保护 High-temperature protection	ERH3>55℃风扇起动，<=45℃ 风扇关闭，>=70℃，切断输出(5~15V) ERH3>55℃ Fan on，<=45℃ Fan off，>=70℃，Cut off output(5~15V)					
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)					
启动 上升保护时间 Setup ,rise ,hold up time	1.5s,50ms,20ms					
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes					
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC					
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ					
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH					
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH					
外形尺寸DIMENSION	185X120X93mm					
重量 Weight	1.8Kgs					
安全标准 Safety standards	满足UL1950 要求（不申请标记） Meet UL 1950 requirement(Not apply for the mark)					
EMC标准 EMC standards	CLSPR22(EN55022),IEC1000-4,2,3,4,5,6,8,11 IEC1000-3-2					

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (S-800)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-800-12	S-800-13.5	S-800-15	S-800-24	S-800-27	S-800-48
直流输出电压 DC OUTPUT VOLTAGE	12V	13.5V	15V	24V	27V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	66A	59A	53A	33A	30A	16A
输出电流范围 OUTPUT CURRENT RANGE	0-66A	0-59A	0-53A	0-33A	0-30A	0-16A
纹波及噪音（注：3）Wave and noise（note:3）	150mVp-p	150mVp-p	150mVp-p	240mVp-p	240mVp-p	480mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±5%	±5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	800W	800W	800W	800W	800W	800W
效率 EFFICIENCY (Typ.)	80%	81%	81%	81%	86.5%	87%
直流电压可调范围 Adjustable range for DC voltage	±10%	±10%	±10%	±10%	±10%	±10%
输入电压范围 AC input voltage range	190~264VAC 47~63Hz: 230~240VDC					
输入电流 Input current	8A/230V					
冲击电流 AC Inrush current	75A/230V					
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC					
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：手动恢复 105%~150% Type:Output shutdown Reset: recovery ACON/OFF					
过电压保护 Over-voltage protection	110%~135%					
高温保护 High-temperature protection	≥70℃切断输出(0-50℃)					
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)					
启动 上升保护时间 Setup ,rise ,hold up time	1.5s,50ms,20ms					
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes					
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC					
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ					
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH					
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH					
外形尺寸DIMENSION	291X132X68mm					
重量 Weight	2.3Kgs					
安全标准 Safety standards	满足UL1950 要求（不申请标记） Meet UL 1950 requirement(Not apply for the mark)					
EMC标准 EMC standards	CLSPR22(EN55022),IEC1000-4,2,3,4,5,6,8,11 IEC1000-3-2					

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(S-1200) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	S-1200-5	S-1200-12	S-1200-15	S-1200-24	S-1200-48
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	180A	100A	80A	50A	24A
输出电流范围 OUTPUT CURRENT RANGE	0~180A	0~100A	0~80A	0~50A	0~24A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	120mVp-p	150mVp-p	240mVp-p	480mVp-p
进线稳定度（注4）Intet stability（note4）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
负载稳定度（注5）Load stability（note5）	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	900W	1200W	1200W	1200W	1200W
效率 EFFICIENCY (Typ.)	77%	83%	85%	85%	87%
直流电压可调范围 Adjustable range for DC voltage	±10%	±10%	±10%	±10%	±10%
输入电压范围 AC input voltage range	190~264VAC 47~63Hz				
输入电流 Input current	11A/230V				
冲击电流 AC Inrush current	150A/230V				
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC				
过载保护 OVERLOAD	105%~150% 类型：切断输出 复位：手动恢复 105%~150% Type:Output shutdown Reset: recovery ACON/OFF				
过电压保护 Over-voltage protection	110%~135%				
高温保护 High-temperature protection	≥70℃切断输出(0-50℃)				
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)				
启动 上升保护时间 Setup ,rise ,hold up time	1.5s,50ms,20ms				
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes				
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC				
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ				
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH				
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH				
外形尺寸DIMENSION	291X132X68mm				
重量 Weight	4.75Kgs				
安全标准 Safety standards	满足UL1950 要求（不申请标记） Meet UL 1950 requirement(Not apply for the mark)				
EMC标准 EMC standards	CLSPR22(EN55022),IEC1000-4,2,3,4,5,6,8,11 IEC1000-3-2				

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (MS-10)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	MS-10-5	MS-10-12	MS-10-12
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	2A	0.8A	0.4A
输出电流范围 OUTPUT CURRENT RANGE	0-2A	0-0.8A	0-0.4A
纹波及噪音（注：3）Wave and noise（note:3）	50mVp-p	50mVp-p	100mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	10W	10W	10W
效率 EFFICIENCY (Typ.)	65%	68%	72%
直流电压可调范围 Adjustable range for DC voltage	±10,-5%	±10	±10
输入电压范围 AC input voltage range	85~264VAC 47~63Hz		
输入电流 Input current	90~260VAC 0.2A		
冲击电流 AC Inrush current	冷启动电流 15A/115V 30A/230V Cold-start current 15A/115V 30A/230V		
漏电流 LEAKAGE CURRENT	<0.5mA/240VAC		
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery		
过电压保护 Over-voltage protection	115~150%		
高温保护 High-temperature protection	.....		
温度系数 TEMP. COEFFICIENT	±0.02%/℃(0~50℃)		
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms		
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes		
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC		
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ		
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH		
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH		
外形尺寸DIMENSION	78X48X21mm		
重量 Weight	0.7Kgs		
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)		
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B		

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(MS-15) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	MS-15-5	MS-15-12	MS-15-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	3A	1.3A	0.7A
输出电流范围 OUTPUT CURRENT RANGE	0-3A	0-1.3A	0-0.7A
纹波及噪音（注：3）Wave and noise（note:3）	50mVp-p	50mVp-p	100mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±0.5%	±0.5%
直流输出功率 DC OUTPUT POWER	15W	15.6W	16.8W
效率 EFFICIENCY (Typ.)	65%	68%	72%
直流电压可调范围 Adjustable range for DC voltage	±10,-5%	±10	±10
输入电压范围 AC input voltage range	AC100~264V 47~63Hz 240~370VDC		
输入电流 Input current	0.5A/115V 0.25A/230V		
冲击电流 AC Inrush current	冷启动电流 15A/115V 30A/230V Cold-start current 15A/115V 30A/230V		
漏电流 LEAKAGE CURRENT	<0.5mA/240VAC		
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery		
过电压保护 Over-voltage protection	.....		
高温保护 High-temperature protection	.....		
温度系数 TEMP. COEFFICIENT	±0.02%/℃(0~50℃)		
启动 上升保护时间 Setup ,rise ,hold up time	200ms,100ms,30ms		
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes		
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC		
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ		
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH		
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH		
外形尺寸DIMENSION	120X46X32mm		
重量 Weight	0.3Kgs		
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)		
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B		

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (DR-30)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effectiely
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-30-5	DR-30-12	DR-30-15	DR-30-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±2%	±1%
额定输出电流 RATED OUTPUT CURRENT	3A	2A	2A	1.5A
输出电流范围 OUTPUT CURRENT RANGE	0-3A	0-2A	0-2A	0-1.5A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	200mVp-p	240mVp-p	480mVp-p
进线稳定度（注 4）Intet stability（note4）	±1%	±1%	±1%	±1%
负载稳定度（注 5）Load stability（note5）	±1%	±1%	±1%	±1%
直流输出功率 DC OUTPUT POWER	15W	24W	30W	35W
效率 EFFICIENCY (Typ.)	72%	77%	77%	80%
直流电压可调范围 Adjustable range for DC voltage	4.75~5.5V	10.8~13.2V	13.5~16.5V	21.6~26.4V
输入电压范围 AC input voltage range	85~264VAC 47~63Hz; 120~370VDC			
输入电流 Input current	1.5A/115V 0.75A/230V			
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V			
漏电流 LEAKAGE CURRENT	<1mA/240VAC			
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery			
过电压保护 Over-voltage protection	.....			
高温保护 High-temperature protection	.....			
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	800ms,60ms,50ms/230V			
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH			
外形尺寸DIMENSION	78X48X21mm			
重量 Weight	0.07Kgs			
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)			
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(DR-45) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effectiely
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-45-5	DR-45-12	DR-45-15	DR-45-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	5A	3.5A	2.8A	2A
输出电流范围 OUTPUT CURRENT RANGE	0-5A	0-3.5A	0-2.8A	0-2A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	200mVp-p	240mVp-p	480mVp-p
进线稳定度（注 4）Intet stability（note4）	±1%	±1%	±1%	±1%
负载稳定度（注 5）Load stability（note5）	±1%	±1%	±1%	±1%
直流输出功率 DC OUTPUT POWER	25W	42W	42W	48W
效率 EFFICIENCY (Typ.)	72%	77%	77%	80%
直流电压可调范围 Adjustable range for DC voltage	4.75~5.5V	10.8~13.2V	13.5~16.5V	21.6~26.4V
输入电压范围 AC input voltage range	85~264VAC 47~63Hz; 120~370VDC			
输入电流 Input current	1.5A/115V 0.75A/230V			
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V			
漏电流 LEAKAGE CURRENT	<1mA/240VAC			
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery			
过电压保护 Over-voltage protection	.....			
高温保护 High-temperature protection	.....			
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	800ms,60ms,50ms/230V			
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH			
外形尺寸DIMENSION	93X78X67mm			
重量 Weight	0.07Kgs			
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)			
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (DR-60)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effectiely
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-60-5	DR-60-12	DR-60-15	DR-60-24
直流输出电压 DC OUTPUT VOLTAGE	5V	12V	15V	24V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	6.5A	4.5A	4A	2.5A
输出电流范围 OUTPUT CURRENT RANGE	0-6.5A	0-4.5A	0-4A	0-2.5A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	200mVp-p	240mVp-p	480mVp-p
进线稳定度（注 4）Intet stability（note4）	±1%	±1%	±1%	±1%
负载稳定度（注 5）Load stability（note5）	±1%	±1%	±1%	±1%
直流输出功率 DC OUTPUT POWER	32.5W	54W	60W	60W
效率 EFFICIENCY (Typ.)	72%	77%	77%	60%
直流电压可调范围 Adjustable range for DC voltage	4.75~5.5V	10.8~13.2V	13.5~16.5V	21.6~26.4V
输入电压范围 AC input voltage range	85~264VAC 47~63Hz; 120~370VDC			
输入电流 Input current	1.5A/115V 0.75A/230V			
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V			
漏电流 LEAKAGE CURRENT	<1mA/240VAC			
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery			
过电压保护 Over-voltage protection	.....			
高温保护 High-temperature protection	.....			
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)			
启动 上升保护时间 Setup ,rise ,hold up time	800ms,60ms,50ms/230V			
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes			
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC			
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ			
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH			
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH			
外形尺寸DIMENSION	93X78X67mm			
重量 Weight	0.3Kgs			
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)			
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B			

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(DR-75) 开关电源
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effectiely
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-75-12	DR-75-24	DR-75-48
直流输出电压 DC OUTPUT VOLTAGE	12V	24V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	6.3A	3.2A	1.6A
输出电流范围 OUTPUT CURRENT RANGE	0-6.3A	0-3.2A	0-1.6A
纹波及噪音（注：3）Wave and noise（note:3）	100mVp-p	150mVp-p	240mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±1%	±1%
直流输出功率 DC OUTPUT POWER	75.6W	76.8W	76.8W
效率 EFFICIENCY (Typ.)	76%	80%	81%
直流电压可调范围 Adjustable range for DC voltage	10.8~13.2V	21.6~26.4V	43.2~52.8V
输入电压范围 AC input voltage range	85~264VAC 47~63Hz; 120~370VDC		
输入电流 Input current	1.8A/115V 0.9A/230V		
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V		
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC		
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery		
过电压保护 Over-voltage protection	13.8~16.2V 27.6~32.4V 58~62V		
高温保护 High-temperature protection	.....		
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)		
启动 上升保护时间 Setup ,rise ,hold up time	1000ms,60ms,50ms/230V		
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes		
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC		
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ		
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH		
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH		
外形尺寸DIMENSION	55.5X125.2X100mm		
重量 Weight	0.55Kgs 20PCS/14Kg/1.1CUET		
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)		
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B		

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源 (DR-120)
SWITCH POWER SUPPLY

- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

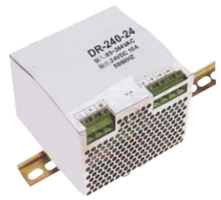
- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-120-12	DR-120-24	DR-120-48
直流输出电压 DC OUTPUT VOLTAGE	12V	24V	48V
输出电压容量 Output voltage range（Note:2）	±2%	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	10A	5A	2.5A
输出电流范围 OUTPUT CURRENT RANGE	0~10A	0~5A	0~2.5A
纹波及噪音（注：3）Wave and noise（note:3）	80mVp-p	80mVp-p	100mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±1%	±1%
直流输出功率 DC OUTPUT POWER	120W	120W	120W
效率 EFFICIENCY (Typ.)	80%	84%	85%
直流电压可调范围 Adjustable range for DC voltage	10.8~13.2V	21.6~26.4V	43.2~52.8V
输入电压范围 AC input voltage range	88~132VAC 47~63Hz; 248~370VDC		
输入电流 Input current	3.3A/115V 2A/230V		
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V		
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC		
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery		
过电压保护 Over-voltage protection	13.8~16.2V	27.6~32.4V	58~62V
高温保护 High-temperature protection	85℃±5℃(TSW1)	90℃±5℃(TSW1)	90℃±5℃(TSW1)
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)		
启动 上升保护时间 Setup ,rise ,hold up time	500ms,70ms,50ms/230V		
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes		
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC		
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ		
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH		
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH		
外形尺寸DIMENSION	65.5X125.2X100mm		
重量 Weight	0.8Kgs 20PCS/16Kg/1.1CUET		
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)		
EMC标准 EMC standards	满足FCC部分15 J 条件 等级B Meet FCC PART15 J Conduction class B		

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

(DR-240) 开关电源
SWITCH POWER SUPPLY



- 低价格、高可靠
- 105℃输出电路
- 全球适用AC输入电源
- 效率高、工作温度低
- 软启动电流、有效降低AC输入冲击
- 有短路保护、过载保护
- 体积小、重量轻
- 100%满负荷烧机测试
- 内装EMI滤波器、纹波极小

- Low price and high reliability
- 105℃ Output capacitor
- AC input power suitable for the world
- High efficiency and low operation temperature
- Soft-start current can reduce the AC input impact effecticly
- With-short-circuit and overload protection
- Compact size,light weight
- 100% full-load burn-in test
- Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-240-24	DR-240-48
直流输出电压 DC OUTPUT VOLTAGE	24V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	10A	5A
输出电流范围 OUTPUT CURRENT RANGE	0~10A	0~5A
纹波及噪音（注：3）Wave and noise（note:3）	80mVp-p	150mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±1%
直流输出功率 DC OUTPUT POWER	240W	240W
效率 EFFICIENCY (Typ.)	84%	85%
直流电压可调范围 Adjustable range for DC voltage	21.6~26.4V	43.2~52.8V
输入电压范围 AC input voltage range	88~264VAC 47~63Hz; 248~370VDC	
输入电流 Input current	3.5A/115V 1.8A/230V	
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V	
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC	
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery	
过电压保护 Over-voltage protection	30~34V 54~60V	
高温保护 High-temperature protection	100℃±5℃(TSW1)	
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)	
启动 上升保护时间 Setup ,rise ,hold up time	800ms,40ms,20ms/230V 800ms,40ms,20ms/115VAC	
抗震性 VIBRATION	10~500Hz,2G 10min,/1 周期，时长60分，各轴 10~500HZ，2G 10min,/1cycle, Period for 60min, Each axes	
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC	
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ	
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH	
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH	
外形尺寸DIMENSION	125.5X125.2X100mm	
重量 Weight	1.2Kgs 20PCS/14.4Kg/1.2CUET	
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)	
EMC标准 EMC standards	满足FCC部分15 J 条件 等级B Meet FCC PART15 J Conduction class B	

注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

开关电源
SWITCH POWER SUPPLY

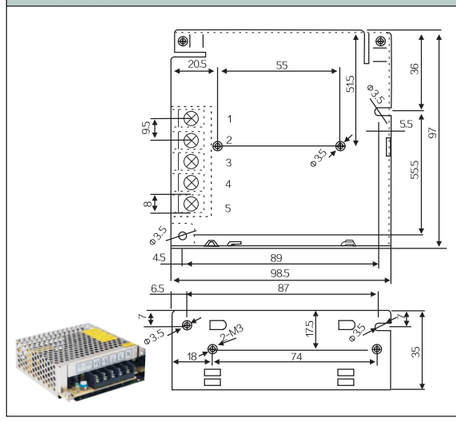
- 低价格、高可靠 ● Low price and high reliability
- 105℃输出电路 ● 105℃ Output capacitor
- 全球适用AC输入电源 ● AC input power suitable for the world
- 效率高、工作温度低 ● High efficiency and low operation temperature
- 软启动电流、有效降低AC输入冲击 ● Soft-start current can reduce the AC input impact effecticly
- 有短路保护、过载保护 ● With-short-circuit and overload protection
- 体积小、重量轻 ● Compact size,light weight
- 100%满负荷烧机测试 ● 100% full-load burn-in test
- 内装EMI滤波器、纹波极小 ● Installed with EMI filter,minimum wave

性能 Specification / 型号 Model	DR-480-24	DR-480-48
直流输出电压 DC OUTPUT VOLTAGE	24V	48V
输出电压容量 Output voltage range（Note:2）	±1%	±1%
额定输出电流 RATED OUTPUT CURRENT	20A	10A
输出电流范围 OUTPUT CURRENT RANGE	0-20A	0-10A
纹波及噪音（注：3）Wave and noise（note:3）	120mVp-p	120mVp-p
进线稳定度（注 4）Intet stability（note4）	±0.5%	±0.5%
负载稳定度（注 5）Load stability（note5）	±1%	±1%
直流输出功率 DC OUTPUT POWER	480W	480W
效率 EFFICIENCY (Typ.)	89%	89%
直流电压可调范围 Adjustable range for DC voltage	21.6~26.4V	43.2~52.8V
输入电压范围 AC input voltage range	180~264VAC 47~63Hz; 250~370VDC	
输入电流 Input current	3.5A/115V 1.8A/230V	
冲击电流 AC Inrush current	冷启动电流 30A/115V 60A/230V Cold-start current 30A/115V 60A/230V	
漏电流 LEAKAGE CURRENT	<3.5mA/240VAC	
过载保护 OVERLOAD	105%~150%类型：电流限制 复位：自动恢复 105%~150% Type:pulsing hiccup shutdown Reset: auto recovery	
过电压保护 Over-voltage protection	30~34V 54~60V	
高温保护 High-temperature protection	100℃±5℃(TSW1)	
温度系数 TEMP. COEFFICIENT	±0.03%/℃(0~50℃)	
启动 上升保护时间 Setup ,rise ,hold up time	1200ms,40ms,160ms/230V	
抗震性 VIBRATION	10~500Hz,2G 10min./1 周期，时长60分，各轴 10~500HZ，2G 10min./1cycle, Period for 60min, Each axes	
耐压性 WITHSTAND VOLTAGE	输入输出间：1.5KvAC 输入与外壳：1.5KvAC输出与外壳：0.5KvAC Input and output intemal:1.5KVAC,Input and enclosure:1.5KvAC,Output and enclosure:0.5KvAC	
隔离电阻 Isolation resistance	输入输出间，输入与外壳，输出与外壳：500VDC/100MΩ Input and output intemal:Input and enclosure,Output and enclosure:500VDC/100MΩ	
工作温度 湿度WORKING TEMP.,HUMIDITY	-10℃~+60℃（参考输出特性图），20%~90%RH -10℃~+60℃（Refer to output derating curve），20%~90%RH	
储存温度 湿度 STORAGE TEMP., HUMIDITY	-20℃~+85℃.10%~95%RH	
外形尺寸DIMENSION	227X125.2X100mm	
重量 Weight	2.4Kgs 6PCS/15.0Kg/1.75CUET	
安全标准 Safety standards	满足UL1012要求（不申请标记） Meet UL 1012 requirement(Not apply for the mark)	
EMC标准 EMC standards	满足FCC部分15J 条件 等级B Meet FCC PART15 J Conduction class B	

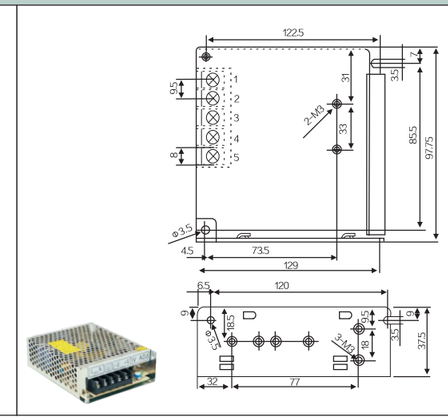
注：1.以上参数测试条件为：230VAC输入，额定负载，25℃℃Rh,温度。
2.容差：包括设定容差，线路稳定度，负载稳定度（注5）。
3.纹波测试：20MHz用“A12”双绞线，中断用0.1uF&47uF电容器短路。
4.。进线电压稳定度测试：满负载时进线最低电压到最高电压。
5.负载稳定度测试：负载从0%到100%。

Note:1.The testing condition for the paramenter above is :230VAC input,rated load,25℃70%RH.Temperature.
2.Error.include the setting error.line stability and load stability.（Note:5）
3.Wave test:adopting “A12” double wire for 20MHz,and 0.1UF&47UF capacitor short-circuit for interrupting.
4.Intel voltage stability test:when is over load,the lowest voltage of inlet is up to the highest voltage.
5.Load stability test:The load is from 0% to 100%.

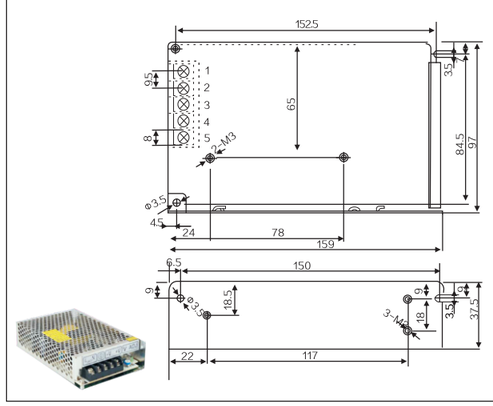
S-15



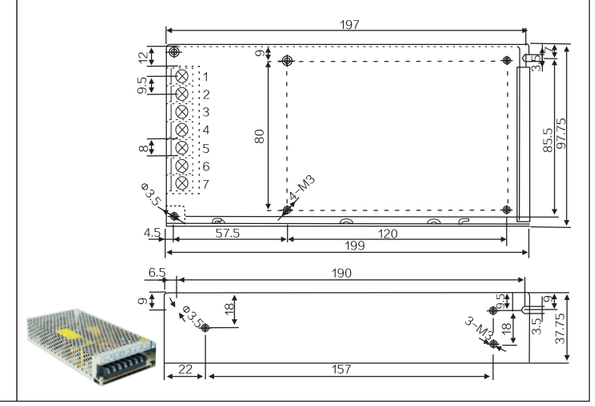
S-35



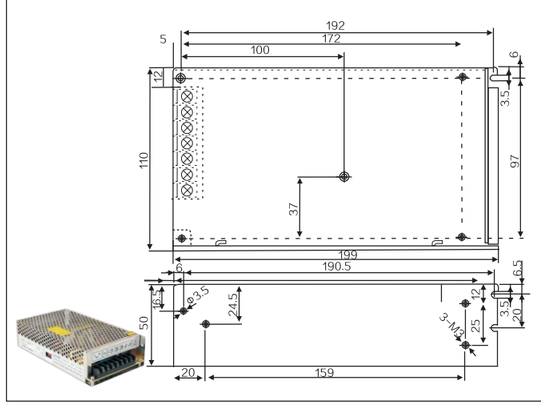
S-50



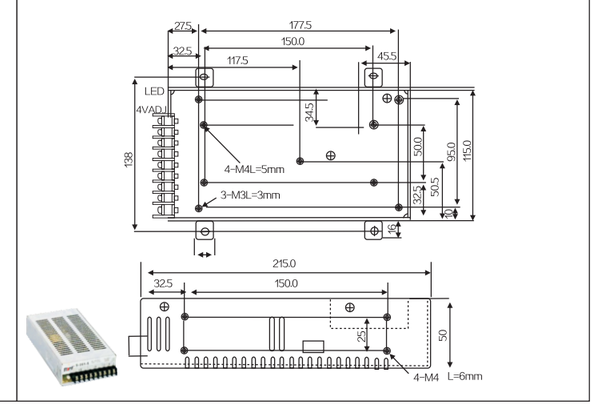
S-100



S-150

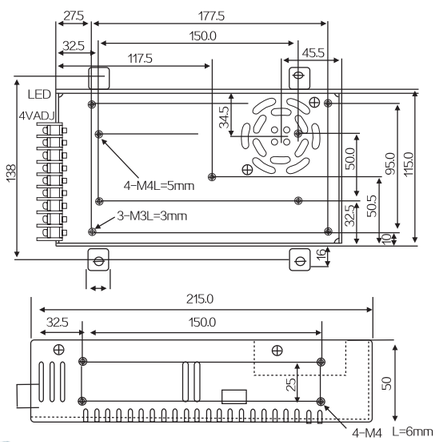


S-201

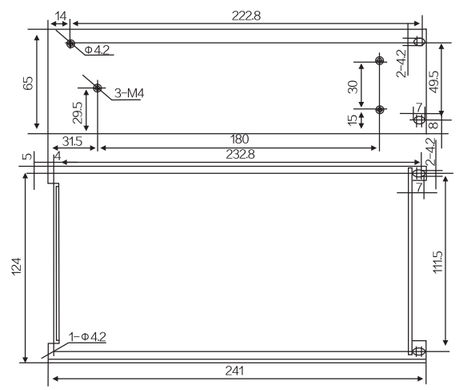


开关电源
SWITCH POWER SUPPLY

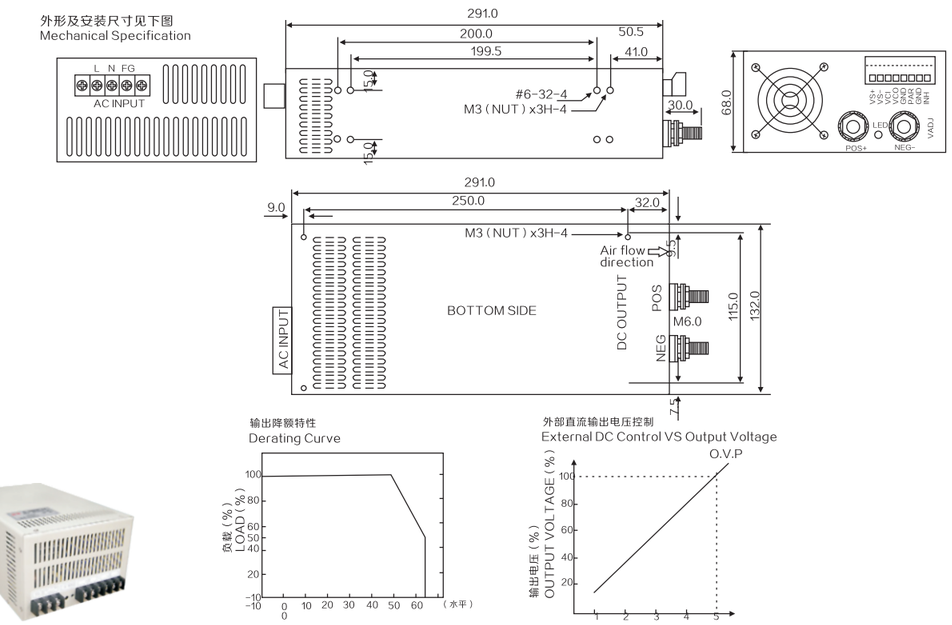
S-350



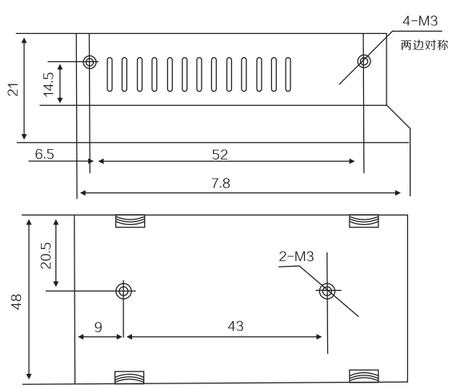
S-400



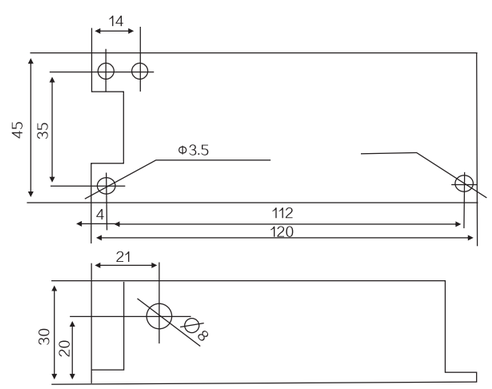
S-800 /S-1000



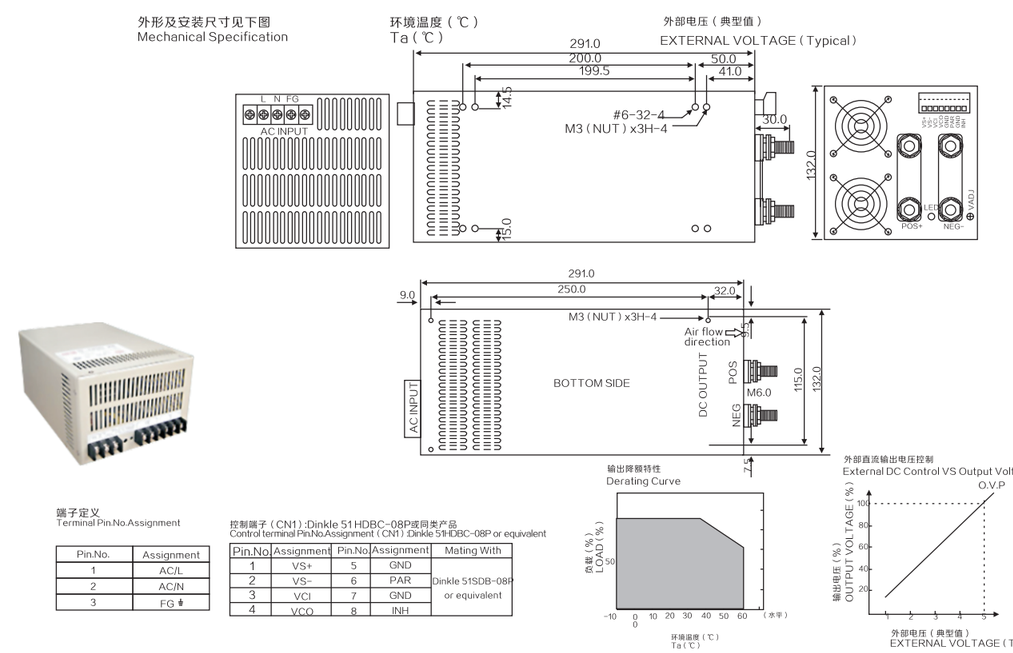
MS-10



MS-15



S-1200 /S-1500



端子定义
Terminal Pin.No.Assignment

Pin.No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

控制端子 (CN1):Dinkle 51HDBC-08P或同类产品
Control terminal Pin.No.Assignment (CN1) Dinkle 51HDBC-08P or equivalent

Pin.No	Assignment	Pin.No	Assignment	Mating With
1	VS+	5	GND	Dinkle 51SDB-08P or equivalent
2	VS-	6	PAR	
3	VCI	7	GND	
4	VCO	8	INH	

(RU-18) 超声波系列
ULTRASONIC SERIES

Characteristic/特点:

●Working area adjusting(windows teach or single point teach)byteach -in button suitable for all models for all models for a fast coming into work ./操作简易，只需通过按键教导工作区（窗口设定和单点设定），产品能够快速地进入工作状态。
●Multifunction LED indicator:output state,teach-in,NO/NC configuration. /多功能LED指示灯：LED可显示输出状态，设定状态，和NO/NC状态等。
●Plastic housing,Ip67 protection degree/特殊塑料外壳，防护等级最高可达IP67。
●Approvals:CE/通过CE认证，品质可靠有保证.
●It is easy to detect transparent objects./最适合于透明物体的检测。

Specifications/规格表:

Output Method / 输出模式	Analogue output 0~10v	RU18-DU90-VK1	RU18-DU160-VK1
	NPN-NO/NC	RU18-DU160-NK1	RU18-DU160-NK1
	PNP-NO/NC	RU18-DU90-PK1	RU18-DU160-PK1
Maximum sensing distance/最大检测距离		900mm	1600mm
Sensing ranger(Sd) /有效距离		100~900mm	150~1600mm
Beam angle/发射角度		±7°	±8°
Frequency transducer/音频		300KHZ	230KHZ
Repeat accuracy/重复精度		0.5%	
Temperature compensation/工作温度		-10℃~+60℃	-20~℃+70℃
Temperature compensation/温度补偿		YES	
Operating voltage/工作电压		DC15~30V	
Thermal drift/热量误差		<5%	
Ripple/ 涟波因素		5%	
Leakage current/漏电流		<10μA@VDC=30V	
Output current/输出电流		100mA	
Minmum load resistence/最小负载阻抗		1KΩ（analogue voltage output/类比电压输出10V）	
Adjustment set pint/调整方式		Teach-in button/按键设定	
Time delay before availability/开机延长时间		300ms	
Output Protection/输出保护		Polarity reversal;overvoltage pulses; short circuit/极性逆接&过电压&短路保护	
Protection degree/防水等级		Ip65	IP66
Housing material/外壳材质		PBT	
Active Head material/振动器材质		Epoxy rexin/环氧树脂	
Tightening torque/扭力		Tightening torque/扭力 1Nm	
Weight/重量		35g	
Storage temperature/保存温度		-35℃~+70℃（without freezer/无结霜、结冰）	

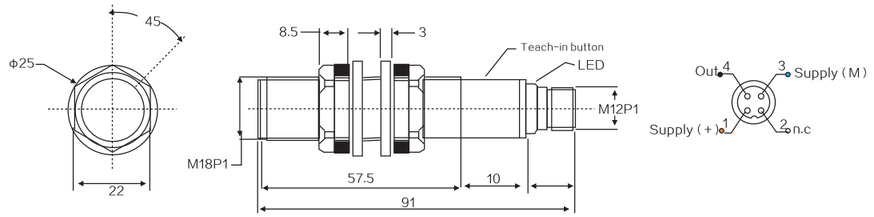
Steps/设定步骤:

Setting A：A-1：Put the object on position A;A-2:Press teach-in button 1 second;A-3:LED twinkles once,setting A ok./1,
设定检测最远距离：将被测物放置在A点，然后长按设定按钮（约1S），待LED灯闪烁1次，即A点设定完成；
Setting B:B-1:Put the object on position B;B-2；Press teach-in button 1 second;B-3:LED tainkles three times,all setting completed./2.设定检测最近距离：将被测物放置在B点，然后长按设定按钮（约1S），待LED灯闪烁3次，即A点设定完成；A点到B点的距离即为感应距离。

A：The longest sensing distance/
A/检测设定最远距离

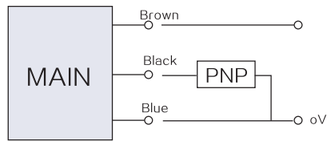
B:The nearest sensing distance（ > =15cm）
/B:检测设定最近距离
检测感应安全距离为15公分

Dimensions/尺寸图

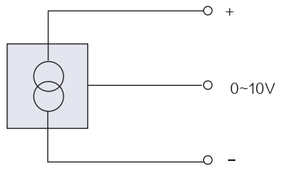


Wring diagrams/接线图

Modelli con uscita digitale PNP ON/NC
PNP ON/AC models with single digital output

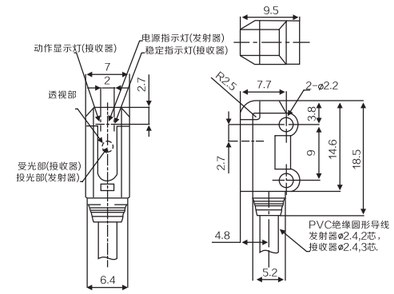


Modelli con uscita analogica in tensione
Models with single voltage analogica output



E3T-ST11 NEW

尺寸图 Dimensions



特点描述 Features

1m的长距离检测
采用专用集成芯片，高可靠性
能进行微小工件的检测
外形精致小巧

电气接线图 Connection diagrams

型号规格 Item Codes		
发射器		E3T-ST-L
接收器	NPN NC	E3T-ST12-D
接收器	NPN NO	EST-ST11-D

规格参数 Specifications	
电源电压	10~30VDC
消耗电流	<15mA
工作电流	<100mA
漏电流	<20uA
输出状态	NPN,NO, NPN,NC
检测距离	1m
光源	红外 850nm
指向角	2~20°
标准检测体	Ø2mm 以上不透明物体
环境光	白炽灯：5000lx以下，太阳光：10000lx以下
保护电路	逆极性、短路、过载保护
响应时间	1ms 以下
环境温度	-25~60℃（无凝露）
耐电压	>1000VAC
绝缘阻抗	>50MΩ
耐振动	复振幅15mm 10…50Hz(X,Y,Z 方向各2小时)
耐冲击	500m/s²(50G)X,Y,Z 各3次
防护等级	IP67
外壳材质	PBT
接线方式	PVC 2m 引线