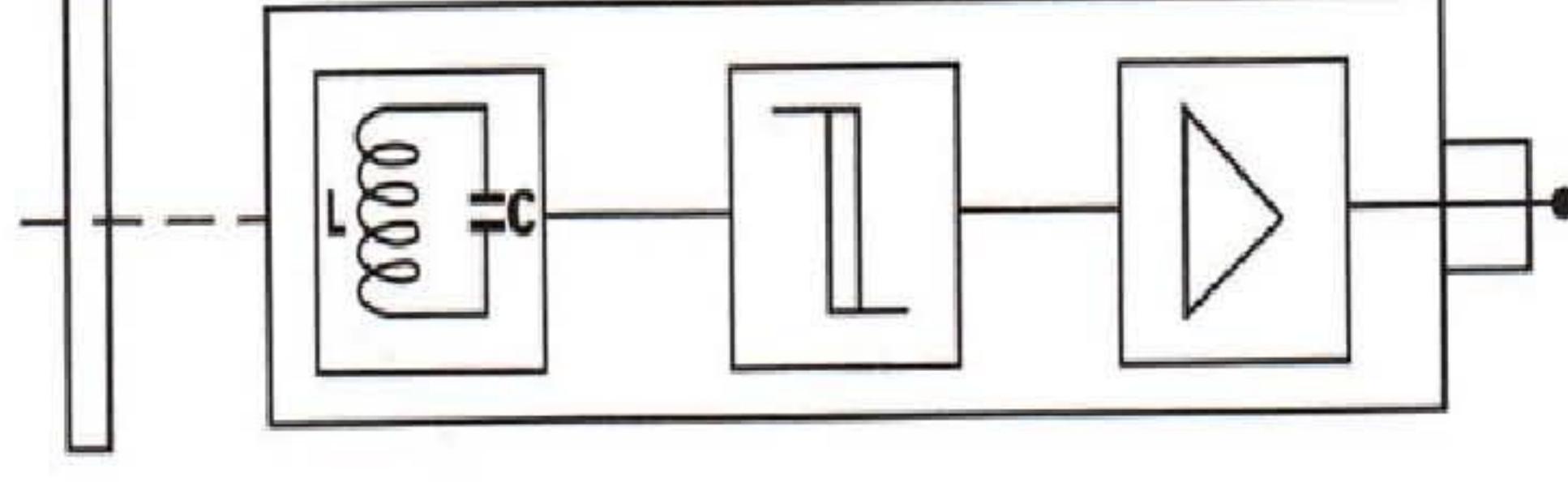


电感式接近开关工作原理

Working principle of inductive proximity switch



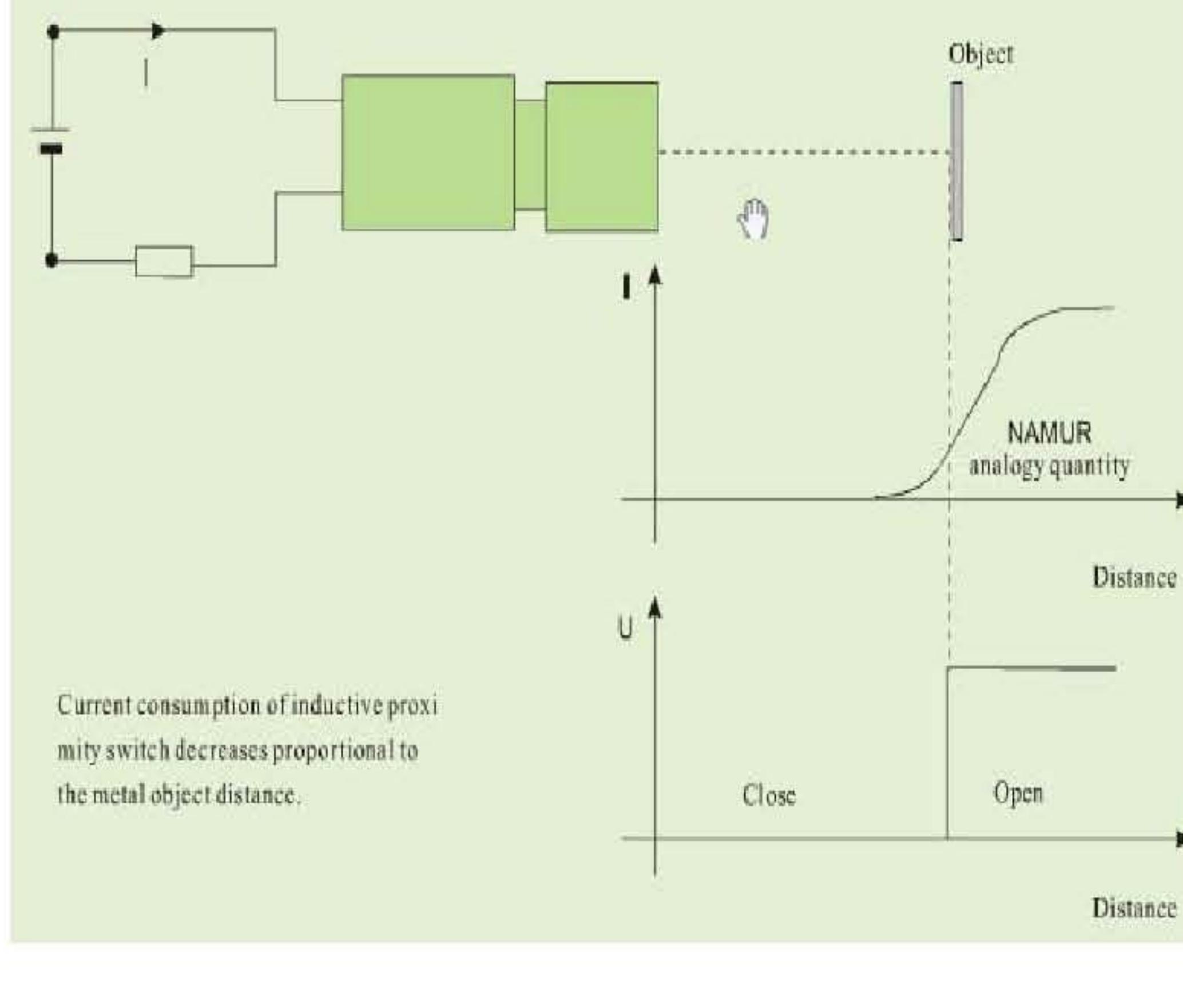
目标 Object LC 震荡器 LC oscillator 开关级 switching stage 放大输出级 magnified output stage

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。振荡器产生一个变交磁场，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, switch circuit and magnified output circuit. The oscillator will generate an alternating electric field. When the metal object approaches this electric field and reaches the induction distance, whirlpool will generate in metal object, resulting in attenuation of vibration and then stop. The change of vibration and stop of oscillator is treated by behind stage magnified circuit and converted to switching sign, triggering driving control for non-contact detection.



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

LM 18- 30 05 N A □

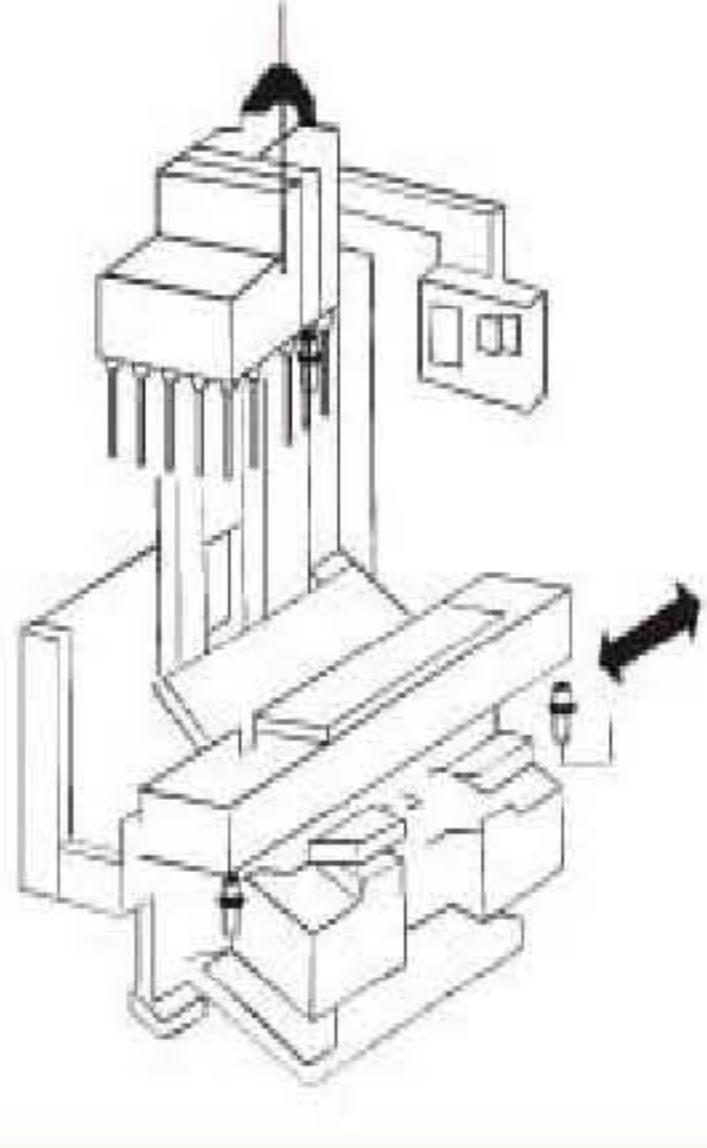
1 2 3 4 5 6 7

编号 No	构成 composition	代码及含义 Code and definition
1	开关类别 Switch category	LM: 电感式 CM: 电容式 SM: 霍尔式 AM: 安全防爆式 XM: 模拟线性式 HM: 舌簧式
2	外形代号 Outward appearance code	□: 圆柱型 □: 角柱型及平面安装型
3	工作电压 Working voltage	30: 6-36VDC 310: 5-24DVC 320: 12-60VDC 20: 90-250VAC 210: 24-250VAC 220: 380VAC 40: 12-240VDC/24-240AC 50: 特殊电压: Special voltage
4	检测距离 Detection distance	01:1mm 05:5mm 10:10mm
5	输出形式 Output form	N:三线直流 NPN 负逻辑 输出 P:三线直流 PNP 正逻辑 输出 L:二线直流输出 □: 交流二线输出 W: 交流三线输出 AC therm-wire output J:继电器触点输出 Relay contact output NP:NPN+PNP 双输出 NPN+PNP double output
6	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
7	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 resistane R:环型 ring type

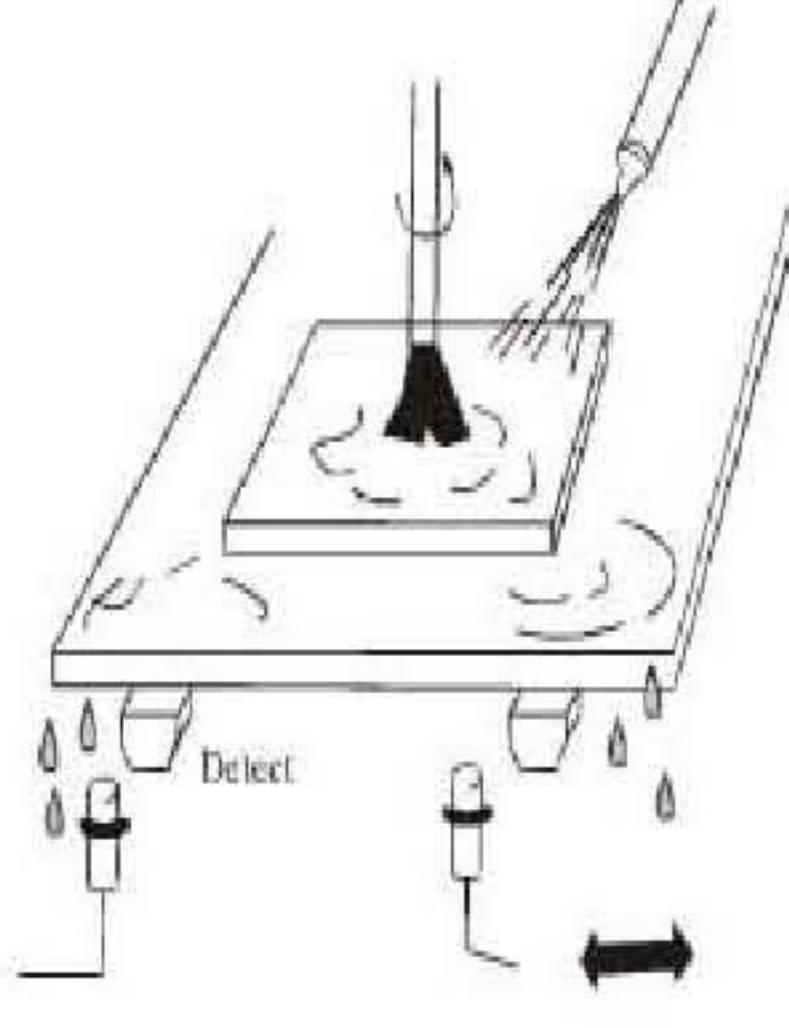
- | | |
|--|--|
| <p>■ 主要特征</p> <ul style="list-style-type: none"> ◆ 体积小 ◆ 重复定位精度高 ◆ 外形结构多样 ◆ 抗干扰性能好 ◆ 输出形式多 ◆ 开关频率高 ◆ 电压范围宽 ◆ 防尘、防震、防水、防油 ◆ 具备短路保护, 反击接保护 ◆ 使用寿命长 | <p>■ Main features</p> <ul style="list-style-type: none"> ◆ Compact volume ◆ High precision of repeated location ◆ Diversified exterior ◆ Good performance of anti-interference ◆ Many output forms ◆ High on-off frequency ◆ Wide voltage range ◆ Dust proof,vibration proof,water proof and oil proof ◆ With short-circuit protection and inverted connecting protection ◆ Long service life |
|--|--|

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

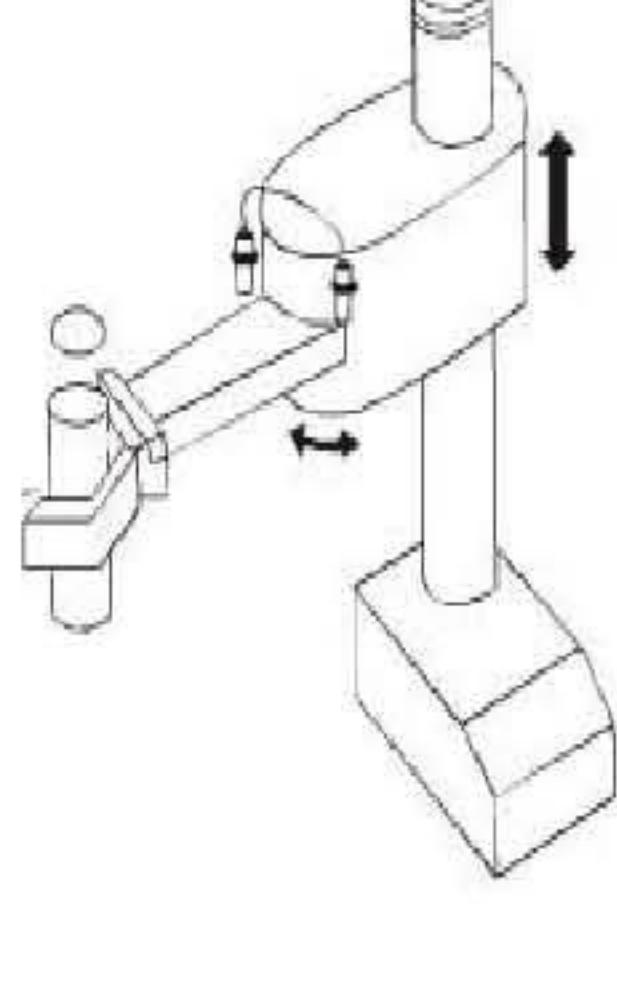
◆ Various location detection of machinery process center



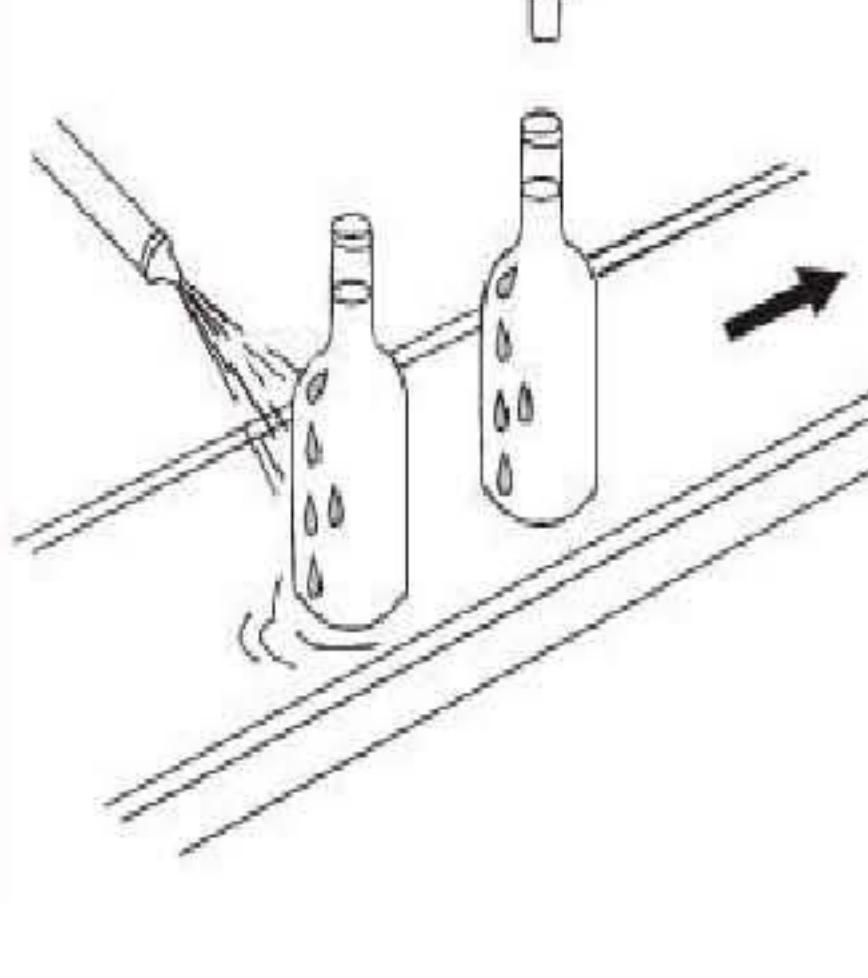
◆ Stopper detection of grinding machine



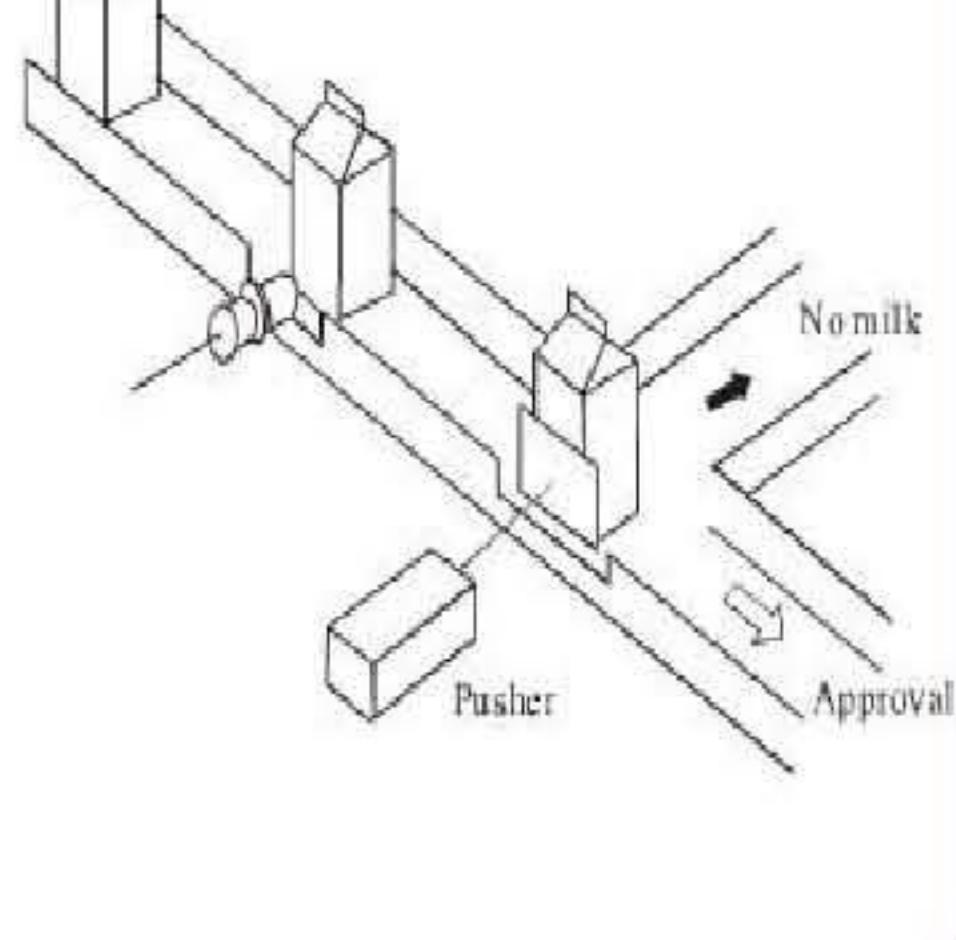
◆ Arm location detection of robot



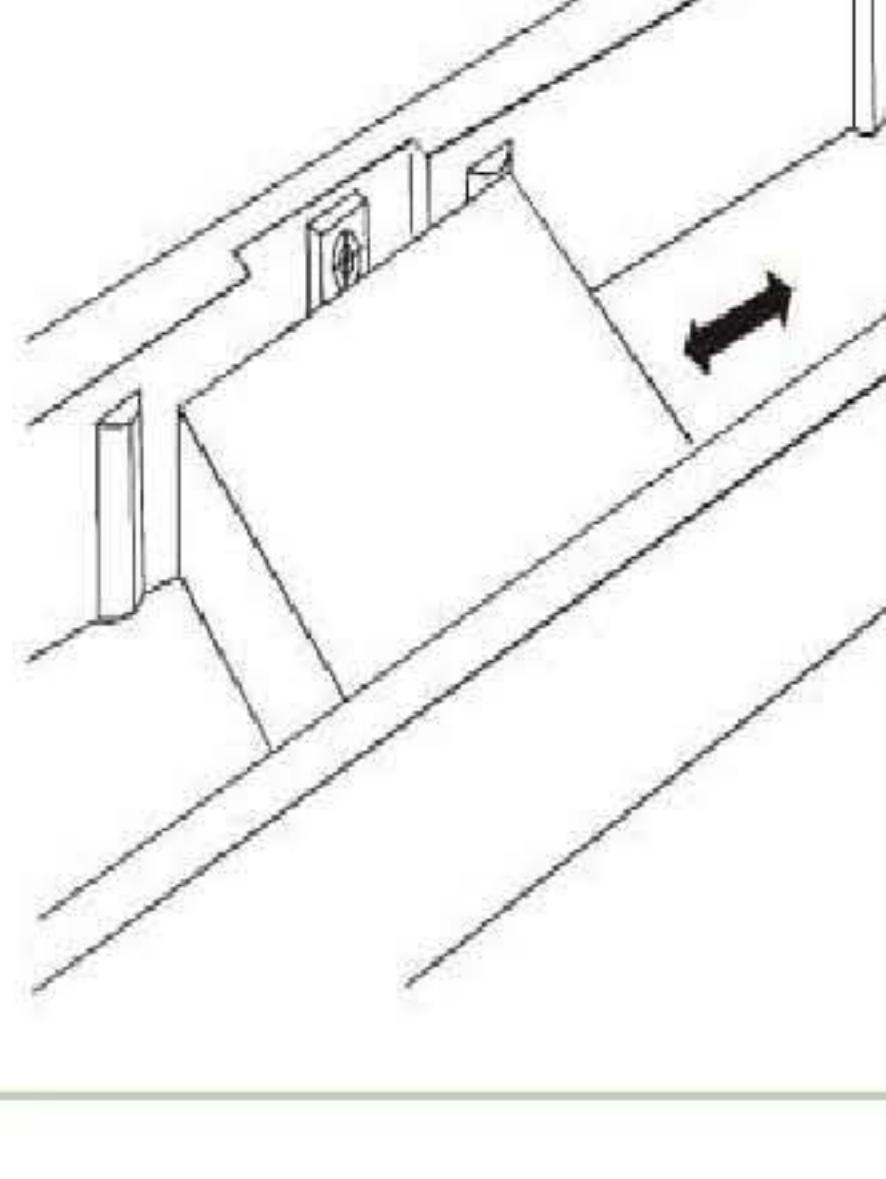
◆ Bottle lid detection



◆ Inspection of the existing of milk inside the paper package



◆ Spacing detection

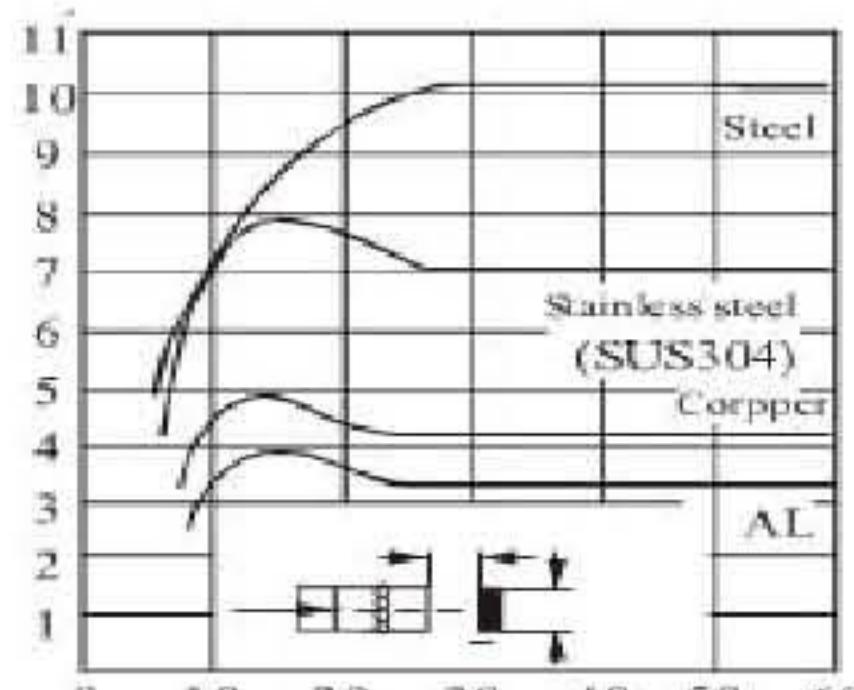
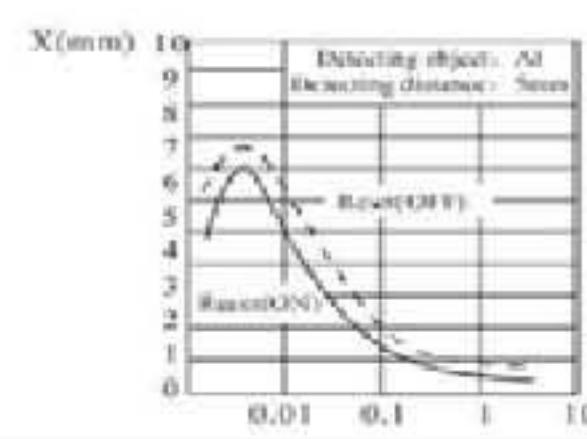
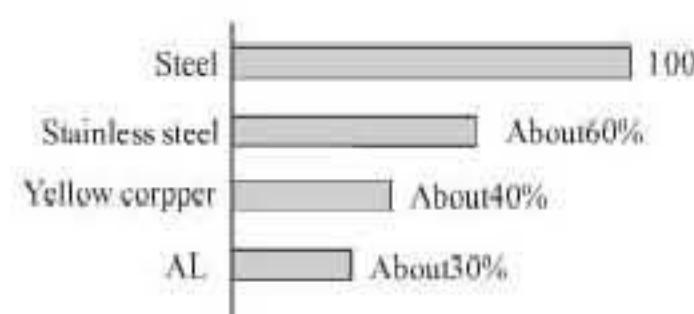


■ 接近开关的特征 Features of proximity switch

◆ 主要特征 Main features

◆ 以高频振荡接近传感器(前面检测器)为代表例,概略说明接近传感器的一般特征.

Take high frequency oscillation type proximity sensor(front detector)as representative 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 d_{mm} 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 d_{mm} 检测距离 X (mm) 	检测物体为大于标准测物体时, 检测距离基本上恒定. 根据机种的不同, 有时和左边的特性不同. 贯通型等, 以圆柱状的金属棒为检测物体 When the detected object is bigger than standard detection distance is constant. According to different Machine type, sometimes the features will 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 decrease. But when the foil material is approximately thicker than a 0.01mm, the detection distance will be the same as that of magnetic object. If the film plating is extremely thin or non-conductive, detection cannot be conducted. The effect of cladding material, 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 X_{mm} (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 change.	为保护动作的可靠和寿命长, 请避免有关规定以外的温度外界(户外)条件下, 接近传感器虽为耐水结构, 若装上罩使用, 勿使水和水溶性切削油等淋到, 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 beyond the stipulated ambient temperature. Do not drench it with Water or water-soluble cutting lubricant when it is used with cover, although the proximity sensor is waterproof. Do not use in the occasions with chemical agents, especially strong base acid, nitric acid, hot strong sulfuric acid and so on.
检测物体材料和镀层等造成的影响 The effects resulted from the thickness of detected object and cladding material	标准检测物体的由于形状, 尺寸因具材料. 或各种镀引起的影响, 用检测距离 X_{mm} 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 X_{mm} 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.	◆ 关于环境气候 About ambient weather 为保护动作的可靠和寿命长, 请避免有关规定以外的温度外界(户外)条件下, 接近传感器虽为耐水结构, 若装上罩使用, 勿使水和水溶性切削油等淋到, 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. ◆ 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进行下列定期检查. 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 following regular examinations should be performed just like general control. 1. Check the installation position of detected object and proximity sensor 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

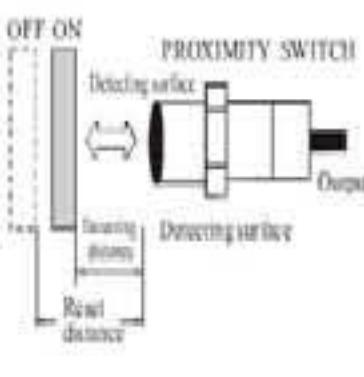
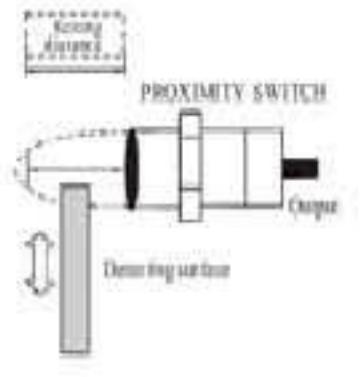
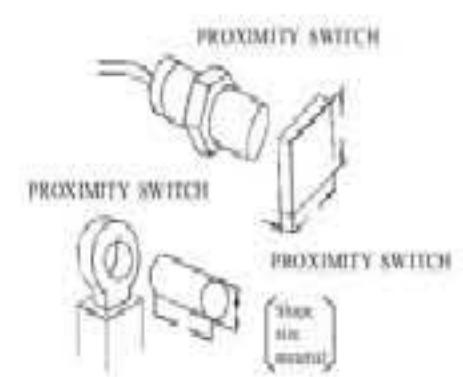
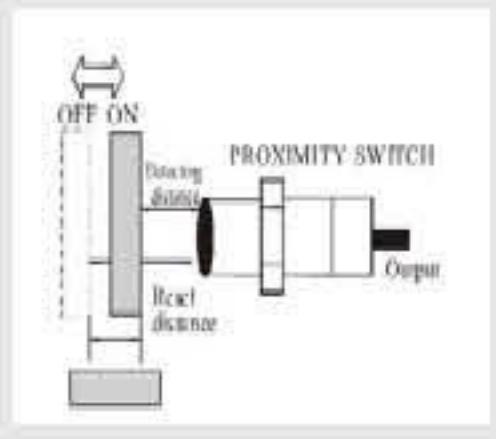
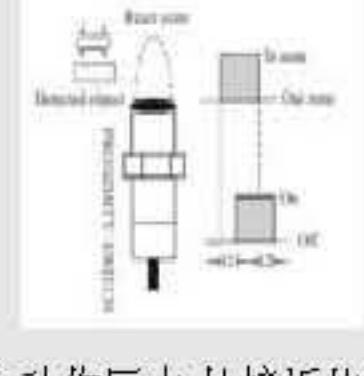
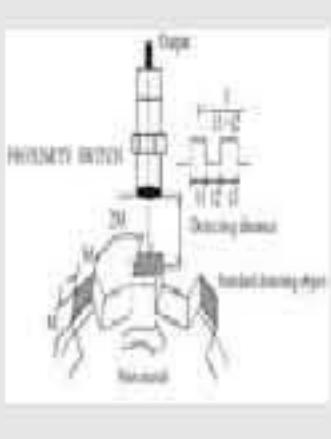
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◆ 以高频振荡接近传感器(前面检测器)为代表例,概略说明接近传感器的一般特征.

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

■ 技术用词的说明 Explanation of technical terms

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

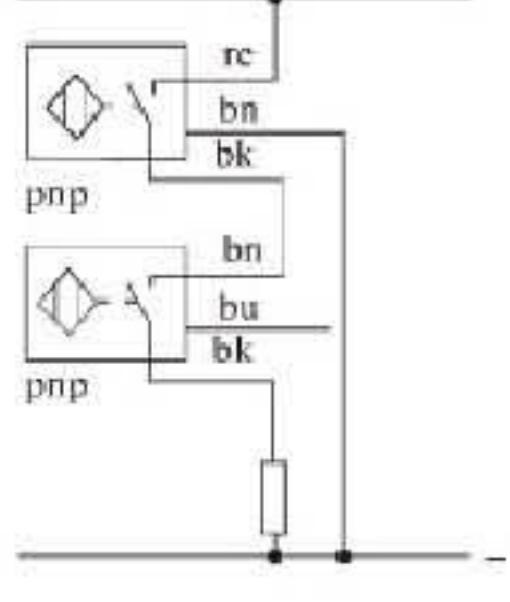
■ 串联, 并联 Series connection and parallel connection

◆ 三线直流与三线直流传感器的串联

◆ 三线直流与三线直流传感器的并联

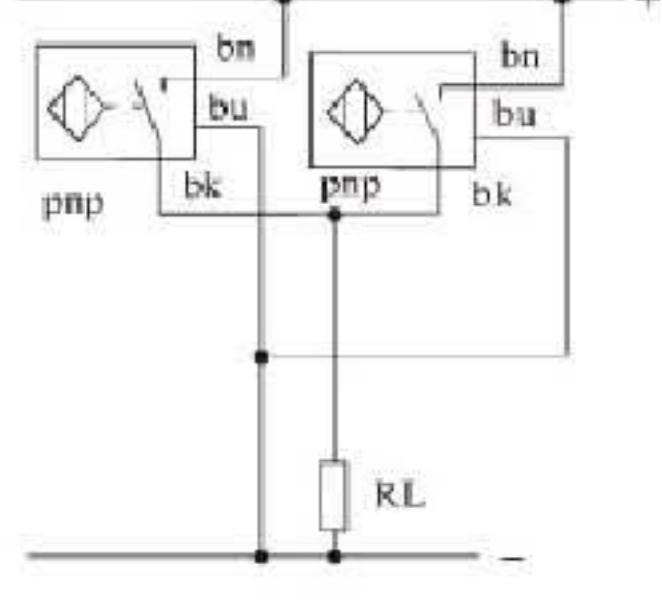
◆ 两线交流传感的串联

Series connection of three-wire DC and three-wire DC seneor Parallel connection of three-wire DC and three-wire DC sensor Series connection of two_wire AC sensor



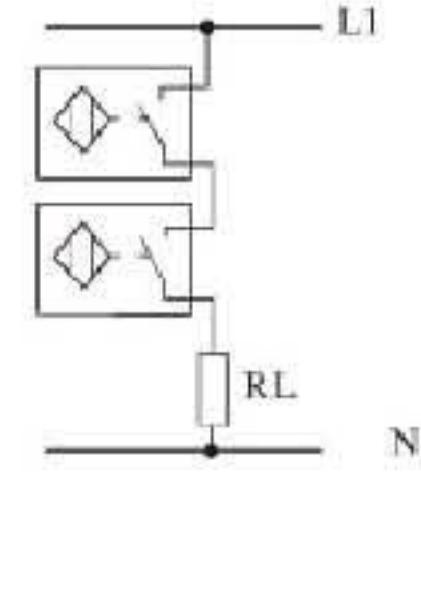
◆ 两线交流传感的并联

Parallel connection of two-wire AC sensor



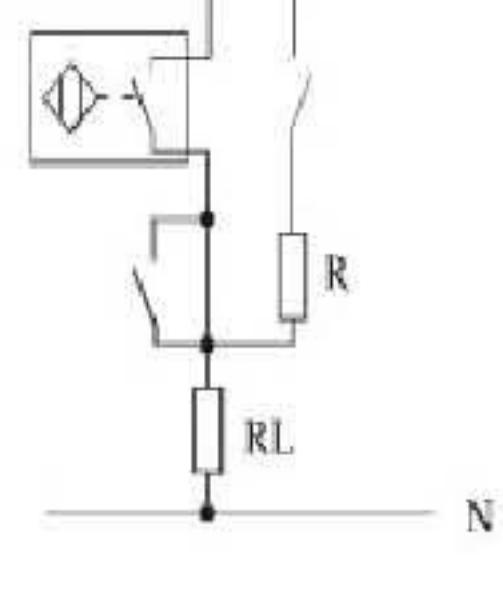
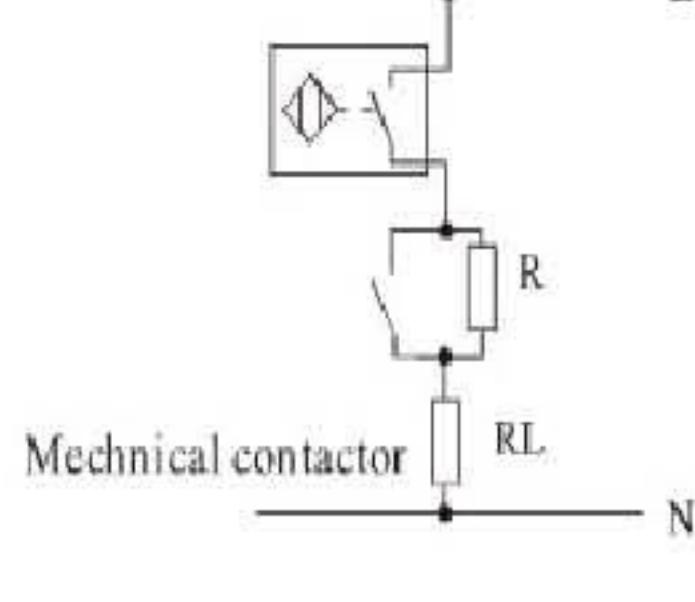
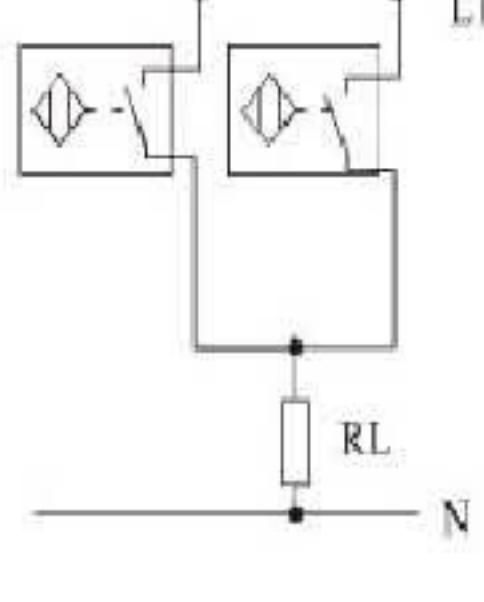
◆ 机械开关与交流传感的串联

Series connection of machinery switch and AC sensor

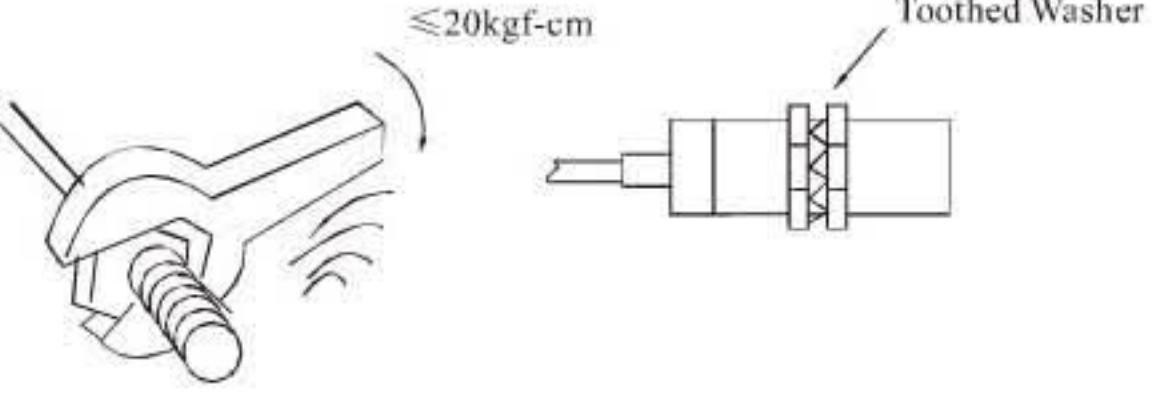
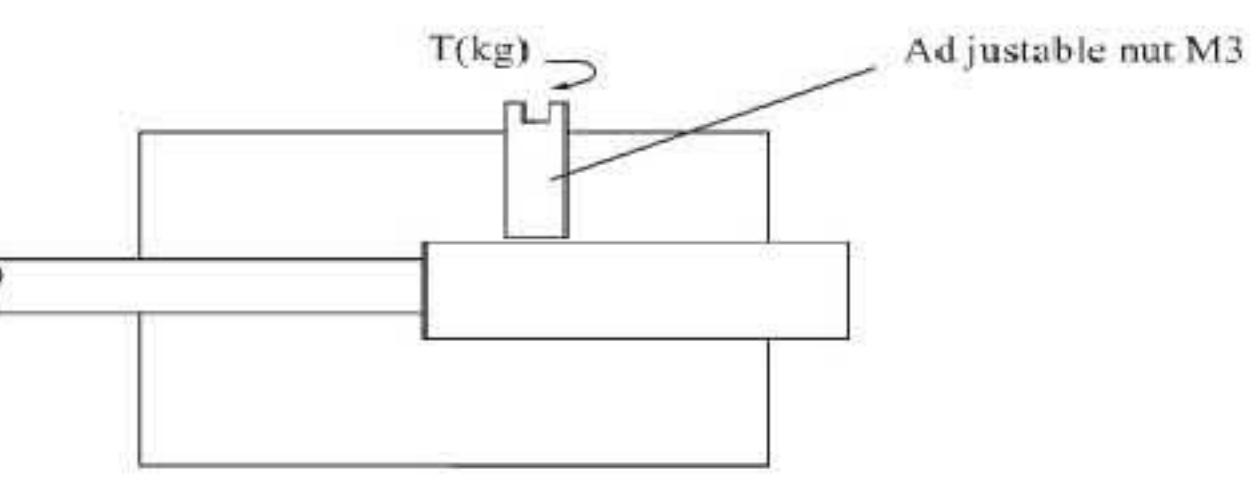
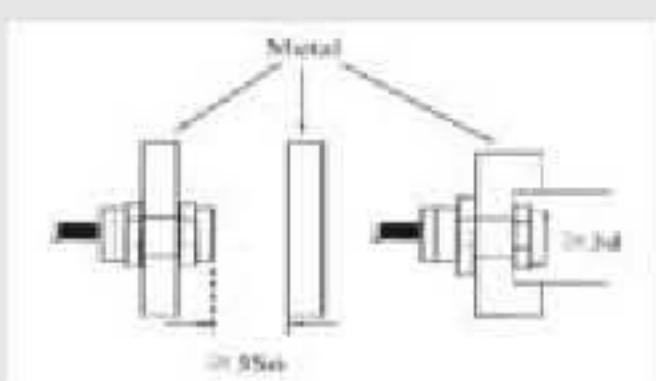
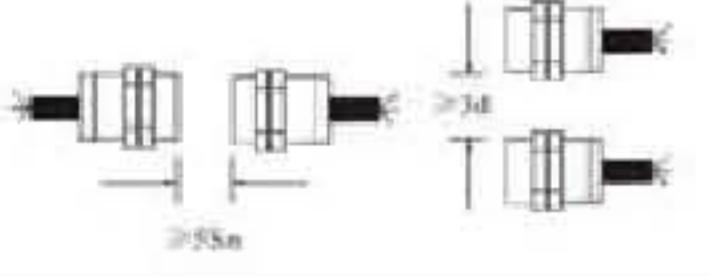
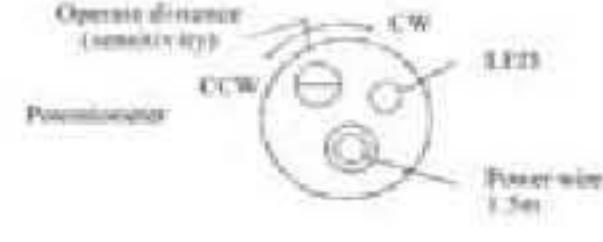
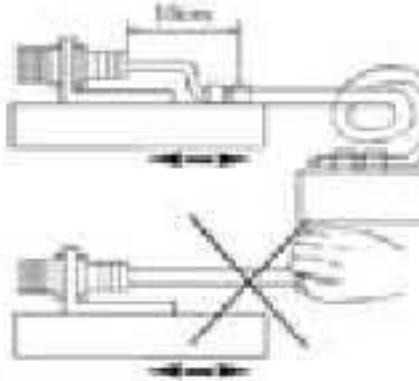


◆ 机械开关与交流传感的并联

Parallel connection of machinery switch and AC sensor

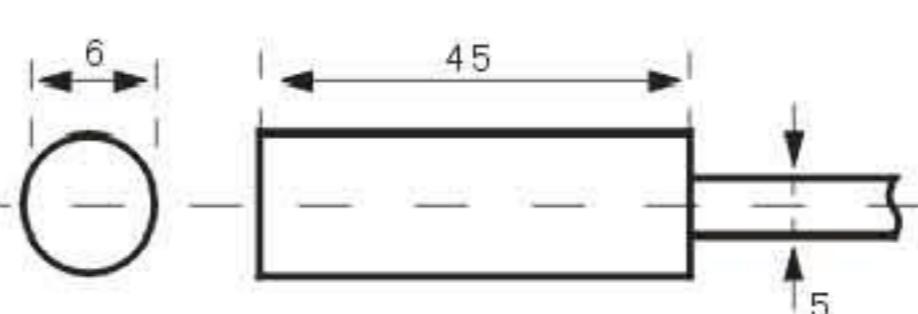
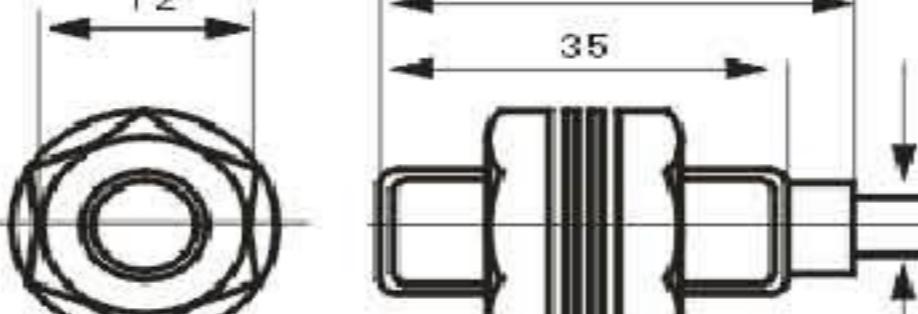
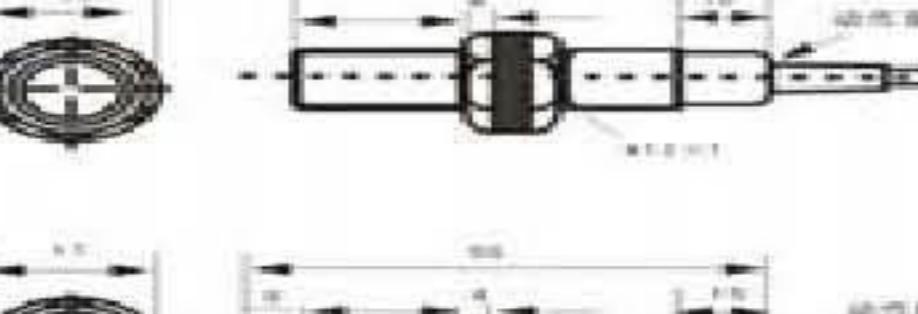


■ 正确使用和安装及注意事项: Correct use, installation and cautions

<p>◆ 螺旋式开关的安装 Mounting screw switch</p> <p>安装开关时不可采用过大力矩紧固，紧固时请务必采用齿垫圈</p> <p>◆ Do not tighten with over-torque when mounting the switch. Adopt toothed washer when tightening</p> 	<p>◆ 无螺旋式柱型开关的安装 Mounting non screw type pillar switch</p> <p>采用调节螺钉时，紧固力矩请用 2-4kgf·cm 以下安装：</p> <p>◆ When adopt adjusting screw, the tightening torque should be within 2-4kgf·cm</p> 
<p>◆ 防止非检测物体的干扰 Protection against the interference of non detected object</p> <p>在金属性上按装接近开关时，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</p> <p>◆ When mounting the proximity switch on the metal part, do refer to the following diagram. Reman a certain space in advance according to the shown diagram so as to prevent the switch from error action</p> 	<p>◆ 防止开关之间的相互干扰 Protection against mutual interference between switches</p> <p>当开关对置或并列按装时，请大于下图的尺寸按装，以免相互干扰而产生误动作。</p> <p>◆ Mount according to the size which is bigger than that in the following diagram to prevent the switch from error action resulted from mutual interference if mount the switches contra-positively or in parallel</p> 
<p>◆ 开关动作距离(灵敏度)可调节 Adjustable switch action distance(sensitivity)</p> <p>接近开关可通过微调电位器调节动作距离(灵敏度)。顺时针动作距离增大(灵敏度减低)。逆时针，反之，切忌在动作距离最大临界状态下使用。</p> <p>◆ The action distance(sensitivity) of proximity switch can be adjusted by the means of trimming potentiometer. Increase the action distance and reduce sensitivity when turn clockwise. Vice versa. Do not use in the critical state of max. action distance.</p> 	<p>◆ 开关引线的防护 Guard of switch lead-wire</p> <p>按装开关事，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。</p> <p>◆ When mount switch, fix the lead-wire at a distance about 10cm from the switch with wire clip so as to prevent the switch lead-wire from damage from outer force</p> 

■ 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，应严格按照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定货时说明，并给予定做
- ◆ DC switch should adopt insulation transformer and ensure stable voltage mains corrugation.
- ◆ If any electric power line or dynamic line passes through the surrounding of switch lead-wire, in order to 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 elementary diagram.
- ◆ If there are any special requirements to the switch like water proof, oil proof, acid proof, base proof, high temperature proof or with any other specifications, the users are required to give clear indication when placing an order. We can produce according to the requirements of the use.

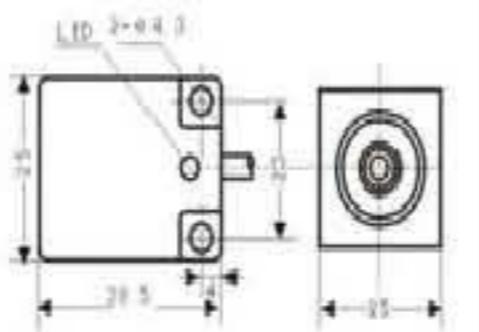
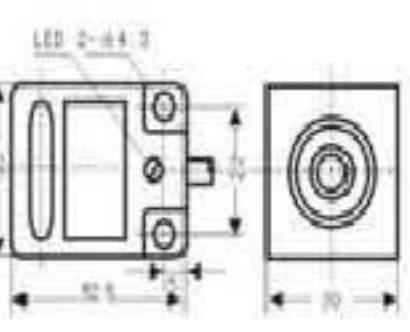
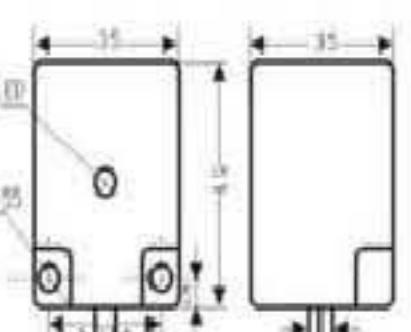
结构分类 Structural category		圆柱型 Cylinder type					
外形编号 Outward appearance code		LM6	LM8	LM12	LM14		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
埋入式 Flush	检测距离 Detection distance		1mm	1mm	2mm	3mm	
	直流 DC 6~ 36 VDC	NPN	NO	LM6-3001NA	LM8-3001NA	LM12-3002NA	LM14-3003NA
			NC	LM6-3001NB	LM8-3001NB	LM12-3002NB	LM14-3003NB
			NO+NC			LM12-3002NC	LM14-3003NC
	交流 AC 90~ 250 VAC	PNP	NO	LM6-3001PA	LM8-3001PA	LM12-3002PA	LM14-3003PA
			NC	LM6-3001PB	LM8-3001PB	LM12-3002PB	LM14-3003PB
			NO+NC			LM12-3002PC	LM14-3003PC
	二线制 Two wire system	Two wire system	NO	LM6-3001LA	LM8-3001LA	LM12-3002LA	LM14-3003LA
			NC	LM6-3001LB	LM8-3001LB	LM12-3002LB	LM14-3003LB
			NO+NC				
非埋入式 Non-Flush	继电器输出 Relay output						
	检测距离 Detection distance		1.5mm	1.5mm	4mm	5mm	
	直流 DC 6~ 36 VDC	NPN	NO	LM6-3002NA	LM8-3002NA	LM12-3004NA	LM14-3005NA
			NC	LM6-3002NB	LM8-3002NB	LM12-3004NB	LM14-3005NB
			NO+NC			LM12-3004NC	LM14-3005NC
	交流 AC 90~ 250 VAC	PNP	NO	LM6-3002PA	LM8-3002PA	LM12-3004PA	LM14-3005PA
			NC	LM6-3002PB	LM8-3002PB	LM12-3004PB	LM14-3005PB
			NO+NC			LM12-3004PC	LM14-3005PC
	二线制 Two wire system	Two wire system	NO	LM6-3002LA	LM8-3002LA	LM12-3004LA	LM14-3005LA
			NC	LM6-3002LB	LM8-3002LB	LM12-3004LB	LM14-3005LB
			NO+NC				
输出电流	继电器输出 Relay output						
	DC		150mA	150mA	200mA	200mA	
SCR/继电器 Relay					300mA	300mA	
输出电压降		直流(NPN、PNP)型 3V 以下、二线型：3.9V 以下、交流 AC 10V 以下					
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下					
标准检测物体		6×6×1(A3 铁)	8×8×1(A3 铁)	15×15×1(A3 铁)	15×15×1(A3 铁)		
重复精度		0.01	0.01	0.01	0.02		
响应频率		500Hz	500Hz/25Hz	400Hz/25Hz	300Hz/25Hz		
工作环境温度		-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C		
绝缘电阻		≥30MΩ	≥50MΩ	≥50MΩ	≥50MΩ		
外壳材料		不锈钢	金属	金属	金属		
防护等级		IP67	IP67	IP67	IP67		
可替代国内型号			E2E-X1R5□□	E2E-X5M□	LJ14A3-□□		

圆柱型 Cylinder type

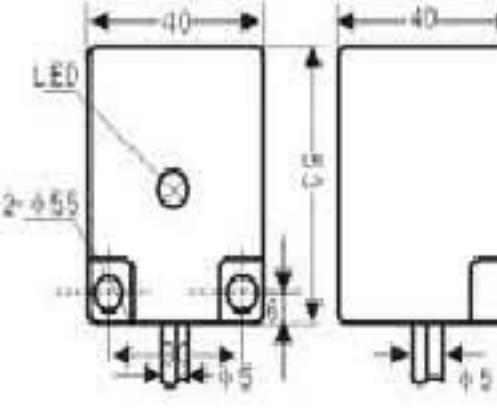
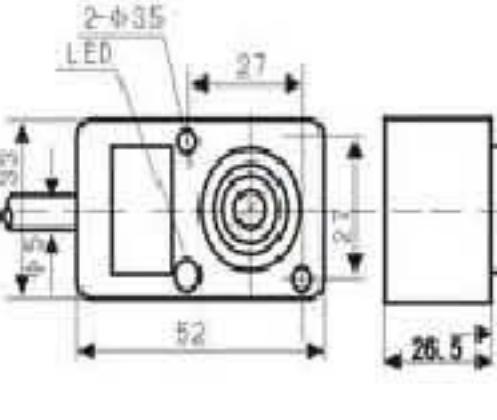
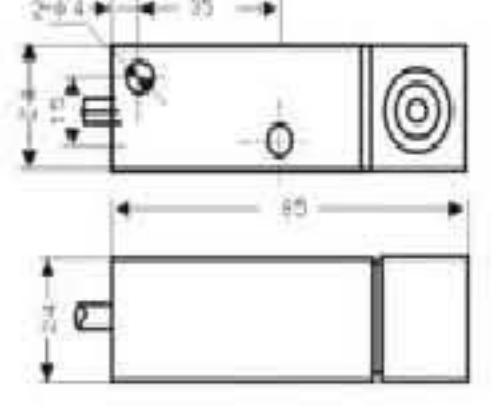
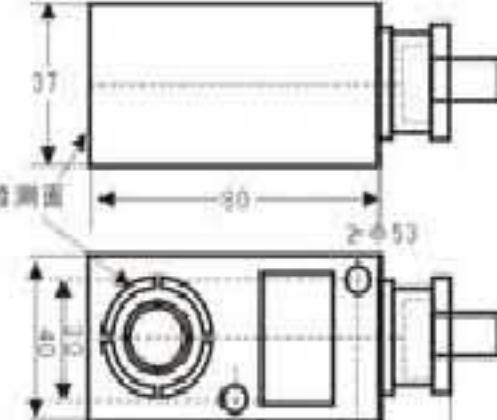
LM18	LM22	LM24	LM30	LM20
5mm	7mm	8mm	10mm	
LM18-3005NA	LM22-3007NA	LM24-3008NA	LM30-3010NA	
LM18-3005NB	LM22-3007NB	LM24-3008NB	LM30-3010NB	
LM18-3005NC	LM22-3007NC	LM24-3008NC	LM30-3010NC	
LM18-3005PA	LM22-3007PA	LM24-3008PA	LM30-3010PA	
LM18-3005PB	LM22-3007PB	LM24-3008PB	LM30-3010PB	
LM18-3005PC	LM22-3007PC	LM24-3008PC	LM30-3010PC	
LM18-3005LA	LM22-3007LA	LM24-3008LA	LM30-3010LA	
LM18-3005LB	LM22-3007LB	LM24-3008LB	LM30-3010LB	
LM18-2005A	LM22-2007A	LM24-2008A	LM30-2010A	
LM18-2005B	LM22-2007B	LM24-2008B	LM30-2010B	
LM18-2005C	LM22-2007C	LM24-2008C	LM30-2010C	
8mm	10mm	10mm	15mm	10mm
LM18-3008NA	LM22-3010NA	LM24-3010NA	LM30-3015NA	LM20-3010NA
LM18-3008NB	LM22-3010NB	LM24-3010NB	LM30-3015NB	LM20-3010NB
LM18-3008NC	LM22-3010NC	LM24-3010NC	LM30-3015NC	LM20-3010NC
LM18-3008PA	LM22-3010PA	LM24-3010PA	LM30-3015PA	LM20-3010PA
LM18-3008PB	LM22-3010PB	LM24-3010PB	LM30-3015PB	LM20-3010PB
LM18-3008PC	LM22-3010PC	LM24-3010PC	LM30-3015PC	LM20-3010PC
LM18-3008LA	LM22-3010LA	LM24-3010LA	LM30-3015LA	LM20-3010LA
LM18-3008LB	LM22-3010LB	LM24-3010LB	LM30-3015LB	LM20-3010LB
LM18-2008A	LM22-2010A	LM24-2010A	LM30-2015A	LM20-2010A
LM18-2008B	LM22-2010B	LM24-2010B	LM30-2015B	LM20-2010B
LM18-2008C	LM22-2010C	LM24-2010C	LM30-2015C	LM20-2010C
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				
直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下				
18×18×1(A3 铁)				
0.02				
200Hz/25Hz	200Hz/25Hz	200Hz/25Hz	200Hz/25Hz	200Hz/25Hz
-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
金属	金属	金属	金属	金属
IP67	IP67	IP67	IP67	IP67
LJ18A3-8-□□	LJ22A□-□-□□	LJ24A4-10-□□	E2E-X18M□	

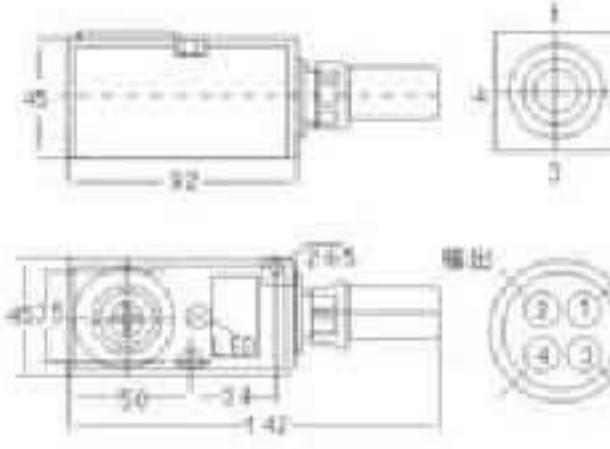
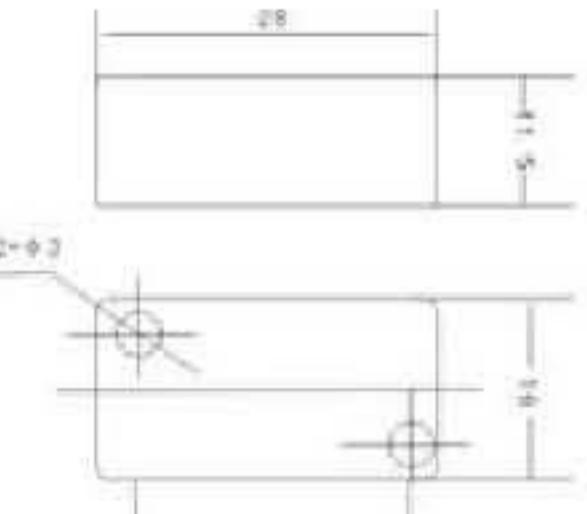
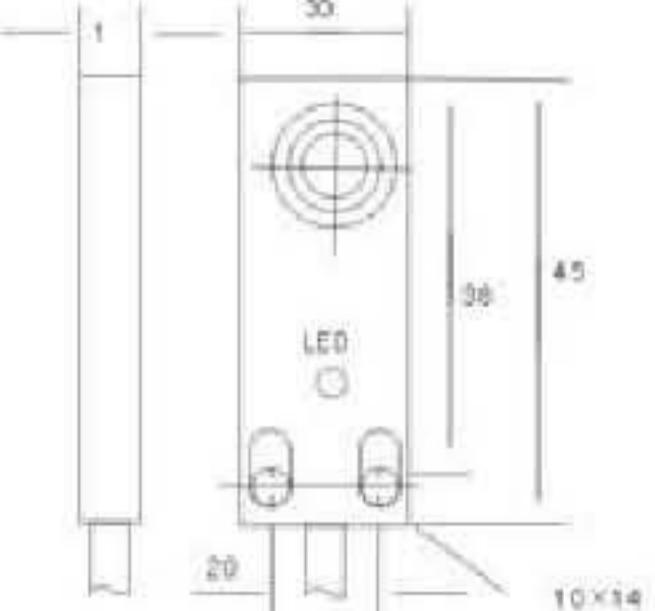
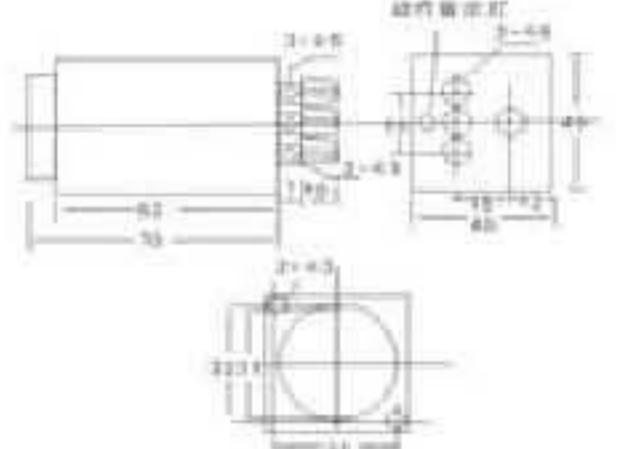
结构分类 Structural category		圆柱型 Cylinder type						
外形编号 Outward appearance code		LM34	LM35	LM38	LM40			
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
检测距离 Detection distance				12mm				
埋入式 Flush	直流 DC 6~36 VDC	NPN	NO		LM38-3012NA			
		NPN	NC		LM38-3012NB			
		NPN	NO+NC		LM38-3012NC			
	PNP	PNP	NO		LM38-3012PA			
		PNP	NC		LM38-3012PB			
		PNP	NO+NC		LM38-3012PC			
	二线制 Two wire system	Two wire system	NO		LM38-3012LA			
		Two wire system	NC		LM38-3012LB			
	交流 AC 90~250 VAC	SCR	NO		LM38-2012A			
		SCR	NC		LM38-2012B			
		SCR	NO+NC		LM38-2012C			
继电器输出 Relay output								
检测距离 Detection distance		17mm	17mm	18mm	20mm			
非埋入式 Non-flush	直流 DC 6~36 VDC	NPN	NO	LM34-3017NA	LM35-3017NA	LM38-3018NA	LM40-3020NA	
		NPN	NC	LM34-3017NB	LM35-3017NB	LM38-3018NB	LM40-3020NB	
		NPN	NO+NC	LM34-3017NC	LM35-3017NC	LM38-3018NC	LM40-3020NC	
	PNP	PNP	NO	LM34-3017PA	LM35-3017PA	LM38-3018PA	LM40-3020PA	
		PNP	NC	LM34-3017PB	LM35-3017PB	LM38-3018PB	LM40-3020PB	
		PNP	NO+NC	LM34-3017PC	LM35-3017PC	LM38-3018PC	LM40-3020PC	
	二线制 Two wire system	Two wire system	NO	LM34-3017LA	LM35-3017LA	LM38-3018LA	LM40-3020LA	
		Two wire system	NC	LM34-3017LB	LM35-3017LB	LM38-3018LB	LM40-3020LB	
	交流 AC 90~250 VAC	SCR	NO	LM34-2017A	LM35-2017A	LM38-2018A	LM40-3020B	
		SCR	NC	LM34-2017B	LM35-2017B	LM38-2018B	LM40-2005B	
		SCR	NO+NC	LM34-2017C	LM35-2017C	LM38-2018C	LM40-3020C	
继电器输出 Relay								
输出电流 DC			200mA	200mA	200mA	200mA		
输出电流 SCR/继电器 Relay				300mA/1A				
输出电压降		直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下						
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下						
标准检测物体		34×34×1(A3 铁)	40×40×1(A3 铁)	38×38×1(A3 铁)	40×40×1(A3 铁)			
重复精度		0.1						
响应频率		100Hz/15Hz						
工作环境温度		-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C			
绝缘电阻		50MΩ						
外壳材料		ABS 树脂			金属			
防护等级		IP67						
可替代国内型号				LJ38A4-18-□□	SC-□□			

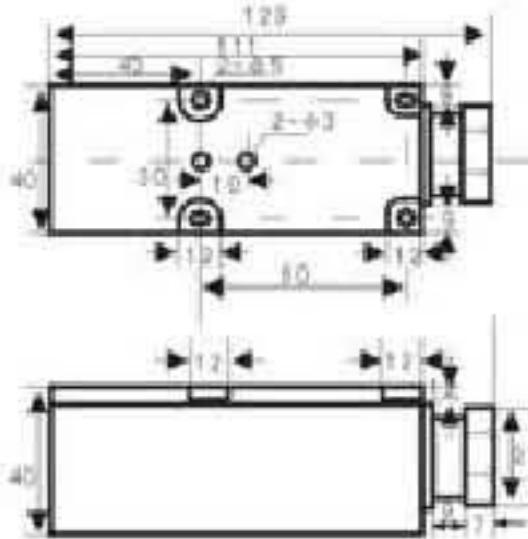
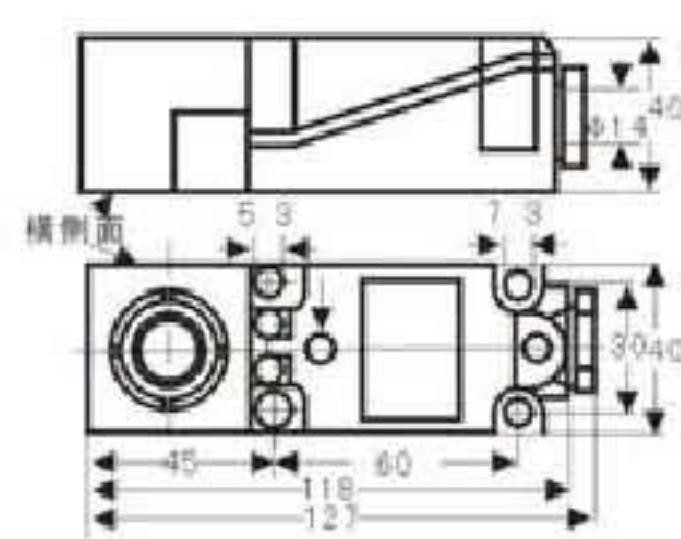
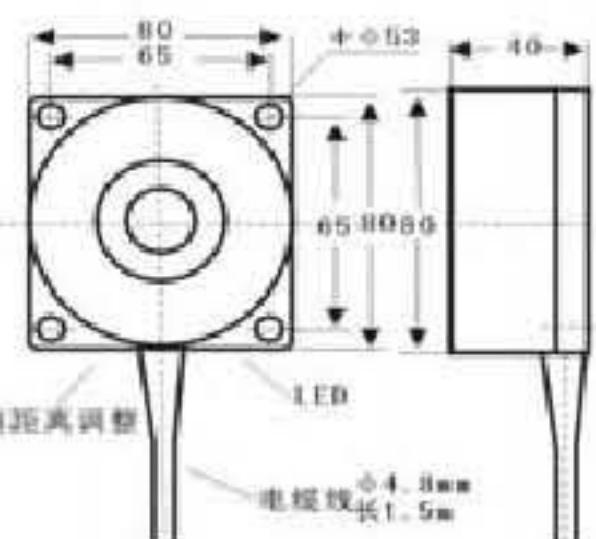
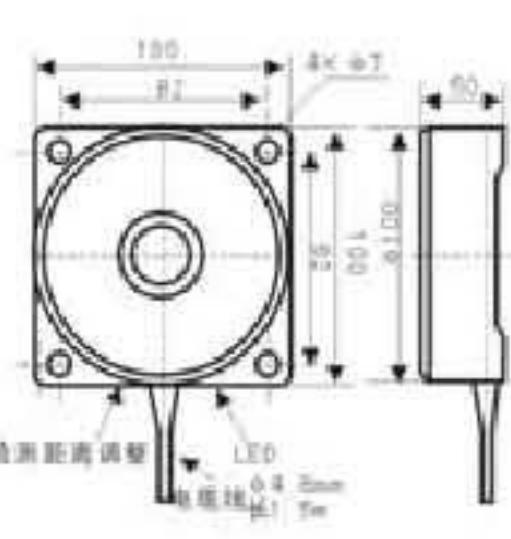
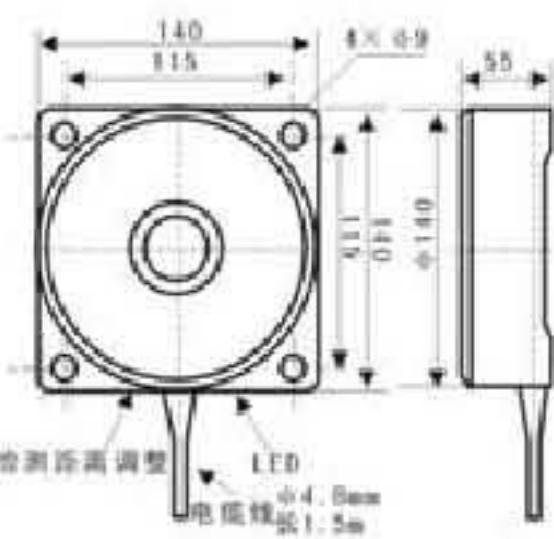
圆柱型 Cylinder type		角柱型 Angular column type				
LM480	LMF1	LMF2	LMF3			
LM480	LMF1	LMF2	LMF3			
5mm	5mm	5mm	5mm			
LMF1-3005NA	LMF2-3005NA	LMF3-3005NA				
LMF1-3005NB	LMF2-3005NB	LMF3-3005NB				
LMF1-3005PA	LMF2-3005PA	LMF3-3005PA				
LMF1-3005PB	LMF2-3005PB	LMF3-3005PB				
LMF1-3005LA	LMF2-3005LA	LMF3-3005LA				
LMF1-3005LB	LMF2-3005LB	LMF3-3005LB				
25mm						
LM480-3025NA						
LM480-3025NB						
LM480-3025NC						
LM480-3025PA						
LM480-3025PB						
LM480-3025PC						
LM480-3025A	LMF1-2005A	LMF2-2005A	LMF3-2005A			
LM480-3025B	LMF1-2005B		LMF3-2005B			
LM480-3025C						
200mA						
300mA						
直流(NPN、PNP)型 3V 以下、二线型：3.9W 以下、交流 AC 10V 以下						
直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下						
50×50×1(A3 铁)	20×20×1(A3 铁)					
0.1	0.02					
100Hz/25Hz	400Hz/25Hz					
-25℃ ~+75℃						
50MΩ						
金属	ABS 树脂					
IP67	IP67					
SFE-□□	SN04-N	TL-Q5MC1	PS17-5PN			

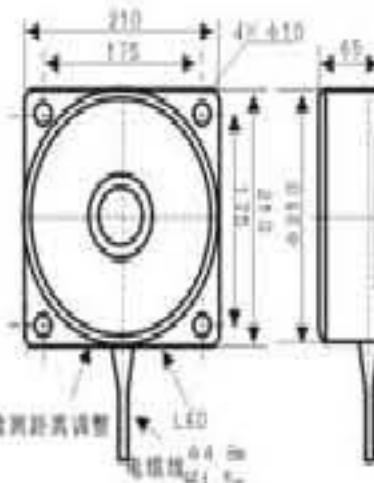
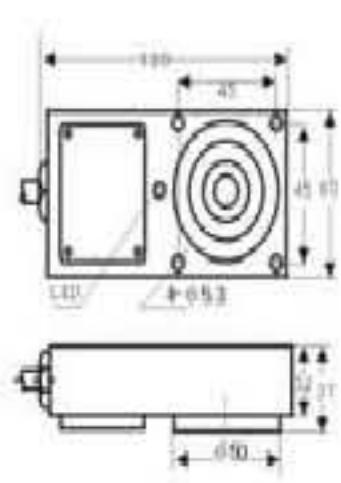
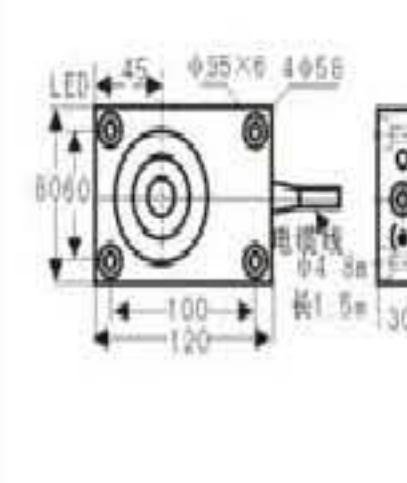
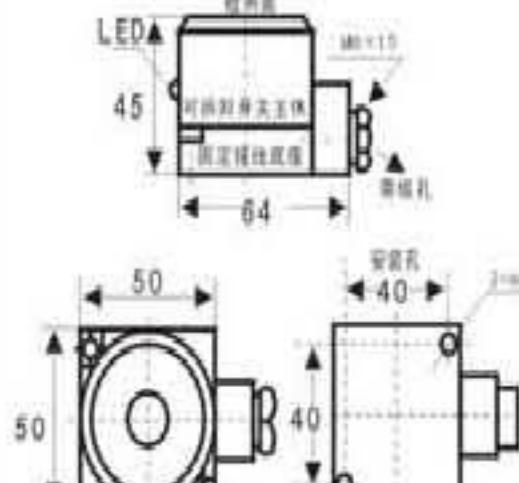
结构分类 Structural category		角柱型 Angular column type					
外形编号 Outward appearance code		LMF5	LMF6	LMF7	LMF8		
外形图例 Outward appearance illustration							
外形尺寸 Overall dimensions							
检测距离 Detection distance		2mm	8mm	10mm	10mm		
埋入式 Flush	直流 DC 6~36VDC	NPN	NO	LMF5-3002NA	LMF6-3008NA	LMF7-3010NA	LMF8-3010NA
			NC	LMF5-3002NB	LMF6-3008NB	LMF7-3010NB	LMF8-3010NB
			NO+NC	LMF5-3002NC	LMF6-3008NC	LMF7-3010NC	LMF8-3010NC
	36VDC	PNP	NO	LMF5-3002PA	LMF6-3008PA	LMF7-3010PA	LMF8-3010PA
			NC	LMF5-3002PB	LMF6-3008PB	LMF7-3010PB	LMF8-3010PB
			NO+NC	LMF5-3002PC	LMF6-3008PC	LMF7-3010PC	LMF8-3010PC
	二线制 Two wire system		NO	LMF5-3002LA	LMF6-3008LA	LMF7-3010LA	LMF8-3010LA
			NC	LMF5-3002LB	LMF6-3008LB	LMF7-3010LB	LMF8-3010LB
	交流 AC 90~250VAC	SCR 可挂硅	NO		LMF6-2008A	LMF7-2010A	LMF8-2010A
			NC		LMF6-2008B	LMF7-2010B	LMF8-2010B
			NO+NC				
继电器输出 Relay output							
非埋入式 Non-Flush	检测距离 Detection distance		4mm	10mm	15mm	15mm	
	直流 DC 6~36VDC	NPN	NO	LMF5-3004NA	LMF6-3010NA	LMF7-3015NA	LMF8-3015NA
			NC	LMF5-3004NB	LMF6-3010NB	LMF7-3015NB	LMF8-3015NB
			NO+NC	LMF5-3004NC	LMF6-3010NC	LMF7-3015NC	LMF8-3015NC
	36VDC	PNP	NO	LMF5-3004PA	LMF6-3010PA	LMF7-3015PA	LMF8-3015PA
			NC	LMF5-3004PB	LMF6-3010PB	LMF7-3015PB	LMF8-3015PB
			NO+NC	LMF5-3004PC	LMF6-3010PC	LMF7-3015PC	LMF8-3015PC
	二线制 Two wire system		NO	LMF5-3004LA	LMF6-3010LA	LMF7-3015LA	LMF8-3015LA
			NC	LMF5-3004LB	LMF6-3010LB	LMF7-3015LB	LMF8-3015LB
	交流 AC 90~250VAC	SCR 可挂硅	NO		LMF6-2010A	LMF7-2015A	LMF8-2015A
			NC		LMF6-2010B	LMF7-2015B	LMF8-2015B
			NO+NC				
继电器输出 Relay output							
输出电流	DC		200mA				
	SCR/继电器 Relay		300mA	300mA			
输出电压降		直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下					
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下					
标准检测物体		15×15×1(A3 铁)	30×30×1(A3 铁)	35×35×1(A3 铁)	40×40×1(A3 铁)		
重复精度		0.03	0.05				
响应频率		400Hz	200Hz/25Hz				
工作环境温度			-25℃ ~+75℃				
绝缘电阻			50MΩ				
外壳材料		ABS 树脂					
防护等级			IP67				
可替代国内型号			TL-N5ME□□	TL-N10M□			

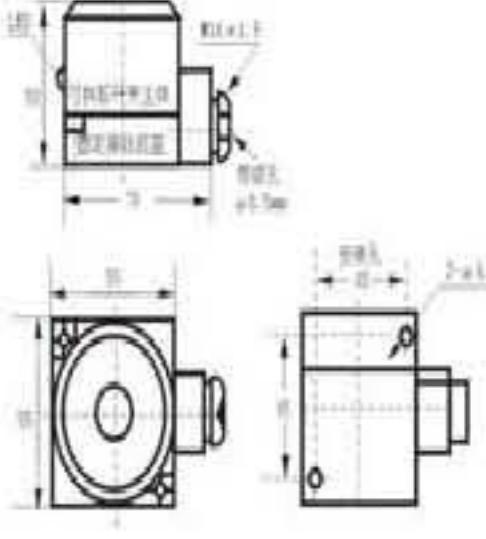
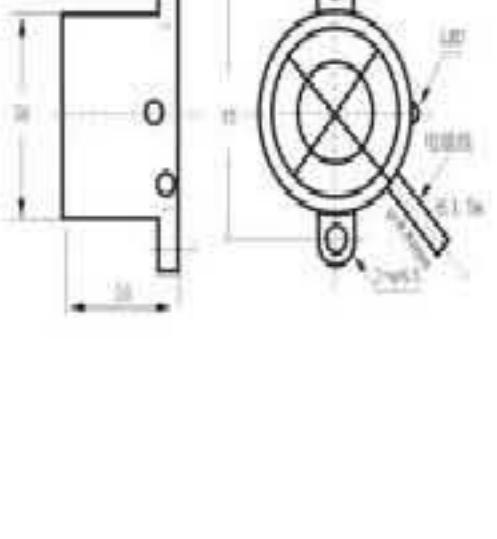
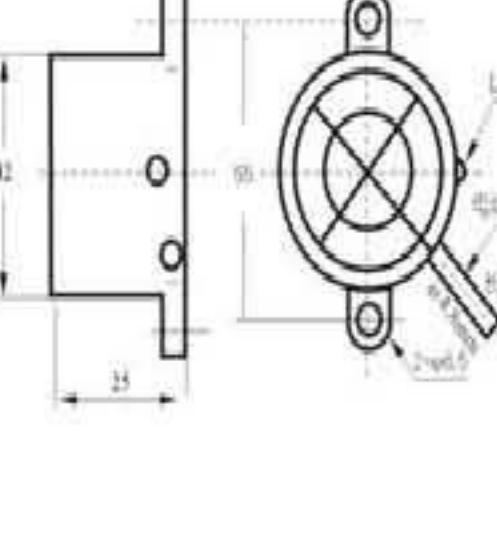
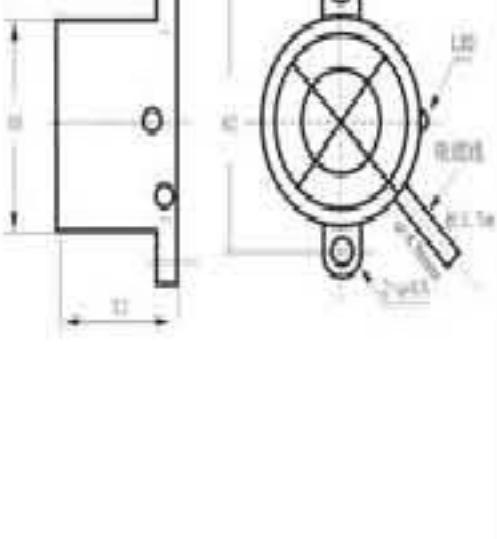
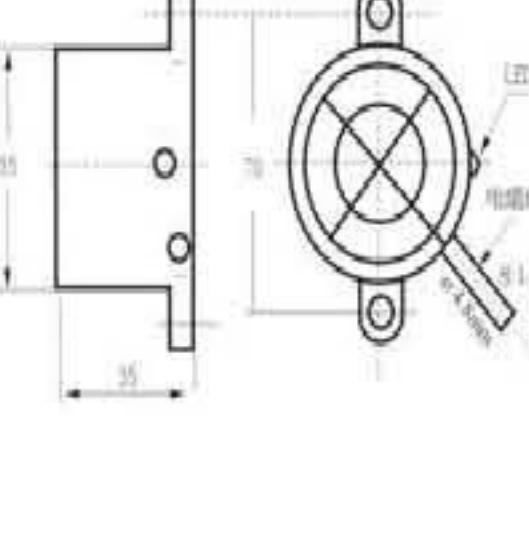
角柱型 Angular column type

LMF10	LMF12	LMF13	LMF15	LMF16				
								
								
15mm			2mm					
LMF10-3015NA			LMF15-3002NA					
LMF10-3015NB			LMF15-3002NB					
LMF10-3015NC			LMF15-3002NC					
LMF10-3015PA			LMF15-3002PA					
LMF10-3015PB			LMF15-3002PB					
LMF10-3015PC			LMF15-3002PC					
LMF10-3015LA			LMF15-3002LA					
LMF10-3015LB			LMF15-3002LB					
LMF10-2015A			LMF15-2002A					
LMF10-2015B			LMF15-2002B					
LMF10-2015C								
20mm	8mm	8mm	4mm	15mm				
LMF10-3020NA	LMF12-3008NA	LMF13-3008NA	LMF15-3004NA	LMF16-3015NA				
LMF10-3020NB	LMF12-3008NB	LMF13-3008NB	LMF15-3004NB	LMF16-3015NB				
LMF10-3020NC	LMF12-3008NC	LMF13-3008NC	LMF15-3004NC	LMF16-3015NC				
LMF10-3020PA	LMF12-3008PA	LMF13-3008PA	LMF15-3004PA	LMF16-3015PA				
LMF10-3020PB	LMF12-3008PB	LMF13-3008PB	LMF15-3004PB	LMF16-3015PB				
LMF10-3020PC	LMF12-3008PC	LMF13-3008PC	LMF15-3004PC	LMF16-3015PC				
LMF10-3020LA	LMF12-3008LA	LMF13-3008LA	LMF15-3004LA	LMF16-3015LA				
LMF10-3020LB	LMF12-3008LB	LMF13-3008LB	LMF15-3004LB	LMF16-3015LB				
LMF10-2020A	LMF12-2008A	LMF13-2008A	LMF15-2004A	LMF16-2015A				
LMF10-2020B	LMF12-2008B	LMF13-2008B	LMF15-2004B	LMF16-2015B				
LMF10-2020C	LMF12-2008C	LMF13-2008C		LMF16-2015C				
				LMF16-2015JC				
300mA	300mA	300mA	200mA	300mA				
500mA	500mA	500mA	300mA/1A	500mA/2A				
直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下								
直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下								
45×45×1(A3 铁 iron)	25×25×1(A3 铁 iron)	25×25×1(A3 铁 iron)	15×15×F(A3 铁 iron)	45×45×F(A3 铁 iron)				
0.05	0.04	0.04	0.02	0.05				
100Hz/25Hz	200Hz/25Hz			100Hz/25Hz				
-25°C ~+75°C								
50MΩ	50MΩ							
ABC 树脂 Resin								
IP67								
TL-N20M□	LJ1A-24	LJD-□□	ST-F-□	LJ2-□□/□□□				

结构分类 Structural category			角柱型 Angular column type			
外形编号 Outward appearance code		LMF17	LMF22	LMF29	LMF35	
外形图例 Outward appearance illustration						
外形尺寸 Overall dimensions						
埋入式 Flush	检测距离 Detection distance		2mm	5mm		
	直流 DC 6~36VDC	NPN	NO	LMF22-3002NA	LMF29-3005NA	
			NC	LMF22-3002NB	LMF29-3005NB	
			NO+NC	LMF22-3002NC	LMF29-3005NC	
	6~36VDC	PNP	NO	LMF22-3002PA	LMF29-3005PA	
			NC	LMF22-3002PB	LMF29-3005PB	
			NO+NC	LMF22-3002PC	LMF29-3005PC	
	二线制 Two wire system		NO	LMF22-3002LA	LMF29-3005LA	
			NC	LMF22-3002LB	LMF29-3005LB	
	交流 AC 90~250VAC	SCR 可挂硅	NO	LMF22-3002A	LMF29-3005A	
			NC	LMF22-3002B	LMF29-3005B	
			NO+NC			
非埋入式 Non-Flush	继电器输出 Relay output					
	检测距离 Detection distance		20mm	4mm	8mm	
	直流 DC 6~36VDC	NPN	NO	LMF17-3020NA	LMF29-3008NA	
			NC	LMF17-3020NB	LMF29-3008NB	
			NO+NC	LMF17-3020NC	LMF29-3008NC	
	6~36VDC	PNP	NO	LMF17-3020PA	LMF29-3008PA	
			NC	LMF17-3020PB	LMF29-3008PB	
			NO+NC	LMF17-3020PC	LMF29-3008PC	
	二线制 Two wire system		NO	LMF17-3020LA	LMF29-3008LA	
			NC	LMF17-3020LB	LMF29-3008LB	
	交流 AC 90~250VAC	SCR 可挂硅	NO	LMF17-2020A	LMF35-2015A	
			NC	LMF17-2020B	LMF35-2015C	
			NO+NC	LMF17-2020C		
输出电流	继电器输出 Relay output		LMF17-2020JC			
	DC			200mA		
SCR/继电器 Relay				300mA		
输出电压降		直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下				
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下				
标准检测物体		50×50×1(A3 铁)	8×8×1(A3 铁)	15×15×1(A3 铁)	15×15×1(A3 铁)	
重复精度		0.05	0.01	0.01	0.02	
响应频率		200Hz/25Hz	500Hz/25Hz	400Hz/25Hz	300Hz/25Hz	
工作环境温度		-25℃ ~+70℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	
绝缘电阻		≥50MΩ	≥50MΩ	≥50MΩ	≥50MΩ	
外壳材料		ABS 树脂	ABS 树脂	ABS 树脂	ABS 树脂	
防护等级		IP67	IP67	IP67	IP65	
可替代国内型号					JDK-1.2 正负	

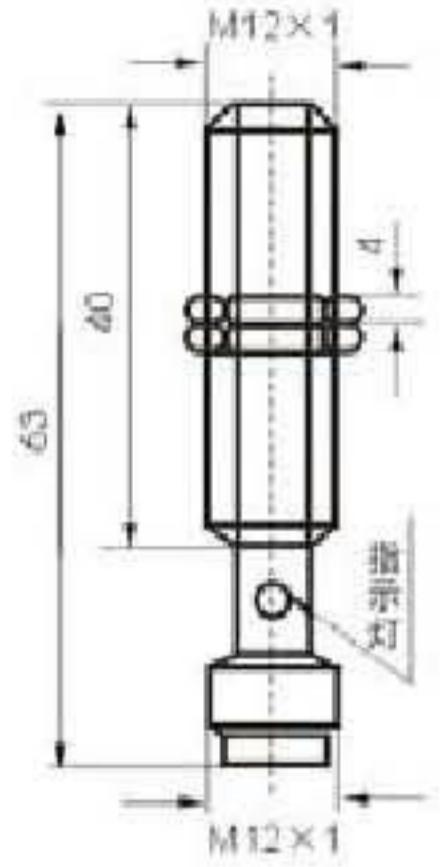
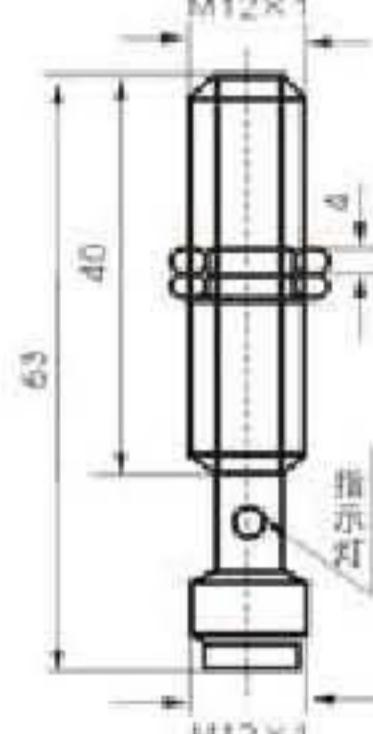
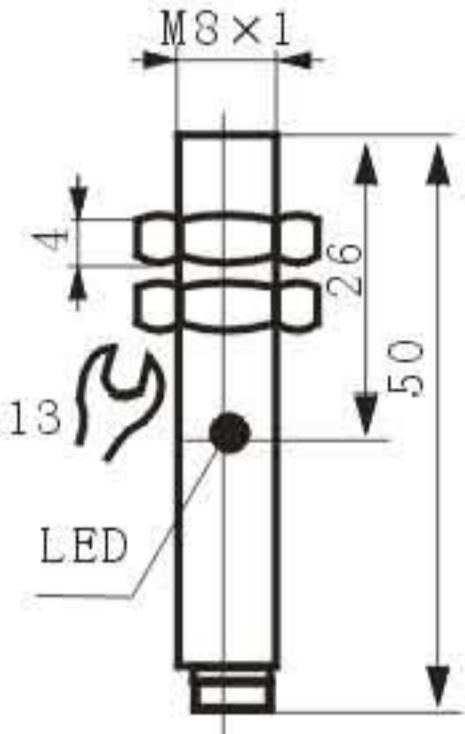
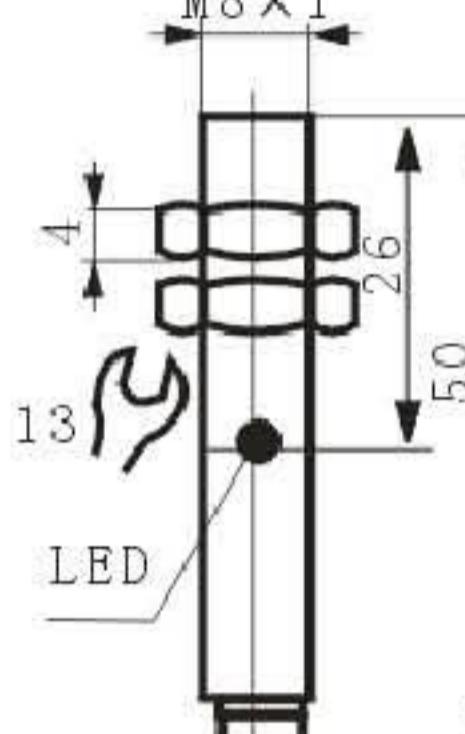
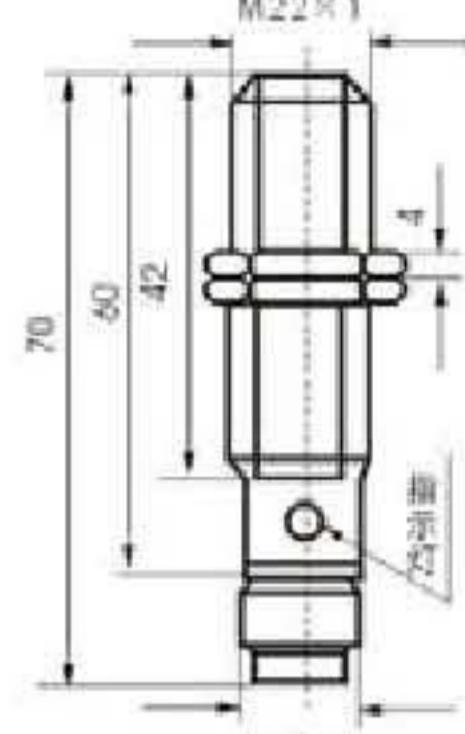
角柱型 Angular column type		平面安装型 plane installation type		
LMF36	LMF37	LMF38	LMF39	LMF40
				
				
15mm				
LMF37-3015NA				
LMF37-3015NB				
LMF37-3015NC				
LMF37-3015PA				
LMF37-3015PB				
LMF37-3015PC				
LMF37-3015LA				
LMF37-3015LB				
LMF37-2015A				
LMF37-2015B				
LMF37-2015C				
LMF37-2015JC				
1-20mm	20mm	1-40mm	1-50mm	80mm
LMF36-3020NA	LMF37-3020NA	LMF38-3040NA	LMF39-3050NA	LMF40-3080NA
LMF36-3020NB	LMF37-3020NB	LMF38-3040NB	LMF39-3050NB	LMF40-3080NB
LMF36-3020NC	LMF37-3020NC	LMF38-3040NC	LMF39-3050NC	LMF40-3080NC
LMF36-3020PA	LMF37-3020PA	LMF38-3040PA	LMF39-3050PA	LMF40-3080PA
LMF36-3020PB	LMF37-3020PB	LMF38-3040PB	LMF39-3050PB	LMF40-3080PB
LMF36-3020PC	LMF37-3020PC	LMF38-3040PC	LMF39-3050PC	LMF40-3080PC
LMF36-3020LA	LMF37-3020LA	LMF38-3040LA	LMF39-3050LA	LMF40-3080LA
LMF36-3020LB	LMF37-3020LB	LMF38-3040LB	LMF39-3050LB	LMF40-3080LB
LMF36-2020A	LMF37-2020A	LMF38-2040A	LMF39-2050A	LMF40-2080A
LMF36-2020B	LMF37-2020B	LMF38-2040B	LMF39-2050B	LMF40-2080B
LMF36-2020C	LMF37-2020C	LMF38-2040C	LMF39-2050C	LMF40-2080C
LMF36-2020JC	LMF37-2020JC	LMF38-2040JC	LMF39-2050JC	LMF40-2080JC
200mA	200mA	200mA	200mA	200mA
300mA/2A	300mA/2A	300mA/2A/10A	300mA/2A/10A	300mA/2A/10A
直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下				
直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下				
50×50×1(A3 铁)	50×50×1(A3 铁)	100×100×1(A3 铁)	120×120×1(A3 铁)	160×160×1(A3
0.05	0.05	0.5	0.5	0.5
200Hz/25Hz	200Hz/25Hz	50Hz/10Hz	50Hz/10Hz	10Hz/5Hz
-25°C ~+75°C	-25°C ~+75°C	-25°C ~+75°C	-25°C ~+75°C	-25°C ~+75°C
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
ABS 树脂	ABS 树脂	ABS 树脂·玻璃钢	ABS 树脂·玻璃钢	ABS 树脂·玻璃
IP67	IP67	IP65	IP65	IP65
	HY-A20□	TCD-2040□	TCA-2050□	TCB-2080□

外形编号 Outward appearance code		LMF41	LMF42	LMF43	LMF50		
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 6~36VDC	NPN	NO				
		NC					
		NO+NC					
	6~36VDC	PNP	NO				
		NC					
		NO+NC					
	二线制 Two-wire	NO					
		NC					
	交流 AC 90~250VAC	SCR 可挂硅	NO				
		NC					
		NO+NC					
继电器输出 Relay output							
非埋入式 Non-flush	检测距离 Detection distance		0-120mm	0-25mm	40mm	20mm	
	直流 DC 6~36VDC	NPN	NO	LMF41-30120NA	LMF42-3025NA	LMF43-3040NA	LMF50-3020NA
			NC	LMF41-30120NB	LMF42-3025NB	LMF43-3040NB	LMF50-3020NB
			NO+NC	LMF41-30120NC	LMF42-3025NC	LMF43-3040NC	LMF50-3020NC
	6~36VDC	PNP	NO	LMF41-30120PA	LMF42-3025PA	LMF43-3040PA	LMF50-3020PA
			NC	LMF41-30120PB	LMF42-3025PB	LMF43-3040PB	LMF50-3020PB
			NO+NC	LMF41-30120PC	LMF42-3025PC	LMF43-3040PC	LMF50-3020PC
	二线制 Two-wire	NO					
		NC					
	交流 AC 90~250VAC	SCR 可挂硅	NO	LMF41-20120A	LMF42-2025A	LMF43-2040A	LMF50-2020A
			NC	LMF41-20120B	LMF42-2025B	LMF43-2040B	LMF50-2020B
			NO+NC	LMF41-20120C	LMF42-2025C	LMF43-2040C	LMF50-2020C
	继电器输出 Relay output		LMF41-20120JC	LMF42-2025JC	LMF43-2040JC	LMF50-2020JC	
输出电流		DC	200mA	200mA	200mA	200mA	
		SCR/继电器 Relay	300mA/2A/10A	300mA/2A	300mA/2A	300mA/2A	
输出电压降		直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下					
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下					
标准检测物体		250×250×1(A3 铁)	80×80×1(A3 铁)	100×100×1(A3 铁)	60×60×1(A3 铁)		
重复精度		0.5	0.05	0.05	0.05		
响应频率		10Hz/5Hz	50Hz/10Hz	30Hz/10Hz	200Hz/25Hz		
工作环境温度		-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃		
绝缘电阻		50MΩ	50MΩ	50MΩ	50MΩ		
外壳材料		玻璃钢	ABS 树脂	ABS 树脂	ABS 树脂		
防护等级		IP65	IP65	IP65	IP65		
可替代国内型号		TCC-2120□			HD-2020□		

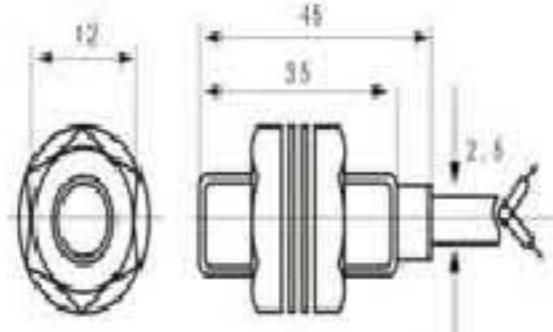
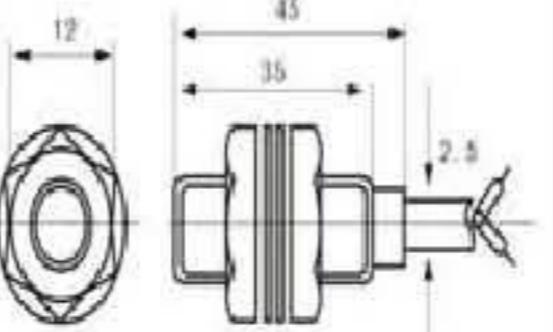
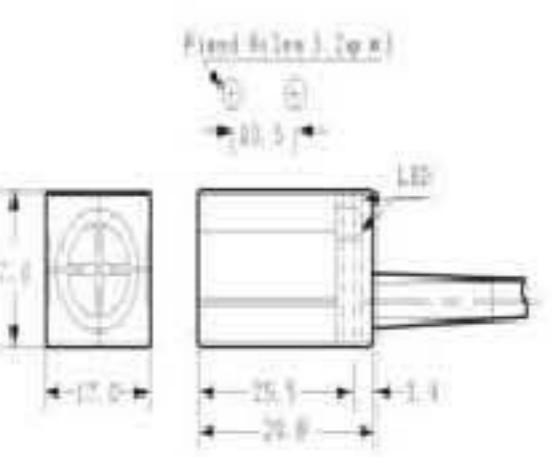
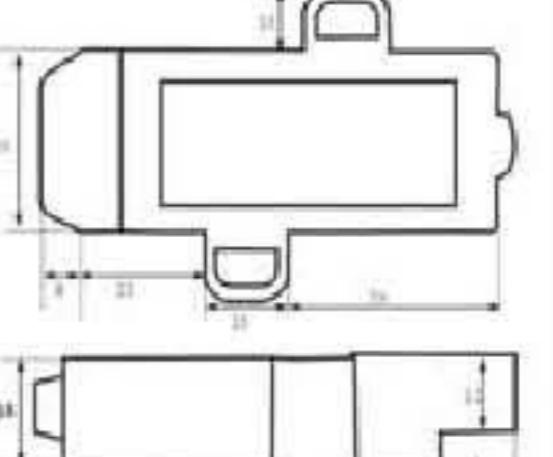
平面安装型 plane installation type				
LMF55	LM36	LM42	LM48	LM55
				
				
25mm	15mm	20mm	20mm	25mm
LMF55-3025NA	LM36-3015NA	LM42-3020NA	LM48-3020NA	LM55-3025NA
LMF55-3025NB	LM36-3015NB	LM42-3020NB	LM48-3020NB	LM55-3025NB
LMF55-3025NC	LM36-3015NC	LM42-3020NC	LM48-3020NC	LM55-3025NC
LMF55-3025PA	LM36-3015PA	LM42-3020PA	LM48-3020PA	LM55-3025PA
LMF55-3025PB	LM36-3015PB	LM42-3020PB	LM48-3020PB	LM55-3025PB
LMF55-3025PC	LM36-3015PC	LM42-3020PC	LM48-3020PC	LM55-3025PC
	LM36-3015LA	LM42-3020LA	LM48-3020LA	LM55-3025LA
	LM36-3015LB	LM42-3020LB	LM48-3020LB	LM55-3025LB
LMF55-2025A	LM36-3015A	LM42-2020A	LM48-2020A	LM55-2025A
LMF55-2025B	LM36-3015B	LM42-2020B	LM48-2020B	LM55-2025B
LMF55-2025C			LM48-2020C	LM55-2025C
LMF55-2025JC				
300mA	300mA	300mA	300mA	300mA
500mA/2A	300mA	500mA/2A	500mA	500mA
直流(NPN、PNP)型 3V 以下、二线型：3.9V 以下、交流 AC 10V 以下				
直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下				
70×70×1(A3 铁)	45×45×1(A3 铁)	25×25×1(A3 铁)	60×60×1(A3 铁)	55×55×1(A3 铁)
0.05	0.05	0.01	0.05	0.05
200Hz/25Hz	200Hz/10Hz	200Hz/25Hz	200Hz/10Hz	200Hz/10Hz
-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃	-25℃ ~+75℃
50MΩ	50MΩ	50MΩ	50MΩ	50MΩ
ABS 树脂	ABS 树脂	ABS 树脂	ABS 树脂	ABS 树脂
IP67	IP67	IP67	IP67	IP67
			SD-□□	SE-□□

结构分类 Structural category		平面安装型 plane installation type 角柱型 Angular column type		接插件型 Connector type	
外形编号 Outward appearance code		LMF45	LM370	LM8-□□T	LM8-□□T3
外形图例 Outward appearance illustration					
外形尺寸 Overall dimensions					
埋入式 Flush	检测距离 Detection distance			1mm	1mm
	直流 DC 6~36 VDC	NPN	NO	LM8-3001NAT	LM8-3001NAT3
			NC	LM8-3001NBT	LM8-3001NBT3
			NO+NC		
	PNP		NO	LM8-3001PAT	LM8-3001PAT3
			NC	LM8-3001PBT	LM8-3001PBT3
			NO+NC		
	二线制 Two wire		NO	LM8-3001LAT	LM8-3001LAT3
			NC		
	交流 AC 90~250 VAC	SCR 可挂壁	NO		
			NC		
			NO+NC		
继电器输出 Relay output					
非埋入式 Non-flush	检测距离 Detection distance		0~50mm	40mm	2mm
	直流 DC 6~36 VDC	NPN	NO	LMF45-3050NA	LM8-3002NAT
			NC	LMF45-3050NB	LM8-3002NBT
			NO+NC	LMF45-3050NC	LMF370-3040NC
	PNP		NO	LMF45-3050PA	LMF370-3040PA
			NC	LMF45-3050PB	LMF370-3040PB
			NO+NC	LMF45-3050PC	LMF370-3040PC
	二线制 Two wire system		NO	LMF45-3050LA	LMF370-3040LA
			NC	LMF45-3050LB	LMF370-3040LB
	交流 AC 90~250 VAC	SCR 可挂壁	NO	LMF45-2050A	LM8-2002AT
			NC	LMF45-2050B	LM8-2002BT
			NO+NC		
继电器输出 Relay output					
输出电流	DC		200mA	200mA	150mA
	SCR/继电器 Relay		500mA	500mA	150mA
输出电压降		直流(NPN、PNP)型 3V 以下、二线型: 3.9V 以下、交流 AC 10V 以下			
消耗电流		直流(NPN、PNP)型 DC 12V 时 8mA、24V 时 15mA、交流 AC 10mA 以下			
标准检测物体		80×80×1(A3 铁)	55×55×1(A3 铁)	8×8×1(A3 铁)	8×8×1(A3 铁)
重复精度		0.05	0.05	0.01	0.01
响应频率		200Hz/5Hz	200Hz/10Hz	500Hz/10Hz	500Hz/25Hz
工作环境温度		-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C
绝缘电阻		≥30MΩ	≥50MΩ	≥50MΩ	≥50MΩ
外壳材料		塑料	塑料	金属	金属
防护等级		IP67	IP67	IP67	IP67
可替代国内型号				E2E-X1R5-M1	E2E-X2ME1-M1

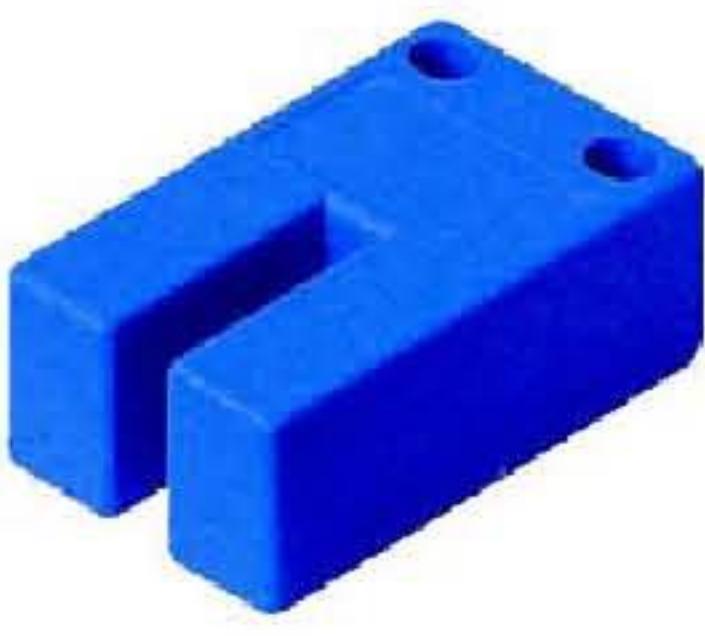
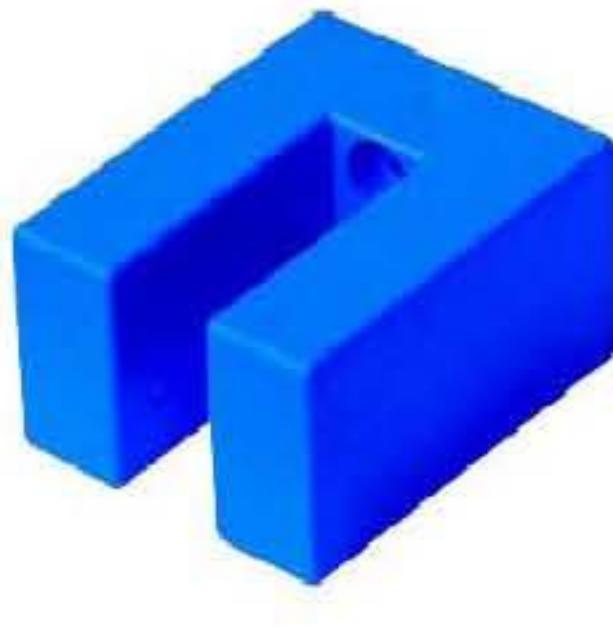
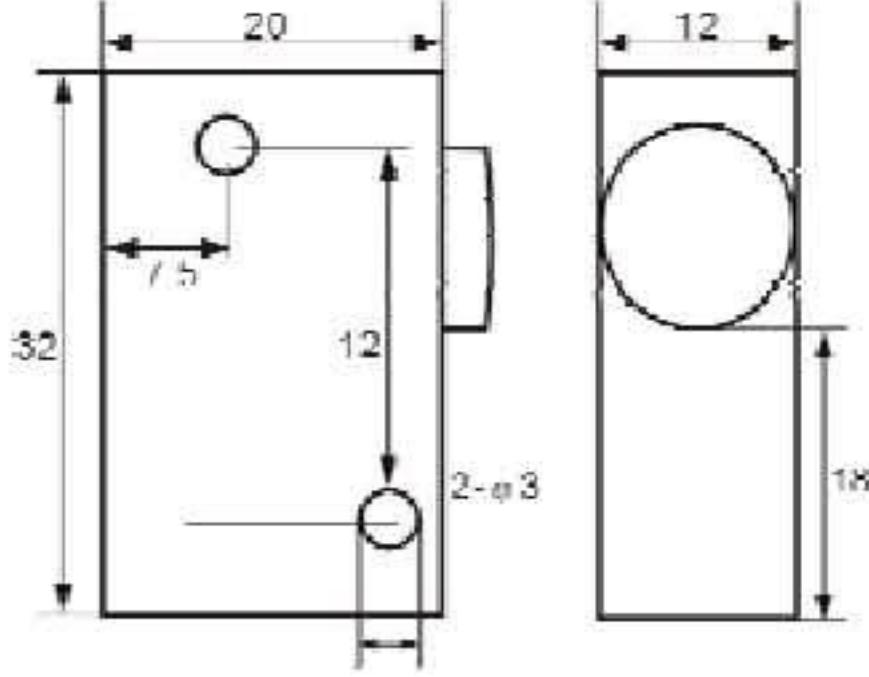
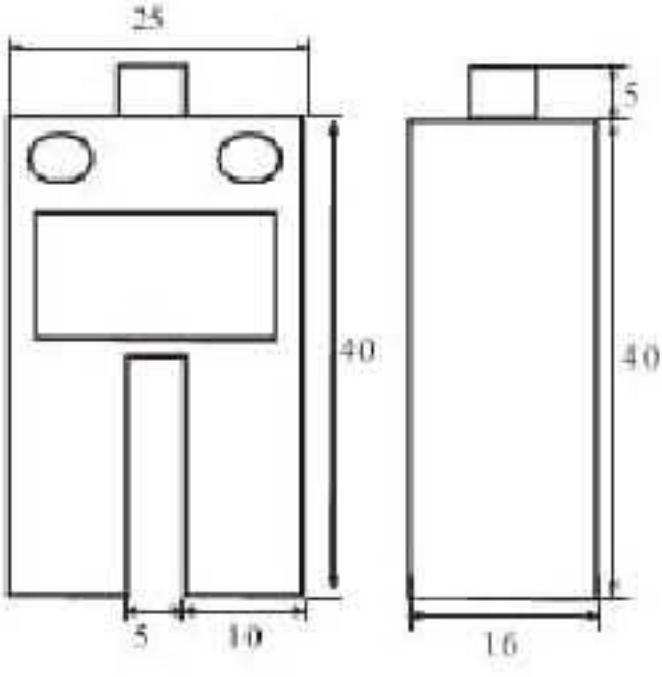
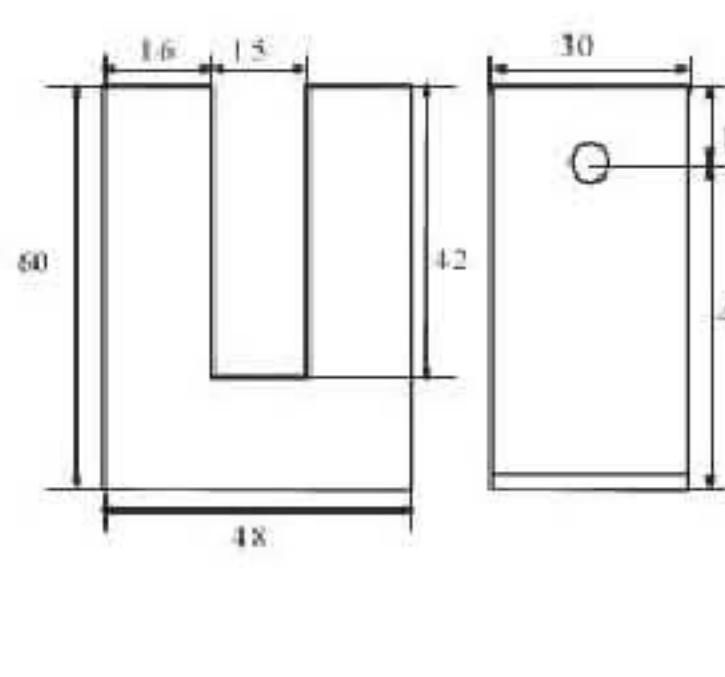
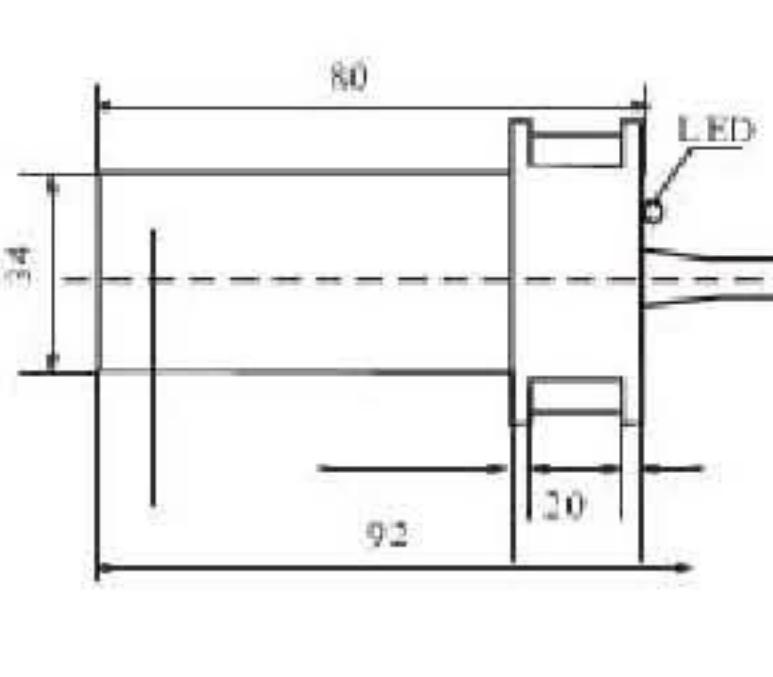
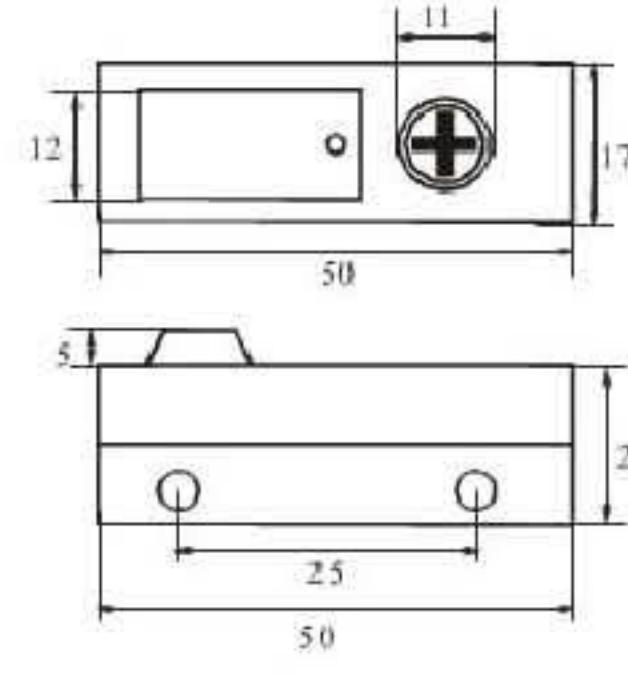
接插件型 Connector type

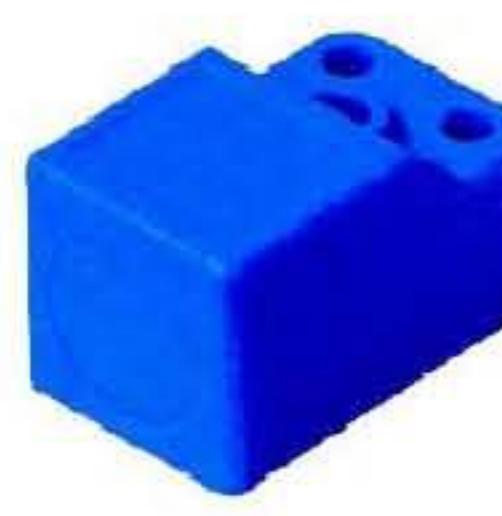
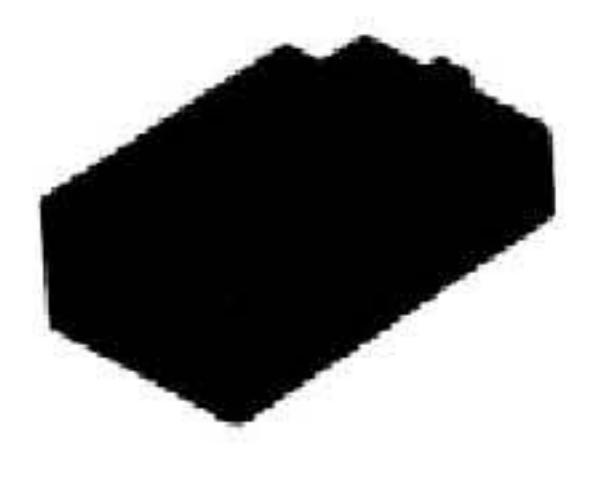
LM12-□T	LM12-□T3	LM18-□T	LM18-□T3	LM22-□T
				
				
2mm	2mm	5mm	5mm	7mm
LM12-3002NAT	LM12-3002NAT3	LM18-3005NAT	LM18-3005NAT3	LM22-3007NAT
LM12-3002NBT	LM12-3002NBT3	LM18-3005NBT	LM18-3005NBT3	LM22-3007NBT
LM12-3002NCT	LM12-3002NCT3	LM18-3005NCT	LM18-3005NCT3	LM22-3007NCT
LM12-3002PAT	LM12-3002PAT3	LM18-3005PAT	LM18-3005PAT3	LM22-3007PAT
LM12-3002PBT	LM12-3002PBT3	LM18-3005PBT	LM18-3005PBT3	LM22-3007PBT
LM12-3002PCT	LM12-3002PCT3	LM18-3005PCT	LM18-3005PCT3	LM22-3007PCT
LM12-3002LAT	LM12-3002LAT3	LM18-3005LAT	LM18-3005LAT3	LM22-3007LAT
LM12-3002LBT	LM12-3002LBT3	LM18-3005LBT	LM18-3005LBT3	LM22-3007LBT
LM12-2002AT	LM12-2002AT3	LM18-2005AT	LM18-2005AT3	LM22-2007AT
LM12-2002BT	LM12-2002BT3	LM18-2005BT	LM18-2005BT3	LM22-2007BT
4mm	5mm	15mm	20mm	4mm
LM12-3004NAT	LM12-3004NAT3	LM18-3008NAT	LM18-3008NAT3	LM22-3010NAT
LM12-3004NBT	LM12-3004NBT3	LM18-3008NBT	LM18-3008NBT3	LM22-3010NBT
LM12-3004NCT	LM12-3004NCT3	LM18-3008NCT	LM18-3008NCT3	LM22-3010NCT
LM12-3004PAT	LM12-3004PAT3	LM18-3008PAT	LM18-3008PAT3	LM22-3010PAT
LM12-3004PBT	LM12-3004PBT3	LM18-3008PBT	LM18-3008PBT3	LM22-3010PBT
LM12-3004PCT	LM12-3004PCT3	LM18-3008PCT	LM18-3008PCT3	LM22-3010PCT
LM12-3004LAT	LM12-3004LAT3	LM18-3008LAT	LM18-3008LAT3	LM22-3010LAT
LM12-3004LBT	LM12-3004LBT3	LM18-3008LBT	LM18-3008LBT3	LM22-3010LBT
LM12-2004AT	LM12-2004AT3	LM18-2008AT	LM18-2008AT3	LM22-2010AT
LM12-2004BT	LM12-2004BT3	LM18-2008BT	LM18-2008BT3	LM22-2010BT
200mA	200mA	200mA	200mA	200mA
		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 8 mA、24V 时 15 mA、交流 AC 10 mA 以下 DC: <15mA AC: <10mA				
12×12×1(A3 铁 iron)	12×12×1(A3 铁 iron)	18×18×1(A3 铁 iron)	18×18×1(A3 铁 iron)	25×25×1(A3 铁 iron)
0.01	0.01	0.02	0.02	0.036
400Hz/10Hz	400Hz/10Hz	200Hz/10Hz	200Hz/10Hz	200Hz/5Hz
-25℃~+70℃	-25℃ ~+70℃	-25℃ ~+65℃	-25℃ ~+65℃	-25℃ ~+65℃
50MΩ	50MΩ	50MΩ	50MΩ	
金属 Metal				
IP67	IP67	IP67	IP67	IP67

结构分类 Structural category		接插件型 Connector type						
外形编号 Outward appearance code		LM22-□T3	LM30-□T	LM30-□T3	LMF16-□T			
外形图例 Outward appearance illustration								
外形尺寸 Overall dimensions								
埋入式 Flush	检测距离 Detection distance		0.7mm	0.7mm	5mm	5mm		
	直流 DC 6-36V VD	NPN	NO	LM05-3001NA	LM06-3001NA	LMF4-3005NA	LMF11-3005NA	
			NC			LMF4-3005NB	LMF11-3005NB	
			NO+NC				LMF1-3005NC	
	6-36V VD	PNP	NO	LM05-3001PA	LM06-3001PA	LMF4-3005PA	LMF1-3005PA	
			NC			LMF4-3005PB	LMF11-3005PB	
			NO+NC				LMF11-3005PC	
	一线制 Two-wire system	NO				LMF4-3005LA	LMF1-3005LA	
		NC				LMF4-3005LB	LMF11-3005LB	
	交流 AC 90~250V VA	SCR 可挂硅 Controlable silicon	NO					
			NC					
			NO+NC					
非埋入式 Non-flush	检测距离 Detection distance							
	直流 DC 6-36V VD	NPN	NO					
			NC					
			NO+NC					
	6-36V VD	PNP	NO					
			NC					
			NO+NC					
	二线制 Twowire system	NO						
		NC						
	交流 AC 90~250V VA	SCR 可挂硅 Controlable silicon	NO+NC					
			继电器输出 Relay					
输出电流 Control output	DC		100mA	100mA	200mA			
	SCR/继电器 Relay							
输出电压降 output voltage drop		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 DC/AC Consumption		直流(NPN、PNP)型 DC 12V 时 8 mA、24V 时 15 mA、交流 AC 10 mA 以下 DC: <15mA AC: <10mA						
标准检测物体 Standard detected		8×8×1(A3 铁 iron)	8×8×1(A3 铁 iron)	20×20×1(A3 铁 iron)	20×20×1(A3 铁 iron)			
重复精度 Repeated precision		0.01	0.01	0.03	0.05			
响应频率 DC/AC Response		500Hz	500Hz	300Hz	500Hz			
工作环境温度 Working environment		-25℃~+70℃	-25℃~+70℃	-25℃~+70℃	-25℃~+70℃			
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ			
外壳材料 Shell material		金属 Metal		ABS 树脂 Resin				
防护等级 Protection grade		IP67	IP67	IP67	IP67			
可替代国内型号 Alternative model				PS05-N、PS05-P	PL-05N PL-05P			

结构分类 Structural category		圆柱型 Cylinder type		角柱型 Angular column type	
外形编号 Outward appearance code		LM05	LM06	LMF4	LMF11
外形图例 Outward appearance illustration					
外形尺寸 Overall dimensions					
埋入式 Flush	检测距离 Detection distance		0.7mm	0.7mm	5mm
	NPN DC 6-36V C	NO	LM05-3001NA	LM06-3001NA	LMF4-3005NA
		NC			LMF11-3005NB
		NO+NC			LMF1-3005NC
	PNP Two-wire system	NO	LM05-3001PA	LM06-3001PA	LMF4-3005PA
		NC			LMF11-3005PB
		NO+NC			LMF11-3005PC
	二线制 Twowire system AC 90~250VA	NO			LMF4-3005LA
		NC			LMF11-3005LB
		NO+NC			
非埋入式 Non-flush	继电器输出 Relay output				
	检测距离 Detection distance				
	NPN DC 6-36V D	NO			
		NC			
		NO+NC			
	PNP Two-wire system	NO			
		NC			
		NO+NC			
	SCR 可挂硅 Controlable silicon AC 90	NO			
		NC			
		NO+NC			
输出电流 Controloutput	继电器输出 Relay output				
	DC		100mA	100mA	200mA
SCR/继电器 Relay					
输出电压降 output voltage drop		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 DC/AC Consumption		直流(NPN、PNP)型 DC 12V 时 8 mA、24V 时 15 mA、交流 AC 10 mA 以下 DC: <15mA AC: <10mA			
标准检测物体 Standard detected		8×8×1(A3 铁 iron)	8×8×1(A3 铁 iron)	20×20×1(A3 铁 iron)	20×20×1(A3 铁 iron)
重复精度 Repeated precision		0.01	0.01	0.03	0.05
响应频率 DC/AC Response		500Hz	500Hz	300Hz	500Hz
工作环境温度 Working environment		-25°C~+70°C	-25°C~+70°C	-25°C~+70°C	-25°C~+70°C
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ
外壳材料 Shell material		金属 Metal		ABS 树脂 Resin	
防护等级 Protection grade		IP67	IP67	IP67	IP67

角柱型 Angular column type

LMF21	LMF14	LMF27	LMF340	LMF30
				
				
4mm LMF21				
4mm	5mm	15mm	20mm	4mm
LMF21-3004NA	LMF14-3005NA	LMF27-3015NA	LMF340-3020NA	LMF30-3004NA
LMF21-3004NB	LMF14-3005NB	LMF27-3015NB	LMF340-3020NB	LMF30-3004NB
	LMF14-3005NC	LMF27-3015NC	LMF340-3020NC	LMF30-3004NC
LMF21-3004PA	LMF14-3005PA	LMF27-3015PA	LMF340-3020PA	LMF30-3004PA
LMF21-3004PB	LMF14-3005PB	LMF27-3015PB	LMF340-3020PB	LMF30-3004PB
	LMF14-3005PC	LMF27-3015PC	LMF340-3020PC	LMF30-3004PC
LMF21-3004LC	LMF14-3005LA	LMF27-3015LA	LMF340-3020LA	LMF30-3004LA
	LMF14-3005LB	LMF27-3015LB	LMF340-3020LB	
	LMF14-2005A	LMF27-2015A	LMF340-2020A	LMF30-2004A
	LMF14-2005B	LMF27-2015B	LMF340-2020B	LMF30-2004B
200mA	200mA	200mA	200mA	200mA
	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 8 mA、24V 时 15 mA、交流 AC 10 mA 以下 DC: <15mA AC: <10mA				
12×12×1(A3 铁 iron)	18×18×1(A3 铁 iron)	30×30×1(A3 铁 iron)	35×35×1(A3 铁 iron)	15×15×1(A3 铁 iron)
0.01	0.05	0.05	0.05	0.01
500Hz/5Hz	500Hz/10Hz	300Hz/10Hz	300Hz/10Hz	500Hz/5Hz
-25°C~+70°C	-25°C ~+70°C	-25°C ~+70°C	-25°C ~+70°C	
50MΩ	50MΩ	50MΩ	50MΩ	
ABC 塑料 Plastic				
IP67	IP67	IP67	IP67	IP67

结构分类 Structural category		角柱型 Angular column type				
外形编号 Outward appearance code		LMF380	LMF23	LMF24	LMF25	
外形图例 Outward appearance illustration						
外形尺寸 Overall dimensions						
埋入式 Flush	检测距离 Detection distance			4mm	5mm	
	直流 DC 6- 36 VDC	NPN	NO		LMF21-3004NA	
			NC		LMF11-3005NA	
			NO+NC		LMF11-3005NB	
	6- 36 VDC	PNP	NO		LMF21-3004PA	
			NC		LMF11-3005PB	
			NO+NC		LMF11-3005PC	
	二线制 Two wire system		NO		LMF21-3004LA	
			NC		LMF11-3005LB	
	交流 AC 90~ 250 VAC	SCR 可挂硅 Control- able silicon	NO			
			NC			
			NO+NC			
	继电器输出 Relay					
非埋入式 Non-flush	检测距离 Detection distance		40mm	5mm	5mm	
	直流 DC 6- 36 VDC	NPN	NO	LMF380-3040NA	LMF23-3005NA	
			NC	LMF380-3040NB	LMF24-3005NA	
			NO+NC	LMF380-3040NC	LMF25-3005NB	
	6- 36 VDC	PNP	NO	LMF380-3040PA	LMF23-3005PA	
			NC	LMF380-3040PB	LMF24-3005PB	
			NO+NC	LMF380-3040PC	LMF25-3005PC	
	二线制 Two wire system		NO	LMF380-3040LA	LMF23-3005LA	
			NC	LMF380-3040LB	LMF25-3005LB	
	交流 AC 90~ 250 VAC	SCR 可挂硅 Control- able silicon	NO	LMF380-2040A		
			NC	LMF380-2040B		
			NO+NC			
	继电器输出 Relay					
输出电流 Control output	DC		200mA	200mA	200mA	
	SCR/继电器 Relay		500mA		500mA	
输出电压降 output voltage drop		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 DC/AC Consumption		直流(NPN、PNP)型 DC 12V 时 8 mA、24V 时 15 mA、交流 AC 10 mA 以下 DC: <15mA AC: <10mA				
标准检测物体 Standard detected		50×50×1(A3 铁 iron)	20×20×1(A3 铁 iron)	12×12×1(A3 铁 iron)	18×18×1(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	500Hz	500Hz/5Hz	500Hz/10Hz	
工作环境温度 Working environment		-25℃~+70℃	-25℃ ~+70℃	-25℃ ~+70℃	-25℃ ~+70℃	
绝缘电阻 Insulation resistance		50MΩ	50MΩ	50MΩ	50MΩ	
外壳材料 Shell material		ABC 塑料 Plastic				
防护等级 Protection grade		IP67	IP67	IP67	IP67	
可替代国内型号 Alternative model at		NJ40P-FP-A2-P1				