一些重要材料的介电常数如下表:

The dielectric constants foe 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 |
|---|---|---|---|---|---|---|---|
| 合成树脂粘接剂 Synthectic 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 Prorcelain | 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

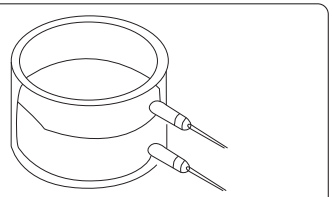


图1、液位测量--塑料或玻璃器皿
Liquid level measurement-plastic or glass container

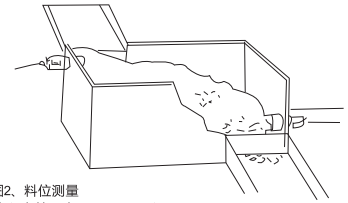


图2、料位测量
Material level measurement

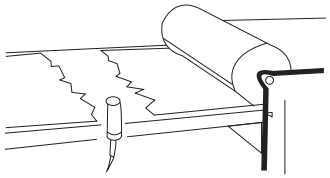


图3、断板检测
chart 3 checking for broken board

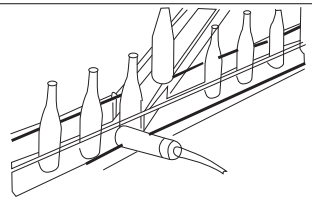


图4、瓶子计数
Fig.4 Count the bottles

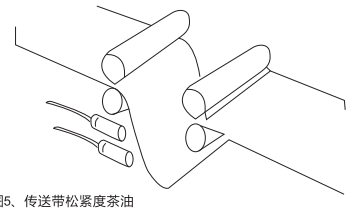


图5、传送带松紧度茶油
Fig.5 detect the tightness of conveyor belt

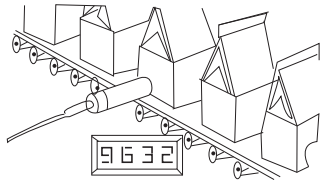
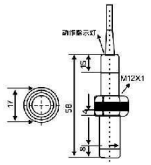
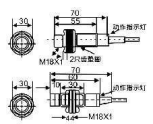
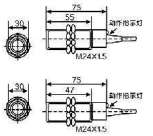
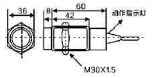


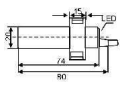
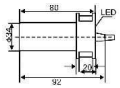
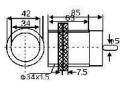
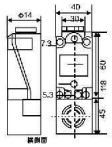
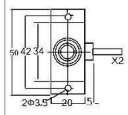

图6、计数及料位检测
Fig.6 Counter and detect the material level



电容式接近开关
CAPACITANCE PROXIMITY SWITCH

| 结构分类 Structural category | | | | 电容式接近开关 Capacitance proximity switch | | | |
|---|---|---|---|---|---|---|---|
| 外形编号Outward Appearance code | | | | CM12 | CM18 | CM24 | CM30 |
| 外形图例 Outward appearance illustration | | | |  |  |  |  |
| 外形尺寸 Overall dimensions | | | |  |  |  |  |
| | 检测距离 DETECTION DISTANCE | | | 0-2mm | 0-5mm | 0-8mm | 0-10mm |
| 埋入式 Flush | 直流 DC 6-36 VDC | NPN | NO | CM12-3002NA | CM18-3005NA | CM24-3008NA | CM30-3010NA |
| | | | NC | CM12-3002NB | CM18-3005NB | CM24-3008NB | CM30-3010NB |
| | | | NO+NC | CM12-3002NC | CM18-3005NC | CM24-3008NC | CM30-3010NC |
| | | 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 | | | |
| 可输出电压降 Output voltage drop DC/AC | | | | 直流(NPN PNP)3V以下，交流型:7V以下、DC＜3V、AC＜7V | | | |
| 响应频率 DC/AC Response frequency | | | | 直流:50Hz，交流型:10Hz | | | |
| 外壳材料 Shell material | | | | 金属 Metal | ABS树脂/金属 Resin,Metal | 金属 Metal | 金属 Metal/ABS树脂 Resin |
| 工作环境温度 Working environment temperature | | | | -25℃~70℃ | | | |
| 绝缘电阻 Insulation resistance | | | | 50MΩ | | | |
| 防护等级 Protection grade | | | | IEC标准IP54 IEC standard IP54 | | | |
| 可替代国内型号 Alyemative model at home and abroad | | | | | LJC18A3-□□ | LJC24A3-□□ | E2K-X15M□ |

# 电容式接近开关
# CAPACITANCE PROXIMITY SWITCH

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



# 霍尔传感器
# HALL SENSOR

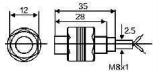
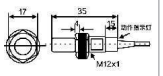
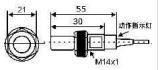
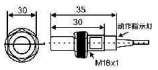
## 简介 BriefIntroduction

- 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-sensitve 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.

## 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 pore like, TTL.MOS

## 型号及参数 Model and parameters

| 外形编号Outward Appearance code | | SM8 | SM12 | SM14 | SM18 |
|---|---|---|---|---|---|
| 外形图例 Outward appearance illustration | |  |  |  |  |
| 外形尺寸 Overall dimensions | |  |  |  |  |
| 检测距离Detection distance | | 10mm | 10mm | 10mm | 10mm |
| 电源电压Mains voltage | | 5~24VDC | 5~24VDC | 5~24VDC | 5~24VDC |
| 可检测物体Detectable object | | 永磁体Permanent magnet | 永磁体Permanent magnet | 永磁体Permanent magnet | 永磁体Permanent magnet |
| 输出低电平电压Outputlowlevelvoltage | | 200mV | 200mV | 200mV | 200mV |
| 输出高电平电流Output high level current | | 0.1uA | 0.1uA | 0.1uA | 0.1uA |
| 电源电流Mains current | | 8mA | 8mA | 8mA | 8mA |
| 开关频率ON-OFF frequency | | 320KHz | | | |
| 工作点磁强度 Working point magnetic density | | 22mT | | | |
| 外壳材料Shell materia | | 金属Metal | | | |
| 环境温度Ambient temperature | | -25℃-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 |