

## 一、简介 Brief Introduction





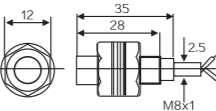
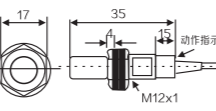
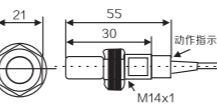
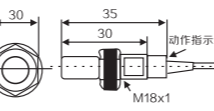
SM系列霍尔传感器是由电压调整器，霍尔电压发生器，差分放大器，施密特触发器和集电极开路的输出级组成的磁敏传感器，其输入为磁感应强度、输出是一个数字电压讯号。

SM series Hall sensor is a kind of magnetic-sensitive sensor consisting of voltage regulator, Hall voltage generator, differential amplifier, Schmidt trigger and the output pole of collector open circuit. Its input is the magnetic flux density. The output is a digital voltage signal.

## 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

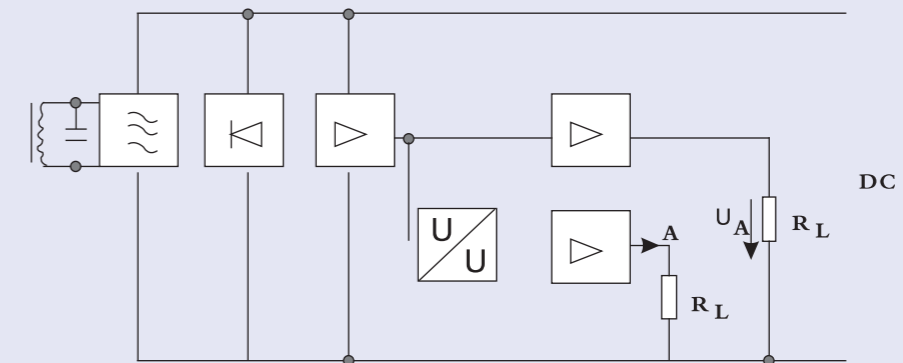
外形编号 Outward appearance code	SM8	SM12	SM14	SM18
外形图例 OUTWARD APPEARANCE ILLUSTRATION				
外形尺寸 OVERALL DIMENSIONS				
检测距离 Detection distance	10mm	10mm	10mm	10mm
电源电压 Mains voltage	5~24VDC	5~24VDC	5~24VDC	5~24VDC
可检测物体 Detectable object	永磁体 Permanent magnet	永磁体 Permanent magnet	永磁体 Permanent magnet	永磁体 Permanent magnet
输出低电平电压 Output low level voltage	200mV	200mV	200mV	200mV
输出高电平电流 Output high level current	0.1uA	0.1uA	0.1uA	0.1uA
电源电流 Mains current	8mA	8mA	8mA	8mA
开关频率 ON-OFF frequency	320KHz			
工作点磁强度 Working point magnetic density	22mT			
外壳材料 Shell material	金属 Metal			
环境温度 Ambient temperature	-25°C ~ 70°C			
防护等级 Protection structure	IEC 标准 Ip67 standard Ip67			
具备型号 Model available	NPN 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...）

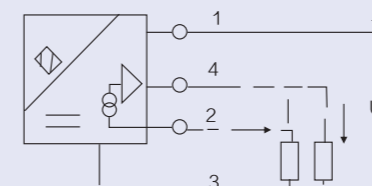
Inductive proximity switch with analog quantity output has the similar work principle with general inductive proximity switch. The energy of oscillator system decreases when a metal object approaches the inductive side. The energy decrease degree indicates the distance between the metal object and the sensor. The energy consumption is transformed into measuring signal in an additional device and magnified through linear treatment. (Fig.5) Provide a standard analog signal at output terminal (0-5V or 4-20mA...)

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

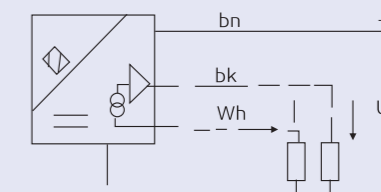


## ■ 接线示意图 Installation and connection

用连接端子引出  
lead out with connecting terminal



用导线引出  
lead out with conductor



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