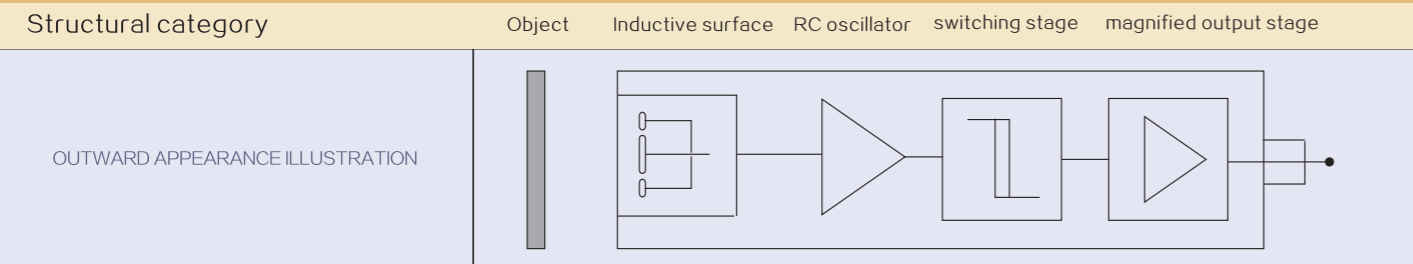


# CAPACITANCE PROXIMITY SWITCH

# CAPACITANCE PROXIMITY SWITCH

## Working principle of capacitance proximity switch

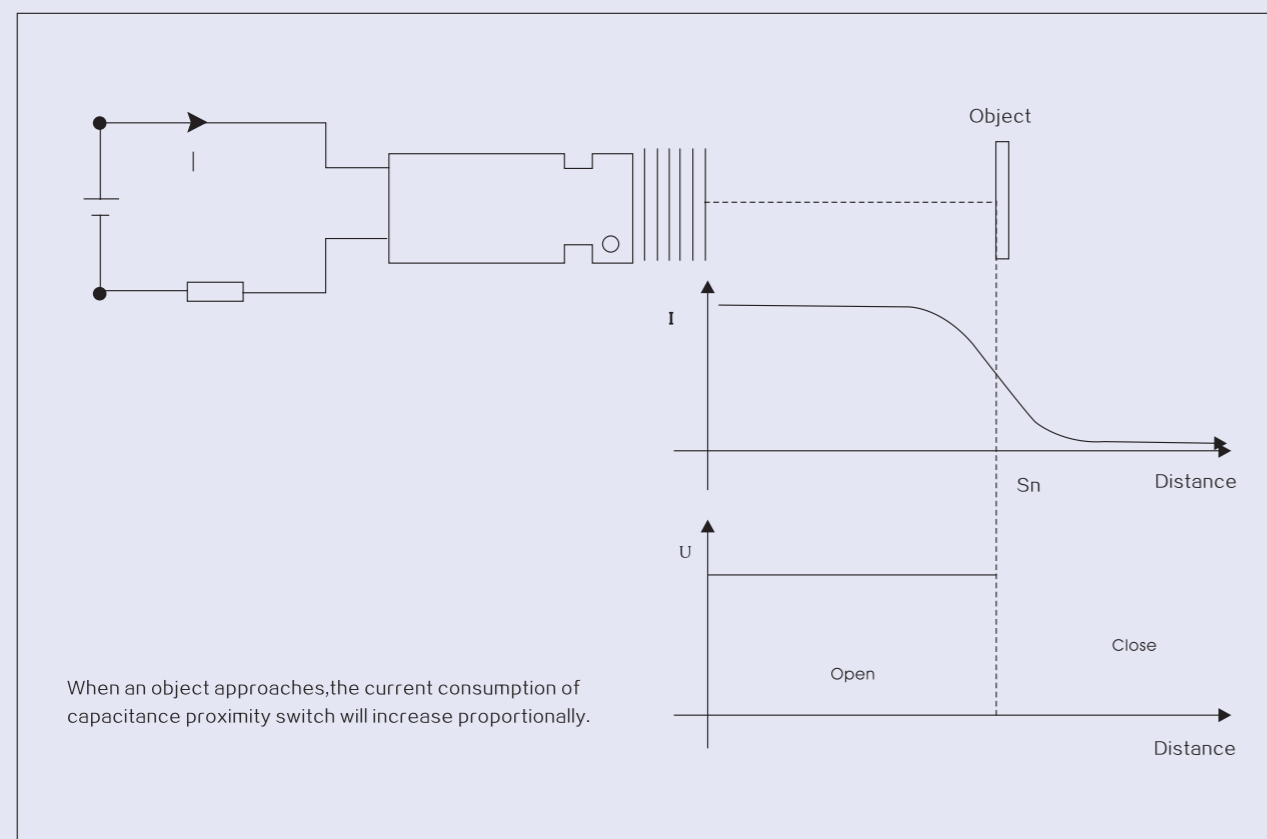


## capacitance proximity switch

The induction surface of capacitance sensor is composed of two coaxial metal electrodes, which form a capacitor and connected on RC oscillation circuit, just like an open capacitor electrode.

When connecting to power supply, RC oscillator does not work. When an object is close to capacitor electrode, the capacitor capacity will increase, and the oscillator will vibrate. Through the treatment of behind stage circuit, both signals of stop oscillation and oscillation will be converted to switch signs for checking the existence of object. This distance can be obtained, but to nonmetal object, the action distance is determined by material dielectric constant, the more dielectric constant, the more action distance will be obtained.

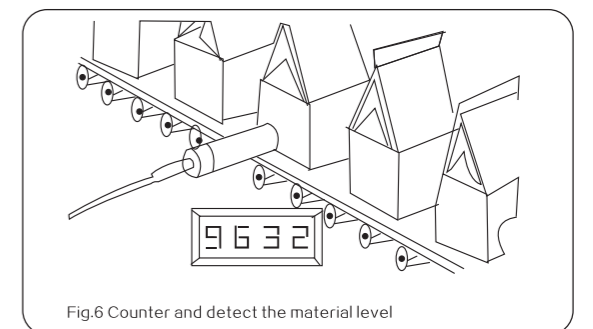
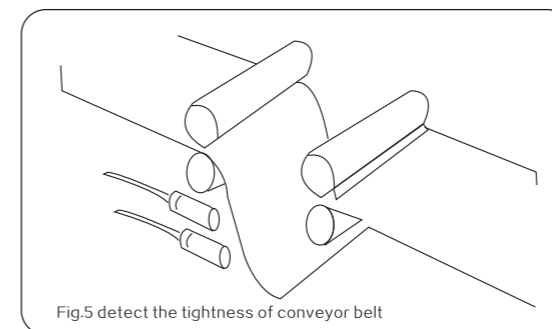
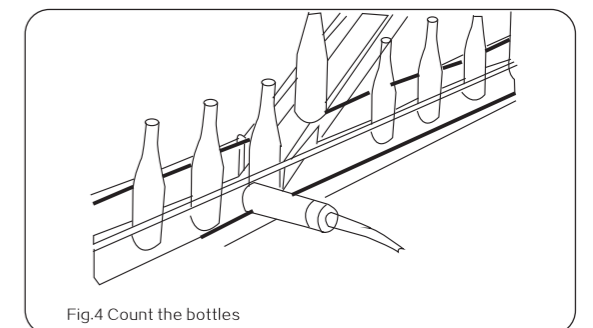
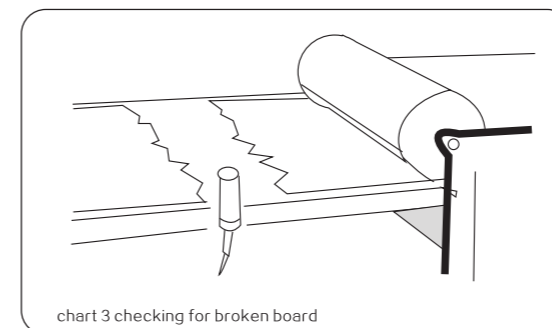
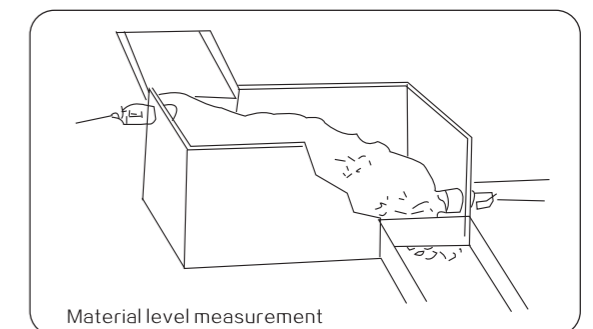
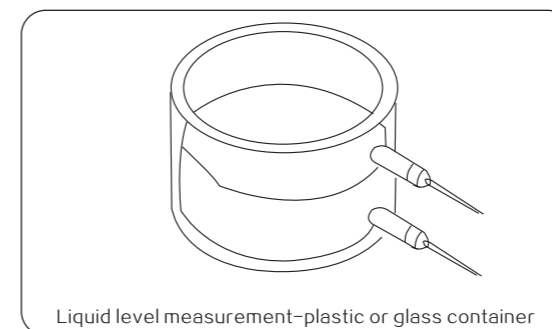
## OUTWARD APPEARANCE ILLUSTRATION



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



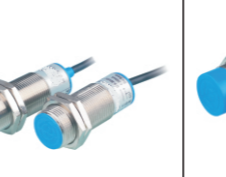

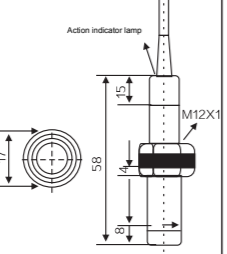
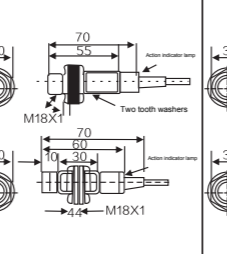
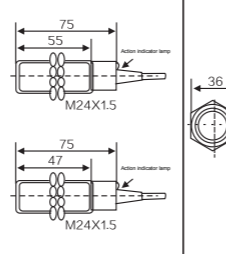
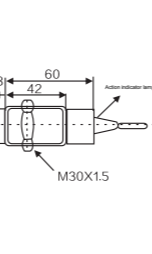
Materials	Dielectric constant	Materials	Dielectric constant	Materials	Dielectric constant	Materials	Dielectric constant
synthetic resin adhesive	3.6	Styrene	3	Alcohol	25.8	Polyvinyl	2.9
Mica	6	Porcelain	4.4	Glass	5	Quartz glass	3.7
Ebonite	4	Petrolin	2.2	Cardboard	4.5	Silicon	2.8
Marble	8	Quartz sand	4.5	Cable rubber compound	2.5		
Paper	2.3	Soft rubber	2.5	Gasoline	2.2		
Organic glass	3.2	Water	80	Wood	2.7		

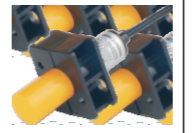

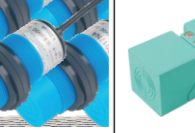
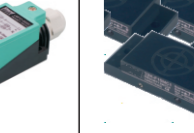

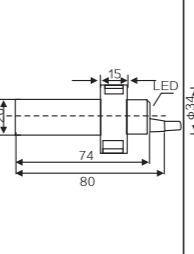
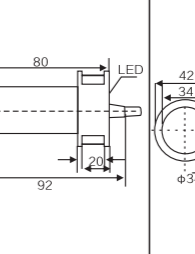
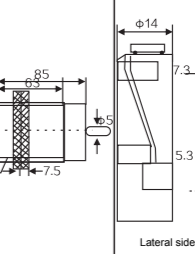
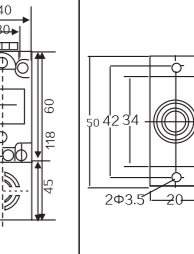
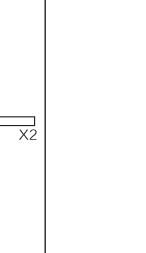
## 应用图例 application illustration



# CAPACITANCE PROXIMITY SWITCH

# CAPACITANCE PROXIMITY SWITCH

Structural category							
Outward Appearance code		CM12	CM18	CM24	CM30		
OUTWARD APPEARANCE ILLUSTRATION							
OVERALL DIMENSIONS							
DETECTION DISTANCE		0-2mm	0-5mm	0-8mm	0-10mm		
Flush	DC 6-36 VDC	NPN	NO	CZ CM12-3002NA	CZ CM18-3005NA	CZ CM24-3008NA	CZ CM30-3010NA
			NC	CZ CM12-3002NB	CZ CM18-3005NB	CZ CM24-3008NB	CZ CM30-3010NB
			NO+NC	CZ CM12-3002NC	CZ CM18-3005NC	CZ CM24-3008NC	CZ CM30-3010NC
	AC 90-250 VAC	SCR Control-lable silicon	NO	CZ CM12-2002A	CZ CM18-2005A	CZ CM24-2008A	CZ CM30-2010A
			NC	CZ CM12-2002B	CZ CM18-2005B	CZ CM24-2008B	CZ CM30-2010B
			NO+NC	CZ CM12-3002PA	CZ CM18-3005PA	CZ CM24-3008PA	CZ CM30-3010PA
Non-Flush	DC 6-36 VDC	NPN	NO	CZ CM12-3004NA	CZ CM18-3008NA	CZ CM24-3012NA	CZ CM30-3015NA
			NC	CZ CM12-3004NB	CZ CM18-3008NB	CZ CM24-3012NB	CZ CM30-3015NB
			NO+NC	CZ CM12-3004NC	CZ CM18-3008NC	CZ CM24-3012NC	CZ CM30-3015NC
	AC 90-250 VAC	SCR Control-lable silicon	NO	CZ CM12-2004A	CZ CM18-2008A	CZ CM24-2012A	CZ CM30-2015A
			NC	CZ CM12-2004B	CZ CM18-2008B	CZ CM24-2012B	CZ CM30-2015B
			NO+NC	CZ CM12-3004PA	CZ CM18-3008PA	CZ CM24-3012PA	CZ CM30-3015PA
DETECTION DISTANCE		0-4mm	0-8mm	0-12mm	0-15mm		
Detectable object		conductor and dielectric body					
Consumption current		(NPN PNP) DC12V 8mA, 24V 15mA : 10m DC<15mA AC<10mA					
Output current		200mA, 300mA					
Output voltage dropDC/AC		(NPN PNP)3V 7V DC<3V AC<7V					
DC/AC Response frequency		50Hz, 10Hz					
Shell material		Metal	ABS/Resin,Metal	Metal	Metal /ABS Resin,		
Working environment temperature		-25℃~70℃					
Insulation resistance		50MΩ					
Protection structure		IECstandard Ip54					
Alternative model at home and abroad			LJC18A3-□□	LJC24A3-□□	E2K-X15M□		

Structural category								
Outward Appearance code		CM20	CM34	CM35	CMF37	E2K		
OUTWARD APPEARANCE ILLUSTRATION								
OVERALL DIMENSIONS								
DETECTION DISTANCE								
Flush	DC 6-36 VDC	NPN	NO					
			NC					
			NO+NC					
	AC 90-250 VAC	SCR Control-lable silicon	NO					
			NC					
			NO+NC					
DETECTION DISTANCE		0-10mm	0-20mm	0-25mm	0-25mm	0-10mm		
非埋入型 Non-Flush	直流 DC 6-36 VDC	NPN	NO	CZ CM20-3010NA	CZ CM34-3020NA	CZ CM35-3025NA	CZ CM37-3025NA	CZ E2K-F10MC1
			NC	CZ CM20-3010NB	CZ CM34-3020NB	CZ CM35-3025NB	CZ CM37-3025NB	CZ E2K-F10MC2
			NO+NC	CZ CM20-3010NC	CZ CM34-3020NC	CZ CM35-3025NC	CZ CM37-3025NC	CZ E2K-F10MC3
	AC 90-250 VAC	SCR Control-lable silicon	NO	CZ CM20-3010PA	CZ CM34-3020PA	CZ CM35-3025PA	CZ CM37-3025PA	CZ E2K-F10MF1
			NC	CZ CM20-3010PB	CZ CM34-3020PB	CZ CM35-3025PB	CZ CM37-3025PB	CZ E2K-F10MF2
			NO+NC	CZ CM20-3010PC	CZ CM34-3020PC	CZ CM35-3025PC	CZ CM37-3025PC	CZ E2K-F10MF3
DETECTION DISTANCE		0-10mm	0-20mm	0-25mm	0-25mm	0-10mm		
Detectable object		conductor and dielectric body						
Consumption current		(NPN PNP) DC12V 8mA, 24V 15mA 10mA DC<15mA AC<10mA						
Output current		200mA, 300mA						
Output voltage dropDC/AC		(NPN PNP)3V 7V DC<3V AC<7V						
DC/AC Response frequency		(NPN-PNP) 50Hz, 10Hz						
Shell material		ABS Resin	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic		
Working environment temperature		-25℃~70℃						
Insulation resistance		50MΩ						
Protection structure		IECstandard IP54						
Alternative model at home and abroad			E2K-C25□□					