GTRIC®

SENSOR PRODUCTS SELECTION MANUAL

Wenzhou Gtric Technology Co., Ltd.
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Company introduction

Wenzhou Gtric Technology Co., Ltd. is located in Yueqing IoT sensors Park, which covers 5,000 square meters, with over 100 employees. We are focuses on intelligent manufacturing and industrial automation, our main businesses are sensors, encoders, button switch, coupling, expansion set and other industrial automation products, providing standard and individual products and solutions for customers.

Our products cover over 20 series, 1000specificatison, which have passed CCC, CE, UL, ISO9001 certification as well as EU RoHS Environmental Directives.

Based on our technical advantages, Gtric can provide industrial automation solution according to customers' requirements.

We support OEM & ODM, if you need please feel free to contact us

Sensor characteristics

Installation conditions

Non shielded proximity switches can achieve maximum operating distance (with the diameter of the relevant); but in order to prevent the switch around the metal impact on the switch, the sensor head must be in a certain gap with the surrounding metal (Figure 1).

Due to the special shielding effect inside the shield, the radial magnetic field of the side is reduced, and the induction distance is about 60% of the non shield type, because it can be flush mounted in the metal (Figure 2).

The magnetic sensor is not affected by the conditions of installation, as long as the material around the material is not magnetized.

Figure 1

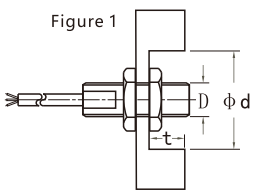
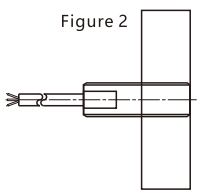
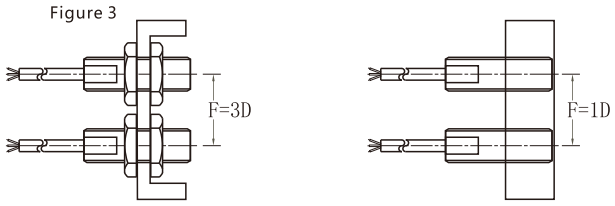


Figure 2



In order to prevent mutual interference, we must keep the minimum distance between each other(Figure 3).

Figure 3



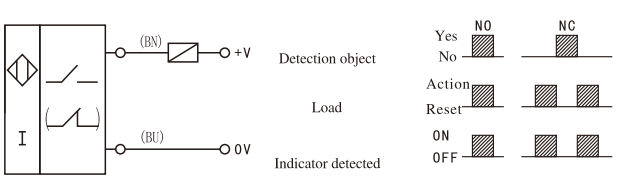
Please refer to the specific data of various types of instructions.

Sensor characteristics

Output mode and electrical characteristics

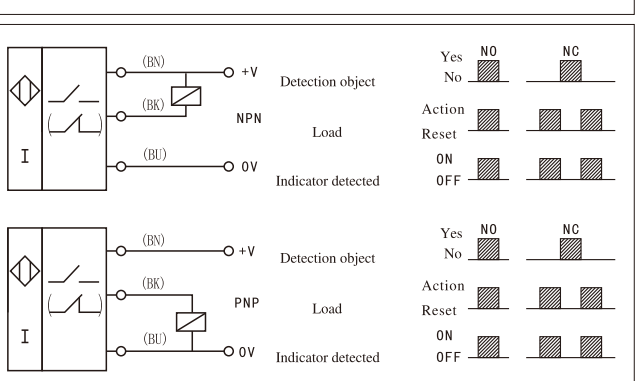
DC **2**-wire system NO or NC

The load must be connected in series in the sensor to work, there is a polarity and short circuit protection function; in the open circuit state, there is a very small leakage current; in the closed circuit, the switching element has a smaller voltage drop.



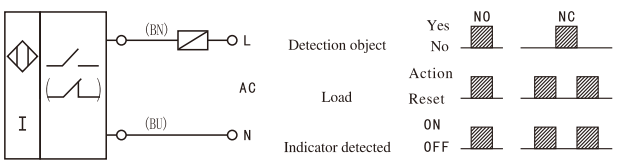
DC **3** -wire system(N,P type) NO or NC

These switches are connected to the load and power supply separately; the polarity, short circuit and overload protection function, and the residual current can be ignored.



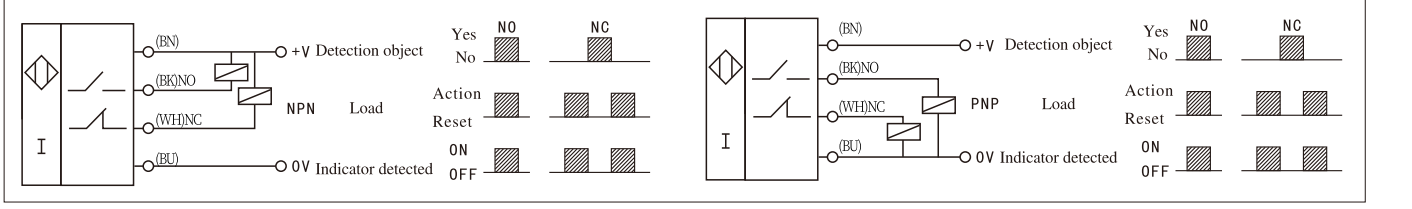
AC **2** -wire system NO or NC

The load must be connected in series in the sensor, in the closed circuit, the switching element has a smaller voltage drop.



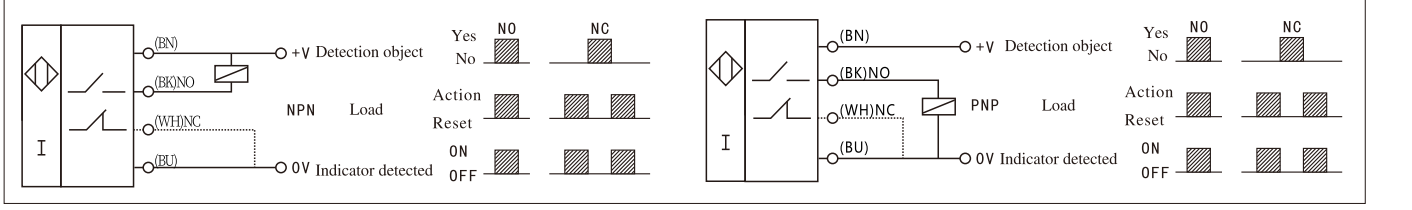
DC 4-wire system (NPN,PNP Type) NO+NC

Sensor switches can provide 2 groups of output NO+NC



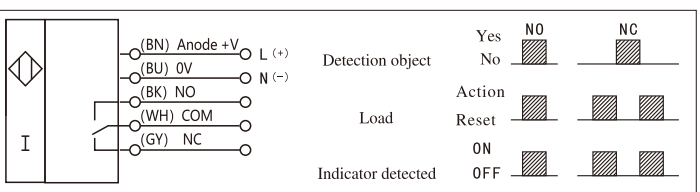
DC **4**-wire system (NPN,PNP Type) NO/NC

The switches can provide two groups of output NO or NC



NO+NC Ac/Dc five wire (relay output) NO + NC

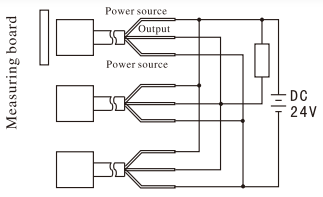
These switches can provide to often open, closed two group relay output.



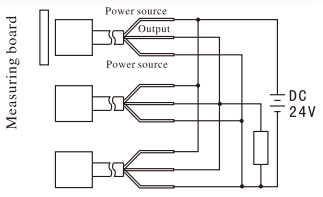
Sensor characteristics

Series and parallel connection of proximity switch

OR connection (NPN and PNP types can be used mixed) series When the proximity switch is OR connected, the action of any proximity switch can drive load. The quantity of the proximity switches depends on the sum of leakage current. More connections are available given that it doesn't affect the loading action.



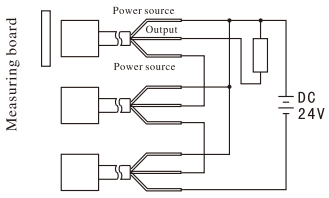
OR connection of NPN output



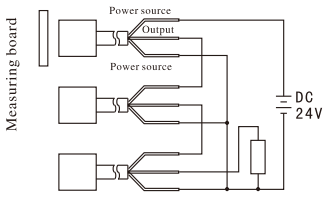
OR connection of PNP output

AND connection (series)

When the proximity switch is AND connected, the action of all proximity switches can drive load. The quantity of the proximity switches depends on the sum of saturation voltage. More connections are available given that it doesn't affect the supply voltage of the proximity switch. The response frequency of the proximity switch is the accumulation of initialized reset of various proximity switch.



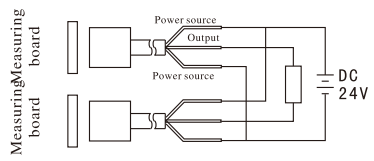
NPN connection of AND output



PNP connection of AND output

Series and parallel connection of proximity switch

AND connection (series) NPN, PNP mixed–use



Promixity switches matters need attention

Cautions when connected or disconnected with the power supply

When connecting the proximity switch with the counter and the programmable controller, there isn't any problem because of the built–in initialized reset circui Please avoid the conditions mentioned below

The detection object lies around the detection distance of the proximity switch; For DC voltage type and DC switch type, when power supply is turned on (turned off), time constant rises (drops) greatly; There is self-excitation and noise when the AC switch type proximity switch is power-on (off)

Capacitor, light load

The proximity switch can't have the capacitor or light that has larger jumping current as the load directly connected to be connected through a relay or series connected with a current-limiting resistance. The peak cuttent set by current-limiting resistance Ris within the load cuttent of the procimity switch; Make sure to connect through load.

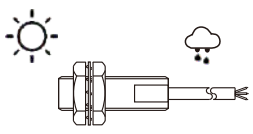
$$\frac{\text{Supply voltage V}}{\text{Peak load current value of proximity switch mA}} \leqslant R(K\Omega)$$

Allowable loss of resistance R (W)

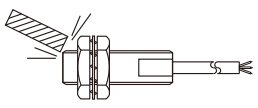
$$\frac{\text{Supply voltage } V^2}{\leqslant R(K\Omega)} \times 2 \text{ times above}$$

Installation notice of proximity switch

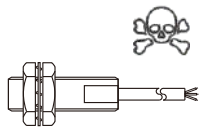
Don't use it in the open air, and use a protectivecover, if necessary.



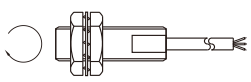
Don't knock the detection surface with hard objects and use a protective cover, if necessary.



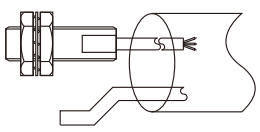
Don't use it in the environment with corrosive objects.



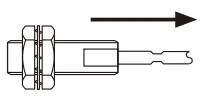
Don't fasten it with a big force, but fasten it with spring washer



The proximity switch must be equipped individually with metal flexible pipe, and don't make it with the electric line and power line in the same metal flexible pipe

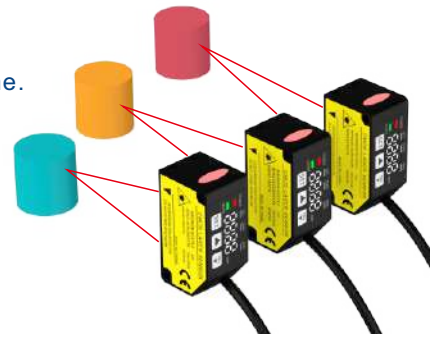


Don't stretch the power line of the proximity switch with a big force.

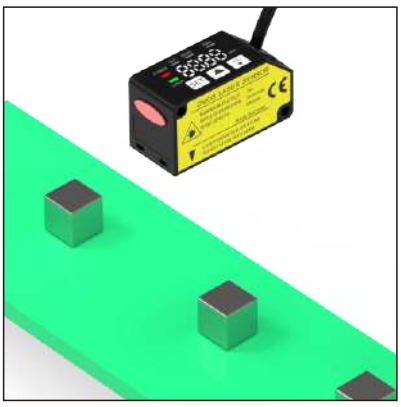


- Short, medium and long detection distances are optional
- Small volume, small light spot and high precision.
- It has dual output of switching value and analog value at the same time.
- Multiple functions, multiple detection modes, applicable to many applications.

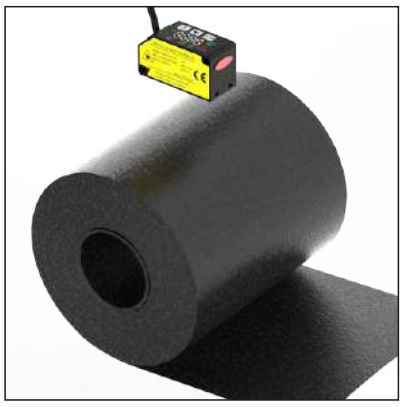
General detection mode
1 point teaching mode
2 point teaching mode
3 point teaching mode
Ascending differential mode
Descending differential mode



Application example



Check whether there is micro flat pad



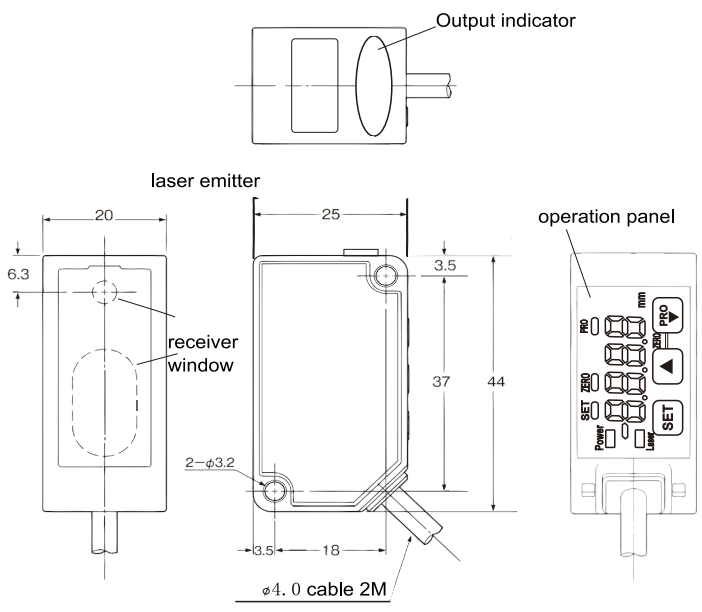
Detect the residual volume of coil material

Test the bending amount of sheet material

Dimension

Appearance	Type	Model	Detection distance	Output mode	Repeatability
	Short distance type	LSZ-S030MN	30±5mm	Switch+Analog Output	10μm
		LSZ-S030MP	30±5mm	Switch+Analog Output	10μm
		LSZ-S050MN	50±15mm	Switch+Analog Output	50μm
		LSZ-S050MP	50±15mm	Switch+Analog Output	50μm
	Medium distance type	LSZ-S100N	100±35mm	Switch Output	100μm
		LSZ-S100MN	100±35mm	Switch+Analog Output	100μm
		LSZ-S100P	100±35mm	Switch Output	100μm
		LSZ-S100MP	100±35mm	Switch+Analog Output	100μm
		LSZ-S200N	200±80mm	Switch Output	200μm
		LSZ-S200MN	200±80mm	Switch+Analog Output	200μm
		LSZ-S200P	200±80mm	Switch Output	200μm
		LSZ-S200MP	200±80mm	Switch+Analog Output	200μm
	Long distance type	LSZ-S400N	400±200mm	Switch Output	400μm/800μm
		LSZ-S400MN	400±200mm	Switch+Analog Output	400μm/800μm
		LSZ-S400P	400±200mm	Switch Output	400μm/800μm
		LSZ-S400MP	400±200mm	Switch+Analog Output	400μm/800μm

Dimensions



Product specifications

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Specifications

Model	Type	Dual Output	Dual Output	switch output	Dual Output	switch output	Dual Output	switch output	Dual Output
	NPN Output	LSZ-S030MN	LSZ-S050MN	LSZ-S100N	LSZ-S100MN	LSZ-S200N	LSZ-S200MN	LSZ-S400N	LSZ-S400MN
	PNP Output	LC-S030MP	LSZ-S050MP	LSZ-S100P	LSZ-S100MP	LSZ-S200P	LSZ-S200MP	LSZ-S400P	LSZ-S400MP
Measuring center distance		30 MM	50 MM	100 MM		200 MM		400MM	
Detection scope		±5mm	±15mm	±35mm		±80mm		±200mm	
Repeatability		10μm	50μm	100μm		200μm		400μm(Measuring distance 200mm-400mm) 800μm(Measuring distance 400mm-600mm)	
straight line deviation		±0.2%F.S.	±0.2%F.S.	±0.2%F.S.		±0.2%F.S.		±0.2%F.S.(Measuring distance 200mm-400mm) ±0.3%F.S.(Measuring distance 400mm-600mm)	
Temperature characteristic		0.03%F.s./°C							
light source		Red semiconductor laser Class 2 ,maximum output: 1mW, wavelength of light beam: 655nm							
Beam diameter		Aboutφ50μm	Aboutφ100μm	Aboutφ150μm		Aboutφ300μm		Aboutφ500μm	
supply voltage		12V~24V DC+10% pulse P-P10%							
Consumption current		40mA or less (when the power supply voltage is 24V DC), 60mA or less (when the power supply voltage is 12V DC)							
Control Output		NPN Output NPN Open Collector Transistors Maximum inflow current: 50mA Applied voltage: below 30VDC (between control output-0V) Residual voltage: 15V or less (Inflow current 50mA or less) Leakage current: below 0.1mA			PNP Output NPN Open Collector Transistors Maximum inflow current: 50mA Applied voltage: below 30VDC (between control output-+V) Residual voltage: 15V or less (Inflow current 50mA or less) Leakage current: below 0.1mA				
Output Action		ON when light is received/ON when no light is received, switchable							
Short circuit protection		Equipped (automatic recovery type)							
Analog output	Voltage analog output (Alarm: +5.2V)	Output range: 0V-5V Output Impedance: 1000Ω		Output range: 0V-5V Output Impedance: 1000Ω		Output range: 0V-5V Output Impedance: 1000Ω		Output range: 0V-5V Output Impedance: 1000Ω	
	Voltage analog output (Alarm: 0mA)	Output range: 4-20mA Load impedance: 3000Ω or less		Output range: 4-20mA Load impedance: 3000Ω or less		Output range: 4-20mA Load impedance: 3000Ω or less		Output range: 4-20mA Load impedance: 3000Ω or less	
Response time		1.5ms/5ms/10ms switchable							
External Output		NPN/PNP non-contact input, effective: 0V~+1.2V DC input impedance: 10KQ							
protective structure		IP67(IEC)							

Degree of defacement	2
Operating temperature	-10°C~+40°C (be careful not to condense or freeze), during storage: -20°C~+60°C
Use environment humidity	35%~85%RH, during storage: 35%~85%RH
Use ambient illuminance	Incandescent lamp: the illuminance of the light-receiving surface is below 3,000Lx
Use the elevation	Below 2000M
Cable	2m with 5-core composite cable in 0.15mm
material	Body shell: aluminum casting Front cover: acrylic
Applicable specifications	Conforms to EMC Directive

*Supply voltage: 24V DC, ambient temperature: +20 C, response time: 10ms, and analogue output value of measurement center distance are used for unspecified measurement conditions. The subject is white paper.
Object: white paper

Name of each part

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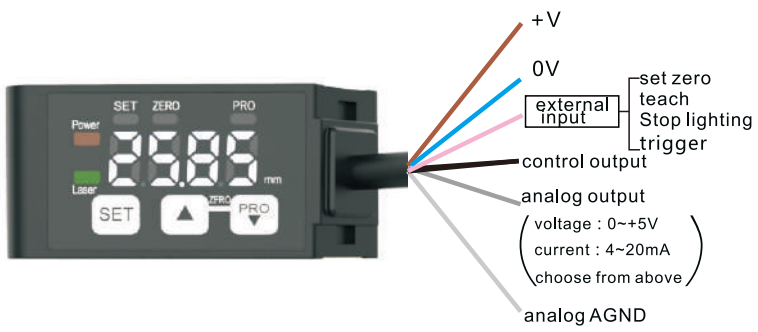
Wiring diagram



For more detailed instructions, please contact our company

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