SIBASS ELECTRIC PVT LTD.
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SIBASS®
ELECTRIC
Answers For technology

Photo sensor ·
Proximity switch ·

Automation Sensing Future

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An ISO 9001:2008 Co. CE

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Model and Description of Approach switch

LM/LJ	□	12	A3	-	4	-	Z	/	B	X
<1>	<2>	<3>	<4>		<5>		<6>		<7>	<8>

<1> Approach Switch
<2>□No letter：inductive type
C：capacitive type
X：Simulative type
<3>The diameter of column sensor is expressed by number.
<4>A3：metallic shell
A4：plastic shell
<5>The number expresses tested distance.
<6>Z：DC type
J：AC type
<7>B：DC normal open
A：DC normal close、
C：normal open and normal close
E：AC normal open
D： AC normal close
<8>X：NPN 200~300mA
Y：PNP 200~300mA
Z：300~400mA
M：500mA

Model and Description of Approach switch

E3	F	-	DS	10	C	4
<1>	<2>		<3>	<4>	<5>	<6>

<1> Photoelectric Switch
<2>F：column type
JK、M：flat type
S：oblong type
K：square type
<3>DS：diffusive emission type
R：feedback emission type
G：groove type
No letter：correlation type
<4>The numbers express test distance
<5>C,E：NPN 300mA
P,F：PNP 300mA
M：contact output
Y：AC two-line system
<6>1,4：normal open
2：normal close
3：one open one close

Proximity switch working principle

Proximity switches also called proximity sensors.Sensor can devided into inductive type、capacitive type、simulative type、Hall type、magnetic type.Sensor can support using of PLC programmable controller、SCM、Sr circuit 、Electronic counters、Solid-state relay、Small relays and other products.

Capacitive proximity switch are composed by High frequency concussion and amplification.Sensor detection surface and between the earth form a capacitor. participate Oscillation circuit work , starting at the stop vibration state.When the object near the surface,The circuit capacity changes,is the Oscillation of high-frequency oscillator .The two states of Oscillator- Oscillations and stopping vibration， Converted to electrical signals through the shaping amplifier Switch into binary signals.

Simulative sensor (also known as the linear displacement sensor), when the metal object close to the detection surface.With the change of the distance,then output the singal which have linear relationship changes with the distance ,So as to achieve the purpose of monitoring.

Hall sensor is a kind of proximity sensor which inside with Hall IC.Using Hall effection convert magnetic signal on or off into switch capacity.Widely used in signal detection, automatic control and safety protection.

Magnetic sensor are composed by reed tube and amplification。When the external magnetic field near the magnetic reed sensor to force the action, and then amplified by the amplifier, increasing the switching capacity, in order to realize the on-off control of external circuits。

Proximity switches technical terms

● Action distance

Operating distance is the most important parameter of the proximity switch . which mainly depends on the proximity switch sensing face diameter, sensing target material and ambient temperature also affects the proximity switch movement distance. For magnetic, Hall sensor, installed on the iron plate or on the items which with the magentic strength , also affects the movement distance;There are two actiion ways of the proximity switch : Axial close and Radial close , Generally using axial approach.

● Rated sensing distance (Sn)

It's a standard value without regard to the influence of external environment.

● Standard detection sheet

The detection sheet is designed into square type. The thickness is 1 mm, the material is ST37 with smooth surface and the side length is 3×Sn. The alternation of the detection object dimension or material will attenuate the inductive range.

● Effective action distance (Sr)

The action distance detected at the rated operating voltage and room temperature (23±5℃)：$0.9Sn \leqslant Sr \leqslant 1.1Sn$

● Practicable action distance (Su)

The action distance detected when the input voltage is in the range of 85% to 110% the rated voltage and the switch works at the allowable ambient temperature −25℃ to +70℃：$0.9Sr \leqslant Su \leqslant 1.1Sr$

● Reliable action distance (Sa)

When the measure object is in this action distance, the action of the switch is reliable：

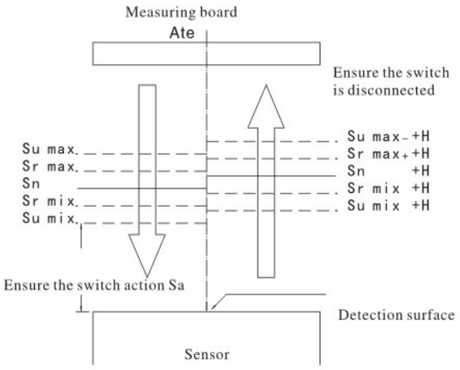
$0 \leqslant Sa \leqslant 0.81Sn$

● Repeatability precision (R)

It is the convert value of the effective action distance that is measured in 8 hours when the ambient temperature is 23±5℃, relative humidity is random and the service voltage is Ue±5：R=0.1Sn

● Ensure the switch breaking distance

When the distance between the detection sheet and the switch inductive surface is larger than the rated action distance, ensure the switch is disconnected.



Attenuation

Attenuation coefficient means how much the action distance of a certain kind of material is attenuated when St37 steel is used as detection sheet
For inductive type proximity switch, the electrical conductivity of the detection sheet material is the main parameter affecting attenuation coefficient

Inductive proximity switch on the patt of the material attenuation coefficient	
Material	Attenuation Coefficient
Steel	1.0
Stainless steel	0.85
Aluminum	0.4
Brass	0.4
Bronze	0.3

Capacitive proximity switch on the patt of the material attenuation coefficient	
Material	Attenuation Coefficient
Earth plate	1.0
Water	1.0
Alcohol	0.75
Ceramic	0.6
PVC	0.45

No-load current (IO)

It means the current consumption that is measured when the proximity switch is on no-load.

Operating current (IL)

It means the maximum load current when the switch works continuously.

Instantaneous current (IK)

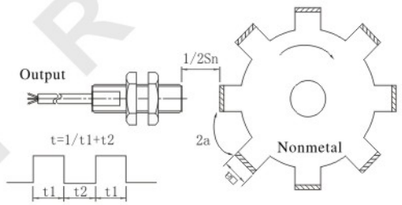
It means the allowable current in a short time that doesn't ruin the switch when the switch is closed.

Residual current (IR)

It means the current that goes through the load when the proximity switch is disconnected.

Operating voltage (UB)

It means the maximum and minimum of the operating voltage. In this range, the proximity switch can ensure the safe operation



Voltage drop (UD)

It means the voltage measured at the both ends of the switch when the switch is turned on.

Operating frequency (F)

It means the maximum switching times from the attenuation state to non-attenuation state,shown as Hz.

Promixity switche installation method

Cylindrical type proximity switch

Non-screen shield type proximity switch can achieve the biggest action distance (related to the diameter); but in order to avoid the influence from the metal surrounding the switch to the switch, the switch inductive head must keep a certain space with the surrounding metal. (Chart 1)

The inside special screen shielding of the screen shield type proximity switch makes the magnetic field of side radial decrease and the sensing distance is about 60% that of the non-screen shield type, therefore it can be flush mounted inside the metal. (Chart 2)

Magnetic type sensor doesn't affected by the installation condition, as long as the surrounding materials aren't be magnetized.

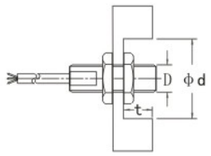


Chart 1

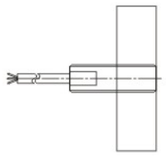


Chart 2

Influence of parallel installation (Chart 3)

To avoid mutual interference, the minimum distance between them must be kept.

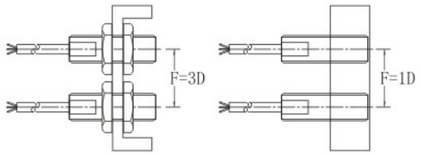
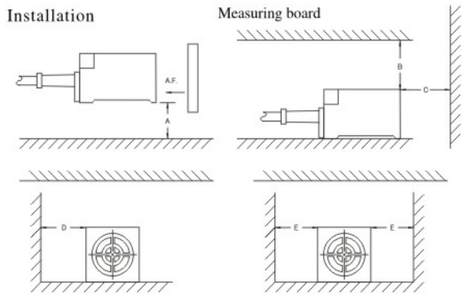


Chart 3

For detailed data, refer to the operation instruction of various types

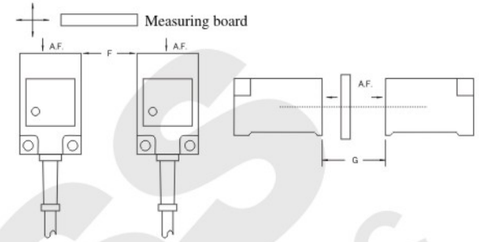
Horn type and the square of proximity switches installation requirements



For detailed data, refer to the operation instruction of various types

Influence of parallel installation

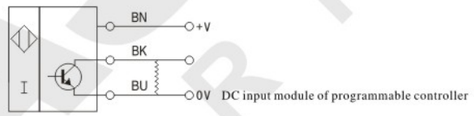
To avoid mutual interference, the minimum distance between them must be kept.



Proximity switch output way and electrical characteristics

Connection between proximity switch and programmable controller

Can be connected with the proximity switch of DC switch three-wire system NPN type output

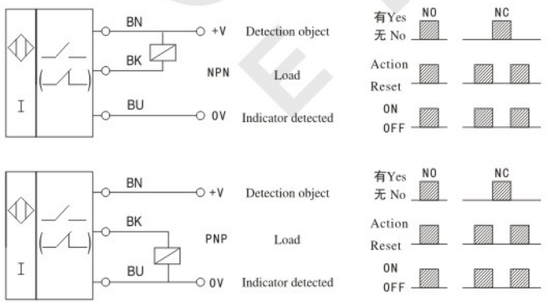


DC two-wire system NO or NC

The load must be series connected inside the sensor and work, owning the functions of polarity and short-circuit protection. On open-circuit state, tiny leakage current exists, while on closed-circuit state, there is a minor voltage drop on the switch elements.

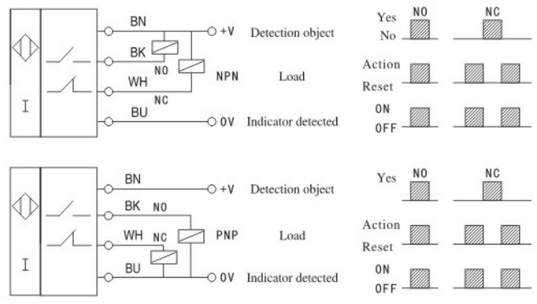
DC three-wire system (N, P type) NO or NC

The load of these switches connects separately with the power supply, owning the functions of polarity, short-circuit and over-load protection. The residual current can be neglected.



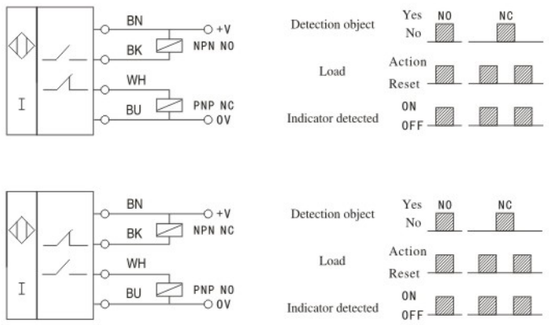
DC four-wire system (N, P type) NO plus NC

The switches can provide two groups of output NO and NC



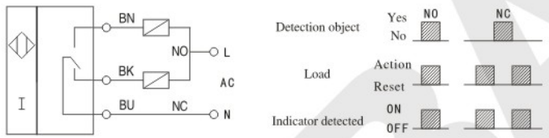
● DC four–wire system (X type)

The four output modes can be converted among NPN, PNP, NO and NC



● AC three–wire system NO + NC

The switches can provide two groups of output NO and NC



● 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.

● AND connection (series)

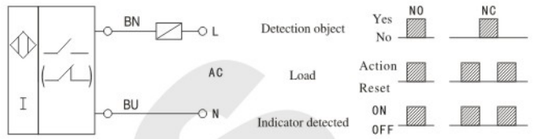
When the proximity switch is AND connected, the action of all proximity switches can drive load. The quantity of the proximity switches depends on the sum of saturation voltage. More connections are available given that it doesn't affect the supply voltage of the proximity switch. The response frequency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

● Series and parallel connection of proximity switch

AND connection (series) NPN, PNP mixed–use

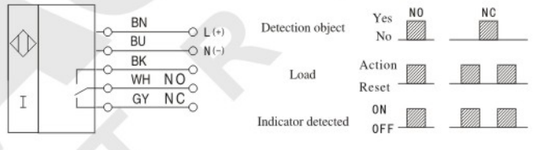
● AC two–wire system NO or NC

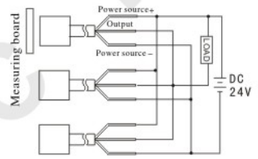
The load must be series connected inside the sensor and work, and on closed–circuit state, there is a minor voltage drop on the switch elements.



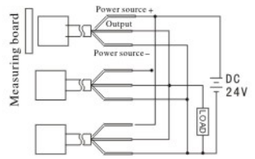
● Ac/Dc five wire (relay output) NO + NC

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

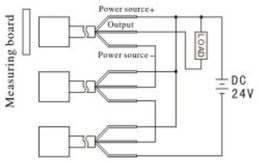




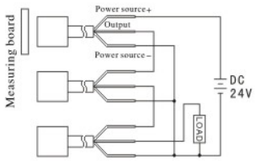
OR connection of NPN output



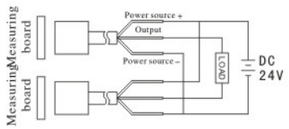
OR connection of PNP output



NPN connection of AND output



PNP connection of AND output



Proximity 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.

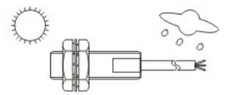
$$\frac{\text{Supply voltage V}}{\text{Peak load current value of proximity switch mA}} \leqslant R(K\Omega)$$

Allowable loss of resistance R (W)

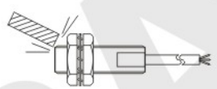
$$\frac{\text{Supply voltage V}^2}{\leqslant R(K\Omega)} \times 2 \text{ times above}$$

● Installation notice of proximity switch

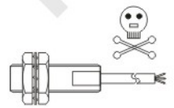
Don't use it in the open air, and use a protectivecover, if necessary.



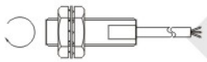
Don't knock the detection surface with hard objects and use a protective cover, if necessary.



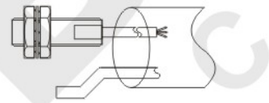
Don't use it in the environment with corrosive objects.



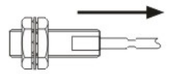
Don't fasten it with a big force, but fasten it with spring washer



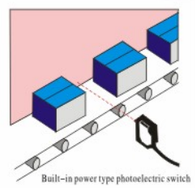
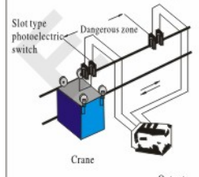
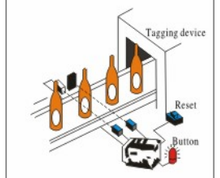
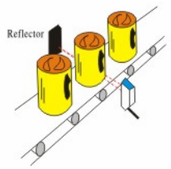
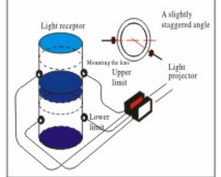
The proximity switch must be equipped individually with metal flexible pipe, and don't make it with the electric line and power line in the same metal flexible pipe



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

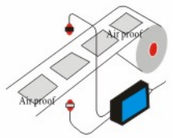


Application Examples Proximity Switch and Photoelectric Switch

1、Thick carton detection	2、Alarm device of the crane	3、Tag detection of the beer bottle	4、Steady detection of mirror surface object	5、Water level detection inside glass tube
Use photoelectric switch with diffuse reflection when the sensorcan't be mounted on one side 	The direction judgment of the crane and the detection of the approach into the dangerous zone 	Check the beer bottle with the reflection type photoelectric switch, and check whether there is a tag with the correlation type photoelectric switch. 	It's available for mirror surface object to undertake steady detection without any misoperation in terms of function MSR. 	Mount the light projector and the light receptor at a slightly staggered angle and the lens on the light projector is the key point. The water level drops, it turns into lightproof state, and the precision of water level detection is up to 1mm. 
Photoelectric switch with diffuse reflection	Slot type photoelectric shape	Reflection type photoelectric switch, correlation type photoelectric switch	Reflection type photoelectric switch	Correlation type optical fiber sensor

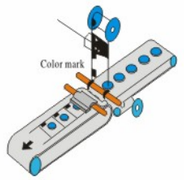
6、Gas tight detection

When the substrate is translucent, undertake detection with correlation type.



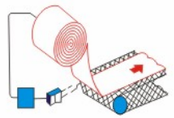
Optical fiber correlation type photoelectric switch

7、Mark detection



Mark sensor

8、Inclination detection

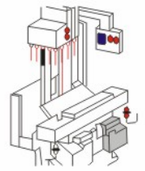


Photoelectric switch with diffuse reflection

9、Safety detection in robot work area

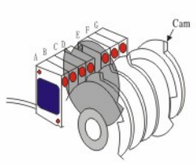
Safety optical veiling sensor

10、Various position detection in machining centre



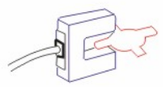
Cylindrical type proximity switch

11、Action sequence cam detection



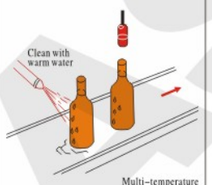
Flat type proximity switch

12、Pulser



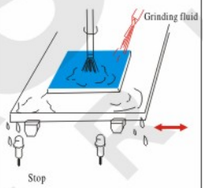
Slot type proximity switch

13、Bottle cap detection



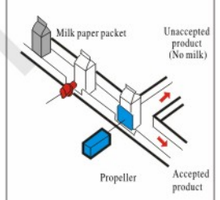
Water-proof type proximity switch

14、Grinder stop detection



Water-proof type proximity switch

15、Detect whether there is milk inside the paper packet



Capacitive type proximity switch

All-purpose type, which can directly substitute the same type of P+F and TURCK

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Newly added current over-load protection; the elements are made of imported chip
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Full thread shape to enlarge the installation space; can use wrench and clamp directly
- Countermeasure to improve the housing intensity an
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				M8		M12		M18		M30	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type
Type	DC type	NPN	NO	Bi1.5-M8-AN6X	Ni2-M8-AN6X	Bi2-M12-AN6X	Ni4-M12-AN6X	Bi5-M18-AN6X	Ni8-M18-AN6X	Bi10-M30-AN6X	Ni15-M30-AN6X
			NC	Bi1.5-M8-RN6X	Ni2-M8-RN6X	Bi2-M12-RN6X	Ni4-M12-RN6X	Bi5-M18-RN6X	Ni8-M18-RN6X	Bi10-M30-RN6X	Ni15-M30-RN6X
			NO+NC								
		PNP	NO	Bi1.5-M8-AP6X	Ni2-M8-AP6X	Bi2-M12-AP6X	Ni4-M12-AP6X	Bi5-M18-AP6X	Ni8-M18-AP6X	Bi10-M30-AP6X	Ni15-M30-AP6X
			NC	Bi1.5-M8-RP6X	Ni2-M8-RP6X	Bi2-M12-RP6X	Ni4-M12-RP6X	Bi5-M18-RP6X	Ni8-M18-RP6X	Bi10-M30-RP6X	Ni15-M30-RP6X
			NO+NC								
		Two-wire	NO	Bi1.5-M8-AD4X	Ni2-M8-AD4X	Bi2-M12-AD4X	Ni4-M12-AD4X	Bi5-M18-AD4X	Ni8-M18-AD4X	Bi10-M30-AD4X	Ni15-M30-AD4X
			NC	Bi1.5-M8-RD4X	Ni2-M8-RD4X	Bi2-M12-RD4X	Ni4-M12-RD4X	Bi5-M18-RD4X	Ni8-M18-RD4X	Bi10-M30RD4X	Ni15-M30RD4X
	AC type	Two-wire	NO	Bi1.5-M8-AZ3X	Ni2-M8-AZ3X	Bi2-M12-AZ3X	Ni4-M12-AZ3X	Bi5-M18-AZ3X	Ni8-M18-AZ3X	Bi10-M30-AZ3X	Ni15-M30-AZ3X
			NC	Bi1.5-M82-RZ3X	Ni2-M82-RZ3X	Bi2-M12-RZ3X	Ni4-M12-RZ3X	Bi5-M18-RZ3X	Ni8-M18-RZ3X	Bi10-M30-RZ3X	Ni15-M30-RZ3X
		Three-wire	NO+NC								
Detection distance				1.5mm±10%	2mm±10%	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
Set distance				0~1.2mm	0~1.6mm	0~1.6mm	0~3.2mm	0~4mm	0~7mm	0~8mm	0~13mm
Standard detection object				8×8×1mm	12×12×1mm	12×12×1mm	15×15×1mm	18×18×1mm	30×30×1mm	30×30×1mm	54×54×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chart 1	Chart 2	Chart 3	Chart 4	Chart 5	Chart 6	Chart 7	Chart 8

Type and Specification

Dimension				M8		M12		M18		M30	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	NBB1.5-8GM50-E0	NBN2-8GM50-E0	NBB2-12GM50-E0	NBN4-12GM50-E0	NBB5-18GM50-E0	NBN8-18GM50-E0	NBB10-30GM50-E0	NBN15-30GM50-E0
			NC								
			NO+NC								
		PNP	NO	NBB1.5-8GM50-E2	NBN2-8GM50-E2	NBB2-12GM50-E2	NBN4-12GM50-E2	NBB5-18GM50-E2	NBN8-18GM50-E2	NBB10-30GM50-E2	NBN15-30GM50-E2
			NC								
			NO+NC								
		Two-wire	NO	NBB1.5-8GM50-Z0	NBN2-8GM50-Z0	NBB2-12GM50-Z0	NBN4-12GM50-Z0	NBB5-18GM50-Z0	NBN8-18GM50-Z0	NBB10-30GM50-Z0	NBN15-30GM50-Z0
			NC								
	AC type	Two-wire	NO			NBB2-12GM50-A0	NBN4-12GM50-A0	NBB5-18GM50-A0	NBN8-18GM50-A0	NBB10-30GM50-A0	NBN15-30GM50-A0
			NC			NBB2-12GM50-A2	NBN4-12GM50-A2	NBB5-18GM50-A2	NBN8-18GM50-A2	NBB10-30GM50-A2	NBN15-30GM50-A2
		Three-wire	NO+NC								
Detection distance				1.5mm±10%	2mm±10%	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
Set distance				0~1.2mm	0~1.6mm	0~1.6mm	0~3.2mm	0~4mm	0~7mm	0~8mm	0~13mm
Standard detection object				8×8×1mm	12×12×1mm	12×12×1mm	15×15×1mm	18×18×1mm	30×30×1mm	30×30×1mm	54×54×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chart 9	Chart 10	Chart 11	Chart 12	Chart 13	Chart 14	Chart 15	Chart 16

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：Nickel plated brass）,（Detection surface：ABS）.

External dimension

Chart 1 Bi1.5-M8-□

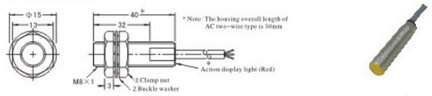


Chart 2 Ni2-M8-□

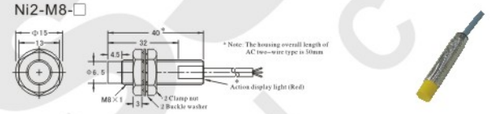


Chart 3 Bi2-M12-□

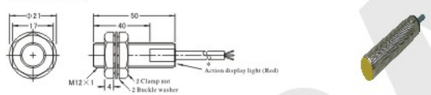


Chart 4 Ni4-M12-□

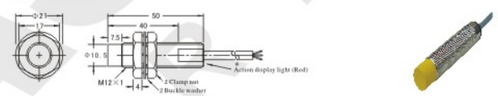


Chart 5 Bi5-M18-□

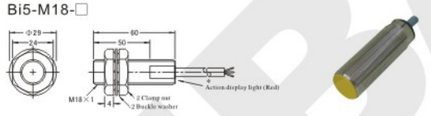


Chart 6 Ni8-M18-□

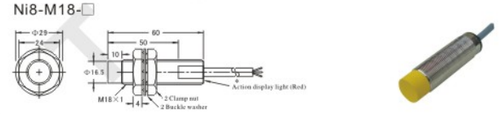


Chart 7 Bi10-M30-□

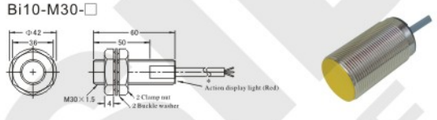


Chart 8 Ni15-M30-□

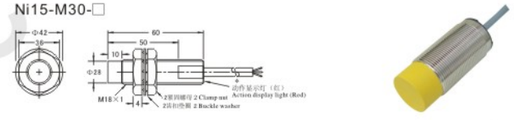


Chart 9 NBB1.5-8GM50-□

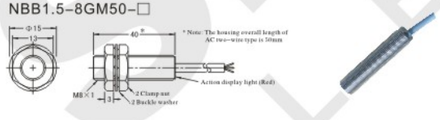


Chart 10 NBN2-8GM50-□

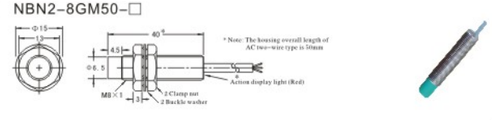


Chart 11 NBB2-12GM50-□

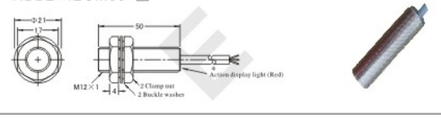


Chart 12 NBN4-12GM50-□

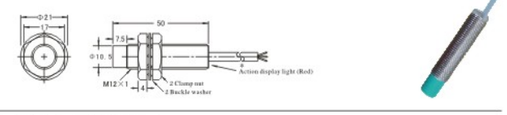


Chart 13 NBB5-18GM50-□

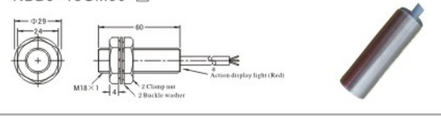


Chart 14 NBN8-18GM50-□

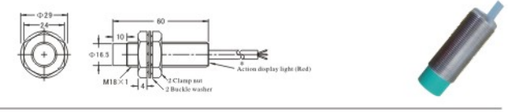


Chart 15 NBB10-30GM50-□

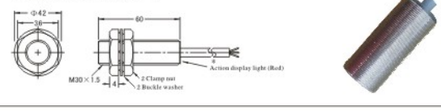
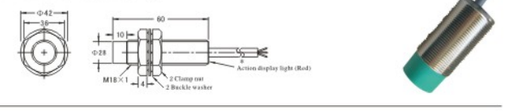


Chart 16 NBN15-30GM50-□



Visible type, can be the direct substitution of the same types of Omron and Autonics

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Long service life, high reliability and strong resistance property to environment
- Countermeasure to improve the housing intensity
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				M8		M12		M18		M30	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type
Type	DC type	NPN	NO	PR08-1.5DN	PR08-2DN	PR12-2DN	PR12-4DN	PR18-5DN	PR18-8DN	PR30-10DN	PR30-15DN
			NC	PR08-1.5DN2	PR08-2DN2	PR12-2DN2	PR12-4DN2	PR18-5DN2	PR18-8DN2	PR30-10DN2	PR30-15DN2
			NO+NC								
		PNP	NO	PR08-1.5DP	PR08-2DP	PR12-2DP	PR12-4DP	PR18-5DP	PR18-8DP	PR30-10DP	PR30-15DP
			NC	PR08-1.5DP2	PR08-2DP2	PR12-2DP2	PR12-4DP2	PR18-5DP2	PR18-8DP2	PR30-10DP2	PR30-15DP2
			NO+NC								
		Two-wire	NO	PR08-1.5DO	PR08-2DO	PR12-2DO	PR12-4DO	PR18-5DO	PR18-8DO	PR30-10DO	PR30-15DO
			NC	PR08-1.5DC	PR08-2DC	PR12-2DC	PR12-4DC	PR18-5DC	PR18-8DC	PR30-10DC	PR30-15DC
	AC type	Two-wire	NO			PR12-2AO	PR12-4AO	PR18-5AO	PR18-8AO	PR30-10AO	PR30-15AO
			NC			PR12-2AC	PR12-4AC	PR18-5AC	PR18-8AC	PR30-10AC	PR30-15AC
		Three-wire	NO+NC								
Detection distance				1.5mm±10%	2mm±10%	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
Set distance				0~1.2mm	0~1.6mm	0~1.6mm	0~3.2mm	0~4mm	0~7mm	0~8mm	0~13mm
Standard detection object				8×8×1mm	12×12×1mm	12×12×1mm	15×15×1mm	18×18×1mm	30×30×1mm	30×30×1mm	54×54×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chart 17	Chart 18	Chart 19	Chart 20	Chart 21	Chart 22	Chart 23	Chart 24

Type and Specification

Dimension				M8		M12		M18		M30	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type
Type	DC type	NPN	NO	E2E-X1R5E1	E2E-X2ME1	E2E-X2E1	E2E-X5ME1	E2E-X5E1	E2E-X10ME1	E2E-X10E1	E2E-X18ME1
			NC	E2E-X1R5E2	E2E-X2ME2	E2E-X2E2	E2E-X5ME2	E2E-X5E2	E2E-X10ME2	E2E-X10E2	E2E-X18ME2
			NO+NC								
		PNP	NO	E2E-X1R5F1	E2E-X2MF1	E2E-X2F1	E2E-X5MF1	E2E-X5F1	E2E-X10MF1	E2E-X10F1	E2E-X18MF1
			NC	E2E-X1R5F2	E2E-X2MF2	E2E-X2F2	E2E-X5MF2	E2E-X5F2	E2E-X10MF2	E2E-X10F2	E2E-X18MF2
			NO+NC								
		Two-wire	NO	E2E-X1R5D1	E2E-X2MD1	E2E-X2D1	E2E-X5MD1	E2E-X5D1	E2E-X10MD1	E2E-X10D1	E2E-X18MD1
			NC	E2E-X1R5D2	E2E-X2MD2	E2E-X2D2	E2E-X5MD2	E2E-X5D2	E2E-X10MD2	E2E-X10D2	E2E-X18MD2
	AC type	Two-wire	NO			E2E-X2Y1	E2E-X5MY1	E2E-X5Y1	E2E-X10MY1	E2E-X10Y1	E2E-X18MY1
			NC			E2E-X2Y2	E2E-X5MY2	E2E-X5Y2	E2E-X10MY2	E2E-X10Y2	E2E-X18MY2
		Three-wire	NO+NC								
Detection distance				1.5mm±10%	2mm±10%	2mm±10%	4mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
Set distance				0~1.2mm	0~1.6mm	0~1.6mm	0~3.2mm	0~4mm	0~7mm	0~8mm	0~13mm
Standard detection object				8×8×1mm	12×12×1mm	12×12×1mm	15×15×1mm	18×18×1mm	30×30×1mm	30×30×1mm	54×54×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chart 25	Chart 26	Chart 27	Chart 28	Chart 29	Chart 30	Chart 31	Chart 32

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：Nickel plated brass），（Detection surface：ABS）.

External dimension

Chart 17 PR08-1.5□

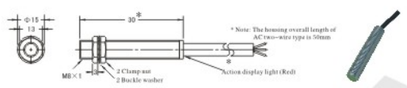


Chart 18 PR08-2□

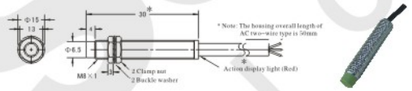


Chart 19 PR12-2□

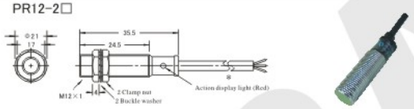


Chart 20 PR12-4□

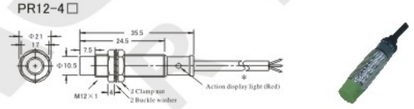


Chart 21 PR18-5□

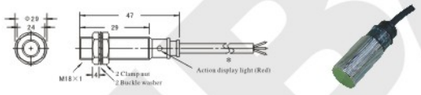


Chart 22 PR18-8□

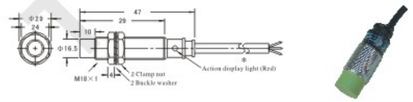


Chart 23 PR30-10□

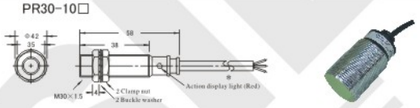


Chart 24 PR30-15□

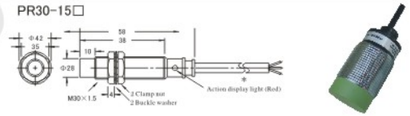


Chart 25 E2E-X1R5□

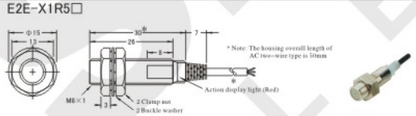


Chart 26 E2E-X2M□

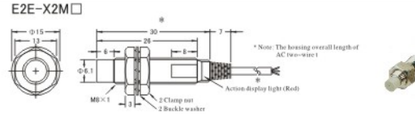


Chart 27 E2E-X2□

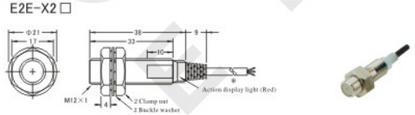


Chart 28 E2E-X5M□

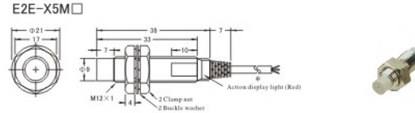


Chart 29 E2E-X5□

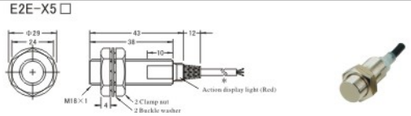


Chart 30 E2E-X10M□

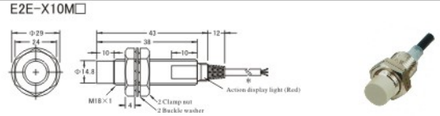


Chart 31 E2E-X10□

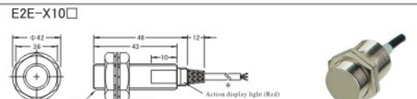
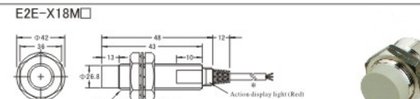


Chart 32 E2E-X18M□



Cylinder type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Used in common places with medium environment resistance
- Red LED indicates that it's available to detect the sensor operating state
- Economic and simple operation
- Widely used, can be the substitution of min-type switch and limiting switch
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				LM Φ4(LJ4)	LM5(LJ5)	LMΦ6(LJ6)		LM8(LJ8)		LM10(LJ10)
Mounting way				Screen shield type	Screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJ4A3-1-Z/BX	LJ5A3-1-Z/BX	LJ6A3-1-Z/BX	LJ6A3-2-Z/BX	LJ8A3-1-Z/BX	LJ8A3-2-Z/BX	LJ10A3-2-Z/BX
			NC	LJ4A3-1-Z/AX	LJ5A3-1-Z/AX	LJ6A3-1-Z/AX	LJ6A3-2-Z/AX	LJ8A3-1-Z/AX	LJ8A3-2-Z/AX	LJ10A3-2-Z/AX
			NO+NC							
		PNP	NO	LJ4A3-1-Z/BY	LJ5A3-1-Z/BY	LJ6A3-1-Z/BY	LJ6A3-2-Z/BY	LJ8A3-1-Z/BY	LJ8A3-2-Z/BY	LJ10A3-2-Z/BY
			NC	LJ4A3-1-Z/AY	LJ5A3-1-Z/AY	LJ6A3-1-Z/AY	LJ6A3-2-Z/AY	LJ8A3-1-Z/AY	LJ8A3-2-Z/AY	LJ10A3-2-Z/AY
			NO+NC							
		Two-wire	NO			LJ6A3-1-Z/EX	LJ6A3-2-Z/EX	LJ8A3-1-Z/EX	LJ8A3-2-Z/EX	LJ10A3-2-Z/EX
			NC			LJ6A3-1-Z/DX	LJ6A3-2-Z/DX	LJ8A3-1-Z/DX	LJ8A3-2-Z/DX	LJ10A3-2-Z/DX
	AC type	Two-wire	NO			LJ6A3-1-J/EZ	LJ6A3-2-J/EZ	LJ8A3-1-J/EZ	LJ8A3-2-J/EZ	LJ10A3-2-J/EZ
			NC			LJ6A3-1-J/DZ	LJ6A3-2-J/DZ	LJ8A3-1-J/DZ	LJ8A3-2-J/DZ	LJ10A3-2-J/DZ
		Three-wire	NO+NC							
Detection distance				1mm±10%	1mm±10%	1.5mm±10%	2mm±10%	1.5mm±10%	2mm±10%	2mm±10%
Set distance				0~0.7mm	0~0.7mm	0~1.2mm	0~1.6mm	0~1.2mm	0~1.6mm	0~1.6mm
Standard detection object				5×5×1mm	5×5×1mm	8×8×1mm	12×12×1mm	8×8×1mm	12×12×1mm	8×8×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chart 33	Chart 34	Chart 35		Chart 36	Chart 37	Chart 38

Type and Specification

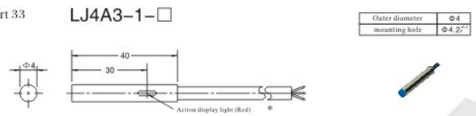
Dimension				LM12(LJ12)		LM18(LJ18)		LM24(LJ24)		LM30(LJ30)	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJ12A3-2-Z/BX	LJ12A3-4-Z/BX	LJ18A3-5-Z/BX	LJ18A3-8-Z/BX	LJ24A3-8-Z/BX	LJ24A3-10-Z/BX	LJ30A3-10-Z/BX	LJ30A3-15-Z/BX
			NC	LJ12A3-2-Z/AX	LJ12A3-4-Z/AX	LJ18A3-5-Z/AX	LJ18A3-8-Z/AX	LJ24A3-8-Z/AX	LJ24A3-10-Z/AX	LJ30A3-10-Z/AX	LJ30A3-15-Z/AX
			NO+NC	LJ12A3-2-Z/CX	LJ12A3-4-Z/CX	LJ18A3-5-Z/CX	LJ18A3-8-Z/CX	LJ24A3-8-Z/CX	LJ24A3-10-Z/CX	LJ30A3-10-Z/CX	LJ30A3-15-Z/CX
		PNP	NO	LJ12A3-2-Z/BY	LJ12A3-4-Z/BY	LJ18A3-5-Z/BY	LJ18A3-8-Z/BY	LJ24A3-8-Z/BY	LJ24A3-10-Z/BY	LJ30A3-10-Z/BY	LJ30A3-15-Z/BY
			NC	LJ12A3-2-Z/AY	LJ12A3-4-Z/AY	LJ18A3-5-Z/AY	LJ18A3-8-Z/AY	LJ24A3-8-Z/AY	LJ24A3-10-Z/AY	LJ30A3-10-Z/AY	LJ30A3-15-Z/AY
			NO+NC	LJ12A3-2-Z/CY	LJ12A3-4-Z/CY	LJ18A3-5-Z/CY	LJ18A3-8-Z/CY	LJ24A3-8-Z/CY	LJ24A3-10-Z/CY	LJ30A3-10-Z/CY	LJ30A3-15-Z/CY
		Two-wire	NO	LJ12A3-2-Z/EX	LJ12A3-4-Z/EX	LJ18A3-5-Z/EX	LJ18A3-8-Z/EX	LJ24A3-8-Z/EX	LJ24A3-10-Z/EX	LJ30A3-10-Z/EX	LJ30A3-15-Z/EX
			NC	LJ12A3-2-Z/DX	LJ12A3-4-Z/DX	LJ18A3-5-Z/DX	LJ18A3-8-Z/DX	LJ24A3-8-Z/DX	LJ24A3-10-Z/DX	LJ30A3-10-Z/DX	LJ30A3-15-Z/DX
	AC type	Two-wire	NO	LJ12A3-2-J/EZ	LJ12A3-4-J/EZ	LJ18A3-5-J/EZ	LJ18A3-8-J/EZ	LJ24A3-8-J/EZ	LJ24A3-10-J/EZ	LJ30A3-10-J/EZ	LJ30A3-15-J/EZ
			NC	LJ12A3-2-J/DZ	LJ12A3-4-J/DZ	LJ18A3-5-J/DZ	LJ18A3-8-J/DZ	LJ24A3-8-J/DZ	LJ24A3-10-J/DZ	LJ30A3-10-J/DZ	LJ30A3-15-J/DZ
		Three-wire	NO+NC			LJ18A3-5-J/EDZ	LJ18A3-8-J/EDZ	LJ24A3-8-J/EDZ	LJ24A3-10-J/EDZ	LJ30A3-10-J/EDZ	LJ30A3-15-J/EDZ
Detection distance				2mm±10%	4mm±10%	5mm±10%	8mm±10%	8mm±10%	10mm±10%	10mm±10%	15mm±10%
Set distance				0~1.6mm	0~3.6mm	0~4mm	0~7mm	0~7mm	0~8mm	0~8mm	0~13mm
Standard detection object				12×12×1mm	15×15×1mm	18×18×1mm	30×30×1mm	24×24×1mm	30×30×1mm	30×30×1mm	54×54×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chart 39	Chart 40	Chart 41	Chart 42	Chart 43	Chart 44	Chart 45	Chart 46

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：Nickel plated brass），（Detection surface：ABS）.

External dimension

Chart 33 LJ4A3-1-□



Outer diameter	Φ4
mounting hole	Φ4.2+

Chart 34 LJ5A3-1-□

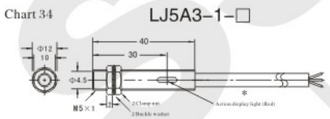
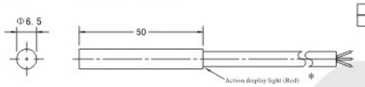


Chart 35 LJ6A3-1-□



Outer diameter	Φ6.5
mounting hole	Φ6.7+

Chart 36 LJ8A3-1-□

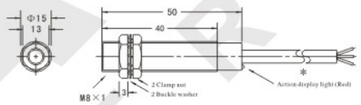


Chart 37 LJ8A3-2-□

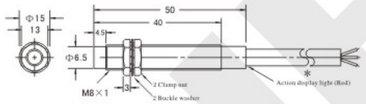


Chart 38 LJ10A3-2-□

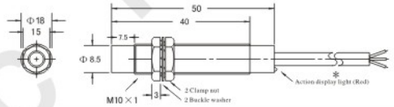


Chart 39 LJ12A3-2-□

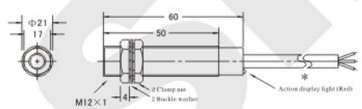


Chart 40 LJ12A3-4-□

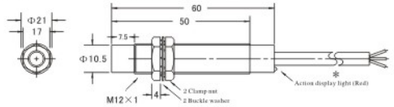


Chart 41 LJ18A3-5-□

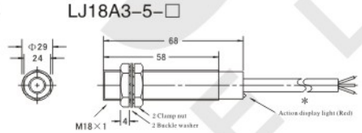


Chart 42 LJ18A3-8-□

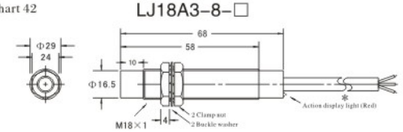


Chart 43 LJ24A3-8-□

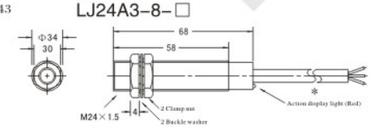


Chart 44 LJ24A3-10-□

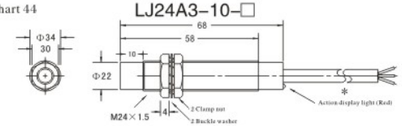


Chart 45 LJ30A3-10-□

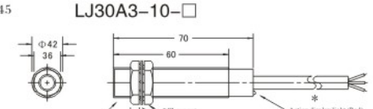
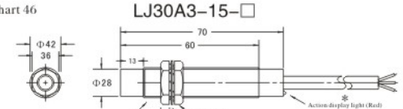


Chart 46 LJ30A3-15-□



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Type and Specification

Dimension				LM14(LJ14)		LM16(LJ16)		LM20(LJ20)		LM22(LJ22)	
Mounting way				Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type	Screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJ14A3-3-Z/BX	LJ14A3-5-Z/BX	LJ16A3-3-Z/BX	LJ16A3-5-Z/BX	LJ20A3-5-Z/BX	LJ20A3-8-Z/BX	LJ22A3-5-Z/BX	LJ22A3-8-Z/BX
			NC	LJ14A3-3-Z/AX	LJ14A3-5-Z/AX	LJ16A3-3-Z/AX	LJ16A3-5-Z/AX	LJ20A3-5-Z/AX	LJ20A3-8-Z/AX	LJ22A3-5-Z/AX	LJ22A3-8-Z/AX
			NO+NC	LJ14A3-3-Z/CX	LJ14A3-5-Z/CX	LJ16A3-3-Z/CX	LJ16A3-5-Z/CX	LJ20A3-5-Z/CX	LJ20A3-8-Z/CX	LJ22A3-5-Z/CX	LJ22A3-8-Z/CX
		PNP	NO	LJ14A3-3-Z/BY	LJ14A3-5-Z/BY	LJ16A3-3-Z/BY	LJ16A3-5-Z/BY	LJ20A3-5-Z/BY	LJ20A3-8-Z/BY	LJ22A3-5-Z/BY	LJ22A3-8-Z/BY
			NC	LJ14A3-3-Z/AY	LJ14A3-5-Z/AY	LJ16A3-3-Z/AY	LJ16A3-5-Z/AY	LJ20A3-5-Z/AY	LJ20A3-8-Z/AY	LJ22A3-5-Z/AY	LJ22A3-8-Z/AY
			NO+NC	LJ14A3-3-Z/CY	LJ14A3-5-Z/CY	LJ16A3-3-Z/CY	LJ16A3-5-Z/CY	LJ20A3-5-Z/CY	LJ20A3-8-Z/CY	LJ22A3-5-Z/CY	LJ22A3-8-Z/CY
		Two-wire	NO	LJ14A3-3-Z/EX	LJ14A3-5-Z/EX	LJ16A3-3-Z/EX	LJ16A3-5-Z/EX	LJ20A3-5-Z/EX	LJ20A3-8-Z/EX	LJ22A3-5-Z/EX	LJ22A3-8-Z/EX
			NC	LJ14A3-3-Z/DX	LJ14A3-5-Z/DX	LJ16A3-3-Z/DX	LJ16A3-5-Z/DX	LJ20A3-5-Z/DX	LJ20A3-8-Z/DX	LJ22A3-5-Z/DX	LJ22A3-8-Z/DX
	AC type	Two-wire	NO	LJ14A3-3-J/EZ	LJ14A3-5-J/EZ	LJ16A3-3-J/EZ	LJ16A3-5-J/EZ	LJ20A3-5-J/EZ	LJ20A3-8-J/EZ	LJ22A3-5-J/EZ	LJ22A3-8-J/EZ
			NC	LJ14A3-3-J/DZ	LJ14A3-5-J/DZ	LJ16A3-3-J/DZ	LJ16A3-5-J/DZ	LJ20A3-5-J/DZ	LJ20A3-8-J/DZ	LJ22A3-5-J/DZ	LJ22A3-8-J/DZ
		Three-wire	NO+NC					LJ20A3-5-J/EDZ	LJ20A3-8-J/EDZ	LJ22A3-5-J/EDZ	LJ22A3-8-J/EDZ
Detection distance				3mm±10%	5mm±10%	3mm±10%	5mm±10%	5mm±10%	8mm±10%	5mm±10%	8mm±10%
Set distance				0~2.1mm	0~4mm	0~2.4mm	0~4mm	0~4mm	0~7mm	0~4mm	0~7mm
Standard detection object				14×14×1mm	15×15×1mm	20×20×1mm	30×30×1mm	20×20×1mm	30×30×1mm	22×22×1mm	30×30×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chart 47	Chart 48	Chart 49	Chart 50	Chart 51	Chart 52	Chart 53	

Type and Specification

Dimension				LM38(LJ38)	LMΦ40+M24(SC)	LMΦ48+M24(SM)	LMΦ34(SH)	LMΦ45(SG)
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJ38A4-18-Z/BX	SC-3020A	SM-3025A	SH-3020A	SG-3020A
			NC	LJ38A4-18-Z/AX	SC-3020B	SM-3025B	SH-3020B	SG-3020B
			NO+NC	LJ38A4-18-Z/CX	SC-3020AB	SM-3025AB	SH-3020AB	SG-3020AB
		PNP	NO	LJ38A4-18-Z/BY	SC-3020C	SM-3025C	SH-3020C	SG-3020C
			NC	LJ38A4-18-Z/AY	SC-3020D	SM-3025D	SH-3020D	SG-3020D
			NO+NC	LJ38A4-18-Z/CY	SC-3020CD	SM-3025CD	SH-3020CD	SG-3020CD
		Two-wire	NO	LJ38A4-18-Z/EX	SC-3020AL	SM-3025AL	SH-3020AL	SG-3020AL
			NC	LJ38A4-18-Z/DX	SC-3020BL	SM-3025BL	SH-3020BL	SG-3020BL
	AC type	Two-wire	NO	LJ38A4-18-J/EZ	SC-2020A	SM-2025A	SH-2020A	SG-2020A
			NC	LJ38A4-18-J/DZ	SC-2020B	SM-2025B	SH-2020B	SG-2020B
		Three-wire	NO+NC	LJ38A4-18-J/EDZ	SC-2020AB	SM-2025AB	SH-2020AB	SG-2020AB
Detection distance				18mm±10%	20mm±10%	25mm±10%	20mm±10%	20mm±10%
Set distance				0~16mm	0~17mm	0~22mm	0~17mm	0~17mm
Standard detection object				54×54×1mm	54×54×1mm	65×65×1mm	78×78×1mm	70×70×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chart 54	Chart 55	Chart 56	Chart 57	Chart 58

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP65 (IEC specification)
Material：（Housing：Nickel plated brass）,（Detection surface：ABS）.

External dimension

Chart 47 LJ14A3-3-□

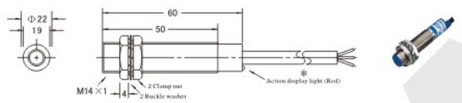


Chart 48 LJ14A3-5-□

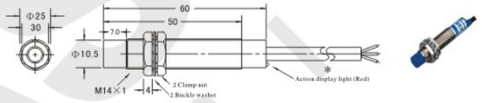


Chart 49 LJ16A3-3-□

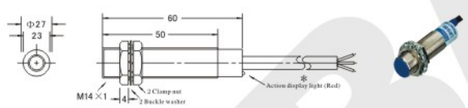


Chart 50 LJ16A3-5-□

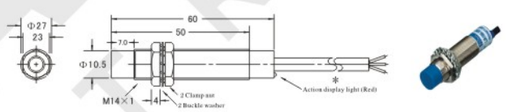


Chart 51 LJ20A3-5-□

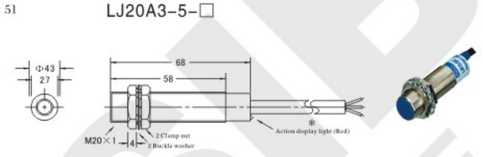


Chart 52 LJ20A3-8-□

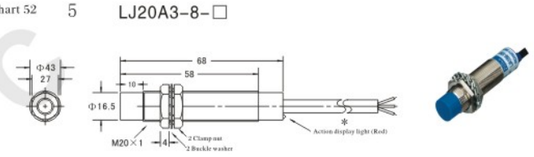


Chart 53 LJ22A3-8-□

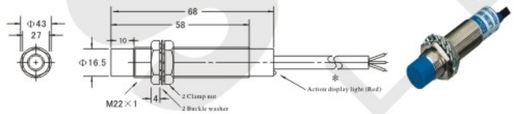


Chart 54 LJ38A4-18-□

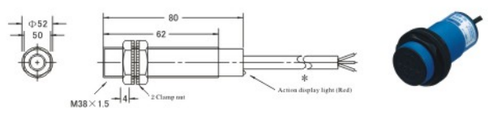


Chart 55 SC-□

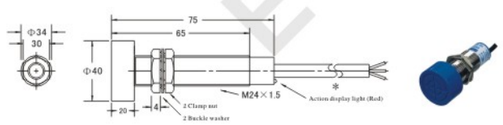


Chart 56 SM-□

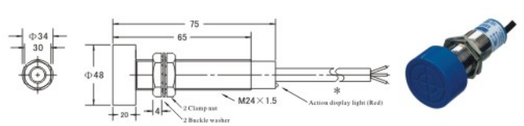


Chart 57 SH-□

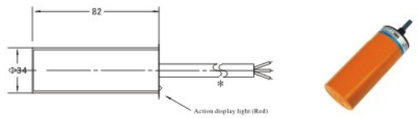
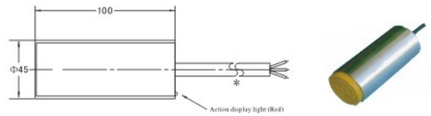


Chart 58 SG-□



Horn type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				17×17×28	25×25×38	30×30×52	35×35×52	40×40×52	18×18×36	17×17×28	17×17×28
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	TL-Q5MC1	TL-N5ME1	TL-N10ME1	TL-N15ME1	TL-N20ME1	PS17-5DN	PS-05N	PS-08N
			NC	TL-Q5MC2	TL-N5ME2	TL-N10ME2	TL-N15ME2	TL-N20ME2	PS17-5DN2	PS-05N2	PS-08N2
			NO+NC	TL-Q5MC3	TL-N5ME3	TL-N10ME3	TL-N15ME3	TL-N20ME3	PS17-5DN3	PS-05N3	PS-08N3
		PNP	NO	TL-Q5MF1	TL-N5MF1	TL-N10MF1	TL-N15MF1	TL-N20MF1	PS17-5DP	PS-05P	PS-08P
			NC	TL-Q5MF2	TL-N5MF2	TL-N10MF2	TL-N15MF2	TL-N20MF2	PS17-5DP2	PS-05P2	PS-08P2
			NO+NC	TL-Q5MF3	TL-N5MF3	TL-N10MF3	TL-N15MF3	TL-N20MF3	PS17-5DP3	PS-05P3	PS-08P3
		Two-wire	NO	TL-Q5MD1	TL-N5MD1	TL-N10MD1	TL-N15MD1	TL-N20MD1	PS17-5D1	PS-05D1	PS-08D1
			NC	TL-Q5MD2	TL-N5MD2	TL-N10MD2	TL-N15MD2	TL-N20MD2	PS17-5D2	PS-05D2	PS-08D2
	AC type	Two-wire	NO	TL-Q5MY1	TL-N5MY1	TL-N10MY1	TL-N15MY1	TL-N20MY1	PS17-5Y1	PS-05Y1	PS-08Y1
			NC	TL-Q5MY2	TL-N5MY2	TL-N10MY2	TL-N15MY2	TL-N20MY2	PS17-5Y2	PS-05Y2	PS-08Y2
		Three-wire	NO+NC								
Detection distance				5mm±10%	5mm±10%	10mm±10%	15mm±10%	20mm±10%	5mm±10%	5mm±10%	8mm±10%
Set distance				0~4mm	0~4mm	0~8mm	0~13mm	0~17mm	0~4mm	0~4mm	0~7mm
Standard detection object				18×18×1mm	25×25×1mm	45×45×1mm	45×45×1mm	50×50×1mm	18×18×1mm	18×18×1mm	18×18×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chatr59	Chatr60	Chatr61	—	Chatr62	Chatr63	Chatr64	

Type and Specification

Dimension				17×17×35	17×17×35	18×18×36	18×18×34	17×17×29	20×20×36	25×25×52	30×30×52
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	PL-05N	PL-08N	SN04-N	SN05-N	SN06-N	SN07-N	Ni10-Q25-AN6X	Ni15-Q30-AN6X
			NC	PL-05N2	PL-08N2	SN04-N2	SN05-N2	SN06-N2	SN07-N2	Ni10-Q25-RN6X	Ni15-Q30-RN6X
			NO+NC	PL-05N3	PL-08N3	SN04-N3	SN05-N3	SN06-N3	SN07-N3		
		PNP	NO	PL-05P	PL-08P	SN04-P	SN05-P	SN06-P	SN07-P	Ni10-Q25-AP6X	Ni15-Q30-AP6X
			NC	PL-05P2	PL-08P2	SN04-P2	SN05-P2	SN06-P2	SN07-P2	Ni10-Q25-RP6X	Ni15-Q30-RP6X
			NO+NC	PL-05P3	PL-08P3	SN04-P3	SN05-P3	SN06-P3	SN07-P3		
		Two-wire	NO	PL-05D1	PL-08D1	SN04-D1	SN05-D1	SN06-D1	SN07-D1	Ni10-Q25-AD4X	Ni15-Q30-AD4X
			NC	PL-05D2	PL-08D2	SN04-D2	SN05-D2	SN06-D2	SN07-D2	Ni10-Q25-RD4X	Ni15-Q30-RD4X
	AC type	Two-wire	NO	PL-05Y1	PL-08Y1	SN04-Y1	SN05-Y1	SN06-Y1	SN07-Y1	Ni10-Q25-AZ3X	Ni15-Q30-AZ3X
			NC	PL-05Y2	PL-08Y2	SN04-Y2	SN05-Y2	SN06-Y2	SN07-Y2	Ni10-Q25-RZ3X	Ni15-Q30-RZ3X
		Three-wire	NO+NC								
Detection distance				5mm±10%	8mm±10%	5mm±10%	5mm±10%	5mm±10%	8mm±10%	10mm±10%	15mm±10%
Set distance				0~4mm	0~7mm	0~4mm	0~4mm	0~4mm	0~7mm	0~8mm	0~13mm
Standard detection object				18×18×1mm	18×18×1mm	18×18×1mm	18×18×1mm	18×18×1mm	18×18×1mm	30×30×1mm	50×50×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chatr65		Chatr66	Chatr67	—	—	Chatr68	Chatr69

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：ABS）,（Detection surface：ABS）.

External dimension

Chart59 TL-Q5M□

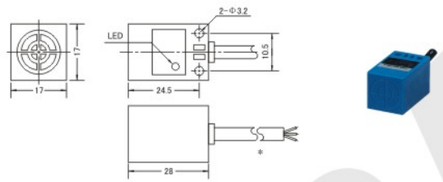


Chart60 TL-N5M□

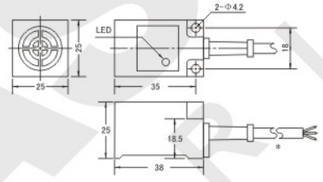


Chart61 TL-N10M□

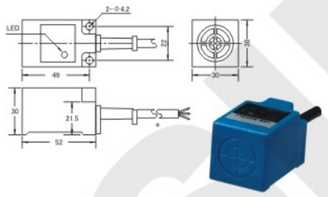


Chart62 TL-N20M□

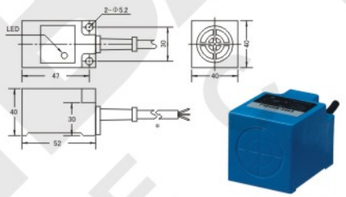


Chart63 PS17-5□

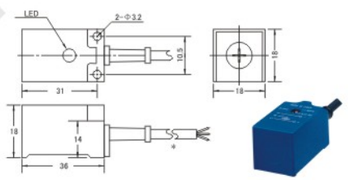


Chart64 PS-05(8)□

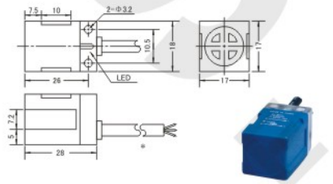


Chart65 PL-05(8)□

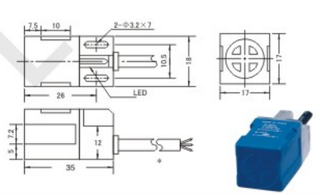


Chart66 SN04-□

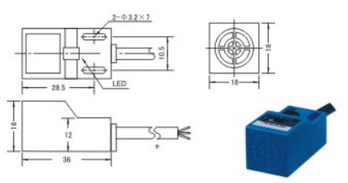


Chart67 SN05-□

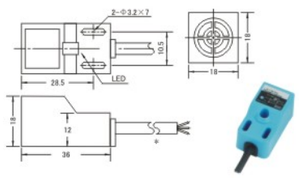


Chart68 Ni10-Q25-□

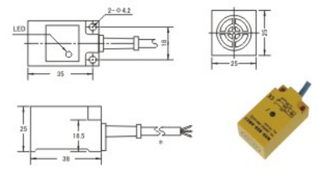
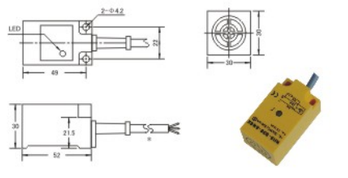


Chart69 Ni15-Q30-□



Horn type and square type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				12×12×45	25×25×39	30×30×53		40×40×53	30×18×10	50×25×10
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type		Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	PS12-4DN	PSN25-5DN	PSN30-10DN	PSN30-15DN	PSN40-20DN	GKB-M0524NA	TL-W5E1
			NC	PS12-4DN2	PSN25-5DN2	PSN30-10DN2	PSN30-15DN2	PSN40-20DN2	GKB-M0524NB	TL-W5E2
			NO+NC		PSN25-5DN3	PSN30-10DN3	PSN30-15DN3	PSN40-20DN3		
		PNP	NO	PS12-4DP	PSN25-5DP	PSN30-10DP	PSN30-15DP	PSN40-20DP	GKB-M0524PA	TL-W5F1
			NC	PS12-4DP2	PSN25-5DP2	PSN30-10DP2	PSN30-15DP2	PSN40-20DP2	GKB-M0524PB	TL-W5F2
			NO+NC		PSN25-5DP3	PSN30-10DP3	PSN30-15DP3	PSN40-20DP3		
		Two-wire	NO	PS12-4DO	PSN25-5DO	PSN30-10DO	PSN30-15DO	PSN40-20DO	GKB-M0524D1	TL-W5D1
			NC	PS12-4DC	PSN25-5DC	PSN30-10DC	PSN30-15DC	PSN40-20DC	GKB-M0524D2	TL-W5D2
	AC type	Two-wire	NO	PS12-4AO	PSN25-5AO	PSN30-10AO	PSN30-15AO	PSN40-20AO		TL-W5A1
			NC	PS12-4AC	PSN25-5AC	PSN30-10AC	PSN30-15AC	PSN40-20AC		TL-W5A2
		Three-wire	NO+NC							
Detection distance				4mm±10%	5mm±10%	10mm±10%	15mm±10%	20mm±10%	5mm±10%	5mm±10%
Set distance				0~3.6mm	0~4mm	0~8mm	0~13mm	0~17mm	0~4mm	0~4mm
Standard detection object				Metal18×18×1mm	Metal 30×30×1mm	Metal 45×45×1mm	Metal 45×45×1mm	Metal50×50×1mm	Metal 18×18×1mm	Metal 18×18×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr70	Chatr71	Chatr72		Chatr73	Chatr74	Chatr75

Type and Specification

Dimension				45×30×12	120×80×30	40×26×12		60×60×12	40×40×68	55×39×128
Mounting way				Non-screen shield type	Non-screen shield type	screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	TL-W7E1	HJ-3050A	GN-0224NA	GN-0424NA	ST-3NK-F	JKD-1 (+)	
			NC	TL-W7E2	HJ-3050B	GN-0224NB	GN-0424NB	ST-3NH-F	JKD-1 (-)	
			NO+NC		HJ-3050AB			ST-4NKH-F		
		PNP	NO	TL-W7F1	HJ-3050C	GN-0224PA	GN-0424PA	ST-3PK-F		
			NC	TL-W7F2	HJ-3050D	GN-0224PB	GN-0424PB	ST-3PH-F		
			NO+NC		HJ-3050CD			ST-4PKH-F		
		Two-wire	NO	TL-W7D1	HJ-3050AL	GN-0224LA	GN-0424LA	ST-2K-F		
			NC	TL-W7D2	HJ-3050BL	GN-0224LB	GN-0424LB	ST-2H-F		
	AC type	Two-wire	NO	TL-W7A1	HJ-2050A	GN-0222KA	GN-0422KA	ST-2K-G		
			NC	TL-W7A2	HJ-2050B	GN-0222KB	GN-0422KB	ST-2H-G		
		Three-wire	NO+NC		HJ-2050AB					3SG3266-1BR86
Detection distance				7mm±10%	50mm±10%	2mm±10%	4mm±10%	5mm±10%	10mm±10%	30mm±10%
Set distance				0~5mm	0~40mm	0~1.6mm	0~3.6mm	0~4mm	0~8mm	0~25mm
Standard detection object				25×25×1mm	100×100×2mm	12×12×1mm	18×18×1mm	18×18×1mm	45×45×1mm	60×60×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr76	Chatr77	Chatr78		Chatr79	Chatr80	Chatr71

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：ABS）,（Detection surface：ABS）.

External dimension

Chart59 TL-Q5M□

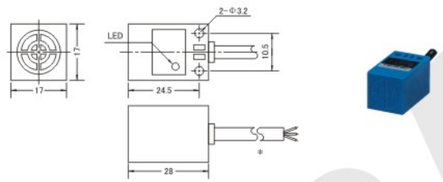


Chart60 TL-N5M□

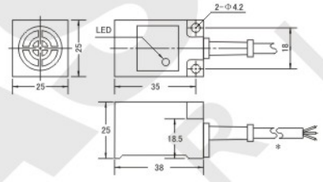


Chart61 TL-N10M□

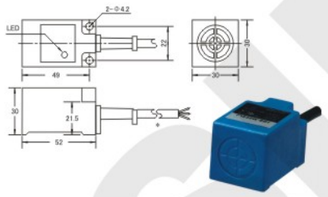


Chart62 TL-N20M□

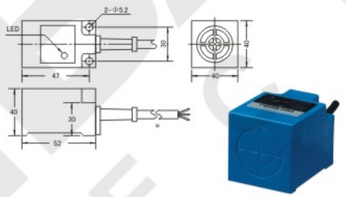


Chart63 PS17-5□

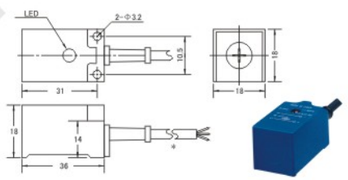


Chart64 PS-05(8)□

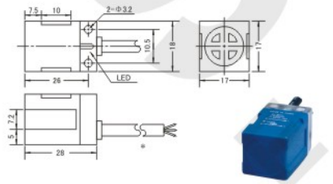


Chart65 PL-05(8)□

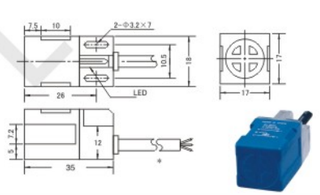


Chart66 SN04-□

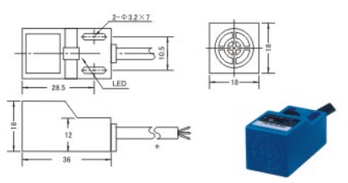


Chart67 SN05-□

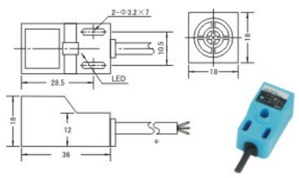


Chart68 Ni10-Q25-□

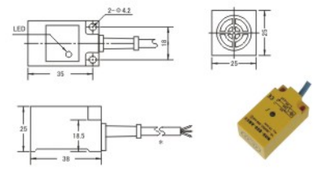
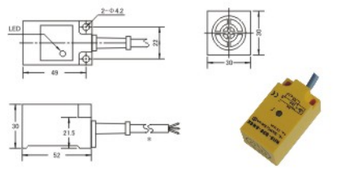


Chart69 Ni15-Q30-□



Horn type and square type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				12×12×45	25×25×39	30×30×53		40×40×53	30×18×10	50×25×10
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type		Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	PS12-4DN	PSN25-5DN	PSN30-10DN	PSN30-15DN	PSN40-20DN	GKB-M0524NA	TL-W5E1
			NC	PS12-4DN2	PSN25-5DN2	PSN30-10DN2	PSN30-15DN2	PSN40-20DN2	GKB-M0524NB	TL-W5E2
			NO+NC		PSN25-5DN3	PSN30-10DN3	PSN30-15DN3	PSN40-20DN3		
		PNP	NO	PS12-4DP	PSN25-5DP	PSN30-10DP	PSN30-15DP	PSN40-20DP	GKB-M0524PA	TL-W5F1
			NC	PS12-4DP2	PSN25-5DP2	PSN30-10DP2	PSN30-15DP2	PSN40-20DP2	GKB-M0524PB	TL-W5F2
			NO+NC		PSN25-5DP3	PSN30-10DP3	PSN30-15DP3	PSN40-20DP3		
		Two-wire	NO	PS12-4DO	PSN25-5DO	PSN30-10DO	PSN30-15DO	PSN40-20DO	GKB-M0524D1	TL-W5D1
			NC	PS12-4DC	PSN25-5DC	PSN30-10DC	PSN30-15DC	PSN40-20DC	GKB-M0524D2	TL-W5D2
	AC type	Two-wire	NO	PS12-4AO	PSN25-5AO	PSN30-10AO	PSN30-15AO	PSN40-20AO		TL-W5A1
			NC	PS12-4AC	PSN25-5AC	PSN30-10AC	PSN30-15AC	PSN40-20AC		TL-W5A2
		Three-wire	NO+NC							
Detection distance				4mm±10%	5mm±10%	10mm±10%	15mm±10%	20mm±10%	5mm±10%	5mm±10%
Set distance				0~3.6mm	0~4mm	0~8mm	0~13mm	0~17mm	0~4mm	0~4mm
Standard detection object				Metal18×18×1mm	Metal 30×30×1mm	Metal 45×45×1mm	Metal 45×45×1mm	Metal50×50×1mm	Metal 18×18×1mm	Metal 18×18×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr70	Chatr71	Chatr72		Chatr73	Chatr74	Chatr75

Type and Specification

Dimension				45×30×12	120×80×30	40×26×12		60×60×12	40×40×68	55×39×128
Mounting way				Non-screen shield type	Non-screen shield type	screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	TL-W7E1	HJ-3050A	GN-0224NA	GN-0424NA	ST-3NK-F	JKD-1 (+)	
			NC	TL-W7E2	HJ-3050B	GN-0224NB	GN-0424NB	ST-3NH-F	JKD-1 (-)	
			NO+NC		HJ-3050AB			ST-4NKH-F		
		PNP	NO	TL-W7F1	HJ-3050C	GN-0224PA	GN-0424PA	ST-3PK-F		
			NC	TL-W7F2	HJ-3050D	GN-0224PB	GN-0424PB	ST-3PH-F		
			NO+NC		HJ-3050CD			ST-4PKH-F		
		Two-wire	NO	TL-W7D1	HJ-3050AL	GN-0224LA	GN-0424LA	ST-2K-F		
			NC	TL-W7D2	HJ-3050BL	GN-0224LB	GN-0424LB	ST-2H-F		
	AC type	Two-wire	NO	TL-W7A1	HJ-2050A	GN-0222KA	GN-0422KA	ST-2K-G		
			NC	TL-W7A2	HJ-2050B	GN-0222KB	GN-0422KB	ST-2H-G		
		Three-wire	NO+NC		HJ-2050AB					3SG3266-1BR86
Detection distance				7mm±10%	50mm±10%	2mm±10%	4mm±10%	5mm±10%	10mm±10%	30mm±10%
Set distance				0~5mm	0~40mm	0~1.6mm	0~3.6mm	0~4mm	0~8mm	0~25mm
Standard detection object				25×25×1mm	100×100×2mm	12×12×1mm	18×18×1mm	18×18×1mm	45×45×1mm	60×60×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr76	Chatr77	Chatr78		Chatr79	Chatr80	Chatr71

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35-95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：ABS），（Detection surface：ABS）.

External dimension

Chart70 PS12-4□

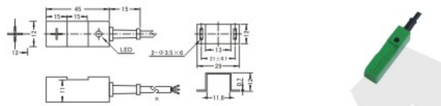


Chart71 PSN25-5□

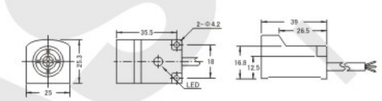


Chart72 PSN30-10(15)□

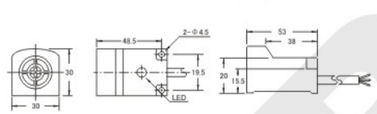


Chart73 PSN40-20□

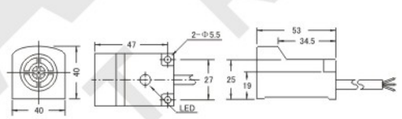


Chart74 GKB-M0524□

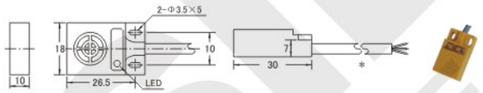


Chart75 TL-W5□

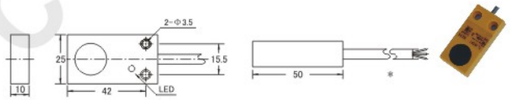


Chart76 TL-W7□

Chart77 HJ-□

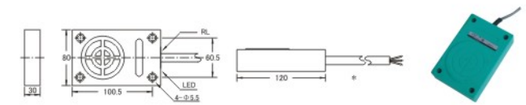


Chart78 GN-02(04)□

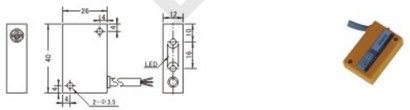


Chart79 ST-□

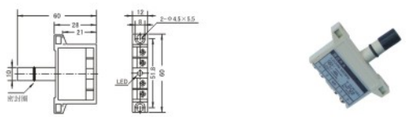


Chart80 JKD-□

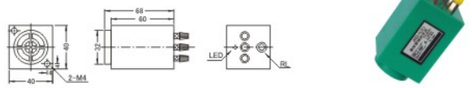
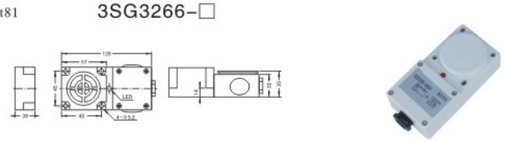


Chart81 3SG3266-□



Square type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				30×30×80	40×40×118		55×55×130	50×50×50	55×55×52	80×80×48
Mounting way				Non-screen shield type	Non-screen shield type		Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	HY-3010A	HY-3015A	HY-3020A	HY-3030A	HD-3020A	HE-3025A	HM-3040A
			NC	HY-3010B	HY-3015B	HY-3020B	HY-3030B	HD-3020B	HE-3025B	HM-3040B
			NO+NC	HY-3010AB	HY-3015AB	HY-3020AB	HY-3030AB			
		PNP	NO	HY-3010C	HY-3015C	HY-3020C	HY-3030C	HD-3020C	HE-3025C	HM-3040C
			NC	HY-3010D	HY-3015D	HY-3020D	HY-3030D	HD-3020D	HE-3025D	HM-3040D
			NO+NC	HY-3010CD	HY-3015CD	HY-3020CD	HY-3030CD			
	AC type	Two-wire	NO	HY-3010AL	HY-3015AL	HY-3020AL	HY-3030AL	HD-3020AL	HE-3025AL	HM-3040AL
			NC	HY-3010BL	HY-3015BL	HY-3020BL	HY-3030BL	HD-3020BL	HE-3025BL	HM-3040BL
		Three-wire	NO	HY-2010A	HY-2015A	HY-2020A	HY-2030A	HD-2020A	HE-2025A	HM-2040A
			NC	HY-2010B	HY-2015B	HY-2020B	HY-2030B	HD-2020B	HE-2025B	HM-2040B
			NO+NC		HY-2015AB	HY-2020AB	HY-2030AB	HD-2020AB	HE-2025AB	HM-2040AB
Detection distance				10mm±10%	15mm±10%	20mm±10%	30mm±10%	20mm±10%	25mm±10%	40mm±10%
Set distance				0~8mm	0~13mm	0~17mm	0~27mm	0~17mm	0~22mm	0~35mm
Standard detection object				30×30×1mm	50×50×1mm	50×50×1mm	65×65×1mm	50×50×1mm	60×60×1mm	90×90×2mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chatr82	Chatr83		Chatr84	Chatr85	Chatr86	Chatr87

Type and Specification

Dimension				38×40×80	44×45×90	52×33×25	56×36×26	65×39×25	31×33×50	31×33×50	34×42×73
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJ2-15/221	LJ2-20/221	LJ1A-24			JWK-D5P	JWK-A5P	JWK-D10P
			NC	LJ2-15G/221	LJ2-20G/221	LJ1A-24B			JWK-D5P2	JWK-A5P2	JWK-D10P2
	AC type	Two-wire	NO	LJ2L-15-4/121	LJ2L-20-4/121	LJ1A-220	WJK-Ⅱ Green Cover	WJK2-Ⅱ White Cover			
			NC	LJ2L-15G-4/121	LJ2L-20G-4/121	LJ1A-220B	WJK-Ⅱ 2Green Cover	WJK2-Ⅱ 2White Cover			
Detection distance				15mm±10%	20mm±10%	8mm±10%	8mm±10%	8mm±10%	5mm±10%	5mm±10%	10mm±10%
Set distance				0~13mm	0~17mm	0~7mm	0~7mm	0~7mm	0~4mm	0~4mm	0~8mm
Standard detection object				45×45×1mm	50×50×1mm	18×18×1mm	18×18×1mm	18×18×1mm	18×18×1mm	18×18×1mm	25×25×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chatr88	Chatr89	Chatr90	Chatr91	Chatr92	Chatr93		Chatr94

Dimension				34×42×73	48×48×105	38×40×92	32×26×80	42×90×65	65×55×48	50×25×32	62×25×24
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	JWK-A10P			JWKL12-AΩ		SQS19-Z4N	LJ1-24	LXU1-115G
			NC	JWK-A10P2			JWKL12-BΩ		SQS19-Z4N2	LJ1-24B	LXU1-115G2
	AC type	Two-wire	NO		JWK220-A(D)10J (Voltage type)	GS-M1522KCT		LXJ0-1A(NO+NC)			
			NC		JWK220-A(D)10JK(Element type)	LJG8D-15/J2H1		LXJ0-2D(NO+NC)			
Detection distance				10mm±10%	10mm±10%	15mm±10%	8mm±10%	10mm±10%	4mm±10%	5mm±10%	5mm±10%
Set distance				0~8m	0~8mm	0~13mm	0~7mm	0~8mm	0~3.6mm	0~4mm	0~4mm
Standard detection object				Metal 30×30×1mm	Metal 30×30×1mm	Metal 30×30×1mm	Metal 18×18×1mm	Metal 30×30×1mm	Metal 30×30×1mm	Metal 18×18×1mm	Metal 18×18×1mm
Response frequency				DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz	DC:0.5kHz AC:25Hz
Illustration				Chatr94	Chatr95	—	—	—	—	—	—

Characteristic parameters

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：ABS），（Detection surface：ABS）.

External dimension

Chart 82 HY-□10□

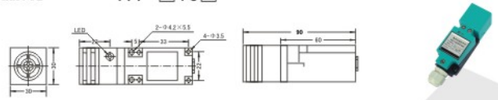


Chart 83 HY-□15(20)□

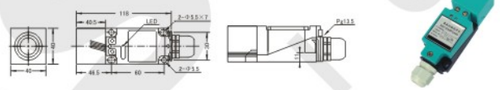


Chart 84 HY-□30□

Chart 85 HD-□20□

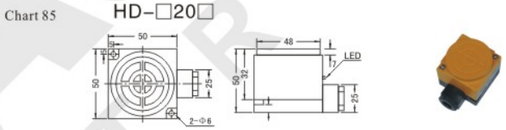


Chart 86 HE-□25□

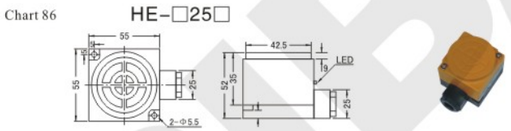


Chart 87 HM-□40□

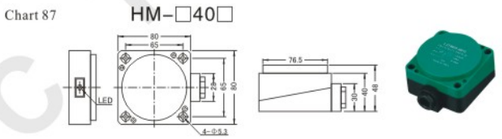


Chart 88 LJ2-15□

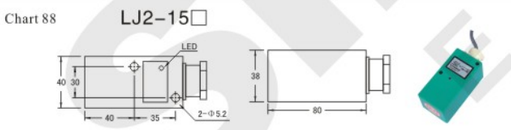


Chart 89 LJ2-20□

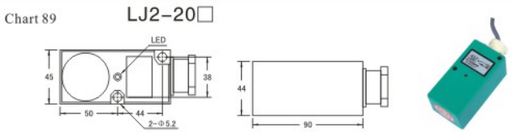


Chart 90 LJ1A-□

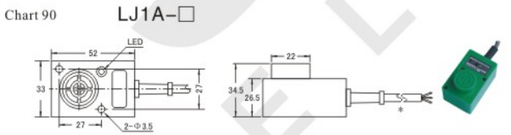


Chart 91 WJK-II

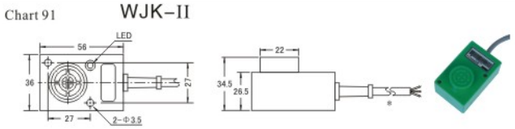


Chart 92 WJK-II

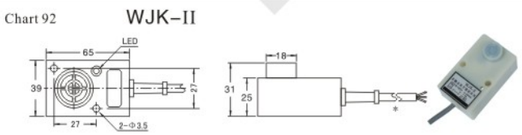


Chart 93 JWK-D(A)5□

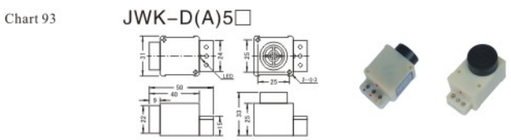


Chart 94 JWK-D(A)10□

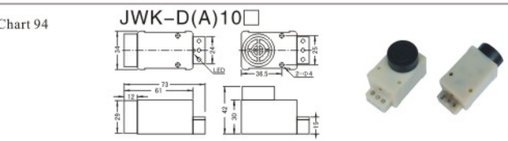
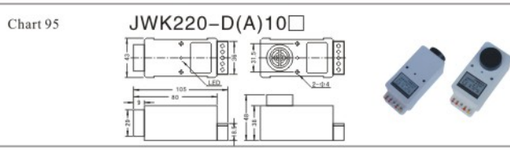


Chart 95 JWK220-D(A)10□



Square and groove type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				28×16×12	32×22×11	10×17×20	16×25×44	16×23×42	15×29×31	86×29×18	87×70×45
Mounting way				Non-screen shield type	Non-screen shield type	Slot type	Slot type	Slot type	Slot type	Non-screen shield type	Slot type
Type	DC type	NPN	NO	LJG5C-4/Z2CN2	LJG5C-5/Z2CN2	LU3-10N1	LU4-16N1	LU5-16N1	LU5-15N1	JKD-J-D12	
			NC	LJG5C-4/Z2BN2	LJG5C-5/Z2BN2	LU3-10N2	LU4-16N2	LU5-16N2	LU5-15N2		
			NO+NC								
		PNP	NO	LJG5C-4/Z2CP2	LJG5C-5/Z2CP2	LU3-10P1	LU4-16P1	LU5-16P1	LU5-15P1		JKS-J-D
			NC	LJG5C-4/Z2BP2	LJG5C-5/Z2BP2	LU3-10P2	LU4-16P2	LU5-16P2	LU5-15P2		
			NO+NC								
		Two-wire	NO	LJG5C-4/Z0AN2	LJG5C-5/Z0AN2		LU4-16D1	LU5-16D1	LU5-15D1		
			NC	LJG5C-4/Z0BN2	LJG5C-5/Z0BN2		LU4-16D2	LU5-16D2	LU5-15D2		
	AC type	Two-wire	NO								
			NC								
		Three-wire	NO+NC								
Detection distance				4mm±10%	5mm±10%	3mm±10%	4mm±10%	5mm±10%	5mm±10%	10mm±10%	10mm±10%
Set distance				0~3.6mm	0~4mm	3mm	4mm	5mm	5mm	0~8mm	10mm
Standard detection object				18×18×1mm	18×18×1mm	18×18×1mm	25×25×1mm	25×25×1mm	25×25×1mm	30×30×1mm	30×30×1mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr96	Chatr97	Chatr98	Chatr99	Chatr100	Chatr101	—	—

Type and Specification

Dimension				Φ36×18	Φ42×25	Φ48×32	Φ55×35	Φ80×40	Φ100×50	Φ140×55	Φ210×64
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	SK-3015A	SJ-3018A	SD-3020A	SE-3025A	TCO-3040A	TCA-3050A	TCB-3080A	TCC-30120A
			NC	SK-3015B	SJ-3018B	SD-3020B	SE-3025B	TCO-3040B	TCA-3050B	TCB-3080B	TCC-30120B
			NO+NC	SK-3015AB	SJ-3018AB	SD-3020AB	SE-3025AB	TCO-3040AB	TCA-3050AB	TCB-3080AB	TCC-30120AB
		PNP	NO	SK-3015C	SJ-3018C	SD-3020C	SE-3025C	TCO-3040C	TCA-3050C	TCB-3080C	TCC-30120C
			NC	SK-3015D	SJ-3018D	SD-3020D	SE-3025D	TCO-3040D	TCA-3050D	TCB-3080D	TCC-30120D
			NO+NC	SK-3015CD	SJ-3018CD	SD-3020CD	SE-3025CD	TCO-3040CD	TCA-3050CD	TCB-3080CD	TCC-30120CD
		Two-wire	NO	SK-3015AL	SJ-3018AL	SD-3020AL	SE-3025AL	TCO-3040AL	TCA-3050AL	TCB-3080AL	TCC-30120AL
			NC	SK-3015BL	SJ-3018BL	SD-3020BL	SE-3025BL	TCO-3040BL	TCA-3050BL	TCB-3080BL	TCC-30120BL
	AC type	Two-wire	NO	SK-2015A	SJ-2018A	SD-2020A	SE-2025A	TCO-2040A	TCA-2050A	TCB-2080A	TCC-20120A
			NC	SK-2015B	SJ-2018B	SD-2020B	SE-2025B	TCO-2040B	TCA-2050B	TCB-2080B	TCC-20120B
		Three-wire	NO+NC			SD-2020AB	SE-2025AB	TCO-2040AB	TCA-2050AB	TCB-2080AB	TCC-20120AB
Detection distance				15mm±10%	18mm±10%	20mm±10%	25mm±10%	40mm±10%	50mm±10%	80mm±10%	120mm±10%
Set distance				0~13mm	0~16mm	0~17mm	0~22mm	0~35mm	0~40mm	0~65mm	0~90mm
Standard detection object				55×55×1mm	60×60×1mm	65×65×1mm	75×75×1mm	80×80×2mm	100×100×2mm	140×140×2mm	210×210×2mm
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr102	Chatr103	Chatr104	Chatr105	Chatr106	Chatr107	Chatr108	Chatr109

Characteristic parameter

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：ABS），（Detection surface：ABS）.

External dimension

Chart 96 LJG5C-4(2)□

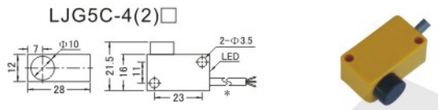


Chart 97 LJG5C-5□

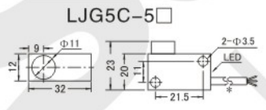


Chart 98 LU3-10□

Chart 99 LU4-16□

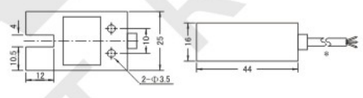


Chart 100 LU5-16□

Chart 101 LU5-15□

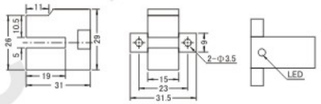


Chart 102 SK-□15□

Chart 103 SJ-□18□

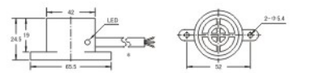


Chart 104 SD-□20□

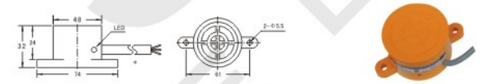


Chart 105 SE-□25□

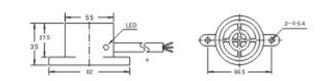


Chart 106 TCO-□40□

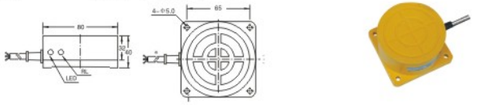


Chart 107 TCA-□50□

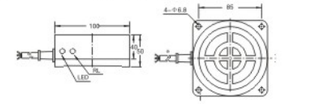


Chart 108 TCB-□80□

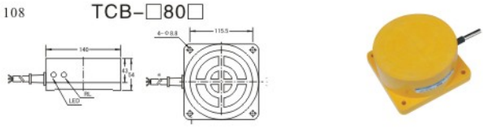
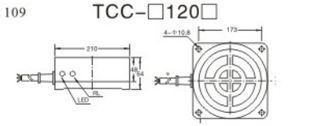
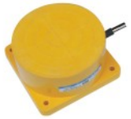


Chart 109 TCC-□120□





Conductive type, can be thedirect substitution of the same type both at home and abroad

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Economic and simple operation
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				M12×1		M18×1		M24×1.5		M30×1	
Mounting way				screen shield type	Non-screen shield type	screen shield type	Non-screen shield type	screen shield type	Non-screen shield type	screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJC12A3-2-Z/BX	LJC12A3-A-Z/BX	LJC18A3-5-Z/BX	LJC18A3-B-Z/BX	LJC24A3-8-Z/BX	LJC24A3-T-Z/BX	LJC30A3-10-Z/BX	LJC30A3-H-Z/BX
			NC	LJC12A3-2-Z/AX	LJC12A3-A-Z/AX	LJC18A3-5-Z/AX	LJC18A3-B-Z/AX	LJC24A3-8-Z/AX	LJC24A3-T-Z/AX	LJC30A3-10-Z/AX	LJC30A3-H-Z/AX
			NO+NC								
		PNP	NO	LJC12A3-2-Z/BY	LJC12A3-A-Z/BY	LJC18A3-5-Z/BY	LJC18A3-B-Z/BY	LJC24A3-8-Z/BY	LJC24A3-T-Z/BY	LJC30A3-10-Z/BY	LJC30A3-H-Z/BY
			NC	LJC12A3-2-Z/AY	LJC12A3-A-Z/AY	LJC18A3-5-Z/AY	LJC18A3-B-Z/AY	LJC24A3-8-Z/AY	LJC24A3-T-Z/AY	LJC30A3-10-Z/AY	LJC30A3-H-Z/AY
			NO+NC								
		Two-wire	NO								
			NC								
	AC type	Two-wire	NO			LJC18A3-5-J/EZ	LJC18A3-B-J/EZ	LJC24A3-8-J/EZ	LJC24A3-T-J/EZ	LJC30A3-10-J/EZ	LJC30A3-H-J/EZ
			NC			LJC18A3-5-J/DZ	LJC18A3-B-J/DZ	LJC24A3-8-J/DZ	LJC24A3-T-J/DZ	LJC30A3-10-J/DZ	LJC30A3-H-J/DZ
		Three-wire	NO+NC								
Detection distance				2mm±10%	5mm±10%	5mm±10%	10mm±10%	8mm±10%	15mm±10%	10mm±10%	20mm±10%
Set distance				0~1.7mm	0~4mm	0~4mm	0~8mm	0~7mm	0~13mm	0~8mm	0~18mm
Standard detection object				SPCC 50×50×1mm							
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr110	Chatr111	Chatr112	Chatr113	Chatr114	Chatr115	Chatr116	Chatr117

Type and Specification

Dimension				Φ20	Φ34	M38×1.5	Φ80×80×40
Mounting way				Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Type	DC type	NPN	NO	LJC20A4-10-Z/BX	LJC34A3-K-Z/BX	LJC38A4-20-Z/BX	LJC80A4-40-Z/BX
			NC	LJC20A4-10-Z/AX	LJC34A3-K-Z/AX	LJC38A4-20-Z/AX	LJC80A4-40-Z/AX
			NO+NC				
		PNP	NO	LJC20A4-10-Z/BY	LJC34A3-K-Z/BY	LJC38A4-20-Z/BY	LJC80A4-40-Z/BY
			NC	LJC20A4-10-Z/AY	LJC34A3-K-Z/AY	LJC38A4-20-Z/AY	LJC80A4-40-Z/AY
			NO+NC				
		Two-wire	NO				
			NC				
	AC type	Two-wire	NO	LJC20A4-10-J/EZ	LJC34A3-K-J/EZ	LJC38A4-20-J/EZ	LJC80A4-40-J/EZ
			NC	LJC20A4-10-J/DZ	LJC34A3-K-J/DZ	LJC38A4-20-J/DZ	LJC80A4-40-J/DZ
		Three-wire	NO+NC				
Detection distance				10mm±10%	25mm±10%	20mm±10%	40mm±10%
Set distance				0~8mm	0~22mm	0~18mm	0~35mm
Standard detection object				SPCC 50×50×1mm			
Response frequency				DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz	DC: 0.5kHz AC: 25Hz
Illustration				Chatr118	Chatr119	Chatr120	Chatr121

Characteristic parameter

Delay distance：10% below of the detection distance
Detection object：Can detect any dielectric
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：Nickel plated brass），（Detection surface：ABS）.

External dimension(mm)

Chart 110 LJC12A3-2-□

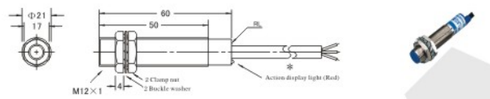


Chart 111 LJC12A3-A-□

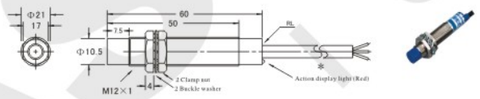


Chart 112 LJC18A3-5-□

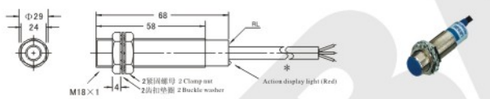


Chart 113 LJC18A3-B-□

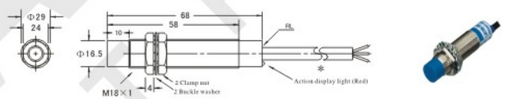


Chart 114 LJC24A3-8-□

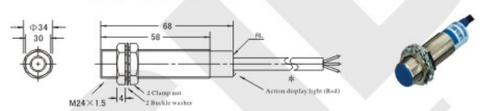


Chart 115 LJC24A3-T-□

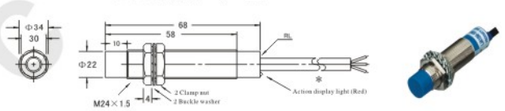


Chart 116 LJC30A3-10-□

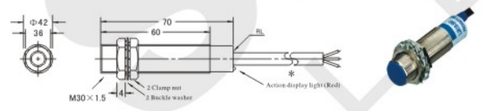


Chart 117 LJC30A3-H-□

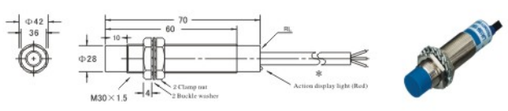


Chart 118 LJC20A4-10-□

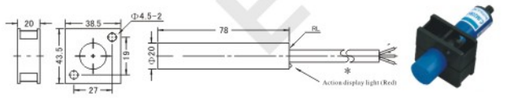


Chart 119 LJC34A4-K-□

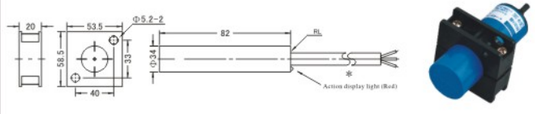


Chart 120 LJC38A4-20-□

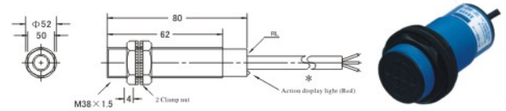
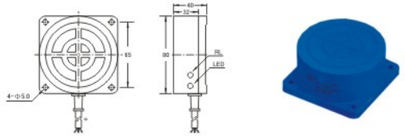


Chart 121 LJC80A4-40-□



Analog type. can detect the movement of the cbject location Hall type to detect objects counting

- Power supply reversal connection protection
- Long service life, high reliability
- Red LED indicates that it's available to detect the sensor operating state
- Simple operation with adjustable distance
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification(Simulation displacement sensor)

Dimension	M18×1	M30×1.5	M38×1.5	M24×1.5
Mounting way	Non-screen shield type	Non-screen shield type	Non-screen shield type	Non-screen shield type
Voltage type	J4-D8V	JCW-30QA	JCW-40QA	JCW-48QA
Detection distance	1-8mm	1-13mm	1-18mm	1-18mm
Standard detection object	Metal 18×18×1mm	Metal 30×30×1mm	Metal 54×54×1mm	Metal 65×65×1mm
Supply voltage	15-30VDC	15-30VDC	15-30VDC	15-30VDC
Voltage output	0-10VDC	0-10VDC	0-10VDC	0-10VDC
Load resistance	≥4.7kΩ	≥4.7kΩ	≥4.7kΩ	≥4.7kΩ
Current output	0-20mA	0-20mA	0-20mA	0-20mA
Load resistance	≤500Ω	≤500Ω	≤500Ω	≤500Ω
Response frequency	200Hz	200Hz	200Hz	200Hz
Illustration	Chatr122	Chatr123	Chatr124	Chatr125

Type and Specification(Hall sensor-based)

Dimension			M8×1×25	M12×1×25	M12×1×35	M18×1×35
Mounting way			screen shield type	screen shield type	screen shield type	screen shield type
Type	NPN	NO	NJK-5001C	NJK-5002C	NJK-8002C	NJK-5003C
		NC	NJK-5001D	NJK-5002D	NJK-8002D	NJK-5003D
		NO+NC		NJK-5002CD	NJK-8002CD	NJK-5003CD
	PNP	NO	NJK-5001A	NJK-5002A	NJK-8002A	NJK-5003A
		NC	NJK-5001B	NJK-5002B	NJK-8002B	NJK-5003B
		NO+NC		NJK-5002AB	NJK-8002AB	NJK-5003AB
Detection distance			10mm±10%	10mm±10%	10mm±10%	10mm±10%
Set distance			0-8mm	0-8mm	0-8mm	0-8mm
Standard detection object			Φ8×2mm	Φ12×2mm	Φ12×2mm	Φ18×2mm
Response frequency			1kHz	1kHz	1kHz	1kHz
Illustration			Chatr126	Chatr127	Chatr128	Chatr129

Characteristic parameter

Delay distance：10% below of the detection distance
Detection object：Magnetic metal (the detection distance decreases when it is non-magnetic metal)
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below, AC type:AC110-220V (36-250V) 50/60Hz
Consumption current：N.P type: 13mA below, D type: 0.8mA below, A type: 1.7mA below
Control output：N.P type: 300mA below, D type: 200mA below, A type: 400mA below
Loop protection：N.P.D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance
Protection structure：IP67 (IEC specification)
Material：（Housing：Nickel plated brass）,（Detection surface：ABS）.

External dimension(mm)

Chart 122 J4-D8V

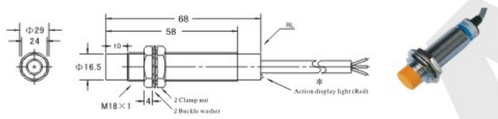


Chart 123 JCW-30QA

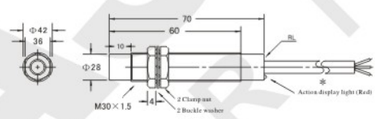


Chart 124 JCW-40QA

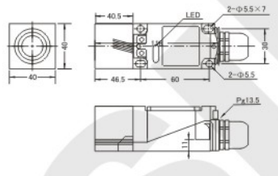


Chart 125 JCW-48QA

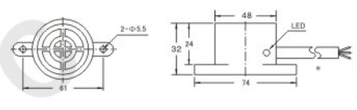


Chart 126 NJK-5001□

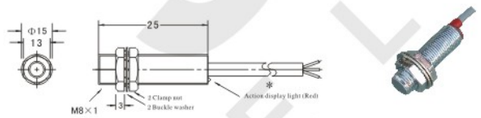


Chart 127 NJK-5002□

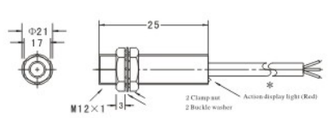


Chart 128 NJK-8002□

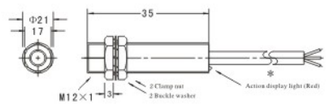
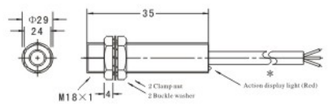


Chart 129 NJK-5003□



Magnetic induction type, can detect the position of the plunger in the cylinder

- Sensors can be mounted in the metal
- The parallel installation of the sensors hasn't any demand
- Sensor induction surface can be made of metal
- Sensors can undertake detection through metal
- Sensors can have larger induction distance and smaller dimension
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				M5×1×30	M8×1×30	M12×1×50	4.7×8×18	7.5×8×23	8×11×26	6.5×11×22.5
Type	Magnetic type	DC/AC Two-wire	NO	LG5A3-10-J/EZ	LG8A3-10-J/EZ	LG12A3-10-J/EZ	SD-1	SD-2	D-C73	D-A73
		DC/AC Three- wire	NO+NC	LG5A3-10-J/DZ	LG8A3-10-J/DZ	LG12A3-10-J/DZ				
Supply voltage				DC/AC:5-220V						
Continuous load current				50mA	50mA	200mA	50mA	50mA	100mA	100mA
Illustration				Chatr130	Chatr131	Chatr132	Chatr133	Chatr134	Chatr135	Chatr136

Type and Specification

Dimension				6.5×11×22.5	11×12×28	11×13×28	15×14×33.5	10×20×40	7.5×7×22	6×14×23
Type	Magnetic type	DC/AC Two-wire	NO	CS1-J	CS1-U	CS1-F	CS1-S	D-B54	CS4H	MS-1
		DC/AC Three- wire	NO+NC							
Supply voltage				DC/AC:5-220V						
Continuous load current				100mA	100mA	100mA	100mA	100mA	100mA	100mA
Illustration				Chatr137	Chatr138	Chatr139	Chatr140	Chatr141	Chatr142	Chatr143

Type and Specification

Dimension				8×16.5×24	8×15×25	6.5×19×28.5	7×14.8×33	10×21×56	3×4.5×22.5	5.8×5×24.5	5.8×5×29
Type	Magnetic type	DC/AC Two-wire	NO	MS-2	MS-3	MS-4	MS-5	MS-6	SD-3	SD-4	SD-5
		DC/AC Three- wire	NO+NC								
Supply voltage				DC/AC:5-220V							
Continuous load current				100mA	100mA	100mA	100mA	100mA	100mA	100mA	100mA
Illustration				Chatr144	Chatr145	Chatr146	Chatr147	Chatr148	Chatr149	Chatr150	Chatr151

Type and Specification

Dimension				6×5×29	12×36×36	10×34×40	28×80×94.5	13×19.5×43	28×80×94.5	78×60×27	13X19.5×43
Type	Magnetic type	DC/AC Two-wire	NO	D-Z73	D-A93	CS1-G	SG-1	SG-2			LJC1-3/24
		DC/AC Three- wire	NO+NC						YG-1	MS-01	
Supply voltage				DC/AC:5-220V							
Continuous load current				100mA	100mA	100mA	100mA	100mA	300mA	300mA	100mA
Illustration				Chatr152	Chatr153	Chatr154	Chatr155	Chatr156	Chatr157	Chatr158	Chatr159

External dimension(mm)

Chart 130 LG5A3-10-J/EZ

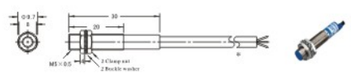


Chart 131 LG8A3-10-J/EZ

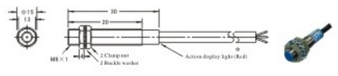


Chart 132 LG12A3-10-J/EZ

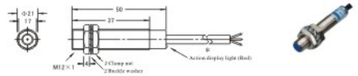


Chart 133 SD-1

Chart 134 SD-2

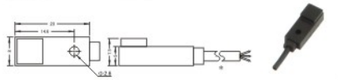


Chart 135 D-C73

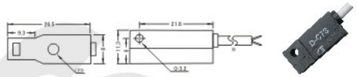


Chart 136 D-A73

Chart 137 CS1-J

Chart 138 CS1-U

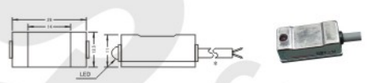


Chart 139 CS1-F

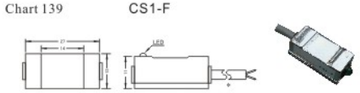


Chart 140 CS1-S

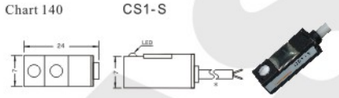


Chart 141 D-B54

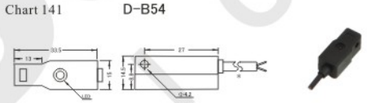


Chart 142 CS4H

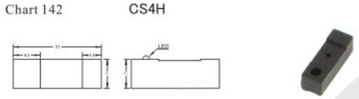


Chart 143 MS-1

Chart 144 MS-2

Chart 145 MS-3

Chart 146 MS-4

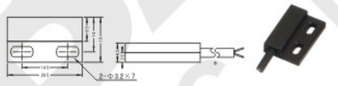


Chart 147 MS-5

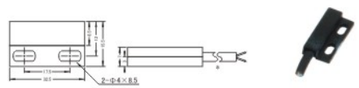


Chart 148 MS-6

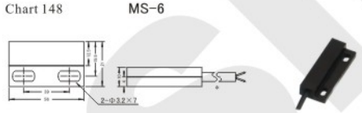


Chart 149 SD-3

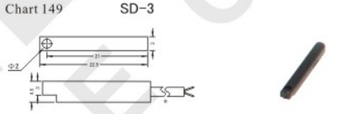


Chart 150 SD-4

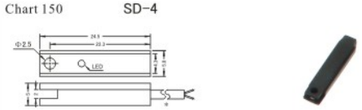


Chart 151 SD-5

Chart 152 D-Z73

Chart 153 D-A93

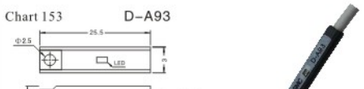


Chart 154 CS1-G

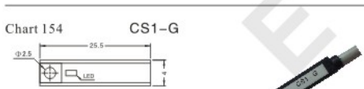


Chart 155 SG-1

Chart 156 SG-2

Chart 157 YG-1

Chart 158 MS-01

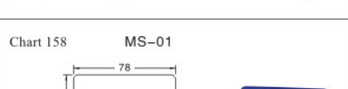
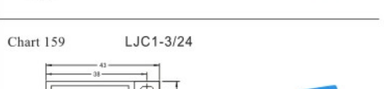
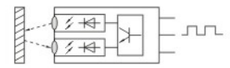


Chart 159 LJC1-3/24



Operation principle photoelectric switch

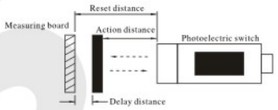
● Photoelectric switch say again photoelectric sensor, sensor points diffuse reflective type, feedback, DuiShe type, sensor and PLC and single-chip microcomputer, sr circuit, electronic counters, solid-state relay, small relays etc products with magnetic use. The transmitter aims at the target and generates light beam, and the receptor turns the light energy received into current and transmits it to the detection circuit backwards. It can filter out an effective signal and use it.



Technical terms photoelectric switch

● Distance delay

It means the distance difference between the action distance and the reset distance produced when the measuring board approaches the photoelectric switch; the delay distance is shown as percent number of switch distance.



● Light on / Dark on

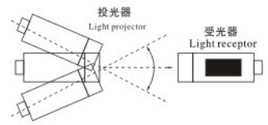
Type	Illustration	Dark on	Light on
Correlation type photoelectric switch			
Reflecting board type photoelectric switch			
Diffuse reflection type photoelectric switch			

● Angle of spread

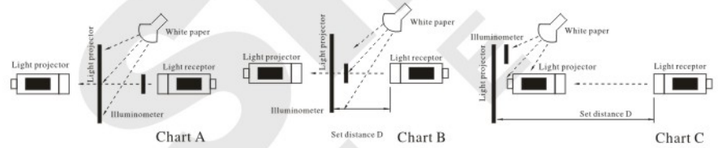
Correlation type and reflection type can ensure the angle range for photoelectric switch to work steadily.

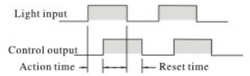
● Response time

It means the delay time when the distance difference is action distance or reset distance between the rise and fall edge of the light input, and the rise and fall edge of the relevant control output. (Action time = reset time).



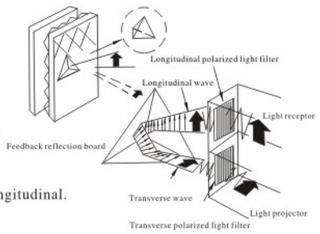
● Illumination level of operational environment





(Chart A) When surrounding environment interferes in the light receptor, it works, therefore, make the determination of Chart A as the criterion of the surrounding environment interference to the illumination level; in Chart B and Chart C, the interference degree of the light receptor changes in terms of the set distance D and white paper reflection ratio, therefore, the criterion becomes uncertain.

● Mirror surface rejection function (MSR)



Due to the built-in polarized light filter and the property of retro-reflection, the retro-reflection type photoelectric switch only accepts the light beam from the retro-reflection board. Through the light projection part, the light beam of polarized light filter becomes transverse.

The light beam reflected to the standard pyrometric cone of the retro-reflection board becomes from transverse to longitudinal.

The reflected light reaches the light receiving elements through the polarized light filter of the light receiving part.

● Dead zone of reflection board

During the reflection process, there is a part of area that the reflection board can't identify. This part of area is exactly the dead zone of reflection board.

● Constant light

It means the light whose radiation power is basically constant.

● Detection range

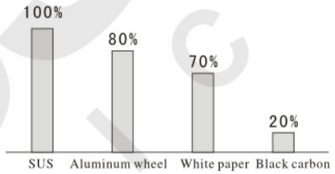
It means the maximum available distance between the photoelectric switch and the object. Detection range is concerned with the reflection light in tensity, the environment state of measuring area and the reflection object condition.

● Infrared ray(IR or IRED)

It's a kind of light whose radiation wavelength is very long. (λ =780nm to 1mm)

● Reflection performance

It's the target's characteristic. It has dependency relationship with the surface structure, color and size of the target, in addition, whether the incident light is good or bad, whether it is directed of diffuse reflected and whether the mon-reflection part is totally absorbed or transmitted do matter. The reflection type photoelectric switch that adopts general material can achieve better reflcting distance.



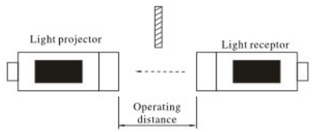
● Adjuster

Through the built−in potential meter and under the circumstance of the minimum illumination level, it makes the receptor produce switch output, therefore, the switch distance can be adjusted to the best state inside the range of the effective distance.

Photoelectric switch classification

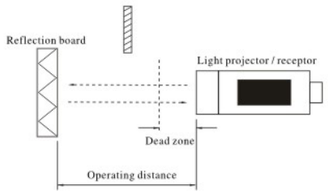
● Correlation type photoelectric switch

Correlation type photoelectric switch is made up of light projector and light receptor, and the both are respectively separated in structure; Distinguish the opaque reflective cbject; Large effective distance, for the light beam crosses the sensing distance only ince; Not vulnerable to be interfered; The equipment has high consumption, so cables must be laid out on the two units.



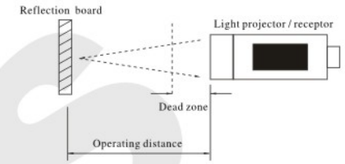
● Feedback reflective photoelectric switch

Feedback reflective photoelectric switch is made up of light projector and light receptor, which is one of standard configurations. The light beam from the projector is reflected by the opposite mirror, and then goes back to the light receptor. The transit time is twice the signal's duration time; a switch change comes into being when the light beam breaks. Distinguish the opaque reflective object; Transparent glass identification mark can be made of special sensor; When the sensor with polaroid filter works, the reflective target becomes a reliable identification (See MSR function); High effective distance range is available with the help of reflective mirror parts; Not vulnerable to be interfered



● Diffuse reflection type photoelectric switch

Diffuse reflection type photoelectric switch is made up of light projector and light receptor, which is one of standard configurations. When the light beam comes from the projector, the target creates diffuse reflection; when there is enough combination light back to the light receptor, the switch state will change; Effective operating distance depends on the reflectibe capacity of the target, as well as the surface property and color. Teh change capacity with sensitivity adjuster can assume compensation action; The equipment has lower consumption. When the optical sensor is made up of a single element, rough location can usually be achieved; Adopts the function of background rejection to regulate the measuring distance; sensitive to the dust on the target and sensitive to the changed reflective performance of the target.



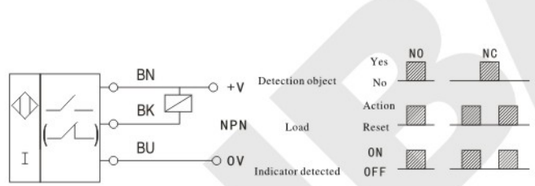
● Optical fiber sensor

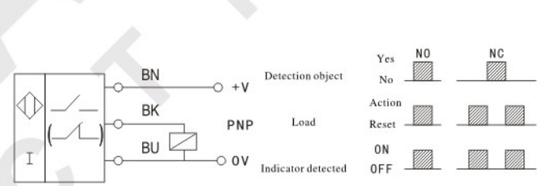
Detect micro-objects(Minimum 0.5mm); Use high-calss alloy steel as extenrnal packing, which can work in the high temperature environment; Suitable to the installation condition which has restriction.

Electrical Characteristics & Output Form of Photoe lectric Switch

● DC three−wire system (N, P type) NO or NC

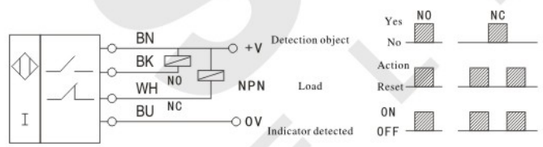
The load of these switches connects separately with the power supply, owning the functions of polarity, short−circuit and over−load protection. The residual current can be neglected.

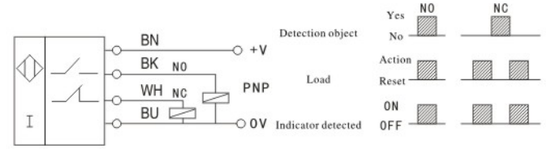




● DC four−wire system (N, P type) NO plus NC

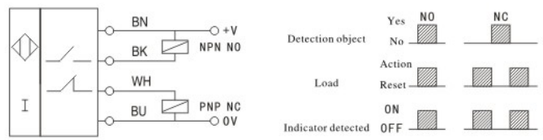
The switches can provide two groups of output NO and NC.

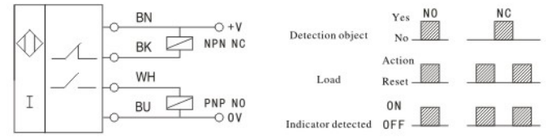




● DC four−wire system (X type)

The four output modes can be converted among NPN, PNP, NO and NC





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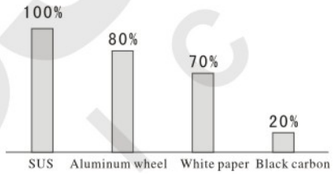

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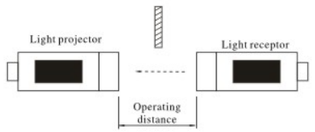

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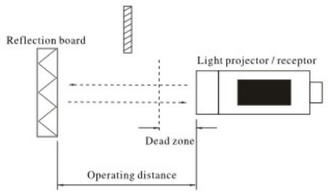

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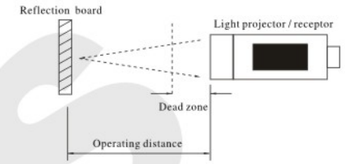

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Electrical Characteristics & Output Form of Photoe lectric Switch

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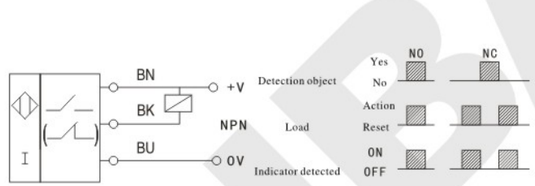
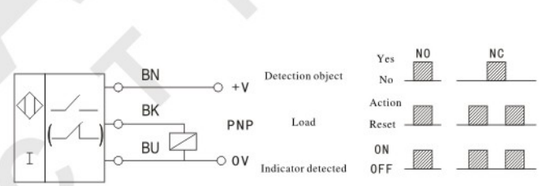
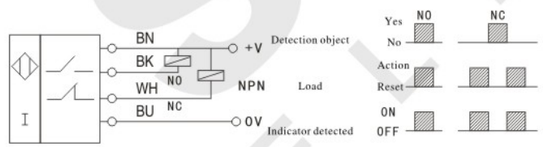
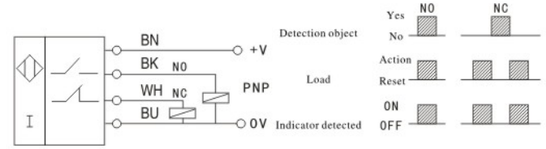




● DC four−wire system (N, P type) NO plus NC

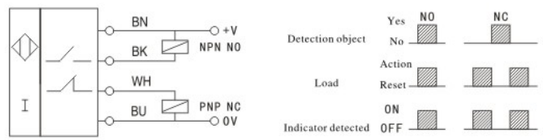
The switches can provide two groups of output NO and NC.

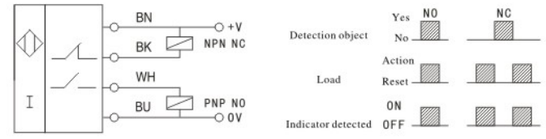




● DC four−wire system (X type)

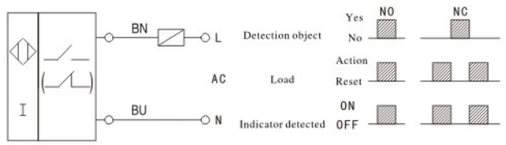
The four output modes can be converted among NPN, PNP, NO and NC



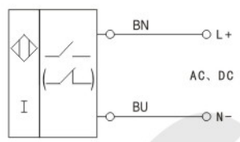


● AC two-wire system NO or NC

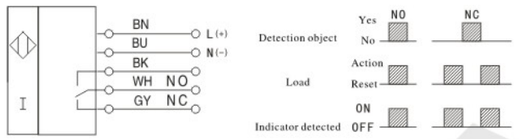
The load must be series connected inside the sensor and work, and on closed -circuit state, there is a minor voltage drop on the switch elements.



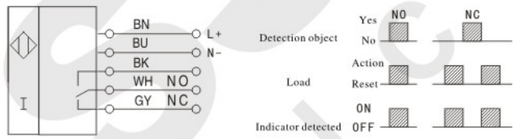
● AC、DC(A,Dtype)Two-wire system reflector



● AC 、DC five-wire system (A、D type) relay output



● ACDC five-wire system (AC plus DC type) relay output



Series and parallel connection of photoelectric switch(See the parameters of proximiyt switch)

Matters Needing Attention when using photoelectric switch

● Ways to avoid mutual interference

When the photoelectric switch approaches to the equipment, the light from another switch emits, causing unsteady action, which is called mutual interference;The light projector and the light receptor are cross-installed mutually; When the reflection type is used together, the distance between them must be kept, and the set distance is 1.4 times of detection distance; When the correlation type is used together, the distance between them must be kept, and the set distance is 0.4 times of detection distance.

● Prevent wiring interference method

The Photoelectric 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; The supply voltage must inside the supply voltage range.

● Installations of the matters needing attention

Where there is more dust; Where there is more corrosive gas; Where water, oil and drugs are sprayed straightly; Where intense light such as sun light shines directly; When it's during the use, the ambient temperature and hu midity must be inside the rated range.

● About maintenance and repair

Check whether there is any movement or looseness about the installation sites of the object and photoelectric switch; Check whether there is any looseness, bad contact or disconnection about the equipped line and connecting parts; Check whether there is any deposit adhered, such as dust; Check whether the operating temperature condition and ambient environment condition are abnormal; Check whether the detection distance is abnormal.

The columned can with various domestic same species directly replaced

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Newly added current over-load protection
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Newly added metal housing to improve the installation intensity
- Countermeasure to improve the housing intensity and to solve disconnection
- M8 correlation has been trial-produced and promoted
- IP67 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				M8×1	M12×1			M18×1			
Detection method				DuiShe type	Diffuse type	Feedback reflex	DuiShe type	Diffuse type		Feedback reflex	DuiShe type
Type	DC type	NPN	NO	E3F01-2DN1-2L	E3F1-DS8C4	E3F1-R1NK	E3F1-3DN1-3L	E3F-DS10C4	E3F-DS30C4	E3F-R2NK	E3F-5DN1-5L
			NC	E3F01-2DN2-2L	E3F1-DS8B2	E3F1-R1N2	E3F1-3DN2-3L	E3F-DS10B2	E3F-DS30B2	E3F-R2N2	E3F-5DN2-5L
			NO+NC					E3F-DS10C3	E3F-DS30C3	E3F-R2N3	E3F-5DN3-5L
		PNP	NO	E3F01-2DP1-2L	E3F1-DS8P1	E3F1-R1PK	E3F1-3DP1-3L	E3F-DS10P1	E3F-DS30P1	E3F-R2PK	E3F-5DP1-5L
			NC	E3F01-2DP2-2L	E3F1-DS8P2	E3F1-R1P2	E3F1-3DP2-3L	E3F-DS10P2	E3F-DS30P2	E3F-R2P2	E3F-5DP2-5L
			NO+NC					E3F-DS10P3	E3F-DS30P3	E3F-R2P3	E3F-5DP3-5L
		NPN/PNP/NO/NC						E3F-DS10X	E3F-DS30X	E3F-R2X	E3F-5DX-5L
	AC type	Two-wire	NO					E3F-DS10Y1	E3F-DS30Y1	E3F-R2Y1	E3F-5DY1-5LY
			NC					E3F-DS10Y2	E3F-DS30Y2	E3F-R2Y2	E3F-5DY2-5LY
		Three- wire No									
		Relay output									
Detection range				2m±10%	8cm±10%	1m±10%	3m±10%	10cm±10%	10-30cm±10%	2m±10%	5m±10%
Detection target				Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation				Fixed	Fixed	Sensitivity adjuster	Fixed	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time				1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms
Illustration				Chatr160	Chatr161			Chatr162			

Type and Specification

Dimension				M18×1				M30×1.5			M18×1
Detection method				Diffuse type		Feedback reflex	DuiShe type	Diffuse type	Feedback reflex	DuiShe type	Diffuse type
Type	DC type	NPN	NO	E3F3-D11	E3F3-D12	E3F3-R11	E3F3-T11	E3F3-DS70N1	E3F3-R4NK	E3F3-10DN1-10L	
			NC	E3F3-D61	E3F3-D62	E3F3-R61	E3F3-T61	E3F3-DS70N2	E3F3-R4N2	E3F3-10DN2-10L	
			NO+NC					E3F3-DS70N3	E3F3-R4N3	E3F3-10DN3-10L	CDD-11N(40N)
		PNP	NO	E3F3-D31	E3F3-D32	E3F3-R31	E3F3-T31	E3F3-DS70P1	E3F3-R4PK	E3F3-10DP1-10L	
			NC	E3F3-D81	E3F3-D82	E3F3-R81	E3F3-T81	E3F3-DS70P2	E3F3-R4P2	E3F3-10DP2-10L	
			NO+NC					E3F3-DS70P3	E3F3-R4P3	E3F3-10DP3-10L	CDD-11P(40P)
		NPN/PNP/NO/NC									
	AC type	Two-wire	NO					E3F-DS70Y1	E3F3-R4Y1	E3F-10DY1-10LY	
			NC					E3F-DS70Y2	E3F3-R4Y2	E3F-10DY2-10LY	
		Three- wire No									
		Relay output									
Detection range				10cm±10%	10-30cm±10%	3m±10%	5m±10%	70cm±10%	4m±10%	10m±10%	10~30cm±10%
Detection target				Transparent / Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Opaque object
Detection range regulation				Sensitivity adjuster	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster
Response time				1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms
Illustration				Chatr163				Chatr164			Chatr165

Characteristic parameters

Connection delay：1.5ms.
Light source：Infrared light 660nm.
Supply voltage：DC type: DC12–24V(6–36V) Impulse (p–p) 10% below,
AC type:AC110–220V(90–250V) 50/60Hz.
Consumption current：N.P type: 20mA below, A type: 1.7mA below.
Control output：N.P type: 300mA below, A type: 400mA below, J type: 2A below (contact service life: 0.1 million times).
Loop protection：N.P..D type: reversal connection protection, surge absorption, load short–circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually –30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH.
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing.
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range –30~+65℃, at +23℃, ±15% detection distance; temperature range –25~+60℃, at +23℃, ±10% detection distance.
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance.
Protection structure：IP67 (IEC specification).
Material：Housing： Nickel plated brass (ABS)
Detection surface (lens)：PMMA.

External dimension

Chart 160 E3F01–□

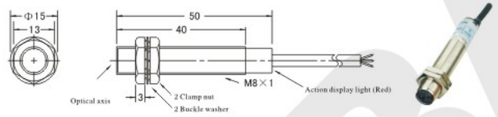


Chart 161 E3F1–□

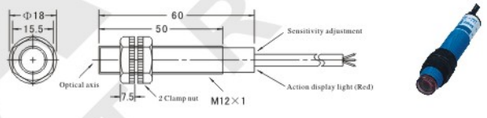


Chart 162 E3F–□

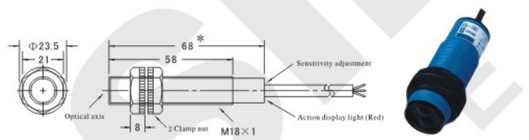


Chart 163 E3F3–□(Import type)

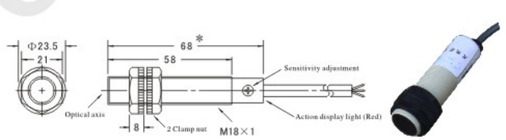


Chart 164 E3F3–□

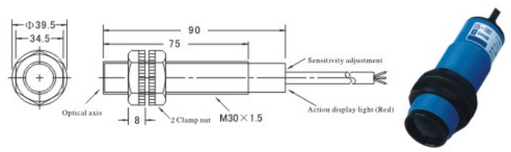
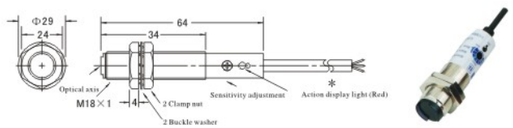


Chart 165 CDD–□



Square model can with various domestic same species directly replaced

- Multiple functions, built–in relay, can drive high current load
- Cabling type and connection terminal type
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Countermeasure to improve the housing intensity and to solve disconnection
- Can provide time–delay output type
- IP65 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension			18×50×50			25×65×75			20×43×60		
Detection method			Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	Relay output	DC illuminate	E3JK-DS30M1	E3JK-R4M1	E3JK-5DM1-5L	E3JM-DS70M4	E3JM-R4M4	E3JM-10DM4-10L	E3K60-DS70M1	E3K60-R4M1	E3K60-5DM1-5L
		AC illuminate	E3JK-DS30M1	E3JK-R4M1	E3JK-5DM1-5L	E3JM-DS70M4	E3JM-R4M4	E3JM-10DM4-10L	E3K60-DS70M1	E3K60-R4M1	E3K60-5DM1-5L
		DC non-illuminate	E3JK-DS30M2	E3JK-R4M2	E3JK-5DM2-5L	E3JM-DS70M2	E3JM-R4M2	E3JM-10DM2-10L	E3K60-DS70M2	E3K60-R4M2	E3K60-5DM2-5L
	Relay output	AC non-illuminate	E3JK-DS30M2	E3JK-R4M2	E3JK-5DM2-5L	E3JM-DS70M2	E3JM-R4M2	E3JM-10DM2-10L	E3K60-DS70M2	E3K60-R4M2	E3K60-5DM2-5L
Detection range			30cm±10%	4m±10%	5m±10%	70cm±10%	4m±10%	10m±10%	70cm±10%	4m±10%	5m±10%
Detection target			Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation			Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time			30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms
Illustration			Chatr166			Chatr167			Chatr168		

Type and Specification

Dimension			26×63×78			24×53.5×80			36×69×100		
Detection method			Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	Relay output	DC illuminate	E3K78-DS80M1	E3K78-R4M1	E3K78-5DM1-5L	E3K80-DS80M1	E3K80-R4M1	E3K80-5DM1-5L	E3K100-DS100M1	E3K100-R4M1	E3K100-10DM1-10L
		AC illuminate	E3K78-DS80M1	E3K78-R4M1	E3K78-5DM1-5L	E3K80-DS80M1	E3K80-R4M1	E3K80-5DM1-5L	E3K100-DS100M1	E3K100-R4M1	E3K100-10DM1-10L
		DC non-illuminate	E3K78-DS80M2	E3K78-R4M2	E3K78-5DM2-5L	E3K80-DS80M2	E3K80-R4M2	E3K80-5DM2-5L	E3K100-DS100M2	E3K100-R4M2	E3K100-10DM2-10L
	Relay output	AC non-illuminate	E3K78-DS80M2	E3K78-R4M2	E3K78-5DM2-5L	E3K80-DS80M2	E3K80-R4M2	E3K80-5DM2-5L	E3K100-DS100M2	E3K100-R4M2	E3K100-10DM2-10L
Detection range			80cm±10%	4m±10%	5m±10%	80cm±10%	4m±10%	5m±10%	100cm±10%	4m±10%	10m±10%
Detection target			Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation			Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time			30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms
Illustration			Chatr169			Chatr170			Chatr171		

Type and Specification

Dimension		18×50×50		
Detection method		Diffuse type	Feedback reflection type	DuiShe type
Type	AC、DC relay output Adjustable light pass through the dark	BEN300-DFR	BEN5M-MFR	BEN10M-TFR
Detection range		30cm±10%	5m±10%	10m±10%
Detection target		Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation		Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time		30ms	30ms	30ms
Illustration		Chatr172		

Characteristic parameters

Connection delay：1.5ms.
Light source：Infrared light 660nm.
Supply voltage：DC type: DC12-24V(6-36V) Impulse (p-p) 10% below,
AC type:AC110-220V(90-250V) 50/60Hz.
DC&AC type:DC12-240V/AC24-240V,50/60Hz.
Power current：3V below
Control output：2A below(contact service life: 0.1 million times).
Impulsion and vibration are allowed：B≤30g，T≤11ms，f≤55Hz，a≤1mm
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH.
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing.
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance.
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance.
Protection structure：IP65 (IEC specification).
Material：Housing： Nickel plated brass (ABS) Detection surface (lens)：PMMA.

External dimension

Chart 166 E3JK-□

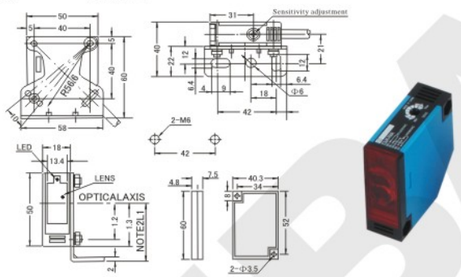


Chart 167 E3JM-□

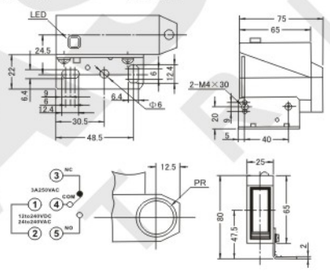


Chart 168 E3K60-□

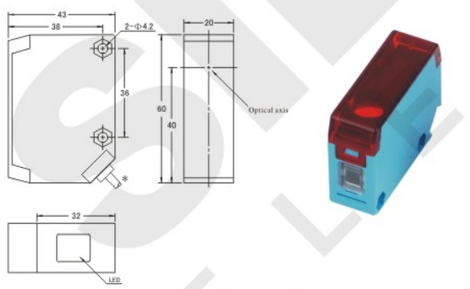


Chart 169 图169 E3K78-□

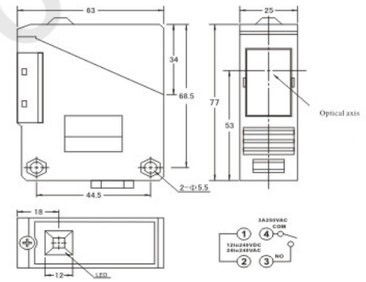


Chart 170 E3K80-□

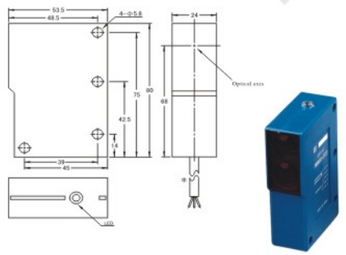


Chart 171 E3K100-□

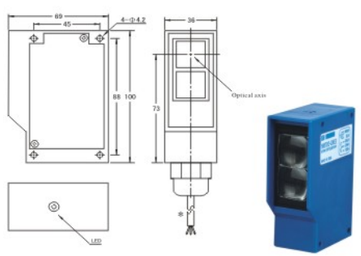
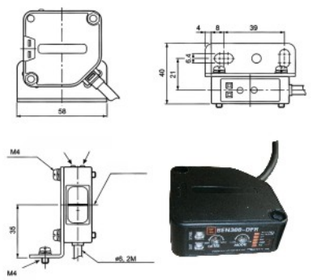


Chart 172 BEN□-□



Square model can with various domestic same species directly replaced

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Newly added current over-load protection
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Newly added metal housing to improve the installation intensity
- Countermeasure to improve the housing intensity and to solve disconnection
- IP65 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension			26×56×76			27×60×85			51×76×73		
Detection method			Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	DuiShe type	
Type	Relay output	DC illuminate	E3K76-DS60M1	E3K76-R2M1	E3K76-5DM1-5L	E3K85-DS60M1	E3K85-R2M1	E3K85-5DM1-5L	GKF-2	GDK-5	GDK-50
		AC illuminate	E3K76-DS60M1	E3K76-R2M1	E3K76-5DM1-5L	E3K85-DS60M1	E3K85-R2M1	E3K85-5DM1-5L	GKF-2	GDK-5	GDK-50
		DC non-illuminate	E3K76-DS60M2	E3K76-R2M2	E3K76-5DM2-5L	E3K85-DS60M2	E3K85-R2M2	E3K85-5DM2-5L			
	Relay output	AC non-illuminate	E3K76-DS60M2	E3K76-R2M2	E3K76-5DM2-5L	E3K85-DS60M2	E3K85-R2M2	E3K85-5DM2-5L			
Detection range			60cm±10%	2m±10%	5m±10%	60cm±10%	2m±10%	5m±10%	50cm±10%	5m±10%	50m±10%
Detection target			Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation			Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Fixed	Fixed
Response time			30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms	30ms
Illustration			Chatr173			Chatr174			Chatr175		

Type and Specification

Dimension				13×35×40			13×43.5×50			17.5×32.5×75		
Detection method				Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	DC type	NPN	NO	E3K40-DS30N1	E3K40-R2N1	E3K40-5DN1-5L	E3K50-DS30N1	E3K50-R2N1	E3K50-5DN1-5L	E3K75-DS30N1	E3K75-R2N1	E3K75-5DN1-5L
			NC	E3K40-DS30N2	E3K40-R2N2	E3K40-5DN2-5L	E3K50-DS30N2	E3K50-R2N2	E3K50-5DN2-5L	E3K75-DS30N2	E3K75-R2N2	E3K75-5DN2-5L
		PNP	NO	E3K40-DS30P1	E3K40-R2P1	E3K40-5DP1-5L	E3K50-DS30P1	E3K50-R2P1	E3K50-5DP1-5L	E3K75-DS30P1	E3K75-R2P1	E3K75-5DP1-5L
			NC	E3K40-DS30P2	E3K40-R2P2	E3K40-5DP2-5L	E3K50-DS30P2	E3K50-R2P2	E3K50-5DP2-5L	E3K75-DS30P2	E3K75-R2P2	E3K75-5DP2-5L
Detection range				30cm±10%	2m±10%	5m±10%	30cm±10%	2m±10%	5m±10%	30cm±10%	2m±10%	5m±10%
Detection target				Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Transparent / Opaque object	Opaque object
Detection range regulation				Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time				1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms
Illustration				Chatr176			Chatr177			Chatr178		

Type and Specification

Dimension				15.5×58.5×64			23×61×63			26×45.5×86		
Detection method				Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	DC type	NPN	NO	E3K64-DS30N1	E3K64-R2N1	E3K64-5DN1-5L	E3K63-DS50N1	E3K63-R2N1	E3K63-5DN1-5L	E3K86-DS30N1	E3K86-R2N1	E3K86-5DN1-5L
			NC	E3K64-DS30N2	E3K64-R2N2	E3K64-5DN2-5L	E3K63-DS50N2	E3K63-R2N2	E3K63-5DN2-5L	E3K86-DS30N2	E3K86-R2N2	E3K86-5DN2-5L
		PNP	NO	E3K64-DS30P1	E3K64-R2P1	E3K64-5DP1-5L	E3K63-DS50P1	E3K63-R2P1	E3K63-5DP1-5L	E3K86-DS30P1	E3K86-R2P1	E3K86-5DP1-5L
			NC	E3K64-DS30P2	E3K64-R2P2	E3K64-5DP2-5L	E3K63-DS50P2	E3K63-R2P2	E3K63-5DP2-5L	E3K86-DS30P2	E3K86-R2P2	E3K86-5DP2-5L
Detection range				30cm±10%	2m±10%	5m±10%	50cm±10%	2m±10%	5m±10%	30cm±10%	2m±10%	5m±10%
Detection target				Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation				Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed	Sensitivity adjuster	Sensitivity adjuster	Fixed
Response time				1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms	1ms
Illustration				Chatr179			Chatr180			Chatr181		

Characteristic parameters

Connection delay：1.5ms.
Light source：Infrared light 660nm.
Supply voltage：DC type: DC12~24V(6~36V) Impulse (p-p) 10% below,
AC type:AC110~220V(90~250V) 50/60Hz.
Consumption current：N.P type: 20mA below, A type: 1.7mA below.
Control output：N.P type: 300mA below, A type: 400mA below, J type: 2A below (contact service life: 0.1 million times).
Loop protection：N.P..D type: reversal connection protection, surge absorption, load short-circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually -30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH.
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing.
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range -30~+65℃, at +23℃, ±15% detection distance; temperature range -25~+60℃, at +23℃, ±10% detection distance.
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance.
Protection structure：IP65 (IEC specification).
Material：Housing： Nickel plated brass (ABS)
Detection surface (lens)：PMMA.

External dimension

Chart 173 E3K76-□

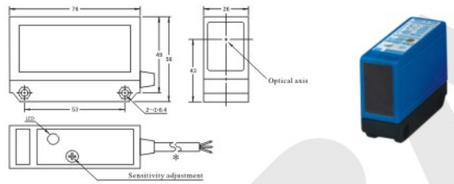


Chart 174 E3K85-□

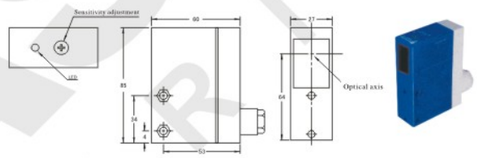


Chart 175 GDK-□

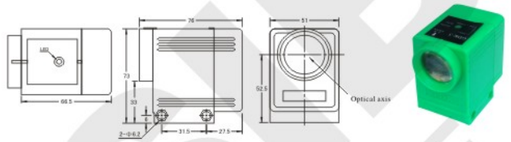


Chart 176 E3K40-□

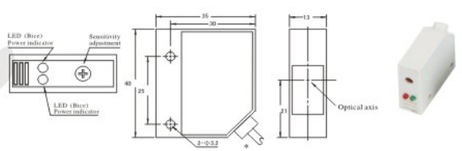


Chart 177 E3K50-□

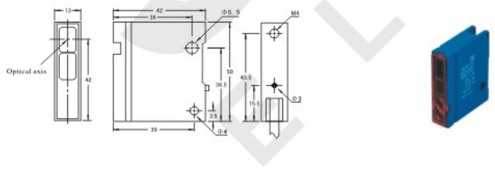


Chart 178 E3K75-□

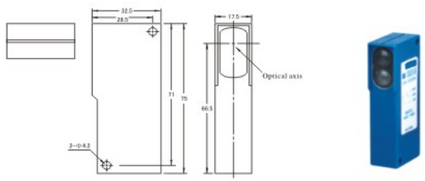


Chart 179 E3K64-□

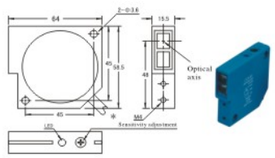


Chart 180 E3K63-□

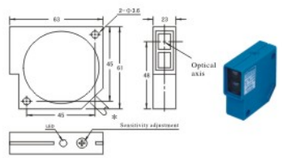
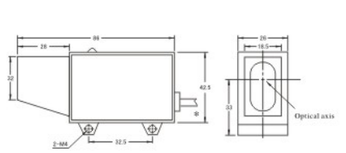


Chart 181 E3K86-□



Square model can with various domestic same species directly replaced

- Power supply reversal connection protection; short-circuit protection, can directly connect with PLC
- Newly added current over-load protection
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Newly added metal housing to improve the installation intensity
- Countermeasure to improve the housing intensity and to solve disconnection
- Ip65 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use

Type and Specification

Dimension				12×25×30			15.5×21×41			20×20×64		
Detection method				Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	DC type	NPN	NO	E3K30-DS10N1	E3K30-R2N1	E3K30-3DN1-3L	E3K41-DS20N1	E3K41-R2N1	E3K41-5DN1-5L	E3S-DS30N1	E3S-R2N1	E3S-5DN1-5L
			NC	E3K30-DS10N2	E3K30-R2N2	E3K30-3DN2-3L	E3K41-DS20N2	E3K41-R2N2	E3K41-5DN2-5L	E3S-DS30N2	E3S-R2N2	E3S-5DN2-5L
			NO+NC							E3S-DS30N3	E3S-R2N3	E3S-5DN3-5L
		PNP	NO	E3K30-DS10P1	E3K30-R2P1	E3K30-3DP1-3L	E3K41-DS20P1	E3K41-R2P1	E3K41-5DP1-5L	E3S-DS30P1	E3S-R2P1	E3S-5DP1-5L
			NC	E3K30-DS10P2	E3K30-R2P2	E3K30-3DP2-3L	E3K41-DS20P2	E3K41-R2P2	E3K41-5DP2-5L	E3S-DS30P2	E3S-R2P2	E3S-5DP2-5L
			NO+NC							E3S-DS30P3	E3S-R2P3	E3S-5DP3-5L
		NPN/PNP/NO/NC								E3S-DS30X	E3S-R2X	E3S-5X
	AC type	Two-wire	NO							E3S-DS30A1	E3S-R2A1	E3S-5A1
			NC							E3S-DS30A2	E3S-R2A2	E3S-5A2
		Three-wire No										
		Relay output										
Detection range				10cm±10%	2m±10%	3m±10%	20cm±10%	2m±10%	5m±10%	30cm±10%	2m±10%	5m±10%
Detection target				Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation				Fixed	Fixed	Fixed	Sensitivity adjuster	Fixed	Fixed	Sensitivity adjuster	Fixed	Fixed
Response time				1ms	1ms	1ms	1ms	1ms	1ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms
Illustration				Chatr182			Chatr183			Chatr184		

Type and Specification

Dimension				12×26×55			18×37×70			16×28×51		
Detection method				Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type	Diffuse type	Feedback reflection type	DuiShe type
Type	DC type	NPN	NO	E3K55-DS30N1	E3K55-R2N1	E3K55-5DN1-5L	E3K70-DS50N1	E3K70-R2N1	E3K70-5DN1-5L	E3K51-DS30N1	E3K51-R2N1	E3K51-5DN1-5L
			NC	E3K55-DS30N2	E3K55-R2N2	E3K55-5DN2-5L	E3K70-DS50N2	E3K70-R2N2	E3K70-5DN2-5L	E3K51-DS30N2	E3K51-R2N2	E3K51-5DN2-5L
			NO+NC									
		PNP	NO	E3K55-DS30P1	E3K55-R2P1	E3K55-5DP1-5L	E3K70-DS50P1	E3K70-R2P1	E3K70-5DP1-5L	E3K51-DS30P1	E3K51-R2P1	E3K51-5DP1-5L
			NC	E3K55-DS30P2	E3K55-R2P2	E3K55-5DP2-5L	E3K70-DS50P2	E3K70-R2P2	E3K70-5DP2-5L	E3K51-DS30P2	E3K51-R2P2	E3K51-5DP2-5L
			NO+NC									
		NPN/PNP/NO/NC										
	AC type	Two-wire	NO	E3K55-DS30A1	E3K55-R2A1	E3K55-5A1	E3K70-DS50A1	E3K70-R2A1	E3K70-5A1	E3K51-DS30A1	E3K51-R2A1	E3K51-5DA1
			NC	E3K55-DS30A2	E3K55-R2A2	E3K55-5A2	E3K70-DS50A2	E3K70-R2A2	E3K70-5A2	E3K51-DS30A2	E3K51-R2A2	E3K51-5DA2
		Three-wire No										
		Relay output										
Detection range				30cm±10%	2m±10%	5m±10%	50cm±10%	2m±10%	5m±10%	30cm±10%	2m±10%	5m±10%
Detection target				Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object	Transparent / Opaque object	Opaque object	Opaque object
Detection range regulation				Fixed	Fixed	Fixed	Sensitivity adjuster	Fixed	Fixed	Sensitivity adjuster	Fixed	Fixed
Response time				DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms	DC:1ms AC:30ms
Illustration				Chatr185			Chatr186			Chatr187		

Characteristic parameters

Connection delay：1.5ms.
Light source：Infrared light 660nm.
Supply voltage：DC type: DC12–24V(6–36V) Impulse (p–p) 10% below,
AC type:AC110–220V(90–250V) 50/60Hz.
Consumption current：N.P type: 20mA below, A type: 1.7mA below.
Control output：N.P type: 300mA below, A type: 400mA below, J type: 2A below
(contact service life: 0.1 million times).
Loop protection：N.P..D type: reversal connection protection, surge absorption,
load short–circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually
–30~+65℃ (no freeze, no drew), During
operation, storage: individually 35~95%RH.
Insulation impedance：50MΩabove (DC500 megameter) between charging part
and housing.
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range –30~+65℃, at +23℃, ±15% detection
distance; temperature range –25~+60℃, at +23℃, ±10%
detection distance.
Voltage influence：Inside ±15% rated supply voltage range, at rated supply
voltage value, inside ±10% detection distance.
Protection structure：IP65 (IEC specification).
Material：Housing： Nickel plated brass (ABS)
Detection surface (lens)：PMMA.

External dimension

Chart 182 E3K30–□

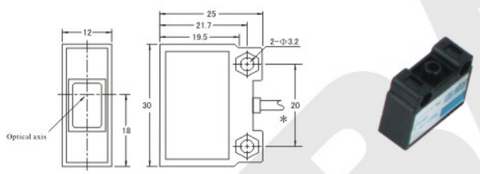


Chart 183 E3K41–□

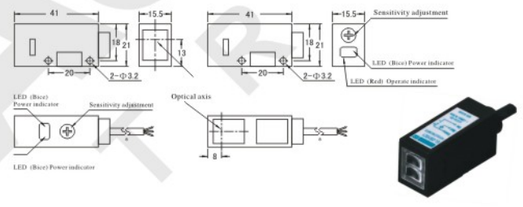


Chart 184 E3S–□

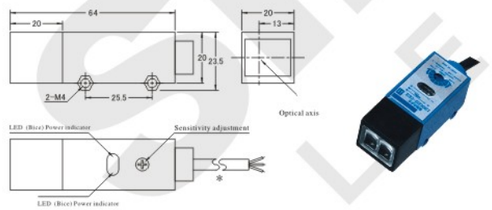


Chart 185 E3K55–□

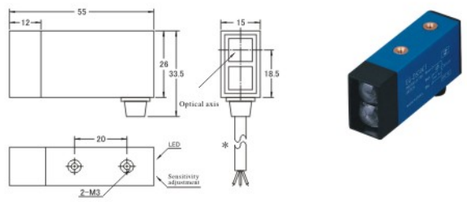


Chart186 E3K70–□

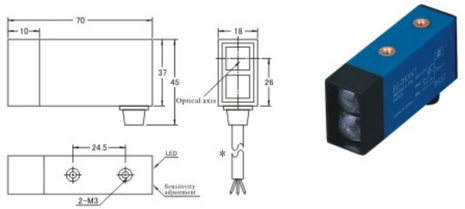
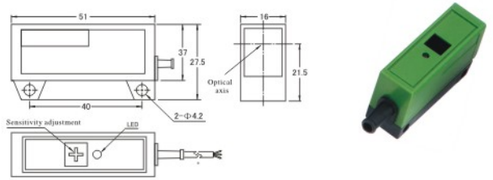
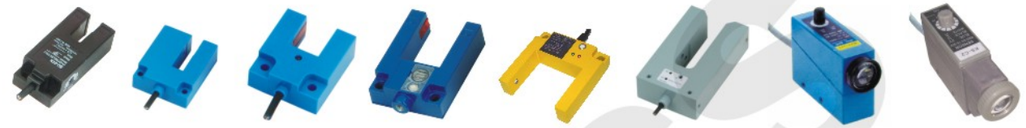


Chart 187 E3K51–□



Color code, groove can with various domestic same species directly replaced

- Power supply reversal connection protection; can directly connect with PLC
- For slot type, there is no need to adjust the optical axis
- Long service life, high reliability and strong resistance property to environment
- Red LED indicates that it's available to detect the sensor operating state
- Newly added metal housing to improve the installation intensity
- Countermeasure to improve the housing intensity and to solve disconnection
- Ip65 protection structure (IEC specification)
- Read the "Matters needing attention" of the Product Instruction before use



Type and Specification

Dimension				16×25×55	25.5×45.5×75	16×35.5×40.5	20×52×72	20×52×72
Detection method				Slot type	Slot type	Slot type	Slot type	Slot type
Type	DC type	NPN	NO	E3S-GS7N	E3S-GS10N	E3S-GS15N	E3S-GS30E4	E3S-GS50E4
			NC	E3S-GS7N2	E3S-GS10N2	E3S-GS15N2	E3S-GS30E2	E3S-GS50E2
			NO+NC				E3S-GS30E42	E3S-GS50E42
		PNP	NO	E3S-GS7P	E3S-GS10P	E3S-GS15P	E3S-GS30F4	E3S-GS50F4
			NC	E3S-GS7P2	E3S-GS10P2	E3S-GS15P2	E3S-GS30F2	E3S-GS50F2
			NO+NC				E3S-GS30F42	E3S-GS50F42
Detection range				7mm	10mm	15mm	30mm	50mm
Detection target				Opaque object	Opaque object	Opaque object	Opaque object	Opaque object
Detection range regulation				Sensitivity adjuster	Sensitivity adjuster	Sensitivity adjuster	Sensitivity adjuster	Sensitivity adjuster
Respnose time				1ms	1ms	1ms	1ms	1ms
Illustration				Chatr188	Chatr189	Chatr190	Chatr191	Chatr192

Type and Specification

Dimension			32×70×120
Detection method			Slot type
Type	AC type	NO+NC	HF-HJ03
Supply voltage			AC12-24V±10%
Boundary control precision			<8mm
Photoelectric detection group number			2
The output signal			AC12-24V
Detection target			Opaque object
Detection range regulation			Sensitivity adjuster
Respnose time			1-30ms
Illustration			Chatr193

Type and Specification (Color sensors)

Dimension			28×48×80	22×63×89
Detection method			Coaxial Reflective	Coaxial Reflective
Type	AC type	NO+NC	Z3N	KS-C2
Supply voltage			Red, green, blue, white	Red, green, blue, white
Boundary control precision			Dot (green)	Dot (green)
Photoelectric detection group number			DC10-30V±10%	DC10-30V±10%
The output signal			<200mA	<200mA
Detection target			10mm±2mm	10mm±3mm
Detection range regulation			Sensitivity adjuster	Sensitivity adjuster
Respnose time			0.1-1mS	0.25-1mS
Illustration			Chatr194	Chatr195

Type and Specification (Color sensors)

Dimension			28×57×85	38×62×100	23×40×56
Detection method			Coaxial Reflective	Coaxial Reflective	Coaxial Reflective
Type	DC type	NPN NO+NC	BZJ-211	BZJ-311	BZJ-411
Chromatogram of light			Red, green, blue, white	Red, green, blue, white	Red, green, blue, white
Spot (color)			Dot (green)	Dot (green)	Dot (green)
Supply voltage			DC10-30V±10%	DC10-30V±10%	DC10-30V±10%
The load current			<200mA	<200mA	<200mA
Detection distance			10mm±2mm	9mm	9mm
Detection range regulation			Sensitivity adjuster	Sensitivity adjuster	Sensitivity adjuster
Respnose time			50uS	50uS	20uS/500uS
Illustration			Chatr196	Chatr197	Chatr198

Characteristic parameters

Connection delay：1.5ms.
Light source：Infrared light 660nm.
Supply voltage：DC type: DC12–24V(6–36V) Impulse (p–p) 10% below,
AC type:AC110–220V(90–250V) 50/60Hz.
Consumption current：N.P type: 20mA below, A type: 1.7mA below.
Control output：N.P type: 300mA below, A type: 400mA below, J type: 2A below (contact service life: 0.1 million times).
Loop protection：N.P..D type: reversal connection protection, surge absorption, load short–circuit protection, A type: surge absorption
Ambient temperature & humidity：During operation, storage: individually –30~+65℃ (no freeze, no drew), During operation, storage: individually 35~95%RH.
Insulation impedance：50MΩabove (DC500 megameter) between charging part and housing.
Withstand voltage：AC1000V 50/60Hz 1min between charging part and housing
Temperature influence：Temperature range –30~+65℃, at +23℃, ±15% detection distance; temperature range –25~+60℃, at +23℃, ±10% detection distance.
Voltage influence：Inside ±15% rated supply voltage range, at rated supply voltage value, inside ±10% detection distance.
Protection structure：IP66 (IEC specification).
Material：Housing：Nickel plated brass (ABS)
Detection surface (lens)：PMMA.

External dimension

Chart 188 E3S-GS7□

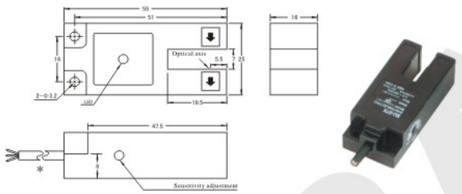


Chart 189 E3S-GS10□

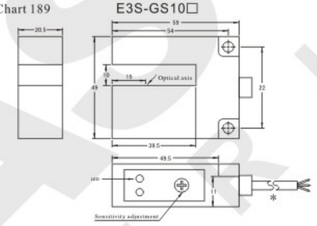


Chart 190 E3S-GS15□

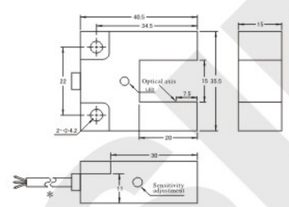


Chart 191 E3S-GS30□

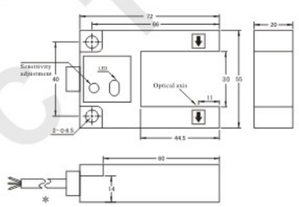


Chart 192 E3S–GS50□

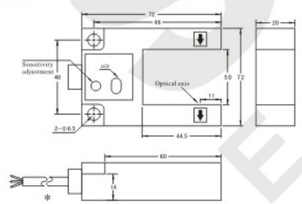


Chart 193 HF–HJ03

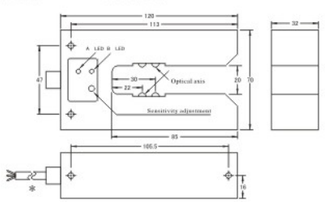


Chart 194 Z3N

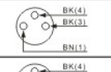
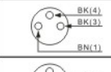
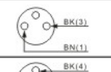
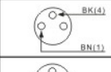
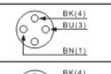
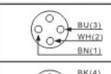
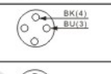
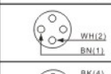
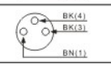
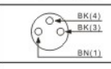
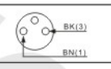
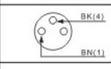
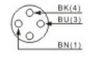
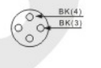
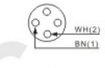
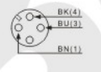
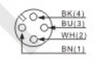
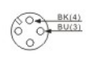
Chart 195 KS–C2

Chart 196 BZJ–211

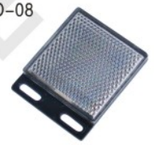
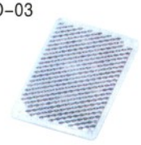
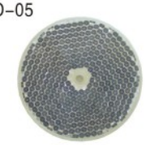
Chart 197 BZJ–311

Chart 198 BZJ–411

Connector Series

Shape	Screw buckle	Type	Specification	Connection diagram: NPN/PNP NO	NPN/PNP NC	NPN/PNP NO+NC	AC/DC Two-wire NO	AC/DC Two-wire Nc
	M8	L1	Three-core straight type					
	M8	L2	Four-core straight type					
	M8	L3	Three-core bent type					
	M8	L4	Four-core bent type					
	M8	L5	Three-core relay					
	M12	L6	Four-core straight type					
	M12	L7	Four-core bent type with LED					
	M12	L8	Four-core relay					
	M12	L9	Four-core straight type					
	M12	L10	Four-core straight type					

Reflection board Series

Shape	TD–02	TD–08	TD–09	TD–03	TD–05
					
Instalation dimension