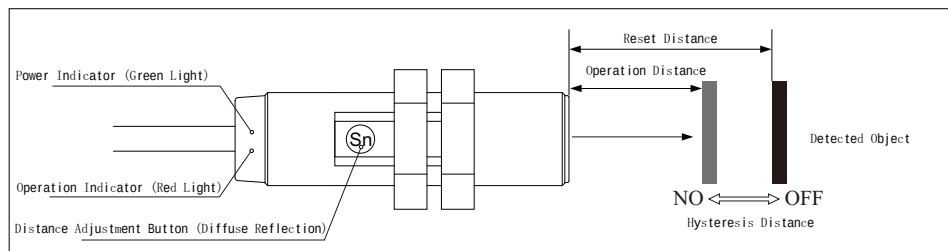


V. Set Distance and Detection Distance

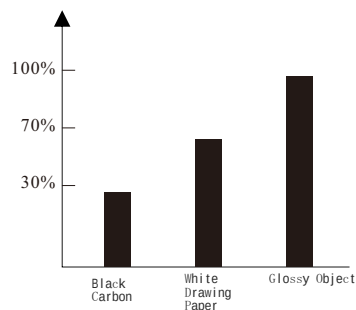
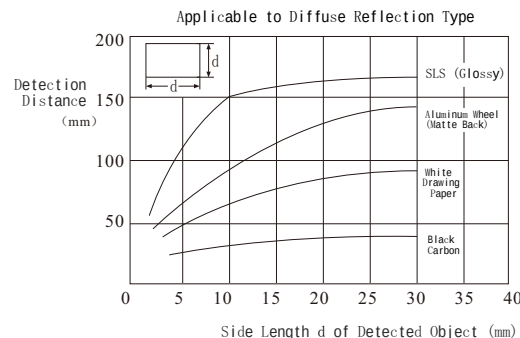


1. When using a diffuse reflection type photoelectric switch, the operation distance refers to the distance from the reference position (induction surface) to the position where the switch operates when the detected object moves in a certain way.
2. Hysteresis distance: the absolute value of the difference between the operation distance and the reset distance.
3. For through-beam and retro-reflective photoelectric switches, the set distance should be less than the rated detection distance indicated on the nameplate, and a margin should be left. They can also work when the distance exceeds the rated detection distance, but the performance cannot be guaranteed. In addition, in harsh environments with garbage and dust, the detection distance should be set less than the rated detection distance.
4. When using a through-beam photoelectric switch, the size of the minimum detected object is determined by the lens diameter and the installation inclination of the receiver and transmitter.
5. The detection distance indicated on the nameplate of a diffuse reflection type photoelectric switch is relative to the standard detected object. The actual detection distance will vary depending on the size, color, and surface unevenness of the detected object, and the detection distance should be set within the rated detection distance.
6. Distance setting for diffuse reflection and retro-reflection: Place the detection target at the required distance position, long-press the distance adjustment button. The green indicator flashes. Wait until the output red indicator lights up and the green light stops flashing, then the distance setting is completed.

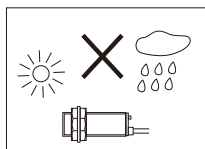
VI. Relationship Between Detected Object Material and Detection Distance

When using a diffuse reflection type photoelectric switch, the surface color and size of the detected object affect the detection distance and action area.

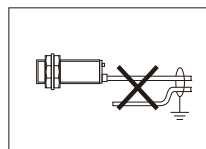
1. Size of Detected Object and Detection Distance: The higher the reflectivity of the detected object's surface, the longer the detection distance (as shown in the following figures).
2. Relationship Between Minimum Detected Object and Lens Diameter: When using a through-beam photoelectric switch, the size of the minimum detected object is determined by the lens diameter.



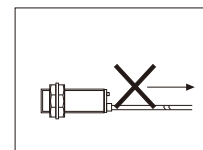
VII. Instructions for Improper Use



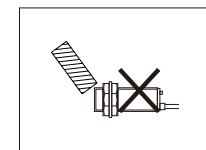
◀ Please try to avoid using it in open-air environments or places where water splashes.



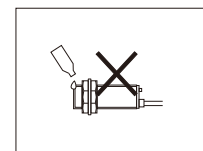
◀ Please do not route wires together with power lines and power cables in the same conduit. They should be wired separately to reduce interference.



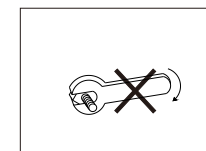
◀ Please do not pull the power cord of the switch with great force.



◀ Please do not strike the detection surface with hard objects.



◀ Please do not use the switch in places with corrosive substances.



◀ Please do not tighten with excessive force; add a washer when tightening.

VIII. Requirements of Photoelectric Switches for Power Supply and Load

1. Surge Protection: When the photoelectric switch is used near areas with severe surge interference (e.g., welding operations of electric welders), a surge absorption device must be added.
2. When irradiated by fluorescent lamps, the photoelectric switch may malfunction. Please keep it away from light sources.
3. When two photoelectric switches are installed together, they may malfunction. Therefore, sufficient space must be left between the two photoelectric switches.
4. When the load current exceeds 200mA, please use a small relay to expand the capacity.
5. Photoelectric switches cannot be powered by autotransformers; isolated transformers should be used.
6. The connecting wires of photoelectric switches should be used within 10 meters as much as possible to reduce interference.
7. AC two-wire photoelectric switches must be connected in series with a load; otherwise, the switch will be damaged.

IX. Maintenance and Inspection

To ensure the long-term stable operation of the photoelectric switch, please conduct the following regular inspections:

1. Check whether the installation positions of the detected object and the photoelectric switch are displaced, loose, or deformed.
2. Check whether the wiring and connection parts are loose, have poor contact, or are broken.
3. Check whether there are accumulations such as metal dust adhering to the detection surface.
4. Check whether there are abnormalities in the operating temperature and surrounding environmental conditions.

X. Ordering Instructions (Standard Wire Length: 2 Meters)

1. C3F-D50N4: 2 meters, 100 pieces;
2. C3F-R2N4: 2 meters, 100 pieces.

C-Lin

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Technical Consultation: 400-026-6775





欣灵

使用说明书
Products Instructions

产品合格证

符合标准: GB/T 14048.10

检验员: 检 07

出厂日期: 见产品或包装

本产品经检验合格, 准予出厂。

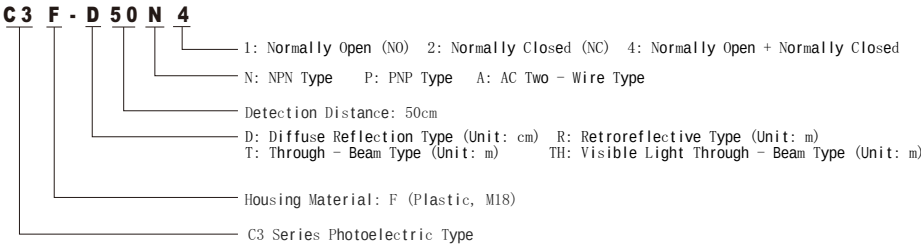
C-Lin 欣灵电气股份有限公司
XINLING ELECTRICAL CO., LTD.

C3F Series Cylindrical Photoelectric Switch

Thank you very much for using C-Lin brand sensors. Please read the instruction manual before using the product!

13A00601

I. Model Description



II. Model Types and Technical Data

Outer Diameter		M18×1	M18×1	M18×1	M18×1
Detection Method		Diffuse Reflection Type	Reflective Type	Through-beam Type	Visible Light Through-beam Type
DC Type	NPN	C3F-D50N4 C3F-D100N4	C3F-R2N4	C3F-T10N4 C3F-T20N4	C3F-TH10N4
	PNP	C3F-D50P4 C3F-D100P4	C3F-R2P4	C3F-T10P4 C3F-T20P4	C3F-TH10P4
AC Type	2-wire NO	C3F-D50A1	/	/	/
	2-wire NC	C3F-D50A2	/	/	/
Detection Distance		50cm、100cm (Adjustable)	2m (Adjustable)	10m、20m (Non-adjustable)	10m (Non-adjustable)
Detected Object		Reflective Object	Opaque Object	Opaque Object	Opaque Object
Standard Detected Object		10×10cm White Non-glossy Paper	Reflector TD-02	5×5cm Opaque Object	5×5cm Opaque Object
Power Supply Voltage		DC: 10~30VDC AC: 90~250VAC	DC: 10~30VDC	DC: 10~30VDC	DC: 10~30VDC
Current Consumption		DC (NPN Type) ≤25mA; DC (PNP Type) ≤35mA			
Response Time		DC Type: 2mA; AC Type: 30mA			
Control Output		Load Current ≤200mA; Residual Voltage: DC (NPN/PNP) Type ≤2V; AC Type ≤10V			
Circuit Protection		DC Type: Reverse Polarity Protection, Short Circuit Protection; AC Type: Surge Absorption Protection			
Ambient Illumination		Incandescent Lamp: Spot Brightness below 3,000Lx; Sunlight: Spot Brightness below 10,000Lx			
Operating Ambient Temperature		-25~+55°C (Note: No condensation or freezing allowed), Storage: -50~+70°C			
Operating Ambient Humidity		35~85%RH, Storage: 35~85%RH			
Withstand Voltage		DC Type: DC500V, AC Type: AC1000V, 1 minute, Between all power supply terminals and the housing			
Insulation Resistance		Between all power supply terminals and the housing, above 20MΩ, based on DC250V megohmmeter			
Vibration Resistance		Frequency Resistance 10~500Hz, Double Amplitude 3mm (MAX. 20G), 2 hours in each of X, Y, Z axes			
Impact Resistance		Acceleration 300m/s ² (about 30G), 3 times in each of X, Y, Z axes			
Protection Class		IP65(IEC)			
Housing Material		PC Material			

III. Output Form (Note: Black Line is Normally Open; White Line is Normally Closed)

