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K3 / P3 Series

Long distance Photoelectric sensor

IP 67
CE Rohs

- Relay is Conformed to Bellcore specification and FCC Part 68
- High compact
- High Reliability
- High Noise Resistance
- High Illumination Resistance
- More reliable relay
- Longer sensing distance
- More performance optical property
- High protection class IP 67
- 堅固耐用
- 高穩定性
- 高抗干擾力
- 高抗外亂光
- 更可靠的繼電器
- 更長的檢測安裝距離
- 更佳光學特性
- 高防水等級 IP 67



Model / 型號

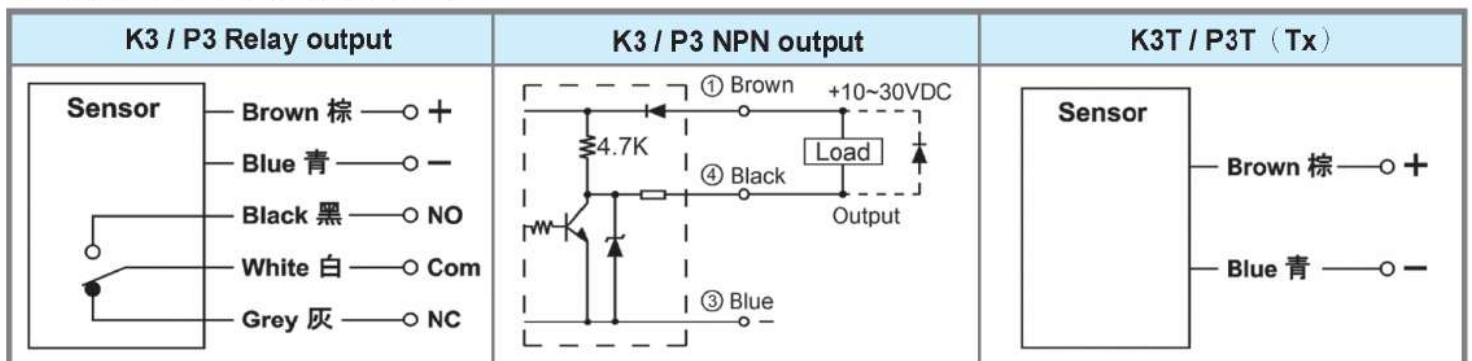
K3 series

Type	Model 型號	Output status 輸出狀態	Output method 輸出方式	Output current 輸出電流	Setting distance 安裝距離	
Thru beam type	K3T-10MR	Dark ON	Relay	2A/30VDC	10 m	
	K3T-10MRB	Light ON				
	K3T-10MN	Dark ON	NPN	100mA		
	K3T-10MNB	Light ON				
	K3T-30MR	Dark ON	Relay	2A/30VDC		30 m
	K3T-30MRB	Light ON				
	K3T-30MN	Dark ON	NPN	100mA		
	K3T-30MNB	Light ON				
	K3T-40MR	Dark ON	Relay	2A/30VDC	40 m	
	K3T-40MRB	Light ON				
	K3T-40MN	Dark ON	NPN	100mA		
	K3T-40MNB	Light ON				
	K3T-60MR	Dark ON	Relay	2A/30VDC		60 m
	K3T-60MRB	Light ON				
	K3T-60MN	Dark ON	NPN	100mA		
	K3T-60MNB	Light ON				
K3T-80MR	Dark ON	Relay	2A/30VDC	80 m		
K3T-80MRB	Light ON					
K3T-80MN	Dark ON	NPN	100mA			
K3T-80MNB	Light ON					
Mirror reflex	K3G-10MR	Dark ON	Relay		2A/30VDC	10 m with MR-1
	K3G-10MRB	Light ON				
	K3G-10MN	Dark ON	NPN	100mA		
	K3G-10MNB	Light ON				
Polarized Mirror reflex	K3G-8MRE	Dark ON	Relay	2A/30VDC	8 m with MR-1	
	K3G-8MRBE	Light ON				
	K3G-8MNE	Dark ON	NPN	100mA		
	K3G-8MNBE	Light ON				

P3 series

Type	Model 型號	Output status 輸出狀態	Output method 輸出方式	Output current 輸出電流	Setting distance 安裝距離	
Thru beam type	P3T-10MR	Dark ON	Relay	2A/30VDC	10 m	
	P3T-10MRB	Light ON				
	P3T-10MN	Dark ON	NPN	100mA		
	P3T-10MNB	Light ON				
	P3T-30MR	Dark ON	Relay	2A/30VDC		30 m
	P3T-30MRB	Light ON				
	P3T-30MN	Dark ON	NPN	100mA		
	P3T-30MNB	Light ON				
	P3T-40MR	Dark ON	Relay	2A/30VDC	40 m	
	P3T-40MRB	Light ON				
	P3T-40MN	Dark ON	NPN	100mA		
	P3T-40MNB	Light ON				
	P3T-60MR	Dark ON	Relay	2A/30VDC		60 m
	P3T-60MRB	Light ON				
	P3T-60MN	Dark ON	NPN	100mA		
	P3T-60MNB	Light ON				
P3T-80MR	Dark ON	Relay	2A/30VDC	80 m		
P3T-80MRB	Light ON					
P3T-80MN	Dark ON	NPN	100mA			
P3T-80MNB	Light ON					
Mirror reflex	P3G-12MR	Dark ON	Relay		2A/30VDC	12 m with MR-3
	P3G-12MRB	Light ON				
	P3G-12MN	Dark ON	NPN	100mA		
	P3G-12MNB	Light ON				
Polarized Mirror reflex	P3G-10MRE	Dark ON	Relay	2A/30VDC	10 m with MR-3	
	P3G-10MRBE	Light ON				
	P3G-10MNE	Dark ON	NPN	100mA		
	P3G-10MNBE	Light ON				

Connection diagram / 接線圖



● General specification / 基本規格

Output method	輸出方式	Relay output / 繼電器輸出	NPN Transistor output / 電晶體輸出
Power supply	工作電壓	10-30VDC	
Current consumption	耗電流	Tx : 10mA max. ; Rx : 40mA max.	Tx : 10mA max. ; Rx : 30mA max.
Response time	反應時間	15 ms max.	5 ms max
Output current	輸出電流	100 mA max.	
Contact rated	接點容量	2A/30VDC max.	
Relay life of mechanical	機械壽命	1 × 10 ⁸ operations min.	
Relay life of electrical	電氣壽命	5 × 10 ⁵ operations. min. (1 A 30 VDC)	
Protection circuit	保護迴路	Power polarity reversed protection	Power polarity reversed & Output short circuit protection
Min. sensible object	最小檢測物	50 Φ Opaque object	
Illumination resistance	耐外亂光	Sunlight > 30,000 Lux. ; Lamplight > 10,000 Lux.	
Noise resistance	抗干擾	2kv / 1 μs	
EMC Immunity	電磁相容	ESD : 8 KV Air Discharge (Level3) / EN-61000-4-2 ; RF Interference : 10V / M / ENV-50140 ; Burst test : 2KV / EN61000-4-4	
Dielectric strength	電介強度	2.5kv / 1 minute min.	
Insulation strength	絕緣強度	100 MΩ / 500vdc	
Vibration resistance	耐震動	10-55Hz / 1.5mm, 2 hours in X/Y/Z directions	
Approval	安規	CE / RoHS	
Housing material	外殼材質	Housing : Intensive ABS (94V0) ; Lenz : PMMA	
Protection	防水等級	IP-67	
Connection method	出線方式	5 Φ × 0.5m or 5 Φ × 2m	
Operating circumstance	工作環境	- 25°C ~ +80°C ; 35% ~ 85% RH	
Connection	接線方式	Emitter (Tx) : 2 wires (Brown=+V ; Blue=0V) NPN : 3 wires (Brown=+V ; Blue=0V ; Black=NPN) Relay : 5 wires (Brown=+V ; Blue=0V ; White=COM ; Black=NO ; Grey = NC)	

● Outline dimension / 外形尺寸

K3T	K3G	K3G-□□□E
P3T	P3G	P3G-□□□E

● Fixed bracket / 固定腳架

K3-BR-1 (Standard)	P3-BR-1 (Standard)
P3-BR-2 (Optioned)	P3-BR-3 (Optioned)

● Reflex mirror / 反射鏡片

MR-1 (for K3G)	MR-2 (Optioned)	MR-3 (for P3G)

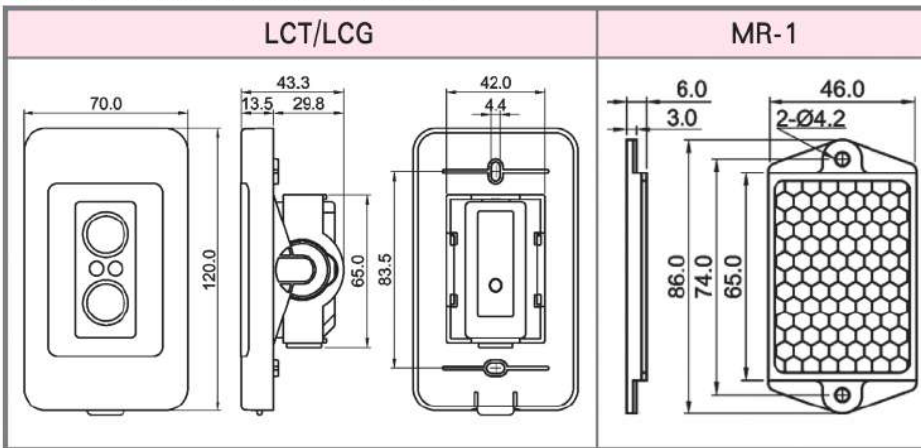
● Notice / 注意事項

<p>Warning</p>	<p>These series products are not designed for personal safety protection, Please do not apply for such as purpose.</p> <p>本系列產品不是設計使用在人員安全防護，請勿使用在此用途上！</p>
<p>Caution</p>	<ol style="list-style-type: none"> 1> Please assure the correct voltage of power supply. 2> Please do not directly expose these products to fluorescent lamp or sunlight, to avoid from making malfunction. 3> Please do not use these products under the oil or chemical environment. 4> Please do not clean these products with organic solvent such as thinner or strong alkali or acid. <p>1> 請確認提供正確的電源電壓。</p> <p>2> 本系列產品請勿直接暴露在螢光燈或太陽光直接照射的環境。</p> <p>3> 本系列產品請勿使用在有油汙或化學氣體的環境。</p> <p>4> 本系列產品請勿使用溶劑擦拭，如松香稀釋劑或強酸強鹼的液體。</p>

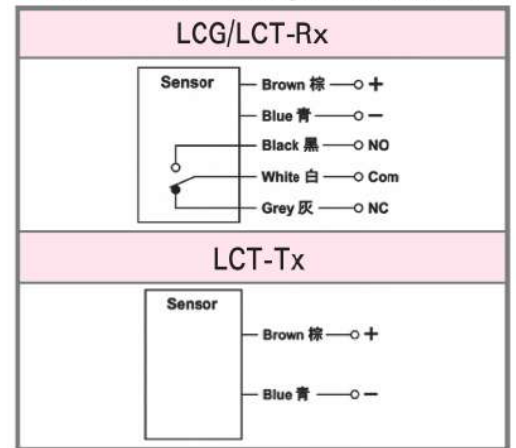
● General specification / 基本規格

Type	形式	Thru beam type				Mirror reflex type		Polarized mirror reflex type	
Model	型號	LCT-16MX	LCT-16MXB	LCT-40MX	LCT-40MXB	LCG-12MR	LCG-12MRB	LCG-10MR	LCG-10MRBE
Sensing distance	檢測距離	16 M min.	16 M min.	40 M min.	40 M min.	12 M min.	12 M min.	10 M min.	10 M min.
Output status	輸出狀態	Dark ON	Light ON	Dark ON	Light ON	Dark ON	Light ON	Dark ON	Light ON
Polarized filter	附偏光片	non				non		With polarized filter	
Emitter	發射光	Infra-Red LED				Red LED			
Light beams	光軸數	Twin light beams				Single light beam			
Current consumption	耗電流	Tx : 10mA max. ; Rx : 30mA max.				40mA max.			
Power supply	工作電壓	10-30VDC							
Output method	輸出方式	Relay 2A/30VDC max.							
Fixed adjustable angle	安裝角度	Rotated angle $\leq \pm 15^\circ$; Pitched angle $\leq \pm 15^\circ$							
Relay life of mechanical	機械壽命	1 \times 10 ⁸ operations min.							
Relay life of electrical	電氣壽命	5 \times 10 ⁵ operations. min. (1 A 30 VDC)							
Response time	反應時間	20 ms max.							
Min. sensible object	最小檢測物	200 Φ Opaque object min.							
Illumination resistance	耐外亂光	Sunlight > 30,000 Lux. ; Lamplight > 10,000 Lux.							
Protection circuit	保護迴路	Power polarity reversed							
Vibration resistance	耐震動	10-55Hz /1.5mm, 2 hours in X/Y/Z directions							
Approval	安規	CE / RoHS							
Housing material	外殼材質	Housing : Intensive ABS (94V0) ; Cover & Lenz : PMMA							
Protection	防水等級	IP-67							
Connection method	出線方式	5 Φ x 12 cm							
Operating circumstance	工作環境	- 25°C ~ +80°C ; 35% ~ 85% RH							

● Outline dimension / 外形尺寸



● Connection diagram / 連接圖



● Notice / 注意事項

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- Standard fixed method
- High solid compact construction : IP- 66
- Output status : Light ON / Dark ON changeable
- Connection method
 - Lead wire
 - Lead wire M8 connector

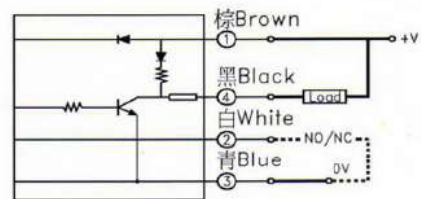


◆ General Specification

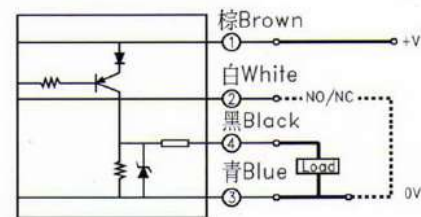
Specification	Data
Operating voltage	10 ~ 30VDC
Ripple of power	20% peak to peak
Output method	NPN or PNP
Output status	Light ON / Dark ON changeable
Output current	150mA max.
Residual voltage	0.1V max.
Leakage current	0.8mA max.
Protection circuit	Short circuit & polarity reversed protection
Housing material	Housing : Intensive PBT ; Lenz : PMMA
Illumination	Lamp light < 10,000Lux ; Sunlight < 20,000Lux
Noise resistance	2kv / 1μs
Dielectric strength	2.5kv / 1 minute min.
Insulation strength	100 MΩ / 500vdc
Operating circumstance	-20°C ~ +80°C ; 35% ~ 85% RH
Protection class	IP-66
Approval	CE / RoHS

Connection diagram

NPN



PNP



Output status

NO : White wire is opened
 NC : White wire is connected to 「0V」

◆ Dimension / 外形尺寸圖

Lead wire & M8 Lead wire	Fixed bracket

◆ Model / 型號

Type	Model	Output method	Sensing distance	Connection method	Emitter LED	Sensing adjuster	Response time	Operating	
								Voltage	Current
Diffuse	K2R-10NE	NPN	150mm	Lead wire	Red LED	270° Trimmer	1ms	10~30Vdc	30mA Max.
	K2R-10PE	PNP							
	K2R-10N	NPN	150mm	Lead wire	Infrared LED				
	K2R-10P	PNP							
	K2R-30N	NPN	400mm	M8 Lead wire	Red LED				
	K2R-30P	PNP							
	K2R-10NE-PG	NPN	150mm	M8 Lead wire	Infrared LED				
	K2R-10PE-PG	PNP							
	K2R-10N-PG	NPN	150mm	M8 Lead wire	Infrared LED				
	K2R-10P-PG	PNP							
K2R-30N-PG	NPN	400mm	M8 Lead wire	Infrared LED					
K2R-30P-PG	PNP								
Retro-reflective	K2G-2MNE *	NPN	2.0m	Lead wire	Red LED	Non	1ms	10~30Vdc	25mA Max.
	K2G-2MPE *	PNP							
	K2G-3MN	NPN	3.0m	Lead wire	Infrared LED				
	K2G-3MP	PNP							
	K2G-2MNE-PG *	NPN	2.0m	M8 Lead wire	Red LED				
	K2G-2MPE-PG *	PNP							
	K2G-3MN-PG	NPN	3.0m	M8 Lead wire	Infrared LED				
K2G-3MP-PG	PNP								
Thru-beam	K2T-4MN	NPN	4.0m	Lead wire	Red LED	Non	2ms	10~30Vdc	Emitter <20mA Receiver <20mA.
	K2T-4MP	PNP							
	K2T-15MN	NPN	15.0m	Lead wire	Infrared LED				
	K2T-15MP	PNP							
	K2T-4MN-PG	NPN	4.0m	M8 Lead wire	Red LED				
	K2T-4MP-PG	PNP							
	K2T-15MN-PG	NPN	15.0m	M8 Lead wire	Infrared LED				
K2T-15MP-PG	PNP								
Note	*With Polarized filter								

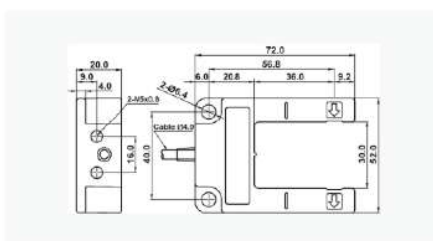
- * 高效率發射IR LED延長壽命
- * 採用調變回路有效提升穿透力及抗干擾力
- * 超強耐外亂光，不受一般照明燈光干擾
- * 超強穿透力可有效防塵防污
- * 防水等級：IP-66



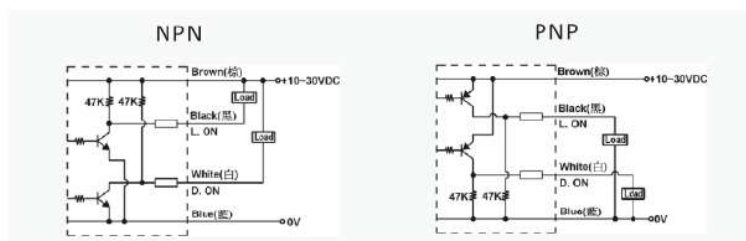
Specification / 規格

Model	型號	KU-30N	KU-30P
Output method	輸出方式	NPN NO / NC (two output)	PNP NO / NC (two output)
Sensing distance		30.0mm	
Sensible object		Non-transparent object 5.0 ϕ min.	
Operating voltage	工作電壓	10 ~ 30 VDC	
Current consumption	耗電流	20mA max.	
Output current	輸出電流	150 mA max.	
Light source		Infrared LED	
Response time		1 ms max.	
Protection circuit	保護回路	Short circuit & polarity reversed	
Voltage drop	輸出壓降	0.8V max.	
Residual voltage	殘餘電壓	0.1V max.	
Leakage current	洩漏電流	0.1mA max.	
EMC Immunity		ESD : 8 KV Air Discharge (Level3) / EN-61000-4-2 ; RF Interference : 10V / M / ENV-50140 ; Burst test : 2KV / EN61000-4-4	
Protection class		IP-66	
Dielectric strength	電介強度	2.5kv / 1 minute min.	
Insulation strength	絕緣強度	100 M Ω / 500vdc	
Approval	安規	CE / RoHS	
Illumination	耐外亂光	Sunlight > 20,000 Lux. ; Lamplight > 5,000 Lux.	
Operating temp	使用環境	- 20 C ~ +80 ; 35 ~ 85%RH	
Cable	出線	4 / 4C-2m (26AWG)	
Housing material	外殼材質	Intensive Polyimid(UL-94V0)	

Outline dimension / 外形尺寸



Connection diagram / 接線圖



Notice of using / 使用注意事項

1. 請勿使用溶劑擦拭傳感器鏡頭。
(Please clean the Lens with the dry cloth , but don't use solvent.)
2. 請勿安裝在有腐蝕性氣體的環境。
(Please don't install in the corrosive circumstance.)
3. 避免太陽光或濾光燈直接照射接收器。
(Please avoid from the sun light or spotlight direct raying.)

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