

Think Controls

FOTEK

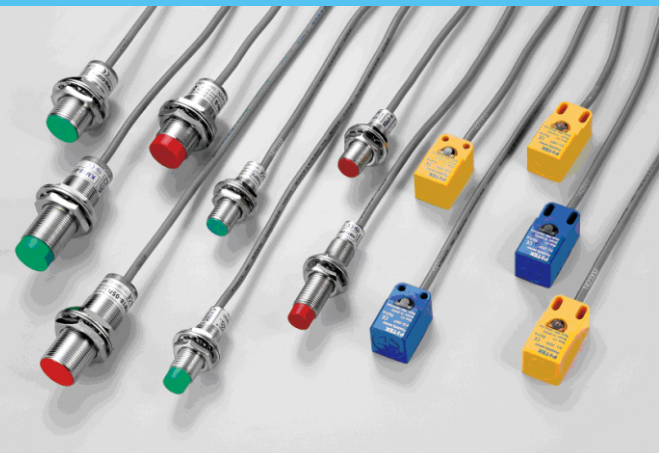
§ Inductive Proximity Sensor

§ Solid State Module

§ 近接傳感器

§ 固態模組

c   RoHS



- * 以使用者角度設計『實用耐用的電控產品』
- * 以量產標準化製造『世界標準的電控產品』
- * 以滿足客戶需求追求『企業永續經營』

陽電科技有限公司
FOTEK CONTROLS CO., LTD.

- ▶ All type with 「Short-circuit」 & 「Polarity reversed」 protection.
- ▶ High solid compact structure 「IP-67」 suited to be applied in any poor circumstance.
- ▶ All models with Twin pilot : 「Power pilot」 & 「Operating pilot.」
- ▶ 全機種都附「短路保護」及「極性保護」回路
- ▶ 堅固結構「IP-67」適用各種惡劣環境
- ▶ 全機種都附「電源燈」及「動作指示燈」



Guiding of model / 型號索引

Ex: **KS - 05 N B - PG**
 1 2 3 4 5

1> Type / 型式

KS = Square type / 方型
 KL = Long square type / 長方型
 KM = Screw type / 圓筒螺絲型

2> Sensing distance / 感應距離

02 = 2.0 mm 04 = 4.0 mm
 05 = 5.0 mm 08 = 8.0 mm

3> Output method / 輸出方

N = NPN P = PNP

4> Output status / 輸出狀態

Non = NO type
 B = NC type

5> Connection method / 接線方式

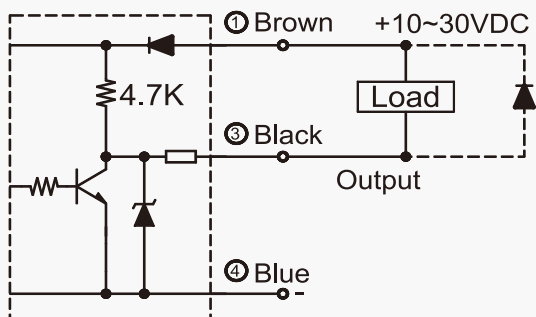
Non = Lead wire type / 出線式
 PG = M8 lead wire type / M8 接頭出線式

General data / 共同規格

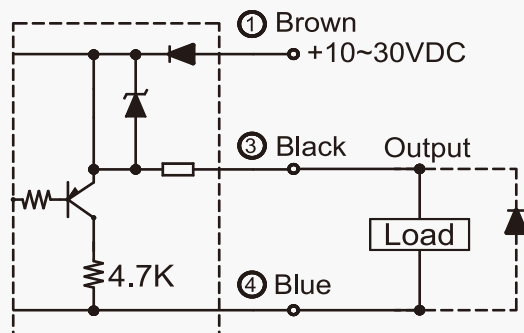
Specification		DC type
Operating voltage	工作電壓	10 ~ 30 VDC
Power ripple	電源漣波	< 20% of Vp-p
Output current	輸出電流	150 mA max.
Current consumption	消耗電流	10 mA max.
Residual voltage	殘留電壓	< 0.1V
Leakage current	洩漏電流	< 0.8 mA
Hysteresis	應差	< 10% of sensing distance
Thermal drift	溫度漂移	< 10µm/ °C
Voltage drift	電壓漂移	< 1µm/ V
Protection circuit	保護回路	Short-circuit & Polarity reversed
Operating temperature	工作溫度	- 25°C ~ +80°C
Operating humidity	工作濕度	35% ~ 95% RH
Protection class	保護等級	IP-67

Output circuit / 輸出回路

NPN



PNP



Specification / 規格

Outline	Model	Output status	Output method	Sensing distance	Mounting method	Sensing direction	Operating voltage	Response frequency
	KS-05N	NO	NPN	5.0 mm	Flushed	Horizontal	10~30 VDC	800Hz
	KS-05P	NO	PNP					
	KS-08N	NO	NPN	8.0 mm	Non-flushed			
	KS-08P	NO	PNP					
	KL-05N	NO	NPN	5.0 mm	Flushed	Horizontal	10~30 VDC	800Hz
	KL-05P	NO	PNP					
	KL-08N	NO	NPN	8.0 mm	Non-flushed			
	KL-08P	NO	PNP					
	KM12-02N-S	NO	NPN	2.0 mm	Flushed	Horizontal	10~30 VDC	2.5KHz
	KM12-02NB-S	NC						
	KM12-02P-S	NO	PNP					
	KM12-02PB-S	NC						
	KM12-04N-S	NO	NPN	4.0 mm	Non-flushed	Horizontal	10~30 VDC	2.5KHz
	KM12-04NB-S	NC						
	KM12-04P-S	NO	PNP					
	KM12-04PB-S	NC						
	KM12-02N	NO	NPN	2.0 mm	Flushed	Horizontal	10~30 VDC	2.5KHz
	KM12-02NB	NC						
	KM12-02P	NO	PNP					
	KM12-02PB	NC						
	KM12-04N	NO	NPN	4.0 mm	Non-flushed	Horizontal	10~30 VDC	2.5KHz
	KM12-04NB	NC						
	KM12-04P	NO	PNP					
	KM12-04PB	NC						
	KM18-05NS	NO	NPN	5.0 mm	Flushed	Horizontal	10~30 VDC	800Hz
	KM18-05NBS	NC						
	KM18-05PS	NO	PNP					
	KM18-05PBS	NC						
	KM18-08NS	NO	NPN	8.0 mm	Non-flushed	Horizontal	10~30 VDC	800Hz
	KM18-08NBS	NC						
	KM18-08PS	NO	PNP					
	KM18-08PBS	NC						
	KM18-05N	NO	NPN	5.0 mm	Flushed	Horizontal	10~30 VDC	800Hz
	KM18-05NB	NC						
	KM18-05P	NO	PNP					
	KM18-05PB	NC						
	KM18-08N	NO	NPN	8.0 mm	Non-flushed	Horizontal	10~30 VDC	800Hz
	KM18-08NB	NC						
	KM18-08P	NO	PNP					
	KM18-08PB	NC						

Application hints

While a switching power supply is used, please be sure to ground the FG (Frame ground) and the G (Ground) terminal, if failure to do so, it may resulting malfunction of the sensor for the noise of the switching power supply. Meanwhile, the ripple of the DC power supply is required less than 20% to avoid resulting malfunction of the sensor.

- ▶ High Dielectric strength over 4KV
- ▶ High Isolation strength over 100MΩ/500VDC
- ▶ High surge current sustenance
- ▶ High surge voltage sustenance
- ▶ Conformity with EN60947-4-3 and EN60950
- ▶ 高電介強度超過4KV
- ▶ 高絕緣強度超過100MΩ/500VDC
- ▶ 耐瞬間電流超過額定電流10倍以上
- ▶ 附雙重突波吸收回路有效防止突波破壞
- ▶ 符合EN60947-4-3 and EN60950標準



Guiding of model / 型號索引

Ex: **KSR - 40 D A - H**
 1 2 3 4 5

1> Product / 產品

「KSR」 = Single phase solid state module

2> Output current / 輸出電流

「10」 = 10A 「25」 = 25A 「40」 = 40A
 「50」 = 50A 「75」 = 75A

3> Input method / 輸入方式

「D」 = 4 ~ 32VDC
 「A」 = 80 ~ 250VAC
 「V」 = Variable resistor

4> Output voltage / 輸出電壓

「A」 = AC voltage

5> Output voltage range / 輸出電壓範圍

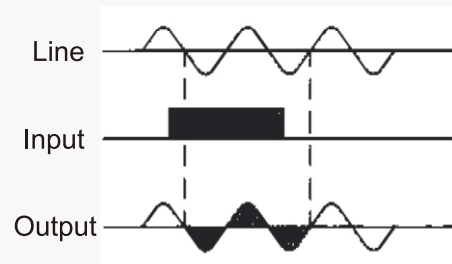
「H」 = High voltage type
 「Non」 = Standard type

Control method / 控制方式

Zero cross trigger method

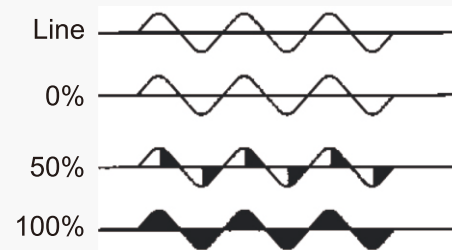
Output will be turned ON or Turned OFF only on the Zero point of sine wave, that may avoid to occur the EMI or RFI. Specially suited to control the resistive, capacitive and non-saturated inductive load.

輸出只有在正弦波的零點上有輸入訊號時才會打開或關閉，以避免產生突波或EMI / RFI。特別適用於控制阻抗性或電容性或不飽和感抗性等負載。



Variable resistance control method (Trimmer control)

Power output is controlled by the Trigger angle of the Triac that is controlled with variable resistor. (250KΩ/110VAC, 500KΩ/220VAC, 1MΩ/220VAC)
 以可變電阻控制Triac的觸發角來控制輸出功率。(250KΩ/110VAC, 500KΩ/220VAC, 1MΩ/380VAC)



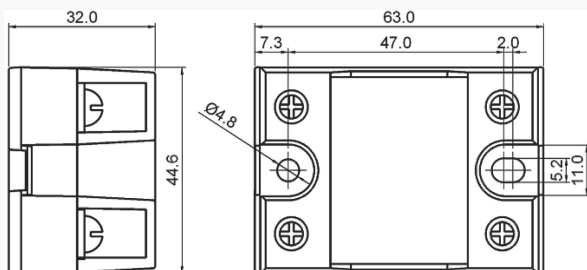
Specification [Rated current corresponding to Resistive load]

Type	型式	Standard type / 標準型				
Model	型號	KSR - 10DA	KSR - 25DA	KSR - 40DA	KSR - 50DA	KSR - 75DA
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	24 ~ 380VAC				

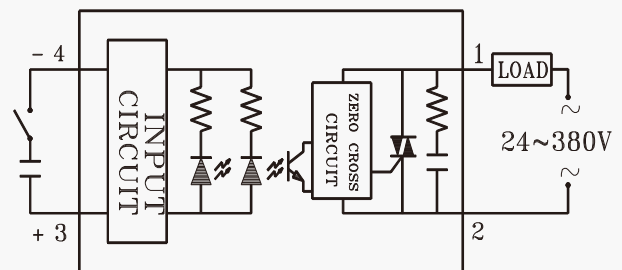
Type	型式	High voltage type / 高壓型				
Model	型號	KSR - 10DA-H	KSR - 25DA-H	KSR - 40DA-H	KSR - 50DA-H	KSR - 75DA-H
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	90 ~ 480VAC				

General specification / 共同規格		
Input voltage	輸入電壓	4 ~ 32 VDC
Turn off voltage	關閉電壓	< 3.5 VDC
Trigger current	觸發電流	12.0mA max.
Control method	控制方式	Zero cross
Leakage current	洩漏電流	5 mA max.
Response time	反應時間	8.3 ms (60Hz)
Input immunity	輸入耐突波	2 KV (EN61000-4-4)
Isolation strength	電介強度	4 KVrms (EN60950/VDE0805)
Insulation strength	絕緣強度	100MΩ / 500VDC (EN60950/VDE0805)
Housing material	外殼材質	防火ABS (UL: 94V0)
Circumstance	工作環境	-25°C ~ +80°C ; 35 ~ 85%RH

Outline dimension / 外形尺寸



Connection / 接線圖



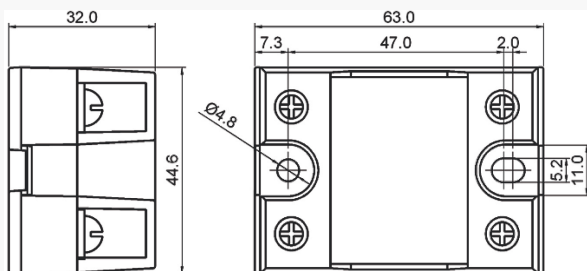
Specification [Rated current corresponding to Resistive load]

Type	型式	Standard type / 標準型				
Model	型號	KSR – 10AA	KSR – 25AA	KSR – 40AA	KSR – 50AA	KSR – 75AA
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	24 ~ 380VAC				

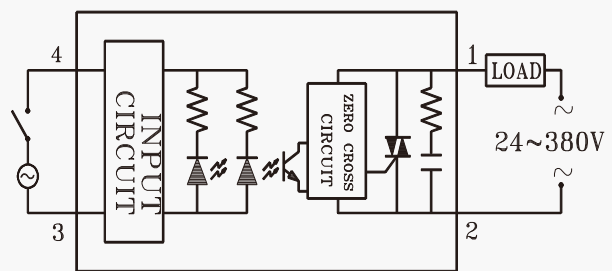
Type	型式	High voltage type / 高壓型				
Model	型號	KSR – 10AA-H	KSR – 25AA-H	KSR – 40AA-H	KSR – 50AA-H	KSR – 75AA-H
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	90 ~ 480VAC				

General specification / 共同規格		
Input voltage	輸入電壓	80 ~ 250 VAC 50/60Hz
Turn off voltage	關閉電壓	< 35 VAC
Trigger current	觸發電流	1.0VA max.
Control method	控制方式	Zero cross switching
Leakage current	洩漏電流	5 mA max.
Response time	反應時間	8.3 ms (60Hz) max.
Input immunity	輸入耐突波	2 KV (EN61000-4-4)
Isolation strength	電介強度	4 KVrms (EN60950/VDE0805)
Insulation strength	絕緣強度	100MΩ / 500VDC (EN60950/VDE0805)
Housing material	外殼材質	防火ABS (UL: 94V0)
Circumstance	工作環境	-25°C ~ +80°C ; 35 ~ 85%RH

Outline dimension / 外形尺寸



Connection / 接線圖



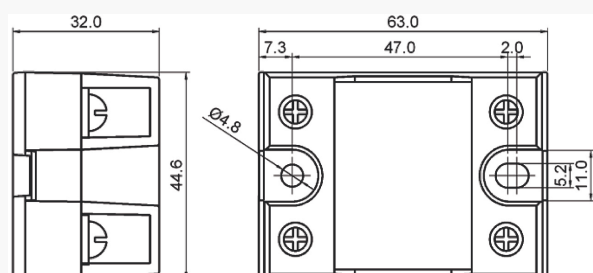
Specification [Rated current corresponding to Resistive load]

Type	型式	Standard type / 標準型				
Model	型號	KSR - 10VA	KSR - 25VA	KSR - 40VA	KSR - 50VA	KSR - 75VA
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	24 ~ 380VAC				

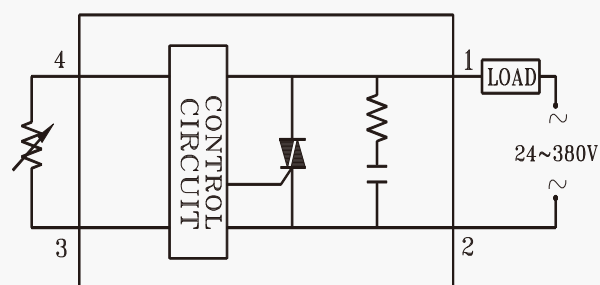
Type	型式	High voltage type / 高壓型				
Model	型號	KSR-10VA - H	KSR-25VA - H	KSR-40VA - H	KSR - 50VA-H	KSR - 75VA-H
Rated current	額定電流	10A max.	25A max.	40A max.	50A max.	75A max.
I ² t for fuse	熔斷電流	144A ² S	259A ² S	664A ² S	518A ² S	1328A ² S
Surge current	耐突波電流	135A	275A	410A	550A	820A
Peak voltage	耐突波電壓	1200VAC min.				
Output voltage	輸出電壓	90 ~ 480VAC				

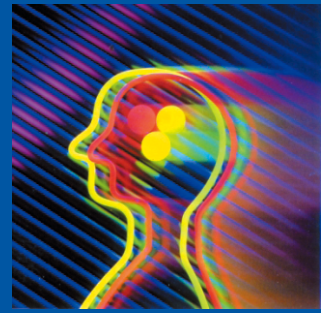
General specification / 共同規格		
Input method	輸入方式	Variable resistor
Input resistance	輸入阻值	250KΩ/110VAC ; 500KΩ/220VAC ; 1MΩ/380VAC ; 2MΩ/480VAC
Wattage of VR	VR功率	1/4 W min.
Control method	控制方式	Phase control
Leakage current	洩漏電流	5.0 mA max.
Response time	反應時間	1.0ms max.
Input immunity	輸入耐突波	2 KV (EN61000-4-4)
Isolation strength	電介強度	4 KVrms (EN60950/VDE0805)
Insulation strength	絕緣強度	100MΩ / 500VDC (EN60950/VDE0805)
Circumstance	工作環境	-25°C ~ +80°C ; 35 ~ 85%RH

Outline dimension / 外形尺寸



Connection / 接線圖





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Specification may be modified without notice in advance(2012/10/12)

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