

EMERGENCY STOP SWITCH

KPS-0 Cylindrical Photo sensor User manual

KPS -0 ___ - ___
 ③ ④

Sensing type	D	Diffuse - reflective
	R	Retro - reflective
	T	Through beam
Output	N	Receiver
	E	Emitter
③ Detecting range	None	Normal type
	1	40cm (Diffuse - reflective)
④ Body material	L	Nylon



Specification

	KPS - OT - L		KPS - ORN - L	KPS - ODN - L	KPS - ODN - 1L
	KPS - OTE - L	KPS - OTN - L			
Sensing type	Through - beam		Retro - reflective	Diffuse - reflective	
	Emitter	Receiver			
Detecting range	15m		3m	10cm	40cm
Detecting object	minimum 15mm opaque object		minimum 75mm opaque object	20 x 20cm Paper(white)	
Light source	IR LED(850nm)		Red LED(640nm)	IR LED(850nm)	
Power supply voltage	12~24VDC ± 10%, Ripple(P - P) Maximum 10%				
Power consumption	Maximum 30mA				
Output control	NPN Open collector, Load current; 100 mA max., Load power supply voltage: 30 VDC max.				
Operation modes	Light ON / Dark ON				
Response time	From operation to reset; Maximum 1ms				
Adjusting sensitivity	Fixed		Multi - turn(15 cycles)		
Operation Indicator	Green(Power)	Green(Power), Red(Operation)			
Circuit protection	Power supply reverse polarity protection, Output short - circuit protection and Over current protection				
Insulation resistance	Minimum 20M at 500VDC				
Dielectric strength	1000VAC 50/60Hz for 1 minute				
Vibration resistance	10 to 55 Hz for 1minute, 1mm double amplitude for 2 hours each in X, Y and Z directions				
Shock resistance	500m/s ² 3 times each in X, Y and Z directions				
Ambient light interference	Sunlight: 10000lx max., Incandescent lamp: 3000lx				
Ambient temperature	Operating: - 10 to 60 °C/ Storage: - 25 to 75 °C (with no icing or condensation)				
Ambient humidity	35~85% RH				
Protection degree	IP67				
Connection	Pre - wired				
Wiring	Standard cable(2m/ 4)				
	2P	4P			
Accessories	Fixing nuts	Reflector(40 x 60mm), Adjuster, Nuts	Adjuster, Nuts		
Weight	62g				
Material	Body: Nylon, Lens: PC				

PHOTO SENSOR

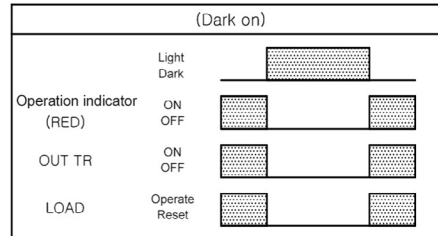
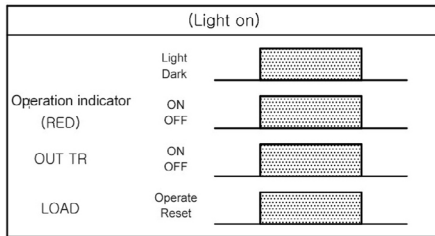
PROXIMITY SENSOR

WATER LEVEL CONTROLLER

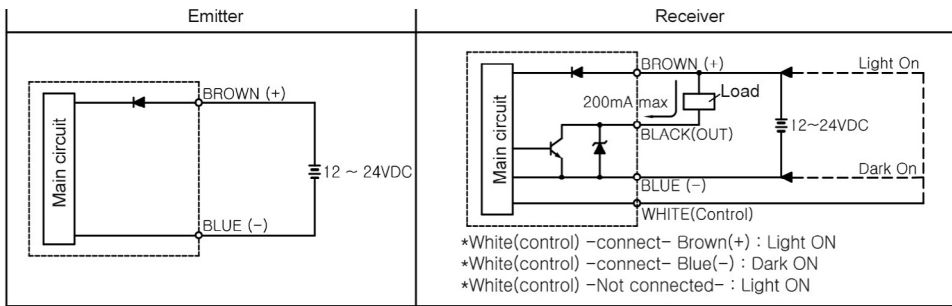
PID TEMP. CONTROLLER

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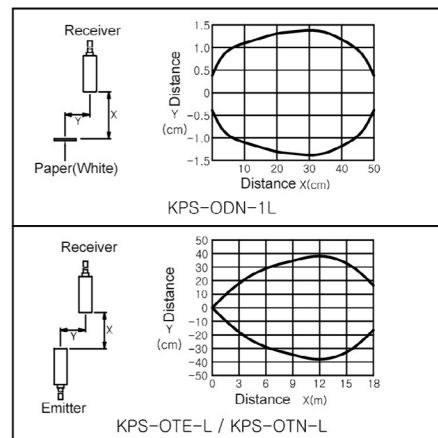
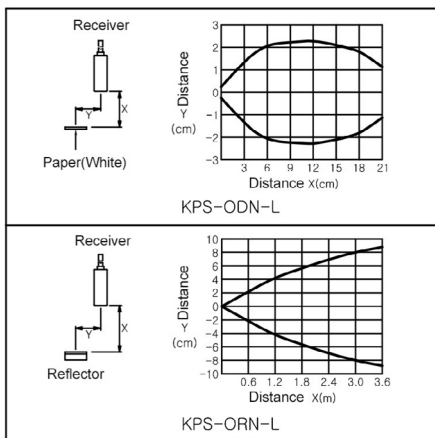
Timing Chart



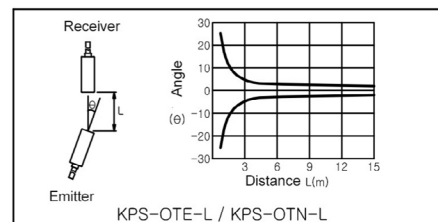
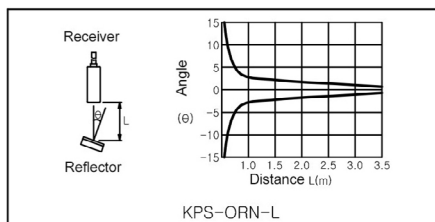
Output Circuit



Parallel Operating Range



Angle Characteristic

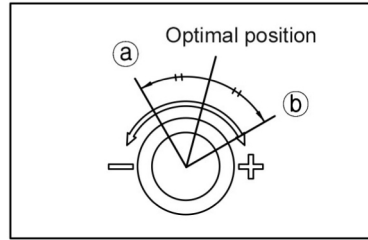
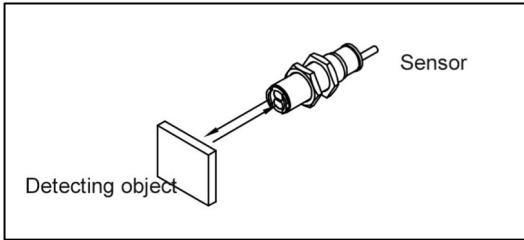


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INSTALL

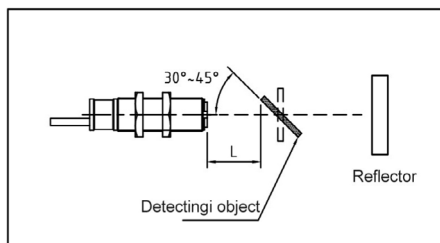
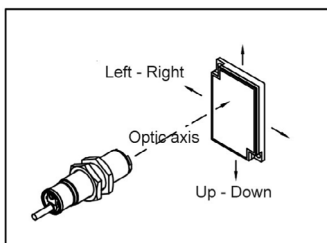
Diffuse reflective

- 1 Generally set to maximum sensitivity. Adjust sensitivity considering the effects of objects, walls, and columns around objects detected.
2. Locate the object in the detection position and increase its sensitivity slightly to determine its operating position (a)
3. Remove the detected object and increase its sensitivity to check the operating position (b)
4. The intermediate position of (a) and (b) is the optimal position. (Volume knob: 15 turns)



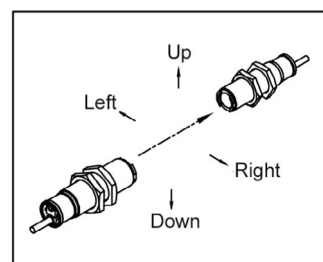
Retro reflective

- 1 Place the sensor and the reflector face to face
2. Move the reflector and the sensor left and right to confirm the extent to which the motion indicator lamp illuminates, and install it at its midpoint.
3. The up and down directions shall also be set as follows in section #2
4. After adjustment is completed, place the detecting object on the optical axis, check its stability, and secure it.
 - *If more than one sensor is used in parallel, the gap between each sensor shall be not less than 30 cm.
 - *Refer to "Diffuse Reflective" Items for instructions on how to adjust the volume
 - *If the detecting object has a higher reflectance than white matte paper, the detection face should be least 30 to 40 degrees to the sensor.
 - *Light ON: Operate when the detecting object is located between the emitter and the reflector
 - *Dark ON: Operate when the emitter and the reflector face each other directly.



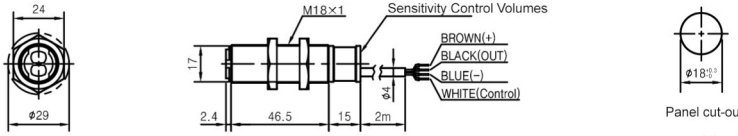
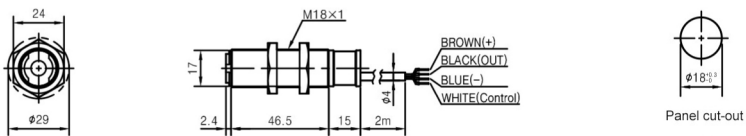
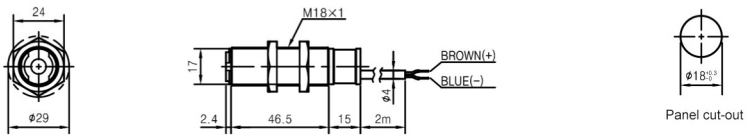
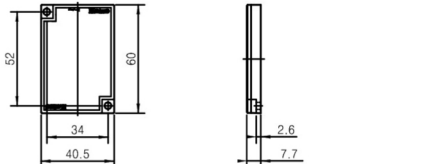
Through-beam

1. Place the emitter and the receiver face to face on a straight line.
 2. Fix one side and move the other up, down, left, and right to determine the extent to which the motion indicator illuminates then install in the central position.
- * If the detected object is translucent or very small, it may not be detectable
 - * If multiple products are used, avoid interference by switching the location of the emitter and the receiver.



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Dimensions

Reflective type KPS-ODN-L / KPS-ODN-1L / KPS-ORN-L	 <p>Panel cut-out 단위 : mm</p>
Receiver (Through-beam) KPS-OTN-L	 <p>Panel cut-out 단위 : mm</p>
Emitter (Through-beam) KPS-OTE-L	 <p>Panel cut-out 단위 : mm</p>
Reflector KPS-R3	 <p>단위 : mm</p>

* Nut tightening strength: Maximum 30kgf.cm .

PRECAUTIONS

1. Avoid using cleaning agent when removing debris on the lens. However, if cleaning is necessary, wipe lightly with a soft cloth with alcohol. Organic solvents such as thinners and gasoline are prohibited for cleaning
2. Use a sun visor when strong external light (solar or incandescent lighting) comes into the sensor's sensing angle.
3. Do not use the sensor under the environment with corrosive gas or salty - wind.
4. Do not use the sensor under the environment with degeneration and deformation due to load.
5. Avoid flame and direct heat
6. Insulate unused wiring
7. Do not use the sensor in environments in excess of rated environmental specifications.
8. Do not use the sensor in a place where the sensor may receive direct vibration or shock.
9. Using in the range of 80% of maximum operating distance is recommended.
10. Do not connect any power or load higher than the rating.
- 11 Check the polarity before applying the power.
12. The maximum cable length is 10m