

Self-contained miniature photoelectric sensors PL-F series



Stable detection

Background suppression (BGS) / Auto crosstalk prevention

Ultra-small, ultra-thin, widely used

Ultra-compact photoelectric sensors for easier use.



Rugged and long life

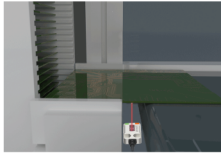
IP67-IP69K by resin filled housing.



M3 screw mounting, simple and convenient

Highly visible indicator/simplified part numbers
/easy mounting with standard M3 screws.

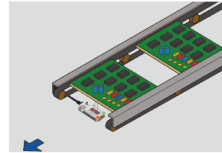
Application



Confirmation of arrival of electronic printed circuit boards



Confirm passage of cans on drive belt



Board positioning in tight spaces

Product List

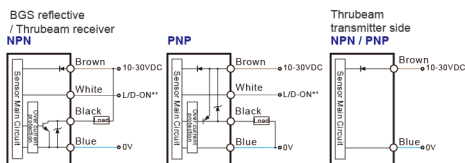
Appearance	Type	Detection distance	Output type	Model
	BGS reflective		NPN	PL-FB15N
			PNP	PL-FB15P
			NPN	PL-FB30N
			PNP	PL-FB30P
	Thrubeam		NPN	PL-F51N
			PNP	PL-F51P

Specs

Type	Flatness			
	BGS reflective		Thrubeam	
Model	NPN	PL-FB15N	PL-FB30N	PL-F51N
	PNP	PL-FB15P	PL-FB30P	PL-F51P
Detection distance		1~15mm	1~30mm	600mm
Maximum detection distance closed (white paper**)		20mm	47mm	-
Response time			0.5ms	
Sensitivity adjustment			None	
Spot diameter		Approx.ø3mm (at 15mm)	Approx.ø5mm (at 30mm)	-
Light source		4-element point source red LED (650nm)		
Indicator lamp		Output indicator (orange) , stable operation indicator (green)		
Power voltage		10~30VDC with ripple current (P-P) 10%		
Current consumption			19mA	16mA
Control output		NPN output type: NPN open collector , PNP output type: PNP open collector under 30VDC, under 50mA		
		Residual voltage: below 1.0V at less than 10mA, under 1.5V at less than 10~30mA		
Protection circuit		Power reverse connection protection, output overcurrent protection, power surge protection, output surge protection		
Protection class		IP67 IEC60529, IP69K (DIN40050-9) , 4X, 6P, 13 (NEMA250)		
Ambient light		Incandescent: under 5000lux; daylight: under 20000lux		
Ambient temperature		Operating ambient temperature: -25℃~+55℃ (no freezing) , storage ambient temperature: -25℃~+75℃ (no freezing)		
Relative humidity		35%~85%RH (no condensation)		
Shock resistance		1000m/s², 6 times each in x, y and z directions		
Vibration resistance		10~55Hz, double amplitude 1.5mm, 2 hours each in X/Y/Z direction.		
Insulation resistance		Over 20MΩ (500VDC)		
Withstand voltage		1000VAC 50/60Hz 1min		
Material		Case: SUS316L, indicator lamp cover: PC, Lens cover: PMMA, cable and protection cover: PVC		
Cable length		3m		
Weight		Approx.40g		

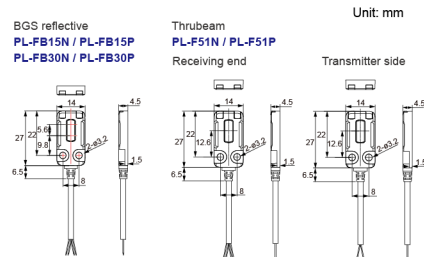
*1 representative value

I/O Circuit Connection Diagram



**1: L-ON white line to blue line; D-ON white line to brown line or dangle

Dimensions



Photoelectric Sensors

PL-F
PK-L
PH2-T
PM-T
PQ-100
SE2-45
SE2-25
SE-400

Fiber Optic Sensors

Photoelectric Sensors

Color Sensors

Laser Sensors

Inductive Proximity Sensors

Precision Contact Sensors

Area/Safety Light Curtain

Laser Scanners

Digital Contact Sensors

Laser Displacement Sensors

Distance Laser Sensors

Confocal Displacement Sensors

Barcode Scanners

Infrared Temperature Sensors

Digital Pressure Sensors

Gate Magnetic Sensors

Ultrasonic Displacement Sensors

Magnetic Scale

Static Eliminators

