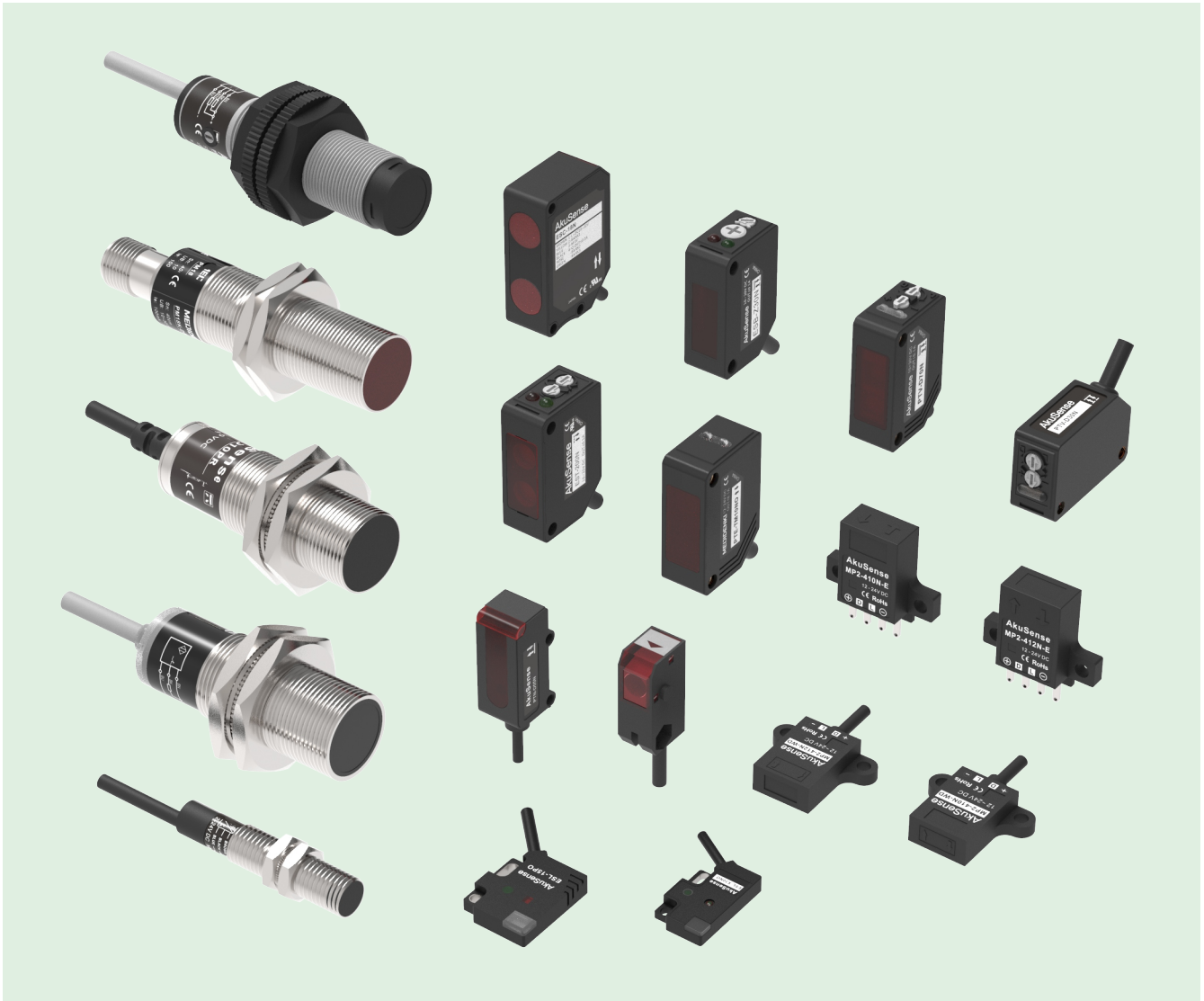
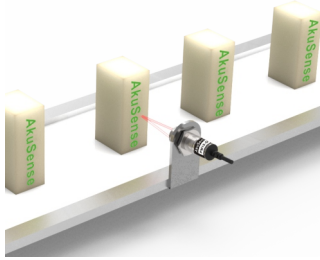


Photoelectric Sensors



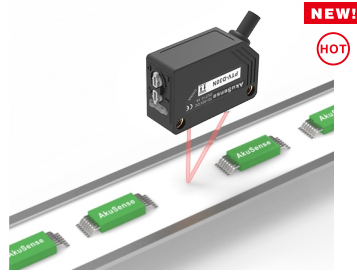
- Available in a variety of models, thin type, square type, cylindrical type, transparent object detection type, background suppression type, etc.
- L.on and D.on switch freely.
- Solid and heavy duty metal housing, economical plastic housing with easy installation.
- Short circuit protection and reverse polarity protection.
- Switch frequency up to 5000Hz.



Cylindrical Type (PM/PXM Series)

- Epoxy resin fillings ,strong shock resistance
- The smallest diameter(8mm) in the industry
- Nickel plated brass, effectively resist chemicals' corrosion

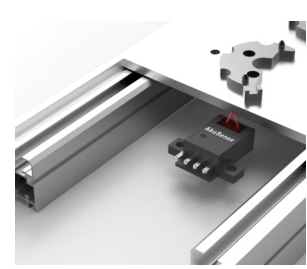
P.C-07



Square Type (PTE/PTV/PTN/PTZ/PTJ-I Series)

- Traditional square, enjoy great performance
- 25.4mm standard hole pitch with simple installation
- Identify the action clearly with dual LED indicators

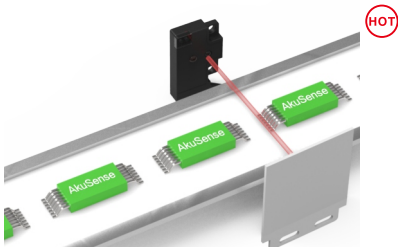
P.C-14



Flat Type (MP2 Series)

- Sensing face on front surface and top surface (various ways of detection)
- Can switch L.on from D.on freely
- Long distance detection (up to 40mm) sensing distance (White cardboard)

P.C-26

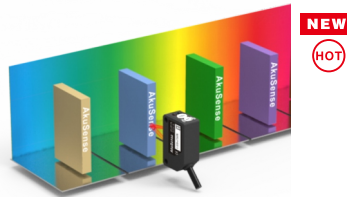


Thickness is only 3.5mm

Thin Type (ESL series)

- 3.5mm ultra-thin design, greatly saves installation space
- Ip67 Protection degree , excellent mechanical performance
- LED indicator is bright and can be clearly seen from the back

P.C-28

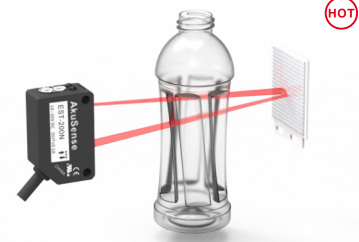


Not affected by background color

BGS Type (ESB Series)

- Interference free from the color of detecting object and the background, stable detection
- Built-in rotational knobs, with many turns for fine-tuning of sensitivity adjustment
- IP67 protection degree, with excellent mechanical performance

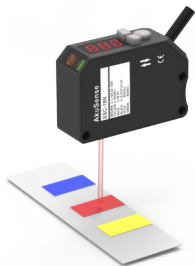
P.C-30



Transparent Object Detection (EST Series)

- No blind spot (detection for every corner)
- Suitable for moving objects
- Best options for different kinds of glass or plastics

P.C-33



RGB Light Source

Color/Mark Detection (ESC Series)

- Built-in RGB light sources
- Accurate color detection, automatically switch to the corresponding sensing light source according to the color of target object
- Two detection modes, with mark mode and molor mode

P.C-35



TOF Reflective (PM18-TF Series)

- 1.2m range can achieve 95% black and white difference
- Strong anti-interference, can reach 3000lux
- Ip67 high protection level

P.C-11



IP69K High Protection Type (PM18K Series)

- AISI 316L stainless steel housing material
- Protection grade IP69K, excellent mechanical performance
- Can be used in harsh environments

P.C-12



Anti-glare Type (PTL Series)

- Not interfered by strong light, stable detection
- Built-in multi-turn potentiometer for fine adjustment of sensitivity
- Protection grade IP67, excellent mechanical performance

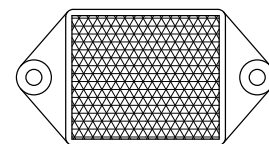
P.C-17



IO-Link Type (PTZ-C Series)

- With IO-link function to accelerate industrial 4.0
- Identify the action clearly with dual LED indicators
- IP67 protection degree, with excellent mechanical performance

P.C-22



Reflectors

- Made of special material (strong housing)
- Shapes as circular, square and combination etc
- Customization is available as request

P.C-36

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Vibration
Temperature
Annexes

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors





Type	Light Source	Series	
Photoelectric	Red Light/ Infrared Light/ RGB	Cylindrical Type	PM/PXM Series
		Square Type	PTE/PTV/PTN/PTZ PTJ-I Series
		Flat Type	MP2 Series
		Thin Type	ESL Series
		BGS Type	ESB Series
		Transparent Object Detection	EST Series
		Color/Mark Detection	ESC Series
		TOF Reflective	PM18-TF Series
		IP69K High Protection Type	PM18 Series
		Anti-glare Type	PTL Series

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance





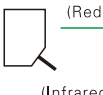

- Photoelectric**
- Cylindrical
- Square
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type
- Reflectors**
- Reflectors

Cylindrical

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN L.on&D.on	PNP L.on&D.on		
PM08	 (Infrared light)	Diffuse reflection	3cm	L.on:PM08-D03NO (HOT)	L.on:PM08-D03PO	C-07
PM18 (Metal housing)	 (Infrared light)	Diffuse reflection	10cm	PM18-D10NR	PM18-D10PR	C-08
			40cm	PM18-D40NR	PM18-D40PR	
		Thru-beam	1000cm	PM18-TM10NR	PM18-TM10PR	
			2000cm	PM18-TM20NR	PM18-TM20PR	
Retro-reflection	300cm	PM18-R300NR	PM18-R300PR			
PM18 (Economical Type)	 (Infrared light)	Diffuse reflection	10cm	L.on:PM18-D10NO	L.on:PM18-D10PO	C-09
			Thru-beam	500cm	PM18-TM05NO	
		Thru-beam		2000cm	PM18-TM20NO	
			2000cm	PM18-TM20NC	PM18-TM20PC	
PXM18 (PBT housing)	 (D10 Red light) (D40 Infrared light)	Diffuse reflection	10cm	PXM18-D10N	PXM18-D10P	C-13
			40cm	PXM18-D40N	PXM18-D40P	

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes




Square

Series	Sensing type	Sensing distance	Model No.		Pages		
			NPN L.on&D.on	PNP L.on&D.on			
PTE	 (Red light)	Diffuse reflection	30cm	PTE-D30N (HOT)	PTE-D30P	C-14	
			100cm	PTE-D70N	PTE-D70P		
		Convergent reflective	14cm	PTE-X09N (HOT)	PTE-X09P		
			Retro-reflection	20cm	PTE-R20N		PTE-R20P
		Retro-reflection		200cm	PTE-R200N		PTE-R200P
			Retro-reflection	300cm	PTE-R300N		PTE-R300P
Thru-beam	1000cm	PTE-TM10NO		-			
		PTE-TM10NC	-				
PTV	 (Infrared light)	Diffuse reflection	30cm	PTV-D30N	PTV-D30P	C-18	
			100cm	PTV-D70N	PTV-D70P		
		Convergent reflective	14cm	PTV-X09N	PTV-X09P		
Thru-beam	500cm	PTV-T500N	PTV-T500P				
PTZ	 (Red light)	Diffuse reflection	30cm	PTZ-D70N	PTZ-D70P	C-21	
			Convergent reflective	100cm	PTZ-X09N		PTZ-X09P
		Thru-beam	14cm	PTZ-TM20N	PTZ-TM20P		
			Retro-reflection	400cm	PTZ-R400N		PTZ-R400P
PTN	 (Infrared light)	Diffuse reflection	5cm	PTN-D05N	PTN-D05P	C-24	
		Thru-beam	50cm	PTN-T50N	PTN-T50P		
PTEW	 (Red light)	Diffuse reflection	20cm	PTEW-D20N	PTEW-D20P	C-16	
PTVW			 (Infrared light)	10cm	PTVW-D10N		PTVW-D10P
				20cm	PTVW-D20N		PTVW-D20P

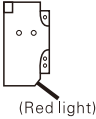

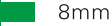


- Guidance
- Photoelectric
- Cylindrical
- Square**
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

- Reflectors
- Reflectors







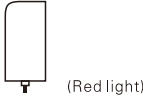



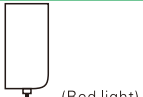

Guidance

PTJ-I	 (Infrared light)	Thru-beam	 80cm	D.on:PTJ-T80NO-I L.on:PTJ-T80NC-I	D.on:PTJ-T80PO-I L.on:PTJ-T80PC-I	C-25
		Thru-beam	 150cm	D.on:PTJ-T150NO-I L.on:PTJ-T150NC-I	D.on:PTJ-T150PO-I L.on:PTJ-T150PC-I	

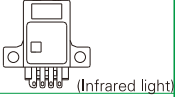



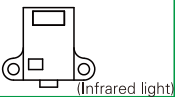
Thin Type

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN L.on&D.on	PNP L.on&D.on		
ESL	 (Red light)	Convergent reflective	 30mm	ESL-X30NO	ESL-X30PO	C-29
		Convergent reflective	 8mm	ESL-X08NO	ESL-X08PO	
	 (Infrared light)	Convergent reflective	 15mm	ESL-15NO	ESL-15PO	



BGS

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN L.on&D.on	PNP L.on&D.on		
ESB	 (Red light)	Diffuse reflection	 10cm	ESB-S10N	ESB-S10P	C-30
	 (Red light)	Diffuse reflection	 15cm	ESB-15N	ESB-15P	
	 (Red light)	Diffuse reflection	 30cm	ESB-30N	ESB-30P	
	 (Red light)	Diffuse reflection	 8cm	ESB-S08N	ESB-S08P	C-31
	 (Red light)	Diffuse reflection	 30cm	ESB-Z30N	ESB-Z30P	
	 (Red light)	Diffuse reflection	 20cm	ESB-20N	ESB-20P	


Flat

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN L.on&D.on	PNP L.on&D.on		
MP2 (Connector)	 (Infrared light)	Diffuse reflection	 40mm	MP2-410N-E 	MP2-410P-E	C-26
		Diffuse reflection	 40mm	MP2-412N-E	MP2-412P-E	
MP2 (Pre-wired)	 (Infrared light)	Diffuse reflection	8mm	D.on: MP2-410N-WD L.on: MP2-410N-WL	D.on: MP2-410P-WD L.on: MP2-410P-WL	C-27
			8mm	D.on: MP2-412N-WD L.on: MP2-412N-WL	D.on: MP2-412P-WD L.on: MP2-412P-WL	

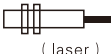
Transparent Detection

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN	PNP		
EST	 (Red light)	Retro-reflection	200cm	EST-200N	EST-200P	C-33
			200cm Coaxial beam	EST-X200N 	EST-X200P	

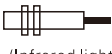
Color/Mark Detection

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN	PNP		
ESC	 (RGB)	Diffuse reflection	18mm	ESC-18N	ESC-18P	C-35


TOF Reflective

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN	PNP		
PM18	 (laser)	Reflection	1.2m	PM18-TF120N	PM18-TF120P	C-11


IP69K High Protection Type

Series	Sensing type	Sensing distance	Model No.	Pages	
PM18	 (Infrared light)	Diffuse reflection	400mm	PM18K-D40NR	C-12

Anti-glare Type

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN	PNP		
PTL		Diffuse reflection	5~100mm	PTL-D10N	PTL-D10P	C-17
			10~300mm	PTL-D30N	PTL-D30P	

IO-Link Type

Series	Sensing type	Sensing distance	Model No.	Pages	
PTZ-C		Diffuse reflection	1m	PTZ-D70N-C	C-22
		Thru-beam	25m	PTZ-TM25N-C	
		Retro-reflection	4m	PTZ-R400N-C	

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

- Cylindrical
- Square
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Cylindrical

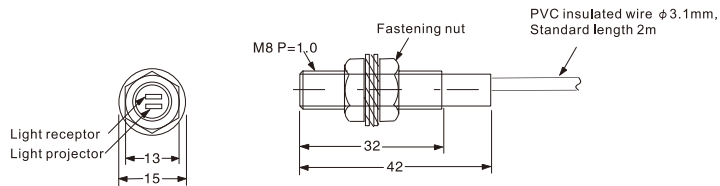
PM08 Series



Appearance		
Sensing type	Diffuse reflection	
Sensing distance	30mm (White 30X30mm)	
Hysteresis	< 20%	
Light source	IR Diode(940nm)	
Operating voltage	12~24V DC \pm 10% ripple(p-p) < 10%	
Current consumption	\leq 30mA	
Control output	NPN open-collector output	PNP open-collector output
Switch mode	L.on	
Protection circuit	Short circuit protection, reverse polarity protection, anti-interference protection	
Ambient brightness	Sunlight \leq 10000lux, Incandescent Lamp \leq 3000lux	
Ambient temperature	Operation: $-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$, Storage: $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$ (No freezing, No condensation)	
Ambient humidity	Operation: 30~85% RH, Storage: 35~95% RH	
Insulation resistance	$> 20\text{M}\Omega$	
Withstand voltage	500 V/AC 50/60Hz 1min	
Anti-vibration	10 to 55 Hz with 1.5mm up&down amplitude for 2 hours each in X, Y, and Z directions	
Impact resistance	500m/s ² for 3 times each in X, Y, Z directions	
Degree of protection	IP65	
Connection method	2M 3core cable	
Weight	Approx 80g	
Material	Stainless steel	
Model No.	PM08-D03NO HOT	PM08-D03PO

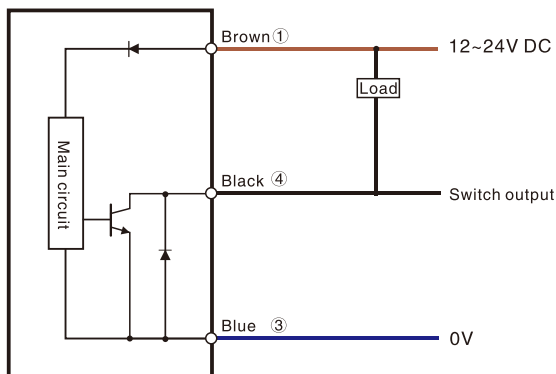
Dimensions

Unit: mm

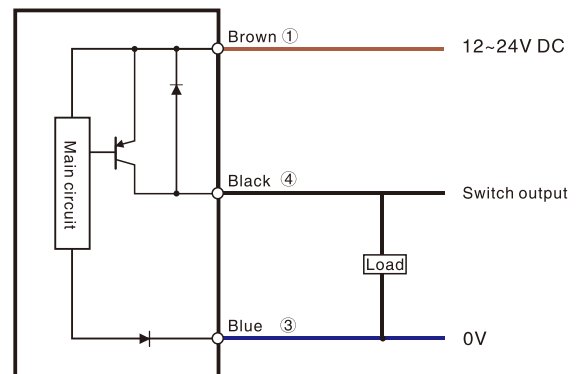


Circuit diagram

NPN Output



PNP Output





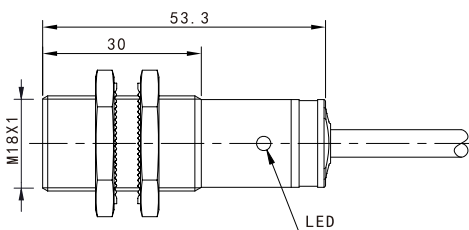
Appearance

Sensing type	Diffuse reflection		Thru-beam		Retro-reflection	
Sensing distance	10cm(fixed)	40cm(adjustable)	1000cm(fixed)	2000cm(fixed)	300cm(fixed)	
Hysteresis	3~20%		...			
Repeat accuracy	< 5%					
Output type	NPN/PNP Open-collector					
Switch type	Selectable L.on/D.on					
Indicator	Yellow LED		Green LED(Emitter)/Yellow LED(Receiver)		Yellow LED	
Response time	< 8.2 ms					
Light source	Infrared LED(880nm)					
Operating voltage	10~30V DC					
Voltage drop	< 2.5V					
Current consumption	< 25mA					
Load current	< 200mA					
Protection circuit	Reverse polarity, short circuit, surge protection					
Ambient temperature	-15°C~+55°C, No freezing					
Ambient humidity	35%~95%RH, No condensation					
Degree of protection	IP67					
Material	Nickel copper alloy					
Connection method	2M 4core cable					
Model No.	NPN	PM18-D10NR	PM18-D40NR	PM18-TM10NR	PM18-TM20NR	PM18-R300NR
	PNP	PM18-D10PR	PM18-D40PR	PM18-TM10PR	PM18-TM20PR	PM18-R300PR

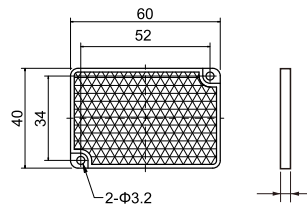
- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Dimensions

Unit: mm



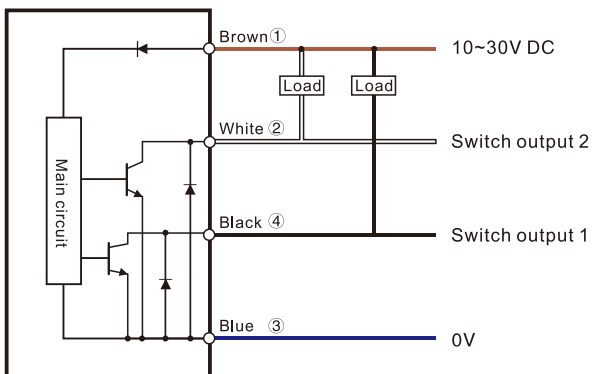
Reflector for PM18-R300



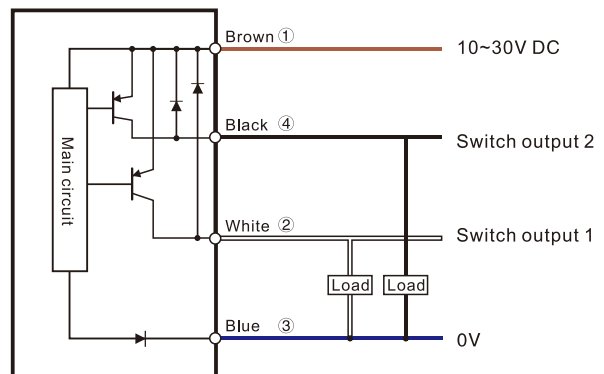
(Standard TD-09)

Circuit diagram

NPN Output



PNP Output



Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

Cylindrical

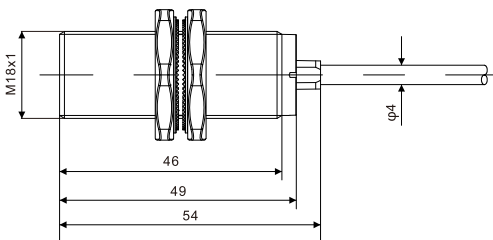
PM18 Series



Appearance

	Disffuse Reflection	Thru-beam				
Sensing type	10cm(fixed)	5m(fixed)	20m(fixed)			
Sensing distance	100mm x 100mm 90% whiteness white paper	> φ 18mm,opaque				
Detected object	NPN Open-collector	NPN/PNP Open-collector				
Output type	L.on	Selectable L.on/D.on				
Switch type	Motion indicator light: yellow	Transmitter end: power indicator: green; Receiving end: action indicator light: yellow	Transmitter end: power indicator: yellow; Receiving end: action indicator light: yellow; power indicator: green;			
Indicator	900HZ	150HZ				
Response frequency	Infrared LED 940nm (modulation)	Infrared LED 850nm (modulation)				
Light source	10~30V DC	12~24V DC	10~24V DC			
Operating voltage	< 2V		< 1.5V			
residual voltage	<25mA	Transmitter < 20 mA; Receiver <20mA		Transmitter < 25 mA; Receiver <25mA		
Current consumption	< 150mA					
Load current	Reverse polarity, short circuit, surge protection					
Protective circuit	-20°C~-+55°C, No freezing	-20°C~-+60°C, No freezing	-20°C~-+55°C, No freezing			
Ambient temperature	-25°C~-+65°C	-25°C~-+70°C		-25°C~-+55°C		
Storage temperature	35~90%RH, No condensation			35~85%RH, No condensation		
Ambient humidity	35~90%RH			35~85%RH		
Store humidity	Withstand Voltage ± 1000V 50/60Hz 60s					
Withstand Voltage	± 4000V		± 8000V			
Electrostatic	Resistance 10~50Hz, 0.5mm amplitude, X, Y, Z direction 2 hours each					
Resistance	Ambient brightness Incandescent lamp: < 3000lux, sunlight: < 10000lux					
Ambient brightness	Degree of protection IP67					
Degree of protection	Material Nickel copper alloy		Housing: PC			
Material	Connection method 2M 3core cable					
Connection method	NPN	PM18-D10NO	PM18-D10NC	PM18-TM05NO	PM18-TM20NO	PM18-TM20NC
Model No.	PNP			PM18-TM05PO	PM18-TM20PO	PM18-TM20PC

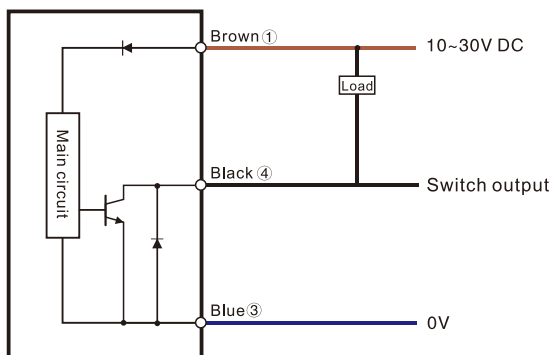
Dimensions



Unit: mm

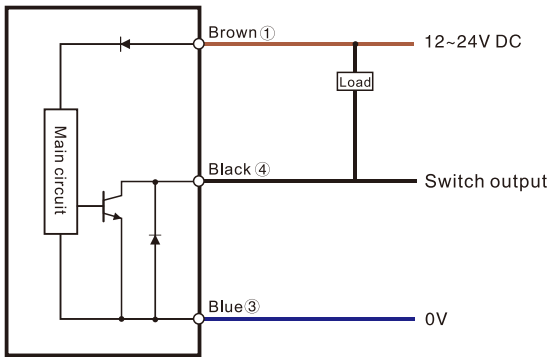
Circuit diagram

NPN Output

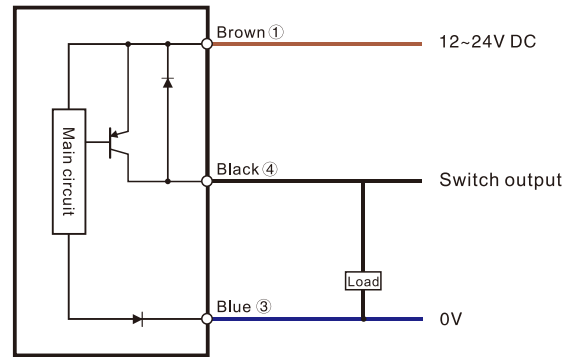


PM18-TM05N(P)O

NPN Output

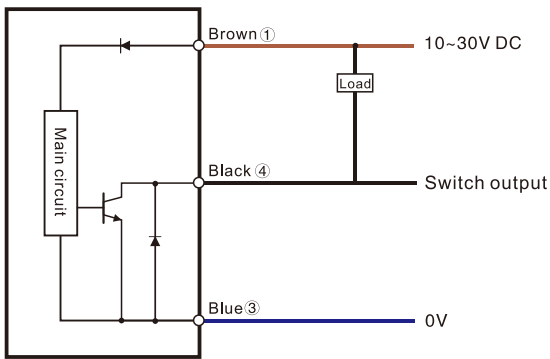


PNP Output

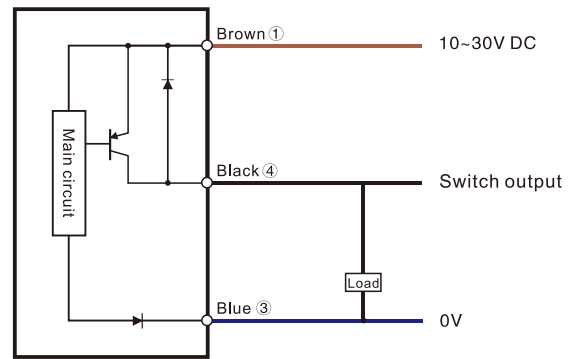


PM18-TM20N(P)O(C)

NPN Output



PNP Output



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

TOF Type Photoelectric

PM18-TF Series

TOF Principle

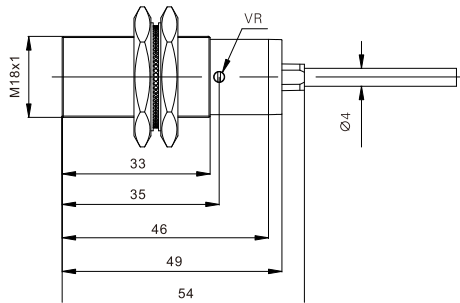
NEW!



Appearance

Sensing type	Reflection
Sensing distance	1.2m
Spot divergence angle	30°
Output	NPN / PNP open collector
Switch mode	L.on/ D.on selectable
Indicator	Operation: green, Motion: Red
Sensitivity	multi-turn adjuster
Light source	Laser 940nm (Modulated), class 1
Operating voltage	10~30V DC
Volatge drop	< 1.5V
Current consumption	≦20mA
Load current	≦100mA
Protective Circuit	Short circuit,reverse polarity,surge protection
Ambient temperature	10°C~50°C No freezing
Ambient humidity	35~85% RH, No condensation
Withstand voltage	± 1000V 50/60Hz 60s
Static electricity	± 8000V (air discharge)
Group pulse	± 2000V (5kHz/50kHz)
Impact resistance	10~55Hz amplitude 1.5mm;X, Y, Z 3 directions, 2 hours each
Ambient light	Incandescent lamp: <3,000 lux, Sunlight < 5,000 lux
Degree of protection	IP67
Material	Nickel-copper alloy
Connection	2M 3-core cable
Accessories	Mounting screws
Model No.	NPN PM18-TF120N PNP PM18-TF120P

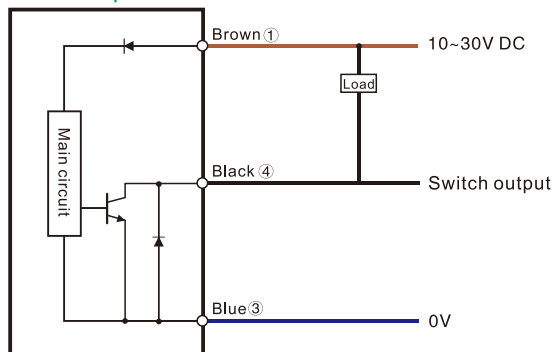
Dimensions



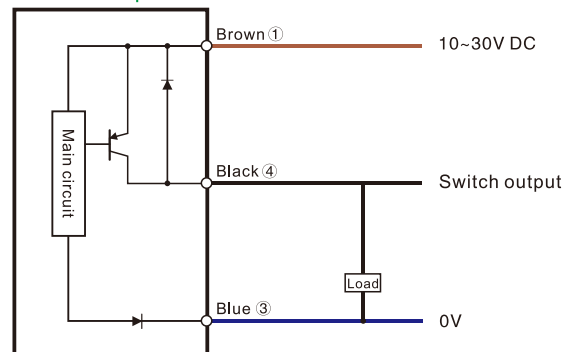
Unit: mm

Circuit diagram

NPN Output



PNP Output





IP69K Type

NEW!

Appearance	
Sensing type	Diffuse Reflection
Sensing distance	400mm
Light source	IR 880 nm
Hysteresis	≤10%
Repeatability	5%
Tolerance	+15/-5% Sn
Operating voltage	10-30V DC
Ripple factor	≤10%
No load current	Max. 35mA (30V)
Load current	≤100mA
LED	Green: teach-in Yellow: Excess gain
Output voltage drop	2Vmax. IL=100mA
Output type	NPN
Switch frequency	500Hz
Start delay	200ms
Ambient light	Incandescent lamp: <5,000 lux, Sunlight < 10,000 lux
Ambient temperature	25°C~80°C, no condensation
Protective Circuit	Reverse polarity protection, short-term overvoltage protection
Output protection	short circuit protection (Automatic reset)
Sensitivity	Teach-in
Temperature drift	10%Sr
Protective degree	IP67; IP68 (1m, 7m /days); IP69K (40050-9 standard)
Material	stainless steel 316
Accessories	Mounting screws
Model No.	PM18K-D40NR

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

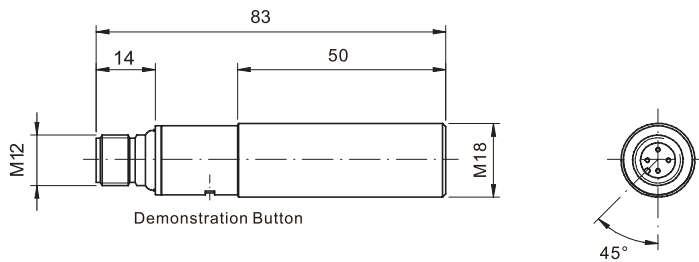
- Cylindrical
- Square
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

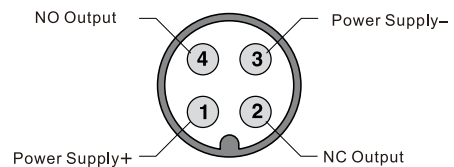
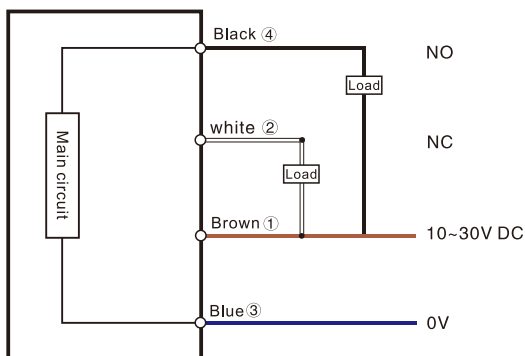
- Reflectors

Dimensions

Unit: mm



Circuit diagram



Cylindrical

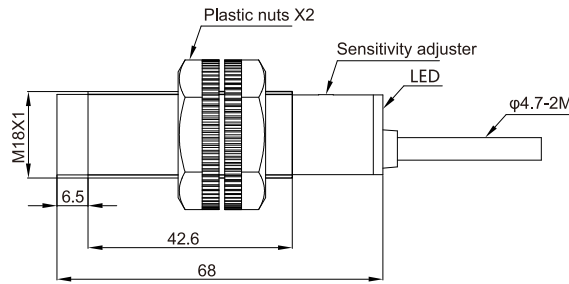
PXM18 Series



Appearance

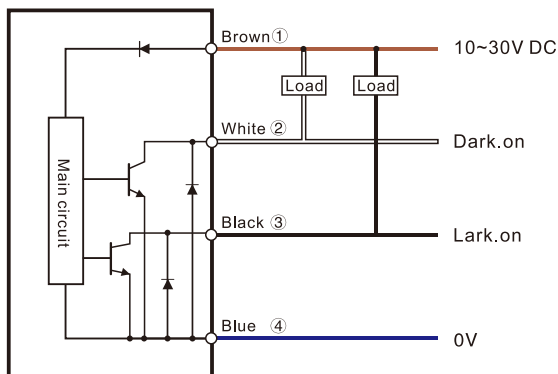
Sensing type	Diffuse reflection		
Sensing distance	10cm(fixed)	40cm(fixed)	
Hysteresis	≤10%		
Repeat accuracy	5%		
Output type	NPN/PNP Open-collector		
Switch type	Selectable L.on/D.on		
Response frequency	250Hz		
Indicator	Red LED(660nm)	Red LED(880nm)	
Operating voltage	10~30V DC(± 10%)		
Voltage drop	2V max 1L=100mA		
Leakage current	1 μA		
Current consumption	30mA		
Load current	100mA		
Protective circuit	Reverse polarity protection, output short circuit protection, pulse overvoltage protection		
Ambient temperature	-25°C~+70°C, No freezing		
Ambient brightness	Sunlight ≤10000 lux, Incandescent lamp ≤3000 lux		
Degree of protection	IP67		
Tightening torque	1Nm		
Material	Housing: PBT, Lens: PC		
Weight	≈ 50g		
Connection method	2M 4core cable		
Model No.	NPN	PXM18-D10N	PXM18-D40N
	PNP	PXM18-D10P	PXM18-D40P

Dimensions

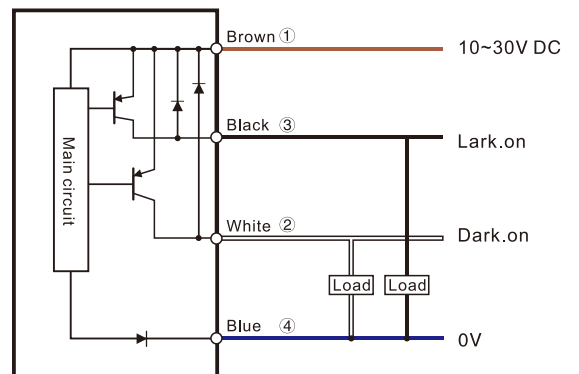


Circuit diagram

NPN Output



PNP Output





Economical Type

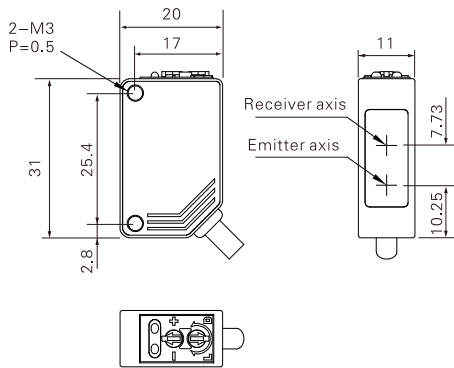
NEW!

Appearance							
Sensing type	Diffuse reflection		Convergent reflective	Retro-reflection			
Sensing distance	30cm	100cm	14cm	20cm	200cm	300cm	
Spot size	≈ φ 16mm / 300mm	≈ φ 50mm / 1000mm	≈ φ 9mm / 140mm	φ 10mm / 20cm	φ 50mm / 2m	φ 90mm / 3m	
Output type	NPN or PNP open collector, ≤100mA (30V DC)						
Switch type	L.on / D.on Switchable						
Indicator	Motion indicator: Red ; Operating indicator: Green						
Response time	<1ms		1ms	<1ms			
Sensitivity adjustment	Single-turn potentiometer						
Light source	Red light LED 623 nm (modulated)						
Operating voltage	10~30V DC						
Current consumption	≤20mA						
Ambient brightness	Sunlight ≤10000 Lux; Incandescent Lamp ≤ 3000 Lux						
Ambient temperature	-25°C~+55°C, No freezing						
Ambient humidity	35%~85%RH, No condensation						
Anti-vibration	10 ~ 50Hz, 0.5mm amplitude, 2 hours each in X, Y, Z directions						
Protective circuit	Power reverse polarity protection, output reverse polarity protection, surge protection, short circuit protection						
Degree of protection	IP65						
Connection method	2M/3 cores cable, φ 4mm						
Material	PBT+Fiberglass (Housing) , PMMA (Lens)						
Accessories	Screwdriver		Screwdriver, reflective sticker	Screwdriver, reflector			
Model No.	NPN	PTE-D30N	PTE-D70N	PTE-X09N	PTE-R20N	PTE-R200N	PTE-R300N
	PNP	PTE-D30P	PTE-D70P	PTE-X09P	PTE-R20P	PTE-R200P	PTE-R300P

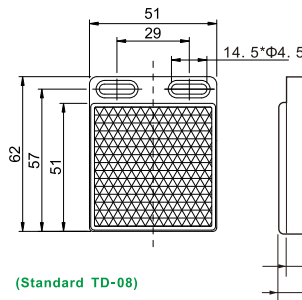
- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Dimensions

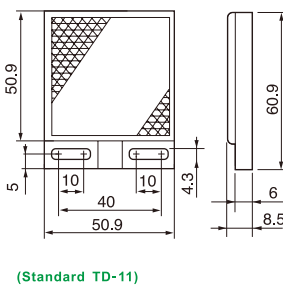
Unit: mm



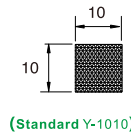
Reflector for PTE-R200



Reflector for PTE-R300

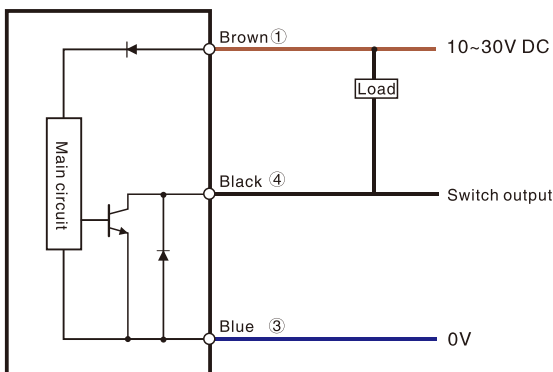


PTE-R20 Reflective Stickers

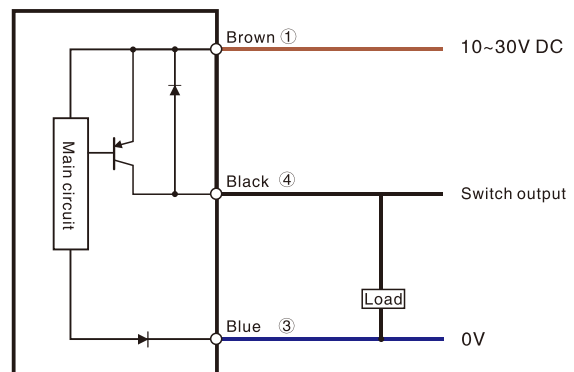


Circuit diagram

NPN Output



PNP Output



Guidance

Photoelectric

- Cylindrical
- Square**
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Square

PTE Series



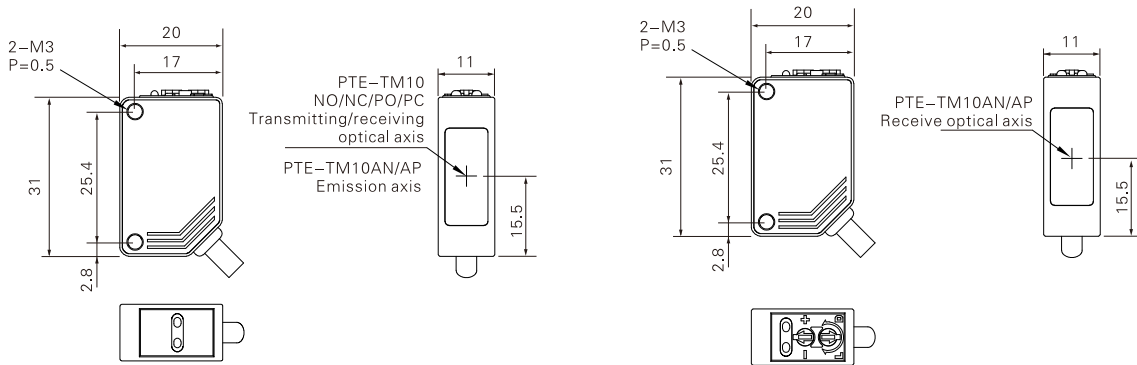
Economical Type

NEW!

Appearance			
Sensing type	Thru-beam Reflection		
Sensing distance	10m (fixed)		10m
Sensing object	$\phi > 12\text{mm}$, opaque		
Output type	NPN / PNP open collector		
Switch Type	L.on /D.on selectable		L.on /D.on Switchable
Indicator	Status indicator: green, output indicator: red		Emitter: Power: green; Receiver: Operation: green, Motion: red
Response time	150HZ		
Sensitivity	Not adjustable		Single turn potentiometer
Light source	IR LED 623nm (modulated)		
Operating voltage	10~30V DC		
Current consumption	Emitter $\leq 16\text{mA}$; Receiver $\leq 15\text{mA}$		
Ambient light	Sunlight $\leq 10,000$ Lux, Incandescent lamp $\leq 3,000$ Lux		
Ambient temperature	$-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$, No freezing		
Ambient humidity	35%~85% RH, No condensation		
Anti-vibration	10 to 50 Hz with 0.5mm amplitude for 2 hours each in X, Y, and Z directions		
Protection circuits	Power reverse polarity protection, short circuit protection		
Degree of protection	IP65		
Connection	2M / 3 cores cable 4mm diameter		
Material	Fiberglass (shell), PMMA(Window)		
Accessories	Screwdriver		
Model No.	NPN	PTE-TM10NO	PTE-TM10NC
	PNP	PTE-TM10PO	PTE-TM10PC
			PTE-TM10AN
			PTE-TM10AP

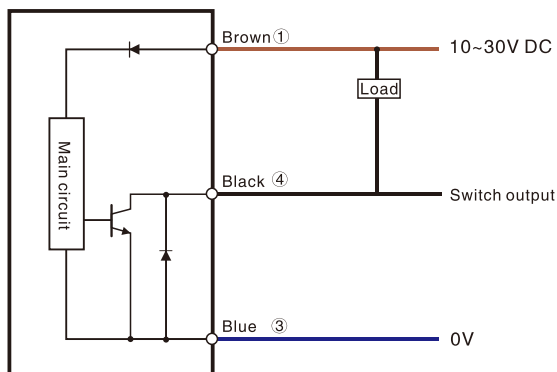
Dimensions

Unit: mm

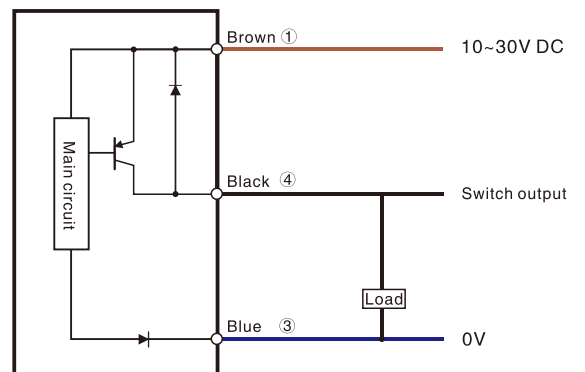


Circuit diagram

NPN Output



PNP Output





Wide Facula Type

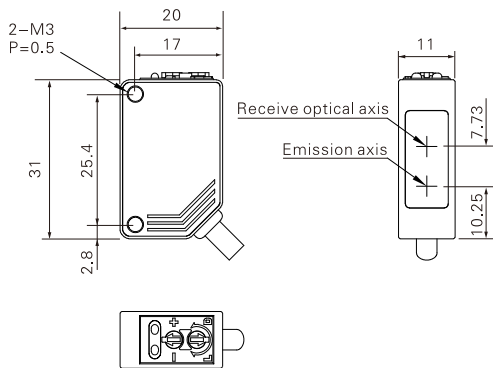
NEW!

Appearance			
Sensing type	Disffuse refection		
Sensing distance	20cm	10cm	20cm
Spot diameter	130*130mm/20cm	-	-
Output type	NPN / PNP open collector		
Switch Type	L.on /D.on selectable		
Indicator	Operation indicator: Green, Motion indicator: Red		
Response time	1ms		
Sensitivity	Single-turn potentiometer		
Light source	Red LED 623nm (modulation)	Infrared LED 940nm (modulation)	
Operating voltage	10~30V DC		
Current consumption	≤20mA		
Ambient light	Sunlight ≤10000Lux, Incandescent lamp ≤3000Lux		
Ambient temperature	-25°C ~ +55°C, No freezing		
Ambient humidity	35% ~85% RH, No condensation		
Anti-vibration	10 to 50 Hz with 0.5mm amplitude for 2 hours each in X, Y, and Z directions		
Protection circuits	Power reverse polarity protection, output reverse polarity protection, surge protection, short circuit protection		
Degree of protection	IP65		
Connection	2M / 3 wire cable 4mm diameter		
Material	PBT+Fiberglass (body), PMMA(window)		
Accessories	Screwdriver		
Model No.	NPN PNP	PTEW-D20N PTEW-D20P	PTVW-D10N PTVW-D10P
			PTVW-D20N PTVW-D20P

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

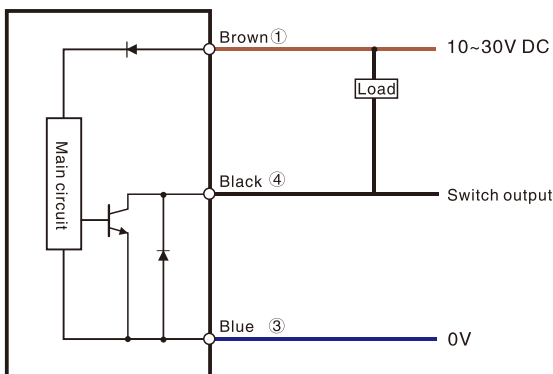
Dimensions

Unit: mm

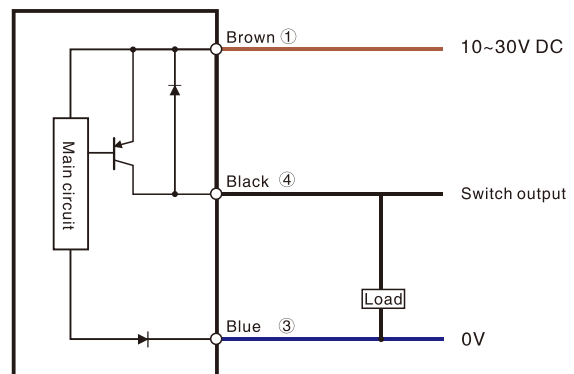


Circuit diagram

NPN Output



PNP Output



Guidance

Photoelectric

- Cylindrical
- Square**
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Anti-glare Type

PTL Series



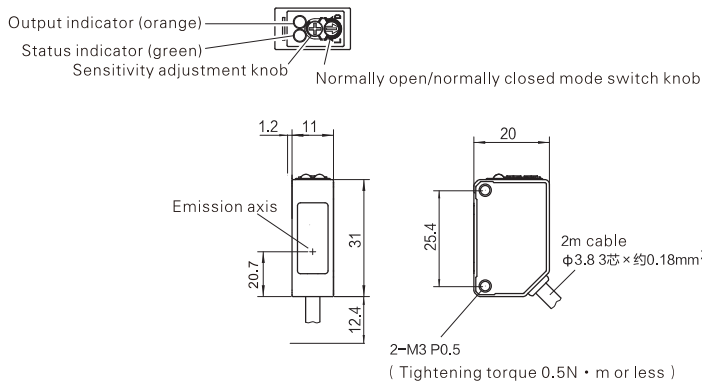
Anti-glare Type

NEW!

Appearance		
Sensing type	Diffuse reflection-BGS	
Sensing distance	5~100mm	10~300mm
Sensing distance	20~100mm	50~300mm
Spot diameter	≈ Ø10mm/100mm	≈ Ø30mm/300mm
Should be bad	≦3%	≦5%
Output type	NPN / PNP open collector	
Switch Type	L.on/D.on selectable	
Indicator	Operating indicator: orange, Status indicator: red	
Response time	≦1ms	
Sensitivity	6-turn potentiometer	4-turn potentiometer
Light source	Red LED	
Operating voltage	10~30V DC	
Current consumption	≦30mA	
Ambient light	Sunlight ≦ 50,000 Lux, Incandescent lamp ≦ 5,000 Lux	
Ambient temperature	-25°C~+55°C, No freezing	
Ambient humidity	35%~85%RH, No condensation	
Anti-vibration	10 to 50 Hz with 0.5mm amplitude for 2 hours each in X, Y, and Z directions	
Degree of protection	IP67	
Connection	ABS (body), PMMA (window)	
Accessories	Screwdriver	
Model No.	NPN PTL-D10N PNP PTL-D10P	PTL-D30N PTL-D30P

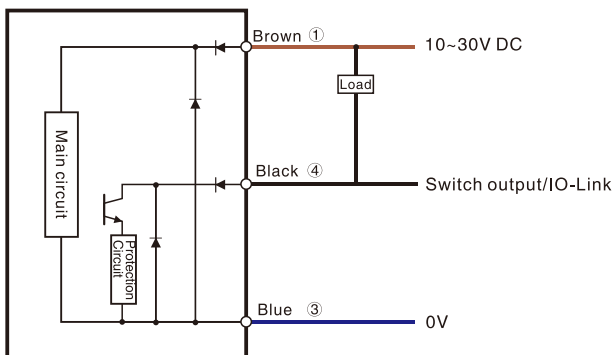
Dimensions

Unit: mm

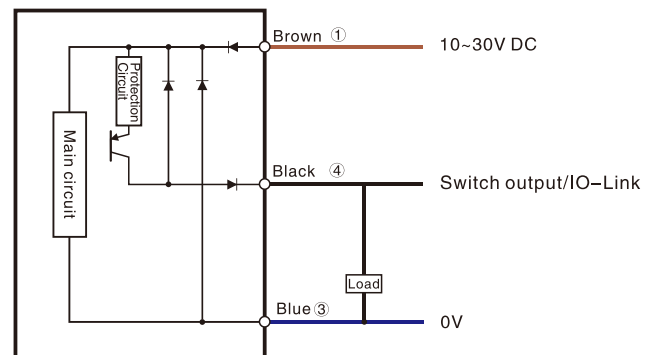


Circuit diagram

NPN Output



PNP Output





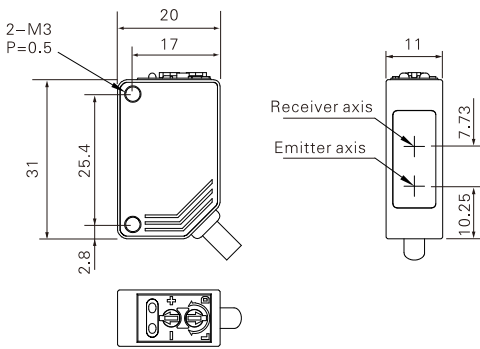
NEW!

Appearance

Sensing type	Diffuse reflection		Convergent reflective	
Sensing distance	30cm	100cm	14cm	
Output type	NPN/PNP Open-collector			
Switch type	Selectable L.on/D.on			
Response time	< 1ms			
Light source	Infrared light LED(940nm modulation)			
Operating voltage	10~30V DC			
No-load supply current	≤20mA			
Load current	≤100mA(24V DC)			
Ambient temperature	-20°C~+55°C, No freezing			
Ambient humidity	35%~85%RH, No condensation			
Protective circuit	Power reverse polarity, output reverse polarity, surge, short circuit			
Degree of protection	IP65			
Material	PBT+Fiberglass (Housing) , PMMA (Lens)			
Connection method	2M 3core cable			
Weight	≈50g			
Accessories	Screwdriver			
Model No.	NPN	PTV-D30N HOT	PTV-D70N	PTV-X09N
	PNP	PTV-D30P	PTV-D70P	PTV-X09P

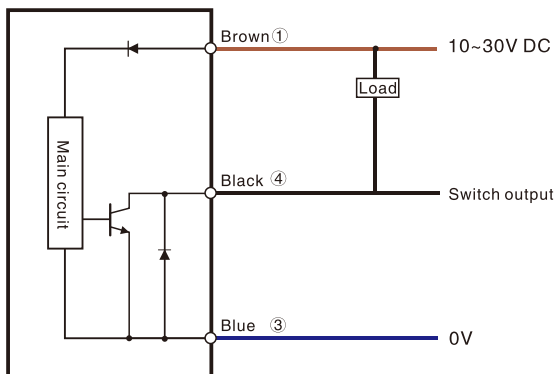
Dimensions

Unit: mm

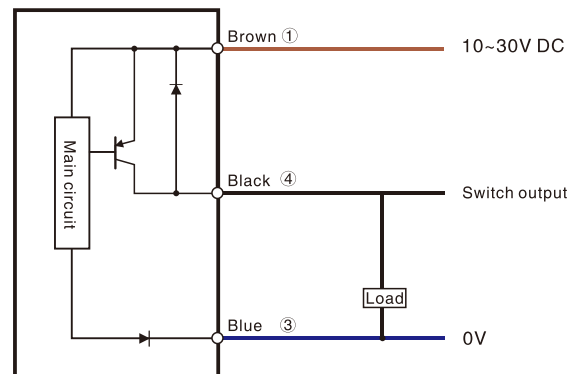


Circuit diagram

NPN Output



PNP Output



- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

- Cylindrical
- Square**
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Square

PTV Series



NEW!

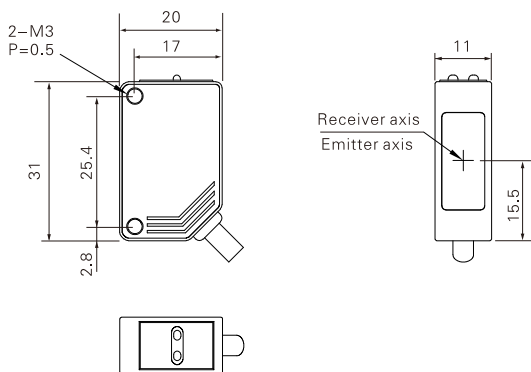
Appearance

Sensing type	Thru-beam				
Sensing distance	20m(fixed)	20m	5m		
Output type	NPN/PNP Open-collector				
Switch type	Selectable L.on/D.on, Model optional		Selectable L.on/D.on		
Response time	< 5ms				
Light source	Infrared light LED(940nm modulation)				
Operating voltage	10~30V DC				
No-load supply current	Transmitter end: ≤20mA; Receiving end: ≤20mA				
Load current	≤100mA(24V DC)				
Ambient temperature	-20°C~+55°C, No freezing				
Ambient humidity	35%~85%RH, No condensation				
Protective circuit	Power reverse polarity,output reverse polarity,surge,short circuit				
Degree of protection	IP65				
Material	PBT+Fiberglass (Housing) , PMMA (Lens)				
Connection method	2M 3core cable				
Weight	≈50g				
Accessories	Screwdriver				
Model No.	NPN	PTV-TM20NO	PTV-TM20NC	PTV-TM20AN	PTV-T500N
	PNP	PTV-TM20PO	PTV-TM20PC	PTV-TM20AP	PTV-T500P

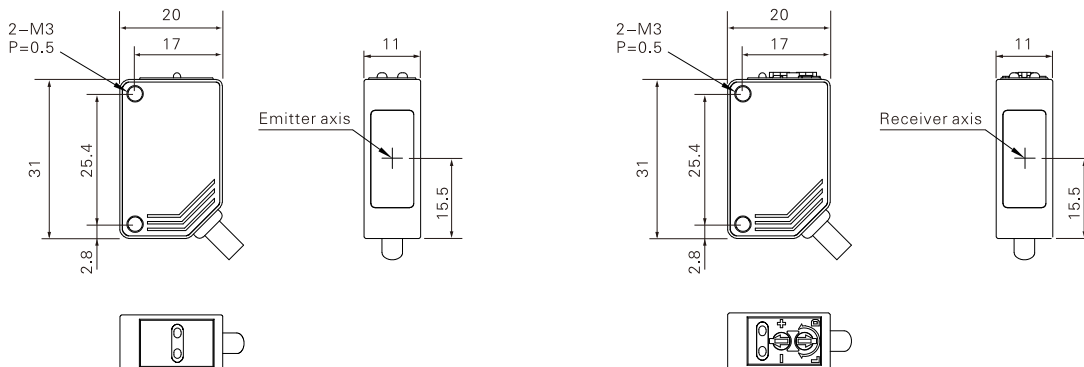
Dimensions

Unit: mm

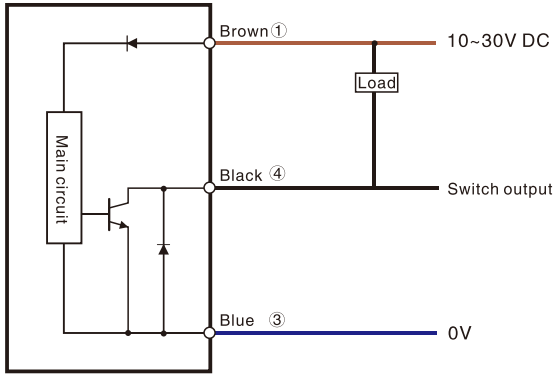
PTV-TM20NO/PO/NC/PC



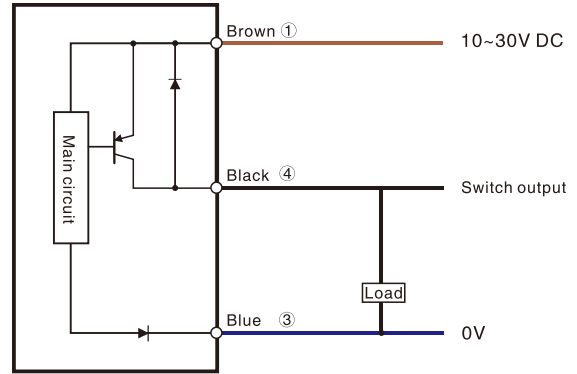
PTV-TM20AN/AP、PTV-T500N/P



NPN Output



PNP Output



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

Square

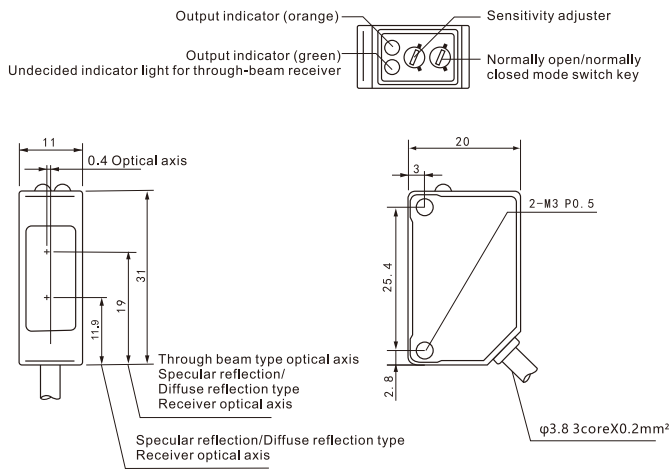
PTZ Series



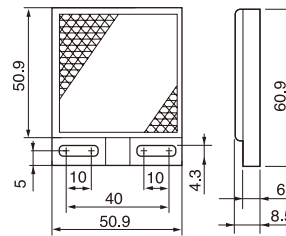
Appearance			
Sensing type	Disffuse refection	Thru-beam	Retro-reflection
Sensing distance	100cm	2000cm	400cm
Beam size	φ 75mm / 1000mm	φ 800mm / 20m	φ 200mm / 4m
Output type	NPN/PNP Open-collector, ≤ 100mA		
Switch type	Selectable L.on/D.on		
Indicator	Motion indicator:Green;Output indicator:Yellow		
Response time	0.5ms		
Sensitivity adjustment	Single turn potentiometer		
Light source	Red LED 660nm		
Operating voltage	10~30V DC ± 10%		
No-load supply current	≤25mA	Emitter ≤20mA, Receiver ≤15mA	≤20mA
Ambient luminance	Sunlight ≤ 1000Lux, Incandescent lamp ≤ 3000Lux		
Ambient temperature	-25°C~55°C no freezing		
Ambient humidity	35~85% RH, No coagulating		
Shock resistance	100G (1000m/s ²)		
Degree of protection	IP67		
Connection method	2M/3 core cable		
Material	ABS contain optic fiber(body);PMMA(lens)		
Accessories	None		Reflector
Model No.	NPN	PTZ-D70N HOT	PTZ-TM20N
	PNP	PTZ-D70P	PTZ-TM20P
			PTZ-R400N
			PTZ-R400P

Dimensions

Unit: mm



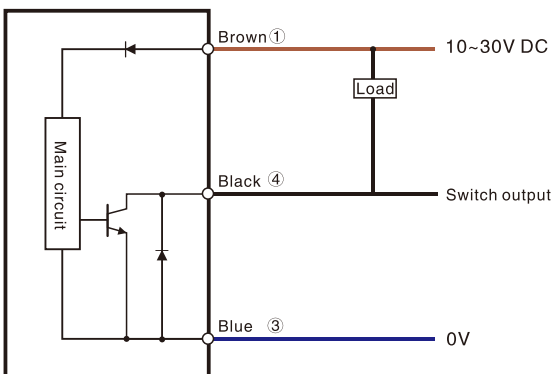
PTZ-R400 Reflector



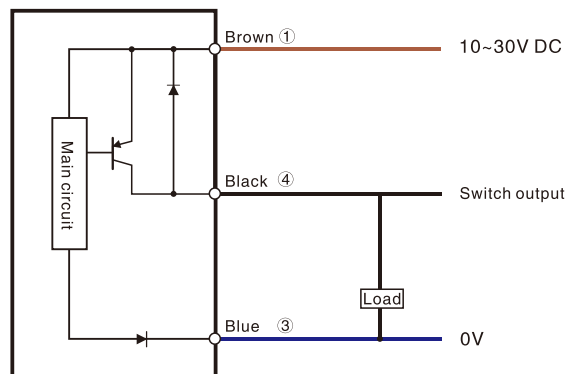
(Standard TD-11)

Circuit diagram

NPN Output



PNP Output





IO-Link
NEW!

Appearance

Sensing type	Diffuse reflection	Thru-beam reflection	Retro-reflection
Sensing distance	0~1m(white paper200X200mm)	25m	0.01~4m(with reflector)
Spot diameter	φ 75mm / 1m	φ 1800mm / 25m	φ 280mm / 4m
Output type	NPN/PNP Open-collector, ≤100mA(30VDC)		
Switch type	L.on/D.on selectable		
Indicator	Input indicator: orange, Status indicator: green		
Response time	≤500us		
Sensitivity	Single turn adjuster		
Light source	Red light LED		
Operating voltage	10~30V DC ± 10%		
Current consumption	≤20mA	Emitter ≤ 14mA, Receiver ≤ 20mA	≤20mA
Hysteresis	≤20%	-	
Function	IO-LINK		
Ambient light	Sunlight ≤ 50000Lux, Incandescent lamp ≤ 5000Lux		
Ambient temperature	-25°C~+55°C, no freezing		
Ambient humidity	35%~85%RH, No condensation		
Degree of protection	IP67		
Connection	3 wire 2m cable, 2 wire 2m cable for thru-beam models		
Material	ABS (housing) +PMMA (window)		
Accessories	-		
Model No.	NPN	PTZ-D70N-C	PTZ-TM25N-C
	PNP	PTZ-D70P-C	PTZ-TM25P-C
			PTZ-R400N-C
			PTZ-R400P-C

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

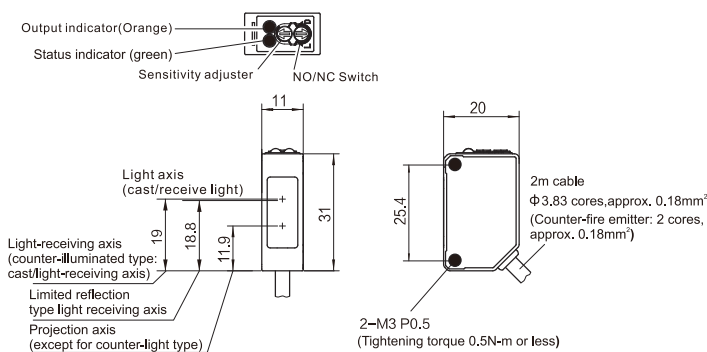
Anti-glare type

Reflectors

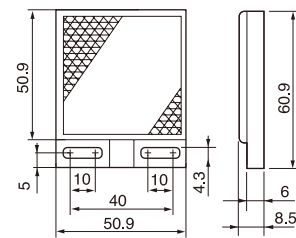
Reflectors

尺寸规格

单位: mm



Reflector for PTZ-R400-C

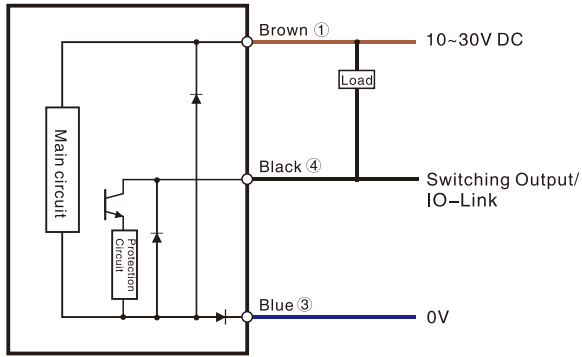


(Optional TD-11)

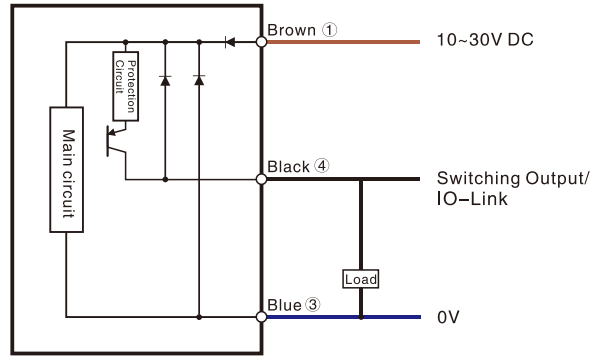
Square

Circuit diagram

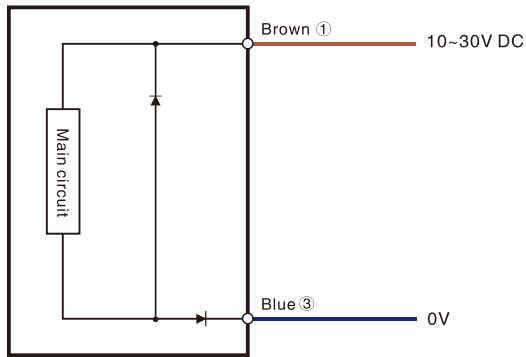
NPN Output



PNP Output



Opposed-fire Launcher



Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

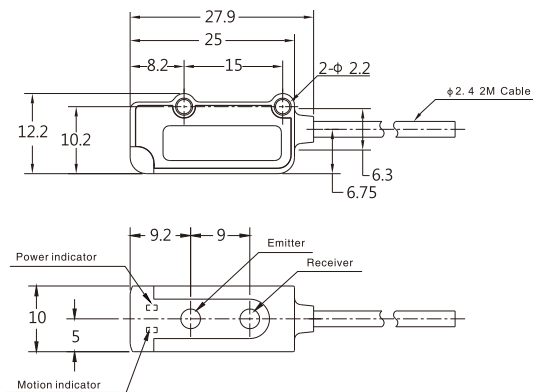


Appearance		
Sensing type	Diffuse reflection	Thru-beam
Sensing distance	5cm, White board 100*100mm (> 5cm)	50cm
Output type	NPN/PNP Open-collector	
Switch type	L.on	D.on
Response time	≤ 1 ms	
Light source	Infrared light LED (940nm)	
Operating voltage	12~24V DC ± 10%	
Current consumption	≤ 20mA	≤ 30mA
Load current	≤ 100mA (24V DC)	
Protective circuit	Reverse polarity, short circuit	
Ambient temperature	-10°C ~ +45°C, No freezing	
Ambient humidity	35% ~ 85% RH, No condensation	
Storage temperature	-10°C ~ +55°C, No freezing	
Storage humidity	35% ~ 95% RH, No condensation	
Voltage withstandability	1000 V/AC 50/60Hz 1min	
Insulation resistance	≥ 20MΩ/500V DC	
Degree of protection	IP64	
Material	ABS	
Connection method	φ 2.4*2M 3core cable	(Receiver) φ 2.4*2M 3core cable/ (Emitter) φ 2.4*2M 3core cable
Weight	≈ 20g	≈ 40g
Model No.	NPN PNP	PTN-D05N PTN-D05P
		PTN-T50N PTN-T50P

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Dimensions

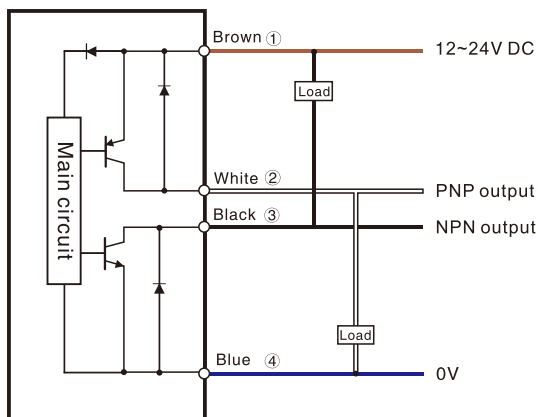
Unit: mm



Guidance

- Photoelectric
- Cylindrical
- Square**
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Circuit diagram



Reflectors

- Reflectors

Square

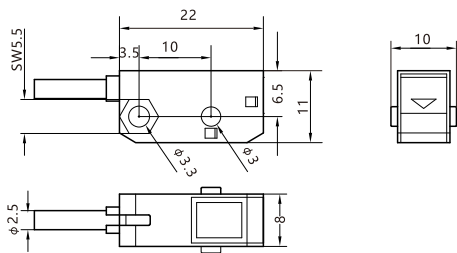
PTJ-I Series



Appearance			
Sensing type	Thru-beam		
Sensing distance	80cm (fixed)	150cm (fixed)	
Standard test object	Opaque objects above ϕ 6mm		
Output type	NPN/PNP Open-collector		
Switch type	Selectable L.on/D.on, Model optional		
Response frequency	150Hz		
Indicator	Transmitter: Power indicator: green; Receiver: Action indicator: yellow		
Light source	Infrared LED 850nm (Modulated)		
Operating voltage	12~24V DC		
Residual voltage	2V or less (when the current is 50mA)		
Current consumption	The transmitting end < 15mA, Receiving end < 15mA		
Load current	< 50mA		
Protective circuit	Reverse polarity , short circuit		
Ambient brightness	Sunlight \leq 10000Lux, Incandescent lamp \leq 3000Lux		
Ambient temperature	-20 $^{\circ}$ C~+50 $^{\circ}$ C, No freezing		
Voltage drop	35~90% RH, Storage : 35~90% RH		
Storage temperature	-30 $^{\circ}$ C~+70 $^{\circ}$ C, No freezing		
Voltage withstandability	\geq 20M Ω /500V DC		
Pressure strength	AC1000V(50/60Hz)1 minute		
Shock resistance	10~55Hz reciprocating amplitude 1.5mm, X, Y, Z directions 2 hours		
Impact resistant	500m/s ² XYZ three directions		
Degree of protection	IP 64		
Housing Material	PC/ABS		
Connection method	2M 3core cable		
Model No.	NPN D.on	PTJ-T80NO-I	PTJ-T150NO-I
	NPN L.on	PTJ-T80NC-I	PTJ-T150NC-I
	PNP D.on	PTJ-T80PO-I	PTJ-T150PO-I
	PNP L.on	PTJ-T80PC-I	PTJ-T150PC-I

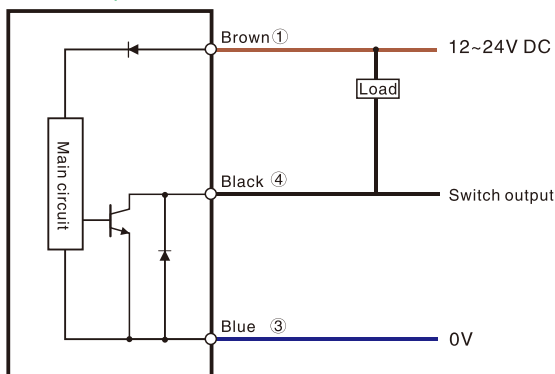
Dimensions

Unit: mm

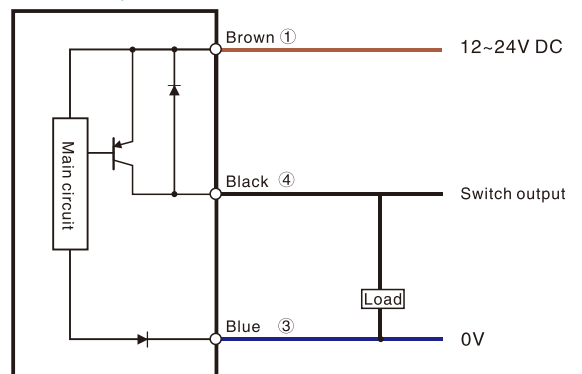


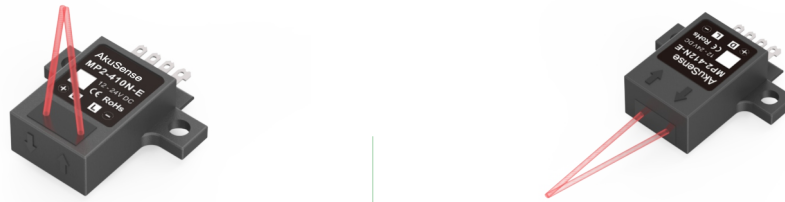
Circuit diagram

NPN Output



PNP Output



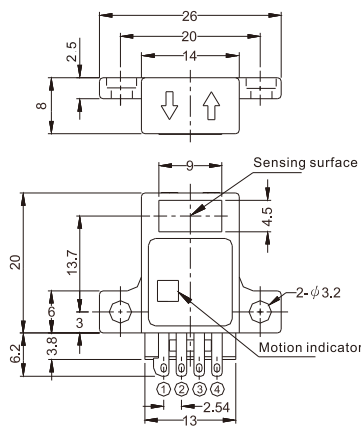


Appearance		
Detection surface	Front	Head
Sensing type	Diffuse reflection	
Sensing distance	40mm (50 × 50 white matte paper)	
Return difference	< 20%	
Output type	NPN/PNP Open-collector	
Switch type	Selectable L.on/D.on	
Response time	< 1 ms	
Light source	Infrared light LED	
Operating voltage	12~24V DC	
Current consumption	< 25mA	
Voltage drop	< 2.5V (load current is 100mA)	
Load current	< 100mA(24V DC)	
Ambient temperature	1000 V DC 50/60Hz 1min	
Ambient humidity	Operation: -20°C~+55°C, Storage: -25°C~+80°C(No freezing)	
Voltage withstandability	Operation: 45%~+85%RH, Storage: 35%~90%RH (No condensation)	
Insulation resistance	> 20MΩ/500V DC	
Ambient brightness	Incandescent lamp ≤3000Lux, Sunlight ≤10000Lux	
Degree of protection	IP50	
Material	PC	
Connection method	connector	
Model No.	NPN PNP	MP2-410N-E (HOT) MP2-410P-E
		MP2-412N-E MP2-412P-E

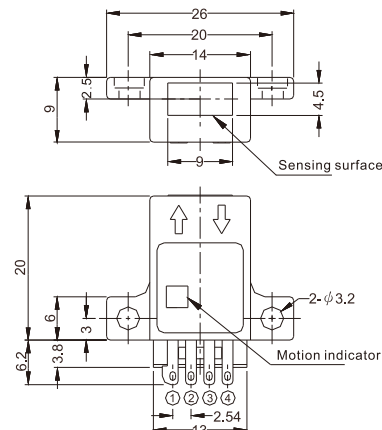
Dimensions

Unit: mm

MP2-410N(P)-E



MP2-412N(P)-E

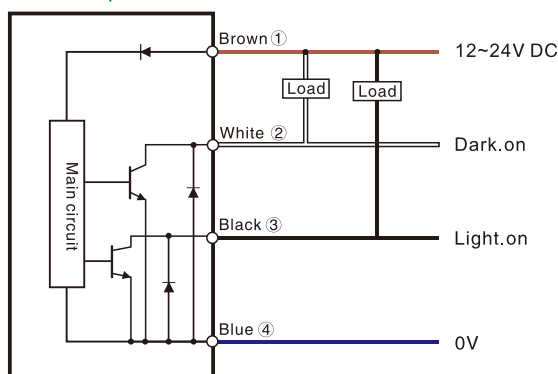


- ①: ○ Brown
- ②: ○ OUT1 White
- ③: ○ OUT2 Black
- ④: ○ Blue

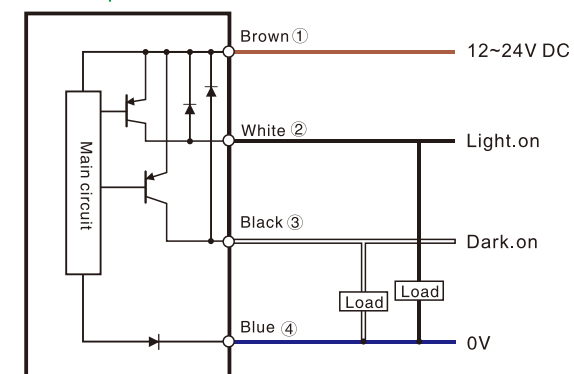
Connection cable: ME-1007 (To M-08)

Circuit diagram

NPN Output



PNP Output



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

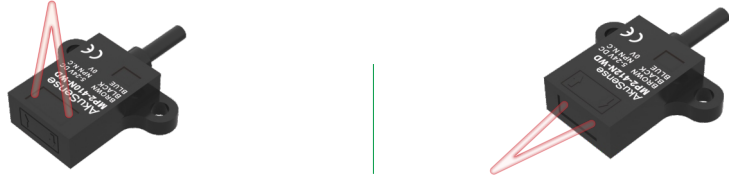
- Cylindrical
- Square
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Flat Type

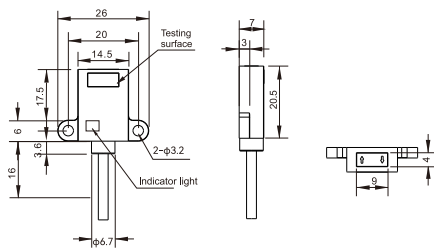
MP2 Series Pre-wired Type



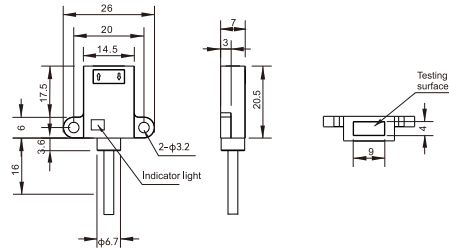
Appearance	Front	Head	
Detection surface			
Sensing type	Diffuse reflection		
Sensing distance	2.5~8mm(black object 3mm)		
Return difference	<20%		
Light source	Infrared light LED(880nm)		
Response time	≤0.8s		
Operating voltage	12~24V DC		
Response frequency	<1ms		
Voltage drop	<2.5V (load current is 100mA)		
Residual voltage	Below 3V (load current 100mA/ 2m cable)		
Indicator	RedLED		
Switching action	L.on/D.on model selectable		
Protective circuit	Surge protection, reverse polarity protection		
Storage temperature	Operation: -10°C~55°C, Storage: -25°C~80°C(No freezing)		
Storage humidity	Operation: 45%~85% RH, Storage: 35%~90% RH (No condensation)		
Ambient brightness	≤3500Lux		
Voltage influence	When the rated power supply voltage range fluctuates within ±15%, the sensing distance will be changed within ±1%.		
Dielectric strength	>50MΩ/500V DC		
Voltage withstandability	AC1000V, 50/60Hz, 1min		
Vibration resistance	10~50Hz, Upper and lower amplitude 1.5mm, 2 hours in X, Y, Z direction		
Impact resistance	500m/s ² 10 times in X,Y,Z		
Degree of protection	IP50		
Housing Material	PC		
Connection method	2m 3 core cable		
Model No.	NPN D.on	MP2-410N-WD	MP2-412N-WD
	NPN L.on	MP2-410N-WL	MP2-412N-WL
	PNP D.on	MP2-410P-WD	MP2-412P-WD
	PNP L.on	MP2-410P-WL	MP2-412P-WL

Dimensions

MP2-410□-W□



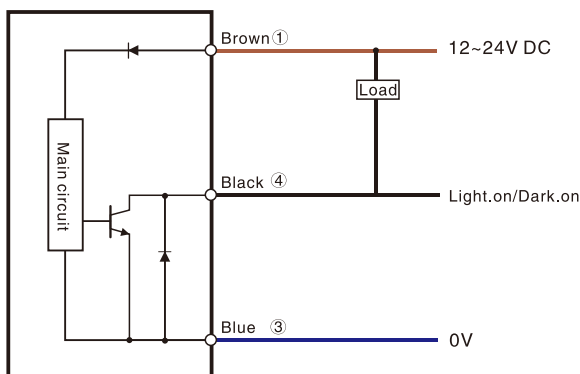
MP2-412□-W□



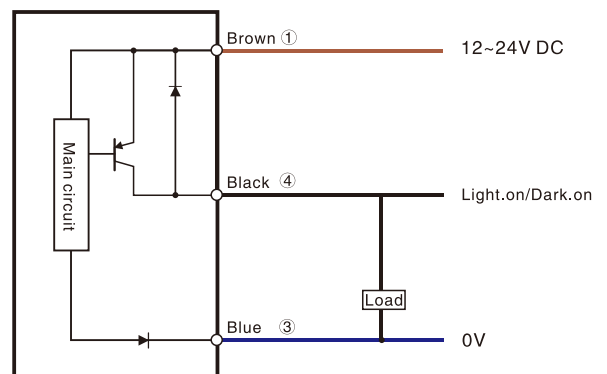
Unit: mm

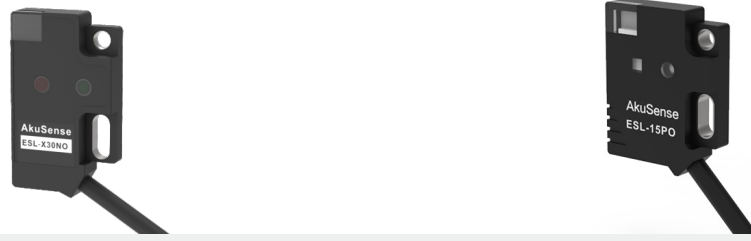
Circuit diagram

NPN Output



PNP Output





Appearance			
Sensing type	Convergent reflective		
Sensing distance	5~30mm	3~8mm	2~15mm
Spot size	φ 20mm / 30mm	φ 10mm / 8mm	φ 10mm / 15mm
Detection object	No-limit		
Hysteresis range	White paper: 15%	White paper: 10%	
Output type	NPN/PNP Open – collector		
Switch type	L.on		
Indicator	Output indicator: Orange; Work indicator: Green; Power indicator: Red		
Response time	≤0.5ms		1.2ms
Power on delay	15ms		50ms
Light source	Infrared 650nm (Modulated)		Infrared 850nm (Modulated)
Operating voltage	12~24V DC ± 10%		10~30V DC ± 10%
Current consumption	≤20mA		
Protective circuit	Overload protection, reverse polarization protection, short circuit protection		
Ambient brightness	Sunlight ≤1000Lux, Incandescent lamp ≤3000Lux		
Ambient temperature	-25°C~+55°C No freezing		
Ambient humidity	35~85%RH No condensation		
Storage temperature	-40°C~+70°C, No freezing		
Storage humidity	35~95%RH, No condensation		
Impact resistance	1000m/s ² , 3 times in X,Y,Z		
Shock resistance	10~50Hz, Upper and lower amplitude 1.5mm, 2 hours in X,Y,Z direction		
Degree of protection	IP67		
Material	PC		
Connection method	φ 2.5*2M/ 3 core cable		
Model No.	NPN PNP	ESL-X30NO ESL-X30PO	ESL-X08NO ESL-X08PO
			ESL-15NO ESL-15PO

- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

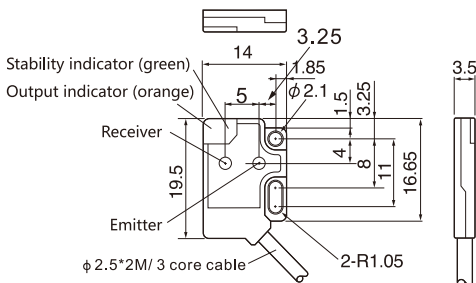
- Cylindrical
- Square
- Flat type
- Thin type**
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

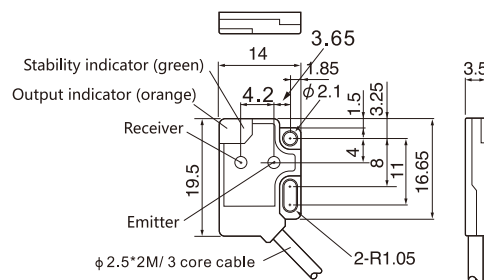
- Reflectors

Dimensions

ESL-X30

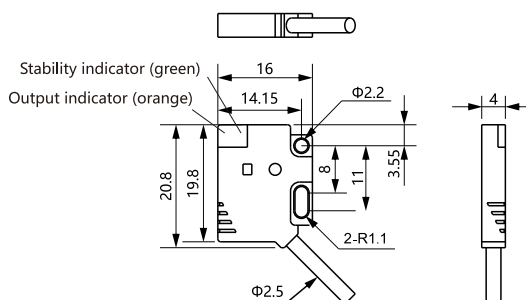


ESL-X08



Unit: mm

ESL-15

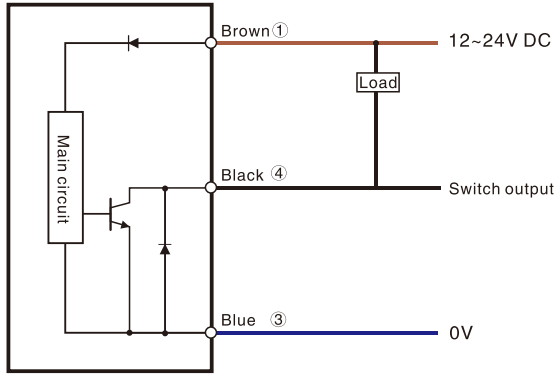


Thin Type

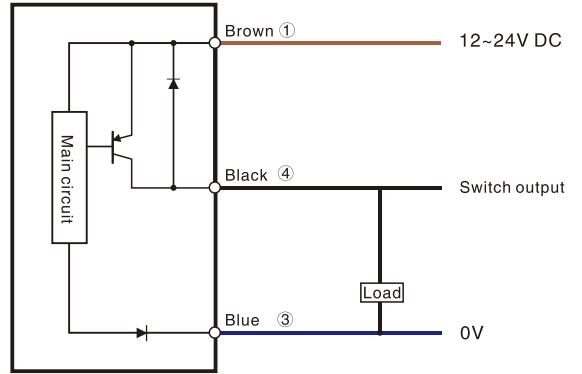
ESL Series

ESL-X30/ESL-X08

NPN Output

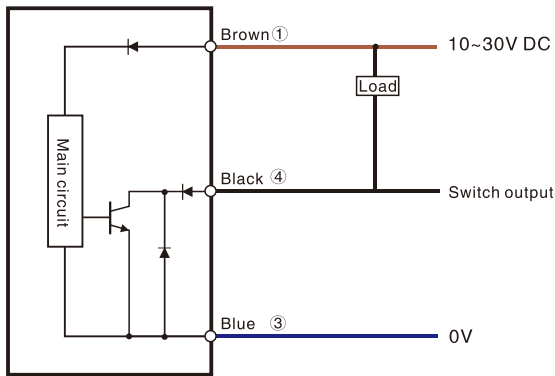


PNP Output

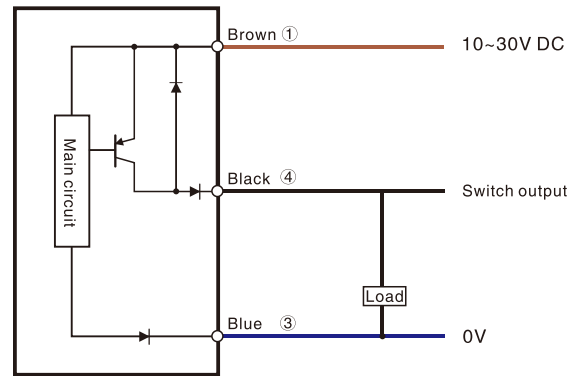


ESL-15

NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Vibration
Temperature
Annexes
Guidance
Photoelectric
Cylindrical
Square
Flat type
Thin type
BGS
Transparent detection
Color/Mark Detection
TOF reflective
IP69K high protection type
Anti-glare type
Reflectors
Reflectors



NEW!



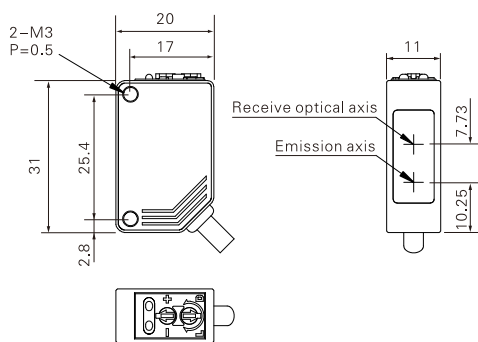
NEW!

Appearance			
Sensing type	Disfuse refection-BGS		
Sensing distance	1~10cm	1~15cm	1~30cm
Hysteresis	≤5%	≤20%	≤5%
Output type	NPN/PNP Open-collector, ≤100mA/30V DC		
Switch type	L.on/D.on selectable		
Indicator	Operation indicator: Green Motion indicator: Red		
Response time	≤2ms	5ms	≤2ms
Sensitivity adjustment	Adjuster(6 turns)	Adjuster (single turns)	Adjuster(6 turns)
Light source	Red LED small spot 623nm (modulation)	Red LED 623nm (modulation)	
Operating voltage	10~30V DC ± 10%	10~24V DC ± 10%	10~30V DC ± 10%
Current consumption	≤30mA		
Ambient luminance	Sunlight ≤ 5,000Lux, Incandescent lamp ≤ 3,000Lux		
Ambient temperature	-25℃~55℃ no freezing		
Ambient humidity	35~85% RH, No condensation		
Degree of protection	IP65		
Connection method	2M/3 core cable		
Material	PBT+fiberglass(body); PMMA(Window)		
Accessories	Screwdriver		
Model No.	NPN PNP	ESB-S10N ESB-S10P	ESB-15N ESB-15P
			ESB-30N ESB-30P

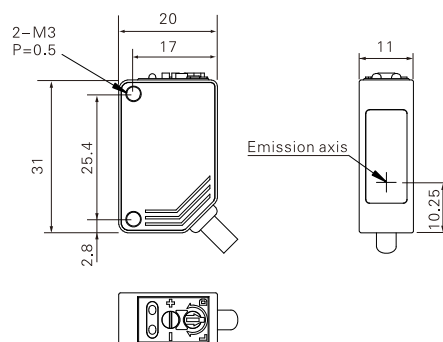
Dimensions

Unit: mm

ESB-S10/15N(P)

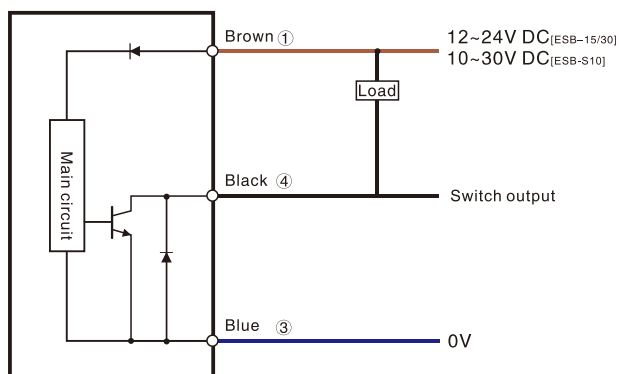


ESB-30N(P)

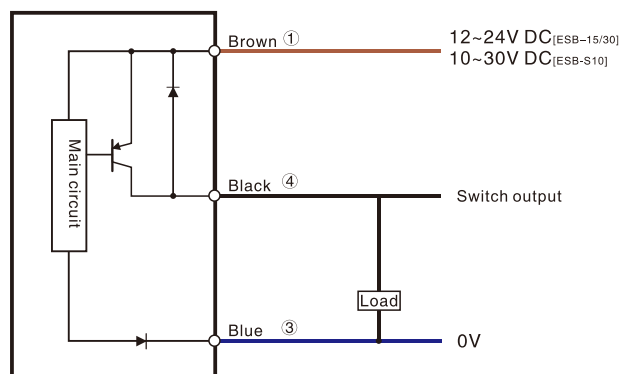


ESB-S10/15/30N(P)

NPN Output



PNP Output



- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

- Cylindrical
- Square
- Flat type
- Thin type
- BGS**
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

ESB Series

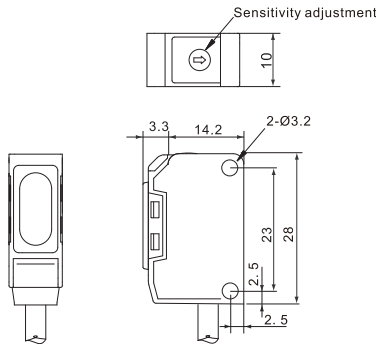


Appearance			
Sensing type	Diffuse refection-BGS		
Sensing distance	1~8cm	1~30cm	1~20cm
Hysteresis	≤10%	5%	10%
Output type	NPN/PNP Open – collector, ≤100mA/30V DC		
Switch type	Selectable L.on / D.on		
Indicator	Output indicator: Red	Operation indicator: Green; Output indicator: Red	
Response time	≤0.5ms	≤0.5ms	<2ms
Sensitivity adjustment	5–turn adjuster	4–turn adjuster	Multi–turn potentiometer
Light source	Red LED (660nm)		
Operating voltage	10~30V DC ± 10%		
Current consumption	<20mA	≤30mA	...
Ambient light	Sunlight ≤10,000Lux, Incandescent lamp ≤3,000Lux		
Ambient temperature	–25°C~55°C no freezing		
Ambient humidity	35~85% RH, No condensation		
Degree of protection	IP67		IP65
Connection	2M/4 core cable	2M/3 core cable	2M/4 core cable
Material	PBT(body);PC(window)	ABS(Body); PMMA(window)	ABS(body);PC(window)
Accessories	Bracket, screwdriver, mounting screw	Bracket, mounting screws	Bracket, screwdriver, mounting screw
Model No.	NPN	ESB-S08N	ESB-Z30N
	PNP	ESB-S08P	ESB-Z30P
Model No.			ESB-20N
			ESB-20P

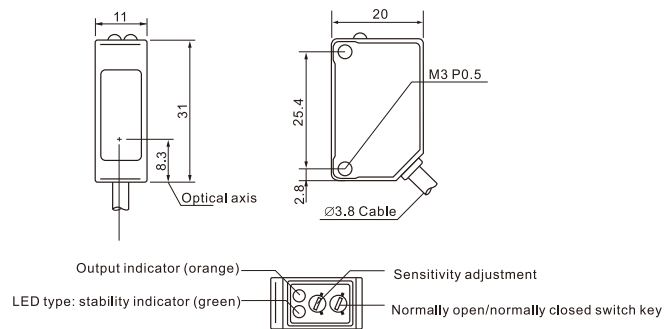
Dimensions

Unit: mm

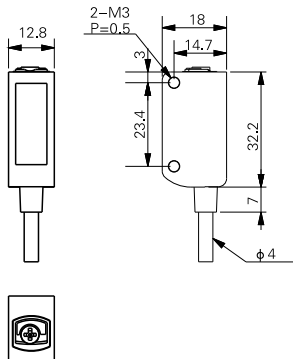
ESB-S08N(P)



ESB-Z30N(P)



ESB-20N(P)



Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

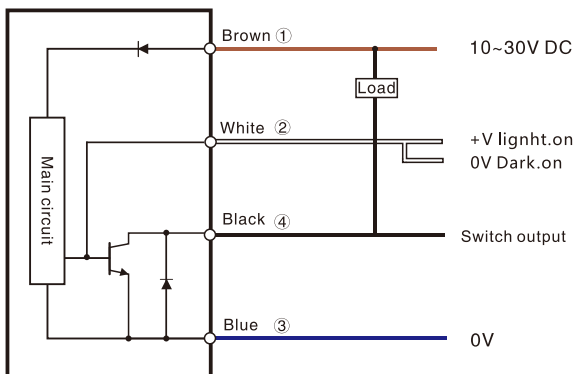
Anti-glare type

Reflectors

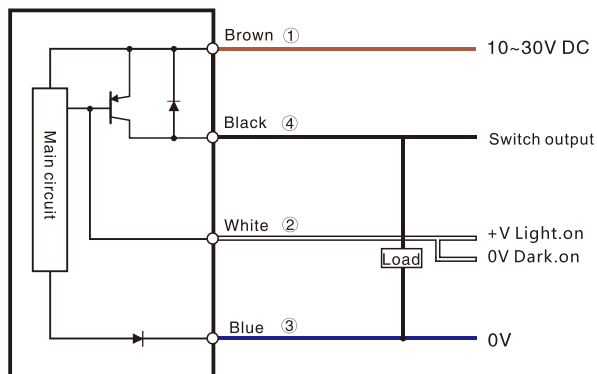
Reflectors

ESB-S08N(P)

NPN Output

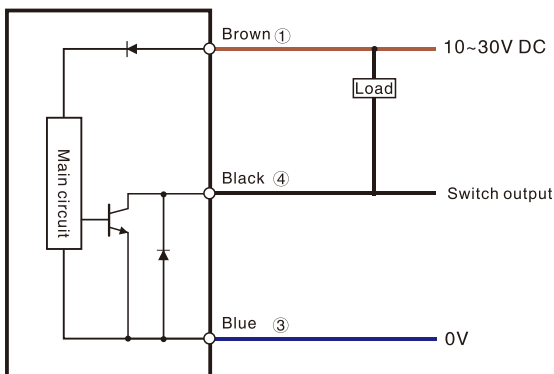


PNP Output

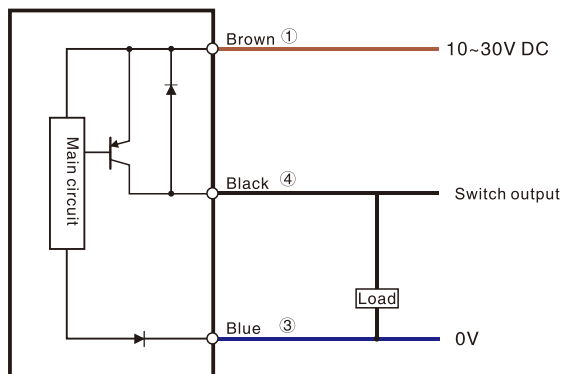


ESB-Z30N(P)

NPN Output

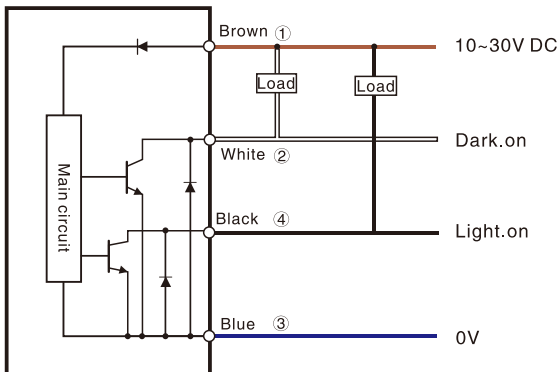


PNP Output

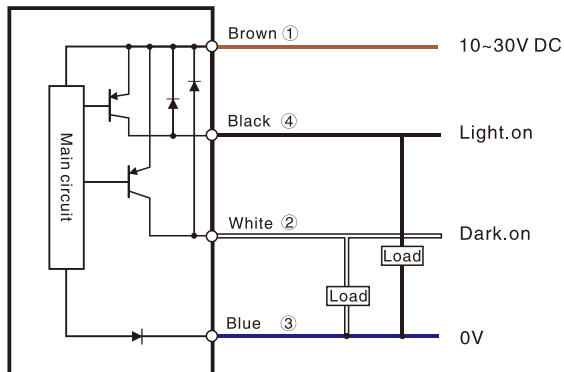


ESB-20N(P)

NPN Output



PNP Output



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Photoelectric

- Cylindrical
- Square
- Flat type
- Thin type

BGS

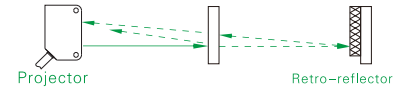
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

- Reflectors

Transparent Detection

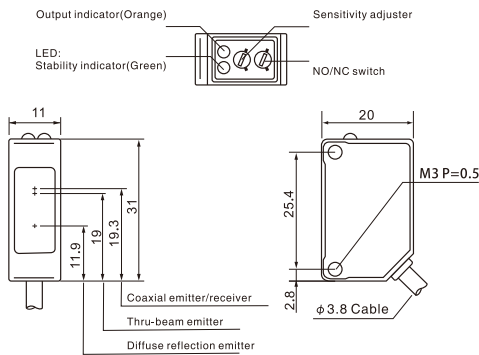
EST Series



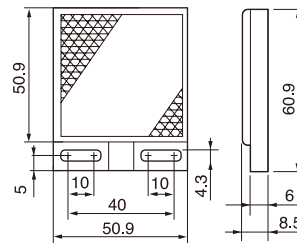
Appearance		
Sensing type	Retro-reflection	
	General Type	Coaxial beam
Sensing distance	1~200cm	0~200cm
Beam size	φ 300mm/200cm	φ 60mm/200cm
Output type	NPN/PNP Open-collector, ≤100mA/30V DC	
Switch type	Selectable L.on/D.on	
Indicator	Motion indicator: Green; Output indicator: Orange	Output indicator: Orange
Response time	0.5 ms	
Light source	Red light LED(66nm)	
Operating voltage	10~30V DC ± 10%	
Current consumption	<20mA	
Ambient brightness	Sunlight≤10000Lux, Incandescent lamp≤3000Lux	
Ambient temperature	-25℃~+55℃, No freezing	
Ambient humidity	35%~85%RH, No condensation	
Degree of protection	IP67	
Connection method	2M 3 core cable	
Material	PBT+Fiberglass (Housing); PMMA(Lens)	
Accessories	Bracket	
Model No.	NPN EST-200N PNP EST-200P	EST-X200N (HOT) EST-X200P

Dimensions

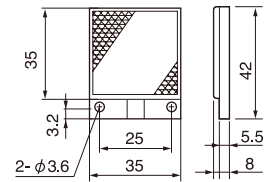
Unit: mm



EST-200 Reflector:



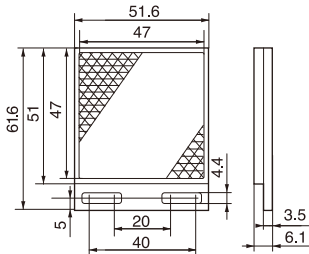
(Standard TD-11)



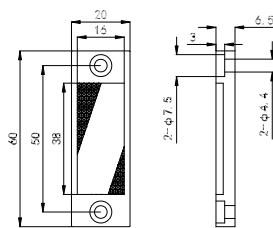
(Optional TD-12)

Noted:
Coaxial products only have one orange LED output indicator.

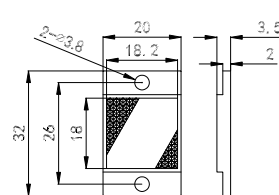
EST-X200 Reflector:



(Standard TD-13)

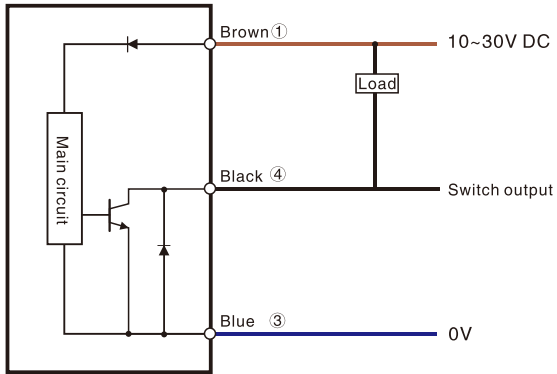


(Optional TD-14)

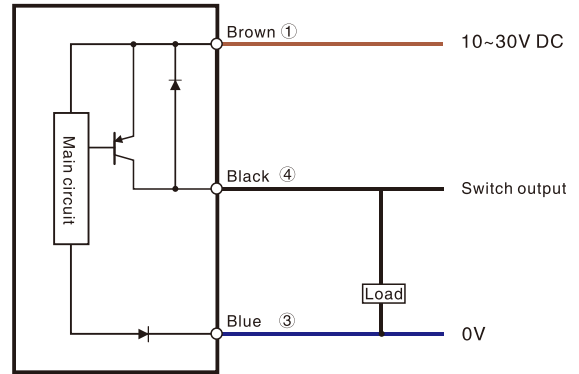


(Optional TD-15)

NPN Output



PNP Output



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

Color/Mark Detection

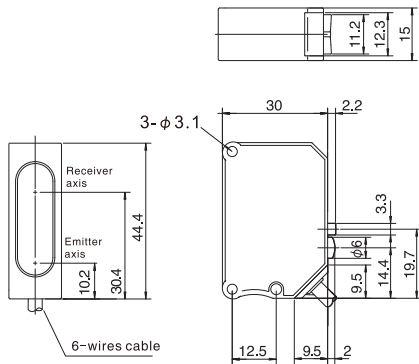
ESC Series

Photoelectric

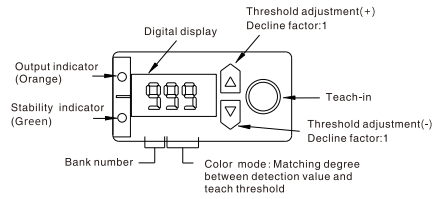


Appearance	
Sensing type	Diffuse reflection
Sensing distance	18 ± 2mm
Beam size	φ 6mm/18mm
Output type	NPN/PNP Open-collector, ≤100mA/30V DC
Switch type	Selectable L.on/D.on
Indicator	Output indicator: Orange; Work indicator; Green
Digital display	7 segments, 3 digit display (Red and Green LED)
Response time	Marks mode: H1/0.25 ms, H2/0.5 ms, L/1.2 ms Colors mode: H1/0.8 ms, H2/1.6 ms, L/4 ms
Time delay function	OFF delay/ ON delay/ Single pulse delay (0~990ms:10ms; 1~10s unit:1s)
Light source	RGB 3 color light source
Operating voltage	10~30V DC ± 10%
Current consumption	35mA(12V), 25mA(24V)
Ambient brightness	Sunlight ≤10000Lux, Incandescent lamp ≤3000Lux
Ambient temperature	-25°C~+55°C, No freezing
Ambient humidity	35%~85%RH, No condensation
Insulation resistance	≥ 20 Ω (500V DC)
Impact resistance	50G(500m/s ²), XYZ three directions
Degree of protection	IP67
Connection method	2M 4 core cable
Material	Housing: ABS, Lens: PMMA
Model No.	NPN ESC-18N PNP ESC-18P

Dimensions

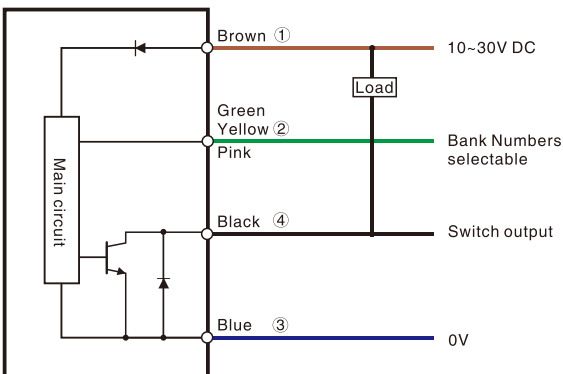


Unit: mm

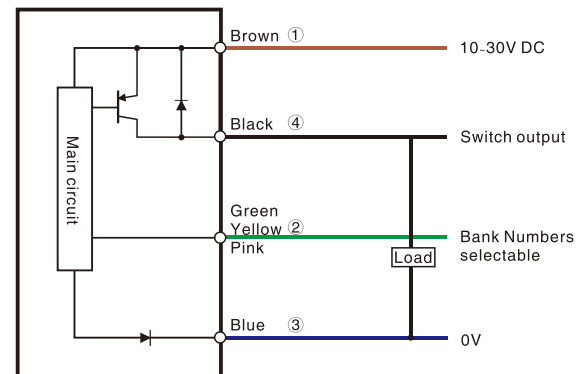


Circuit diagram

NPN Output



PNP Output



- Fiber Optic
- Slot Sensors
- Photoelectric**
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

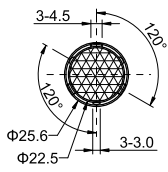
Photoelectric

- Cylindrical
- Square
- Flat type
- Thin type
- BGS
- Transparent detection
- Color/Mark Detection
- TOF reflective
- IP69K high protection type
- Anti-glare type

Reflectors

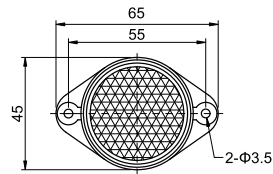
Reflectors

STD-06



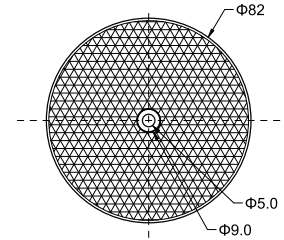
Thickness: 8mm

TD-04



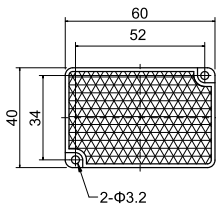
Thickness: 8mm

TD-05



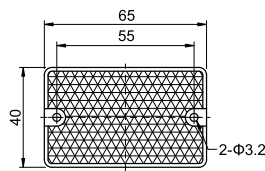
Thickness: 8mm

TD-09



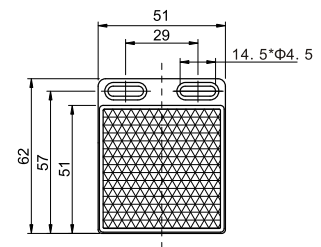
Thickness: 8mm

TD-02



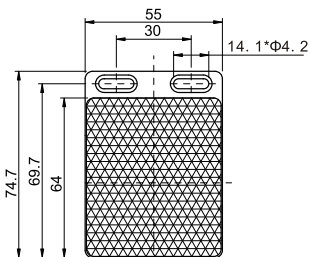
Thickness: 8mm

TD-08



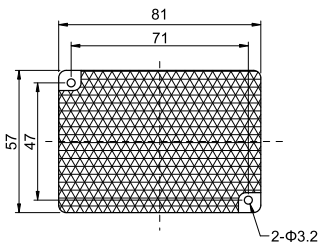
Thickness: 8mm

TD-01



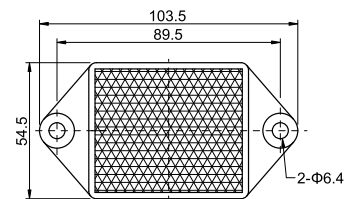
Thickness: 8mm

TD-03



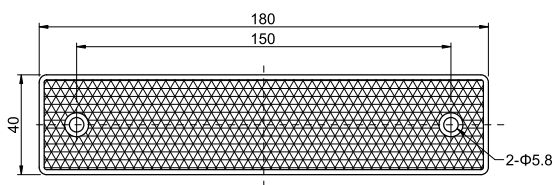
Thickness: 8mm

TD-01-3



Thickness: 8mm

TD-10



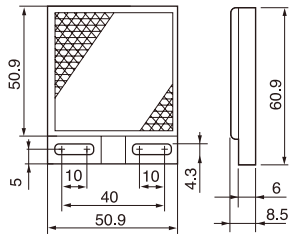
Thickness: 8mm

Reflectors

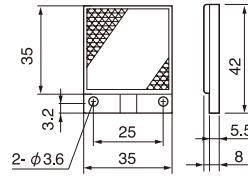
Dimensions

Unit: mm

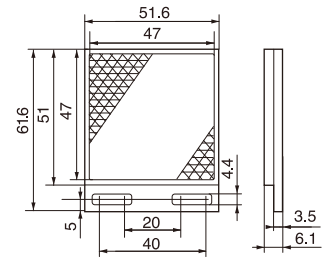
TD-11



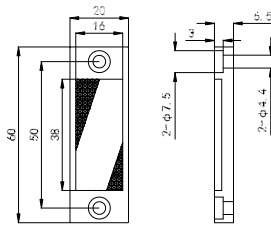
TD-12



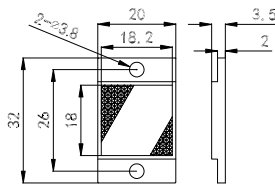
TD-13



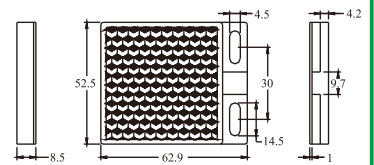
TD-14



TD-15



TD-22



Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF reflective

IP69K high protection type

Anti-glare type

Reflectors

Reflectors

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Vibration
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Annexes

Guidance

Photoelectric
Cylindrical
Square
Flat type
Thin type
BGS
Transparent detection
Color/Mark Detection
TOF reflective
IP69K high protection type
Anti-glare type

Reflectors
Reflectors