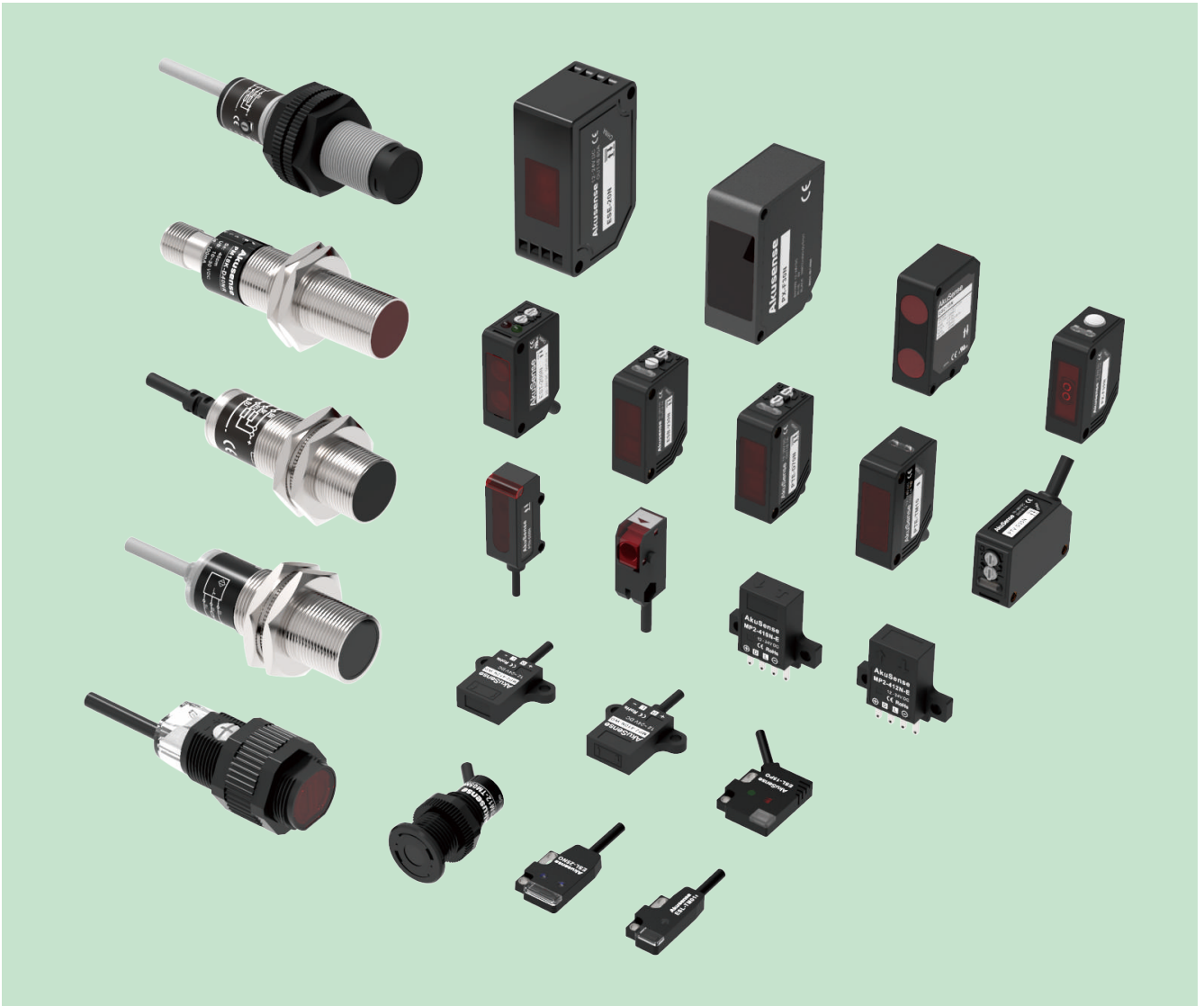
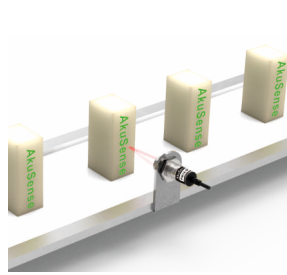


Photoelectric Sensors



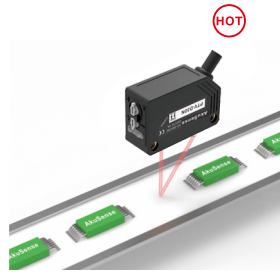
- ◉ Available in a variety of models, like thin type, square type, cylindrical type, transparent object detection type, background suppression type, etc.
- ◉ L.on and D.on switch freely.
- ◉ Solid and durable metal housing; Economical plastic housing and easy to install.
- ◉ Short circuit protection and reverse polarity protection.
- ◉ Switch frequency up to 5000Hz.



Cylindrical Type (PM/PSM/PXM Series)

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

P.C-07



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

- Traditional square housing with great performance
- 25.4mm standard hole pitch for simple installation
- Identifying the action clearly with dual LED indicators

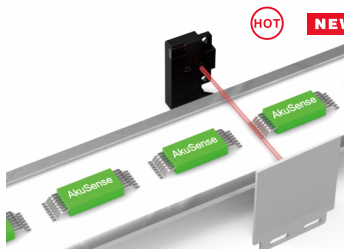
P.C-16



Flat Type (MP2 Series)

- Sensing surfaces on top side and front side support various detections
- Can switch L.on and D.on switch flexibly
- Long distance detection up to 40mm(white cardboard)

P.C-28



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-30



BGS Type (ESB Series)

- Free from objects and background colors with stable detection
- Built-in rotational knobs, with many turns for fine-tuning of sensitivity adjustment
- IP67 protection degree, with excellent mechanical performance

P.C-32



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-35



RGB Light Source

Color/Mark Detection (ESC/ESE Series)

- Built-in RGB light sources
- Automatic adjustment to the most suitable light source according to the detected color
- Two detection modes, mark and color

P.C-37



TOF Principle Type (PM18-TF/PX series)

- Up to 3 meters range
- TOF principle, high stability
- Independent of object color, background color and reflectivity

P.C-27



IP69K High Protection Type (PM18K Series)

- AISI 316L stainless steel housing material
- Protection grade IP69K, excellent mechanical performance
- Applied in harsh environments.

P.C-12



Anti-glare Type (PTL Series)

- Not interfered by glare, with stable detection
- Built-in multi-turn potentiometer for fine adjustment of sensitivity
- IP67, excellent mechanical performance

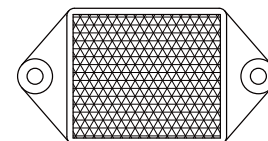
P.C-19



IO-Link Type (PTZ-C Series)

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

P.C-23



Reflectors

- Made of special material (robust housing)
- Shapes as circular, square and combination etc
- Customization is available as requested by clients

P.C-39

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

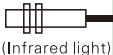
IO-Link type

Reflectors

Reflectors

Type	Light Source	Series	
Photoelectric	Red Light/ Infrared Light/ RGB	Cylindrical Type	PM/PSM/PXM Series
		Square Type	PTE/PTEW/PTV/PTVW/ PTN/PTJ-I Series
		Flat Type	MP2 Series
		Thin Type	ESL Series
		BGS Type	ESB Series
		Transparent Object Detection	EST Series
		Color/Mark Detection	ESC/ESE Series
		TOF Principle Type	PM18-TF/PX Series
		IP69K High Protection Type	PM18K Series
		Anti-glare Type	PTL Series
		IO-Link Type	PTZ-C Series

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  L.on:PM08-D03PO	C-07
PM18 (Metal housing)	 (Infrared light)	Diffuse reflection	10cm	PM18-D10NR	C-08
			40cm	PM18-D40NR	
		Thru-beam	1000cm	PM18-TM10NR	
			2000cm	PM18-TM20NR	
PM18 (Economical Type)	 (Infrared light)	Retro-reflection	300cm	PM18-R300NR	C-09
		Diffuse reflection	10cm	L.on:PM18-D10NO	
			500cm	PM18-TM05NO	
			2000cm	PM18-TM20NO	
PXM18 (PBT housing)	 (D10 Red light) (D40 Infrared light)	Diffuse reflection	10cm	PXM18-D10N	C-15
			40cm	PXM18-D40N	
PSM12	 (Infrared light)	Thru-beam	500cm	PSM12-TM05NO PSM12-TM05NC	C-13
PSM18	 (Red light)	Diffuse reflection	10~40cm	PSM18-D40N	C-14

Square

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN L.on&D.on	PNP L.on&D.on		
PTE	 (Red light)	Diffuse reflection	 1~30cm	PTE-D30N 	PTE-D30P	C-16
			 0.5~100cm	PTE-D70N	PTE-D70P	
		Convergent reflective	 0.5~14cm	PTE-X09N 	PTE-X09P	
			Retro-reflection	 1~20cm	PTE-R20N	
		 200cm		PTE-R200N	PTE-R200P	
		 300cm		PTE-R300N	PTE-R300P	
		Thru-beam	 1000cm	PTE-TM10NO	PTE-TM10PO	C-17
				PTE-TM10NC	PTE-TM10PC	
				PTE-TM10AN	PTE-TM10AP	
		PTEW	 (PTEW Red light PTVW Infrared light)	Diffuse reflection	 0.5~20cm	PTEW-D20N
PTVW	 10cm	PTVW-D10N			PTVW-D10P	
	 20cm	PTVW-D20N			PTVW-D20P	
PTV	 (Infrared light)	Diffuse reflection	 1~30cm	PTV-D30N	PTV-D30P	C-20
			 0.5~100cm	PTV-D70N	PTV-D70P	
		Convergent reflective	 0.5~14cm	PTV-X09N	PTV-X09P	
			 500cm	PTV-T500N	PTV-T500P	
		Thru-beam	 500cm	PTV-TM20NO	PTV-TM20PO	C-21
			 2000cm	PTV-TM20NC	PTV-TM20NC	
				PTV-TM20AN	PTV-TM20AP	

Square

PTN	 (Infrared light)	Diffuse reflection	 5cm	PTN-D05N	PTN-D05P	C-25
		Thru-beam	 50cm	PTN-T50N	PTN-T50P	
PTJ-I	 (Infrared light)	Thru-beam	 80cm	D.on:PTJ-T80NO-I	D.on:PTJ-T80PO-I	C-26
				L.on:PTJ-T80NC-I	L.on:PTJ-T80PC-I	
		Thru-beam	 150cm	D.on:PTJ-T150NO-I	D.on:PTJ-T150PO-I	
				L.on:PTJ-T150NC-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	 (Infrared light)	Convergent reflective  2~15mm	ESL-15NO	ESL-15PO	C-30
	 (Infrared light)	Diffuse reflection  2~25mm	ESL-25NO	ESL-25PO	
	 (Red light)	Thru-beam  500mm	ESL-T50NO	ESL-T50PO	
		Thru-beam  100cm	ESL-TM01NO	ESL-TM01PO	

BGS

Series	Sensing type		Sensing distance		Model No.		Pages
					NPN L.on&D.on	PNP L.on&D.on	
ESB	 (Red light)	Diffuse reflection	 0.5~10cm	ESB-S10N	ESB-S10P	C-32	
		Diffuse reflection	 0.5~15cm	ESB-15N	ESB-15P		
		Diffuse reflection	 0~30cm	ESB-30N	ESB-30P		
	 (Infrared light)	Diffuse reflection	 1~30cm	ESB-V30N	ESB-V30P	C-33	
		 (Red light)	Diffuse reflection	 1~20cm	ESB-C20N		ESB-C20P

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-28
	 (Infrared light)	Diffuse reflection	 40mm	MP2-412N-E	MP2-412P-E	
MP2 (Pre-wired)	 (Infrared light)	Diffuse reflection	 2.5~8mm	D.on: MP2-410N-WD	D.on: MP2-410P-WD	C-29
				L.on: MP2-410N-WL	L.on: MP2-410P-WL	
	 (Infrared light)	Diffuse reflection	 2.5~8mm	D.on: MP2-412N-WD	D.on: MP2-412P-WD	
				L.on: MP2-412N-WL	L.on: MP2-412P-WL	

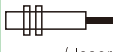
Transparent Detection

Transparent Detection						
Series	Sensing type		Sensing distance	Model No.		Pages
			NPN	PNP		
EST	 (Red light)	Retro-reflection		EST-200N	EST-200P	C-35
			1~200cm			
			 0~200cm Coaxial beam	EST-X200N 	EST-X200P	

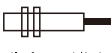
Color/Mark Detection

Series	Sensing type		Sensing distance	Model No.		Pages
			NPN	PNP		
ESC		Diffuse reflection	 16~20mm	ESC-18N	ESC-18P	C-37
ESE	 (RGB)	Diffuse reflection	 17~23mm	ESE-20N	ESE-20P	C-38

TOF Principle Type

Series	Sensing type	Sensing distance	Model No.		Pages	
			NPN	PNP		
PM18-TF	 (laser)	Reflection	 1.2m	PM18-TF120N	PM18-TF120P	C-11
PX	 (Infrared light)	1 Point teach-in	 1m	PX-F09N	PX-F09P	C-27
		1 Point teach-in	 3m	PX-F30N	PX-F30P	

IP69K High Protection Type

Series	Sensing type	Sensing distance	Model No.		Pages
PM18K	 (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-19
			 10~300mm	PTL-D30N	PTL-D30P	

IO-Link Type

Series	Sensing type	Sensing distance	Model No.		Pages
PTZ-C		Diffuse reflection	0~1m	PTZ-D70N-C	C-23
		Thru-beam	0~25m	PTZ-TM25N-C	
		Retro-reflection	0.01~4m	PTZ-R400N-C	

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Code Readers

Vibration

Temperature

Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

Cylindrical

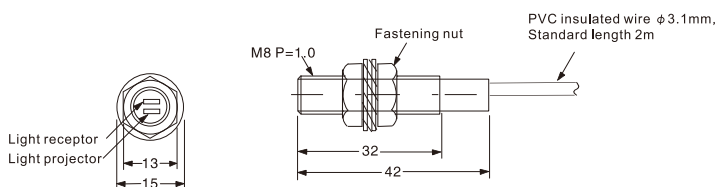
PM08 Series



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	$\leq 30\text{mA}$	
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	
Response time	Action/Reset: < 3ms	
Ambient brightness	Sunlight $\leq 10000\text{lux}$, Incandescent Lamp $\leq 3000\text{lux}$	
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	> 20M Ω	
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	
Accessories	Mounting screws	
Model No.	PM08-D03NO (HOT)	PM08-D03PO

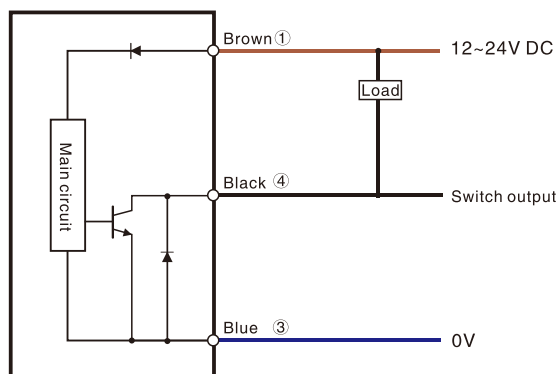
Dimensions

Unit: mm

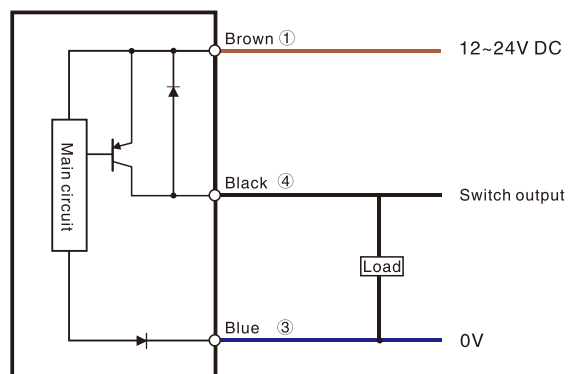


Circuit diagram

NPN Output



PNP Output



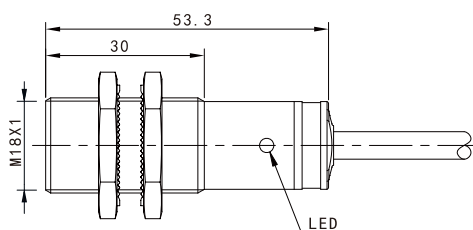


Appearance

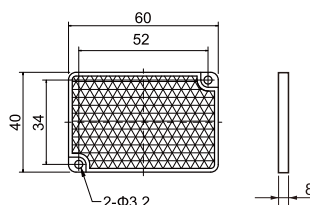
Sensing type		Diffuse reflection		Thru-beam		Retro-reflection	
Sensing distance		10cm(fixed)	40cm(adjustable)	1000cm(fixed)	2000cm(fixed)	300cm(fixed)	
Hysteresis		3~20%		...			
Repeat accuracy		< 5%					
Output type		NPN/PNP Open-collector					
Switch type		Selectable L.on/D.on					
Indicator		Yellow 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℃~+55℃, No freezing					
Ambient humidity		35%~95%RH, No condensation					
Degree of protection		IP67					
Material		Nickel copper alloy					
Connection method		2M 4core cable					
Accessories		Mounting screws					
Model No.	NPN	PM18-D10NR	PM18-D40NR	HOT	PM18-TM10NR	PM18-TM20NR	PM18-R300NR
	PNP	PM18-D10PR	PM18-D40PR		PM18-TM10PR	PM18-TM20PR	PM18-R300PR

Dimensions

Unit: mm



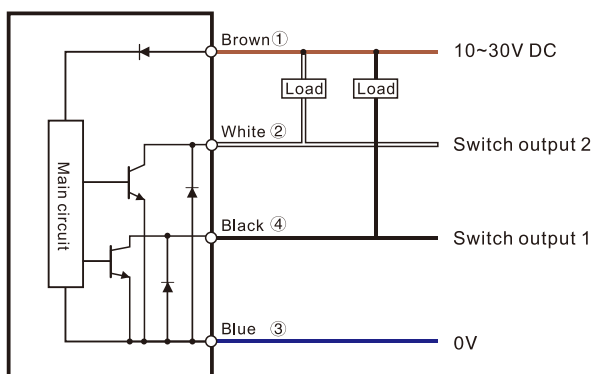
Reflector for PM18-R300



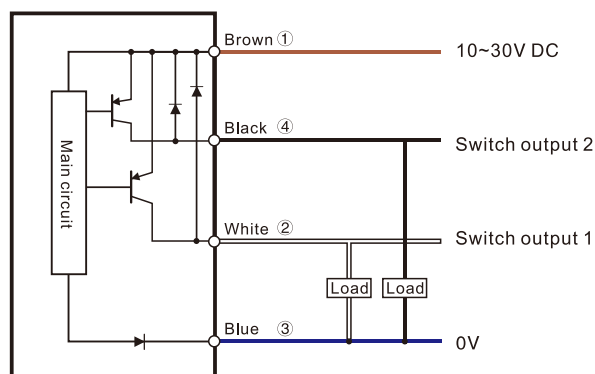
(Standard TD-09)

Circuit diagram

NPN Output



PNP Output



Cylindrical

PM18 Series

Economical Type

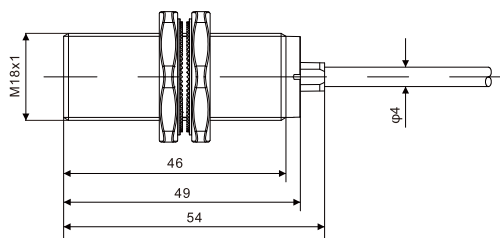


Appearance

Sensing type		Disffuse Reflection		Thru-beam			
Sensing distance		10cm(fixed)		5m(fixed)		20m(fixed)	
Detected object		100mm×100mm 90% whiteness white paper			>φ18mm,opaque		
Output type		NPN Open-collector			NPN/PNP Open-collector		
Switch type		L.on			Selectable L.on/D.on		
Indicator		Motion indicator light: yellow			Transmitter end: power indicator: green; Receiving end: action indicator light: yellow		
Response time		0.5ms			33ms		
Light source		Infrared LED 940nm (modulation)			Infrared LED 850nm (modulation)		
Operating voltage		10~30V DC		12~24V DC		10~24V DC	
Residual voltage		<2V					
Current consumption		<25mA		Transmitter < 20 mA; Receiver <20mA		Transmitter < 25 mA; Receiver <25mA	
Load current		< 150mA		< 100mA			
Circuit protection		Reverse polarity, short circuit, surge protection					
Ambient temperature		-20℃~+55℃, No freezing			-20℃~+60℃, No freezing		
Storage temperature		-25℃~+65℃		-25℃~+70℃		-20℃~+60℃	
Ambient humidity		35~90%RH, No condensation					
Storage humidity		35~90%RH					
Withstand Voltage		±1000V 50/60Hz 60s					
Electrostatic		±4000V					
group value		±2000V					
Resistance		10~50Hz, 0.5mm amplitude, X, Y, Z direction 2 hours each					
Ambient illuminance		Incandescent lamp: < 3000lux,sunlight: < 10000lux					
Degree of protection		IP67					
Material		Nickel copper alloy					
Connection method		2M 3core cable					
Accessories		Mounting screws					
Model No.	NPN	PM18-D10NO	PM18-D10NC	PM18-TM05NO		PM18-TM20NO	PM18-TM20NC
	PNP			PM18-TM05PO		PM18-TM20PO	PM18-TM20PC

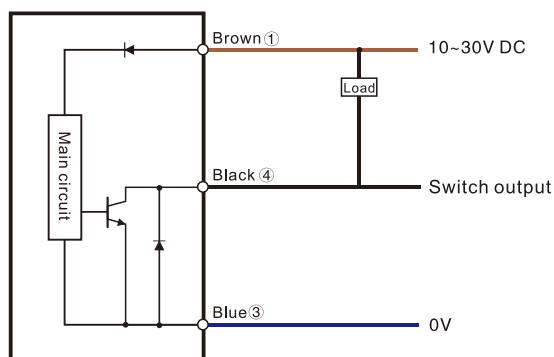
Dimensions

Unit: mm



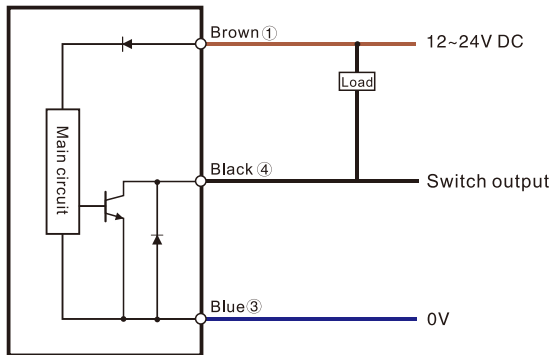
PM18-D10NO(NC)

NPN Output

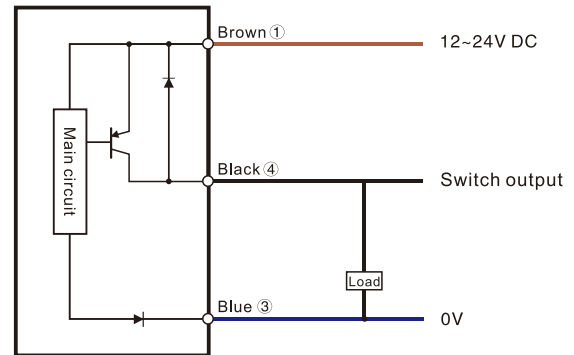


PM18-TM05N(P)O

NPN Output

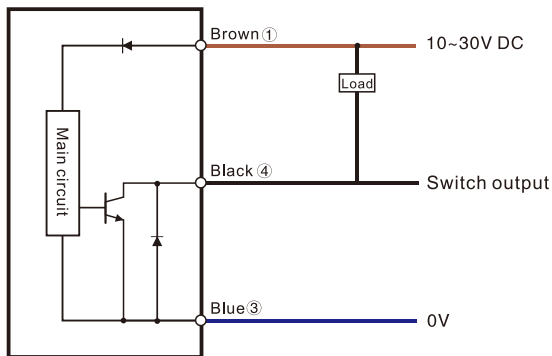


PNP Output

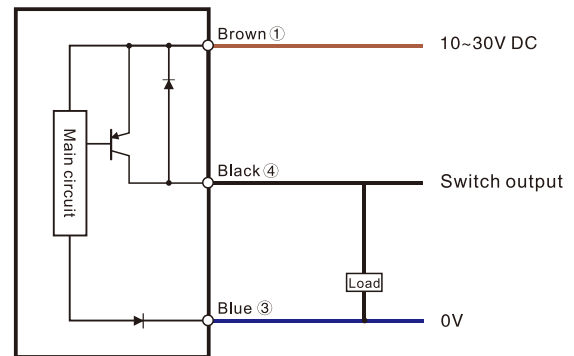


PM18-TM20N(P)O(C)

NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

TOF Type Photoelectric

PM18-TF Series

TOF Principle

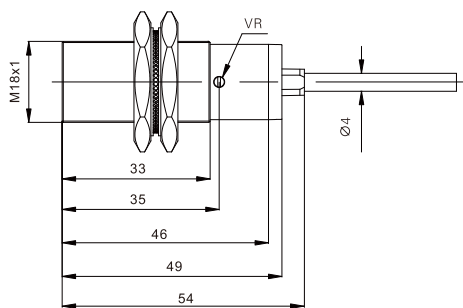


Appearance

Sensing type	Reflection
Sensing distance	1.2m
Spot divergence angle	30°
Output	NPN / PNP open collector
Switch type	L.on/ D.on selectable
Indicator	Operation: green, Motion: Red
Sensitivity adjustment	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
Circuit protection	Short circuit,reverse polarity,surge protection
Ambient temperature	-10℃~50℃ 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 illuminance	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

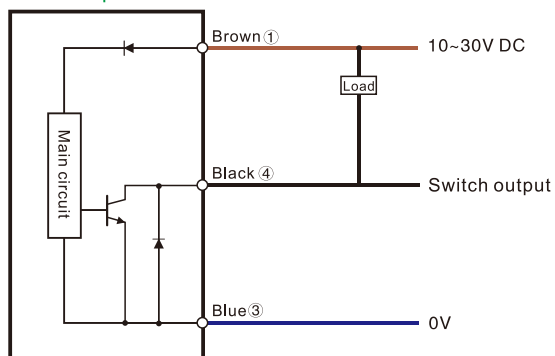
Dimensions

Unit: mm

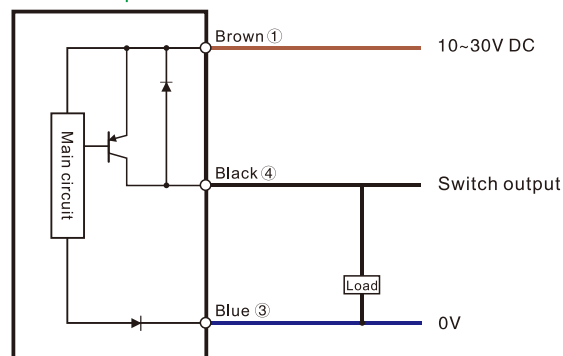


Circuit diagram

NPN Output



PNP Output



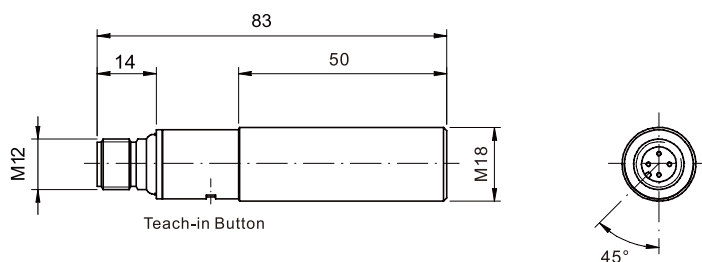
IP69K Type



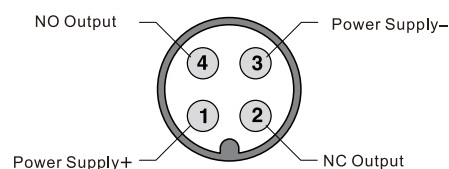
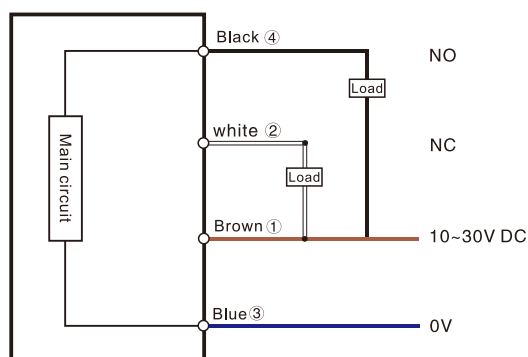
Appearance	
Sensing type	Disffuse Reflection
Sensing distance	400mm
Light source	IR 880 nm
Hysteresis	≤10%
Repeatability	5%
Tolerance	+15/-5% Sn
Operating voltage	10~30V DC
Ripple factor	≤10%
No load current	Max. 35mA (30V)
Load current	≤100mA
LED	Green: teach-in Yellow: Excess gain
Output voltage drop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

Dimensions

Unit: mm



Circuit diagram



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Code Readers

Vibration

Temperature

Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

Cylindrical

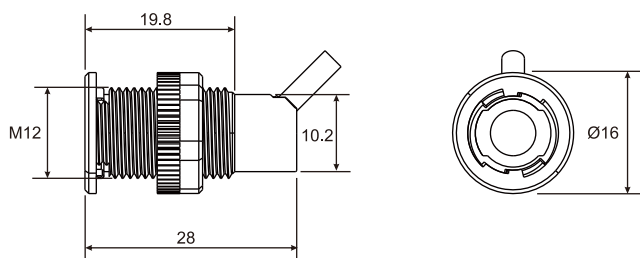
PSM12 Series



Appearance		
Sensing type	Through beam	
Sensing distance	5m	
Light source	Infrared LED	
Detected object	opaque object, $\phi > 8\text{mm}$	
Output	NPN / PNP for option	
Switch type	Light on/ Dark on selectable	
Response time	<2ms	
Indicators	Power: Green, Operation indicator: Orange	
Power supply	12~24V DC $\pm 10\%$ Ripple P-P10% or less	
Residual voltage	< 1 V (When input current is equal to 50 mA)	
Current consumption	Emitter < 18 mA, Receiver < 15 mA	
Load current	<50mA	
Circuit protection	Short circuit protection	
Ambient temperature	Operation: $-25\sim 55^{\circ}\text{C}$; storage: $-30\sim 70^{\circ}\text{C}$, no freezing	
Ambient humidity	Operation: 30~90% RH, storage: 35~85% RH, no condensation	
Degree of protection	IP67	
Material	Housing, lens: PC	
Connection	Emitter: 2m 2 core cable; Receiver: 2m 2 core cable	
Weight	Approx. 25g	
Model No.	NPN	PSM12-TM05NO
	PNP	PSM12-TM05PO
		PSM12-TM05NC
		PSM12-TM05PC

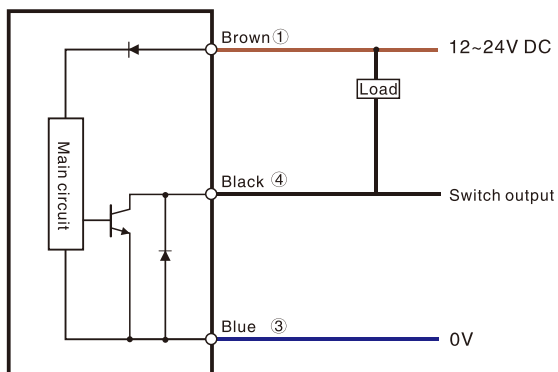
Dimensions

Unit: mm

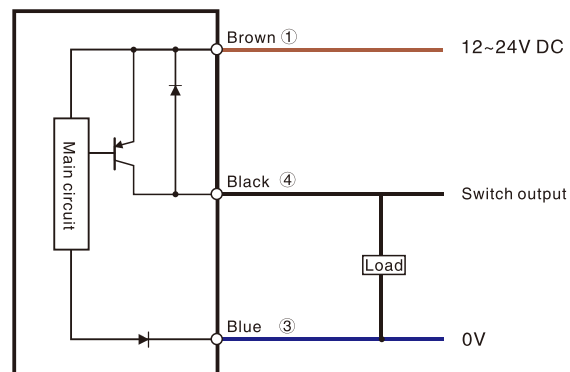


Circuit diagram

NPN Output



PNP Output





NEW!

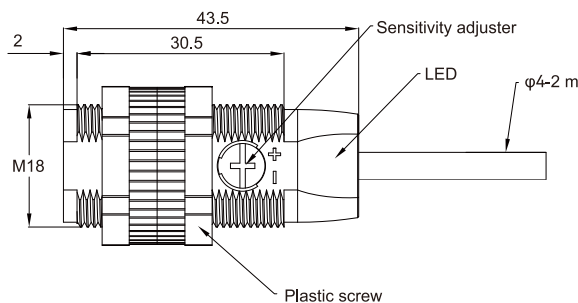
Appearance	
Sensing type	Diffuse reflective
Sensing distance	10~40 cm (adjustable)
Light source	Red light LED
Detected object	opaque object, $\phi > 7$ mm
Output	NPN / PNP for option
Switch Type	Light on/ Dark on selectable
Indicators	Power: Green, Operation indicator: Red
Power supply	10~30V DC
Residual voltage	<1.5V
Current consumption	<25mA
Load current	<120mA
Response time	<2ms
Circuit protection	reverse polarity protection, short circuit protection
Ambient temperature	-15~55°C, no freezing
Ambient humidity	35~90% RH, no condensation
Ambient illuminance	LED ≤ 450 Lux
Withstand voltage	± 1000 V 50/60Hz 60s
Static electricity	± 8000 V
Group pulse	± 2000 V 5KHz/100KHz
Anti-vibration	10~50Hz, amplitude 0.5mm; 2 hours each in X, Y, Z directions
Degree of protection	IP67
Material	PC
Connection	2m 4 wire cable
Model No.	NPN PSM18-D40N
	PNP PSM18-D40P

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

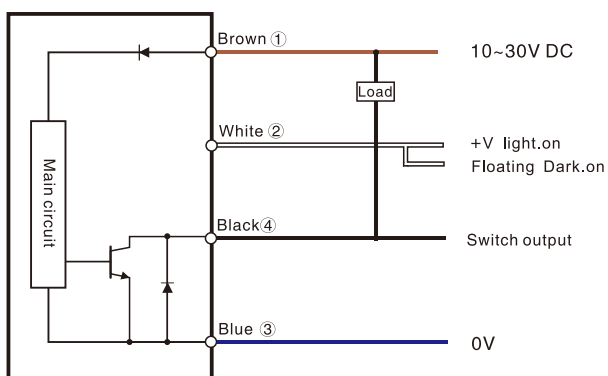
Dimensions

Unit: mm

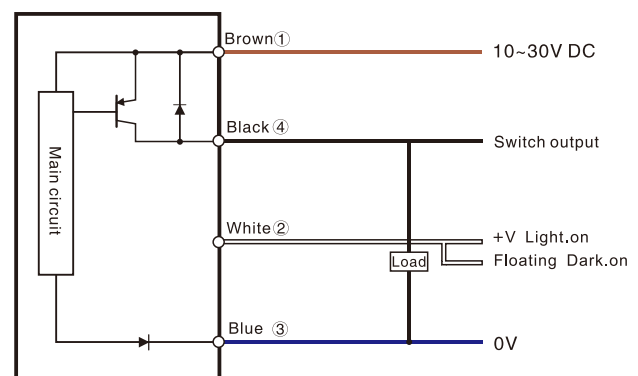


Circuit diagram

NPN Output



PNP Output



Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

Cylindrical

PXM18 Series

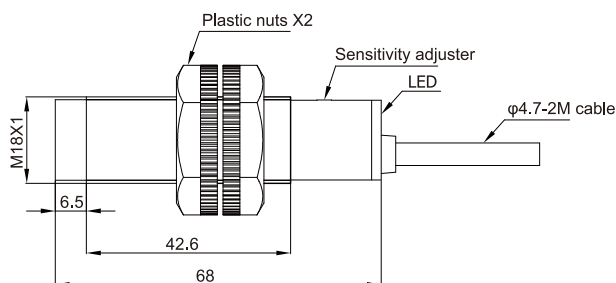


Appearance

Sensing type	Diffuse reflection	
Sensing distance	10cm(adjustable)	40cm(adjustable)
Hysteresis	≤10%	
Repeat accuracy	5%	
Output type	NPN/PNP Open-collector	
Switch type	Selectable L.on/D.on	
Response time	20ms	
Indicator	Red LED(660nm)	Red LED(880nm)
Operating voltage	10~30V DC(±10%)	
Voltage drop	2V max 1L=100mA	
Leakage current	10μA	
Current consumption	30mA	
Load current	100mA	
Circuit protection	Reverse polarity protection, output short circuit protection, pulse overvoltage protection	
Ambient temperature	-25℃~+70℃, No freezing	
Ambient illuminance	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	
Accessories	Mounting screws	
Model No.	NPN	PXM18-D10N
	PNP	PXM18-D10P
		PXM18-D40N
		PXM18-D40P

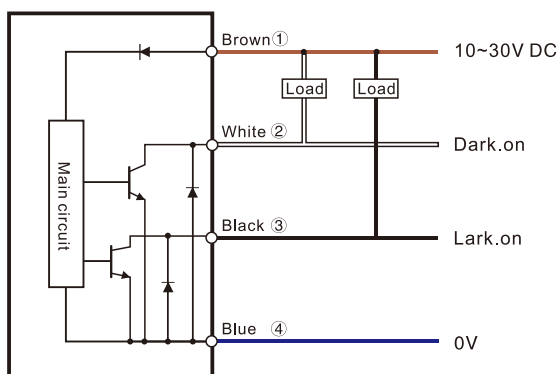
Dimensions

Unit: mm

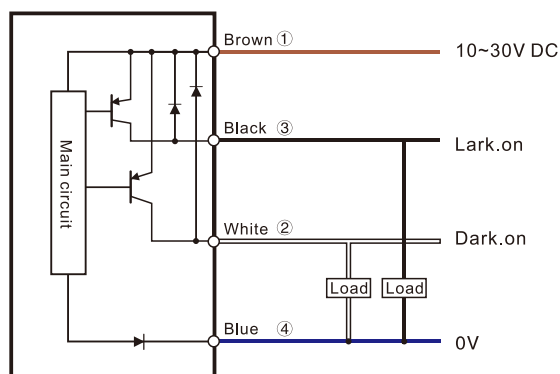


Circuit diagram

NPN Output



PNP Output





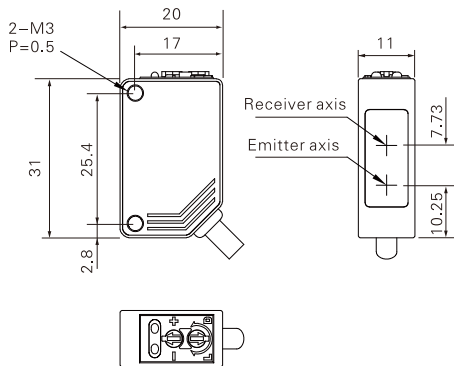
Economical Type

Appearance

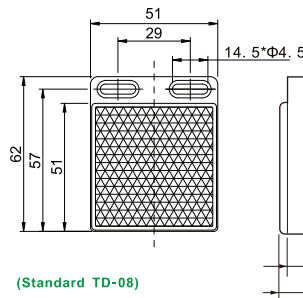
Sensing type	Diffuse reflection		Convergent reflective	Retro-reflection			
Sensing distance	10–300mm	5–1000mm	5–140mm	10–200mm	2m	3m	
Spot size	≈ ϕ 16mm / 300mm	≈ ϕ 50mm / 1000mm	≈ ϕ 9mm / 140mm	ϕ 10mm / 20cm	ϕ 50mm / 2m	ϕ 90mm / 3m	
Output type	NPN or PNP open collector, ≤100mA (30V DC)						
Switch 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	≤25mA			≤20mA			
Ambient illuminance	Sunlight ≤10000 Lux; Incandescent Lamp ≤ 3000 Lux						
Ambient temperature	-25℃~+55℃, No freezing						
Ambient humidity	35%~85%RH, No condensation						
Anti-vibration	10 ~ 50Hz, 0.5mm amplitude, 2 hours each in X, Y, Z directions						
Circuit protection	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

Dimensions

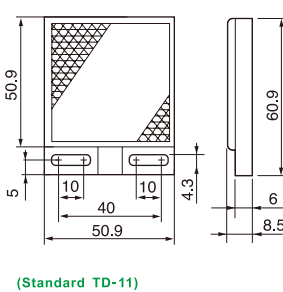
Unit: mm



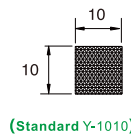
Reflector for PTE-R200



Reflector for PTE-R300

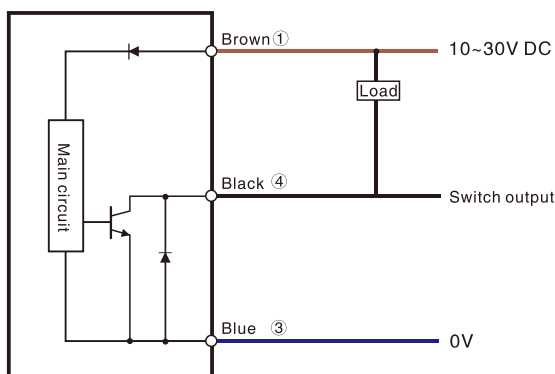


PTE-R20 Reflective Stickers

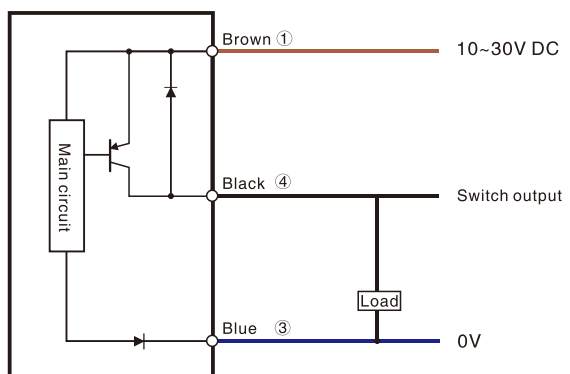


Circuit diagram

NPN Output



PNP Output



Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

Square

PTE Series



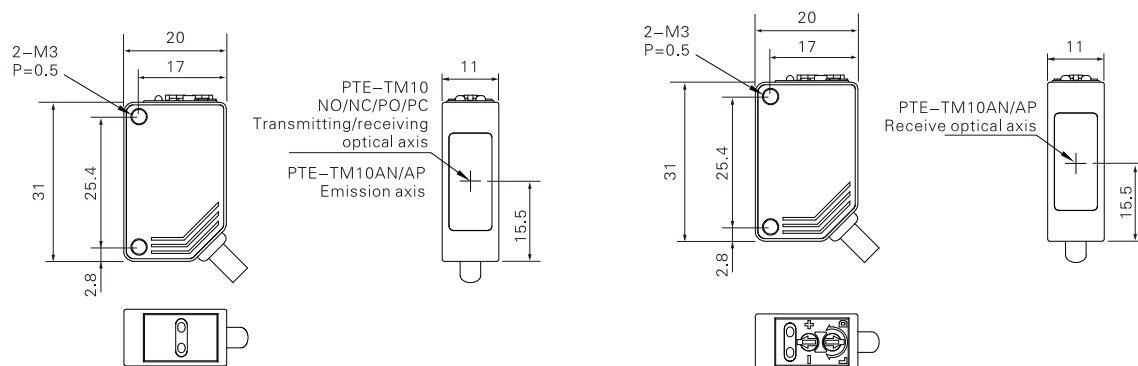
Economical Type

Appearance

Sensing type	Thru-beam Reflection			
Sensing distance	10m			
Detected object	φ >12mm, opaque			
Output type	NPN / PNP open collector			
Swthc 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	33ms			
Sensitivity	Not adjustable		Single turn potentiometer	
Light source	IR LED 623nm (modulated)			
Operating voltage	10~30V DC			
Current consumption	Emitter ≤20mA; Receiver ≤20mA			
Ambient illuminance	Sunlight ≤ 10,000 Lux , Incandescent lamp ≤ 3,000 Lux			
Ambient temperature	-25℃~+55℃, 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			
Circuit protection	Power reverse polarity protection, short circuit protection			
Degree of protection	IP65			
Connection	2M / 3 cores cable 4mm diameter			
Material	Fiberglass (housing), PMMA(lens)			
Accessories	Screwdriver			
Model No.	NPN	PTE-TM10NO	PTE-TM10NC	PTE-TM10AN
	PNP	PTE-TM10PO	PTE-TM10PC	PTE-TM10AP

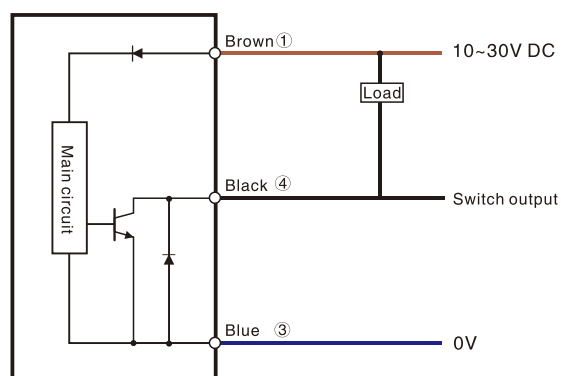
Dimensions

Unit: mm

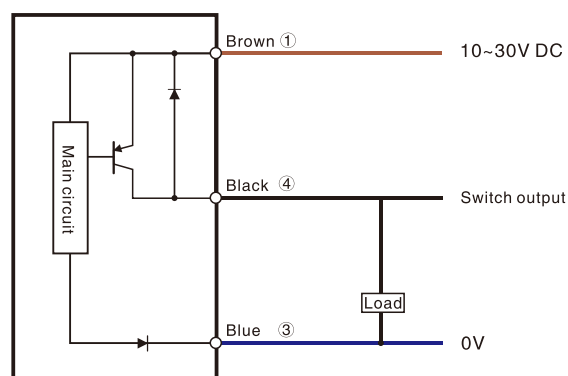


Circuit diagram

NPN Output



PNP Output



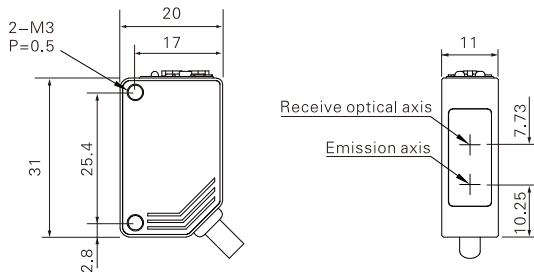


Wide Facula Type

Appearance			
Sensing type		Disffuse refection	
Sensing distance		5–200mm	10cm20cm
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		<25mA	≤20mA
Load current		<100mA	≤100mA
Ambient illuminance		Sunlight≤10000Lux, Incandescent lamp≤3000Lux	
Ambient temperature		–25℃~+55℃, 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	
Circuit protection		Power reverse polarity protection, output reverse polarity protection, surge protection, short circuit protection	
Degree of protection		IP65	
Connection		2M 3 core cable, ϕ 4mm	
Material		PBT+Fiberglass (body), PMMA(lens)	
Accessories		Screwdriver	
Model No.	NPN	PTEW-D20N	PTVW-D10NPTVW-D20N
	PNP	PTEW-D20P	PTVW-D10PPTVW-D20P

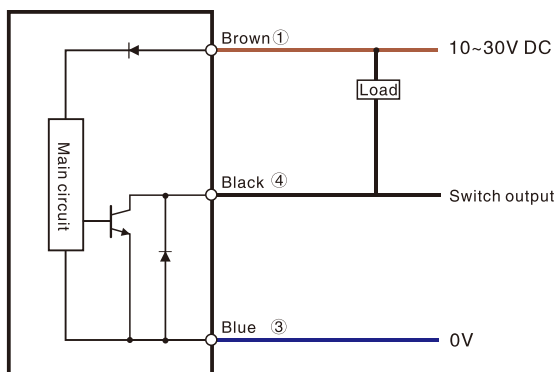
Dimensions

Unit: mm

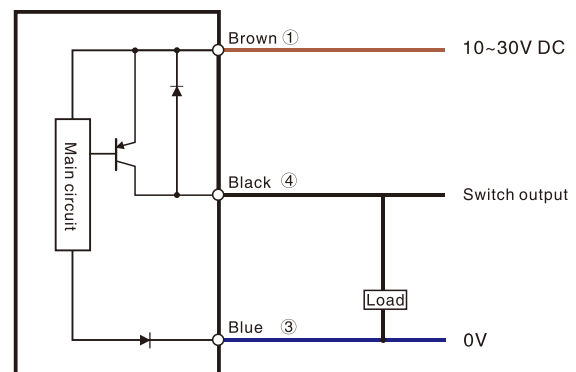


Circuit diagram

NPN Output



PNP Output



Anti-glare Type

PTL Series



Anti-glare Type

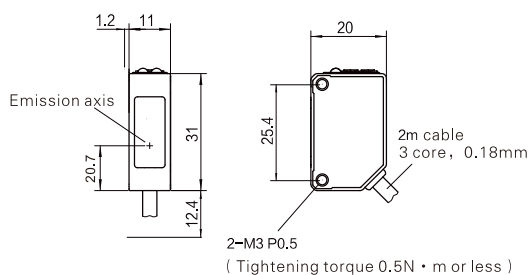
Appearance

Sensing type	Diffuse reflection—BGS		
Sensing distance	5~100mm	10~300mm	
Setting distance	20~100mm	50~300mm	
Spot diameter	≈ Ø10mm/100mm	≈ Ø30mm/300mm	
Hysteresis	≤3%	≤5%	
Output type	NPN / PNP open collector		
Switch type	L.on/D.on selectable		
Indicator	Operating indicator: orange,Status indicator: green		
Response time	≤1ms		
Sensitivity	6—turn potentiometer	4—turn potentiometer	
Light source	Red LED		
Operating voltage	10~30V DC		
Current consumption	≤30mA		
Load current	≤100mA		
Ambient illuminance	Sunlight ≤ 50,000 Lux , Incandescent lamp ≤ 5,000 Lux		
Ambient temperature	-25℃~+55℃, 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 (lens)		
Accessories	Screwdriver		
Model No.	NPN	PTL-D10N	PTL-D30N
	PNP	PTL-D10P	PTL-D30P

Dimensions

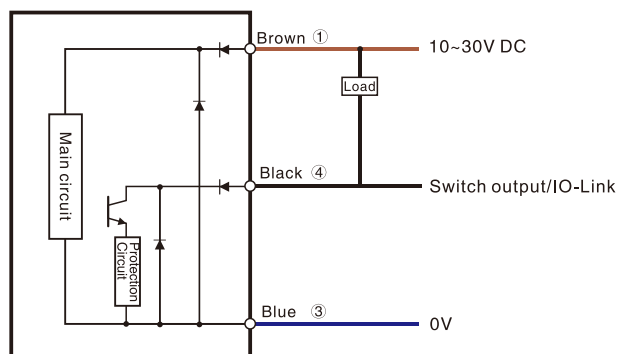
Unit: mm

Output indicator (orange)
Status indicator (green)
Sensitivity adjustment knob
Normally open/normally closed mode switch knob

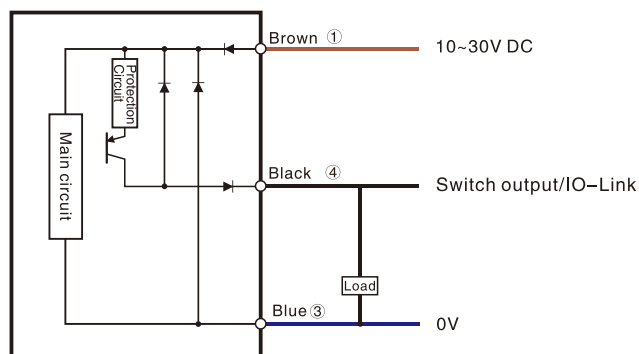


Circuit diagram

NPN Output



PNP Output



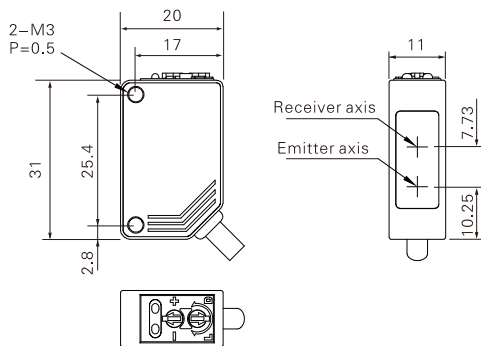


Appearance

Sensing type		Diffuse reflection		Convergent reflective	
Sensing distance		10–300mm		5–1000mm 5–140mm	
Output type		NPN/PNP Open–collector			
Switch type		Selectable L.on/D.on			
Response time		< 1ms			
Light source		Infrared LED(940nm modulation)			
Operating voltage		10~30V DC			
No-load supply current		< 25mA			
Load current		< 100mA			
Ambient temperature		–25℃~+55℃, No freezing			
Ambient humidity		35% ~85% RH, No condensation			
Circuit protection		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	

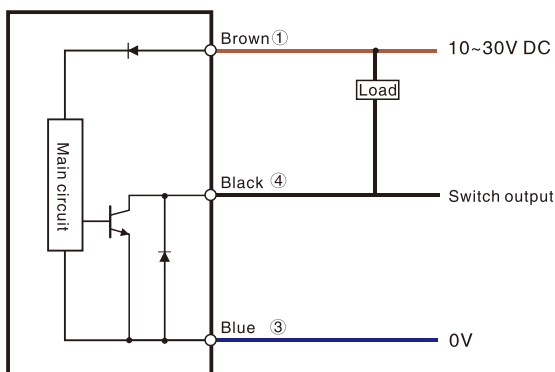
Dimensions

Unit: mm

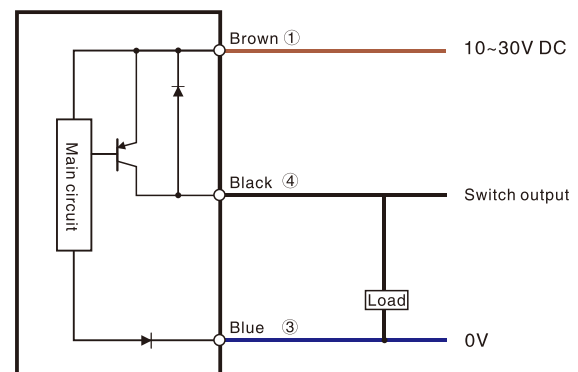


Circuit diagram

NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

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

Reflectors

Reflectors

Square

PTV Series



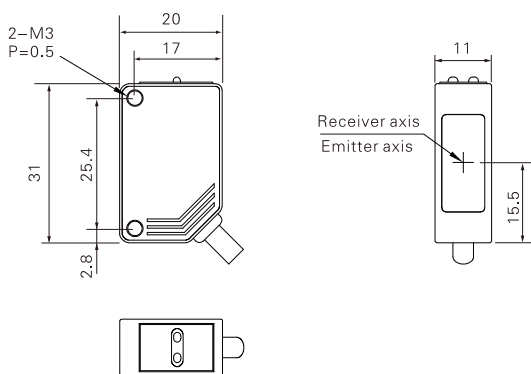
Appearance

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 LED(940nm modulation)			
Operating voltage		10~30V DC			
No-load supply current		Transmitter: <20mA; Receiver end: <20mA			
Load current		<100mA			
Ambient temperature		-25℃~+55℃, No freezing			
Ambient humidity		35%~85%RH, No condensation			
Circuit protection		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

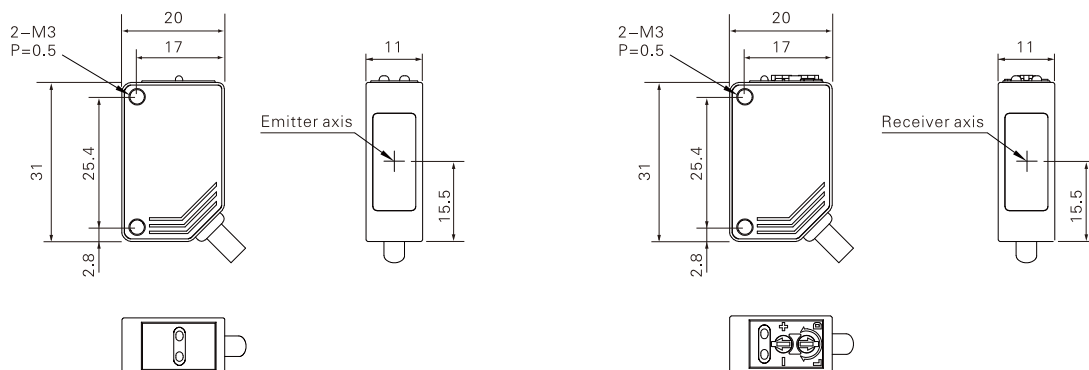
Dimensions

Unit: mm

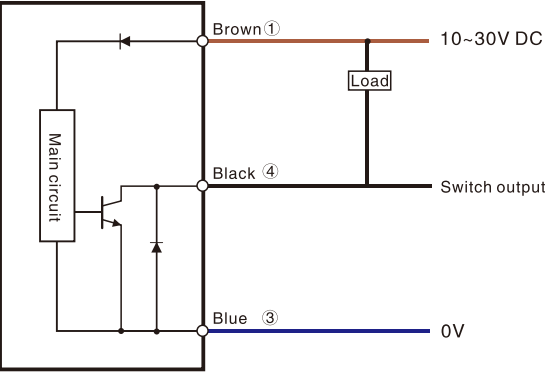
PTV-TM20NO/PO/NC/PC



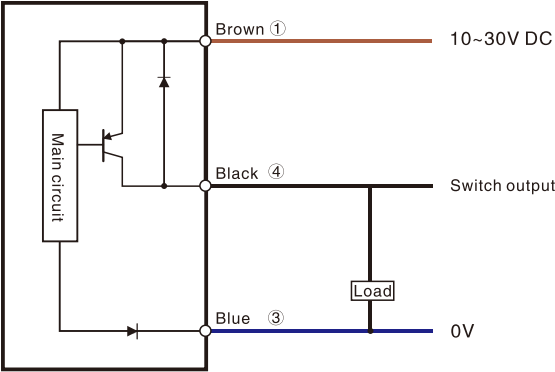
PTV-TM20AN/AP、PTV-T500N/P



NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

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



IO-Link

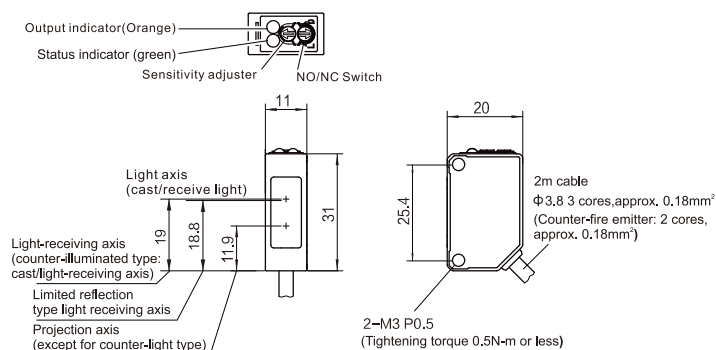
Appearance

Sensing type		Diffuse reflection	Thru-beam reflection	Retro-reflection
Sensing distance		0~1m(white paper200X200mm)	0~25m	0.01~4m(with reflector)
Spot diameter		φ 75mm / 1m	φ 1800mm / 25m	φ 280mm / 4m
Output type		NPN/PNP Open-collector		
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
Load current		≤100mA		
Hysteresis		≤20%	—	
Function		IO-LINK		
Ambient illuminance		Sunlight≤50000Lux, Incandescent lamp≤5000Lux		
Ambient temperature		-25℃~-+55℃, no freezing		
Ambient humidity		35%~85%RH, No condensation		
Degree of protection		IP67		
Connection		2m 3 core cable(2m 2 core cable for thru-beam models)		
Material		ABS (housing) +PMMA (lens)		
Accessories		-		
Model No.	NPN	PTZ-D70N-C	PTZ-TM25N-C	PTZ-R400N-C
	PNP	PTZ-D70P-C	PTZ-TM25P-C	PTZ-R400P-C

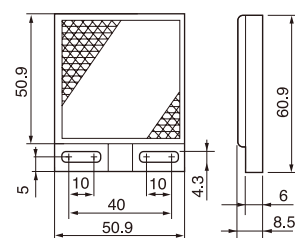
Guidance

Dimensions

Unit: mm

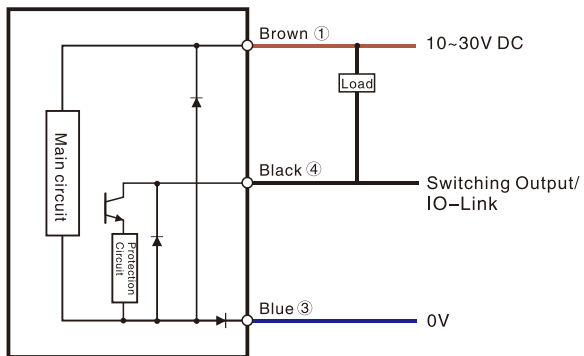


Reflector for PTZ-R400-C

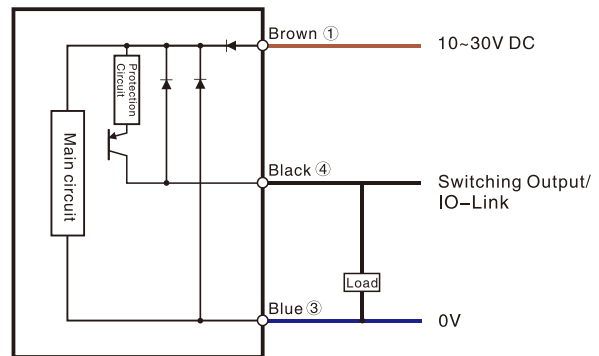


(Optional TD-11)

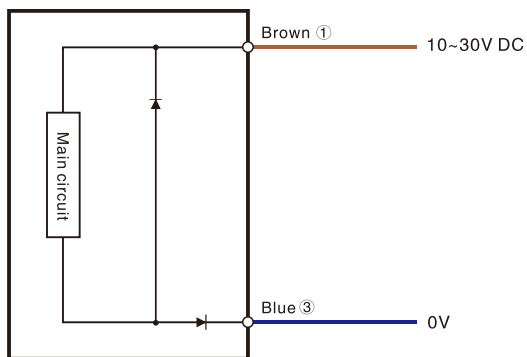
NPN Output



PNP Output



Thru-beam Emitter



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

Photoelectric

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

Reflectors

Reflectors

Square

PTN Series

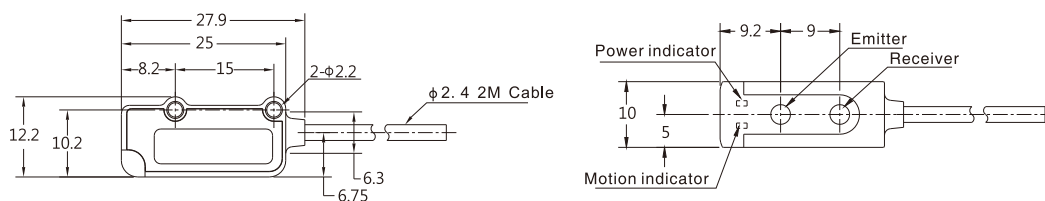


Appearance

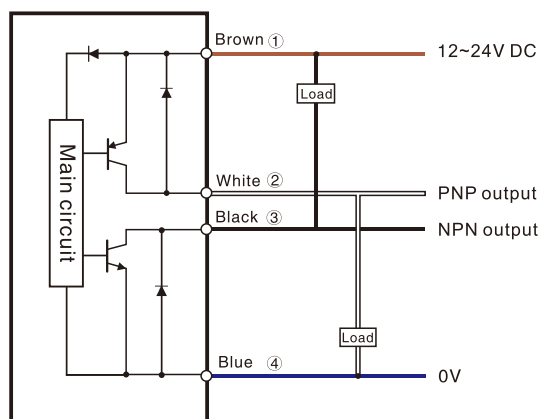
Sensing type		Diffuse reflection	Thru-beam
Sensing distance		5cm,White board 100*100mm(> 5cm)	50cm
Output type		NPN/PNP Open-collector	
Switch type		L.on	D.on
Response time		≤1 ms	
Light source		Infrared LED (940nm)	
Operating voltage		12~24V DC ± 10%	
Current consumption		≤20mA	≤30mA
Load current		≤100mA (24V DC)	
Circuit protection		Reverse polarity protection, short circuit protection	
Ambient temperature		-10℃~-+45℃, No freezing	
Ambient humidity		35%~85% RH, No condensation	
Storage temperature		-10℃~-+55℃, No freezing	
Storage humidity		35%~95% RH, No condensation	
Withstand voltage		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
Accessories		Mounting screws	
Model No.	NPN	PTN-D05N	PTN-T50N
	PNP	PTN-D05P	PTN-T50P

Dimensions

Unit: mm



Circuit diagram





Appearance		
Sensing type	Thru-beam	
Sensing distance	80cm (fixed)	150cm (fixed)
Detected object	Opaque objects above $\phi 6\text{mm}$	
Output type	NPN/PNP Open-collector	
Switch type	Selectable L.on/D.on, Model optional	
Response time	33ms	
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 < 20mA, Receiving end < 20mA	
Load current	< 50mA	
Circuit protection	Reverse polarity , short circuit	
Ambient illuminance	Sunlight $\leq 10000\text{Lux}$, Incandescent lamp $\leq 3000\text{Lux}$	
Ambient temperature	$-20^{\circ}\text{C}\sim+50^{\circ}\text{C}$, No freezing	
Voltage drop	35~90% RH, Storage: 35~90% RH	
Storage temperature	$-30^{\circ}\text{C}\sim+70^{\circ}\text{C}$, No freezing	
Withstand voltage	$\geq 20\text{M}\Omega/500\text{V DC}$	
Pressure strength	AC1000V(50/60Hz)1minute	
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	
Accessories	-	
Model No.	NPN D.on	PTJ-T80NO-I
	NPN L.on	PTJ-T80NC-I
	PNP D.on	PTJ-T80PO-I
	PNP L.on	PTJ-T80PC-I

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

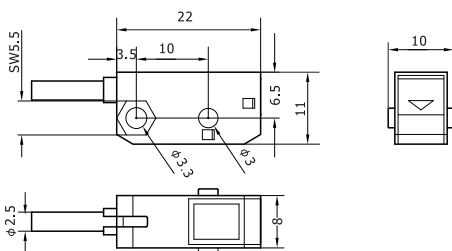
IO-Link type

Reflectors

Reflectors

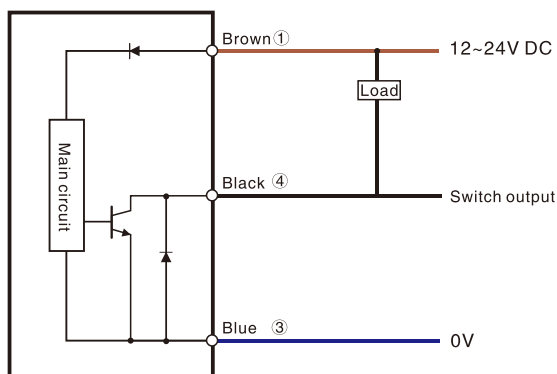
Dimensions

Unit: mm

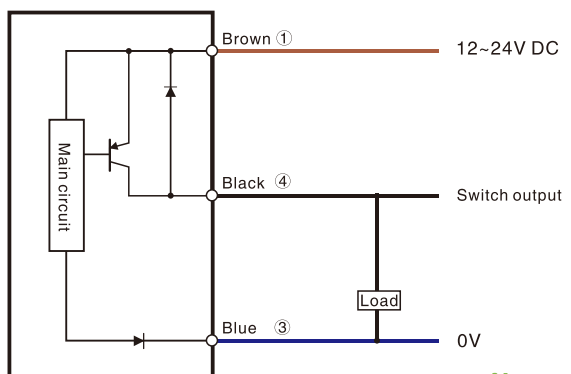


Circuit diagram

NPN Output



PNP Output



TOF Type

PX Series



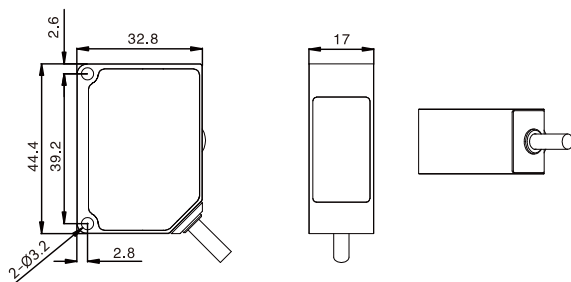
TOF Type

NEW!

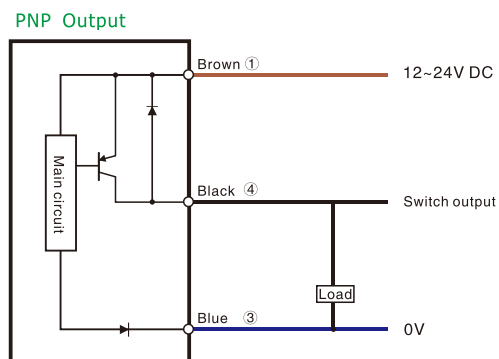
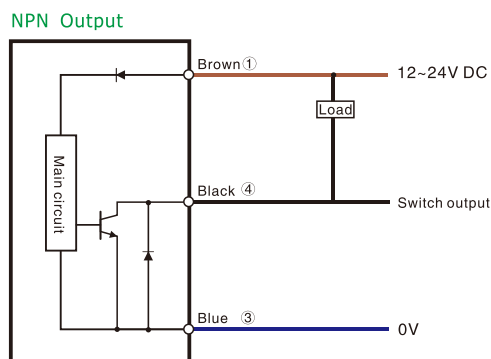
Appearance		
Sensing type	TOF (Time of flight) 1 point teaching	
Sensing distance	100cm	300cm
Setting range	5 ~ 100cm (White paper 200 × 200mm)	20 ~ 300cm (White paper 200 × 200mm)
Light source	Infrared LED (940nm)	Infrared LED (850nm)
Detected object	above 200*200mm	above 200*200mm
Output	NPN/PNP Open-collector	
Sensitivity adjustment	Tech-in	
Indicators	Power: green, output indicator: red, When the teaching is successful: the green light flashes and then keeps on; when the teaching fails: the red and green lights flash alternately for 6s	
Response time	< 30 ms	< 100 ms
Hysteresis	Range 5~10cm, hysteresis < 1cm; Range 10~100cm, hysteresis < 10%	Range 20~50 cm, hysteresis < 4cm; Range 50~300 cm, hysteresis < 10%
Repeatability	Range 5~10cm, hysteresis < 0.5cm; Range 10~100cm, hysteresis < 5 %	< 1.5 cm
Operating voltage	12~24V DC ± 10%	
Residual voltage	< 1.5 V (load current < 125mA)	
Current consumption	≤ 30mA	≤ 25mA
Load current	≤ 100mA (24V DC)	
Circuit protection	reverse polarity protection, short circuit protection	
Ambient temperature	Operation temperature: -10℃~60℃, no freezing; storage temperature: -20℃~70℃	
Ambient humidity	Working: 35~90% RH; storage: 35~90% RH, no condensation	
Withstand voltage	± 1000V 50/60Hz 60s	
Static electricity	± 4000V(Contact discharge)	
Group pulse	± 2000V/5kHz/100kHz	
Anti-vibration	10~50Hz, amplitude 0.5mm; 2 hours each in X, Y, Z directions	
Ambient light	Incandescent light ≤ 5,000Lux	
Material	Aluminum alloy	
Connection	φ = 4mm, 2m 3 wire cable	
Model No.	NPN	PX-F09N
	PNP	PX-F09P
		PX-F30N
		PX-F30P

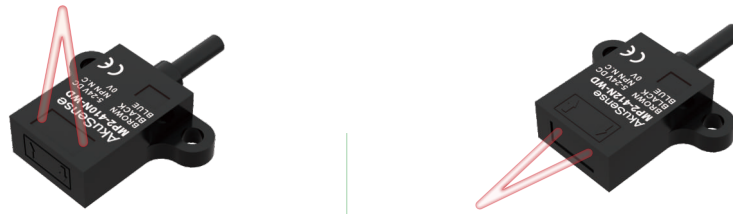
Dimensions

Unit: mm



Circuit diagram

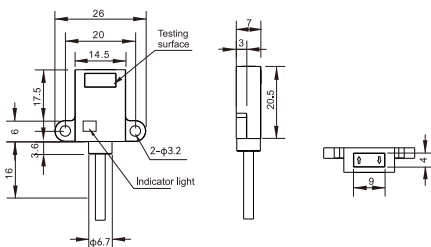




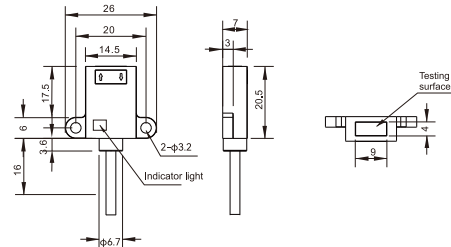
Appearance				
Detection surface			Front	Head
Sensing type			Diffuse reflection	
Sensing distance			2.5~8mm(black object 3mm)	
Hysteresis			<20%	
Light source			Infrared LED(880nm)	
Response time			<1ms	
Operating voltage			12~24V DC	
Voltage drop			<2.5V (load current is 100mA)	
Residual voltage			Below 3V (load current 100mA/ 2m cable)	
Indicator			Red LED	
Switch type			L,on/D,on model selectable	
Circuit protection			Surge protection, reverse polarity protection	
Storage temperature			Operation: -10℃~55℃, Storage: -25℃~80℃(No freezing)	
Storage humidity			Operation: 45%~85% RH, Storage: 35%~90% RH (No condensation)	
Ambient illuminance			≤3500Lux	
Voltage influence			When the rated power supply voltage range fluctuates within ± 15%, the sensing distance will be changed within ± 1%.	
Insulation resistance			> 50MΩ/500V DC	
Withstand voltage			AC1000V, 50/60Hz, 1min	
Vibration resistance			10~55Hz, Upper and lower amplitude 1.5mm, 2 hours in X, Y, Z direction	
Impact resistance			500m/s² 10 times in X,Y,Z	
Degree of protection			IP50	
Housing Material			PC	
Connection method			2m 3 core cable	
Accessories			-	
Model No.	NPN	Dark.on	MP2-410N-WD	MP2-412N-WD
		Light.on	MP2-410N-WL	MP2-412N-WL
	PNP	Dark.on	MP2-410P-WD	MP2-412P-WD
		Light.on	MP2-410P-WL	MP2-412P-WL

Dimensions

MP2-410□-WD



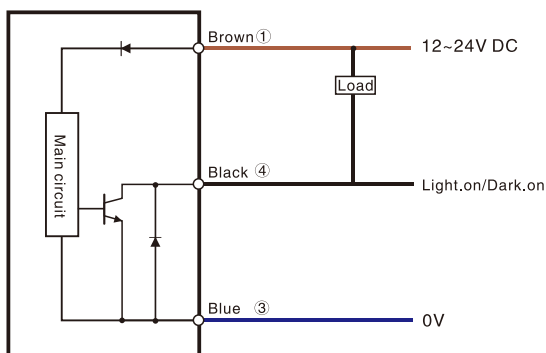
MP2-412□-WD



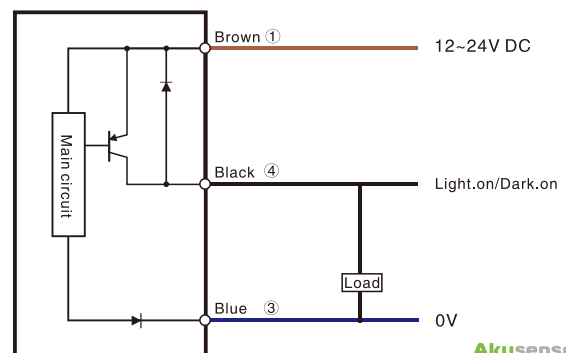
Unit: mm

Circuit diagram

NPN Output

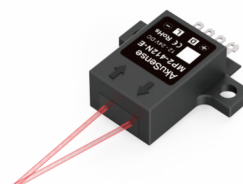


PNP Output



Flat Type

MP2 Series Connector Type



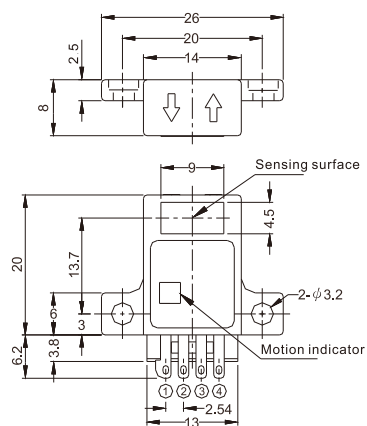
Appearance

Detection surface	Front	Head	
Sensing type	Diffuse reflection		
Sensing distance	40mm (50 × 50 white matte paper)		
Hysteresis	< 20%		
Output type	NPN/PNP Open—collector		
Switch type	Selectable L.on/D.on		
Response time	< 1 ms		
Light source	Infrared LED (850nm)		
Operating voltage	12~24V DC		
Current consumption	< 20mA	< 25mA	
Voltage drop	<2.5V (load current is 100mA)		
Load current	< 100mA(24V DC)		
Withstand voltage	AC 1000V 50/60Hz 1min		
Ambient temperature	Operation: -20℃~+55℃, Storage: -25℃~+80℃(No freezing)		
Ambient humidity	Operation: 45%~+85%RH, Storage: 35%~90%RH (No condensation)		
Insulation resistance	> 20MΩ/500V DC		
Ambient illuminance	Incandescent lamp ≤3000Lux,Sunlight ≤10000Lux		
Degree of protection	IP50		
Material	PC		
Connection method	connector		
Accessories	Mounting screws		
Model No.	NPN	MP2-410N-E 	MP2-412N-E
	PNP	MP2-410P-E	MP2-412P-E

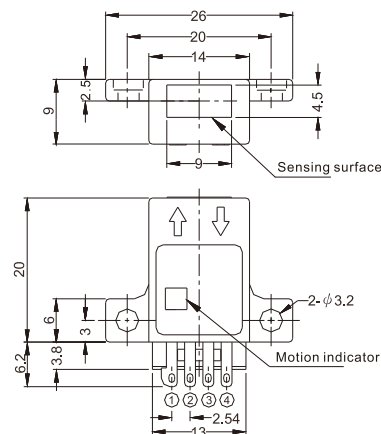
Dimensions

Unit: mm

MP2-410N(P)-E



MP2-412N(P)-E

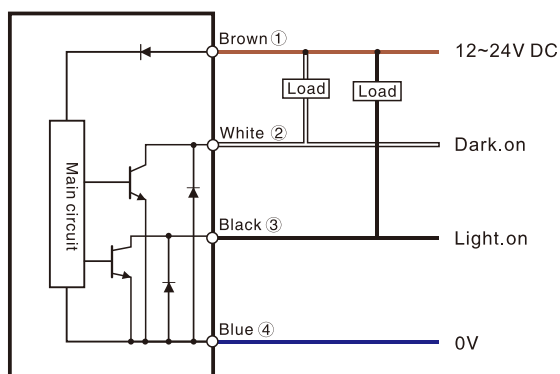


- ①: ○ Brown
②: OUT1 White
③: OUT2 Black
④: ○ Blue

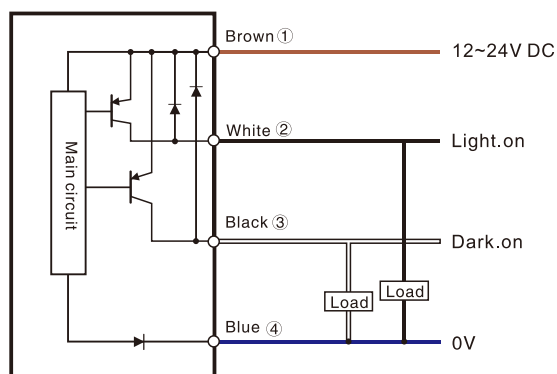
Connection cable: ME-1007 (To O-11)

Circuit diagram

NPN Output



PNP Output





NEW!



NEW!

Sensing type	Convergent reflective					Thru beam			
Sensing distance	2~15mm		2~25 mm (fixed)			500mm (fixed)		1m (fixed)	
Light source	Infrared light 850nm (modulated)		Infrared light 950nm (Modulated)			Infrared light		Red light	
Detectable object	all objects		50*50mm white paper			Opaque, ϕ >2 mm			
Output	NPN/PNP Open–collector, ≤100mA								
Switch type	L.on								
Indicator	Motion indicator: orange; Power: green								
Response time	1.2ms		≤1.2ms						
Power-up delay	50ms					—			
Operating voltage	10~30V DC ± 10%								
Residual voltage	<2V (load current <50mA)								
Current consumption	≤20mA								
Load current	< 100mA		< 50mA						
Circuit protection	Overload protection/reverse connection protection/short circuit protection		Reverse polarity protection/surge protection/short circuit protection						
Ambient illuminance	Sunlight ≤ 10,000Lux, Incandescent lamp≤ 3,000Lux								
Ambient temperature	Working : -25℃~+55℃, no freezing; storage: -10℃ ~ +55℃								
Ambient humidity	Working: 35%~85%RH; Storage: 35%~95%RH, no condensation								
Withstand voltage	± 500V 50/60Hz 60s								
Static electricity	± 8000V								
Group pulse	± 2000V (5kHz/50kHz/100kHz)								
Anti-vibration	10~55Hz, amplitude 1.5mm, 2 hours each in X, Y, Z directions		10~50Hz, 0.5mm amplitude, 2 hours each in X, Y, Z directions						
Degree of protection	IP67								
Connection	Φ2.5* 2M /3 core cable								
Material	PC								
Accessories	Mounting screws								
Model No.	NPN	ESL-15NO	ESL-15NC	ESL-25NO	ESL-25NC	ESL-T50NO	ESL-T50NC	ESL-TM01NO	ESL-TM01NC
	PNP	ESL-15PO	ESL-15PC	ESL-25PO	ESL-25PC	ESL-T50PO	ESL-T50PC	ESL-TM01PO	ESL-TM01PC

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

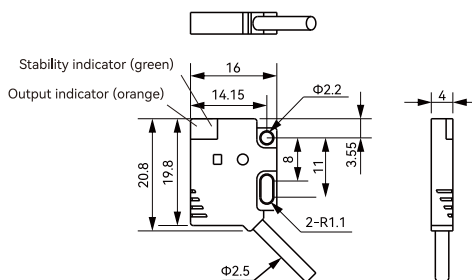
Reflectors

Reflectors

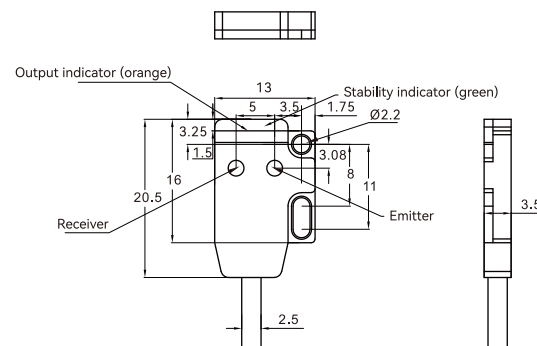
Dimensions

Unit: mm

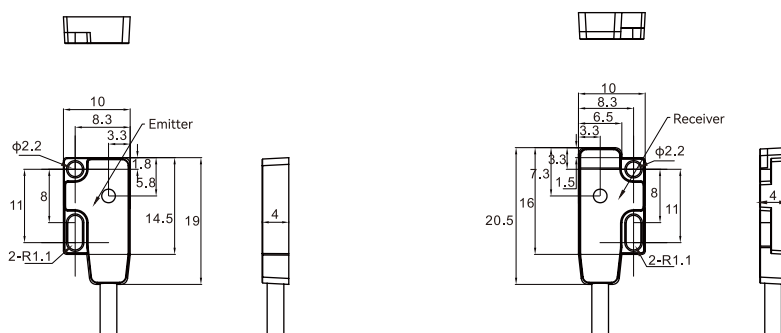
ESL-15



ESL-25



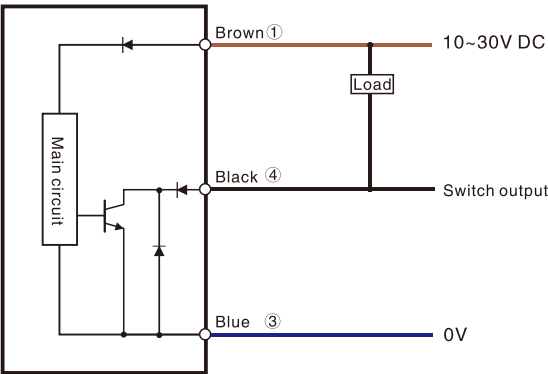
ESL-T50/TM01



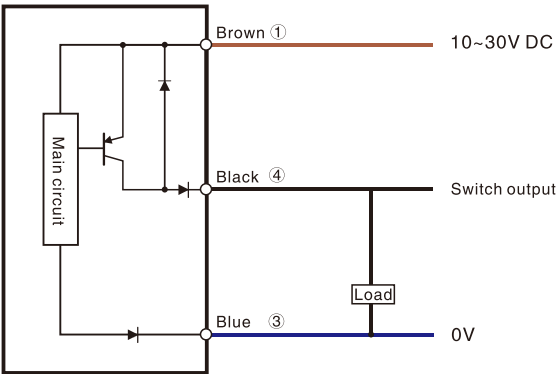
Thin Type

Circuit diagram

NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories
Guidance

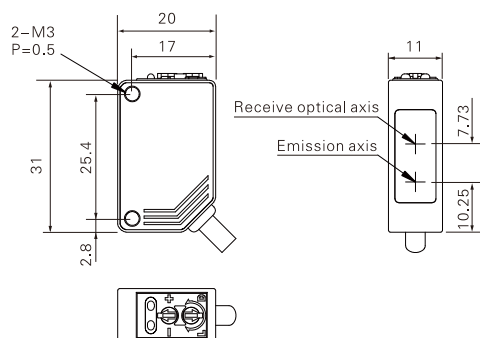
Photoelectric
Cylindrical
Square
Flat type
Thin type
BGS
Transparent detection
Color/Mark Detection
TOF type
IP69K high protection type
Anti-glare type
IO-Link type
Reflectors
Reflectors

Appearance				
Sensing type	Disffuse refection–BGS			
Sensing distance	5 ~ 100mm(White non–glossy paper)	5mm ~ 150mm(White non–glossy paper)	0 ~ 300mm (White non–glossy paper)	
Setting distance	30 ~ 100mm	40 ~ 150mm	40 ~ 300mm	
Spot size	≈ Ø1.5mm/10cm	≈ Ø9mm/15cm	≈ Ø16mm/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	<20mA		<25mA	
Load current	<100mA			
Ambient illuminance	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(Lens)			
Accessories	Screwdriver			
Model No.	NPN	ESB-S10N	ESB-15N	ESB-30N
	PNP	ESB-S10P	ESB-15P	ESB-30P

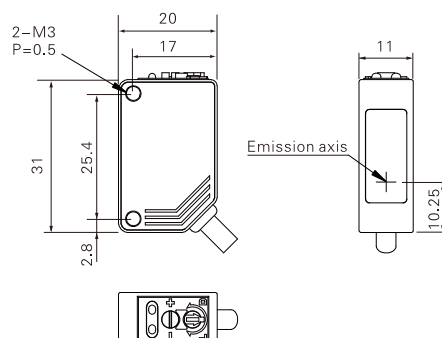
Dimensions

Unit: mm

ESB-S10/15N(P)

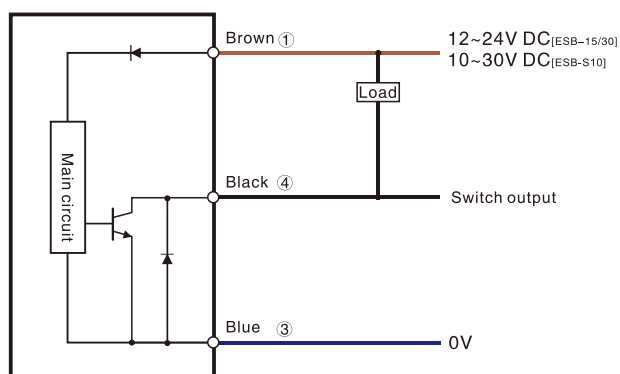


ESB-30N(P)

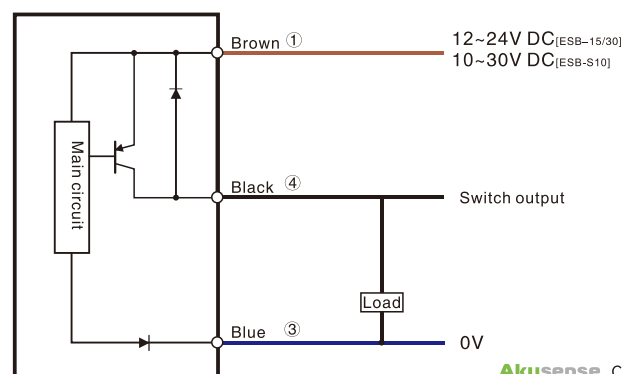


ESB-S10/15/30N(P)

NPN Output



PNP Output



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Code Readers

Vibration

Temperature

Accessories

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors

ESB Series

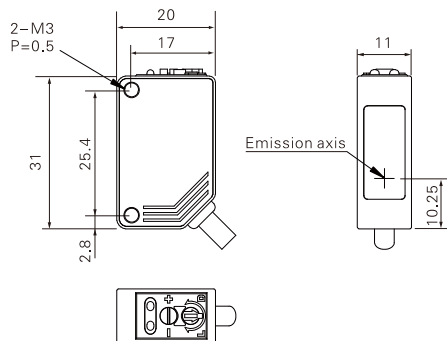


NEW!

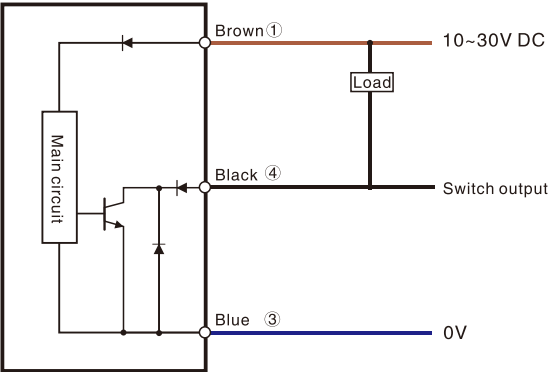
Sensing type		Disffuse reffective – Background suppression	
Sensing distance		10 ~ 300mm	10 ~ 200mm
Setting distance		40 ~ 300mm	40 ~ 200mm
Spot size		—	≈ Ø12mm/200mm
Hysteresis		≤5%	
Output		NPN/PNP Open – collector	
Switch type		L.on /D.on switchable	
Indicators		Power: green; motion indicator: red	
Response time		≤2ms	
Sensivity adjustment		6 turns adjuster	
Light source		Infrared LED 940nm (modulation)	Red LED 623nm (modulation)
Supply voltage		10~30V DC ± 10%	
Residual voltage		<1.5V	
Current consumption		≤25mA	
Load current		≤100mA	
Circuit protection		Power reverse polarity protection/surge protection/short circuit protection	
Ambient illuminance		Sunlight ≤5,000 lux, incandescent lamp ≤3,000 lux	
Ambient temperature		Working temperature: –25℃~+55℃, no freezing; storage: –30 ~ +70℃	
Ambient humidity		Working: 35%~85% RH; storage: 35%~95% RH,; no condensation	
Insulation resistance		20MΩ	
Withstand voltage		± 1000V 50/60Hz 60s	
Static electricity		± 8000V	
Group pulse		± 2000V (5kHz/50kHz)	
Anti-vibration		10~50Hz, 0.5mm amplitude, 2 hours each in X, Y, Z directions	
Degree of protection		IP65	
Connection		φ 4 mm, 2 m 3 wire cable	
Material		PBT+glass fiber (housing); PMMA (lens)	
Accessories		screwdriver	
Model No.	NPN	ESB-V30N	ESB-C20N
	PNP	ESB-V30P	ESB-C20P

Dimensions

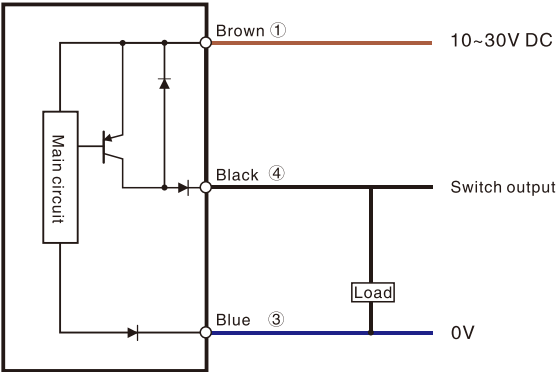
Unit: mm



NPN Output



PNP Output

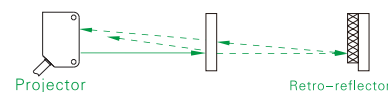


Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

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

Transparent Detection

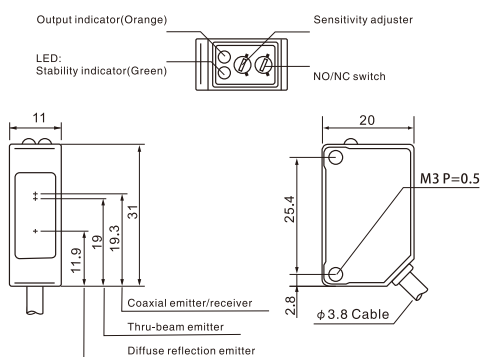
EST Series



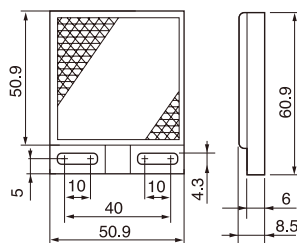
Appearance	Retro-reflection	
Sensing type	General Type	Coaxial beam
Spot size	0.01~2m	0~2m
Sensing distance	φ 300mm/200cm	φ 60mm/200cm
Output type	NPN/PNP Open-collector, ≤100mA/30V DC	
Switch type	Selectable L.on/D.on	
Indicator	Work indicator: Green; Output indicator: Orange	Output indicator: Orange
Response time	0.5 ms	
Light source	Red light LED(660nm)	
Operating voltage	10~30V DC ± 10%	
Current consumption	< 20mA	
Load current	≤ 100mA	
Ambient illuminance	Sunlight ≤ 10000Lux, Incandescent lamp ≤ 3000Lux	
Ambient temperature	-25°C ~ +55°C, No freezing	
Ambient humidity	35% ~ 85% RH, No condensation	
Degree of protection	IP67	
Connection method	2M 3 core cable	
Material	ABS with glass fiber (Housing); PMMA(Lens)	
Accessories	reflector	Bracket, reflector, mounting screw
Model No.	NPN	EST-200N HOT
	PNP	EST-200P

Dimensions

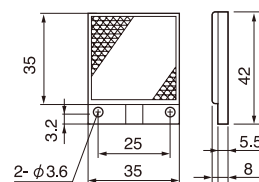
Unit: mm



EST-200 Reflector:



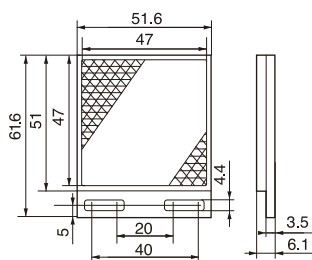
(Standard TD-11)



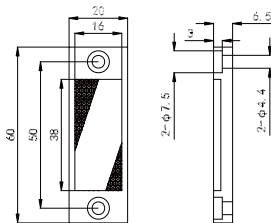
(Optional TD-12)

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

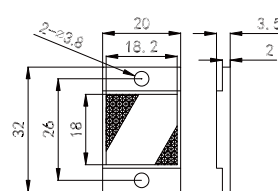
EST-X200 Reflector:



(Standard TD-13)

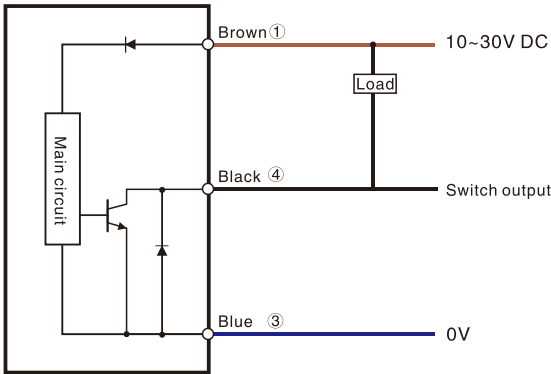


(Optional TD-14)

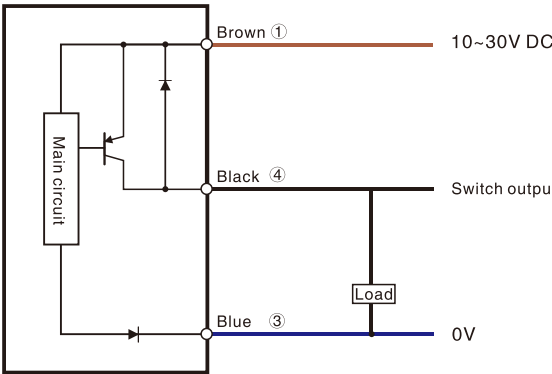


(Optional TD-15)

NPN Output



PNP Output



Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Code Readers
Vibration
Temperature
Accessories

Guidance

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

Color/Mark Detection

ESC Series

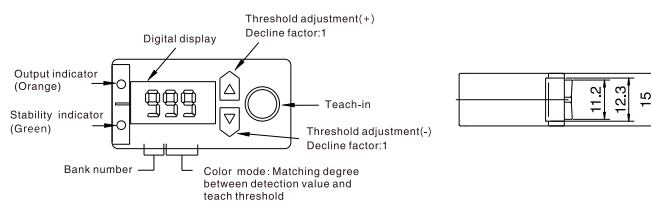
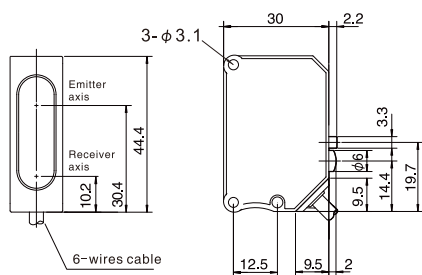


Appearance

Sensing type	Diffuse reflection
Sensing distance	18 ± 2mm
Spot 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	Mask mode: H1/0.25 ms, H2/0.5 ms, L/1.2 ms Color 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	≤40mA
Load current	≤100mA
Ambient illuminance	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/s²), XYZ three directions
Degree of protection	IP67
Connection method	2M 4 core cable
Material	Housing: ABS, Lens: PMMA
Accessories	Bracket, mounting screw
Model No.	NPN ESC-18N PNP ESC-18P

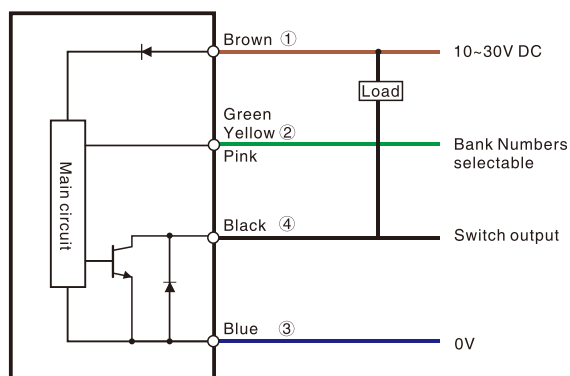
Dimensions

Unit: mm

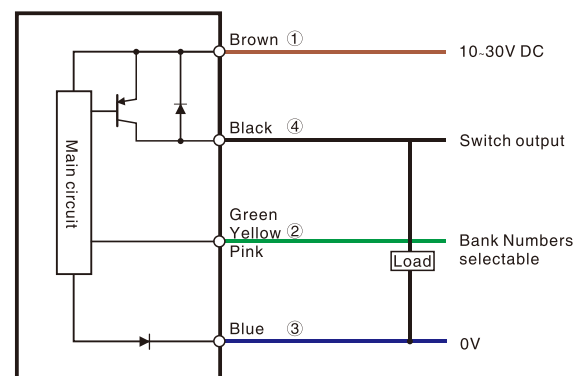


Circuit diagram

NPN Output



PNP Output





NEW!

Appearance	
Sensing type	Diffuse reflective
Sensing distance	20mm ± 3mm
Spot size	1x5mm (setting distance: 20mm)
Output	NPN / PNP for option
Switch type	L.on /D.on switchable
Indicators	Work indicator: Green, motion indicator: Red
Response time	Mark mode: 0.5ms; color mode: 2ms
Digital display	4 digits
Power supply	12~24V Dc ± 10%
Residual voltage	< 1.5 V (load current < 50 mA)
Current consumption	<35mA (24V)
Load current	< 50mA
Circuit protection	Reverse polarity protection / short circuit protection
Ambient temperature	-10~55°C, no freezing
Storage temperature	-20°C~70°C
Ambient humidity	35~85%RH, no condensation
Storage humidity	35~85%RH
Withstand voltage	± 1000V 50/60Hz 60s
Static electricity	± 8000V
Degree of protection	IP67
Group pulse	± 2000V
Anti-vibration	10~50Hz, amplitude 1.5 mm; 2 hours each in X, Y, Z directions
Ambient luminance	Incandescent lamp: ≤3,000 lux, Sunlight: ≤10000 lux
Model No.	NPN ESE-20N PNP ESE-20P

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Guidance

Photoelectric

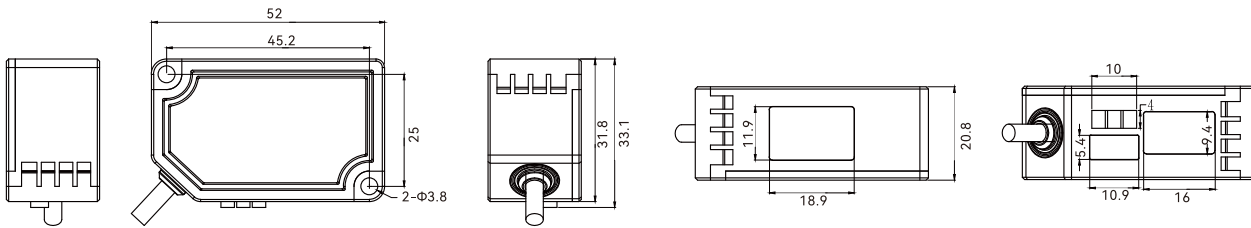
Cylindrical
Square
Flat type
Thin type
BGS
Transparent detection
Color/Mark Detection
TOF type
IP69K high protection type
Anti-glare type
IO-Link type

Reflectors

Reflectors

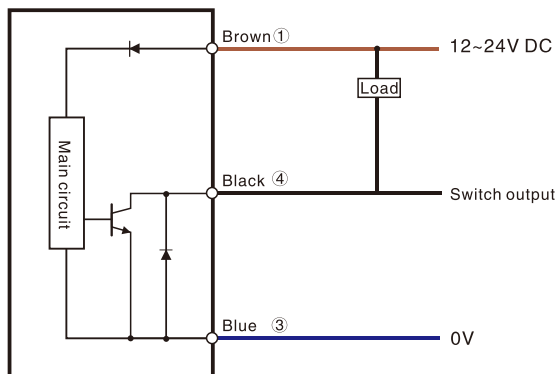
Dimensions

Unit: mm

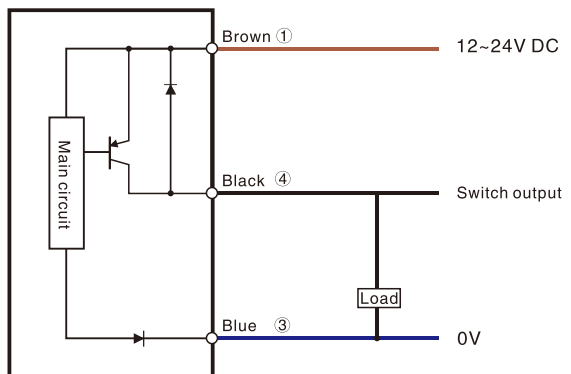


Circuit diagram

NPN Output



PNP Output

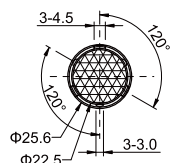


Reflectors

Dimensions

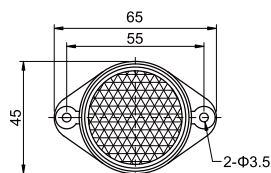
Unit:mm

STD-06



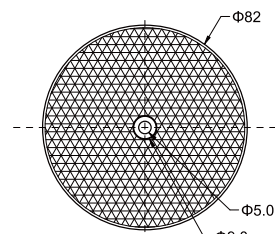
Thickness: 8mm

TD-04



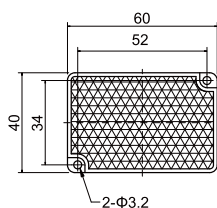
Thickness: 8mm

TD-05



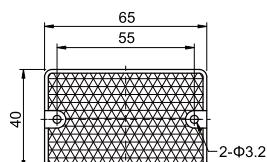
Thickness: 8mm

TD-09



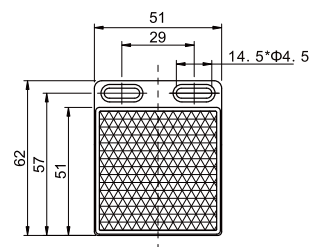
Thickness: 8mm

TD-02



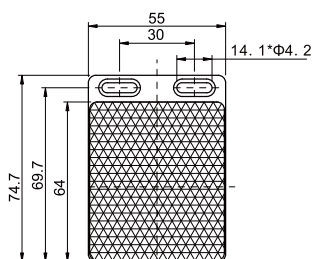
Thickness: 8mm

TD-08



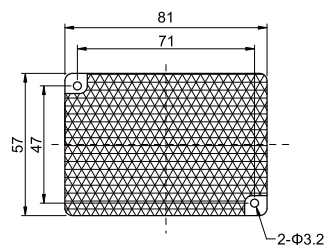
Thickness: 8mm

TD-01



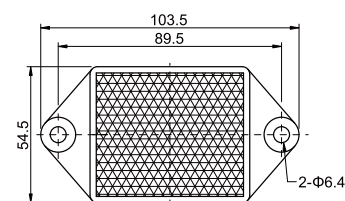
Thickness: 8mm

TD-03



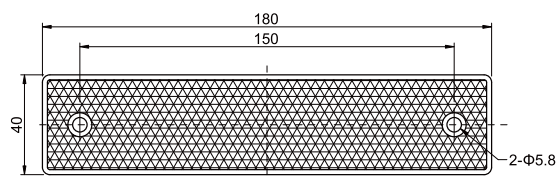
Thickness: 8mm

TD-01-3



Thickness: 8mm

TD-10



Thickness: 8mm

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

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Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

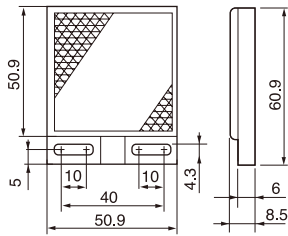
Anti-glare type

IO-Link type

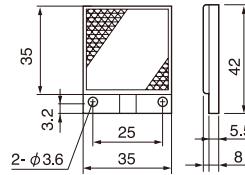
Reflectors

Reflectors

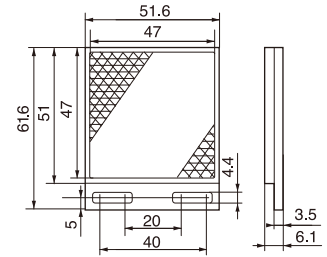
TD-11



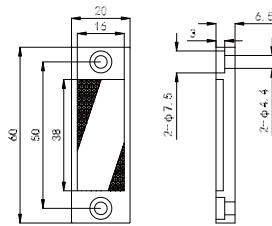
TD-12



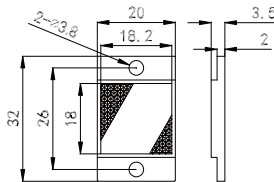
TD-13



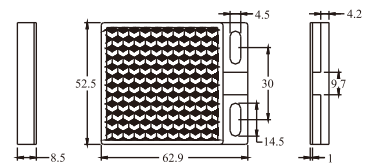
TD-14



TD-15



TD-22



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

Guidance

Photoelectric

Cylindrical

Square

Flat type

Thin type

BGS

Transparent detection

Color/Mark Detection

TOF type

IP69K high protection type

Anti-glare type

IO-Link type

Reflectors

Reflectors