

Фотоэлектрические датчики

Технические характеристики

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Россия +7(495)268-04-70

Казахстан +(727)345-47-04

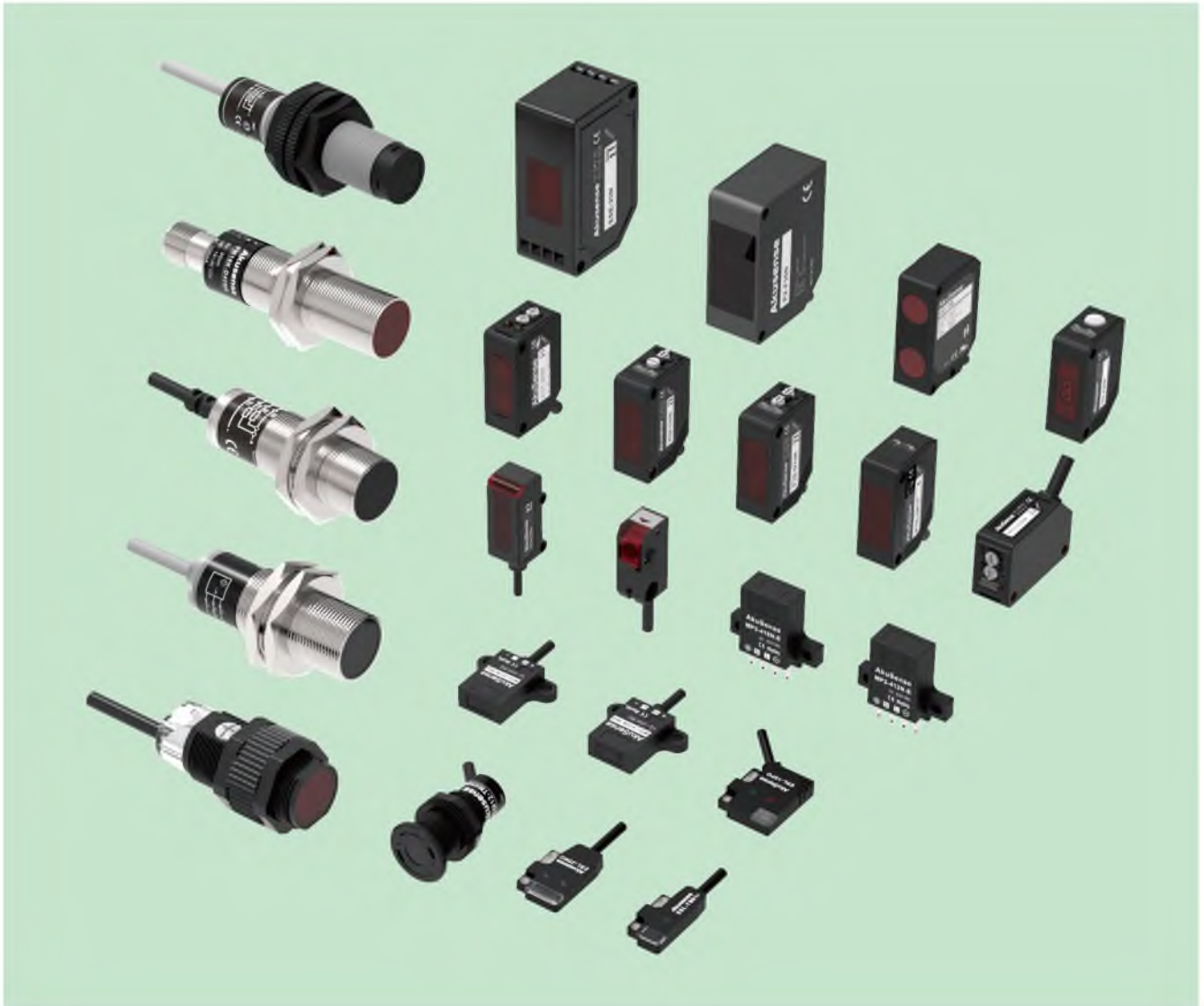
Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: auh@nt-rt.ru || сайт: <https://akusense.nt-rt.ru>

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

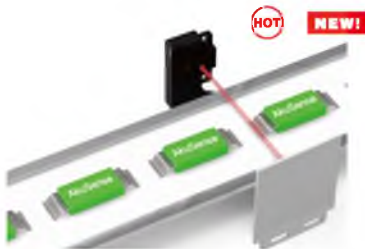
P.C-16



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-25



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



Not affected by background color

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

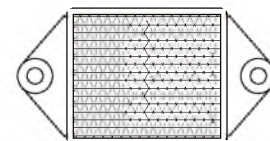
P.C-19



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

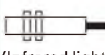
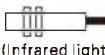
- Made of special material (robust housing)
- Shapes as circular, square and combination etc
- Customization is available as requested by clients

P.C-39

Guidance

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	
		Thru-beam	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	C-13
				PSM12-TM05NC	
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		PTE-TM10NO	PTE-TM10PO	C-17
			 1000cm	PTE-TM10NC	PTE-TM10PC	
	PTE-TM10AN		PTE-TM10AP			
PTEW	 (PTEW Red light PTVW Infrared light)	Diffuse reflection	 0.5~20cm	PTEW-D20N	PTEW-D20P	C-18
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		PTV-TM20NO	PTV-TM20PO	C-21
			 2000cm	PTV-TM20NC	PTV-TM20NC	
				PTV-TM20AN	PTV-TM20AP	

Guidance

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

Transparent Detection

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

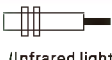
Color/Mark Detection

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

Cylindrical

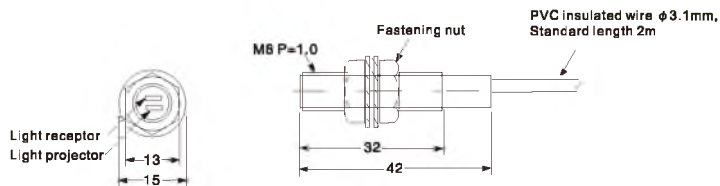
PM08 Series



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

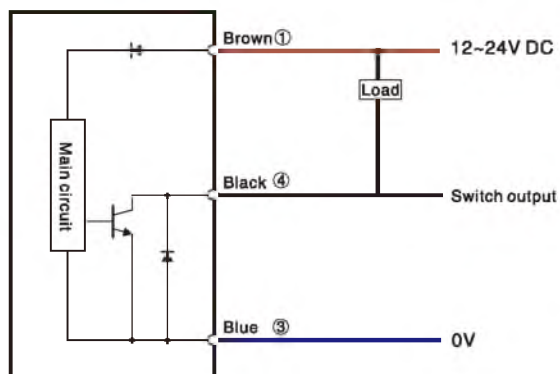
Dimensions

Unit: mm

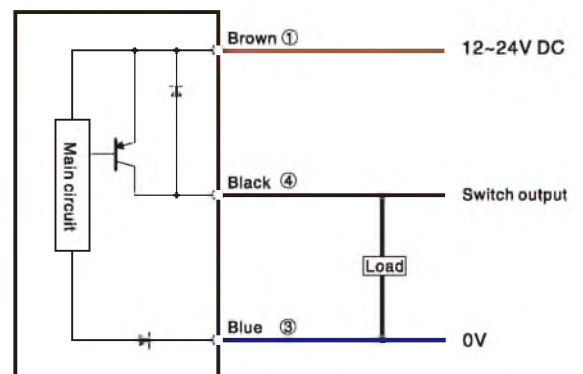


Circuit diagram

NPN Output



PNP Output



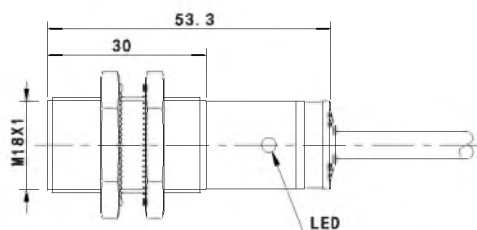


Appearance

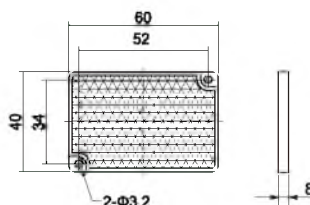
Sensing type		Diffuse reflection		Thru-beam		Retro-reflection	
Sensing distance		10cm(fixed)	40cm(adjustable)	1000cm(fixed)	2000cm(fixed)	300cm(fixed)	
Hysteresis		3~20%		---			
Repeat accuracy		< 5%					
Output type		NPN/PNP Open-collector					
Switch type		Selectable L.on/D.on					
Indicator		Yellow 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		PM18-TM10NR	PM18-TM20NR	PM18-R300NR
	PNP	PM18-D10PR	PM18-D40PR		PM18-TM10PR	PM18-TM20PR	PM18-R300PR

Dimensions

Unit: mm



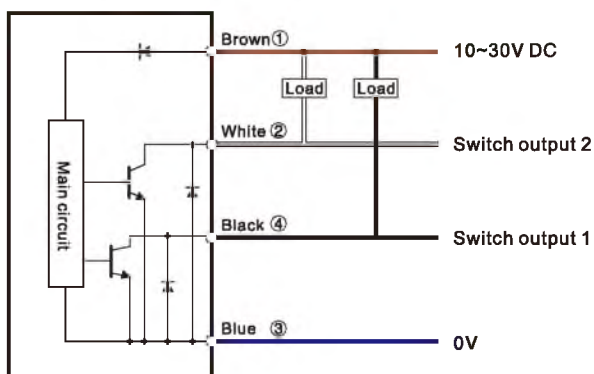
Reflector for PM18-R300



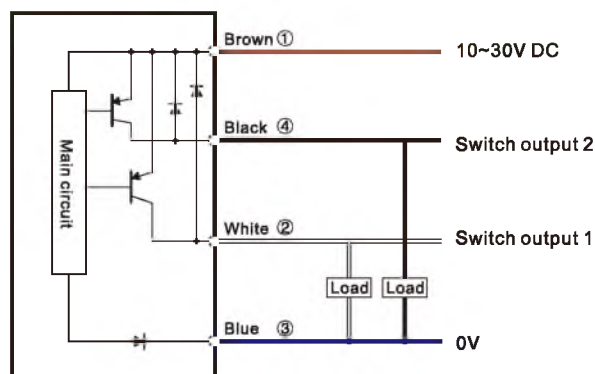
(Standard TD-09)

Circuit diagram

NPN Output



PNP Output



Cylindrical

PM18 Series



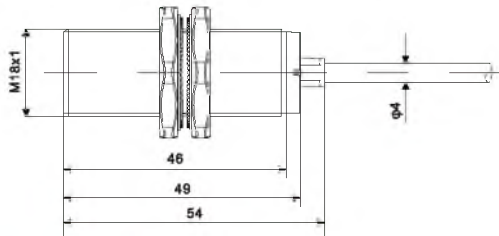
Economical Type

Appearance

Sensing type	Disffuse Reflection		Thru-beam			
Sensing distance	10cm(fixed)		5m(fixed)		20m(fixed)	
Detected object	100mm x 100mm 90% whiteness white paper		> φ 18mm,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

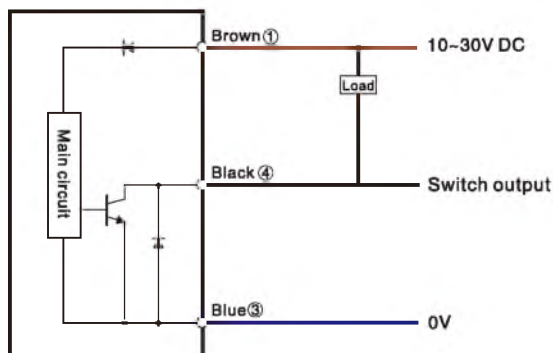
Dimenslons

Unit: mm



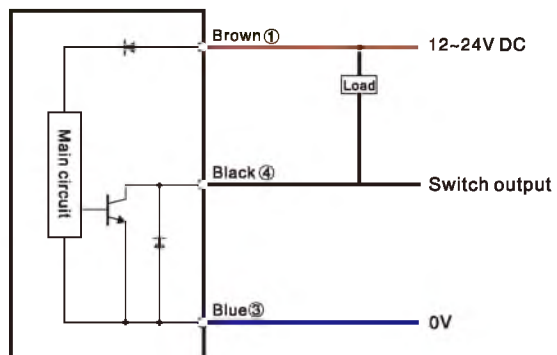
PM18-D10NO(NC)

NPN Output

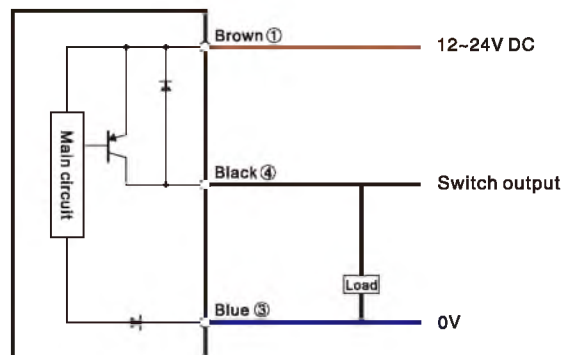


PM18-TM05N(P)O

NPN Output

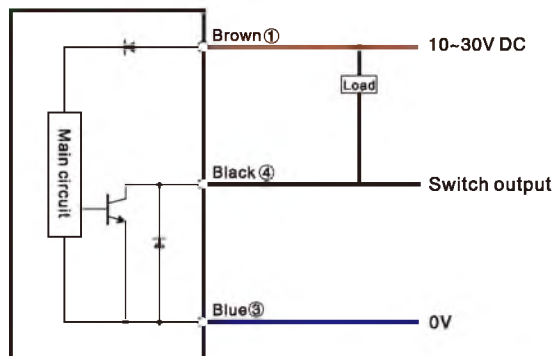


PNP Output

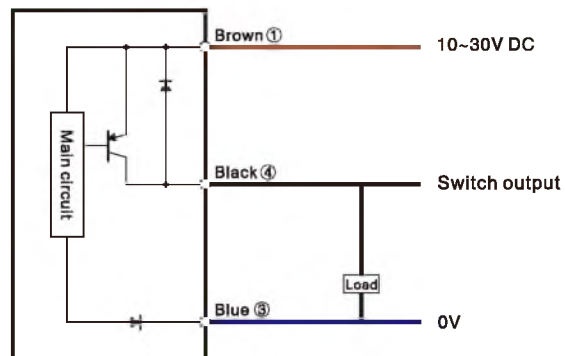


PM18-TM20N(P)O (C)

NPN Output



PNP Output



TOF Type Photoelectric

PM18-TF Series

TOF Principle

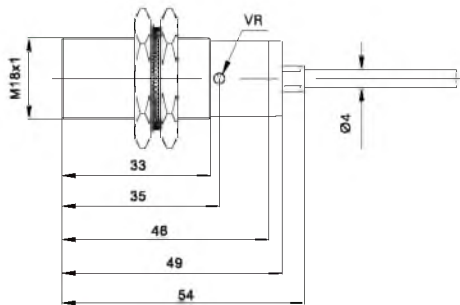


Appearance

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
Voltage 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 PNP
	PM18-TF120N PM18-TF120P

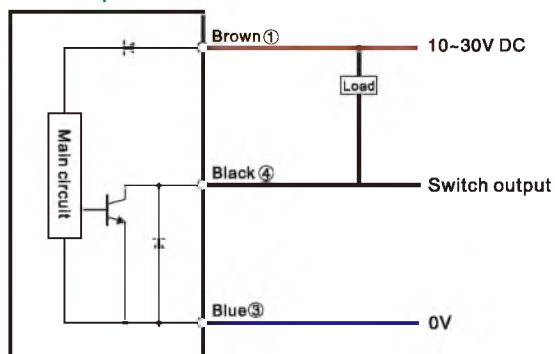
Dimensions

Unit: mm

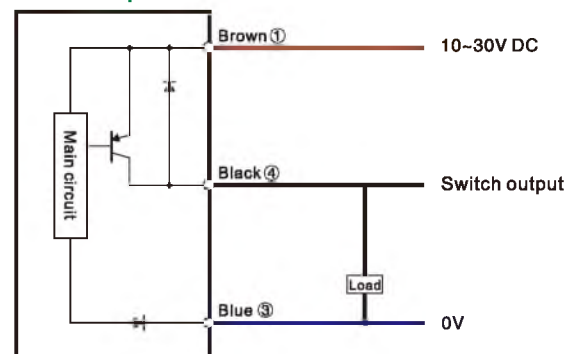


Circuit diagram

NPN Output



PNP Output



Cylindrical

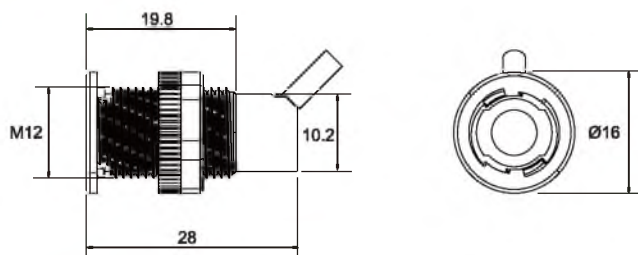
PSM12 Series



Appearance	
Sensing type	Through beam
Sensing distance	5m
Light source	Infrared LED
Detectable 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 PNP
	PSM12-TM05NO PSM12-TM05PO
	PSM12-TM05NC PSM12-TM05PC

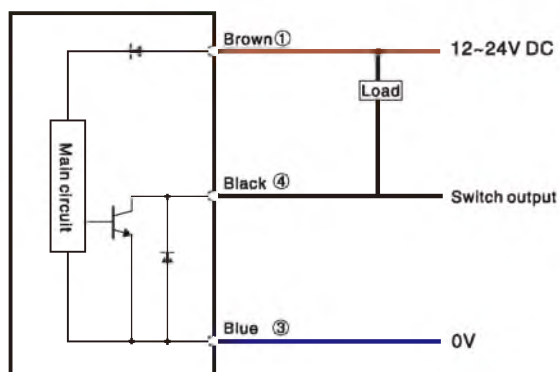
Dimensions

Unit: mm

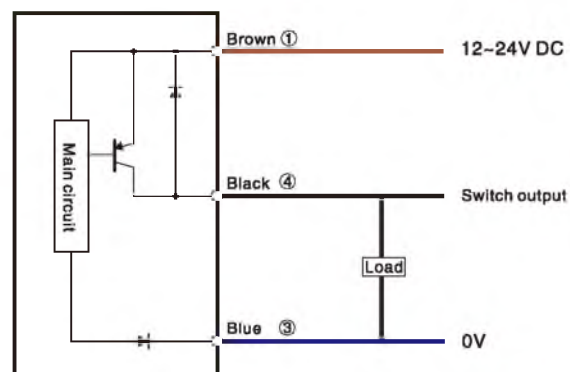


Circuit diagram

NPN Output



PNP Output

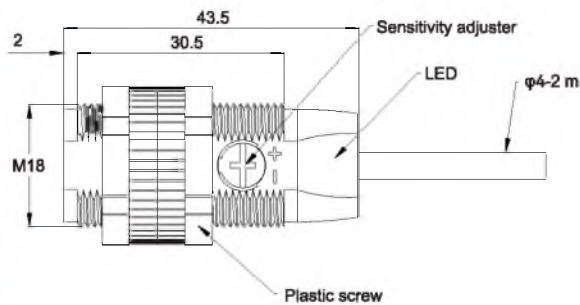




Appearance	
Sensing type	Diffuse reflective
Sensing distance	10~40 cm (adjustable)
Light source	Red light LED
Detected object	opaque object, $\phi > 7$ mm
Output	NPN / PNP for option
Switch Type	Light on/ Dark on selectable
Indicators	Power: Green, Operation indicator: Red
Power supply	10~30V DC
Residual 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 60/60Hz 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 PNP
	PSM18-D40N PSM18-D40P

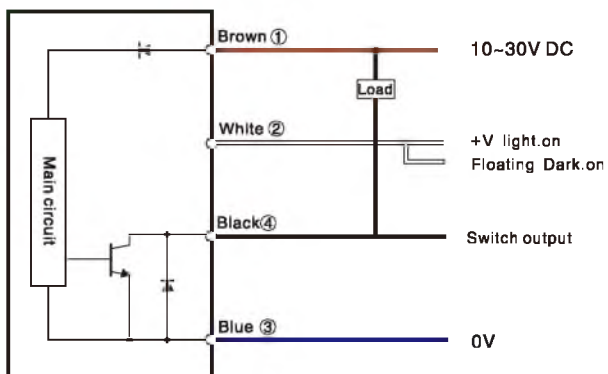
Dimensions

Unit: mm

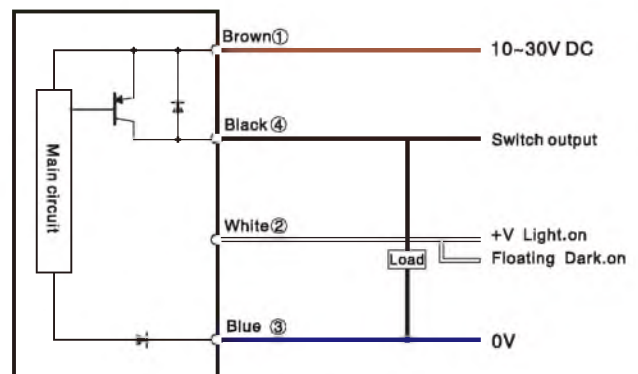


Circuit diagram

NPN Output



PNP Output



Cylindrical

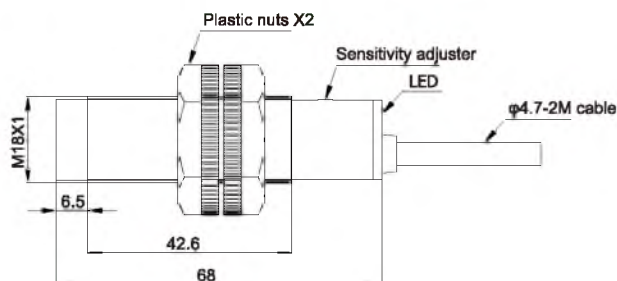
PXM18 Series



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

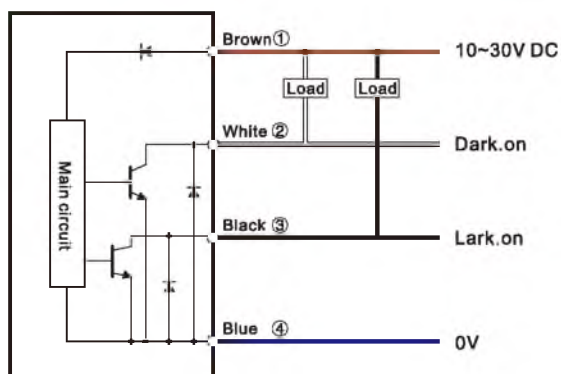
Dimensions



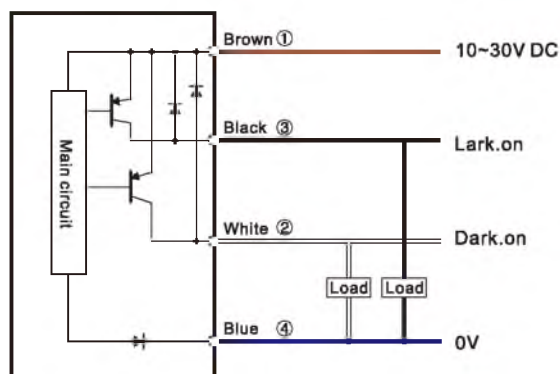
Unit: mm

Circuit diagram

NPN Output



PNP Output



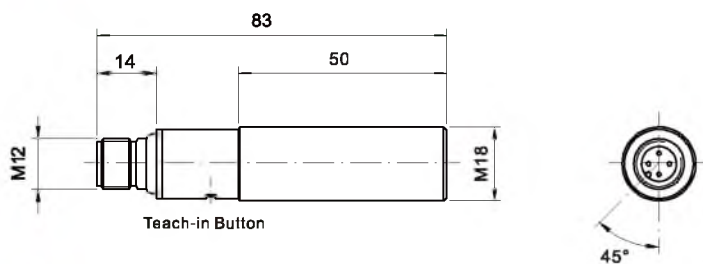
IP69K Type



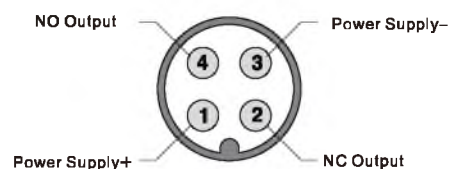
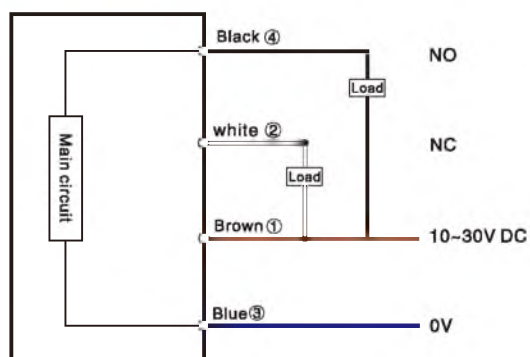
Appearance	
Sensing type	Disffuse Reflection
Sensing distance	400mm
Light source	IR 880 nm
Hysteresis	≤10%
Repeatability	5%
Tolerance	+15/-5% Sn
Operating voltage	10~30V DC
Ripple factor	≤10%
No load current	Max. 35mA (30V)
Load current	≤100mA
LED	Green: teach-in Yellow: Excess gain
Output voltage drop	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





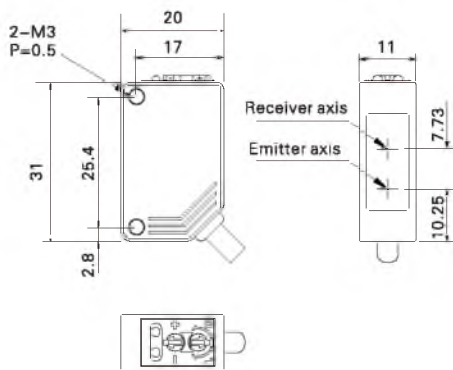
Economical Type

Appearance

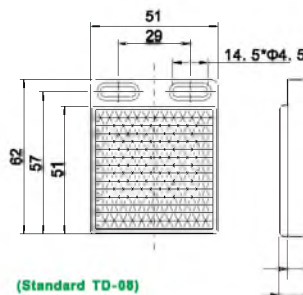
Sensing type	Diffuse reflection		Convergent reflective		Retro-reflection		
Sensing distance	10–300mm	5–1000mm	5–140mm	10–200mm	2m	3m	
Spot size	≈ φ 16mm / 300mm	≈ φ 50mm / 1000mm	≈ φ 9mm / 140mm	φ 10mm / 20cm	φ 50mm / 2m	φ 90mm / 3m	
Output type	NPN or PNP open collector, ≤100mA (30V DC)						
Switch 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

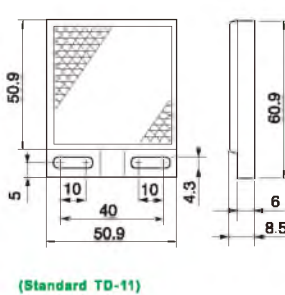
Unit: mm



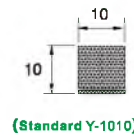
Reflector for PTE-R200



Reflector for PTE-R300

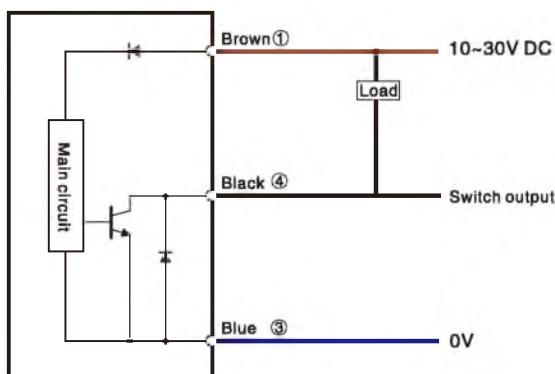


PTE-R20 Reflective Stickers

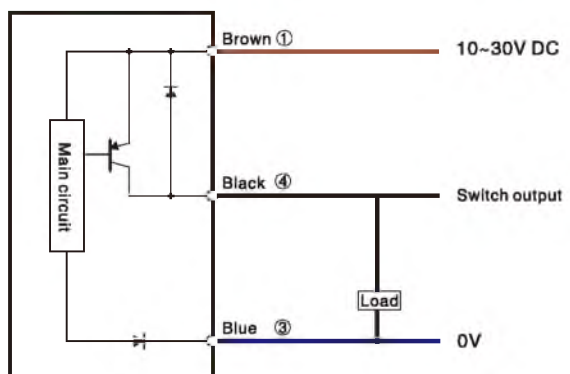


Circuit diagram

NPN Output



PNP Output



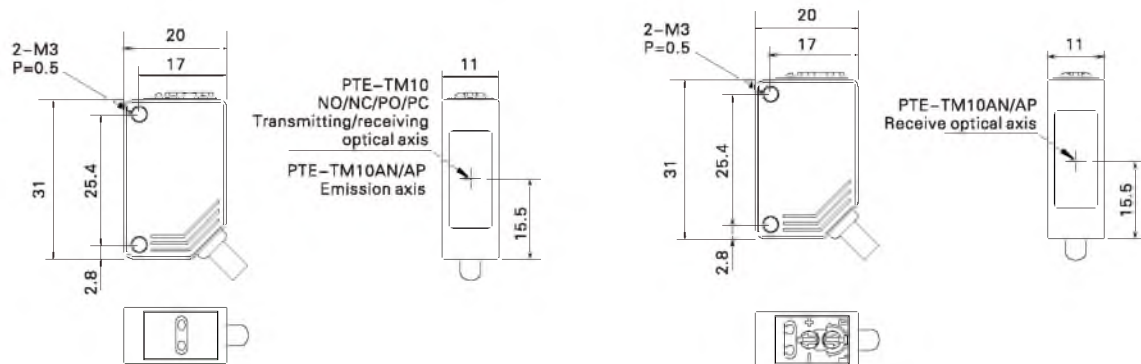


Economical Type

Appearance			
Sensing type	Thru-beam Reflection		
Sensing distance	10m		
Detected 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	33ms		
Sensitivity	Not adjustable		Single turn potentiometer
Light source	IR LED 623nm (modulated)		
Operating voltage	10~30V DC		
Current consumption	Emitter $\leq 20\text{mA}$; Receiver $\leq 20\text{mA}$		
Ambient illuminance	Sunlight $\leq 10,000\text{ Lux}$, Incandescent lamp $\leq 3,000\text{ Lux}$		
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		
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
	PNP	PTE-TM10PO	PTE-TM10PC
			PTE-TM10AN
			PTE-TM10AP

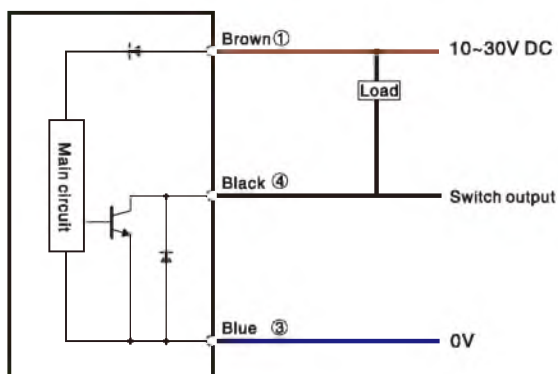
Dimensions

Unit: mm

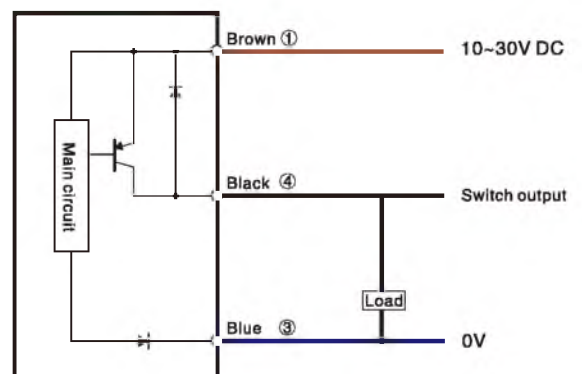


Circuit diagram

NPN Output



PNP Output





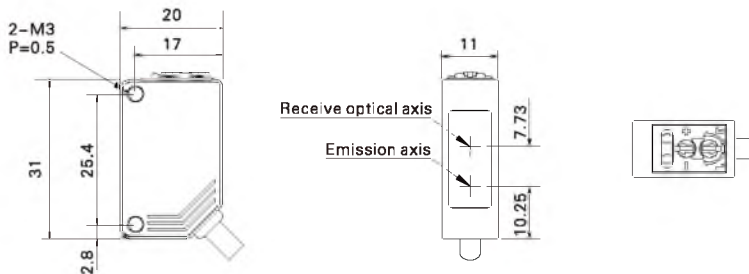
Wide Facula Type

Appearance

Sensing type	Disffuse refection		
Sensing distance	5-200mm	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 840nm (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-D10N
	PNP	PTEW-D20P	PTVW-D10P

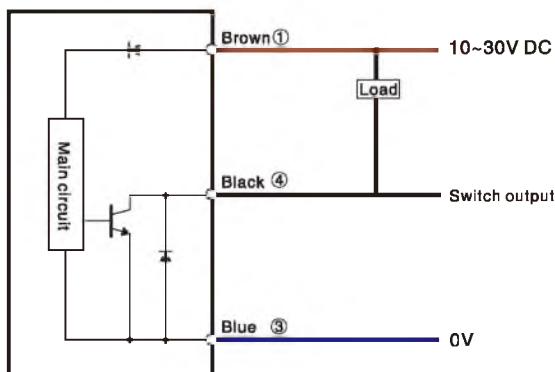
Dimensions

Unit: mm

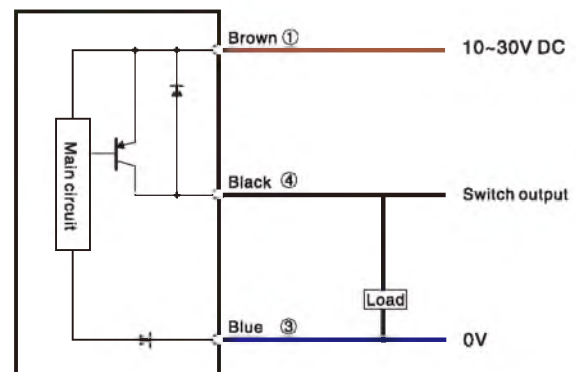


Circuit diagram

NPN Output



PNP Output



Anti-glare Type

PTL Series



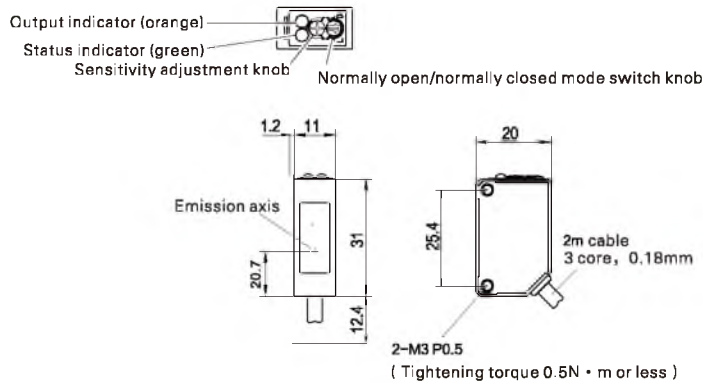
Anti-glare Type

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
	PNP	PTL-D10P
		PTL-D30N
		PTL-D30P

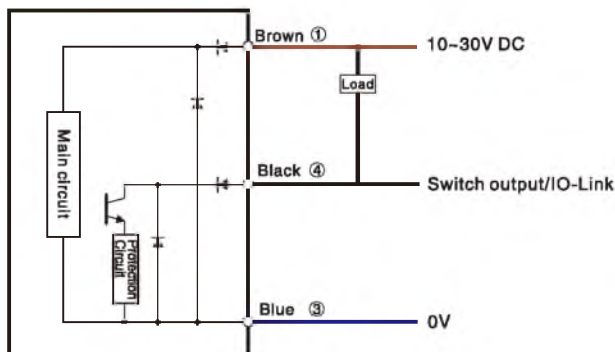
Dimensions

Unit: mm

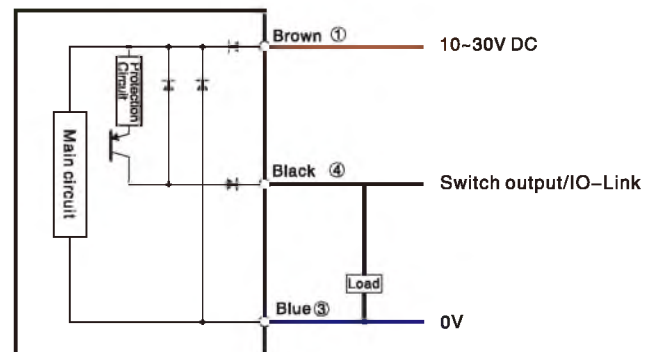


Circuit diagram

NPN Output



PNP Output



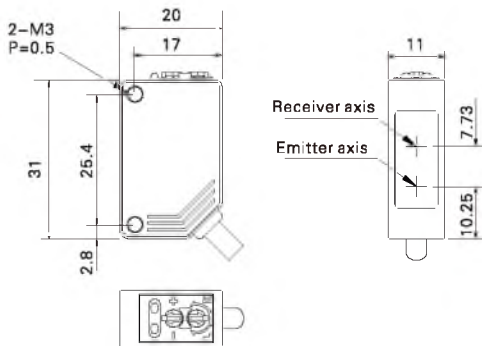


Appearance

Sensing type		Diffuse reflection		Convergent reflective	
Sensing distance		10~300mm		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		PTV-D70N	PTV-X09N
	PNP	PTV-D30P		PTV-D70P	PTV-X09P

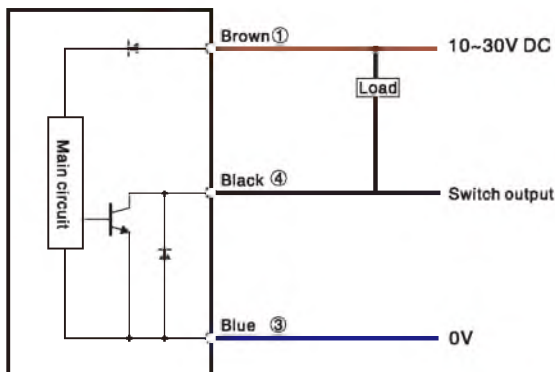
Dimensions

Unit: mm

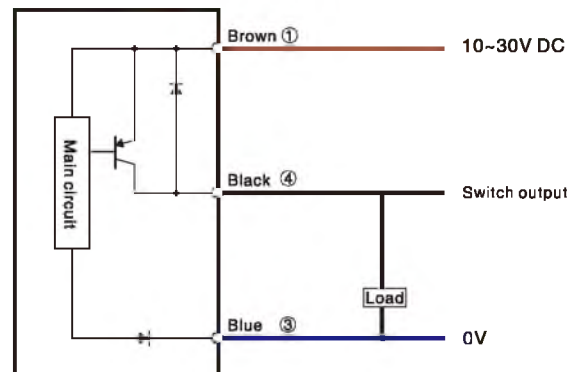


Circuit diagram

NPN Output



PNP Output



Square

PTV Series



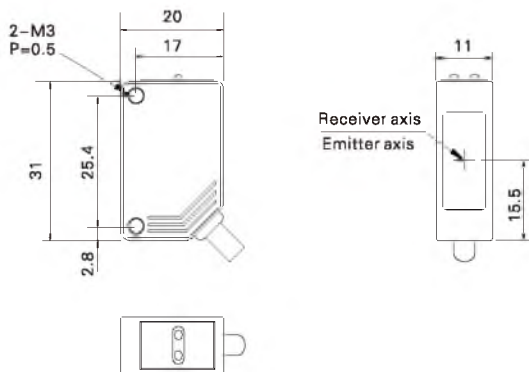
Appearance

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

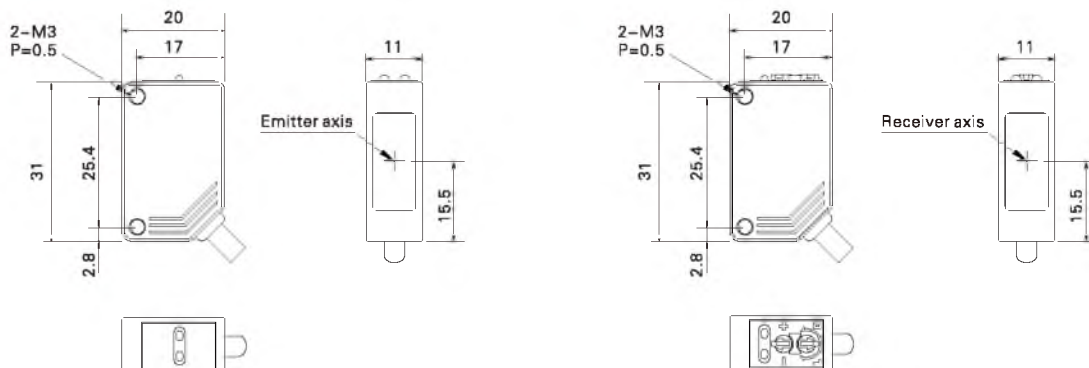
Dimensions

Unit: mm

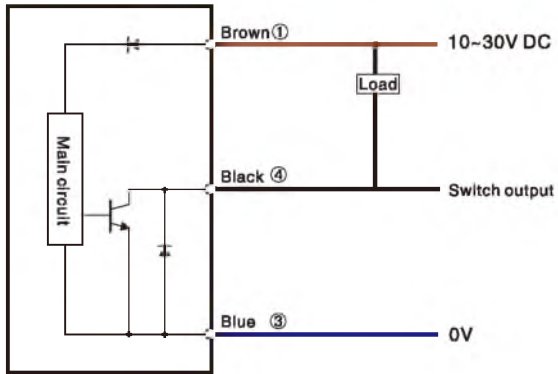
PTV-TM20NO/PO/NC/PC



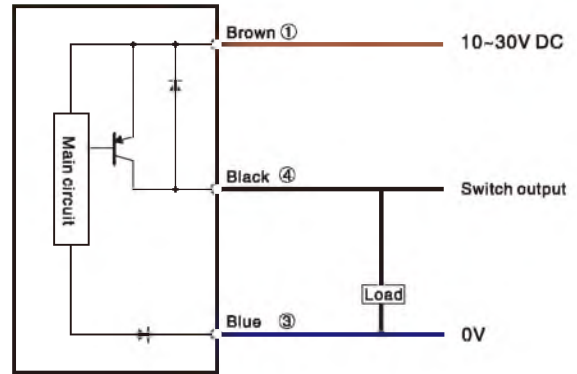
PTV-TM20AN/AP、PTV-T500N/P



NPN Output



PNP Output





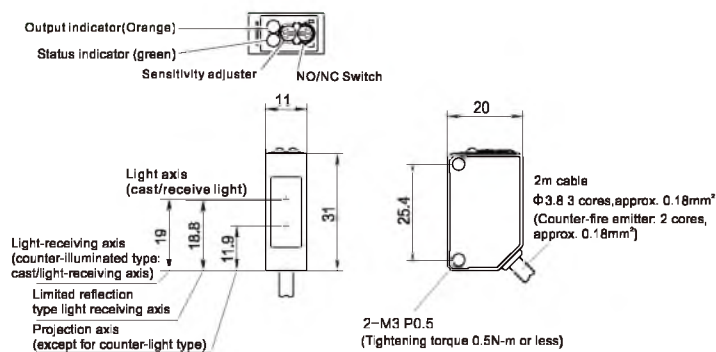
IO-Link

Appearance

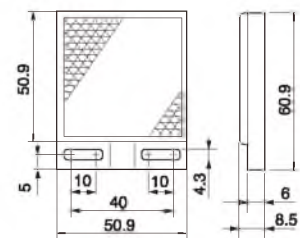
Sensing type		Diffuse reflection	Thru-beam reflection	Retro-reflection
Sensing distance		0~1m(white paper200X200mm)	0~25m	0.01~4m(with reflector)
Spot diameter		φ 75mm / 1m	φ 1800mm / 25m	φ 280mm / 4m
Output type		NPN/PNP Open-collector		
Switch type		L.on/D.on selectable		
Indicator		Input indicator: 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

Dimensions

Unit: mm

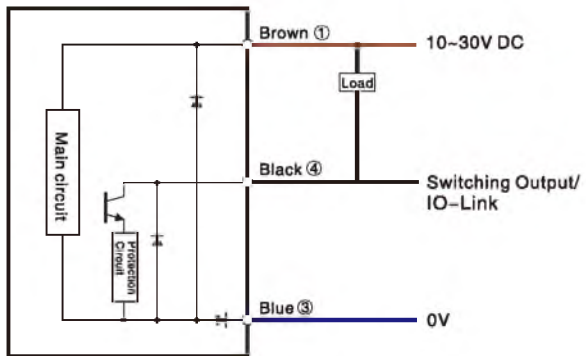


Reflector for PTZ-R400-C

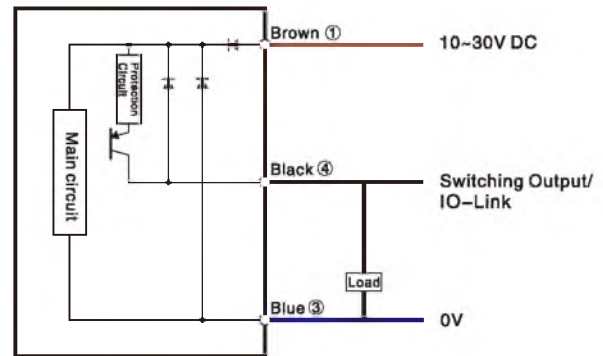


(Optional TD-11)

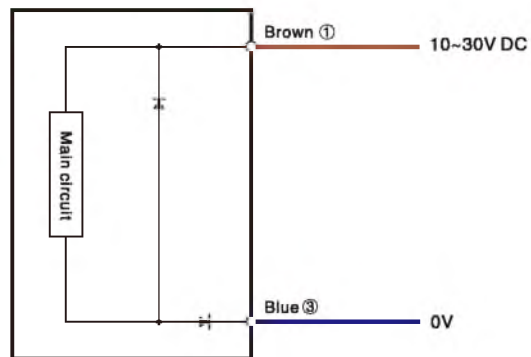
NPN Output



PNP Output



Thru-beam Emitter



Square

PTN Series

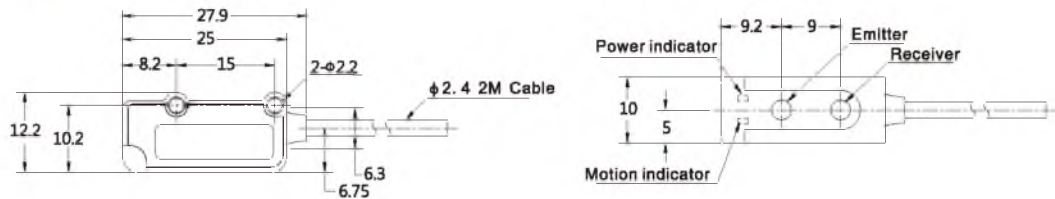


Appearance

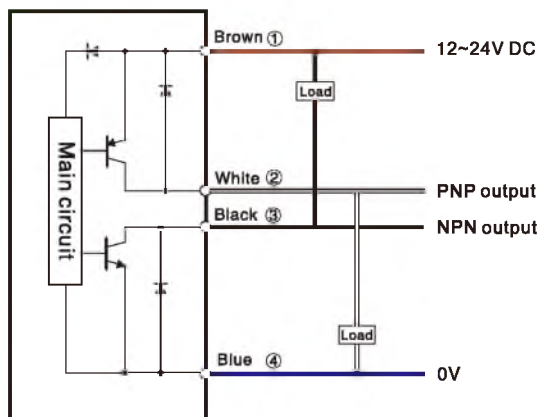
Sensing type	Diffuse reflection	Thru-beam
Sensing distance	5cm, White board 100*100mm(> 5cm)	50cm
Output type	NPN/PNP Open-collector	
Switch type	L.on	D.on
Response time	≤ 1 ms	
Light source	Infrared LED (940nm)	
Operating voltage	12~24V DC ± 10%	
Current consumption	≤ 20mA	≤ 30mA
Load current	≤ 100mA (24V DC)	
Circuit protection	Reverse polarity protection, short circuit protection	
Ambient temperature	-10°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	
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
	PNP	PTN-D05P
		PTN-T50N
		PTN-T50P

Dimensions

Unit: mm



Circuit diagram



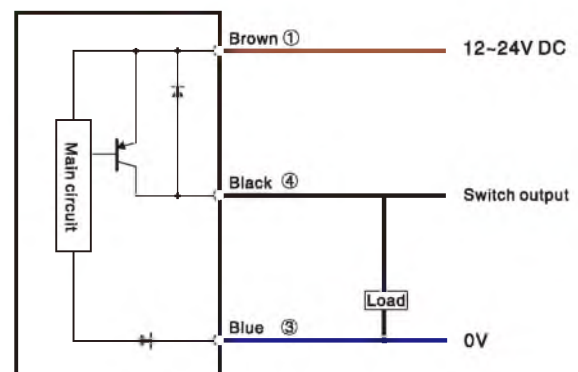


Dimensions

Unit: mm



PNP Output



TOF Type

PX Series



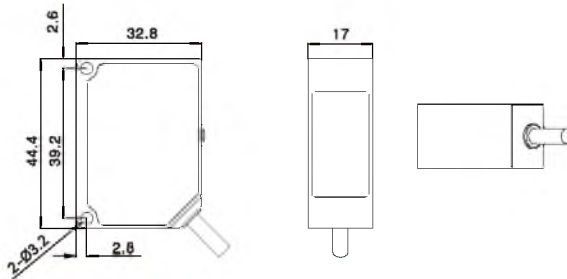
TOF Type

NEW!

Appearance		
Sensing type	TOF (Time of flight) 1 point teaching	
Sensing distance	100cm	300cm
Setting range	5 ~ 100cm (White paper 200 x 200mm)	20 ~ 300cm (White paper 200 x 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 $\pm$ 10%	
Residual voltage	<1.5 V (load current <125mA)	
Current consumption	$\leq$ 30mA	$\leq$ 25mA
Load current	$\leq$ 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	$\pm$ 1000V 50/60Hz 60s	
Static electricity	$\pm$ 4000V(Contact discharge)	
Group pulse	$\pm$ 2000V/5kHz/100kHz	
Anti-vibration	10~50Hz, amplitude 0.5mm; 2 hours each in X, Y, Z directions	
Ambient light	Incandescent light $\leq$ 5,000Lux	
Material	Aluminum alloy	
Connection	ϕ =4mm, 2m 3 wire cable	
Model No.	NPN PX-F09N	PX-F30N
	PNP PX-F09P	PX-F30P

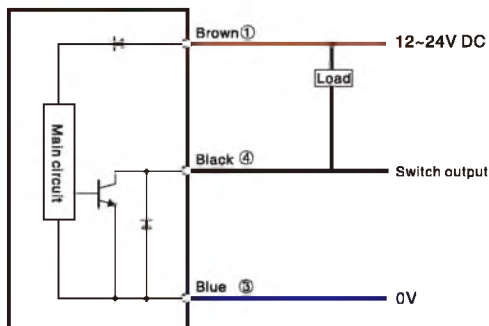
Dimensions

Unit: mm

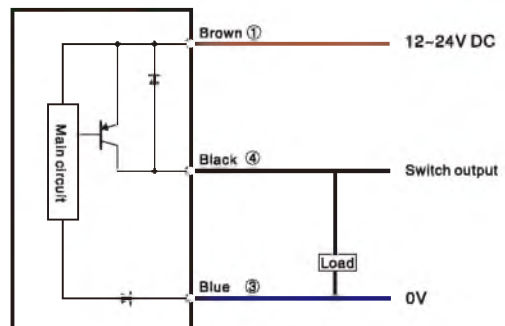


Circuit diagram

NPN Output



PNP Output



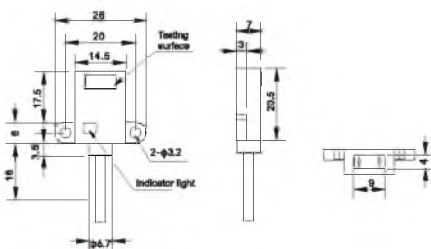
MP2 Series Pre-wired Type



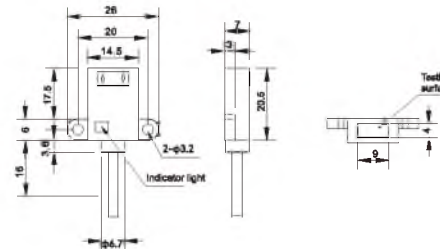
Appearance				
Detection surface	Front	Head		
Sensing type	Diffuse reflection			
Sensing distance	2.5~8mm(black object 3mm)			
Hysteresis	<20%			
Light source	Infrared LED(880nm)			
Response time	<1ms			
Operating voltage	12~24V DC			
Voltage drop	<2.5V (load current is 100mA)			
Residual voltage	Below 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	> 50M Ω/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□-W□



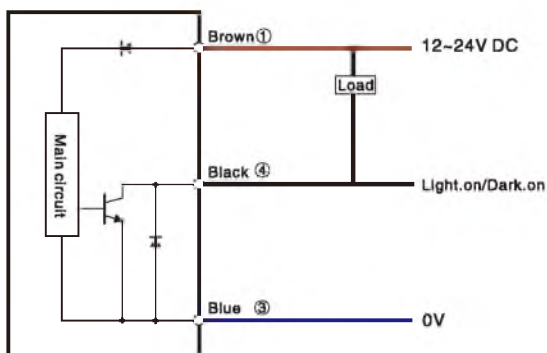
MP2-412□-W□



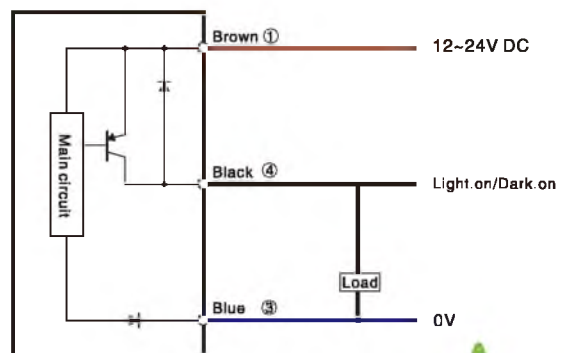
Unit: mm

Circuit diagram

NPN Output



PNP Output



Flat Type

MP2 Series Connector Type



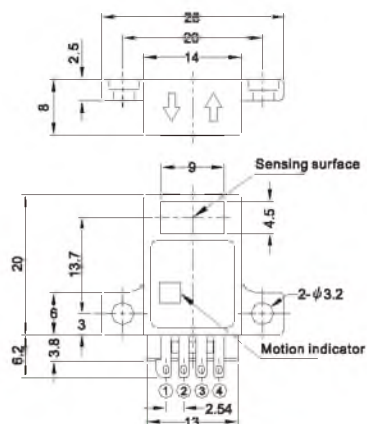
Appearance

Detection surface	Front	Head
Sensing type	Diffuse reflection	
Sensing distance	40mm (50 x 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°C~+55°C, Storage: -25°C~+80°C (No freezing)	
Ambient humidity	Operation: 45%~+85%RH, Storage: 35%~90%RH (No condensation)	
Insulation resistance	> 20M Ω /500V DC	
Ambient illuminance	Incandescent lamp $\leq$ 3000Lux, Sunlight $\leq$ 10000Lux	
Degree of protection	IP50	
Material	PC	
Connection method	connector	
Accessories	Mounting screws	
Model No.	NPN	MP2-410N-E (HOT) MP2-412N-E
	PNP	MP2-410P-E MP2-412P-E

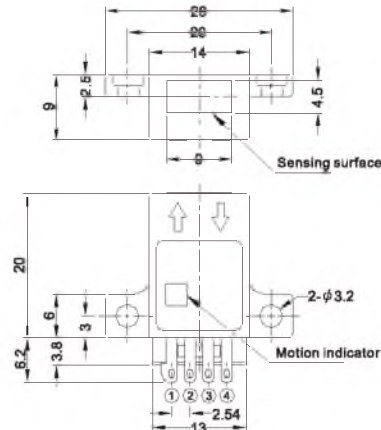
Dimensions

Unit: mm

MP2-410N(P)-E



MP2-412N(P)-E

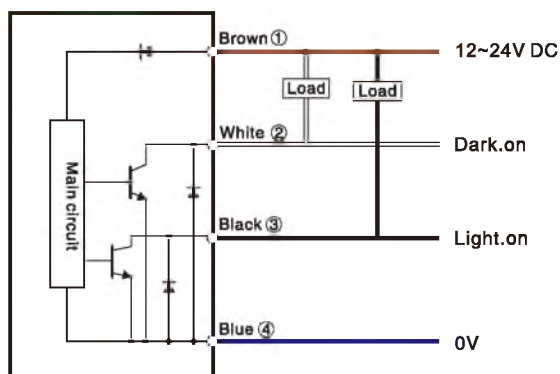


- ①: $\odot$ Brown
- ②: $\odot$ White
- ③: $\odot$ Black
- ④: $\odot$ Blue

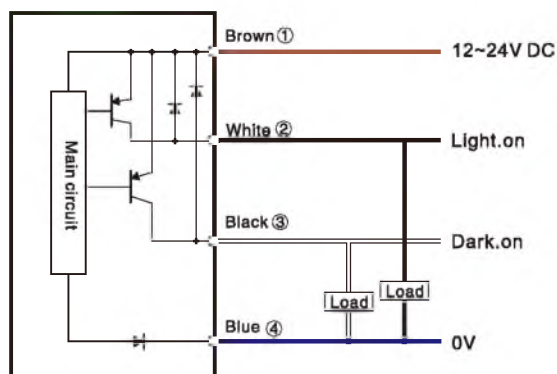
Connection cable: ME-1007 (To O-11)

Circuit diagram

NPN Output



PNP Output





NEW



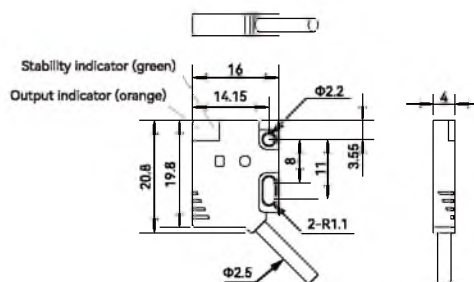
NEW

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

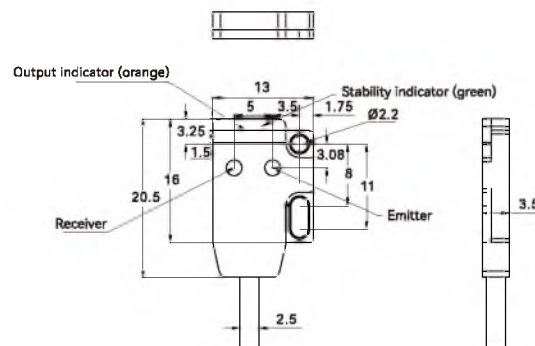
Dimensions

Unit: mm

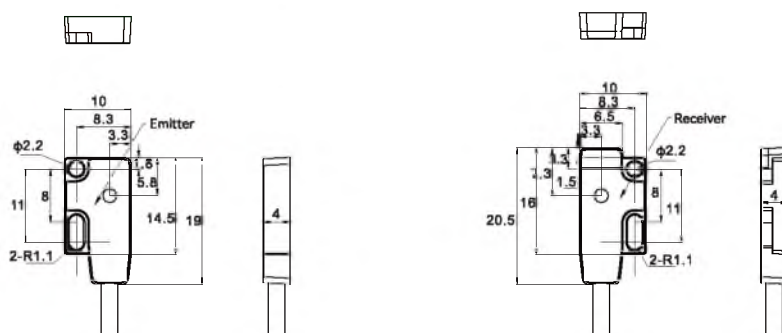
ESL-15



ESL-25



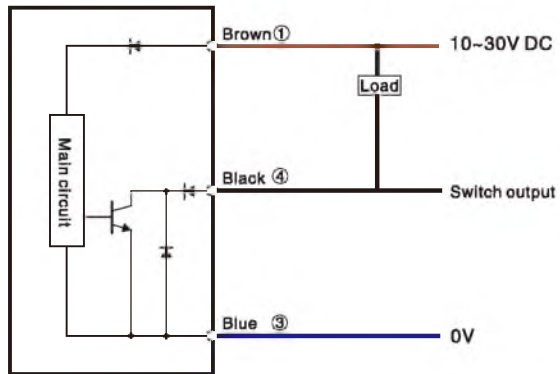
ESL-T50/TM01



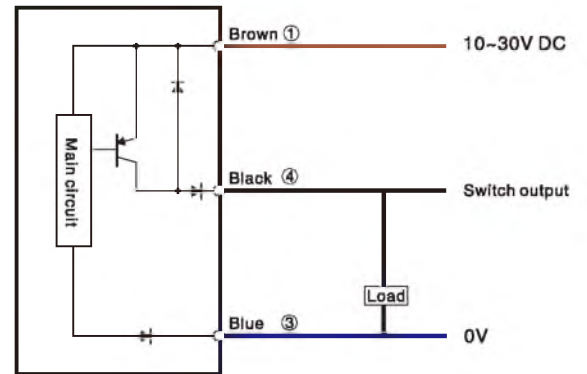
in Type

cuit diagram

N Output



PNP Output

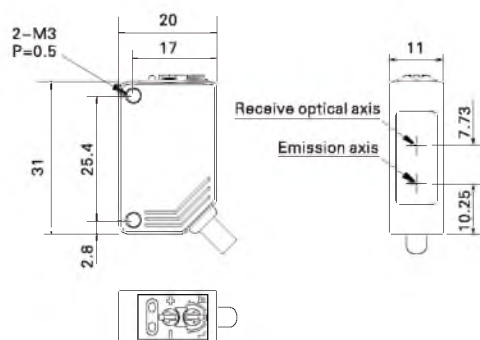


Appearance				
Sensing type	Diffuse refection-BGS			
Sensing distance	5 ~ 100mm(White non-glossy paper)	5mm ~ 150mm(White non-glossy paper)	0 ~ 300mm (White non-glossy paper)	
Setting distance	30 ~ 100mm	40 ~ 150mm	40 ~ 300mm	
Spot size	≈ Ø1.5mm/10cm	≈ Ø9mm/15cm	≈ Ø16mm/30cm	
Hysteresis	≦5%	≦20%	≦5%	
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

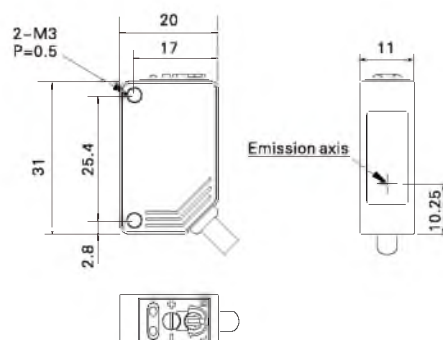
Dimensions

Unit: mm

ESB-S10/15N(P)

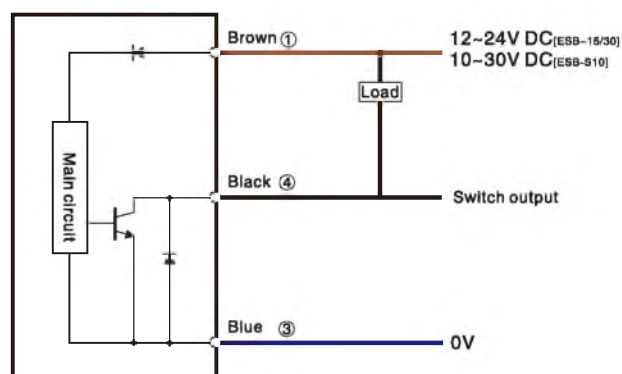


ESB-30N(P)

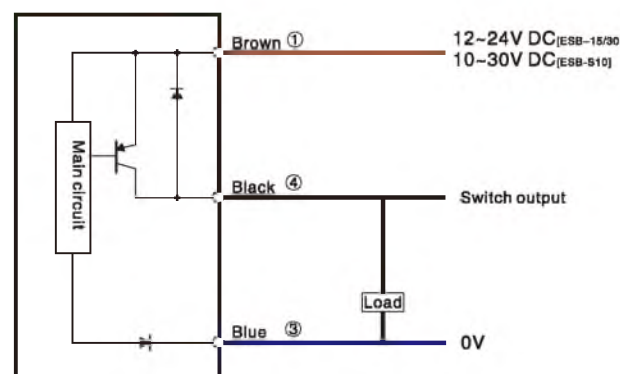


ESB-S10/15/30N(P)

NPN Output



PNP Output



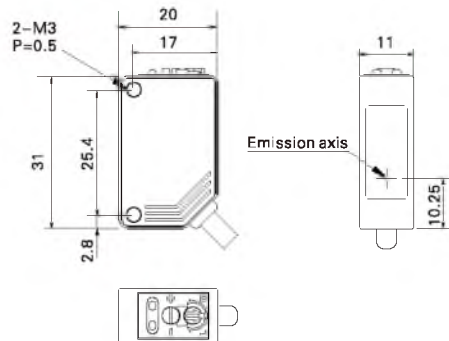


NEW!

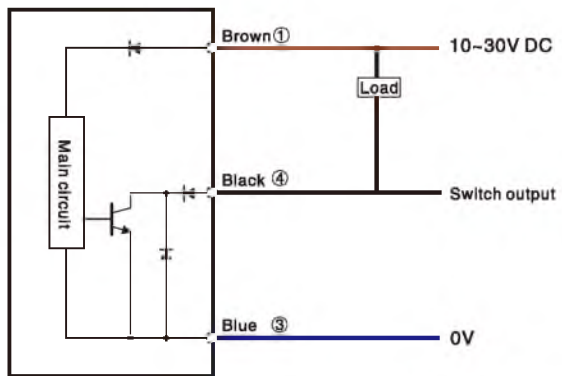
Sensing type	Diffuse reflective – Background suppression	
Sensing distance	10 ~ 300mm	10 ~ 200mm
Setting distance	40 ~ 300mm	40 ~ 200mm
Spot size	—	≈ Ø12mm/200mm
Hysteresis	≤ 5%	
Output	NPN/PNP Open – collector	
Switch type	L.on /D.on switchable	
Indicators	Power: green; motion indicator: red	
Response time	≤ 2ms	
Sensitivity 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
	PNP	ESB-V30P
		ESB-C20N
		ESB-C20P

Dimensions

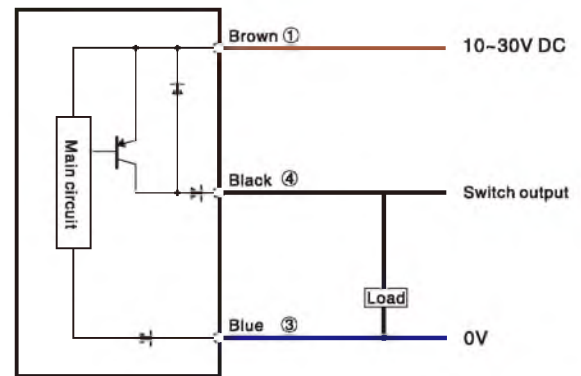
Unit: mm



NPN Output

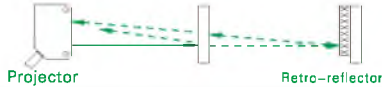


PNP Output



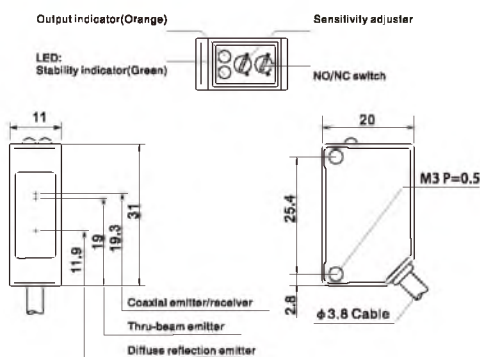
Transparent Detection

EST Series

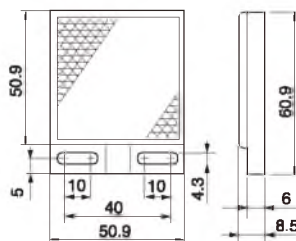
Appearance	 	
Sensing type	Retro-reflection	
Spot size	General Type	Coaxial beam
Sensing distance	0.01~2m	0~2m
Spot size	φ 300mm/200cm	φ 60mm/200cm
Output type	NPN/PNP Open-collector, ≤100mA/30V DC	
Switch type	Selectable L.on/D.on	
Indicator	Work indicator: Green; Output indicator: Orange	Output indicator: 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℃~+55℃, 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 PNP	EST-200N EST-200P
		EST-X200N (HOT) EST-X200P

Dimensions

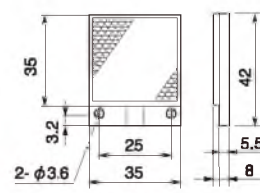
Unit: mm



EST-200 Reflector:



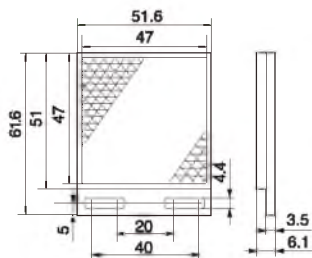
(Standard TD-11)



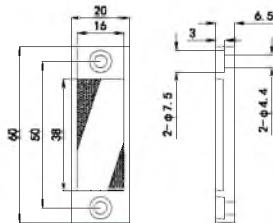
(Optional TD-12)

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

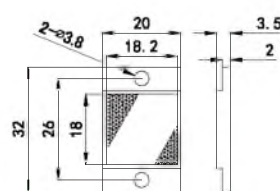
EST-X200 Reflector:



(Standard TD-13)

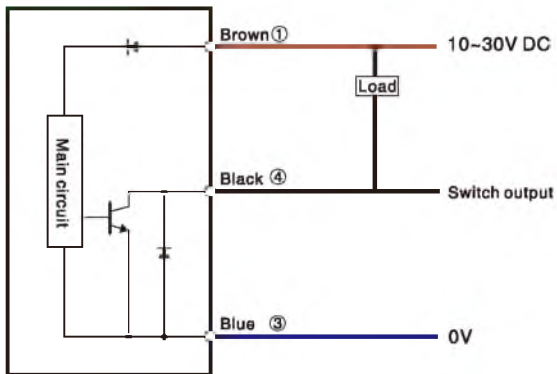


(Optional TD-14)

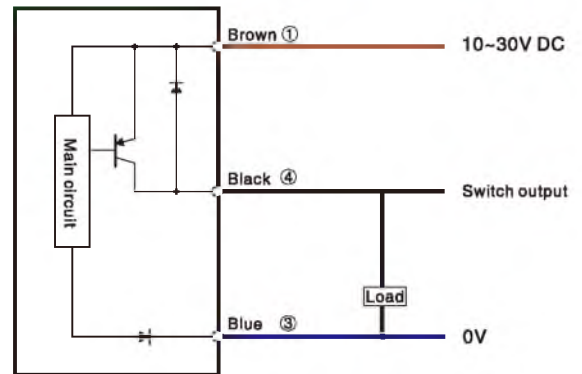


(Optional TD-15)

NPN Output



PNP Output

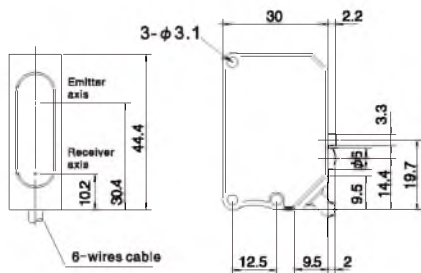


ESC Series

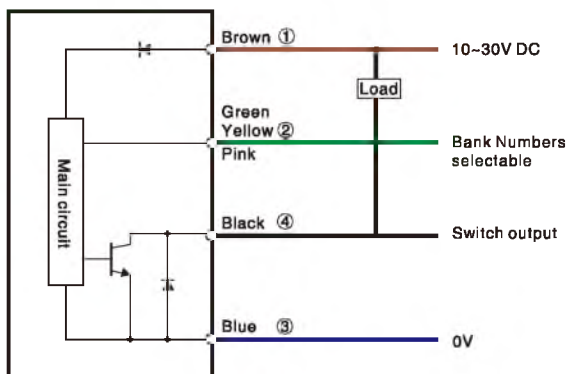


Model No. NPN
PNP

Unit: mm



NPN Output



The diagram illustrates the wiring for the 10-30V DC power supply. The 'Main circuit' block is connected to four wires: Brown ① (10-30V DC), Black ④ (Switch output), Green ② (Bank Numbers selectable), and Blue ③ (0V). A 'Load' is connected between the Green ② and Blue ③ wires. The circuit includes a MOSFET and a diode.

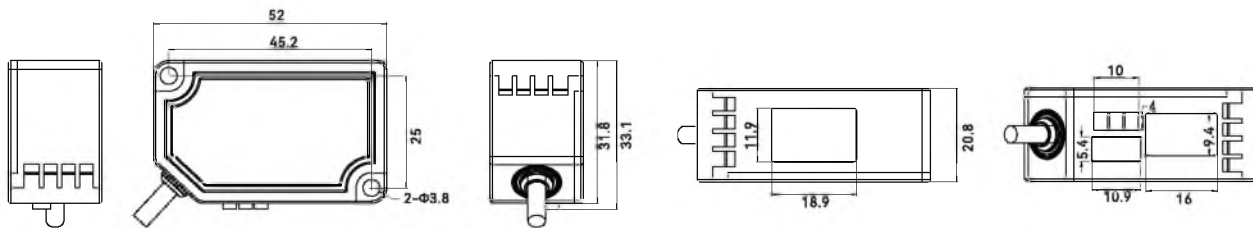


NEW!

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℃, no freezing
Storage temperature	-20℃~70℃
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

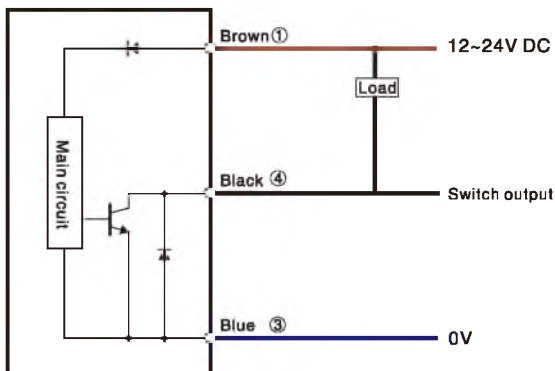
Dimensions

Unit: mm

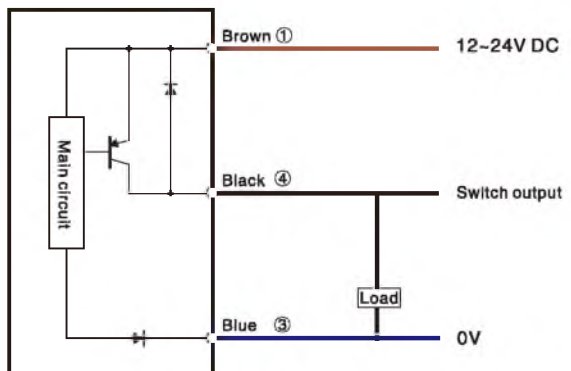


Circuit diagram

NPN Output



PNP Output



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Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: auh@nt-rt.ru || сайт: <https://akusense.nt-rt.ru>