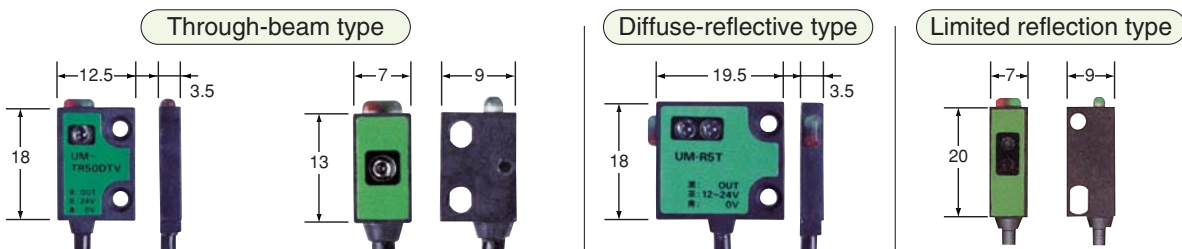




- Ultra miniature size
(extra thin, extra compact)
- Long distance detecting up to 1 m
- Ideal for integrating into small devices
 - Thinness of 3.5 mm achieved with embedded amplifier type!
Extremely small volume: less than 0.8 cm³
Volume fraction: about 1/5 (to conventional Takex product)
 - Low cost
 - Red LED light source allows checking of emitted light spot
 - Equipped with stability and operation indicators
 - Wide range of applications from small-scale FA to system wide FA

Type

Detection method	Detecting distance	Model	In-line sensitivity adjustment volume	Operation mode	Output mode
Through-beam type 	150mm	UM-T15DT	—	Dark-ON (Contact Takex for Light-ON type.)	NPN Open collector
		UM-T15DTV	Provided		
	500mm	UM-T50DT	—		
		UM-T50DTV	Provided		
		UM-T50DS	—		
	1m	UM-T50DSV	Provided		
		UM-T100DT	—		
UM-T100DS	—				
Polarization reflector type 	2~30mm	UM-R3T	—	Light-ON (Contact Takex for Dark-ON type.)	
		UM-R3TV	Provided		
	2~50mm	UM-R5T	—		
		UM-R5TV	Provided		
Diffuse-reflective type 	5~30mm	UM-Z3SV	Provided		



Rating/Performance/Specification

Type	UM-T15DT	UM-T15DTV	UM-T50DT	UM-T50DTV	UM-T50DS	UM-R3T	UM-R3TV	UM-R5T	UM-R5TV	UM-Z3SV	
Detection method	Through-beam type					Diffuse-reflective type				Limited reflection type	
Detecting distance	150mm		500mm (*1m)			2 - 30mm *1		2 - 50mm*1		5 - 30mm *1	
Detection object	φ 3mm (Min.) Opaque					—————					
Power supply	24V DC ±10% / Ripple 10% max. *2					12 - 24V DC ±10% / Ripple 10% max.					
Current consumption	15mA max.					20mA max.	27mA max.	20mA max.	27mA max.	27mA max.	
	Transmitter										
Receiver	15mA max.	22mA max.	15mA max.	22mA max.	15mA max.						
Output mode	NPN open collector Rating: sink current 80 mA (30 VDC) max. (PNP output type also available.)										
Operation mode	Dark-ON					Light-ON					
Response time	0.5ms max.										
Operating angle	25°					—————					
Hysteresis	—————					Up to 10% of detecting distance					
Light source (light wavelength)	Red LED (660nm) (*Infrared LED)										
Indicator	Operation indicator (red LED) — For through-beam type, provided on receiver. Stability indicator (green LED)										
Volume	————	In-line sensitivity adjustment *3	————	In-line sensitivity adjustment *3	———— *4	————	In-line sensitivity adjustment *3	————	In-line sensitivity adjustment *3	In-line sensitivity adjustment *3	
Material	Liquid crystalline polyester (filler: polypropylene)										
	Case	Acrylic resin					ABS resin	Acrylic resin			ABS resin
Lens	Acrylic resin										
Connection	Permanently attached cord (outer dimension: dia. 2.8)										
Mass	Transmitter 0.15 sq. 2 core 2 m length (gray)					0.15 sq. 3 core 2 m length (black)					
	Receiver 0.15 sq. 3 core 2 m length (black)										
Notes	Transmitter	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 40g
	Receiver	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 40g
*1 Standard detection object: 50x 50 mm white drawing paper *2 12 VDC type also available. *3 Length of cord between sensor and in-line sensitivity adjustment volume: 30 cm (fixed) *4 Model with in-line sensitivity adjustment volume available											

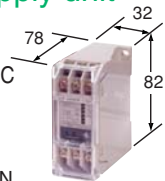
*Models with detecting distance of 1 m are also available (infrared LED used as light source).
For model numbers, see "Type."

Environmental Specification

Ambient light	3,000 lx max.
Ambient temperature	-25 - +55 -C (non-freezing)
Ambient humidity	35-85%RH (non-condensing)
Protective structure	IP64
Vibration	10 - 55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction

Applicable power supply unit

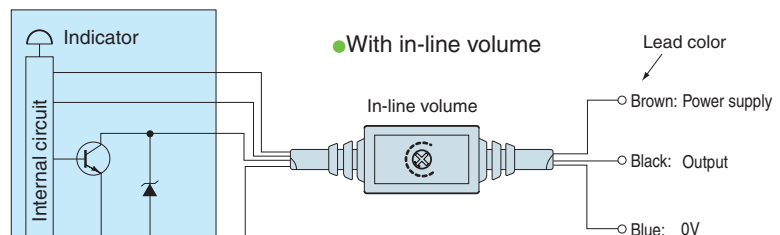
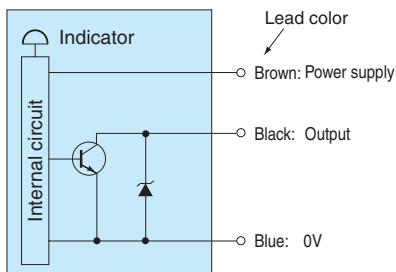
PS series
High capacity of 200 mA at 12 VDC



(General-purpose type) PS3N
PS3N-SR
(Multifunctional type) PS3F
PS3F-SR

Input/Output Circuit and Connection

(Shows receiver of through-beam type as typical example. Power supply for reflective type: 12-24 VDC.)

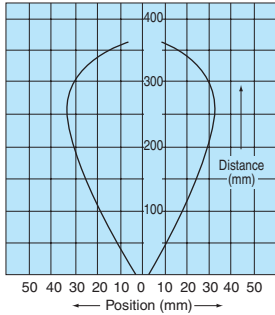


*The transmitter of the through-beam type is provided with power supply lines (brown: 24 VDC; blue: 0 V) only.

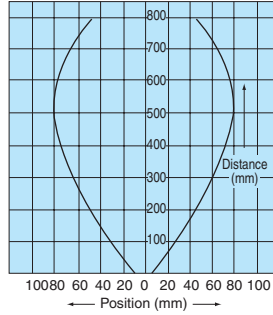
Characteristics (Typical Example)

Directional characteristics

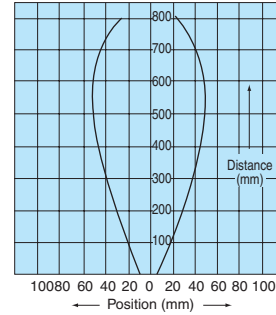
UM-T15DT · UM-T15DTV



UM-T50DT · UM-T50DTV

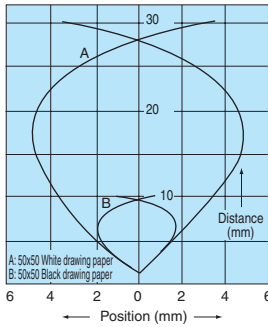


UM-T50DS

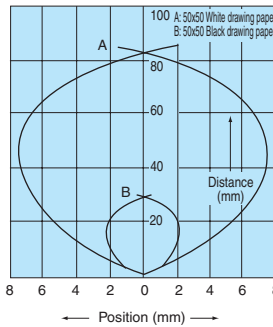


Activation area characteristics

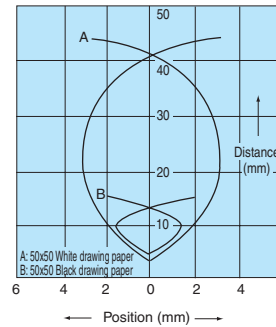
UM-R3T · UM-R3TV



UM-R5T · UM-R5TV

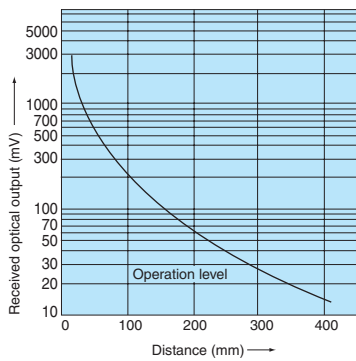


UM-Z3SV

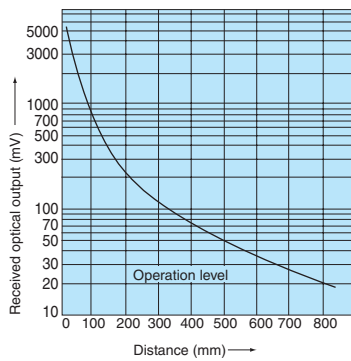


Distance-area characteristics

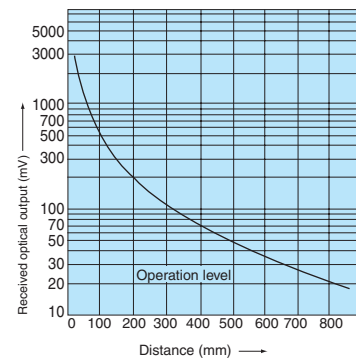
UM-T15DT · UM-T15DTV



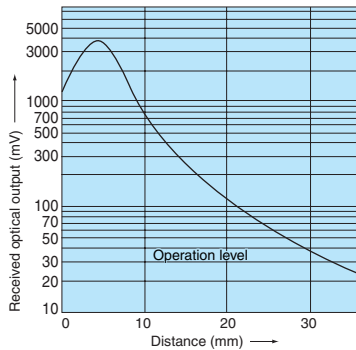
UM-T50DT · UM-T50DTV



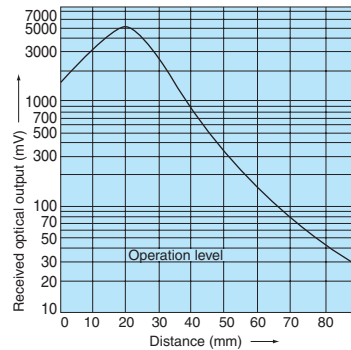
UM-T50DS



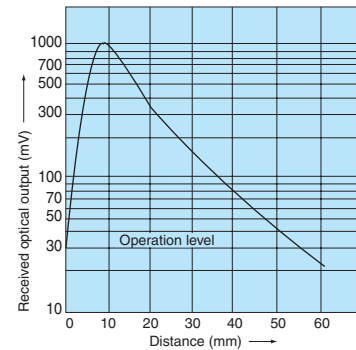
UM-R3T · UM-R3TV



UM-R5T · UM-R5TV



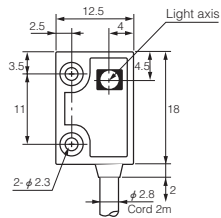
UM-Z3SV



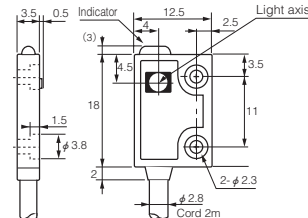
Dimensions (in mm)

UM-T15DT
UM-T15DTV(*1)

CAD Transmitter



Receiver

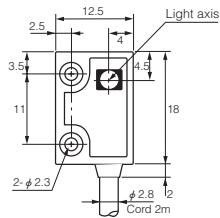


(The profile, which is the same as the receiver except that indicator is omitted.)

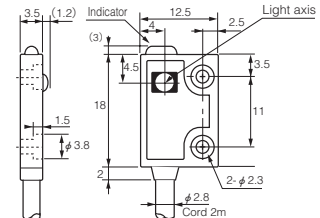
M2 x 10 mm screws, nuts, internal toothed washers provided.

UM-T50DT•UM-T100DT
UM-T50DTV(*1)

CAD Transmitter



Receiver

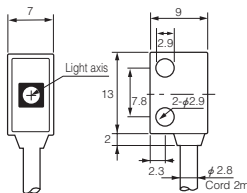


(The profile, which is the same as the receiver except that it has no indicator, is omitted.)

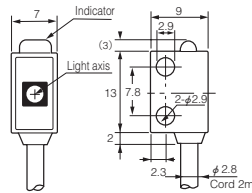
M2 x 10 mm screws, nuts, internal toothed washers provided.

UM-T50DS
UM-T100DS

CAD Transmitter



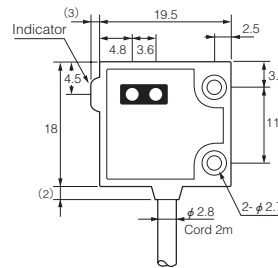
Receiver



M2.6 x 12 mm screws, nuts, internal toothed washers provided.

UM-R3T
UM-R3TV(*1)

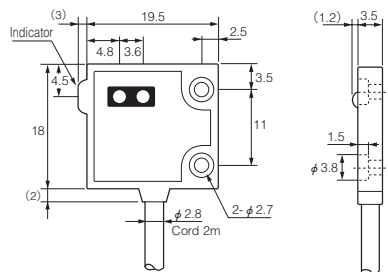
CAD



M2 x 10 mm screws, nuts, internal toothed washers provided.

UM-R5T
UM-R5TV(*1)

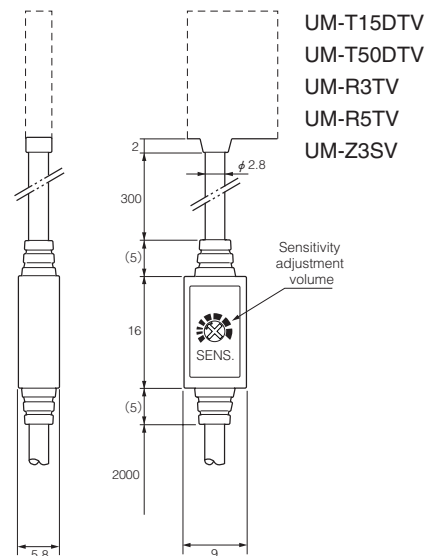
CAD



M2 x 10 mm screws, nuts, internal toothed washers provided.

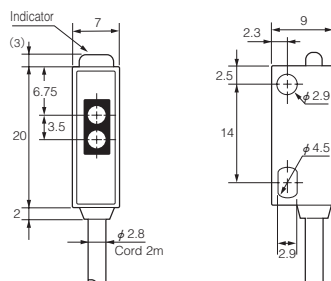
(*1) Models identified by "V" at the end of the model number are equipped with a sensitivity adjustment volume. For through-beam type, the volume is provided in the receiver cord.

CAD



UM-Z3SV(※1)

CAD



M2.6 x 12 mm screws, nuts, internal toothed washers provided.

• Directly screw onto the surface for mounting. The tightening torque should not exceed 0.3 N·m. Mounting brackets are available as optional parts.



- Slim slide-on style sensor
- Basic function model for applications ranging from flush-mounting to small conveyor lines

- In-line sensitivity adjustment

<Sample application> detection of translucent objects

Sensitivity adjustment allows detection of objects even if they do not completely block light.

<Sample application> detection of small objects

Small object that blocks light axis but cannot be detected due to light going around it may be detected by adjusting sensitivity.

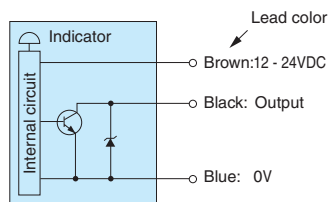
(Note) Be sure to test the operation before use.

Type

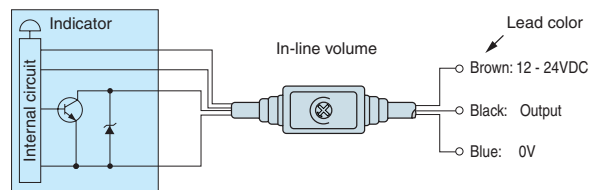
Detection method	Detecting distance	Model	In-line sensitivity adjustment volume	Operation mode	Output mode
 Through-beam type	 500mm	UM-T50DNS	—	Dark-ON	NPN Open collector
		UM-T50DNSV	Provided		
		UM-T50NS	—	Light-ON	
		UM-T50NSV	Provided		

Input/Output Circuit and Connection

Model: UM-TR50DNS
UM-TR50NS



Model: UM-TR50DNSV
UM-TR50NSV
With in-line sensitivity adjustment volume



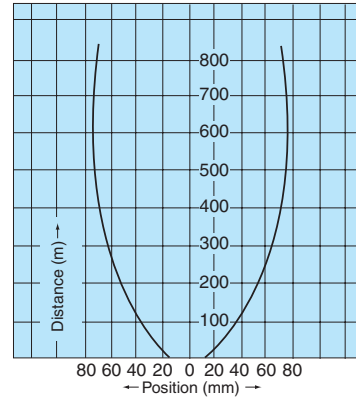
The transmitter of the through-beam type is provided with power supply lines (brown: 12~24 VDC; blue: 0 V) only.

Rating/Performance/Specification

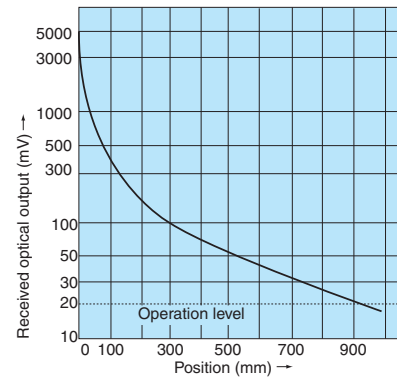
		UM-T50DNS	UM-T50DNSV	UM-T50NS	UM-T50NSV	
Rating/performance	Type	UM-T50DNS				
	Detection method	Through-beam type				
	Detecting distance	500mm				
	Detection object	φ 3mm (Min.) Opaque				
	Power supply	12 - 24V DC ±10% / Ripple 10% max.				
	Current consumption	Transmitter	14mA max.			
		Receiver	14mA max.	22mA max.	14mA max.	22mA max.
	Output mode	NPN open collector Rating: sink current 100 mA (30 VDC) max.				
	Operation mode	Dark-ON		Light-ON		
	Response time	0.5ms max.				
	Operating angle	13°				
Hysteresis	—					
Specification	Light source (light wavelength)	Red LED (660nm)				
	Indicator	Operation indicator (red LED)		Stability indicator (green LED)		
	Volume	—	In-line sensitivity adjustment *	—	In-line sensitivity adjustment *	
	Material	Case	Polybutylene terephthalate			
		Lens	Polyarylate			
	Connection	Permanently attached cord (outer dimension: dia. 2.8) Transmitter 0.15 sq. 2 core 2 m length (gray) Receiver 0.15 sq. 3 core 2 m length (black)				
	Mass	Transmitter	Approx. 30g			
		Receiver	Approx. 35g	Approx. 40g	Approx. 35g	Approx. 40g
	Notes	* Length of cord between sensor and in-line sensitivity adjustment: 300 mm (fixed)				
	Environment-specification	Ambient light	3,000 lx max.			
Ambient temperature		-25 - +55 -C (non-freezing)				
Ambient humidity		35 - 85%RH (non-condensing)				
Protective structure		IP64				
Vibration	10 - 55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction					

Characteristics (Typical Example)

Directional characteristics



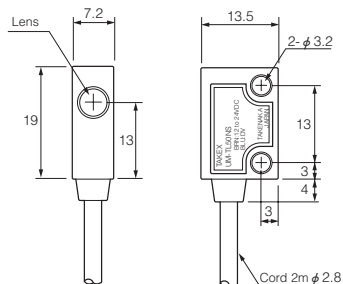
Distance-area characteristics



Dimensions (in mm)

Transmitter

CAD

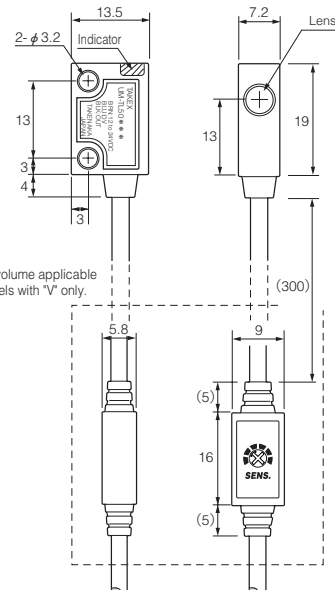


- No mounting bracket is provided.
- For mounting, use the screws provided.
The tightening torque not exceed 0.3 N·m.

(M3 x 15 mm screws, nuts, two 3-piece sems screws provided)

Receiver

CAD



*In-line volume applicable to models with "V" only.