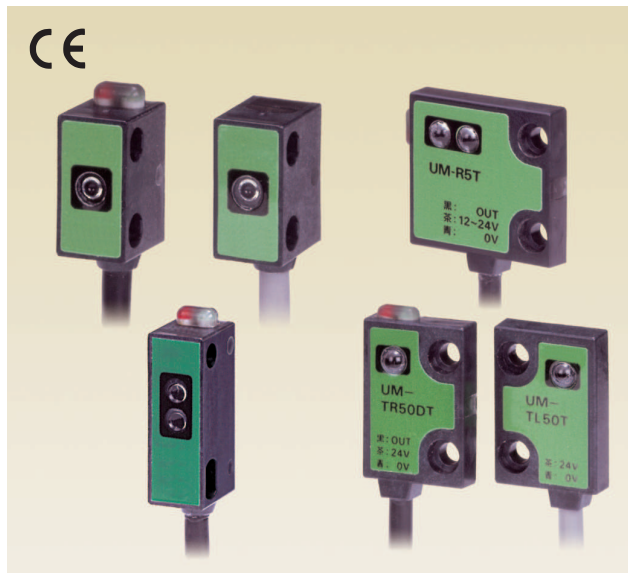


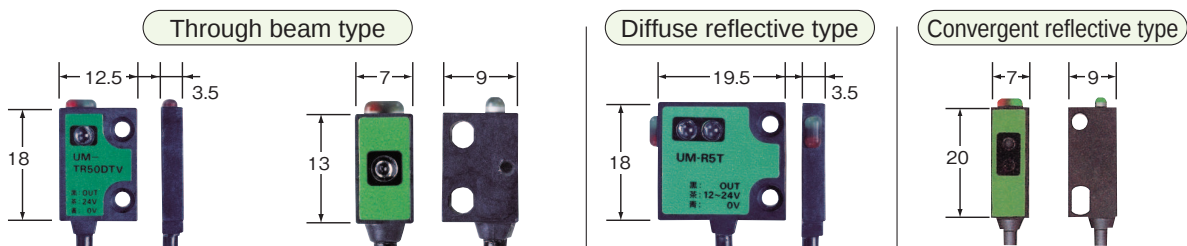


- Ultra miniature size
(extra thin, extra compact)
- Long distance detecting up to 1 m
- Ideal for integrating into small devices
 - Thinness of 3.5 mm achieved with embedded amplifier type!
 - Extremely small volume: less than 0.8 cm³
 - Volume fraction: about 1/5 (to conventional Takex product)
 - 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
		NPN output	PNP output			
Through beam ↑	150 mm	UM-T15T	—	—	Light-ON	Open collector output
		UM-T15DT	UM-T15DTP		Dark-ON	
		UM-T15TV	—		Light-ON	
		UM-T15DTV	UM-T15DTV		Dark-ON	
	500 mm	UM-T50T	—	—	Light-ON	
		UM-T50DT	UM-T50DTP		Dark-ON	
		UM-T50TV	—		Light-ON	
		UM-T50DTV	UM-T50DTV		Dark-ON	
		UM-T50S	UM-T50SP	—	Light-ON	
		UM-T50DS	UM-T50DSP		Dark-ON	
		UM-T50SV	UM-T50SVP		Light-ON	
		UM-T50DSV	UM-T50DSVP		Dark-ON	
	1m	UM-T100T	UM-T100TP	—	Light-ON	
		UM-T100DT	UM-T100DTP		Dark-ON	
		UM-T100S	—		Light-ON	
		UM-T100DS	—		Dark-ON	
Diffuse reflective ↑↓	2-30 mm	UM-R3T	UM-R3TP	—	Light-ON	Open collector output
		UM-R3DT	—		Dark-ON	
		UM-R3TV	UM-R3TVP		Light-ON	
		UM-R3DTV	—		Dark-ON	
	2-50 mm	UM-R5T	—	—	Light-ON	
		UM-R5DT	—		Dark-ON	
		UM-R5TV	UM-R5TVP		Light-ON	
		UM-R5DTV	—		Dark-ON	
Convergent reflective ▽	5-30 mm	UM-Z3SV	UM-Z3SVP	Provided	Light-ON	Open collector output
		UM-Z3DSV	—		Dark-ON	

*PNP output type models identified by a "P" at the end of the model number comes with an output conversion unit.



Rating/Performance/Specification

Type	Light-ON	NPN output	UM-T15T	UM-T15TV	UM-T50T	UM-T50TV	UM-T50S	UM-T50SV	UM-T100T	UM-T100S	UM-R3T	UM-R3TV	UM-R5T	UM-R5TV	UM-Z3SV
		PNP output	—	—	—	—	UM-T50SP	UM-T50SVP	UM-T100TP	—	UM-R3TP	UM-R3TVP	—	UM-R5TVP	UM-Z3SVP
	Dark-ON	NPN output	UM-T15DT	UM-T15DTV	UM-T50DT	UM-T50DTV	UM-T50DS	UM-T50DSV	UM-T100DT	UM-T100DS	UM-R3DT	UM-R3DTV	UM-R5DT	UM-R5DTV	UM-Z3DSV
PNP output		UM-T15DTP	UM-T15DTVP	UM-T50DTP	UM-T50DTVP	UM-T50DSP	UM-T50DSVP	UM-T100DTP	—	—	—	—	—	—	
Detection method		Through beam									Diffuse reflective				Convergent reflective
Detecting distance		150 mm			500 mm			1 m			2-30mm (50x50mm white drawing paper)		2-50mm (50x50mm white drawing paper)		5-30mm (50x50mm white drawing paper)
Detection object		φ3mm (or more) Opaque									Opaque, translucent, transparent				
Power supply		24VDC±10% / Ripple 10% or less						12VDC±10%		12-24V DC±10% / Ripple 10% or less					
Current consumption	Transmitter	15mA or less									20mA or less	27mA or less	20mA or less	27mA or less	27mA or less
	Receiver	15mA or less	22mA or less	15mA or less	22mA or less	15mA or less									
Output mode	NPN output	NPN open collector Rating: sink current 80mA (30 VDC) or less													
	PNP output	PNP open collector Rating: source current 80mA (30 VDC) or less													
Operation mode		(See the Type table in the previous page)													
Response time		0.5ms or less													
Operating angle		25° (at receiver)									—				
Hysteresis		—													
Light source (light wavelength)		Red LED (640nm)				Red LED (660nm)		Infrared (870nm)	Infrared (850nm)	Red LED (640nm)					
Indicator		Transmitter: — Receiver: Operation indicator (red LED), Stability indicator (green LED)										Operation indicator (red LED), Stability indicator (green LED)			
Volume (VR) *		—	in-line sensitivity adjustment	—	in-line sensitivity adjustment	—	in-line sensitivity adjustment	—			in-line sensitivity adjustment	—	in-line sensitivity adjustment		
Material	Case	Liquid crystalline polyester (filler: polypropylene)													
	Lens	Acryl resin				Polycarbonate		Acryl resin	ABS	Acryl resin				Polycarbonate	
Connection		Attached cable (dia. 2.8)													
		Transmitter: 0.15 mm ² x 2 cores 2m (gray) Receiver: 0.15 mm ² x 3 cores 2m (black)									0.15 mm ² x 3 cores 2m (black)				
Weight	Transmitter	Approx. 30g									Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	
	Receiver	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g									
Notes		* The distance between the sensor and the in-line volume for sensitivity adjustment is fixed to 300mm.													
Accessory		Instruction manual, mounting screws, washers, nuts, screwdriver for adjustment (attached to the model whose model number ends with “V”)													

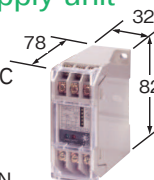
The detecting distance of diffuse reflective type varies, depending on transmittance of the detection object. Please be sure to check the detection beforehand.

Environmental Specification

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

Applicable power supply unit

PS series
High capacity of 200 mA at 12 VDC

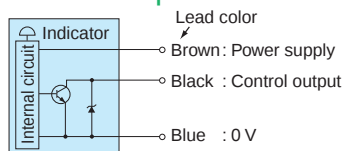


(General-purpose type) PS3N
PS3N-SR
(Multifunctional type) PS3F
PS3F-SR

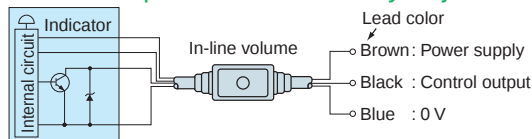
Input/Output Circuit and Connection

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

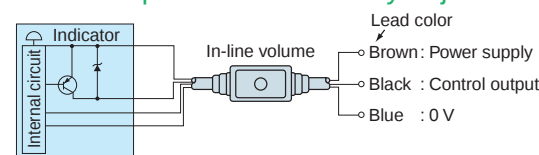
NPN output



NPN output In-line sensitivity adjustment



PNP output In-line sensitivity adjustment

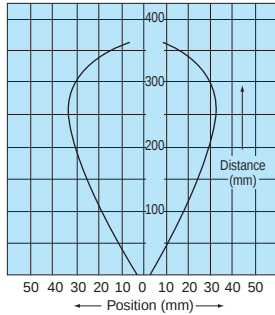


The transmitter of through beam type has power supply cable only (brown: 24 VDC, blue: 0V).

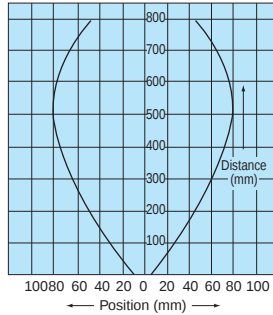
Performance curves excepting output mode are common to NPN output / PNP output

Response Curves : Beam Pattern

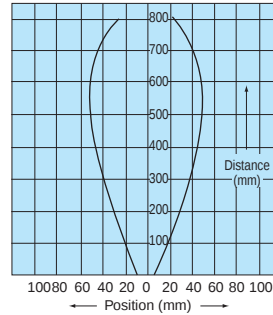
UM-T15DT·UM-T15DTV



UM-T50DT·UM-T50DTV

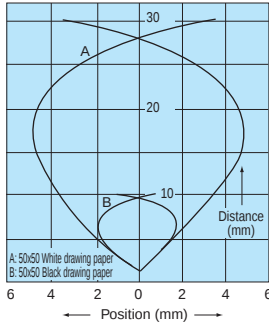


UM-T50DS

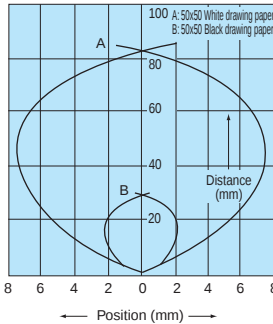


Response Curves : Detecting Position

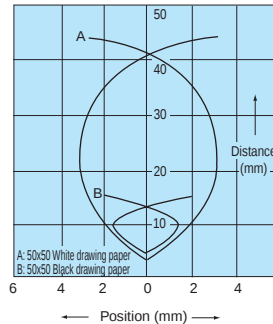
UM-R3T·UM-R3TV



UM-R5T·UM-R5TV

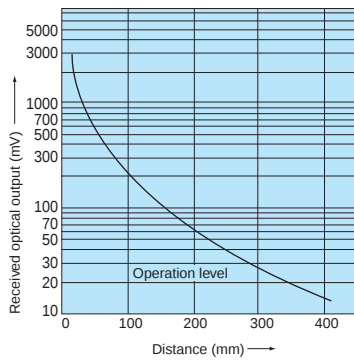


UM-Z3SV

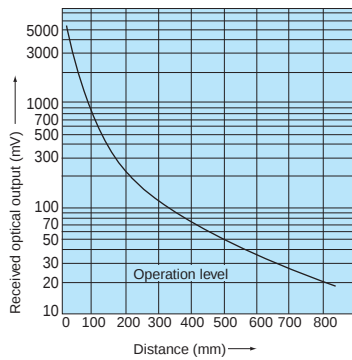


Output Distance Curves

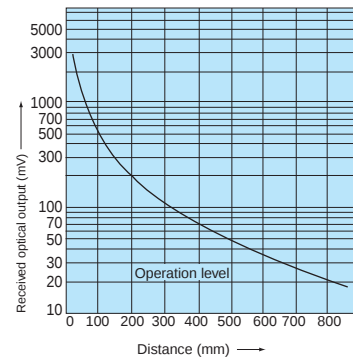
UM-T15DT·UM-T15DTV



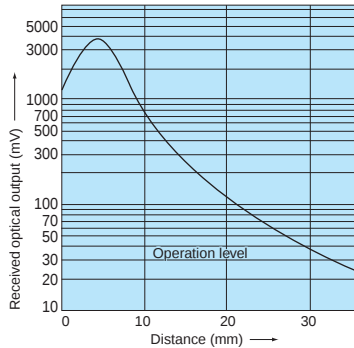
UM-T50DT·UM-T50DTV



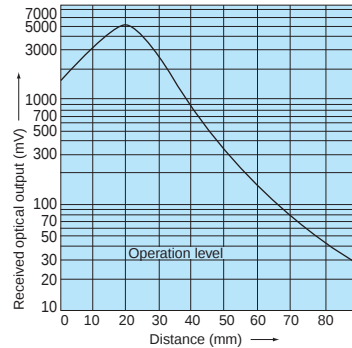
UM-T50DS



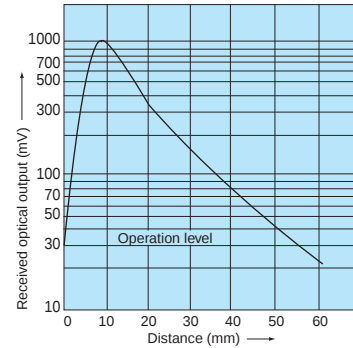
UM-R3T·UM-R3TV



UM-R5T·UM-R5TV



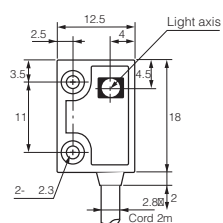
UM-Z3SV



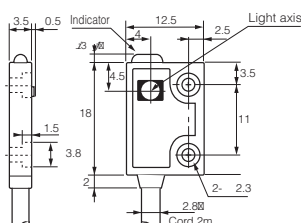
Dimensions (in mm)

UM-T15DT UM-T15DTV(*1)

CAD Transmitter



Receiver

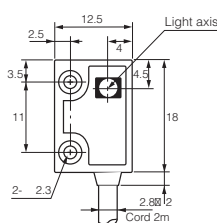


(The profile, which is the same as the receiver except that indicator is omitted.)

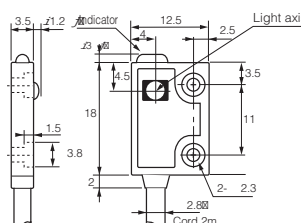
M2 x 10 mm screws, nuts, internal toothed washers provided.

UM-T50DT・UM-T100DT UM-T50DTV(*1)

CAD Transmitter



Receiver

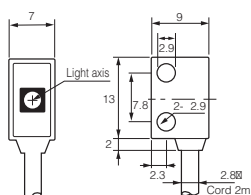


(The profile, which is the same as the receiver except that it has no indicator, is omitted.)

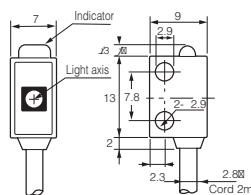
M2 x 10 mm screws, nuts, internal toothed washers provided.

UM-T50DS UM-T100DS

CAD Transmitter



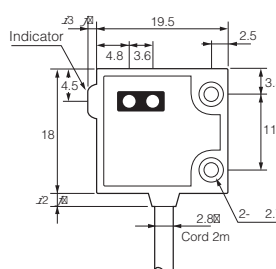
Receiver



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

UM-R3T UM-R3TV(*1)

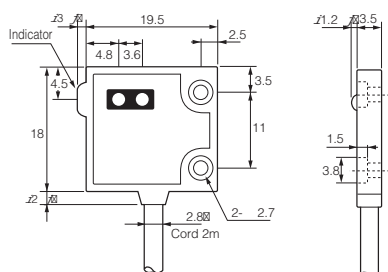
CAD



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

UM-R5T UM-R5TV(*1)

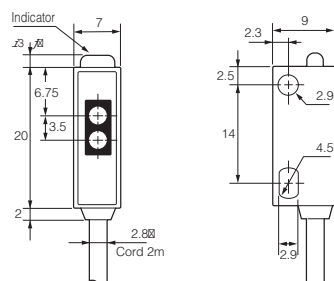
CAD



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

UM-Z3SV(*1)

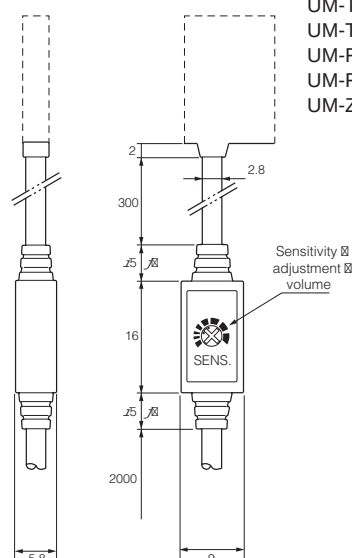
CAD



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

(*1) Models identified by a "V" at the end of the model number are equipped with a sensitivity adjustment volume. The volume of the through-beam type is attached on the receiver.

CAD



UM-T15V UM-T15DTP
UM-T50TV UM-T15DTV
UM-T50SV UM-T50DTP
UM-R3TV UM-T50DTP
UM-R5TV UM-T50SP
UM-Z3SV UM-T100TP
UM-R3TP
UM-R3TVP
UM-R5TVP
UM-Z3SVP

• Directly screw onto the surface for mounting. The tightening torque should not exceed 0.3 N·m. Mounting brackets (model : UM-V1) are available as optional parts.