

TAKEX

UM SERIES Instruction Manual

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- Thank you for using **TAKEX** products. ● Please read this manual carefully prior to sensor use.



SPECIFICATIONS

NPN output	Light-ON	UM-T15T	UM-T15TV	UM-T50T	UM-T50TV	UM-T50S	UM-T50SV	UM-T15T1	UM-T15T1V	UM-T50T1	UM-T50T1V	UM-T50S1	UM-T50S1V	UM-R3T	UM-R3TV	UM-R5T	UM-R5TV	UM-Z3SV			
	Dark-ON	UM-T15DT	UM-T15DTV	UM-T50DT	UM-T50DTV	UM-T50DS	UM-T50DSV	UM-T15DT1	UM-T15DT1V	UM-T50DT1	UM-T50DT1V	UM-T50DS1	UM-T50DS1V	UM-R3DT	UM-R3DTV	UM-R5DT	UM-R5DTV	UM-Z3DSV			
PNP output	Light-ON	—	—	—	—	UM-T50SP	UM-T50SVP	—	—	—	—	—	—	UM-R3TP	UM-R3TVP	UM-R5TP	UM-R5TVP	UM-Z3SVP			
	Dark-ON	UM-T15DTP	UM-T15DTPV	UM-T50DTP	UM-T50DTPV	UM-T50DSP	UM-T50DSPV	—	—	—	—	—	—	—	—	—	—	—			
Detection method		Through beam											Diffuse reflective			Convergent reflective					
Detection distance		150mm				500mm				150mm				500mm				2 to 30mm	2 to 50mm	5 to 30mm	
Detection object		Φ 3mm or more Opaque (50×50mm White card) (50×50mm White card) (50×50mm White card)																			
Power Supply		24VDC ±10%, Ripple 10% or less									12VDC ±10%, Ripple 10% or less				12V~24VDC ±10%, Ripple 10% or less						
Current consumption	Transmitter	15mA																			
	Receiver	22mA or less	30mA or less	22mA or less	30mA or less	22mA or less	30mA or less	15mA or less	22mA or less	15mA or less	22mA or less	15mA or less	22mA or less	28mA or less	35mA or less	28mA or less	35mA or less	35mA or less			
Output mode	NPN output	NPN Open collector Rating : Sink current 80mA (30VDC) or less																			
	PNP output	PNP Open collector Rating : Source current 80mA (30VDC) or less																			
Response time		0.5ms or less																			
Operating angle		25° (at receiver)																			
Hysteresis		—																			
Light source		Red LED																			
Indicator		Receiver : Operation indicator (red LED), Stability indicator (green LED)											Receiver : 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	—	In-line sensitivity adjustment	—	In-line sensitivity adjustment	—	In-line sensitivity adjustment	—			
	300mm between the sensor and in-line sensitivity adjustment unit (fixed)																				
Material	Case	Liquid crystalline polyester																			
	Lenz	Acryl resin				Polycarbonate				Acryl resin				Polycarbonate				Acryl resin			
Connection		Attached cable (dia. φ2.8)																			
		Transmitter : 0.15mm ² × 2core 2m (gray) Receiver : 0.15mm ² × 3core 2m (black)											0.15mm ² × 3core 2m (black)								
Weight	Transmitter	Approx. 30g																			
	Receiver	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 40g		
Accessory		Instruction manual, screws, nuts, washers and a screwdriver for adjustment (for models which model number ends with "V")																			

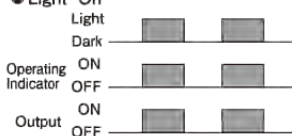
* Discontinued as of 2013

AMBIENT CONDITIONS

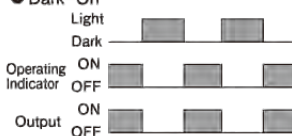
Ambient light	3,000 lx (Max)
Operating temp.	-25°C to +55°C
Ambient humidity	35~85%RH
Protection	I P64
Vibration	10~55Hz, 1.5mm Amplitude, 2 Hr., 3 Directions

OPERATION

● Light-On



● Dark-On

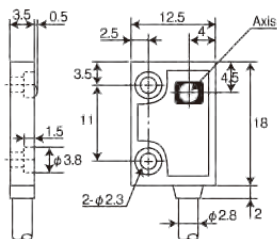


(ABH-HS-0018-3)

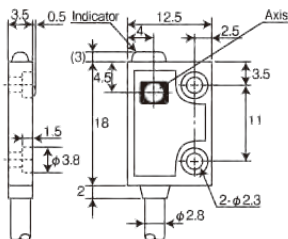
DIMENSIONS

(unit : mm) NPN/PNP output models and Light on/Dark on models have the same dimensions respectively.

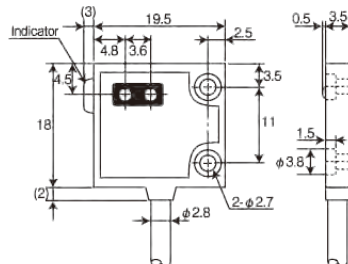
● SET MODEL · UM-T15DT, UM-T15DTV(※5)
UM-T15DT1, UM-T15DT1V(※5)
Tms : MODEL · UM-TL15T, UM-TL15T1



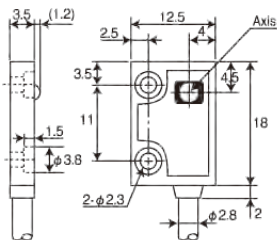
Rcvr : MODEL · UM-TR15DT, UM-TR15DTV(※5)
MODEL · UM-TR15DT1, UM-TR15DT1V
(※5)



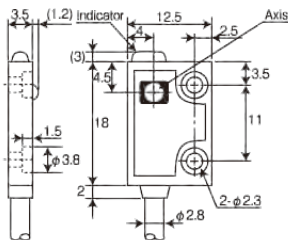
MODEL · UM-R3T
MODEL · UM-R3TV(※5)



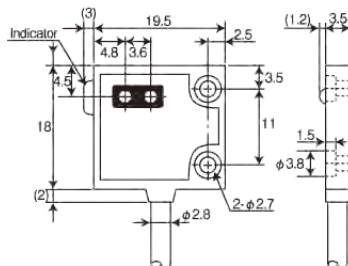
● SET MODEL · UM-T50DT, UM-T50DTV(※5)
UM-T50DT1, UM-T50DT1V(※5)
Tms : MODEL · UM-TL50T, UM-TL50T1



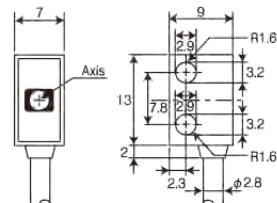
Rcvr : MODEL · UM-TR50DT, UM-TR50DTV(※5)
MODEL · UM-TR50DT1, UM-TR50DT1V
(※5)



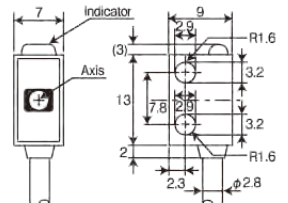
MODEL · UM-R5T
MODEL · UM-R5TV(※5)



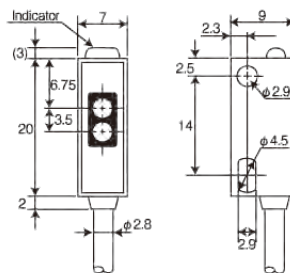
● SET MODEL · UM-T50DS, UM-T50DSV(※5)
UM-T50DS1, UM-T50DS1V(※5)
Tms : MODEL · UM-TL50S, UM-TL50S1



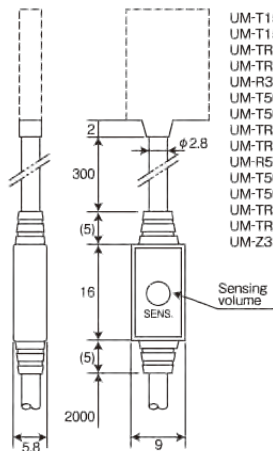
Rcvr : MODEL · UM-TR50DS, UM-TR50DSV(※5)
MODEL · UM-TR50DS1, UM-TR50DS1V
(※5)



MODEL · UM-Z3SV(※5)



(※5) With sensitivity adjustment

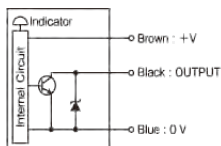


UM-T15DTV
 UM-T15DT1V
 UM-TR15DTV
 UM-TR15DT1V
 UM-R3TV
 UM-T50DTV
 UM-T50DT1V
 UM-TR50DTV
 UM-TR50DT1V
 UM-R5TV
 UM-T50DSV
 UM-T50DS1V
 UM-TR50DSV
 UM-TR50DS1V
 UM-Z3SV

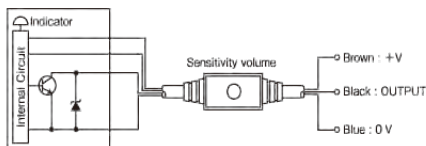
OUTPUT CIRCUIT

(Throughbeam type receiver.)

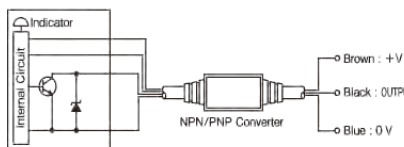
(NPN output type)



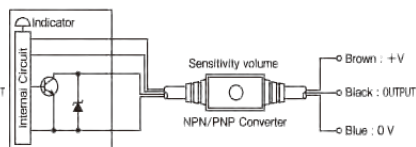
(NPN output with sensitivity Volume)



(PNP output type)



(PNP output with sensitivity volume)



- If a load short circuit or overload occurs, the output transistor turns off. Check the load before restoring the power.

NOTES

- Use attached screws to fix the sensor. Tightening torque should be 0.1N·m or less.
- Clean the lens by a soft and dry cloth periodically. Do not use organic solvent including alcohol and thinner.
- Avoid turning the power on and off consecutively.
- Be sure to route the sensor cables separate from any power transmission or high voltage line, or else use shielded cables. Using the same conduit or duct as high voltage or power lines will cause malfunctions or damage because of electromagnetic induction.
- A transient overcurrent may flow in when a capacitor or a coil is connected to the load.
- When using a DC power unit with an insulated

transformer or a switching regulator, be sure to ground the frame ground (FG) terminal.

- Limit the current of the power supply to 1A.
- Use UL class 2 power supply when using this product as UL approved equipment.
- High frequency fluorescent lamps or inverters may cause faulty operation as these equipments may emit light or noise of similar modulated frequency that photo sensors generate. Do not install the sensor in the vicinity of high frequency equipment.
- When extending the cables, use conductors of at least 0.5mm² cross-sectional area and check the voltage drop.
- When using a large-capacity switching regulator, insert a breaker or a fuse in accordance with the number of the sensor.

- The guarantee period of this product is one year after the delivery.
- If any defect is found during the guarantee period, Takenaka will repair or replace the defective product.
- This product is an industrial sensor which issues an output upon detecting an object. It does not have any function to prevent accidents, death or injuries.
- Takenaka will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.