TAKEX

Photosensor
with built-in amplifier

NT50·NT50P
NT100·NT100P Instruction Manual

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● OUTLINE

The NT50(P)/100(P) Series sensors are high-powered CMDs designed to withstand severe operating environment (water, dust, etc.).

RATING/PERFORMANCE/SPECIFICATION CE (NT50, NT100)

Rating/Performance	Models	Set type	NT50	NT100	NT50P	NT100P
		Transmitter type	NTL50	NTL100	NTL50P	NTL100P
		Receiver type	NTR50	NTR100	NTR50P	NTR100P
	Detection method		Through-beam			
	Detecting distance		50m	100m	50m	100m
	Detection object		Φ22㎜ min.	Φ28㎜ min.	Φ22㎜ min.	Φ28㎜ min.
	Power Supply		12–24VDC ±10% Ripple 10% max.		100–240V AC ±10% 50/60Hz	
	Current consumption/ Power consumption		Transmitter : 30mA max. / Receiver : 35mA max.		Transmitter : 5W max. / Receiver : 5W max.	
	Output		NPN open collector Rating : sink current 200mA (30VDC) max.		Relay contact output 1c Rating : 250V AC 2A max. (resistance load)	
	Operation mode		Light-ON/Dark-ON selectable (with switch)			
	Light monitor		NPN open collector Rating : sink current 200mA (30VDC) max.		Relay contact output 1c Rating : 250V AC 2A max. (resistance load)	
		Power supply	ON OFF			
		Lighting	Nomal(ON) Abnormal(OFF)			
		Output	ON OFF			
	Alarm output (✱1)		NPN open collector Rating : sink current 200mA (30VDC) max.		———	
	Response time		5ms. max.		20ms. max.	
Specification	Light source		Infrared LED (910nm)			
	Indicator		(Transmitter) P.L : Power indicator (Green LED) ··· Illuminated when power-on OP.L : Monitor indicator (Red LED) ··· Illuminated when emit light normally (Receiver) OP.L : Operation indicator (Red LED) ··· Illuminated when output-on LEVEL : Level indicator (Three level display) LEVEL1 : Yellow LED illuminated when light intensity of about twice as much as operation level is detected. LEVEL2 : Yellow LED illuminated when light intensity of about four times as much as operation level is detected. LEVEL3 : Green LED illuminated when light intensity of about eight times as much as operation level is detected.			
	Switch (SW)		Light-ON/Dark-ON selector switch provided (Remove the case lid of the receiver to access the switch.) Light-ON ··· Output at light receiving Dark-ON ··· Output at light blocking			
	Case materials		Zinc die-cast			
	Connection		Terminal block (screw : M3.5, width : 8.1㎜)			
	Mass		Transmitter : about 700g Receiver : about 700g	Transmitter : about 800g Receiver : about 800g	Transmitter : about 700g Receiver : about 700g	Transmitter : about 800g Receiver : about 800g

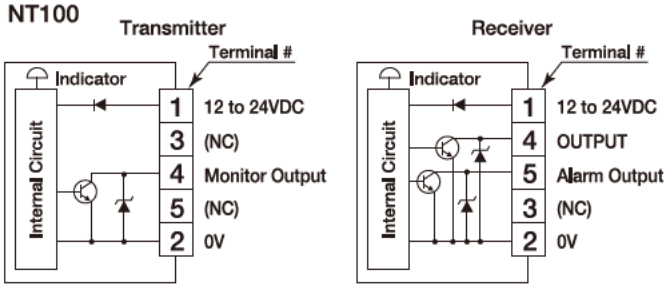
✱1 Alarm output is triggered when light intensity is less than LEVEL1. (Yellow LED turns off)

ENVIRONMENTAL SPECIFICATION

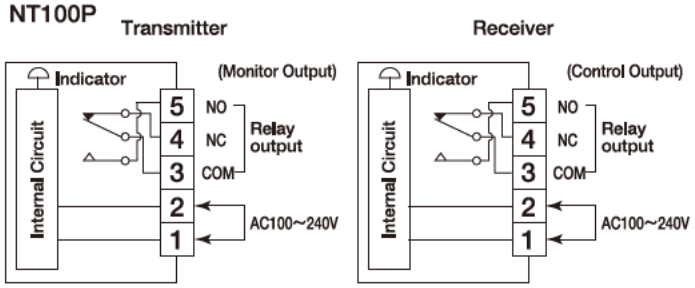
Environment	Ambient light (on light receiving surface)	50,000 lx max. (incandescent lamp)	50,000 lx max. (incandescent lamp) 100,000 lx max. (sunlight)
	Ambient temperature	−25 to +55℃ (Non-freezing)	
	Storage temperature	−40 to +70℃ (Non-condensing)	
	Ambient humidity	35 to 85%RH (Non-condensing)	
	Protective structure	IP66	
	Vibration	10 to 55Hz / 1.5㎜ amplitude / 2 hours each in 3 direction	
	Shock	1000m/s² / 3 times each in 3 directions	500m/s² / 3 times each in 3 directions
	Dielectric withstanding	500VAC for 1 minute (between input/output and case)	2000VAC for 1 minute (between input/output and case)
	Insulation resistance	500VDC, 20MΩ or higher	

OUTPUT CIRCUIT

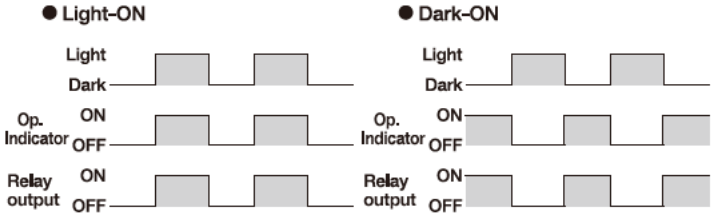
NT50
NT100



NT50P
NT100P

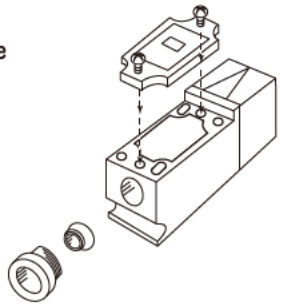


TIME CHART

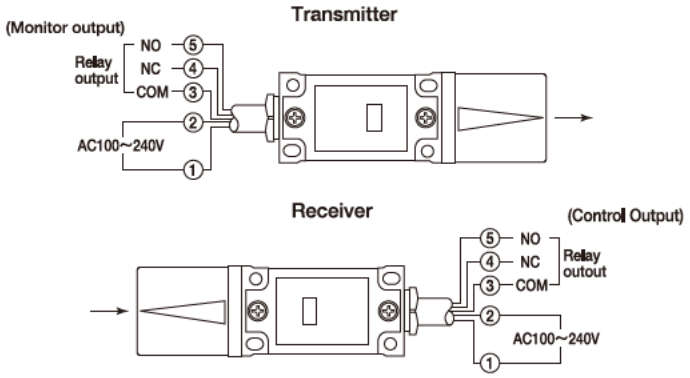


INSTALLATION

- For installation of the sensor prepare a base without vibrations etc.
- The sensor should be fastened with M6 bolts.
- The cable diameter ranges from 9㎜ to 11㎜.



WIRING (for NT50P/NT100P)

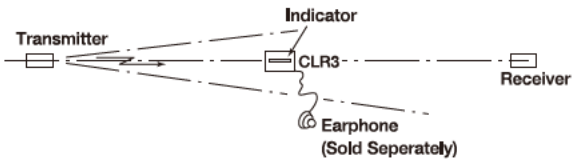


ADJUSTMENT

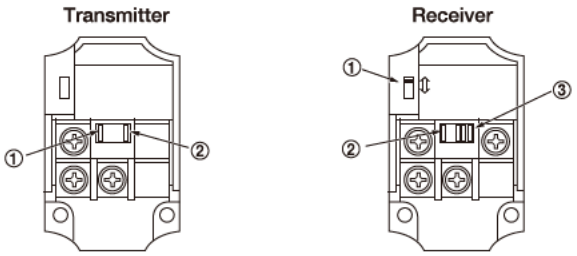
For the throughbeam sensor, align the light source and receiver so that the operation LED lights.
Then confirm the 3 indicators light.

◇CHECKER (CLR3) Option

Confirm and adjust the light alignment by a sound and LED indicators.



SWITCH SELECTION



① P.L Power Indicator
② OP.L Transmitter Monitor Indicator
Indicator lights normal state.

① Light-ON/Dark-ON Selectable switch
L.ON Light-ON operation
D.ON Dark-ON operation
② Op. Indicator
③ Level Indicator
3 LEDs indicate the stability.
LEVEL1 ; 2 times the Op. Level
LEVEL2 ; 4 times the Op. Level
LEVEL3 ; 8 times the Op. Level

NOTES

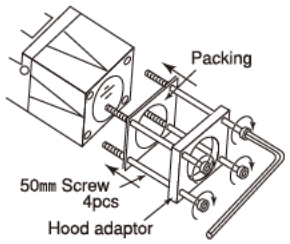
1. When cleaning the lens and the case, use a dry cloth and gently wipe the surface.
2. Avoid such a usage as continuously switching on and off the power source.
3. Although this sensor is waterproof, you cannot use the sensor where direct water spray continuously occurs, or under water.
4. After wiring, mount the cover onto the case.
5. Use screw PF1/2 when wiring with conduit tube.

OPTION

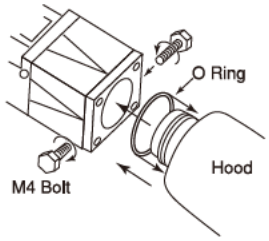
■ HOOD

For NT50 and NT50P	Hood	H301	Protect the dust and external light.
	Air-less Hood	F301	
	Air-purge Hood	A301	Protect the dust.
For NT100 and NT100P	Air-less Hood	F38S	Protect the dust and external light.

(Tighting torque of the screw should be less than 0.6N·m.)

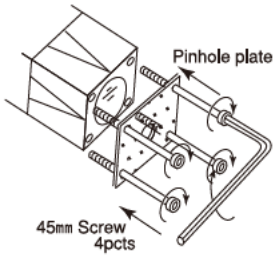


(The tighting torque of the bolt should be less than 0.8N·m.)

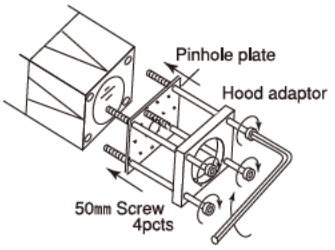


■ PINHOLE PLATE (for NT50/NT50P)

To detect small diameter objects, use the appropriate sized pinhole plates to aperture the beams.



● Mount the pinhole plate on sensor directly.



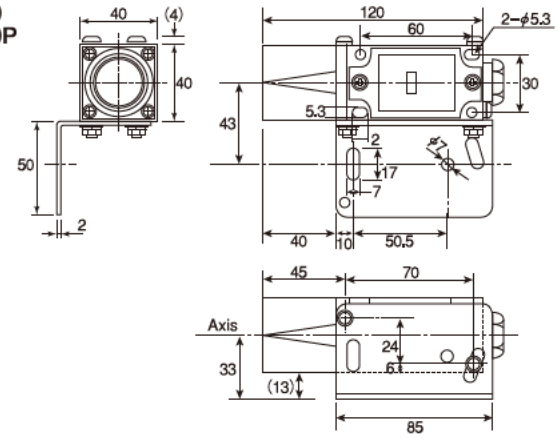
● Mount the pinhole plate on sensor with hood.

(Tighting torque of the screw should be less than 0.6N·m.)

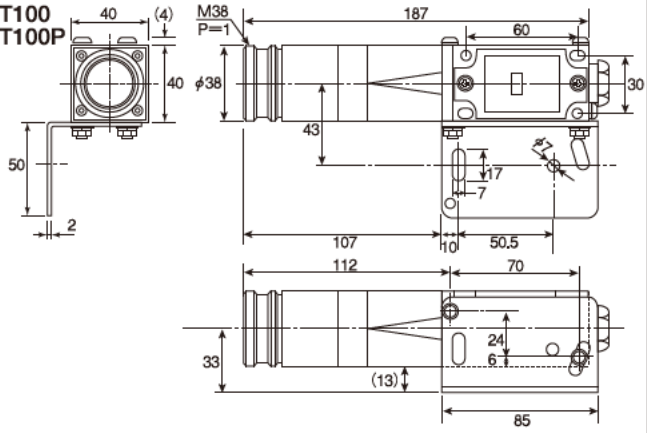
Models	Diameter	Decting distance
30P1	Φ1㎜	0.6m or less
30P3	Φ3㎜	4m or less
30P5	Φ5㎜	9m or less
30P7	Φ7㎜	15m or less
30P10	Φ10㎜	26m or less

DIMENSIONS (unit : ㎜)

NT50
NT50P

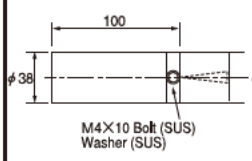


NT100
NT100P

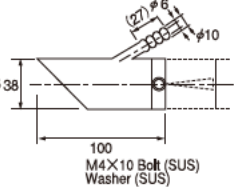


● Hood

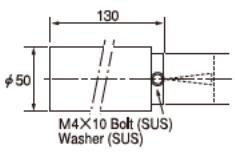
H301 Hood



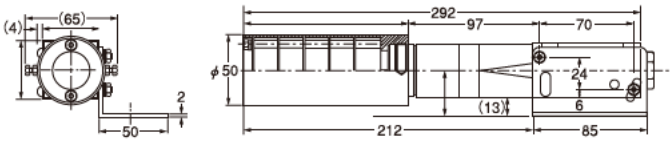
A301 Air-purge Hood



F301 Air-less Hood



● With F38S attached



WARRANTY AND LIMITATION OF LIABILITY

- This sensor is designed to detect a specific object. It is not provided with control functions for prevention of injuries or accidents in itself.
- Takex 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.
- Specifications and dimensions may be subject to change without notice.