NT50/100(P) series

Simplified CMD

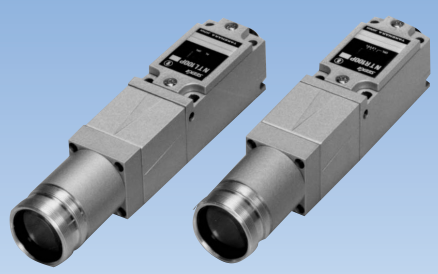
CE (NT50 NT100)

High powered light transmission capable of withstanding adverse environmental conditions. Optional parts available for a wide range of applications

Detecting distance: 50 m

Model NT50
Model NT50P

Detecting distance: 100 m



Model NT100
Model NT100P

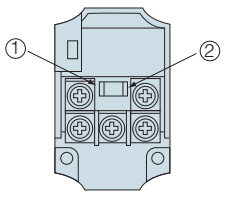
The NT50/100(P) Series sensors are high powered CMDs designed to withstand severe operating environment (water, dust, etc.).

Features

- Smallest size of long distance sensors
- 3-point level indicator with margin for reliable detection
  The green LED is illuminated at a level 8 times as much as the operation level but the inherent performance of the emission is over tenfold.
- DIN compatible robust Zinc die cast case
- Integrated light emission monitor circuit in transmitter
  Alarm signal generates output if light emission stops in the unlikely event of failure.
- Operation mode selectable
  Operation mode is selectable between Light ON and Dark ON with the switch provided.

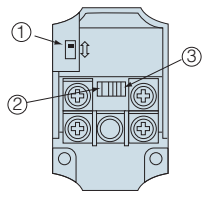
Panel Description

Transmitter



①P.L.
Indicator
②OP.L
Light emission monitoring operation indicator
Illuminated when transmitter is functioning normally.

Receiver



①Light ON/Dark ON selector switch
Set according to the situation
②Operation indicator
Illuminated when output is activated.
③Level indicator
A set of 3 LEDs indicates stability.

Rating/Performance/ Specification/ Environmental Specification

Models	Set	**NT50**	**NT100**	**NT50P**	**NT100P**
	Transmitter	**NTL50**	**NTL100**	**NTL50P**	**NTL100P**
	Receiver	**NTR50**	**NTR100**	**NTR50P**	**NTR100P**
Detection method		Through beam			
Detecting distance		50m	100m	50m	100m
Detectiing object		ø22㎜ or more	ø28㎜ or more	ø22㎜ or more	ø28㎜ or more
Power Supply		12-24VDC ±10% Ripple 10% or less		100 - 240VAC ±10% 50/60Hz	
Current consumption / Power consumption		Transmitter: 30mA or less / Receiver: 35mA or less		Transmitter: 5W or less / Receiver: 5W or less	
Output mode		NPN open collector output Rating: Sink current 200mA (30VDC) or less		Relay output 1c Rating: 250VAC 2A or less (resistive load)	
Operation mode		Light ON/Dark ON (selectable with switch)			
Light monitor		NPN open collector output Rating: sink current 200mA (30VDC) or less		Relay contact output 1c Rating: 250V AC 2A or less (resistive load)	
	Power supply	ON OFF			
	Lighting	Normal (ON) Abnormal (OFF)			
	Light emission monitoro output	ON OFF			
Alarm output*1		NPN open collector output Rating: Sink current 200mA (30VDC) or less			
Response time		5ms or less		20ms or less	
Light source		Infrared LED (wave length 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			
Materials		Case: Zinc die cast			
Connection		Terminal block (screw: M3.5, width: 8.1mm)			
Weight		Transmitter: Approx. 700g Receiver: Approx. 700g	Transmitter: Approx. 800g Receiver: Approx. 800g	Transmitter: Approx. 700g Receiver: Approx. 700g	Transmitter: Approx. 800g Receiver: Approx. 800g
Accessories		Operation manual, Mounting bracket			

*1 When the light intensity is LEVEL 1 or lower, the alarm is output (yellow LED turns off).

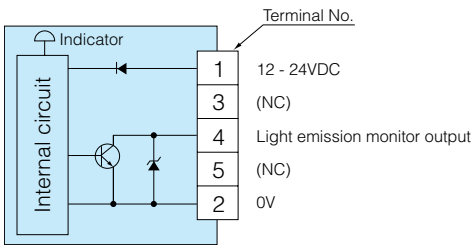
Environmental Specification

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

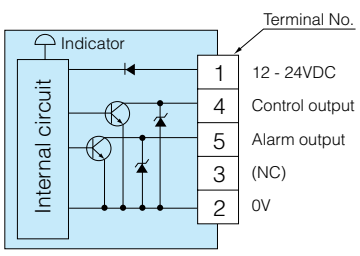
Input/Output Circuit and Connection

NT50/NT100

(Transmitter)

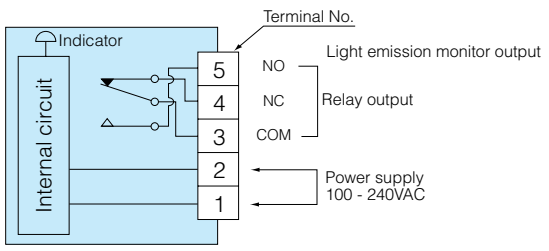


(Receiver)

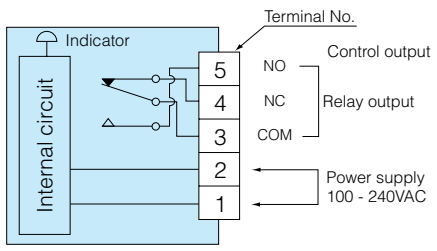


NT50P/NT100P

(Transmitter)



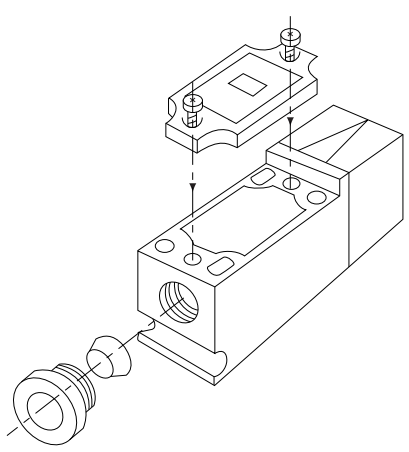
(Receiver)



- Connection

For connection, use cables of 9 - 11 mm in diameter.

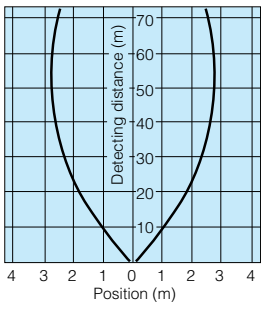
Loosen the screws on the lid of the body to remove the lid.



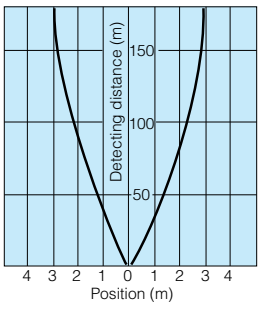
The rubber packing must be attached in the right orientation.

Response Curves: Beam Pattern (Typical)

NT50
NT50P

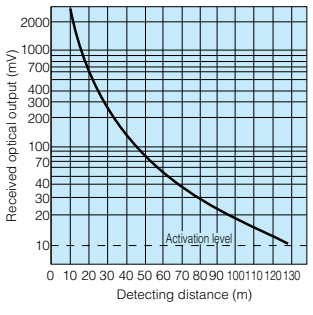


NT100
NT100P

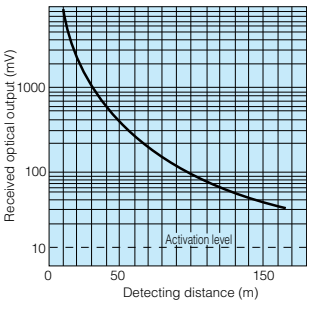


Excess Gain Carves (Typical)

NT50
NT50P



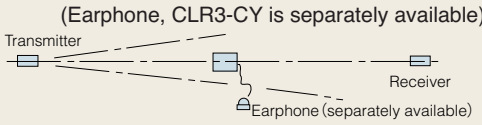
NT100
NT100P

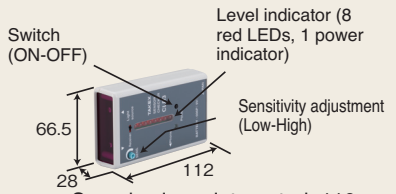


Optional Parts

Checker CLR3

Used for aligning the light axis while observing the light emitted from the transmitter with “sound” and “level indicator.” Find the light from the transmitter with the checker and adjust the orientation of the transmitter so that the receiver is installed at the center of the light. (Earphone, CLR3-CY is separately available)





Sound volume integrated, 110 g
Level indicator provided

Hood (Applicable to NT50, NT50P)

Hood H301

Airless hood F301

Air purge hood A301

Energy-saving airless dust hood taking advantage of muffler effect for preventing soiling of lens.

Air purge hood for prevention of soiling of lens.

Airless hood (Applicable to NT100, NT100P)

F38S

Energy-saving airless dust hood taking advantage of muffler effect for preventing soiling of lens.

Pinhole plate (Applicable to NT50, NT50P)

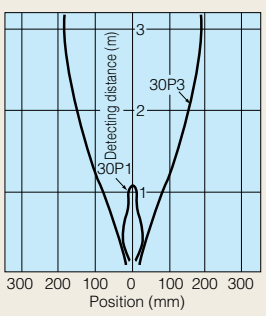
Use of pinhole plates reduces the smallest allowable detection object diameter and activation area. Note that the detecting distance is reduced as well.

Model	Pinhole diameter (mm)	Detecting distance (m)
30P1	ø1	0.6
30P3	ø3	4
30P5	ø5	9
30P7	ø7	15
30P10	ø10	26

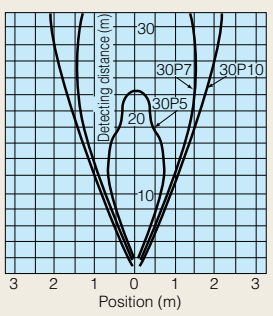
• Response Curves: Beam Pattern (Typical)

NT50, NT50P: with pinhole plate (optional) attached to both transmitter and receiver

With 30P1/30P3 attached

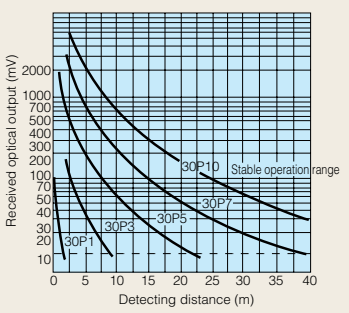


With 30P5/30P7/30P10 attached



• Excess Gain Curves (Typical)

NT50, NT50P: with pinhole plate (optional) attached to both transmitter and receiver



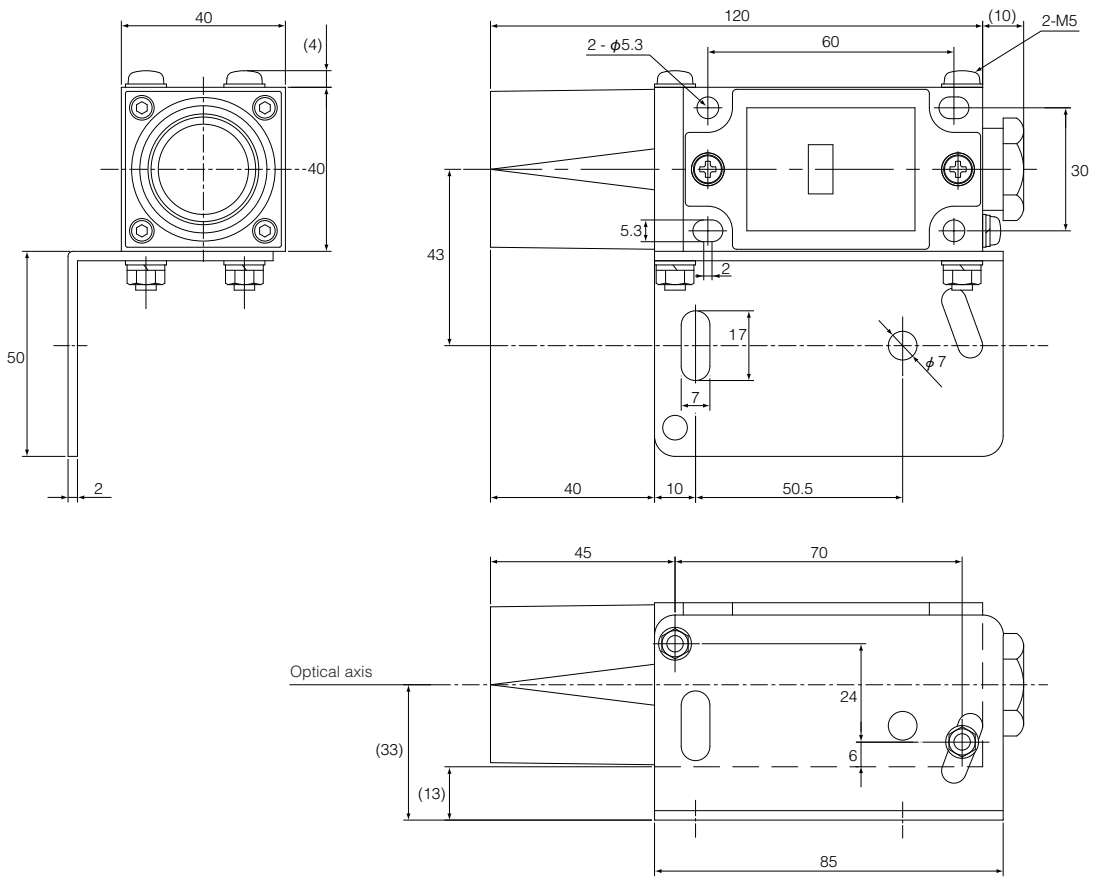
• Installation

Prepare a solid platform to avoid vibration.
Fix the sensor on the mounting bracket with two M5 screws.
Fix the mounting bracket on the platform with an M6 screw.
(Prepare screws, nuts. washers, etc.)

Dimensions (in mm)

Model NT50 NT50P

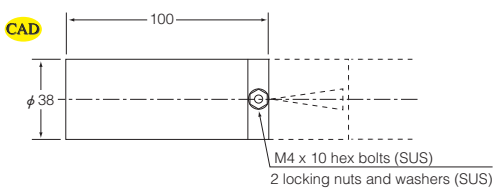
CAD



Hoods (optional)

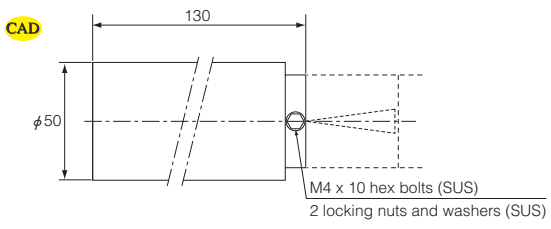
H301 (hood)

CAD



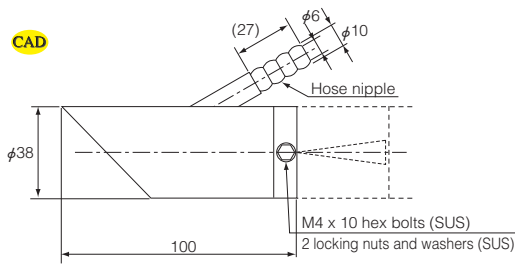
F301 (Airless hood)

CAD



A301 (air purge hood)

CAD



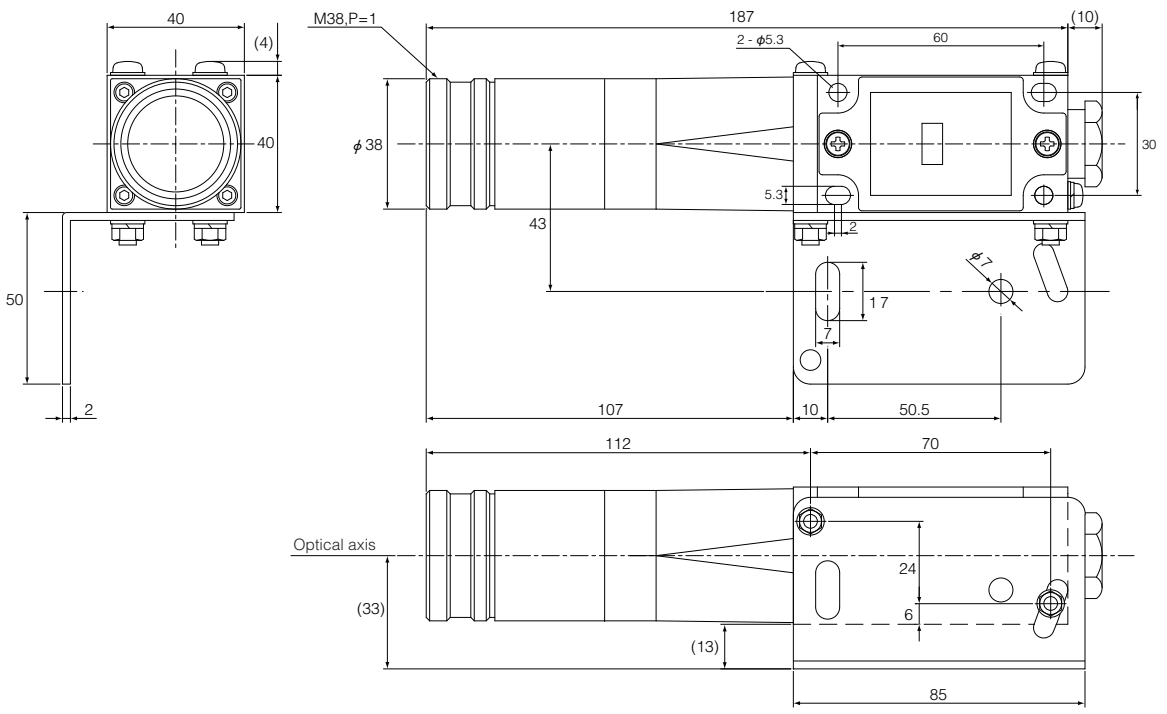
Air purge specification
Flow rate···200L/min
Withstand pressure···1MPa

CAD To download CAD data including dimensions, please visit www.takex-elec.co.jp/index_e.html.

Dimensions (in mm)

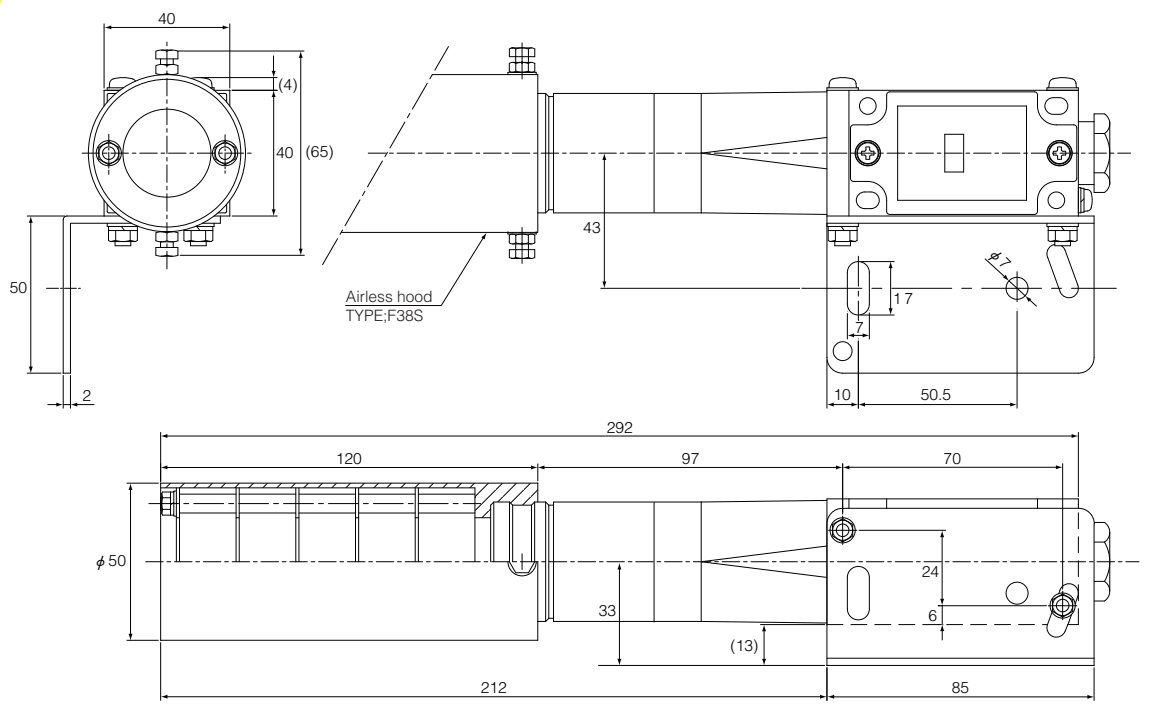
Model NT100 NT100P

CAD



With F38S Airless hood (optional) attached

CAD



CAD To download CAD data including dimensions, please visit www.takex-elec.co.jp/index_e.html.