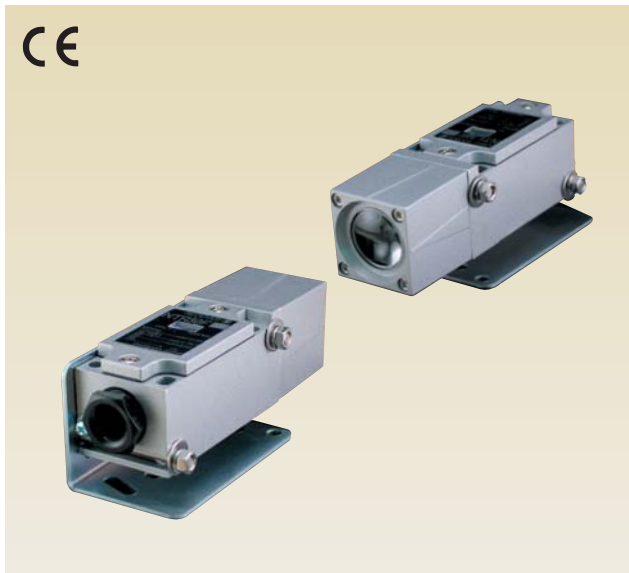


CE



- Self-diagnostic feature
- High power for reliable detection in adverse environment
- Long distance detection of up to 30 m
 - DIN compatible zinc die-cast case
 - Receiver provided with "stability output circuit" for monitoring adequate light reception together with indicator and output terminal. Also equipped with monitor output jack for additional reliability in light axis alignment by use of earphone and Light-ON/Dark-ON selector switch.
 - Transmitter provided with "check signal input terminal" and "monitor output" for overall operation checking of transmitter and receiver.

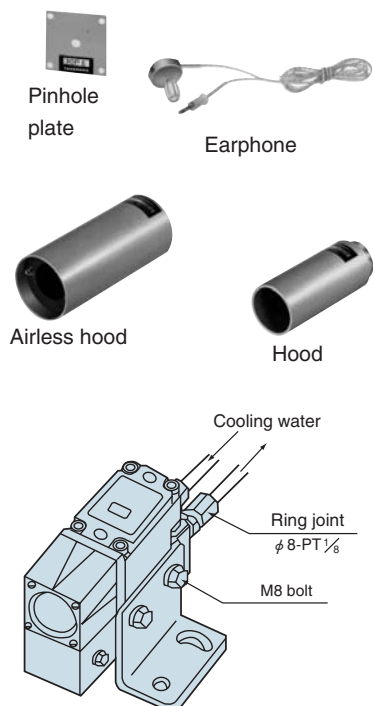
Type

Detection method	Detecting distance	Model	Operation mode	Output mode
 Through-beam type	 30m	NT30F	Light-ON/Dark-ON selectable (with switch)	Current output/voltage output

- Extra long-distance of 50 m and 100 m also available
 Models allowing even longer detecting distance are also available.
 50 m type: model NT50 / 100 m type: model NT100

Optional Parts

Type	Model	Description
Pinhole plate	30P1	$\phi 1$
	30P3	$\phi 3$
	30P5	$\phi 5$
	30P7	$\phi 7$
	30P10	$\phi 10$
Earphone	EC30	Simplifies light axis alignment for long-distance setting by monitoring sound.
Hood	H301	Hood for shielding from outside light.
	F301	Hood for shielding from outside light. Energy-saving airless dust hood taking advantage of muffler effect for preventing soiling of lens.
	A301	Air purge hood.



Model Equipped with Water-Cooling Jacket

Water-cooling type	Model	Transmitter/Receiver	Description
	NTL30FW	Transmitter	For protecting sensor from ambient temperature
	NTR30FW	Receiver	

Rating/Performance/Specification

Model		NT30F		
Rating/performance	Detection method	Through-beam type		
	Detecting distance	30m		
	Detection object	φ 22mm (Min.) Opaque		
	Power supply	12 - 24V DC ±10% / Ripple 10% max.		
	Current consumption	Transmitter: 50 mA max. Receiver: 35 mA max.		
	Output mode	Current output/voltage output (Rating) Current output : sink current 100 mA (30 VDC) max. Voltage output: output impedance 4.7 kΩ		
	Operation mode	Light-ON/Dark-ON selectable (with switch)		
	Self-diagnosis feature	(Transmitter)	Check signal input (Terminal No. 4) Monitor output (Terminal No. 3): activated when normal (For current/voltage: sink current 100 mA (30 VDC) max. output impedance 4.7 kΩ)	
		(Receiver)	Stability output (Terminal No. 4): activated when abnormal (NPN open collector sink current 100 mA (30 VDC) max.) Received light monitor, earphone jack terminal	
	Response time	5ms max. (*0.5ms)		
Specification	Light source	Infrared LED		
	Indicator	(Transmitter) P.L power indicator (red LED) NORM.OP: monitor output indicator (green LED)	(Receiver) OP.L operation indicator (red LED) UP: Stability indicator (green LED)	
	Switch (SW)	Light-ON/Dark-ON selector switch provided		
	Short circuit protection	provided		
	Case material	Zinc die-cast		
	Connection	Terminal block connection (screw: M3.5; terminal pitch: 8.1 mm)		
	Mass	About 700 g (transmitter/receiver)		

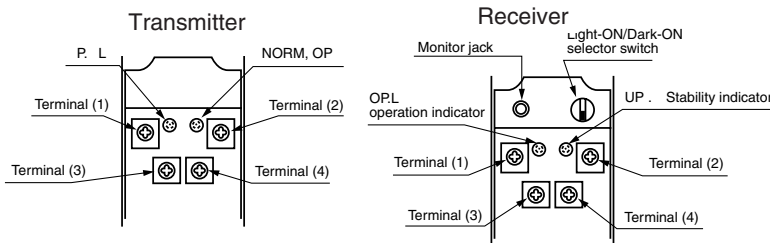
Environmental Specification

Environment	Ambient light	20,000 lx max.
	Ambient temperature	-25 - +55°C (non-freezing) *1
	Ambient humidity	35~85%RH (non-condensing)
	Protective structure	IP66
	Vibration	10 - 55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction

*High-speed response type (0.5 ms) also available: model NT30FA

*1 Some models may be used in environment of 110 °C by attaching water-cooling jacket.

Terminal Block and Connection



Terminal (1) Power supply 12 - 24VDC
Terminal (2) 0V
Terminal (3) monitor output
Voltage/current output
Terminal (4) Check signal input
Indicator PL: power indicator (red LED)
Indicator NORM.OP: monitor output (green LED)

Terminal (1) Power supply 12~24VDC
Terminal (2) 0V
Terminal (3) Output: voltage/current output
Stability output (current output)
Open collector
Terminal (4) O.P.L operation indicator (red LED)
UP: Stability indicator (green LED)
Indicator Selector switch: Light-ON/Dark-On selector switch
Indicator Monitor jack: for earphone for light axis alignment

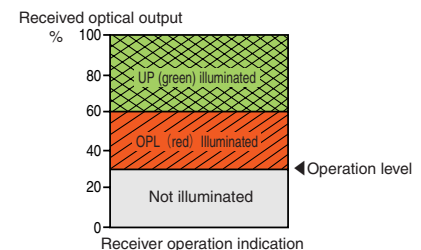
Note) Be sure to use the earphone specified (EC30 separately available).

Operation and Stability Indicators

When the received light intensity is under the operation level, neither of the indicator is illuminated.

When the light intensity reaches the operation level, OP.L is illuminated (with selector switch set to LIGHT).

When the light intensity reaches twice as much as the operation level, the stability indicator UP is illuminated.



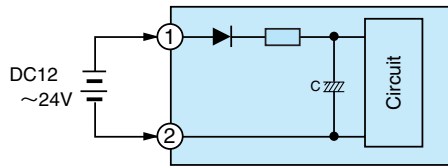
NT30F

Input/Output Circuit and Connection

Transmitter (NTL30F)

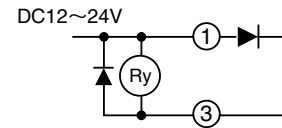
Power supply connection

Indicator illuminated when power is supplied, indicating normal operation



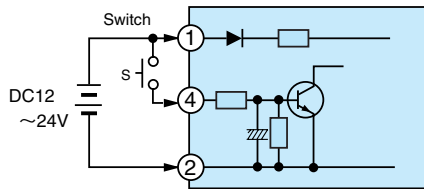
Use of monitor output

(For relay output (control))



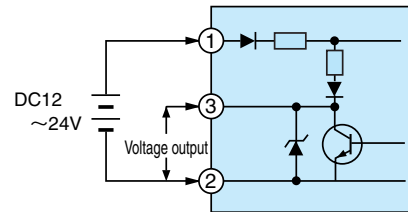
Relay activated when normal (relay of 30 VDC, 100 mA max.)

(For use of check signal input (HOLD))



Connect a switch, etc. between Terminals (1) and (4) (normally-open contact) and press the switch. The light emission stops after about 25 ms and the output level turns H.

(For voltage output)



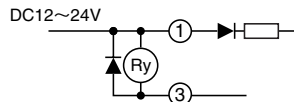
Light emission state = indicator (NORM.OP) illuminated
output: ON (level)

Receiver (NTR30F)

Output connection

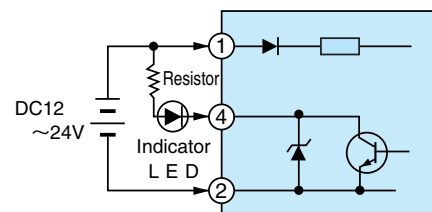
Terminal assignment for power supply same as transmitter:

(For relay output)



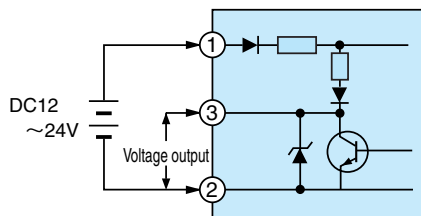
(relay of 30 VDC, 100 mA max.)

(For use of stability output)



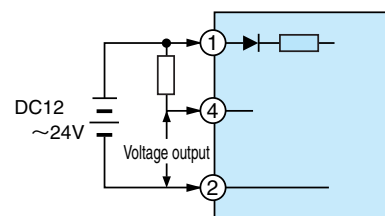
Abnormal: ON (L level) indicator illuminated
Note) Connect a resistor in series with the indicator.
(Hint) Resistance: 2 - 4 K Ω

(For voltage output)



Output mode selectable with switch between Light-ON/Dark ON

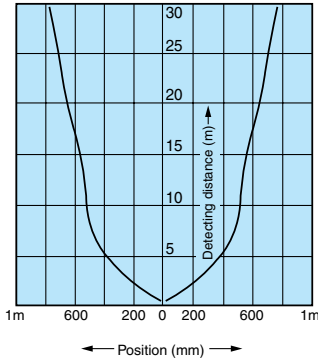
(For voltage output)



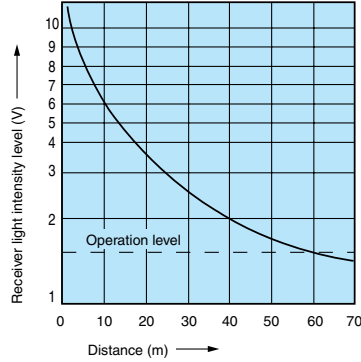
Connect a resistor between Terminals (4) and (1) for voltage output between Terminal (4) and (2).
Output between Terminals (4) and (2): OFF (H level) when normal.

Characteristics (Typical Example)

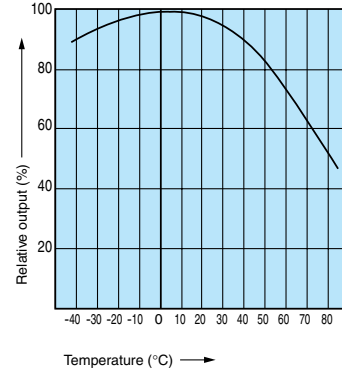
Directional characteristics



Distance-output characteristics

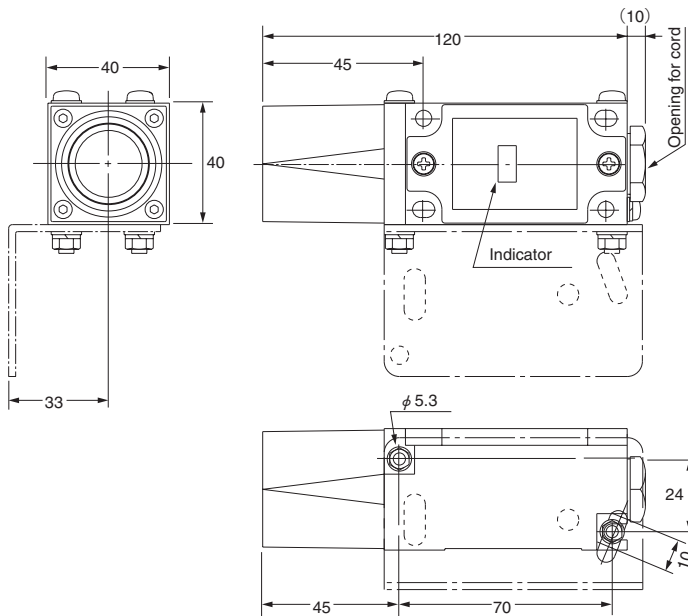


Temperature characteristics



Dimensions (in mm)

CAD



For connection, use cables of 9-11 mm in diameter.
 Loosen the screws on the lid of the body to remove the lid.
 For mounting, use a solid base not subject to vibration.
 Use 2 M6 bolts for securing the sensor body (separately prepare bolts, nuts, washers, etc.).

Mounting bracket (accessory)

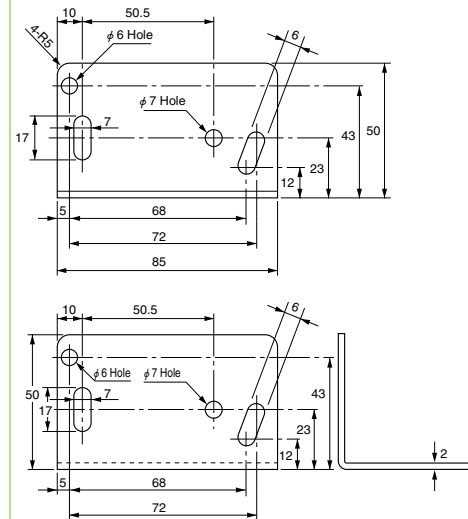
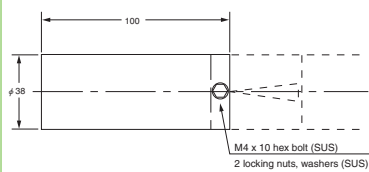


Plate thickness: 2 mm

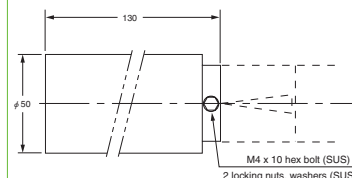
(NT30F + H301 hood)

CAD



(NT30F + F301 airless hood)

CAD



(NT30F + A301 air purge hood)

CAD

