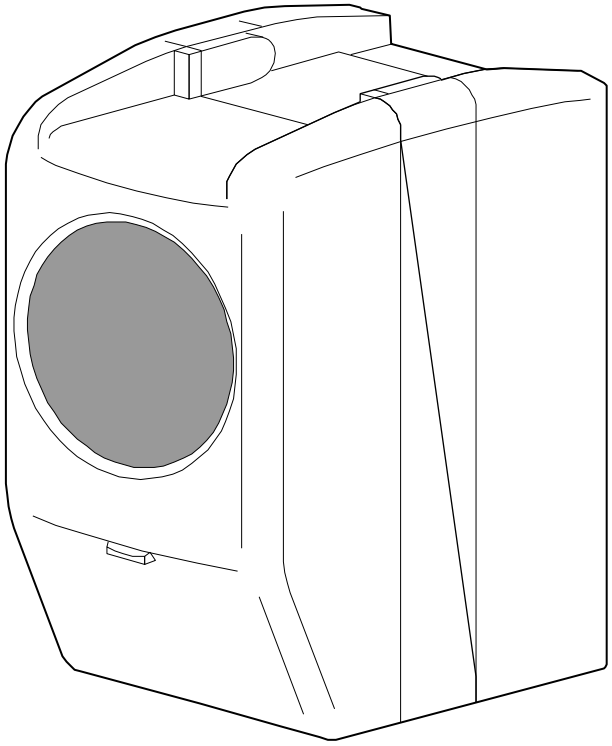
NITTAN

Instruction Manual

Beam Type Smoke Detector

CKLD-KPT2



Thank you for purchasing our product.
Please read through the instruction manual before use.
Keep this manual in an easily accessible place for future reference.

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Handling Instructions

For Your Safety

The criteria of the Danger, Warning and Caution markings are as follows.

⚠ Warning	There is a risk of endangering the health or life of the user, or causing a significant damage to the product if the product is mishandled.
⚠ Caution	There is a risk of causing minor injuries, damage to the product, or a trouble to the product if the product is mishandled.

	
Action Prohibited	Action Mandated or Directed

⚠Warning	
	○**Do not get the equipment wet or touch it with a wet hand.** It may cause electric shock or system trouble. ○**Do not use the equipment in a location where operating temperature exceeds its range (-10 to +50°C) or where explosive gas or corrosive gas is generated.** It may cause the equipment trouble or fire ignition. ○**Do not use the equipment in a location with high humidity, or where condensation, steam, or oily smoke is generated.** It may cause electric shock or system trouble. ○**Do not disassemble or modify the equipment.** It may cause electric shock or system trouble.
	○ **Make sure to connect to each terminal correctly, according to rated capacity and polarity.** Otherwise it may cause the equipment trouble or fire ignition. ○**If work at height is involved, make sure to secure scaffolding for safety to prevent falls.** There is risk of falls or falling objects.

Handling Instructions

⚠Warning

	○**Make sure to turn the power off before commencing any wiring work.** Otherwise it may cause damage to the equipment.
	○ **Avoid installing the product in any location where it can be easily touched by accident.** It may cause injury. ○**Ensure to fix the product securely.** Otherwise it may cause falling.

Important

1）Notes in installation

- Contact your distributor or contractor for the installation of the product.
- Any work at height must be carried out by no less than 2 persons in order to prevent falling accidents.
- Use the Remote Station（LP05/LP04） in combination with the Detector.
- Avoid locations where the Receiver is exposed to direct sunlight.
- Avoid locations where the Receiver is exposed to an intense light source (more than 5000 lux), light beam, or strobe light. Optional shading hood (KLD-14) is also available.
- Secure the space of approximately 1 square meter around the Detector and the Remote Station, for maintenance and adjustment after the installation.
- In the event of installation in places where the Detector may be hit by a ball such as a school gymnasium, use the optional protector (KLD-15).

2）Notes in operation

- Place the monitoring switch of Remote Station back to the normal position. If the switch is shifted to the monitoring side, normal monitoring is not available.

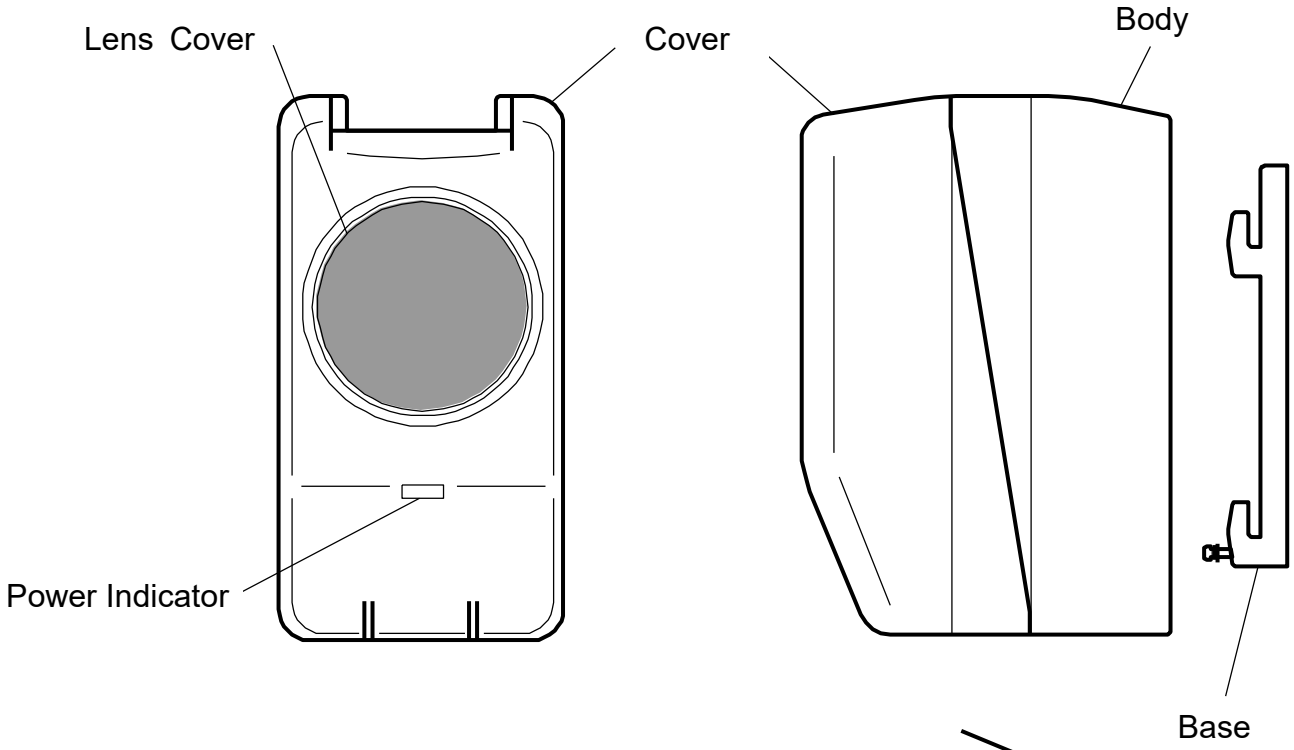
3）Notes in maintenance

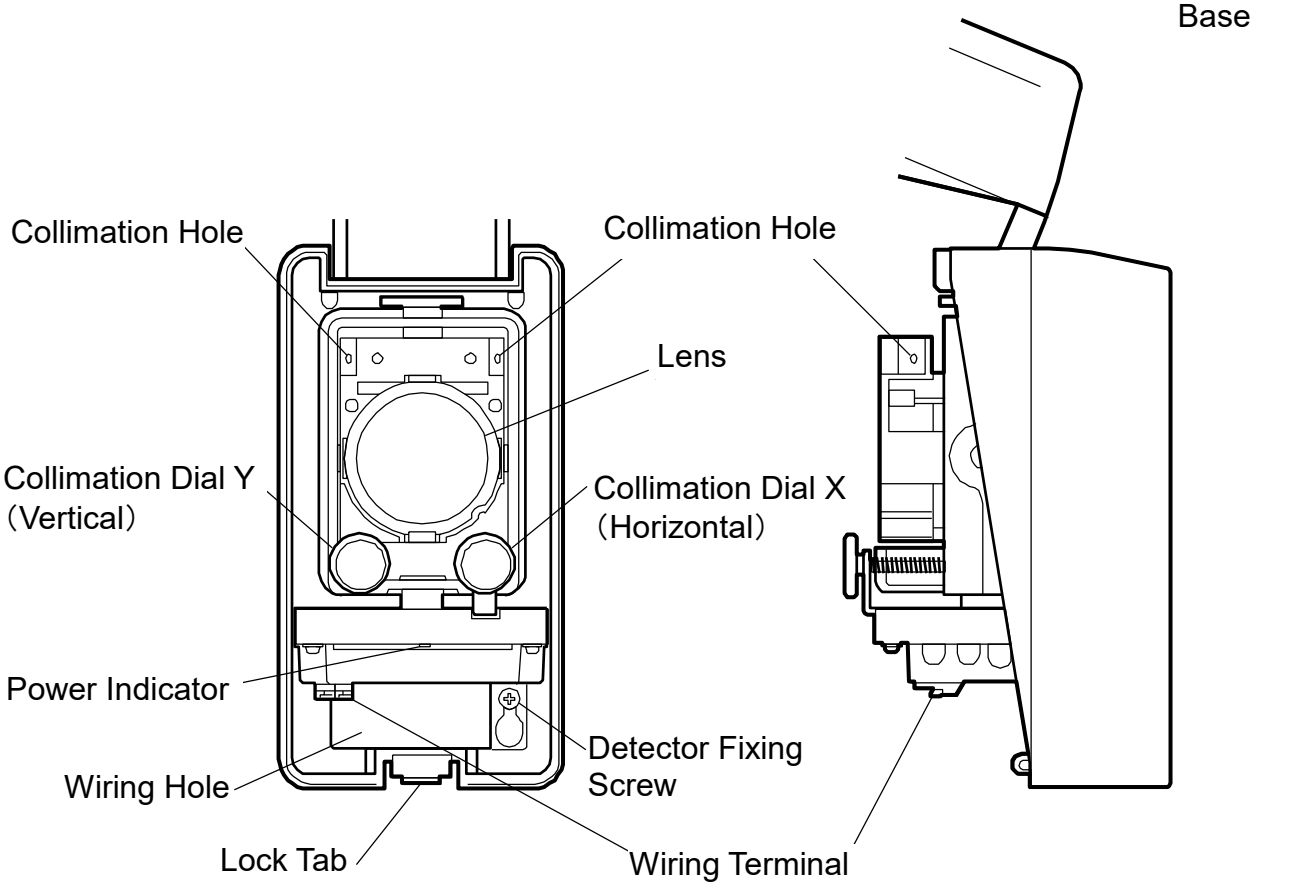
- Antifog coating is applied to both the Transmitter and Receiver lenses. For cleaning, gently wipe off with a dry soft cloth to avoid damage. Do not use thinner or other solvents.

Names of Parts

Transmitter

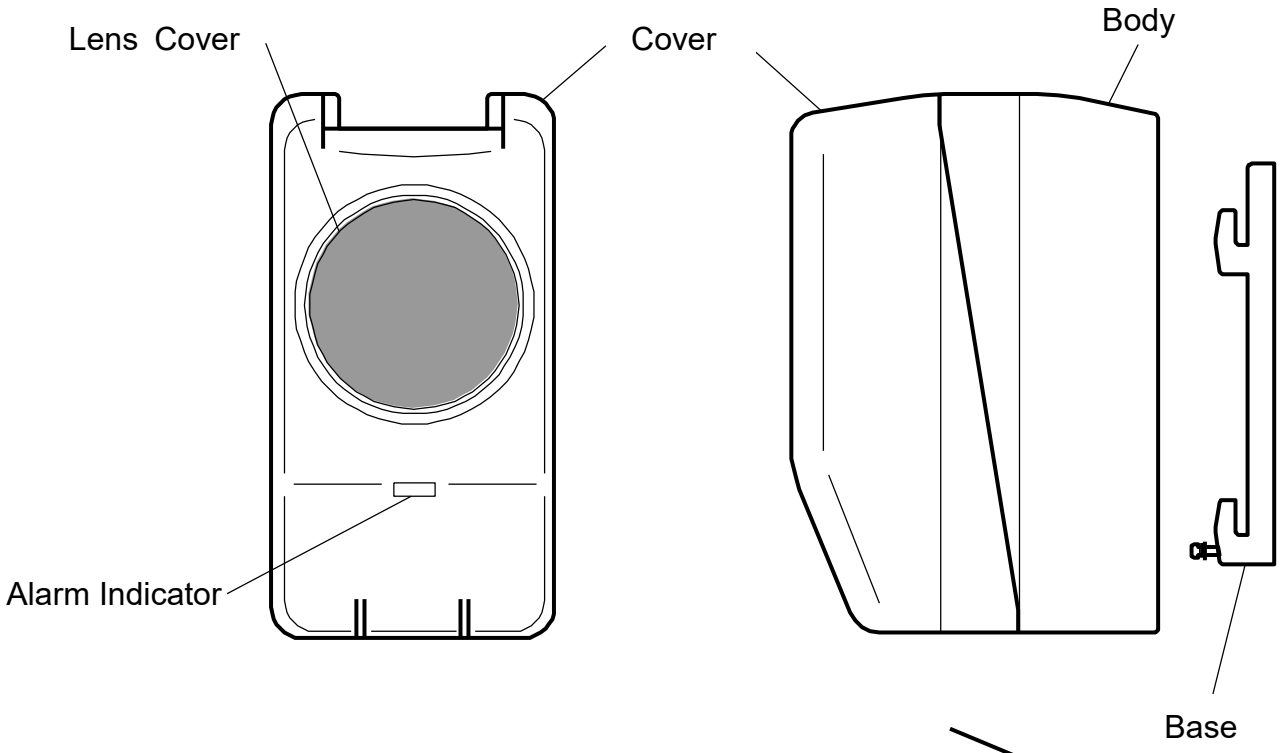
Upper figure: Cover closed Lower figure: Cover opened

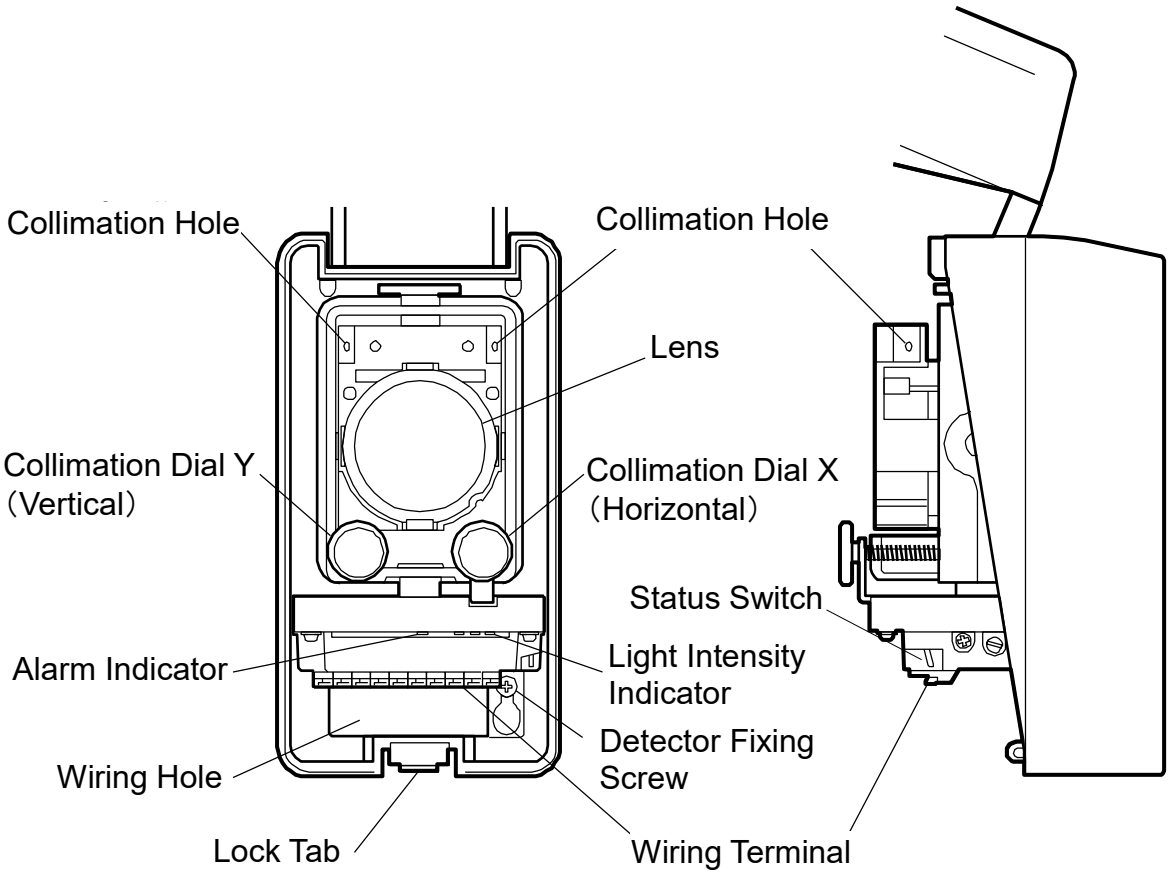




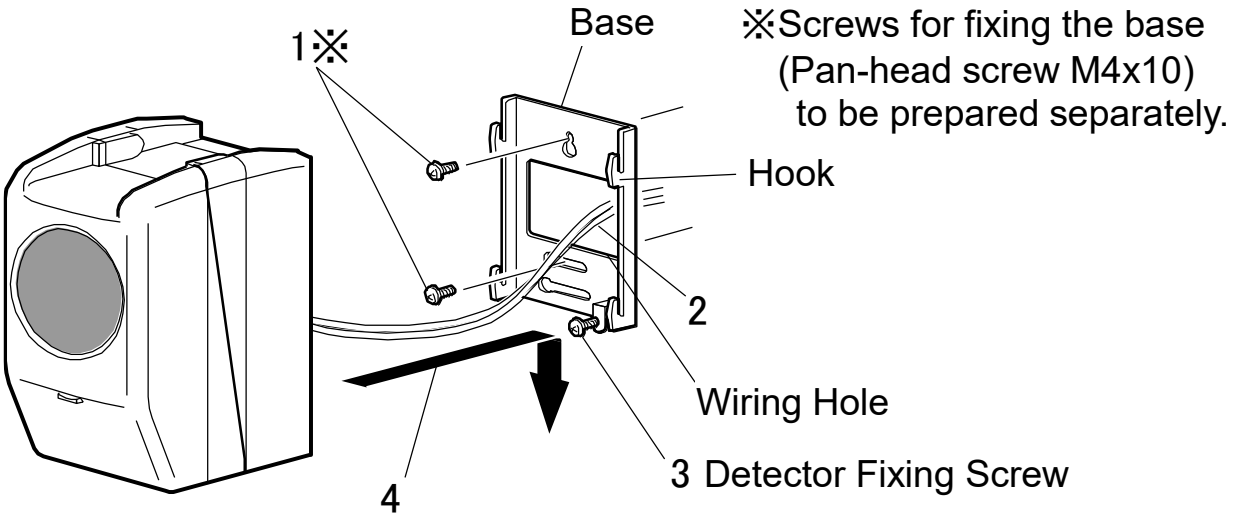
Names of Parts

Receiver Upper figure: Cover closed Lower figure: Cover opened



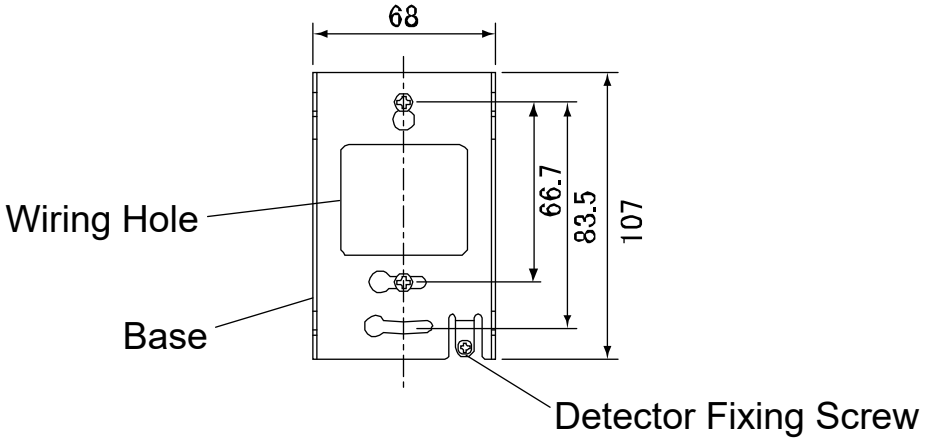


Installation

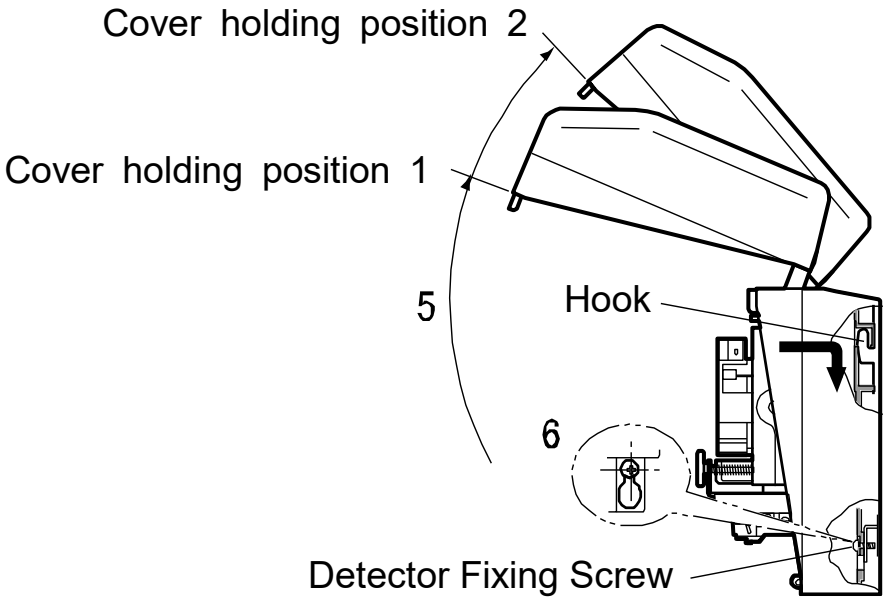


1. Pay attention to the vertical direction of the Base and fix it to the wall. (Detector Fixing Screw to be on the bottom).
2. Pull out Wiring cable from the Wiring Hole.
3. Do not tighten the Detector Fixing Screw until the Detector is mounted onto the Base.
4. Put the Detector onto the Base and slide it downward, as shown in the figure. Four hooks on the Base are to be slotted into the slit provided on the back side of the Detector, in order to be temporarily fixed.

Base Mounting Dimensions（mm）



Installation

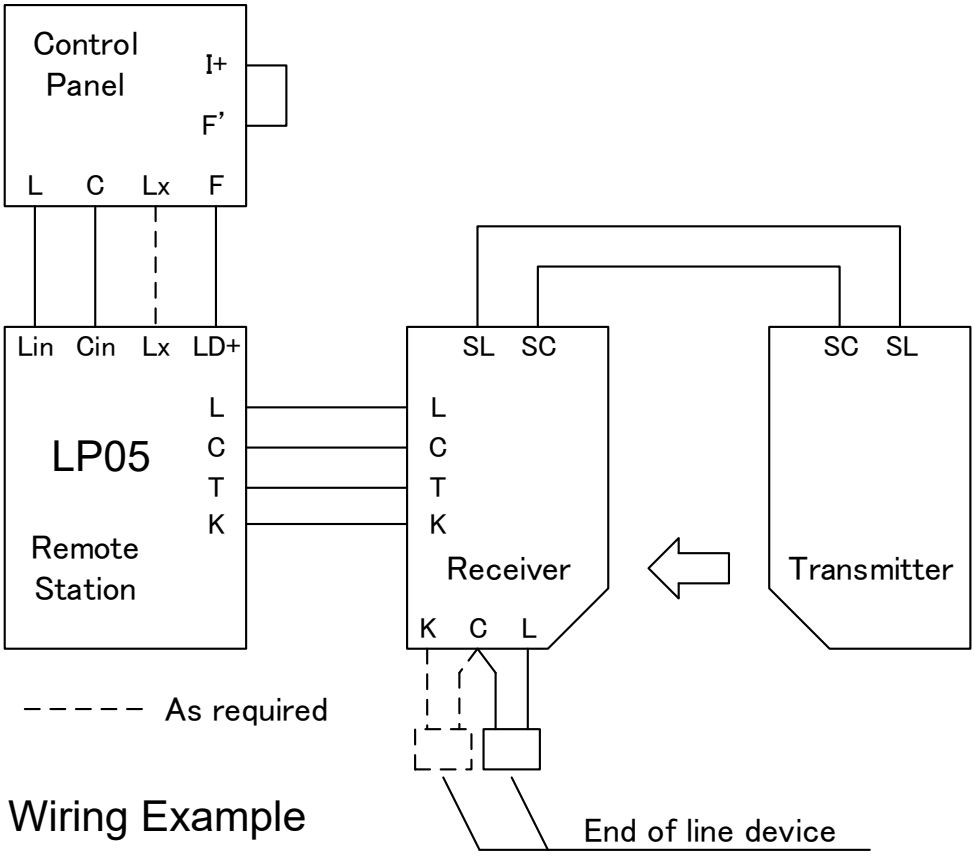


5. Press the Lock Tab, open and move the body cover upward. The cover can be held at 2 positions to make the installation easier.

6. Fasten the Detector Fixing Screw next to the Wiring Hole. Ensure that the head of the screw is positioned at the specific position of the main body. Fasten the Detector Fixing Screw to secure the Detector to the Base. When detaching the Detector, loosen the Detector Fixing Screw and slide the Detector upward.

	○ **Set the Status Switch of the Receiver to "CAL" position before power up.** When the Detector is powered up while the Status Switch is at the "NORM" position, the Detector may go into alarm. ○ **Please be aware that the switch would go back to "NORM" position when the Detector cover is closed.** ○ **The mounting method for both the Transmitter and the Receiver are the same.**

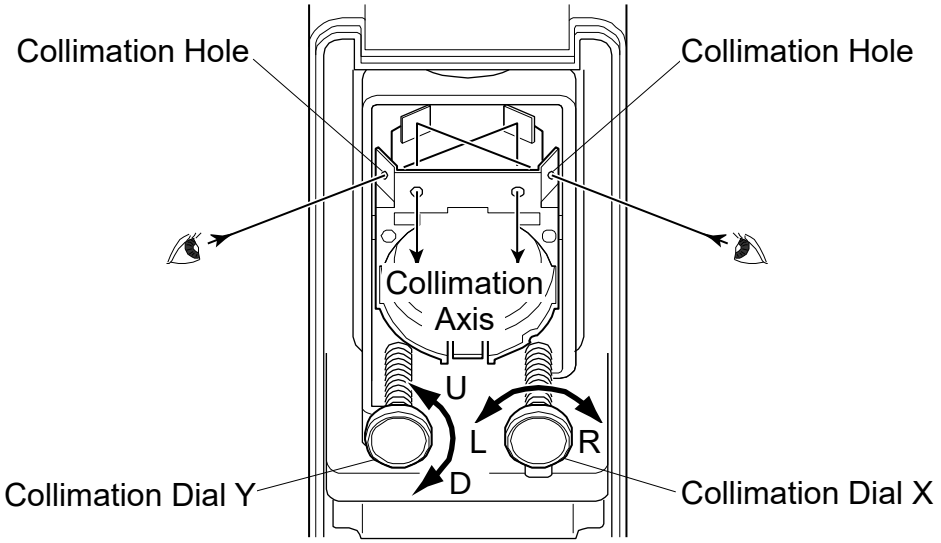
Wiring Connection



Wiring Example

1. Use dedicated Remote Station LP04 or LP05.
2. The number of the Detector and the Remote Station connected to a zone is 3 sets at maximum for LP04, and 1 set for LP05.
3. In case of using LP05, do not connect any other detector in the same zone.
4. The line between L and C of the Detector is polarity insensitive. The other terminals are polarity sensitive.
5. Ensure to connect the EOL device accompanied with the Remote Station in the line between L and C, and C and K of the Receiver.
6. In case of requirement of taking trouble status of CKLD-KPT2 by compatible control panel through the remote station, make wiring “Lx” between panel and remote station, and wiring “K” between receiver and remote station respectively.

Adjustment of Light Axis (Transmitter and Receiver)



Collimation Dial

Two Collimation Dials X and Y are provided to adjust the light axis.
Look into one of the Collimation Holes provided above the lens to collimate the opposed unit. Turn the Collimation Dial, until the opposed unit can be seen in the center of the hole.

Vertical adjustment

Turn the Collimation Dial Y to adjust the light axis in a vertical direction.
The degree range of movement on “Y” dial is plus-minus 10 degrees. One full turn of dial corresponds to approximately 1 degree change.

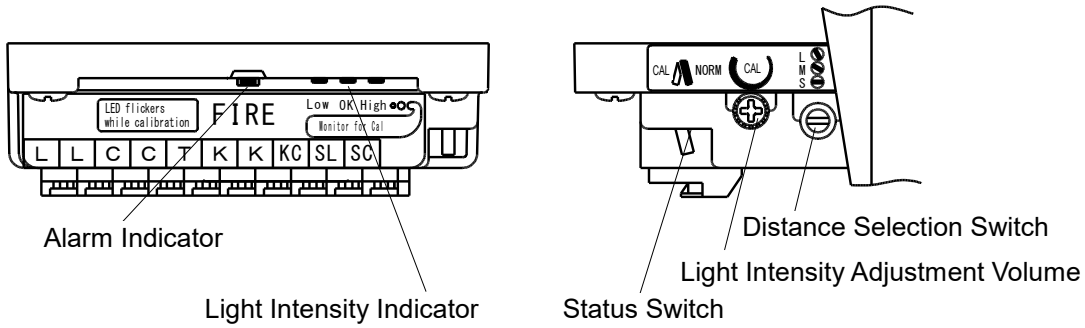
Horizontal adjustment

Turn the Collimation Dial X to adjust the light axis in a horizontal direction.
The degree range of movement on “X” dial is plus-minus 10 degrees. One full turn of dial corresponds to approximately 1.7 degree change.

Adjustment procedure

1. Adjust the light axis of the Transmitter.
2. After the light axis adjustment is completed, close the main cover immediately.
3. Adjust the light axis of the Receiver.
4. After the light axis adjustment is completed, adjust the receiving light intensity next.

Adjustment of Receiving Light Intensity (Receiver)



	○ **Ensure that the cover of the Transmitter is closed completely before adjusting the receiving light intensity.** If the cover is opened, it is not possible to adjust the receiving light intensity.

1. Confirm that the control panel is powered off (i.e. the Detector is not powered).
2. Open the cover of the Receiver, and move the Status Switch from “NORM” to “CAL” position.
3. Turn on the power of the control panel to power the Detector. Confirm that the Alarm Indicator of Receiver blinks.
4. Set the Distance Selection Switch according to the table below.

Distance Selection Switch	Distance between Transmitter and Receiver
Short	5m to less than 15m
Medium	15m to less than 40m
Long	40m to 100m

Adjustment of Receiving Light Intensity (Receiver)

5. Turn and adjust the Light Intensity Adjustment Volume, looking at the Light Intensity Indicator, so that only the green indicator blinks.

Light Intensity Indicator					Light Intensity Level
Orange	Green	**Red**	------	Blinking	Too high
Orange	**Green**	**Red**	------	Blinking	Slightly high
Orange	**Green**	Red	------	Blinking	Adjusted
Orange	**Green**	Red	------	Blinking	Slightly low
Orange	Green	Red	------	Blinking	Too low

In spite of adjusting the Light Intensity Adjustment Volume to maximum, if the orange indicator still blinks, the adjustment of light axis or the setting of Distance Selection Switch may be inappropriate.
Check the adjustment of light axis and the setting of Distance Selection Switch.

In spite of adjusting the Light Intensity Adjustment Volume to minimum, if the red indicator still blinks, the setting of Distance Selection Switch may be inappropriate.
Check the setting of Distance Selection Switch.

6. Confirm that received light intensity level is adjusted (i.e. only the green indicator is blinking). Put the Status Switch back to the “NORM” position, and the adjustment of received light intensity is completed. Close the cover immediately after the completion.

7. When the Status Switch is back to “NORM” position, the Detector starts its initialization that takes 3 minutes. The Alarm Indicator of the Receiver blinks during the initialization. The indicator turns off, when the initialization completes and the Detector goes back to the normal monitoring condition.

Adjustment of Receiving Light Intensity (Receiver)

8. After adjusting the Detector, the state of detector can be monitored by using the Remote Station for Beam Detector. For the details of monitoring, refer to the instruction manual of Remote Station for Beam Detector LP04/ LP05.

- **Make sure that the voltage between K and C during monitoring is within the following range, and not the range specified in the instruction manual of the Remote Station.**

Voltage range for monitoring
Approx. 2.08V to 2.23V

- **If the main cover is left open longer than 10 seconds after the Status Switch has put back to the "NORM" position, put the Status switch back to "CAL" position and perform the operation from 5. above again.**
- **Keep clear the monitoring area (light axis) during initialization.**
- **Sensitivity test must not be conducted during initialization. Make sure that the Alarm Indicator of the Receiver finishes blinking before sensitivity test.**

Sensitivity and Response Time

The sensitivity of detector (obscuration rate) and response time are shown in the following table.

Distance between Transmitter and Receiver	Sensitivity of activation (central value)	Response time
5m to less than 15m	30 %	4-10 sec
15m to less than 40m	40 %	4-10 sec
40m to 100m	65 %	4-10 sec

Sensitivity Test

Put the light obscuration filter test unit (NKL-F2), which is sold separately, just in front of the lens of Receiver to perform Activation /Non-activation test. Use the filters in the test according to the following table.

Distance between Transmitter and Receiver	Activation test	Non-activation test
5m to less than 15m	40 % filter	20 % filter
15m to less than 40m	50 % filter	30 % filter
40m to 100m	80 % filter	50 % filter

Make sure that the Detector is activated within 30 seconds in Activation test, and is not activated for 2 minutes in Non-activation test, after placing the filter.

Compensation and Fault Signal

1. The Detector performs compensation process for the slow change of received light intensity which is caused by the contamination of the lens or shifting of light axis. In the monitoring condition, the Detector regularly checks if light intensity received by the Receiver is appropriate. If specified light intensity cannot be received, compensation process is performed to compensate light intensity.
2. The Detector sends a fault signal (short circuit between K and C) to the Remote Station, if the light intensity continues to be less than 43% or more than 130% of the initial value for 12 hours or more.

Cause of Fault	Countermeasures
Light axis is misaligned	Adjust the light axis and the receiving light intensity. (Refer to “Handling Instructions” on page 4)
Lens cover is contaminated	Clean the lens cover and adjust the receiving light intensity. (Refer to “Handling Instructions” on page 4)

	O After readjusting the light axis and the receiving light intensity, in order to update the internal status of detector, make sure to restart the detector. Press and hold the reset switch of Remote Station for 5 seconds or more, after the initial setting is completed (i.e. when approx. 3 minutes pass after the Status Switch is placed at the “NORM” position). (If restarting the detector cannot be easily done, please wait for the automatic update of internal status, which is performed 20 minutes after the completion of initial setting)

Sensitivity Compensation

The sensitivity of detector is compensated also if the received light intensity is reduced to less than 50 % of initial setting value. If the received light intensity continuously decreases, the Detector goes into alarm at the specific sensitivity level.

Test Function

The remote test function is supported by using Remote Station for Beam Detector (LP04/ LP05) to connect the Detector to P-type control panel. Test is remotely performed by operating the test switch of the Remote Station. Refer to the Operation Instruction Manual of the Remote Station for test method.

Maintenance

Fire alarm systems are essential for providing early detection and warning in the event of fire in order to save lives and properties and minimize damage. After installed, periodical maintenance is necessary to keep the facilities in proper condition.

Important
○**Note in cleaning** Antifog coating is applied to both lenses of the Detector. For cleaning, gently wipe off with a dry soft cloth to avoid damage. Do not use thinner or other solvents.

Indicator

Each state of the indicator of Receiver is as follows.

State of the Detector	Receiver Light Intensity Indicator	Receiver Alarm Indicator
Adjustment	Blinking	Blinking
Normal monitoring	Off	Off
Fire	Off	On
Low received light (12 hrs or more)	Off	Off
High received light (12 hrs or more)	Off	Off
No received light	Off	On

Specification

Classification	Beam type smoke detector (with test function)
Model	CKLD-KPT2
Allowable Distance	5m to 100m
Sensitivity	Distance Sensitivity 5m to less than 15m : 30% 15m to less than 40m : 40% 40m to 100m : 65%
Rated Current/ Voltage	L－C：Fire Nominal Voltage DC 24V Monitoring current 760μA Alarm current 65mA K－C：Fault Nominal voltage DC 24V Alarm current 65mA T－C：Test Nominal voltage DC 24V Alarm current 100mA
Indicator	Transmitter： Power Indicator（red LED） Blinking in the monitoring state Receiver: Alarm indicator（red LED） Turning on in the alarm state
Other functions	Adjustment of receiving light intensity Sensitivity compensation Fault signal output
Terminal	Transmitter SL & SC（Transmission signal）×1 for each Receiver L & C （Fire signal） ×2 for each T （Test signal） ×1 K （Fault signal） ×2 KC （Fault signal） ×1 SL & SC（Transmission signal）×1 for each
Compatible control panel	1PM2, 1PM3
Remote Station	LP04/LP05
Temperature & humidity	-10℃ to 50℃ Relative humidity 0% to 95%（no condensation） **Note:** This product should not be installed in excessive humid or condensing conditions.
Weight	Transmitter Approx. 500g （including the base） Receiver Approx. 520g （including the base）

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