

## BATTERY OPERATED PHOTOELECTRIC DETECTOR

# OVS-50TNR

MODEL	DETECTION RANGE
OVS-50TNR	50 ft. / 15 m

### FEATURES

- Easy installation with battery driven transmitter
- 8 years battery life with 2pcs. of SAFT LSH-20
- Simplified optical adjustment -Sniper View Finder with ×2 magnification
- Slim body design
- Easy to see LED optical alignment
- IP65 waterproof structure
- Outdoor use / Usage extérieur

## 1 INTRODUCTION

### 1-1 BEFORE YOUR OPERATION

- The system must install in ordinary locations in accordance with the in Canada general requirements are given in CSA Standard C22.2 No.0, General Requirements – Canadian Electrical Code, Part II.
- Read this instruction manual carefully prior to installation.
- After reading, store this manual carefully in an easily accessible place for reference.
- This manual uses the following warning indications for correct use of the product, harm to you or other people and damage to your assets, which are described below. Be sure to understand the description before reading the rest of this manual.

	Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

	Le non respect des instructions indiquées par signe et un mauvais maniement peuvent causer la mort ou des blessures graves.
	Le non respect des instructions indiquées par ce signe et un mauvais maniement peuvent causer des blessures et/ou des dommages matériels.

This symbol indicates prohibition. The specific prohibited action is provided in and/or around the figure.

This symbol requires an action or gives an instruction.

This symbol indicates recommendation.

Ce symbole signifie interdiction. L'action interdite est décrite dans et/ou autour de l'image.

Ce symbole demande une action ou donne une instruction.

Warning	
Do not use this product for any other purpose other than its intended use on automatic gates. This product is not intended for use on Industrial Doors or Vertical gates and does not comply with UL 325 for those applications.	
Do not touch the unit base or power terminals of the product with a wet hand (do not touch when the product is wet with rain, etc.). It may cause electric shock.	
Never attempt to disassemble or repair the product. It may cause fire or damage to the devices.	
Do not use batteries that have different levels of power remaining (i.e., new and used batteries). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.	
[Handling of Batteries] Do not recharge, short circuit, crush, disassemble, exceed heat above 100°C (212°F), incinerate, or expose contents to water. Do not solder directly to the cell.	

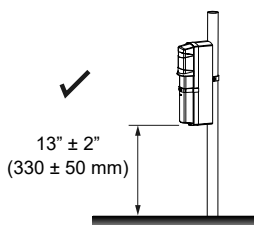
Avertissement	
N'utilisez pas ce produit à d'autres fins que son utilisation prévue sur les portails automatiques. Ce produit n'est pas destiné à être utilisé sur des portes industrielles ou des portails verticaux et n'est pas conforme à la norme UL 325 pour ces applications.	
Ne pas toucher l'unité ou les bornes électriques du produit avec une main humide (ne pas toucher si le produit a été mouillé par la pluie, etc.). Il y a un risque de choc électrique.	
Ne jamais essayer de démonter ou de réparer le produit. Cela pourrait causer un incendie ou endommager le dispositif.	
Ne pas utiliser des batteries avec des niveaux de charges différents (par ex., des batteries neuves avec des usagées). Le non respect de ce qui précède peut causer une explosion, une fuite d'électrolyte, une émission de gaz toxiques ou une conséquence nocive aux personnes et aux biens.	
[Manipulation des batteries] Ne pas recharger, court-circuiter, écraser, démonter, porter à une température supérieure à 100°C (212°F), incinérer, ou exposer le contenu à de l'eau. Ne pas souder directement à la cellule.	

Caution	
Do not pour water over the product with a bucket, hose, etc. The water may enter, which may cause damage to the devices.	
Clean and check the product periodically for safe use. If any problem is found, do not attempt to use the product as it is and have the product repaired by a professional engineer or electrician.	

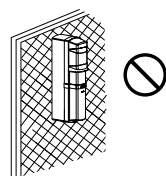
Attention	
Ne pas verser d'eau sur le produit avec un seau, un tuyau, etc. De l'eau pourrait pénétrer et endommager l'appareil.	
Nettoyer et vérifier périodiquement le produit pour une utilisation en toute sécurité. Si vous rencontrez un problème, n'essayez pas d'utiliser le produit en l'état, faites le réparer par un ingénieur ou électricien professionnel.	

### 1-2 PRECAUTIONS

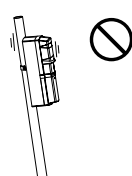
Install the unit at 13" height from the ground level.



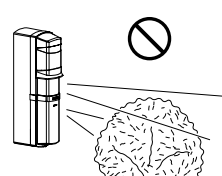
Do not install the unit on an unstable surface.



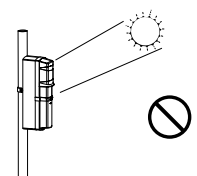
Do not install the pole in a location where sufficient stability can not be ensured.



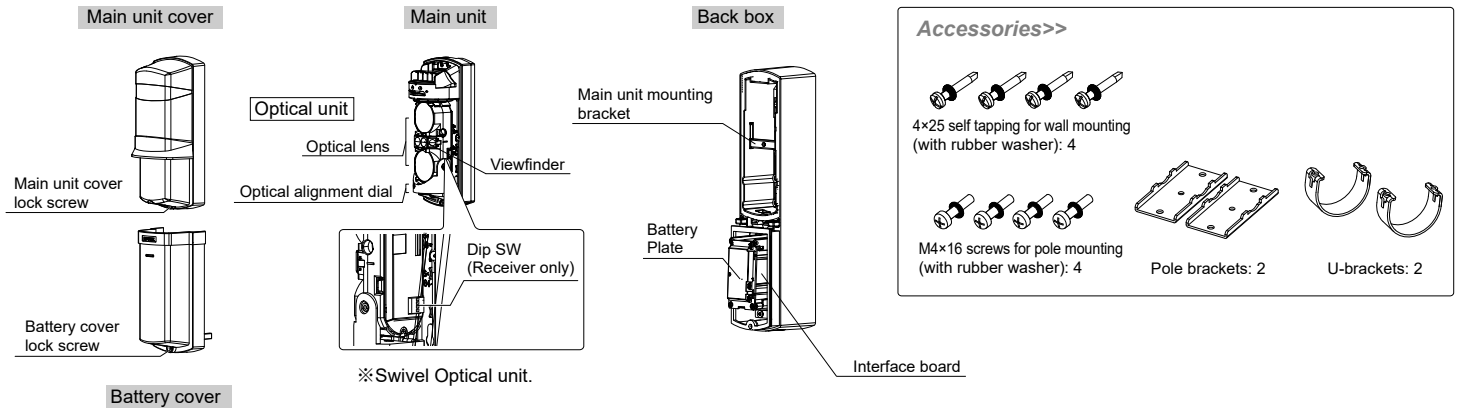
Do not install the unit in trees, leaves, or other objects that may swing in the wind and block the beam.



Avoid installing the receiver in a location where rising or setting sun may go directly into the receiver.



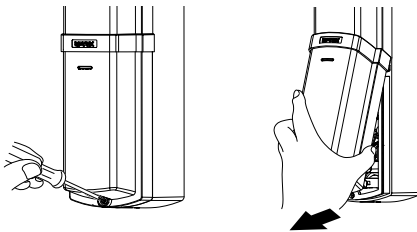
## 1-3 PARTS IDENTIFICATION



## 2 INSTALLATION

### 2-1 SEPARATING (Transmitter & Receiver)

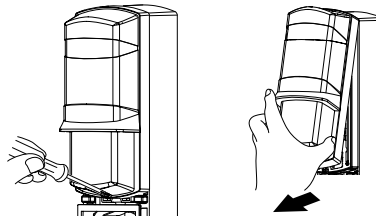
1 Remove the battery cover.



① Loosen the battery cover lock screw.

② Pull

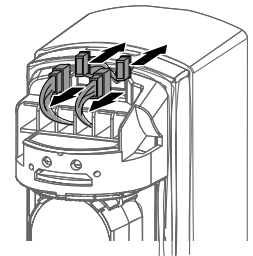
2 Remove the main unit cover.



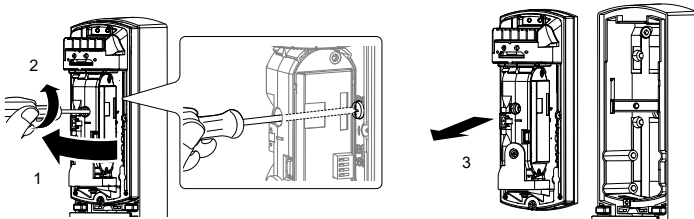
① Loosen the main unit cover lock screw.

② Pull

3 Remove the connectors.



4 Remove the main unit from the back box.

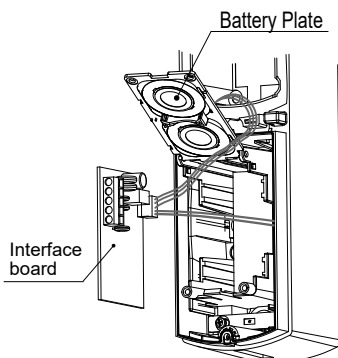


① Turn the optical unit 90 degrees and loosen the screw.

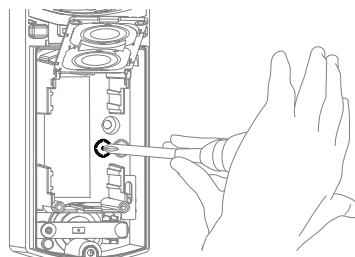
② Take the main unit out of the back box.

### 2-2 WIRING (Receiver only)

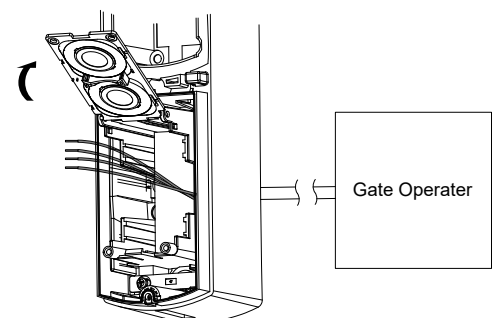
1 Open the battery plate, eject InterfaceBoard.



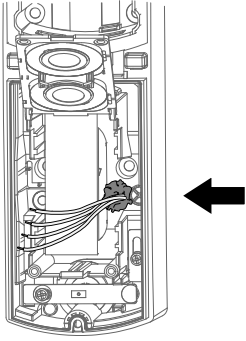
2 Using a screwdriver or similar tool, break the knockout position in the back box as shown.



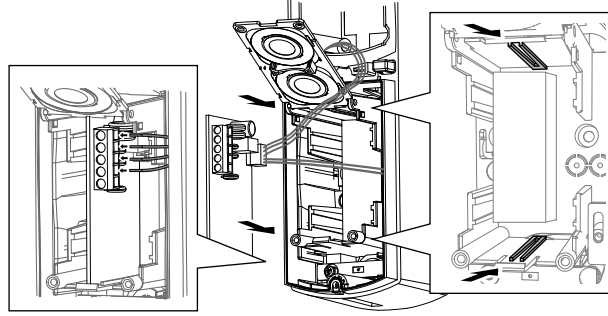
3 Open the battery plate and then route the Gate Operator wires from the rear of the back box through the knockout holes. Adjust the wires so that they extend about 100mm (4 inch) from the holes.



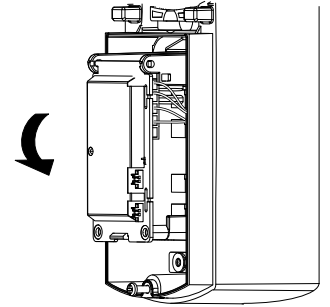
4 Fill the holes with the wires using the some putty.



5 Insert Interface board into the slots on the back box and then connect the wires to interface board terminals.

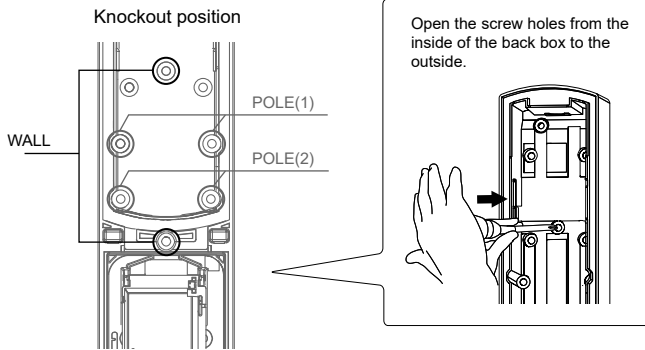


6 Close the battery plate .

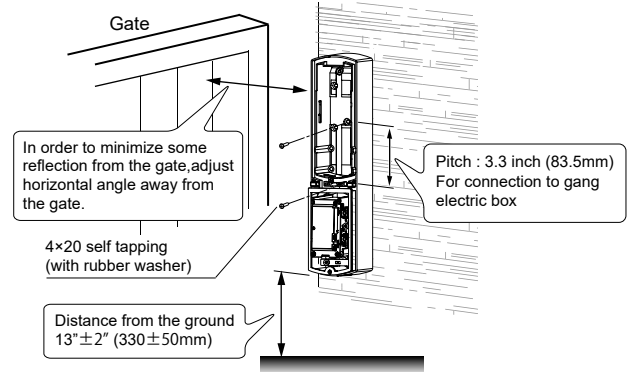


## 2-3 WALL MOUNTING (Transmitter & Receiver)

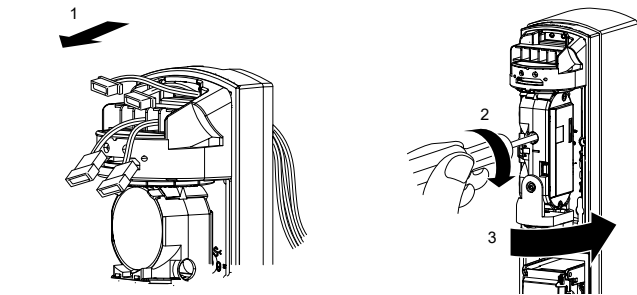
1 Using a screwdriver or similar tool, break the knockout position (x2) in the back box as shown.



2 Mount the back box to the wall.



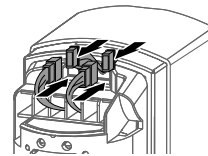
3 Mount the main unit.



① Route the two connectors of the back box through the slits in the upper part of the main unit.

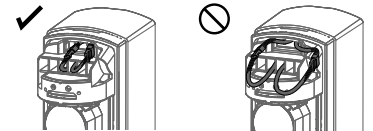
② Tighten the main unit fixing screw and turn the optical unit 90 degrees.

4 Attach the connectors.



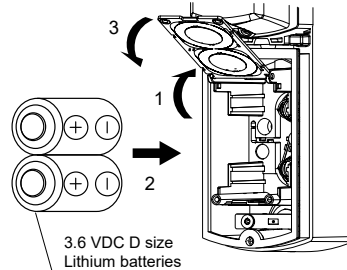
**Note>>**

• Avoid placing the cables in a position where they can be caught between the main unit and cover.



5 Replace batteries (Transmitter only).

- ① Open the battery plate in the direction of the arrow. Insert the two batteries into their compartment.
- ② Ensure the positive terminals are facing toward the front.
- ③ Close the battery plate.



### Disposal method for batteries

Dispose of used batteries in accordance with local government regulations/low and EU Battery Directive (2006/66/EU).

### ⚠ Warning

• Do not mix batteries that have different levels of power remaining (i.e., new and used batteries or batteries of different manufacturers). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.



### ⚠ Avertissement

• Ne pas mélanger des batteries avec des niveaux de charges différentes (par ex. des batteries neuves avec des batteries usagées, ou des batteries de fabricants différents). Le non respect de ce qui précède peut causer une explosion, une fuite d'électrolyte, une émission de gaz toxiques ou d'autres conséquences dangereuses pour les personnes ou les biens.



### ⚠ Caution

• Remove all batteries prior to replacing with new ones. If this is not followed, the low battery indicator LED will not reset and will continue to blink.



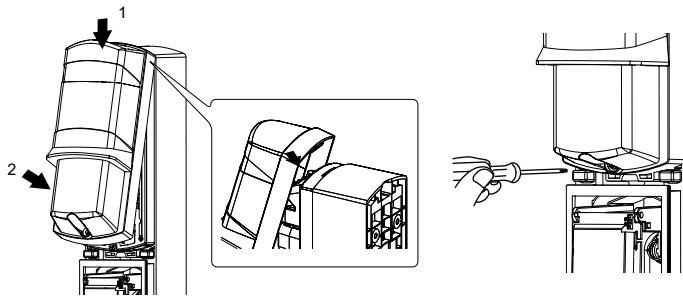
### ⚠ Attention

• Enlever toutes les batteries avant d'en remettre de nouvelles. Cela empêcherait la remise à zéro de la LED qui continuera de clignoter.  
• Lors du retour de ce détecteur au fournisseur, retirez toutes les batteries de l'émetteur et le récepteur.



6 Referring to "4 SETTING" on page 5, perform the necessary settings.

7 Close the main unit cover.



- ① Hook on the upper part of the back box.
- ② Push the lower part of the main unit cover.
- ③ Fasten the main unit cover lock screw.

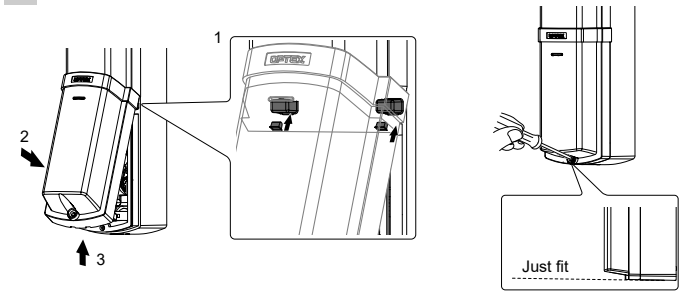
**⚠ Caution**

- Do not touch the optical unit when mounting the cover. Otherwise, the resulting shift of the optical axis may result in malfunction of the unit and require readjustment.

**⚠ Attention**

- Ne touchez pas à l'unité optique lors du montage du couvercle. Sinon, le déplacement résultant de l'axe optique peut entraîner un dysfonctionnement de l'unité et nécessiter un réajustement.

8 Close the battery cover.



- ① Close the battery cover.
- ② Tighten the fixing screw for the battery cover.

**⚠ Caution**

- When closing the cover, be careful that the cables are not caught by the cover.

**⚠ Attention**

- Lors de la fermeture du couvercle, veillez à ce que les câbles ne se prennent pas dans le couvercle.

## 2-4 POLE MOUNTING

1 Using the guide below, break the knockout positions (×2) in the back box with a screwdriver.

Knockout position

Open the screw holes from the inside of the back box to the outside.

Instruction condition	Knockout position	
	Detector No. 1	Detector No. 2
One detector	POLE (1)	-
Two detectors in opposing directions	POLE (1)	POLE (2)

**⚠ Caution**

- If you accidentally open an unnecessary knockout, be sure to fill the knockout. Not doing so may result in waterproof failure and malfunction of the product.

**⚠ Attention**

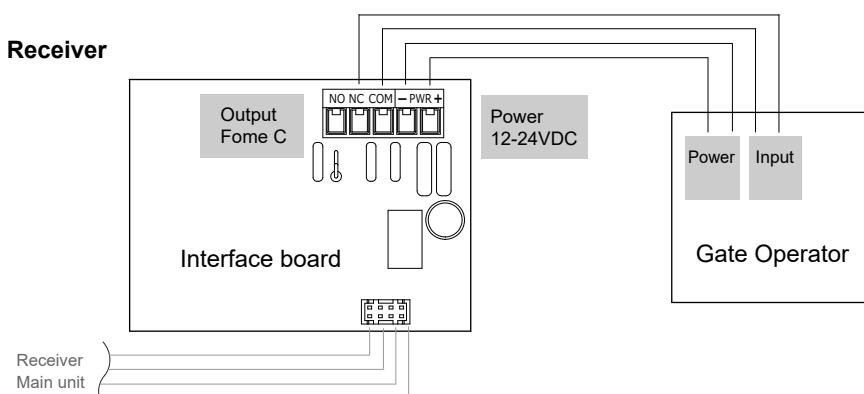
- Entrée défonçable inutile mal cassée : elle doit être refermée avec un matériau imperméable à l'eau. Sinon, cela peut entraîner un problème d'imperméabilité et un mauvais fonctionnement du produit.

2 Fix the back box on the pole.

3 Perform the wall mounting procedure of 5 to 8 on page 3.

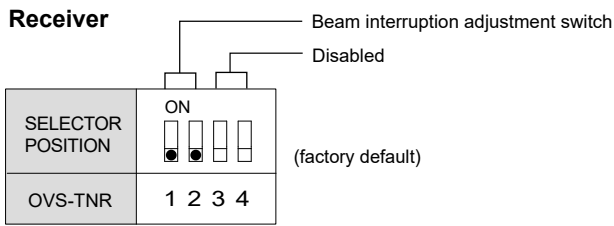
## 2-5 WIRING (Receiver only)

The Receiver Beam unit must power by UL approved Class 2 power supply.



## 3-1 FUNCTIONS

### 1 DIP SWITCH Refer to "1-3 PARTS IDENTIFICATION".



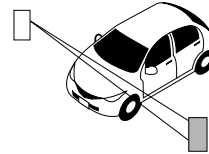
**Note>>**

- Do not press the tamper when you set the DIP switches. Otherwise the settings will not actually be changed.



### 2 BEAM INTERRUPTION ADJUSTMENT

Initial setting is at 20ms.  
Set the beam interruption adjustment switches of the Receiver according to the required response time.  
If get longer, less false alarm.



Selector Position	ON 1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Interruption Time	20msec ※	100msec	250msec	500msec

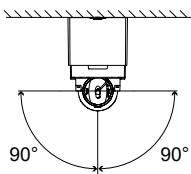
※ UL-325 complied setting.

## 3-2 OPTICAL ALIGNMENT

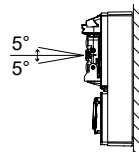
Optical alignment is an important procedure to increase reliability. Be sure to take alignment step

1 through 2 described below to attain the maximum level of the output through the monitor jack.

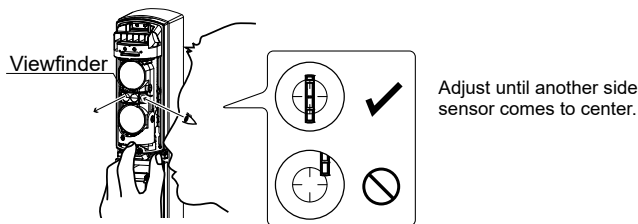
Horizontal alignment angle



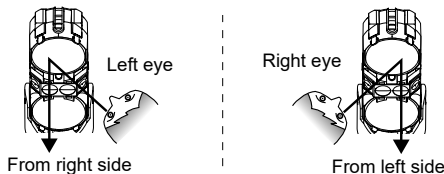
Vertical alignment angle



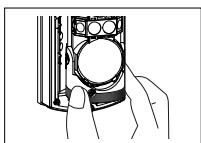
1 Look into the viewfinder and perform fine alignment of the horizontal and vertical angles using the alignment dial.



**Note>>** < How to look into the viewfinder >

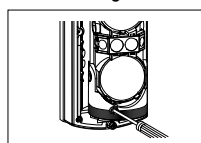


< Horizontal alignment >



Turn the horizontal alignment dial by fingers to make alignment

< Vertical alignment >

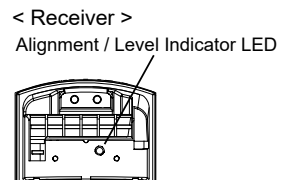


Turn the vertical alignment dial with a screwdriver to make alignment

### 2 Checking the Indicator LED and fine alignment

Checking of the indicator

- After the rough alignment using the view finder, check the light receiving status by the Alignment / Level Indicator.



Alignment / Level indicator LED	Beam interrupted	Beam received		
	ON	Fast blink	Slow blink	OFF
	●	⦿	⦿	○
Adjustment level	Realign		Fair	Good   Excellent
Monitor jack output	0 v ▽ 0.1 vDC	▹▹▹ 2.4 vDC	▹ 2.8 vDC	

※ Good more than 2.4 VDC.

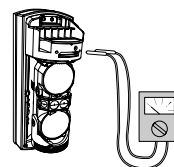
Fine adjustment with monitor jack

- After checking the receiving level of optical axis by using the alarm indicator, make sure to make fine alignment for both transmitter and receiver with voltmeter until it reaches maximum monitor output over "Good" level.

**Note>>**

- When making the adjustments by the monitor jack, be careful not to cover the optical unit with your hand, the voltmeter pin cord, etc.

< Receiver >



Set the voltmeter range to 5 to 10VDC and connect the voltmeter probes ⊕ and ⊖ to ⊕ and ⊖ of the monitor jack respectively.

**⚠ Caution**

- The Alignment / Level indicator LED is a supporting tool for easy alignment. Be sure to perform fine alignment to ensure the maximum output level through the monitor jack.
- The Alignment / Level indicator LED should only be used for rough alignment. For fine or good alignment, always use the monitor jack output level.

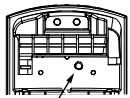
**⚠ Attention**

- Le témoin de l'alarme/de niveau est un outil d'aide pour faciliter l'alignement. Assurez-vous de réaliser réglage précis pour obtenir le niveau maximum de sortie du point de test.

# 4 OPERATION CHECK

## 4-1 LED INDICATION

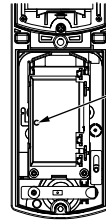
Alignment / Level indicator LED (Receiver only)



Alignment / Level indicator LED

DETECTOR	LED
Beam Interruption	● ON (continue)
Beam not received sufficiently	● Fast blink or ● Slow blink
Beam Aligned	○ OFF

Power / Low battery indicator LED



Power / Low battery indicator LED

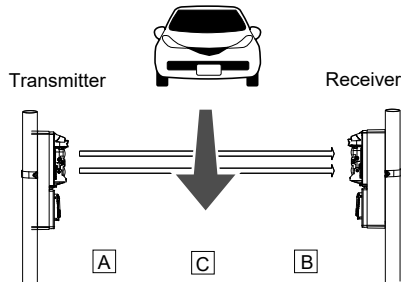
Transmitter and Receiver

BATTERY CONDITION	LED
Normal	● ON (continue)
Transmitter is low battery	● ... ● Fast blink

## 4-2 OPERATION CHECK

After installation is complete, be sure to check the operation.

- 1 Make sure that the Alignment / Level indicator LED is OFF. If it is illuminated even when the beams are not blocked, make optical alignment again.
- 2 Check that the Power / Low battery indicator LEDs on both transmitter and receiver are ON. If the Power / Low battery indicator LED is blinking, the battery power is low. Replace with new batteries.
- 3 Conduct a walk test to check that Alignment / Level indicator LED on the receiver turns ON as the walker interrupts the beams.



Be sure to conduct a walk test at the following three points:

- A. In front of the transmitter
- B. In front of the receiver
- C. At the mid point between the transmitter and receiver

The detector is installed properly when Alignment / Level indicator LED turns solid ON in the tests at all the three points.

# 5 TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Power / Low battery indicator LEDs are not illuminated. (Receiver)	Power may not be supplied.	Connect power supply of 12-24VDC.
	The supply voltage may not be correct.	Check Power supply voltage 12-24VDC.
	The power supply polarity is wrong.	Check power supply polarity.
Power / Low battery indicator LEDs are not illuminated. (Transmitter)	Reversed battery polarity.	Check the battery polarity.
Output is not sent.	Reflection from the floor or wall.	Align beams away from the floor or wall.
	Beam has not been blocked.	Block all two beams.
When the beam is blocked, the "OUTPUT" indicator LED is illuminated but the Output is not activated.	Signal line short-circuited.	Check the wiring.
Output is activated even if the light is not blocked.	Surface of Transmitter/Receiver cover soiled.	Clean the cover (wipe the cover with a soft cloth dampened with water or diluted neutral detergent).
	Optical alignment was not performed properly.	See "3-2 OPTICAL ALIGNMENT" on page 5 and make realignment.
Batteries are running out too quickly.	Main unit cover is not set properly.	Set the cover properly.
Frost, snow or heavy rain causes activation.	Optical alignment not optimized.	See "3-2 OPTICAL ALIGNMENT" on page 5 and make realignment.
	Too much snow or frost accretion.	Remove snow or frost on the cover.
Improper output	Problem with wiring.	Install the correct wiring.
Even if new batteries are used, Low battery indicator LED is ON.	Batteries are inactive condition.	Clean up the battery terminal if it is covered with an oxide film or soil.

## 6 SPECIFICATIONS

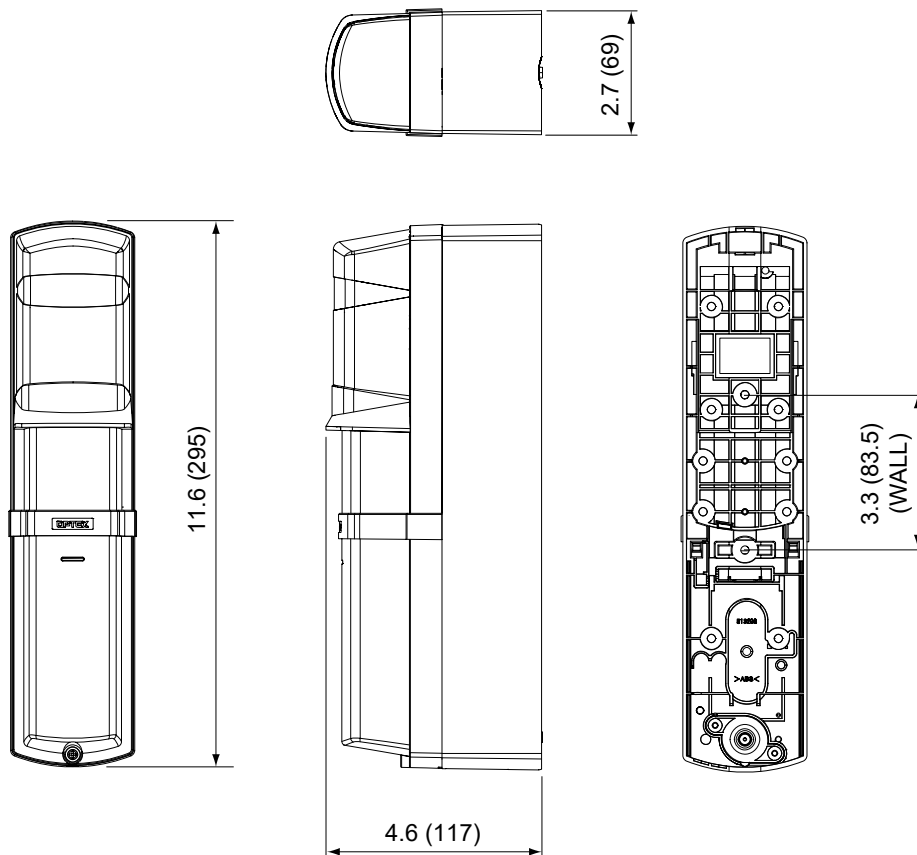
Model		OVS-50TNR
Detection range		50 ft. / 15 m
Detection method		Twin infrared beam interruption detection
Interruption time		Variable between 20/100/250/500 ms (4 steps)
Operation frequency		200Hz
Power source		Transmitter : 3.6 VDC D size lithium batteries (2 units) Receiver : 12 - 24 VDC
Current draw		Transmitter : 130µA (25°C, DC3.6V) Receiver : 80mA (max.)
Battery life **	LSH-20 by SAFT	Approx. 8 years (Transmitter)
Output	Output	Form C relay ; 30VDC. 0.2A
	Output hold time	Blocked beam period +0.5 sec
	Resistive Termination	10K ohm across NO contact
Indicator LED	Output / Level indicator (Receiver)	ON : Beam not received Blinking : Beam not received sufficiently OFF : Beam received
	Power/ Low battery indicator (Transmitter )	ON : Power ON Blinking : Low voltage OFF : Power OFF
Operating temperature		-20°C to +60°C (-4°F to 140°F)
Operating humidity		95 % (max.)
Alignment angle		±90° Horizontal / ±5° Vertical
Dimension		H × W × D inch (mm) : 11.6 (295) × 2.7 (69) × 4.6 (117)
Weight		1200 g (42.3 oz) (Total weight of Transmitter + Receiver, excluding accessories)
International protection		IP65

Specifications and design are subject to change without prior notice.

\* The value is based on the condition that it is used within the ambient temperature range of 20 to 25°C.

\*\* Using batteries other than those recommended may shorten the battery life.

## 7 DIMENSIONS



Unit : inch (mm)