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Triple Beam Photoelectric Detector

zh

Installation Instruction
DS432i-CHI
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en

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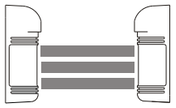
TRIPLE BEAM PHOTOELECTRIC DETECTOR
三光束室內、室外用主動紅外綫探測器

INSTALLATION INSTRUCTION
安裝說明書



DS432i-CHI
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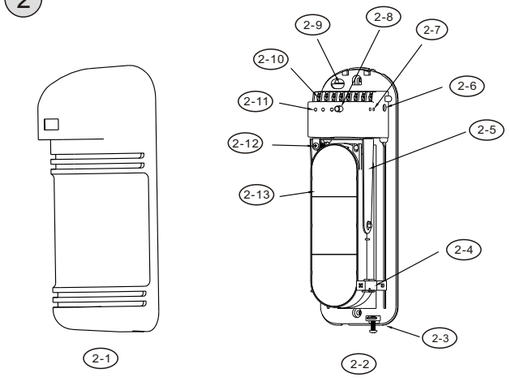

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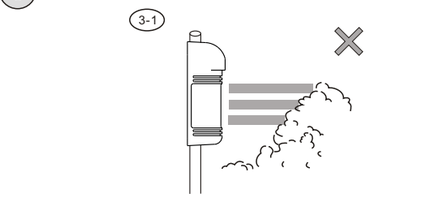

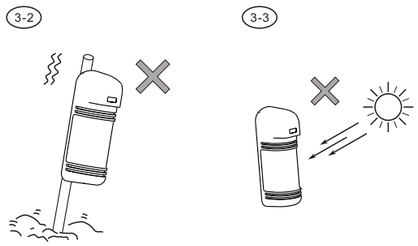

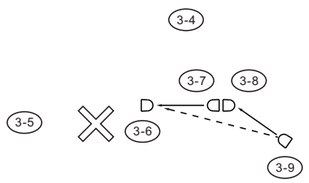

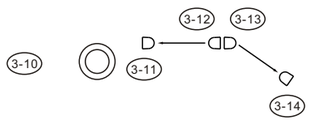

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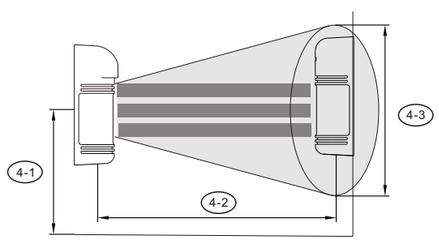

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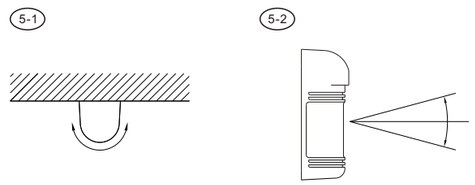

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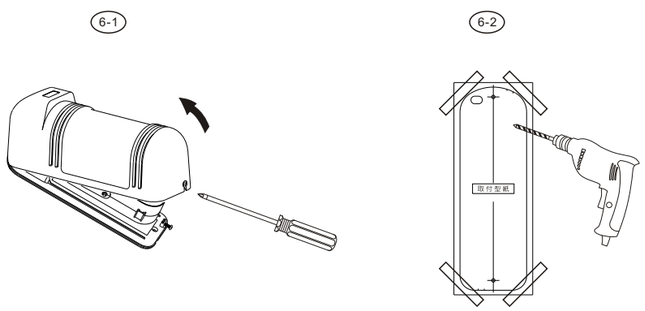

7 光軸調整

(7-1) 取下外罩後接上電源。
(7-2) 將瞄準鏡 (7-3) 取下，並照圖裝配。
(7-4) 距離瞄準鏡 (7-3)10cm左右，在右邊觀察瞄準效果
(7-5) 上下角度調整螺絲
(7-6) 上(鬆)
(7-7) 下(緊)
(7-8) 調整上下角調整螺絲(7-5)及水平調整架，使對面的探測器影像落入瞄準鏡中間位置。此時接收器的GOOD指示燈應點亮。(指示燈不亮時請繼續調整光軸)

紅色LEVEL指示燈越亮，
表示光軸對準精度越高。

(7-9) 信號電壓測試孔
(7-10) 最佳之光軸調整方法—量度測試孔之輸出
(7-11) 將測試筆插入測試孔位 (7-9)（注意“+”，“-”極性）
(7-12) 先調水平角度，直至測試孔電壓輸出最大，然後作垂直調整，方法與水平角度相同。
(7-13) 必須調校至2.3V以上，否則探測器無法穩定工作，如果不能獲得2.3V以上的電壓，則重復步驟 (7-8)~(7-12)。

8 遮光時間的調整

接收器上的遮光時間調整參照圖 (8-1)。
一般情況下，設定的時間應稍小於侵入者穿過警戒面所需的時間。

(8-1) 遮光時間的調整
(8-2) 快速跑動 (6.9m/s)
(8-3) 快速步行 (1.2m/s)
(8-4) 普通步行 (0.7m/s)
(8-5) 慢速運動 (0.3~0.5m/s)

9 外形尺寸圖

(9-1) 安裝孔
(9-2) 後蓋（另購件）
(9-3) 支架直徑

10 動作確認

完成設置後，必須進行步行測試，請參閱表格進行動作確認。

	狀態	表　示
發射器	投光時	POWER指示燈亮（綠燈）
接收器	警戒時	GOOD和LEVEL指示燈亮（綠燈和紅燈）
	警報時	ALARM警報指示燈亮（紅燈）

11 異常時的檢查

故障	故障原因	對策
發射器指示燈不亮	電源電壓不適合（斷綫、短路等）	檢查電源配綫
接收器指示燈不亮	電源電壓不適合（斷綫、短路等）	檢查電源配綫
光綫被遮斷，接收器指示燈不亮	① 因反射或其他發射器的光綫進入接收器 ② 三條光束沒有同時被遮斷 ③ 遮光時間設定過短	① 除去反射物體或變更光軸方向 ② 同時遮斷三束光 ③ 延長遮光時間
遮斷光綫後，接收器報警指示燈亮，但無報警信號輸出	① 配綫斷路或短路 ② 接點接觸不良	檢查配綫和接點
接收器的報警指示燈常亮	① 光軸不重合 ② 投、接收器之間有障礙物 ③ 外罩被污物污染	① 重新調整光軸 ② 清除障礙物 ③ 清洗外罩
斷斷續續有報警信號輸出	① 配綫不良 ② 電源電壓有變動 ③ 投、接收器之間有活動障礙物 ④ 安裝基礎不穩定 ⑤ 光軸重合精度不夠 ⑥ 其他移動物體遮光	① 檢查配綫 ② 檢查電源 ③ 去除障礙物或變更設置場所 ④ 選擇基礎牢固的場所 ⑤ 重新調校光軸 ⑥ 調整遮光時間或變更安裝場所

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三光束室內、室外用主動紅外綫探測器
安裝說明書

DS432i-CHI
DS433i-CHI
DS435i-CHI

2 部件名稱

(2-1) 外罩
(2-2) 本體
(2-3) 外罩鎖定螺釘
(2-4) 瞄準鏡
(2-5) 水平角調整架
(2-6) 遮光時間調整鈕
(接收器部份)
設定遮光時間時使用
(請參照其使用方法)
(2-7) 光軸調整測試端子
(接收器部份)
樣驗光軸對準精度時使用(請參照其使用方法)
(2-8) 防拆開關
(2-9) 配綫孔
(2-10) 接綫端子
(2-11) LED燈
(2-12) 上下角調整螺釘
(2-13) 鏡片
(2-14) 接收器指示燈
(2-15) GOOD指示燈(綠)
光軸對準時綠色燈亮，
光軸對不準時，不亮燈。
(2-16) LEVEL指示燈(紅)
隨光軸對準精度不同，
亮度發生變化。
(2-17) ALARM燈
警報指示燈
報警時點燈表示
(2-18) 發射器指示燈
(2-19) POWER燈(綠)
投光時點燈

3 設置上的注意事項

● 請避免在以下場合設置本探測器

(3-1) 設置時中間有樹木等障礙物
(3-2) 設置基礎不穩定
(3-3) 陽光、燈光等直射
(3-4) 長距離警戒時可使用多組探測器請按圖(3-10)方式安裝，以避免相互間光束干擾。
(3-5) 不正確的安裝方式
(3-6) 接收器
(3-7) 發射器
(3-8) 接收器
(3-9) 發射器
(3-10) 正確的安裝方式
(3-11) 接收器
(3-12) 發射器
(3-13) 發射器
(3-14) 接收器

1 技術參數

型 號		DS432i-CHI	DS433i-CHI	DS435i-CHI
警戒距離	室外	75m	100m	150m
	室内	225m	300m	450m
光束數		3束		
探測方式		3光束同時遮斷檢知式		
光源		紅外LED		
感應速度		35~700 msec		
報警輸出		C型繼電器（常開/常閉） 接點容量AC, DC 30V 0.5A max.		
電源電壓		DC 10.5V~28V (無極性)		
消耗電流		80mA	90mA	100mA
使用溫度範圍		-25℃~+55℃		
外形尺寸		長270mm×寬90mm×高90mm		
防拆輸出		B型開關（常閉）DC 30V 0.5A max.		
光軸調整角度（水平）		180°（±90°）		
光軸調整角度（垂直）		16°（±8°）		
瞄準器		可拆卸式		
結露、結霜對策		超聲波焊接結構		
其他附加功能		受光指示、OK指示、測試端子		
材質		面罩PC樹脂，底殼ABS樹脂		
重量		1100g（接收器+發射器）		

4 安裝高度及探測距離

型 號	探測距離	光束張角
DS432i-CHI	**75m**	**2.25m**
DS433i-CHI	**100m**	**3.0m**
DS435i-CHI	**150m**	**4.5m**

(4-1) 安裝高度
0.7~1.0m
(4-2) 探測距離
(4-3) 光束張角

5 光軸調整範圍

可在水平方向±90°
垂直方向±8°進行
光軸調整

(5-1) 水平方向180°（±90°）
(5-2) 上下方向16°（±8°）

6 設置方法

● 牆壁安裝方式

(6-1) 拆下固定螺絲取下外罩。
(6-2) 將附帶的安裝對位圖粘在牆上，按其孔位打孔。
(6-3) 將電纜穿過配綫孔 (6-4)進行配綫。
(6-5) 將本體固定在牆上。
(6-6) 將電纜綫接入配綫端子。
(6-7) 完成光軸遮光時間的調整後外罩裝好。
(6-8) 發射器端子配綫圖
(6-9) 備用端子
(6-10) 電源輸入（DC 10.5V~28V 無極性）
(6-11) 備用端子
(6-12) 防拆開關端子（常閉）

● 本體至受信機的配綫距離

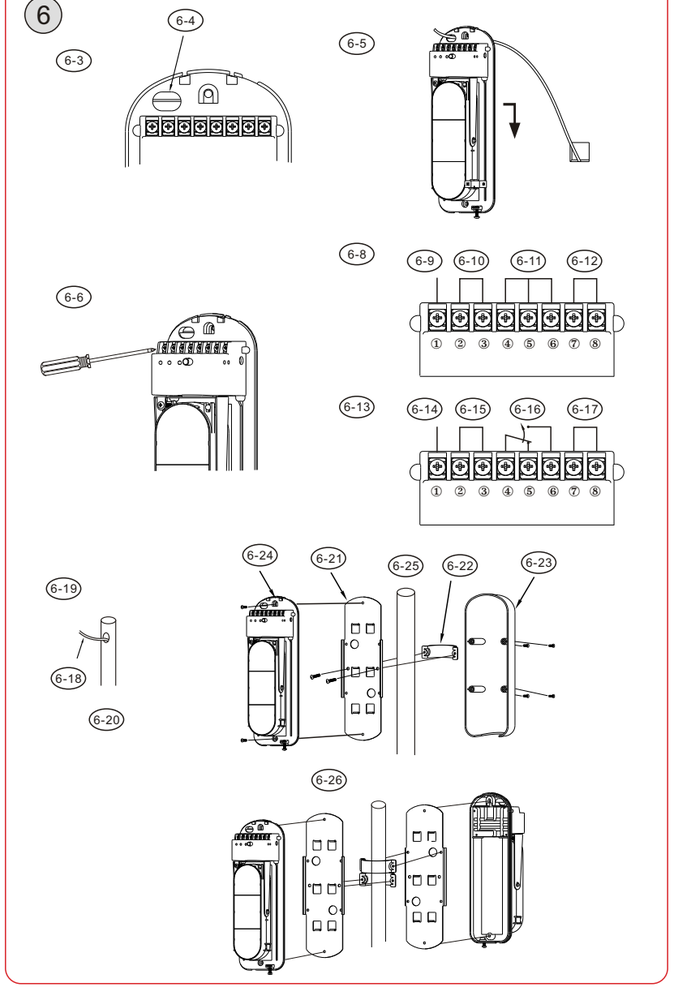
機 種	DS432i-CHI		DS433i-CHI		DS435i-CHI	
綫徑 \ 電壓	12V	24V	12V	24V	12V	24V
0.3mm²(ø0.6)	268m	2411m	214m	1929m	179m	1607m
0.5mm²(ø0.8)	469m	4219m	375m	3375m	313m	2813m
0.75mm²(ø1.0)	625m	5625m	500m	4500m	417m	3750m
1.25mm²(ø1.2)	938m	8438m	750m	6750m	625m	5625m

(6-13) 接收器端子配綫圖
(6-14) 備用端子
(6-15) 電源輸入（DC 10.5V~28V 無極性）
(6-16) 警報輸出（常開/常閉）
(6-17) 防拆開關端子（常閉）

● 固定安裝方式

(6-19) 在支架上開好引綫孔，
并引出電纜綫 (6-18)。
(6-20) 支架外徑ø38mm~ø50mm。
(6-21) 安裝鋼板
(6-22) U形鋼環
(6-23) 後蓋（另購件）
(6-24) 取下外罩(6-23)。
(6-25) 將安裝鋼板(6-21)固定在支架上。
(6-26) 背對背安裝參考圖

6



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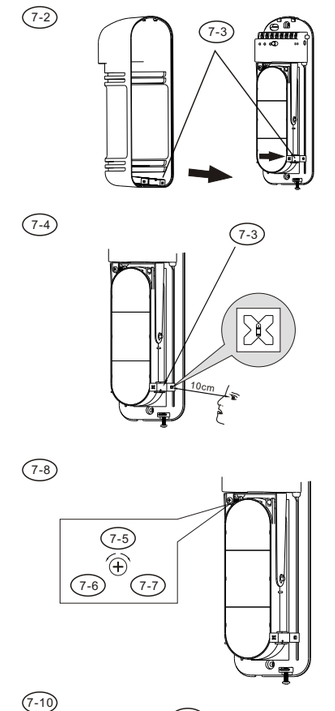

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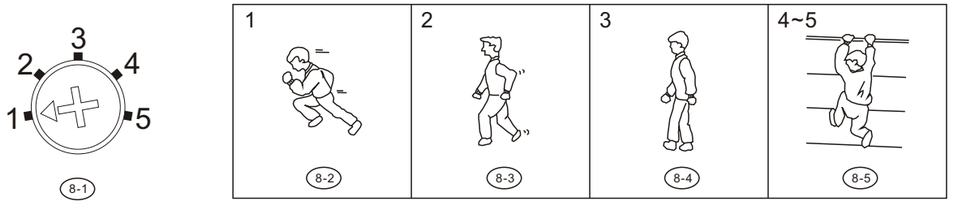

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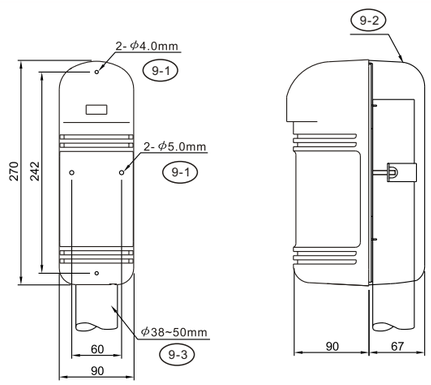

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TRIPLE BEAM PHOTOELECTRIC DETECTOR INSTALLATION INSTRUCTION

DS432i-CHI
DS433i-CHI
DS435i-CHI

2 PARTS DESCRIPTION

(2-1) COVER
(2-2) MAIN BODY
(2-3) Cover lock screw
(2-4) Viewfinder
(2-5) Horizontal angle adjustment dial
(2-6) Obscuratin time adjustment
(Only for Receiver)
Obscuration time adjustment:To be used for setting the obscuration time
(Refer to '**adjustment of obscuration time** ')
(2-7) Monitor jack
(Only for Receiver)
Monitor jack: Should be used for making the optimum optical axis adjustment
(Refer to '**how to use the monitor jack**')
(2-8) Tamper
(2-9) Wire hole
(2-10) Connection terminal
(2-11) LED
(2-12) Vertical adjustment screw
(2-13) LENS
(2-14) Receiver LED
(2-15) GOOD(Green)
On when optically aligned
Off when optically not aligned
(2-16) LEVEL(Red)
Intensity varies with signal
(2-17) ALARM
Alarm indication lamp
(2-18) Transmitter LED
(2-19) POWER(Green)

1 SPECIFICATION

Model		DS432i-CHI	DS433i-CHI	DS435i-CHI
Protection range	Outdoor	50-75m	75-100m	100-150m
	Indoor	225m	300m	450m
Infrared beam		3 beams		
Detection system		3 beams simultaneous cut-off detection		
Light source		Infrared LED		
Response time		35~700 msec		
Alarm output		Relay contact, form 'C' contact rating 30V AC, DC 0.5A Max.		
Power required		DC 10.5V~28V		
Power consumption	Receiver	40mA	40mA	40mA
	Transmitter	40mA	50mA	60mA
Temperature range		-25℃~+55℃		
Outline dimension		L270mm×W90mm×H90mm		
Tamper output		Switch contact, B-Contact 30V DC, 0.5 A Max.		
Optical axis horizontal adjust		180° (±90°)		
Optical axis vertical adjust		16° (±8°)		
Collimator		Finder (peep window)		
Measure for moisture/frost		Slit type cover, heater option		
Other additional function		Sensitivity monitoring output terminal. Ok monitoring		
Material		Cover: PC, Base: ABS		
Weight		1100g (Transmitter and Receiver)		

3 SUGGESTIONS FOR INSTALLATION

(3-1) Ensure the sensors line of sight is free from any false alarm sources such as bushes, trees,etc.
(Pay attention to these as they may change seasonally.)
(3-2) Ensure the sensors are mounted on a stable and firm fixing.
(3-3) Ensure strong sunlight or car headlights do not shine directly on to the receiver. (Within ±2° from the optical axis is not recommended.)
(3-4) In case of jump phenomenon, as shown× section(3-5), change the disposition of transmitter and receiver to the following manner shown ◎section(3-10).
(3-6) Receiver
(3-7) Transmitter
(3-8) Receiver
(3-9) Transmitter
(3-11) Receiver
(3-12) Transmitter
(3-13) Transmitter
(3-14) Receiver

4 Height of installation and protection distance

- Note that here the protection distances refers to the sheet below.

Model	Protection Distance	Spread of Beam
DS432i-CHI	75m	2.25m
DS433i-CHI	100m	3.0m
DS435i-CHI	150m	4.5m

(4-1) Height of installation 0.7~1.0m
(4-2) Protection Distance
(4-3) Spread of Beam

5 DIRECTION OF INSTALLATION

Because angle of reflection mirror is adjustable in ±90° horizontally and ±8° vertically, the unit can be installed in various directions.

(5-1) Horizontally 180° (±90°)
(5-2) Vertically16° (±8°)

6 INSTALLATION

- WALL MOUNT

(6-1) Loosen screw holding cover and remove the cover.
(6-2) Attach the mounting pattern paper to the wall, mark the installation holes, and make guide holes.
(6-3) Break knock-out (6-4) and pull wire through.
(6-5) Attach the unit to the wall.
(6-6) Connect wires to the terminal.
(6-7) Make the optimum optical adjustment as per section 7 and confirm system operation before replacing covers.
(6-8) Transmitter Terminal Configuration
(6-9) Free
(6-10) Power
(6-11) Free
(6-12) Tamper
(6-13) Receiver Terminal Configuration
(6-14) Free
(6-15) Power
(6-16) Alarm
(6-17) Tamper

- POLE MOUNT

(6-19) Pull the wire through the wire(6-18) hole of the pole.
(6-20) ϕ38mm~ϕ50mm
(6-21) Bracket
(6-22) Pole holder
(6-23) Pole cover
(6-24) Take off pole cover(6-23)。
(6-25) Attach the bracket(6-21) to the pole with the pole holder.
(6-26) Pole mount back-to-back
Each bracket to be reversely attached.

- Wiring distance

Model	DS432i-CHI		DS433i-CHI		DS435i-CHI	
Wire diameter \ Voltage	12V	24V	12V	24V	12V	24V
0.3mm² (ϕ0.6)	268m	2411m	214m	1929m	179m	1607m
0.5mm² (ϕ0.8)	469m	4219m	375m	3375m	313m	2813m
0.75mm² (ϕ1.0)	625m	5625m	500m	4500m	417m	3750m
1.25mm² (ϕ1.2)	938m	8438m	750m	6750m	625m	5625m

7 ADJUSTMENT OF OPTICAL AXIS

- It is important to ensure correct optical alignment between the transmitter and receiver for proper operation.

(7-1) Turn on the power supply after uninstallation.
(7-2) Look through the viewfinder(7-3) as shown below.
(7-4) Place the viewfinder(7-3) on either right or left hand side of the lens whichever makes easier viewing.
(7-5) Vertical adjustment
(7-6) to raise(loosen)
(7-7) to lower(tighten)
(7-8) Adjust the angle of the lens via the Horizontal angle adjustment and the Vertical adjustment(7-5) screw so that the sensor can be seen in the center of the Viewfinder.This adjustment is carried out on both the Transmitter and Receiver. Confirm after adjustment that the green GOOD LED is on, otherwise alignment should be readjusted. The red LEVEL LED lamp will be brighter dependent on higher signal levels.
NOTE:After completion of optical adjustment, ensure that both filters on the receiver are replaced to their original position behind the mirrors.
(7-9) Monitor Jack
(7-10) How to use the Monitor Jack?
The best adjustment of optical axis can be done by reading the output voltage of the monitor jack.
(7-11) Insert the meter pins into the monitor jack(7-9). (Pay attention to the polarity because of DC voltage)
(7-12) a) Adjust the horizontal adjustment until the output is at a maximum.
b) Adjust the vertical adjustment screw to obtain best signal.
(Do not interrupt beam by hands during the adjustment)
(7-13) The following minimum voltages should be obtained to ensure best performance.2.3V for all of the SBM series. If this is not obtained then the transmitter and receiver should be re-aligned.
NOTE: If the sensors are too close together then the signal level saturates and the IR beam may be shut-down. This is normal and will only be achieved during bench testing. Signal levels are restored under normal operation distances.

8 ADJUSTMENT OF OBSCURATION

Set the obscuration time of the receiver by adjusting the obscuration time control to the required setting according to the sketch (8-1). The obscuration time should be set lower to detect faster moving targets, however care should be taken to note the environmental conditions as the obscuration time should be set higher to ignore conditions where there are a lot of birds or wind blown material.
Caution: Obscuration time settings exceeding 70msec (exceeding a setting of 1) do not comply with the requirements in UL639. Instrusion Detection Units.

(8-1) Obscuration time control
(8-2) fast running at full speed (6.9m/s)
(8-3) walking with quick steps (1.2m/s)
(8-4) normal walking (0.7m/s)
(8-5) slow action (0.3~0.5m/s)

9 OUTLINE DIMENSION

(9-1) Installation hole
(9-2) Back cover
(9-3) Pole

10 CONFIRMATION OF OPERATION

After completion of the installation, confirm correct operation by suitable walk test. Refer to the following LED indications during the walk test. Confirm tamper operation prior to replacing covers. Confirm system operation with covers replaced.

	Conditions	Indication
Transmitter	Transmitting	Power indicator is on (Green LED)
Receiver	Watching	Good&Level indicator is on (Green LED&Red LED)
	Alarm	Alarm indicator is on (Red LED)

NOTE: Conduct a Walk Test at least once a year

11 TROUBLE SHOOTING GUIDE

Q Symptom	Possible cause	A Remedy
Indication lamp of Transmitter does not light.	Improper voltage of power supply	Check power supply and wiring
Power supply indication Lamp of Receiver does not light.	Improper voltage of power supply	Check power supply and wiring
Alarm indication lamp does not light even when the beams are intercepted.	① Infrared beam from Transmitter is reflected on another object and sent into the Receiver. ② Three beams are not intercepted at the same time. ③ Shorter obscuration time than that set on the obscuration control.	① Remove the reflecting object or change the place for installation and the optical axis direction. ② Check three beams to intercept at the same time. ③ Adjust obscuration time setting to be shorter.
Although alarm LED lights when the beams are intercepted, alarm does not ring.	① Broken wires or short on the signal wires. ② Melted bridge on the signal connection (Wrong current on the signal wires)	① Check the wiring. ② It needs to be repaired.
Alarm LED on the Receiver does not turn off.	① Inadequate optical axis. ② Shading objects between the Transmitter and the Receiver. ③ Dirty cover or dirty reflection mirror of the Transmitter and/or Receiver.	① Readjust the optical axis. ② Remove the shading objects. ③ Clean optics with soft cloth.
Intermittent alarm.	① Bad wiring connection. ② Change of supply voltage. ③ Shading objects moving by wind between the Transitter and the Receiver. ④ Unstable installation of the sensor unit. ⑤ Incomplete optical axis adjustment. ⑥ Birds and other large flying objects intercept the beam.	① Check the wiring connection. ② Check the voltage (for stabilized supply voltage.) ③ Remove the shading objects or change the place for installation. ④ Fix steadily. ⑤ Readjust the optical axis. ⑥ Readjust the obscuration time to be longer or reposition.