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Dual Beam Photoelectric Detector

Security Systems

zh Installation Instruction
DS422i-CHI DS428i-CHI
DS426i-CHI DS429i-CHI

en Installation Instruction
DS422i-CHI DS428i-CHI
DS426i-CHI DS429i-CHI

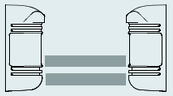
广州澳星电子有限公司13926095043

BOSCH

BOSCH

DUAL BEAM PHOTOELECTRIC DETECTOR
双光束室内、室外用主动红外线探测器

INSTALLATION INSTRUCTION
安装说明书



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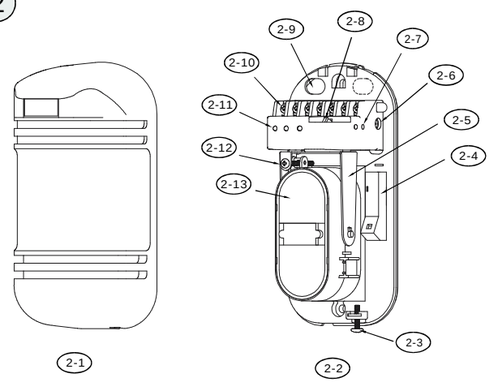

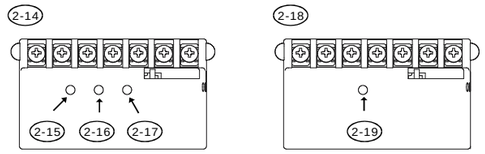

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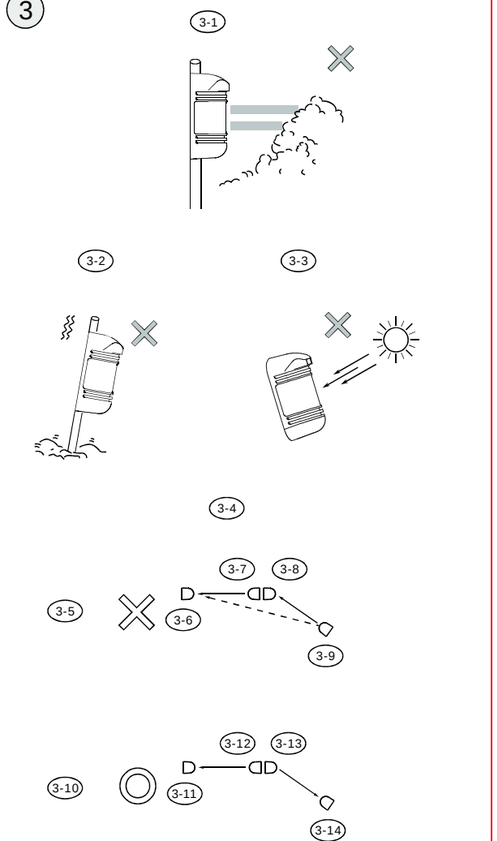

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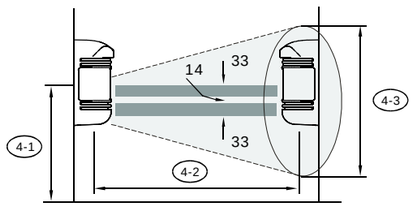

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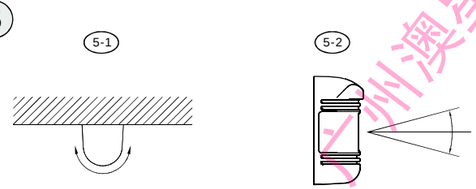

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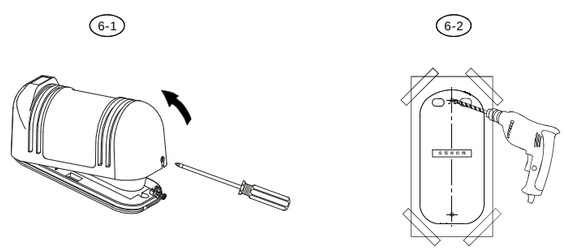

7 光軸調整

(7-1) 取下外罩後接上电源。
(7-2) 将瞄准镜 (7-3) 取下，並照图装配。
(7-4) 距离瞄准镜 (7-3)10cm左右，在右边观察瞄准效果
(7-5) 上下角度调整螺丝
(7-6) 上(鬆)
(7-7) 下(紧)
(7-8) 调整上下角调整螺丝(7-5)及水平调整架，使对面的探测器影像落入瞄准镜中间位置。此时接收器的GOOD指示灯应点亮。(指示灯不亮时请继续调整光轴)

红色LEVEL指示灯越亮，表示光轴对准精度越高。

(7-9) 信号电压测试孔
(7-10) 最佳之光轴调整方法—量度测试孔之输出
(7-11) 将测试笔插入测试孔位 (7-9) (注意“+”，“-”极性)
(7-12) 先调水平角度，直至测试孔电压输出最大，然後作垂直调整，方法与水平角度相同。
(7-13) 必须调校至2.3V以上，否则探测器无法稳定工作，如果不能获得2.3V以上的电压，则重复步骤 (7-8)~(7-12)。

8 遮光時間的調整

接收器上的遮光时间调整参照图 (8-1)。
一般情况下，设定的时间应稍小於侵入者穿过警戒面所需的时间。

(8-1) 遮光时间的调整
(8-2) 快速跑动 (6.9m/s)
(8-3) 快速步行 (1.2m/s)
(8-4) 普通步行 (0.7m/s)
(8-5) 慢速运动 (0.3~0.5m/s)

9 外形尺寸圖

(9-1) 安装孔
(9-2) 後盖（另购件）
(9-3) 支架直径

10 動作確認

完成设置後，必须进行步行测试，请参阅表格进行动作确认。

	状态	表 示
发射器	投光时	POWER指示灯亮
接收器	警戒时	GOOD和LEVEL指示灯亮
	警报时	ALARM警报指示灯亮

11 異常時的檢查

故障	故障原因	对策
发射器指示灯不亮	电源电压不适合(断线、短路等)	检查电源配线
接收器指示灯不亮	电源电压不适合(断线、短路等)	检查电源配线
光线被遮断，接收器指示灯不亮	1 因反射或其他发射器的光线进入接收器 2 两条光束没有同时被遮断 3 遮光时间设定过短	1 除去反射物体或变更光轴方向 2 同时遮断两束光 3 延长遮光时间
遮断光线後，接收器报警指示灯亮，但无报警信号输出	1 配线断路或短路 2 接点接触不良	检查配线和接点
接收器的报警指示灯常亮	1 光轴不重合 2 投、接收器之间有障碍物 3 外罩被污物污染	1 重新调整光轴 2 清除障碍物 3 清洗外罩
断断续续有报警信号输出	1 配线不良 2 电源电压有变动 3 投、接收器之间有活动障碍物 4 安装基础不稳定 5 光轴重合精度不够 6 其他移动物体遮光	1 检查配线 2 检查电源 3 去除障碍物或变更设置场所 4 选择基础牢固的场所 5 重新调校光轴 6 调整遮光时间或变更安装场所

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Bosch Security Systems Ltd.
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双光束室内、室外用主动红外线探测器
安装说明书

DS422i-CHI　DS426i-CHI
DS428i-CHI　DS429i-CHI

② 部件名稱

(2-1) 外罩
(2-2) 本体
(2-3) 外罩锁定螺钉
(2-4) 瞄准镜
(2-5) 水平角调整架
(2-6) 遮光时间调整钮
(接收器部份)
设定遮光时间时使用
(请参照其使用方法)
(2-7) 光轴调整测试端子
(接收器部份)
样验光轴对准精度时使用(请参照其使用方法)
(2-8) 防拆开关
(2-9) 配线孔
(2-10) 接线端子
(2-11) LED灯
(2-12) 上下角调整螺钉
(2-13) 镜片
(2-14) 接收器指示灯
(2-15) GOOD指示灯(绿)
光轴对准时绿色灯亮，
光轴对不准时，不亮灯。
(2-16) LEVEL指示灯(红)
随光轴对准精度不同，
亮度发生变化。
(2-17) ALARM灯
警报指示灯
报警时点灯表示
(2-18) 发射器指示灯
(2-19) POWER灯(绿)
投光时点灯

③ 設置上的注意事項

- 请避免在以下场合设置本探测器

(3-1) 设置时中间有树木等障碍物
(3-2) 设置基础不稳定
(3-3) 阳光、灯光等直射
(3-4) 长距离警戒时可使用多组探测器请按图(3-10)方式安装，以避免相互间光束干扰。
(3-5) 不正确的安装方式
(3-6) 接收器
(3-7) 发射器
(3-8) 接收器
(3-9) 发射器
(3-10) 正确的安装方式
(3-11) 接收器
(3-12) 发射器
(3-13) 发射器
(3-14) 接收器

① 技術參數

型　号		DS422i-CHI	DS426i-CHI	DS428i-CHI	DS429i-CHI
警戒距离	室外	30m	60m	80m	100m
	室内	90m	180m	240m	300m
最大到达距离		350m	650m	900m	1100m
光束数		2束			
探测方式		2光束同时遮断检知式			
光源		红外LED			
感应速度		50~700 msec			
报警输出		C型继电器（常开/常闭） 接点容量AC, DC 30V 0.5Amax.			
电源电压		DC 10.5V~28V (无极性)			
消耗电流		40mA	55mA	65mA	65mA
使用温度范围		-25°C~+55°C			
外形尺寸		参照外形图			
防拆输出		B型开关（常闭）DC 30V 0.5Amax.			
光轴调整角度（水平）		180°(±90°)			
光轴调整角度（垂直）		20°(±10°)			
瞄准器		可拆卸式			
结露、结霜对策		超声波焊接结构			
其他附加功能		受光指示、OK指示、测试端子			
材质		面罩PC树脂，底壳ABS树脂			
重量		600g（接收器+发射器）			

④ 安裝高度及探測距離

型　号	探测距离	光束张角
DS422i-CHI	30m	0.9m
DS426i-CHI	60m	1.8m
DS428i-CHI	80m	2.4m
DS429i-CHI	100m	3.0m

(4-1) 安装高度
0.7~1.0m
(4-2) 探测距离
(4-3) 光束张角

⑤ 光軸調整範圍

可在水平方向± 90°
垂直方向±10° 进行
光轴调整

(5-1) 水平方向180°(±90°)
(5-2) 上下方向20°(±10°)

⑥ 設置方法

- 墙壁安装方式

(6-1) 拆下固定螺丝取下外罩。
(6-2) 将附带的安装对位图粘在墙上，按其孔位打孔。
(6-3) 将电缆穿过配线孔 (6-4)进行配线。
(6-5) 将本体固定在墙上。
(6-6) 将电缆线接入配线端子。
(6-7) 完成光轴遮光时间的调整後外罩装好。
(6-8) 发射器端子配线图
(6-9) 电源输入（DC 10.5V~28V 无极性）
(6-10) 备用端子
(6-11) 防拆开关端子（常闭）
(6-12) 接收器端子配线图
(6-13) 电源输入（DC 10.5V~28V 无极性）
(6-14) 警报输出（常开/常闭）
(6-15) 防拆开关端子（常闭）

- 固定安装方式

(6-17) 在支架上开好引线孔，
并引出电缆线 (6-16)。
(6-18) 支架外径φ38mm~φ50mm。
(6-19) 安装钢板
(6-20) U形钢环
(6-21) 後盖（另购件）
(6-22) 取下外罩(6-21)。
(6-23) 将安装钢板(6-19)固定在支架上。
(6-24) 背对背安装参考图

- 本体至受信机的配线距离

机种	DS422i-CHI		DS426i-CHI		DS428i-CHI		DS429i-CHI	
线径 \ 电压	12V	24V	12V	24V	12V	24V	12V	24V
0.3mm²(φ0.6)	280m	2400m	250m	2100m	190m	1600m	190m	1600m
0.5mm²(φ0.8)	500m	4400m	430m	3800m	350m	3000m	350m	3000m
0.75mm²(φ1.0)	780m	7000m	680m	6100m	546m	4900m	546m	4900m
1.25mm²(φ1.2)	1120m	10000m	980m	8700m	784m	7000m	784m	7000m

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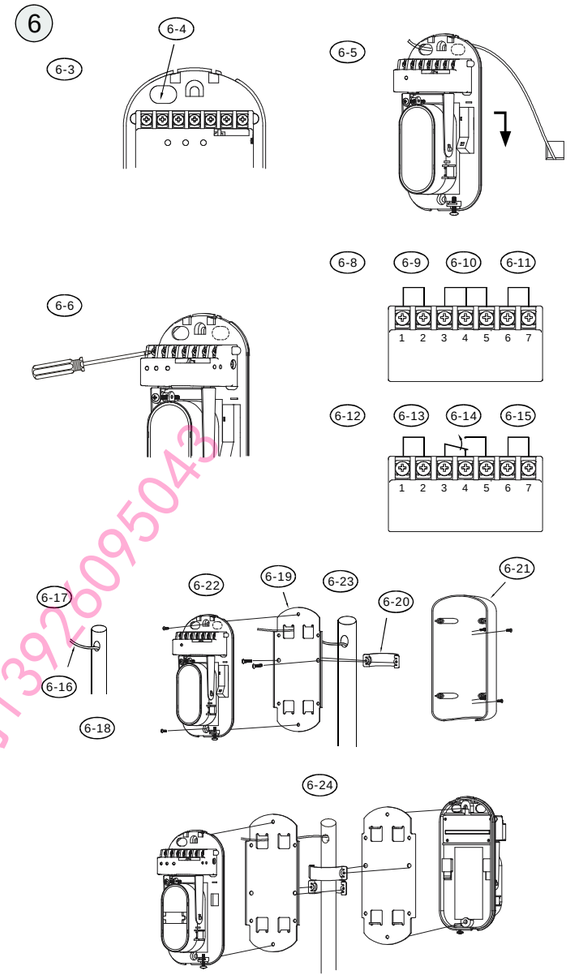

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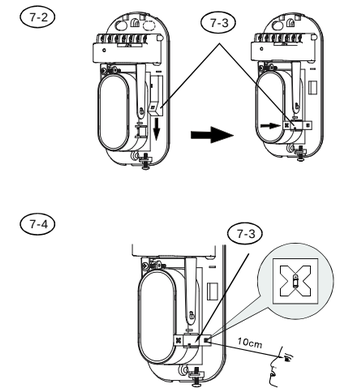

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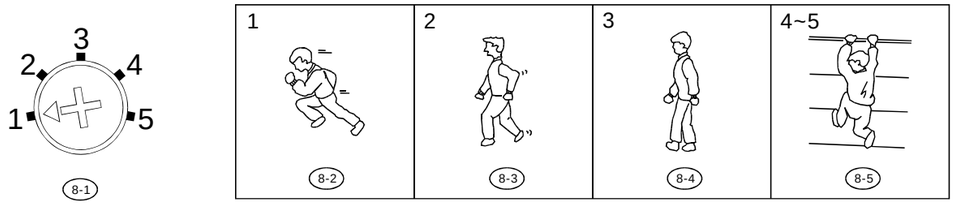

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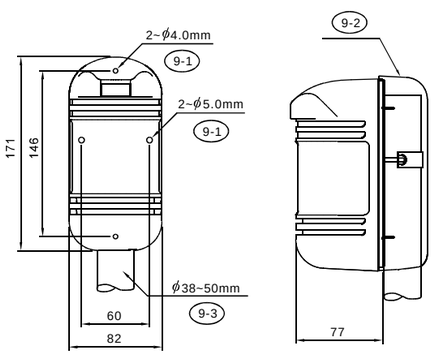

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DUAL BEAM PHOTOELECTRIC DETECTOR INSTALLATION INSTRUCTION

DS422i-CHI DS426i-CHI
DS428i-CHI DS429i-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)

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

① SPECIFICATION

Model		DS422i-CHI	DS426i-CHI	DS428i-CHI	DS429i-CHI
Protection range	Outdoor	30m	60m	80m	100m
	Indoor	90m	180m	240m	300m
Distance allowance		350m	650m	900m	1100m
Infrared beam		2 beams			
Detection system		2 beams simultaneous cut-off detection			
Light source		Infrared LED			
Response time		50~700 msec			
Alarm output		Relay contact, form 'C' contact rating 30V AC, DC 0.5A Max.			
Power required		DC 10.5V~28V			
Power consumption		40mA	55mA	65mA	65mA
Temperature range		-25°C~+55°C			
Outline dimension		Refer to Outline dimension			
Tamper output		Normally closed voltage free contacts 30V DC, 0.5 A Max.			
Optical axis horizontal adjust		180°(±90°)			
Optical axis vertical adjust		20°(±10°)			
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		600g (Transmitter and 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
DS422i-CHI	**30m**	**0.9m**
DS426i-CHI	**60m**	**1.8m**
DS428i-CHI	**80m**	**2.4m**
DS429i-CHI	**100m**	**3.0m**

(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 ±10 ° vertically, the unit can be installed in various directions.

(5-1) Horizontally 180° (±90°)
(5-2) Vertically 20° (±10°)

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) Power
(6-10) Free
(6-11) Tamper

- Wiring distance

Model	DS422i-CHI		DS426i-CHI		DS428i-CHI		DS429i-CHI	
Voltage / Wire diameter	12V	24V	12V	24V	12V	24V	12V	24V
0.3mm²(∅0.6)	280m	2400m	250m	2100m	190m	1600m	190m	1600m
0.5mm²(∅0.8)	500m	4400m	430m	3800m	350m	3000m	350m	3000m
0.75mm²(∅1.0)	780m	7000m	680m	6100m	546m	4900m	546m	4900m
1.25mm²(∅1.2)	1120m	10000m	980m	8700m	784m	7000m	784m	7000m

(6-12) Receiver Terminal Configuration
(6-13) Power
(6-14) Alarm
(6-15) Tamper

- POLE MOUNT

(6-17) Pull the wire through the wire(6-16) hole of the pole.
(6-18) ∅38mm~∅50mm
(6-19) Bracket
(6-20) Pole holder
(6-21) Pole cover
(6-22) Take off pole cover(6-21)。
(6-23) Attach the bracket(6-19) to the pole with the pole holder.
(6-24) Pole mount back-to-back
Each bracket to be reversely attached.

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 SBT 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	Green LED is on
Receiver	Watching	Alarm indicator is off
	Alarm	Alarm indicator is on

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 Two 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 two 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.

广州澳星电子有限公司13926096043