

# BD132 Installation instructions

Intelligent 3 Technology Outdoor PIR with 2 PIR's and MW detector

## 1. INTRODUCTION

BD132 is a Quad-technology (PIR+PIR+MW+ASIC) detector, designed for outdoor applications. Stability and dependability are achieved by applying multi grade digital signal processing, advanced algorithms and signals received from 3 individual sensors, two PIR's and one Microwave. This detection method offer 3 different detection modes on 2 sensitive grading methods and the detector automatically set the best the detection procedure according to the environment allowing the best differentiation rate between maximum detection and minimum false alarm rate. With normal "AND/OR" modes, and "EI" the detector can avoid masking attempts such as spraying of the lens. BD132 is supplied in a unique waterproof housing, 3 detection channels, and includes an auto-set anti-masking and alarm memory functions.



Figure 1

## 2. FEATURES

- Two PIR'S and MW detection technology
- Automatic setting of anti-masking
- Microwave synchronization
- Detection mode: EI; OR - AND
- Adjustable detection sensitivity
- Alarm type memory
- Alternative Led OFF
- Anti white light filter
- Micro-strip MW with pulse transmission
- 18 beams Fresnel lens with down-view window on 4 planes
- Vertical adjustment
- Air-proof optical parts
- Wall mount inlay
- Detection angle: 90° at 15 meters
- Corner and wall installation
- Mounting Bracket adjustment options: 90° horizontal adjustment and 30° vertical adjustment

### 3. SPECIFICATIONS

Operating voltage: 9-16Vdc

Current: 30mA

Installation height: 1.5m.-2.4m

Coverage: 12m X12m 100°

MW frequency: 10.525GHz

Alarm time: 3 seconds

Anti RFI/EMI: 0.1-500MHz/3V/m

Anti-white light: > 10000LUX

Alarm output: 100mA/24V

Mask output: 100mA/24V

Temperature: -10°C/+55°C

Humidity (RH): 95%

Sensitivity: H / L Select

Detect speed: 0.2m/s to 3.5m/s

Dimensions (H x W x D):160mm\*65mm\*50.5mm

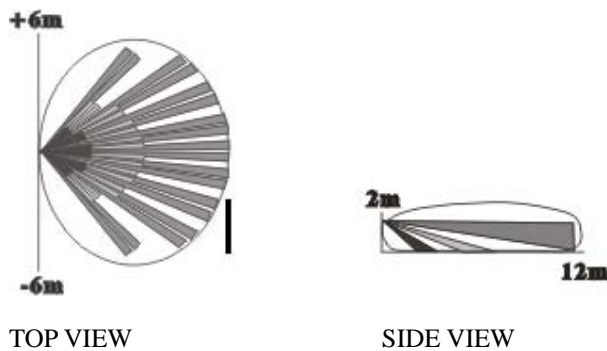
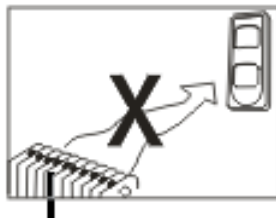


Figure 2

### 4. INSTALLATION GUIDE

Select the best installation point applicable to the use of PIR and MW technologies. Mount the BD132 at the selected position avoiding opening doors, windows, electrical machinery, reflective or vibrating surfaces and heat sources in close proximity to the detector.



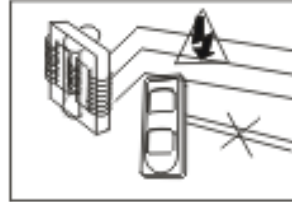
No direct facing cold/hot source



Mount on a secure and stable base/object



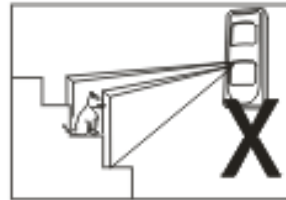
Keep away from strong electrical interferences



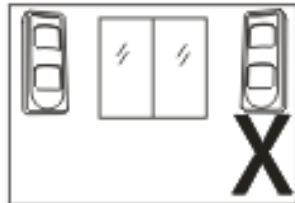
Keep away from high voltage power



Avoid direct sunlight



Incorrect Installation



Don't install more than 2 detectors  
at the same location



don't install on the tree, wire fence etc.

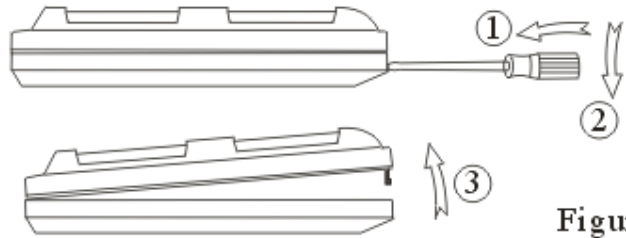
When mounting two or more detectors at the same location (next to each other or back to back), please use a MWSY-8 control board for installation (see MW synchronization section) to avoid MW interference and back radiation.

## 5. WALL FASTENING

In order to get the best detection and signal covering scale, the detector should be installed at 2.1 meters (height) and in a vertical adjustment to position A. Ensure that there are no obstacles, trees which could obstruct the wide angle detection view.

Remove the front cover by releasing the screw at the bottom of the detector. Insert a flat tip screwdriver into the opening slot and gently separate the front cover from the base by lifting the front cover upwards. **Figure 4**

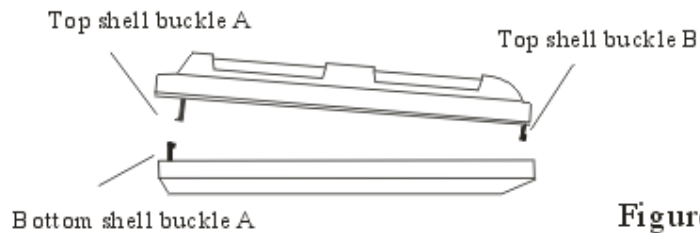
To remove the PCB, release the two screws securing the PCB to the base. Remove the PCB. Do not touch the pyro-electric elements. Break the pre-set hole, (Figure 6), and open the applicable wiring holes. Mark the wiring hole on wall or mounting surface and put the "wall inlay" label on the pre-set hole. Drill 3 6mm holes and screw in the "wall inlay screws", let its front extremity be 5/6 mm from the wall. Insert the cable through the cable hole and fasten the bottom cover onto the wall.



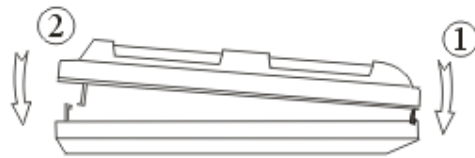
**Figure 4**

Procedure for opening the cover:

1. Release the screw on the external cover
2. Insert the blade screw driver into the opening slot, press it and wind it to the arrow direction, so that the external cover can be opened.

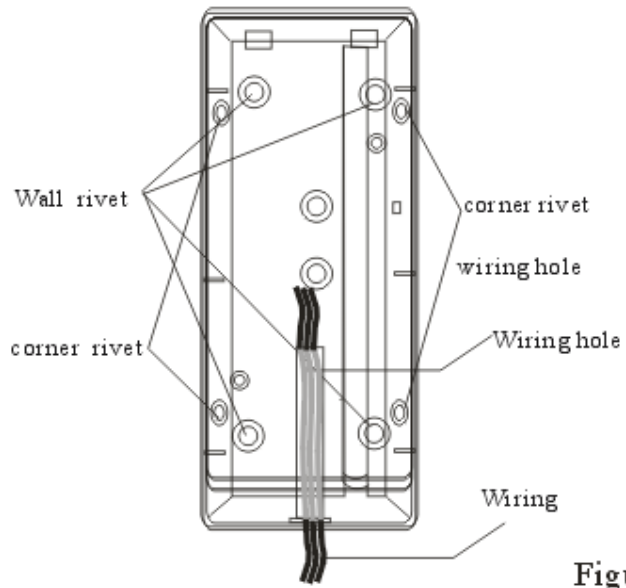


**Figure 5**



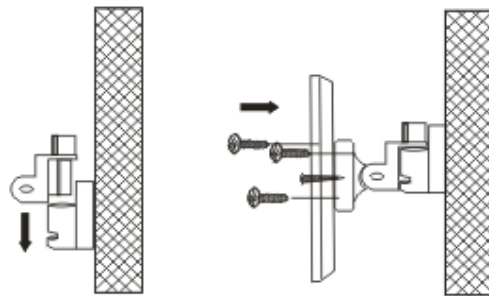
Procedure for closing the cover:

1. Face the B shell buckle of upper cover to the slot of lower cover, and face A shell buckle of upper cover with A shell buckle of lower cover. Press the upper cover down to close the detector.



**Figure 6**

Fasten the wall mount accessory bracket to a stable surface at the correct installation height. Insert and twist the connection accessory into the bracket section mounted on the wall. Fasten the bracket section to the PIR housing. (See Fig 9)



**Figure 9**

## 6. PART EXPLAIN (Refer to the left diagram)

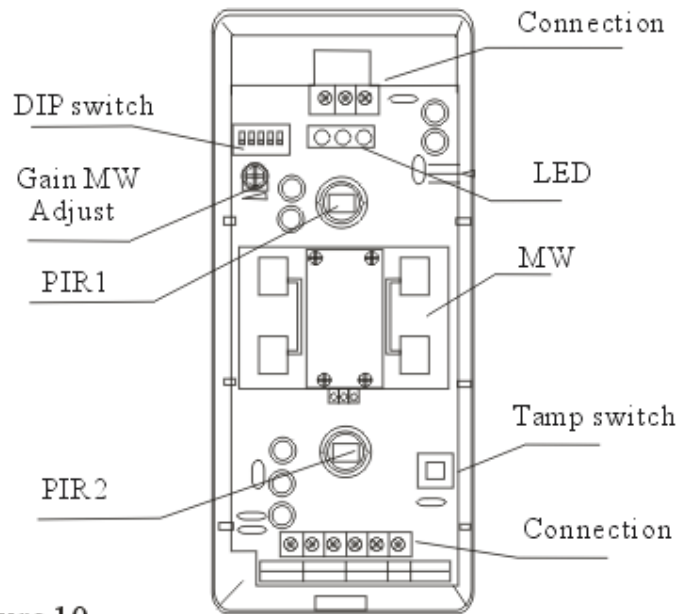


Figure 10

## 7. TESTING

DIP 1 switch on “OFF” (anti masking cover “OFF”)

DIP 5 switch on “OFF” (LED actives)

**Note: During this mode, anti-masking is limited**

### MW

Turn the microwave tuner to minimum, (adjustment settings form 2-15m); and then to the extremity of protected area and wait for the LED indicators to switch off. Move towards the detector and check MW detection by observing the green LED. If the green LED doesn't light, turn the MW tuner clockwise to increase it's the detection range. Repeat this test several times until the required detection distance is achieved. Note: MW can penetrate a wall and when not set and tested the microwave might detect movement outside the protected area. (MW sensitivity when it the highest when detecting movement directly towards the detector) **Fig 11, 12, 14 and 16**

**Anti-mask cover control/AND/high sensitivity/LED activation**

(For the maximum monitoring operation, please refer to “monitoring mode” section.)

**Note: When there is interference with the monitor, anti-masking cover function will be limited.**

<b>Time</b>	9	10	11	12	1	2	3
<b>Range</b>	2m	4m	6m	8m	10m	12m	14m

Figure 11

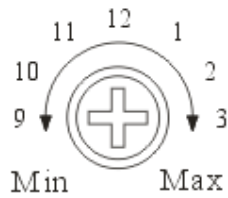


Figure 12

Gain MW

**PIR**

Close the front cover, and wait for the LED indicators turns off. Perform horizontal movement (moving across the detection area of the detector), and check the detection status of PIR by observing the yellow LED. This step checks the detection angle of the PIR in relation to the detection angle of the detector. PIR's best detect movement when moving across the detection filed. When all the dipswitches are in "OFF" position the detector is in the standard operation mode. **Fig 13 and 16**

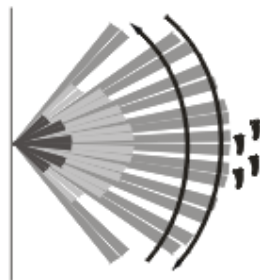


Figure 13

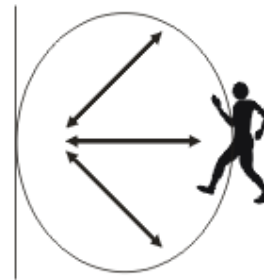
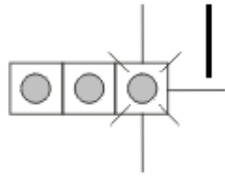
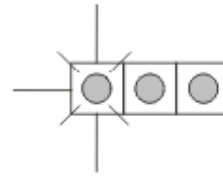


Figure 14



Yellow led

Figure 15



Green led

Figure 16

## 8. MONITORING MODE

### AND

Dipswitch 2 switched in “OFF” status

If all three sensors (2 x PIR & MW) detect a signal at the same time, alarm will be triggered. This mode is fit for installation with unstable factors.

### OR

Dipswitch 2 switch in “ON” position

**Any of the sensors** detects a signal an alarm will be triggered. This mode is fit for **highly stable environments which require the detector with very high detection ability.**

### EI (MODE)

Dipswitch 3 switch is in “ON” position

NOTE: the settings applicable to dipswitch 2 are not operational in this mode.

If three sensors detect simultaneous activation signals at the same time, (such as AND mode), or if the detector detects continuous or more MW signals and no detection is received from the 2 PIR’s an alarm conditions will be triggered. Useful in areas which require the “AND” detection mode with a high probability of masking, detector tampering and PIR sabotage.

### SENSL

Dipswitch 4 switch is in “ON” position

Detection sensitivity of both sensors is reduced.

PIR: During the time, signals detected by both negative and positive period of PIR are limited.

MW: the detection response speed of MW is 0.5 seconds, running speed is 0.6m/second.



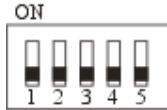


Figure 17

	1	2	3	4	5
ON	MASK	OR	HI	SEN L	
OFF		AND		SEN H	LED

Figure 18

ALARM	Green Led	Red/Blue Led	Yellow Led
PIR+MW	OFF	ON	OFF
PIR	OFF	ON	ON
MW	ON	ON	OFF
MASK	FLASH	FLASH	FLASH

Figure 19

## 9. FUNCTION

### Anti-masking function

Any object blocking the MW will be indicated with a rapid flashing LED and the Mask relay will trigger allowing a separate masking signal to be reported (wired to the MASK connector). This condition will persist until the cause of the masking is removed or cleared away.

### Activation of anti-masking function

DIP 1 switch is in "ON" position

The activation of anti-masking function is achieved by turning on dipswitch 1 and immediately replacing the cover on the detector. The BD132T automatically enters anti-masking self-check status and during this period and the LED indicator will flash for 100 seconds.

After replacing the front cover of the detector immediately move away from the detection area of the detector to allow the detector to complete the automatic anti masking adjustment and anti masking height adjustment settings. The most important point is to ensure that there isn't anybody approaching or avoid any obstacles placed in front of the detector which would have any effect on the automatic anti masking settings.

### INHIBIT LED OPERATION

Dipswitch 5 switch is in the "ON" position.

In this option (dipswitch 5 in the "ON" position) the limited LED detection display is active and no detection will activate the alarm output when connected to the "INHIBIT" connection or when removing the PCB. The LED's will start its display for 30 seconds after the first detection.

MW OFF

DIP 1 switch is in “OFF” position

DIP 5 switch is in “ON” position

**Note:**

**During this mode, anti-masking is limited.**

When LED indicator is in “OFF” mode, anti-masking function is limited.

When the “INHIBIT” connection is connected the relay outputs do not operate (no signaling to the alarm panel), the LED indicators doesn’t activate and the MW turn off to avoid radiation to the protection area.

**Relay control**

When INHIBIT is connected the alarm relay is under limitation mode and no activations will be reported.

**Memory**

When INHIBIT is connected the detector is disconnected from the relay outputs and only the LED’s will display the first alarm condition which have occurred. (See **figure 19**).  
When the equipment is reconnected the memory will reset again.