ISN-CP1-CM-W50, ISN-CP1-CM-N100

Security Systems

	Installation Instructions
EN	PIR Detector

BOSCH

1.0   Installation Considerations

☑ The detector senses intruder movement and notifies an alarm control panel. Because the detector is only one part of a complete system, Bosch Security Systems does not assume responsibility for damages or other consequences from an intrusion.

- Not suitable for outdoor use.
- Point the detector away from glass or any other object that changes temperature rapidly.
- Mount the detector on a solid and vibration-free surface.
- Avoid intense electrical or electromagnetic noise.
- Avoid magnetic material.
- Avoid corrosive gas and dust.
- Point away from direct and indirect sunlight.
- Avoid vapor or high humidity that can cause condensation.
- Mount the detector on 2.5 m (8.2 ft) to 5 m (16.4 ft) ceilings.
- Install the detector so that intruders cross the coverage pattern.
- Do not install the detector where pets are present.
- Avoid installing the detector where cabinet doors, curtains, or other objects that can swing or move are within the coverage pattern.
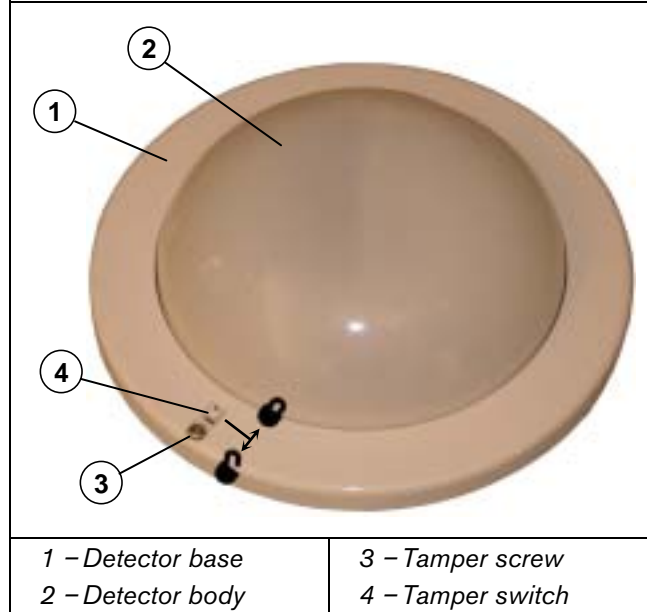
2.0   Installation

⚠ Do not apply power until after you connect and inspect all wires.

1. Remove the tamper screw on the base. Refer to *Figure 1*.

Figure 1: PIR Detector

| 1 – Detector base | 3 – Tamper screw |
| 2 – Detector body | 4 – Tamper switch |

2. Push the tamper switch toward the tamper screw to unlock (*Figure 1*).
3. Hold the base and turn the detector body counterclockwise to remove from the base (*Figure 1*).
4. Position the base with the printed arrows pointing in the direction of the desired coverage and mount the base on the ceiling using the two mounting screws. Refer to *Figure 2* on page 3.

Figure 2: PIR Detector Base
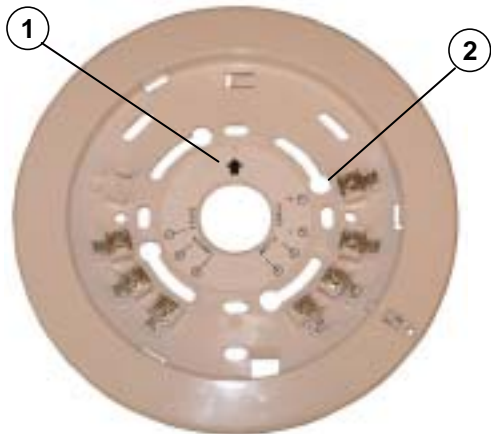
1 − Coverage direction
2 − Mounting holes

5. Wire the detector base (refer to *Table 1*).

Table 1: Detector Terminals

Terminals	Function	Description
1, 2	Power Input	9 VDC to 28 VDC, no polarity
3, 4	Alarm Output	A selectable Form 1B normally closed (NC) or Form 1A normally open (NO) relay. This contact opens when unpowered, regardless of the DIP switch settings (refer to *Table 3*).
5, 6	Tamper Output	The Form 1B (NC) contacts open when the body is detached from the base, regardless of the power supply conditions.
7	Spare	No connection

Refer to *Table 2* to determine the minimum gauge wire required between the power source and the detector. The table is based on one detector connected to a 12 VDC power source.

Table 2: Wiring Specifications

Wire Gauge	Maximum Length
0.3 mm^2 (AWG 22)	700 m (2250 ft)
0.5 mm^2 (AWG 20)	1200 m (3900 ft)
0.75 mm^2 (AWG 18)	1800 m (5900 ft)

When adding two or more detectors to a wire run, the maximum length per gauge decreases. Determine the new length by dividing the length in *Table 2* by the number of detectors on the wire run.

6. Set the mirror adjustment switch (*Figure 3*) to the appropriate position. Refer to the label on the back of the detector.

Figure 3: PIR Detector Back
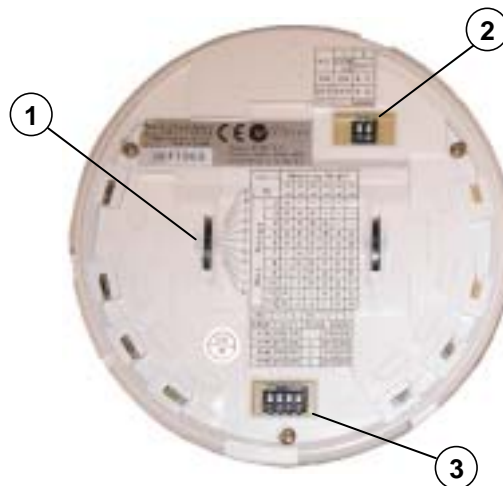
1 − Mirror adjustment switch
2 − DIP Switch 1
3 − DIP Switch 2

7. Set the DIP switches (*Figure 3*) to the appropriate positions. Refer to *Table 3* on page 4.

Table 3: DIP Switch Settings			
DIP Switch/Function	**Settings**		
1-1 Alarm LED	ON: The Alarm LED lights when the detector activates an alarm. OFF: The Alarm LED never lights. The Alarm LED always flashes during the 1 min warmup period and during Self Diagnosis[1].		
1-2 Relay	ON: A Form 1B (NC) relay opens when the detector activates an alarm. OFF: A Form 1A (NO) relay closes when the detector activates an alarm.		
2-1, 2-2 Sensitivity[2]	**2-1**	**2-2**	**Sensitivity**
	ON	ON	120%
	OFF	ON	100%
	ON	OFF	80%
	OFF	OFF	60%
2-3, 2-4 Pulse Count[2, 3] (ISN-CP1-CM-W50 only)	**2-3**	**2-4**	**Count**
	ON	ON	1
	OFF	ON	2
	ON	OFF	3
	OFF	OFF	4

[1]   Self diagnosis, active at all times, checks for device malfunction. If the Alarm LED continues to flash after the 1 min warm-up period, you must replace the unit because there is a malfunction of the pyro sensor or the amplifier. The Alarm output operates when this fault condition occurs.

[2]   For UL Certificated installations, you must set the sensitivity to 100% or 120%. You must set the pulse count to 1.

[3]   The detector activates an alarm when the count reaches the number of specified pulses within an interval of 10 sec or less. The unit resets the count 10 sec after the last pulse. As a guide, set a pulse count of 1 only in very stable environments when rapid response is required. Set a pulse count of 4 for unstable environments.
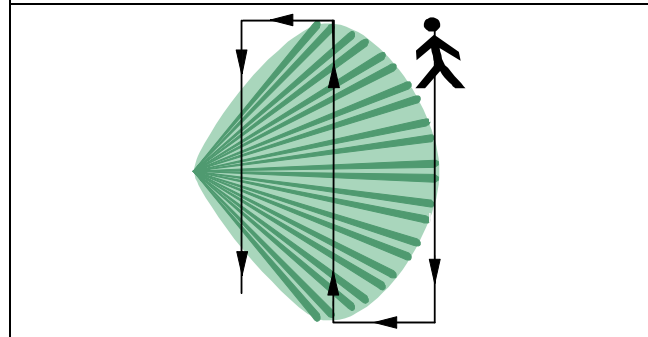
8.   Mount the detector body on the base.
9.   Do the Walk Test (refer to *Section 3.0 Walk Test*).
10. After you successfully complete the Walk Test, lock the switch to firmly fix the body on the base and replace the tamper screw.
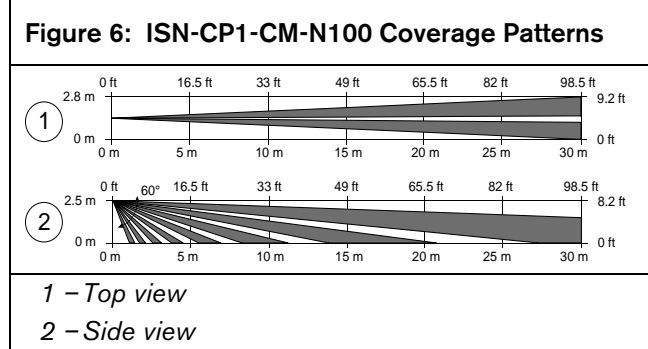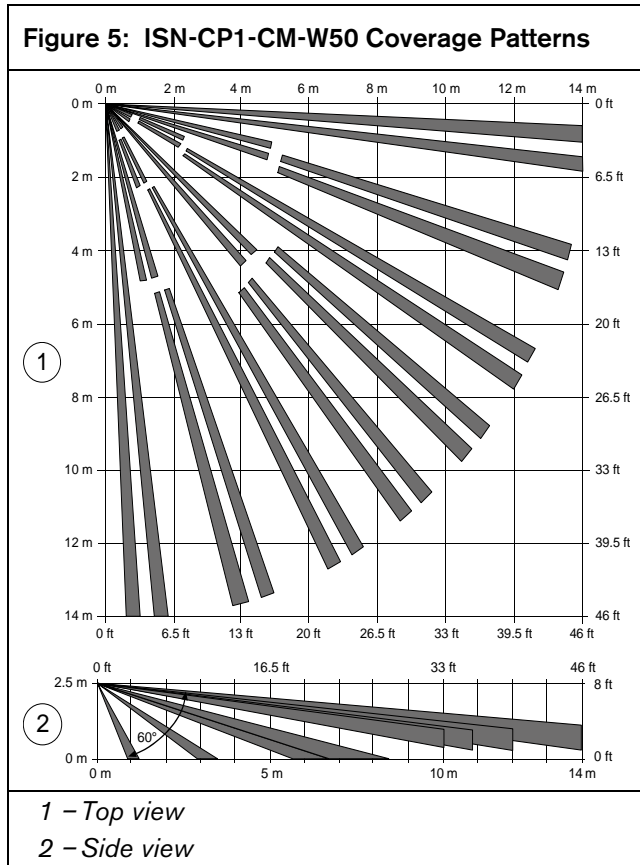
3.0   Walk Test

Perform a Walk Test at least once a year.

1.   Ensure DIP Switch 1-1 (*Figure 3* on page 3) is set to ON.
2.   Walk through the expected coverage pattern as shown in *Figure 4*.
     Observe that the Alarm LED lights when you cross the coverage pattern.
3.   To adjust the coverage pattern, change the mirror adjustment switch.

Figure 4: Walk Test

4.0   Coverage Patterns

Figure 5: ISN-CP1-CM-W50 Coverage Patterns

1 – Top view
2 – Side view

Figure 6: ISN-CP1-CM-N100 Coverage Patterns

1 – Top view
2 – Side view

5.0   Troubleshooting Guide

Table 4: Detector Troubleshooting		
Symptom	**Probable Cause**	**Solution**
No alarm or the Alarm LED never lights	No power Damaged wires Improper connection Insulation problem	Turn the power ON. Change the wires. Tighten the screws to improve the connection.
	Object in the coverage pattern	Remove the object. Adjust the coverage pattern.
	Alarm LED does not light.	Turn DIP Switch 1-1 to ON.
The unit only detects occasionally	The intruder does not cross the detector's field of view.	Adjust the coverage pattern so that the intruder crosses the field of view.
False alarms	The detector is installed too close to a source of electromagnetic noise or is wired too close to a power source.	Relocate the detector. Reroute the wiring.
	Sudden temperature fluctuation Exposed to direct sunlight	Remove the heat source. Readjust the coverage. Block the light with blinds.
	The detector body is not attached to the base.	Attach the detector body firmly on the base.
Alarm LED lights but there is no alarm output	Controller not armed	Arm the controller. Tighten the screws to improve the connection.
	Damaged wires Improper connection Insulation problem	Check with a tester. Tighten the screws to improve the connection.
	When Form 1B (NC) is used, the alarm output is connected in parallel with the outputs from other detectors.	Connect in series with the other detector's output. Wire only one detector per loop.
Alarm LED flashes (one per second).	The detector activates self diagnosis due to mechanical failure.	Replace the detector.
Relays operate in reverse.	The relay setting is reversed.	Change the position of DIP Switch 1-2.

6.0   Specifications

Table 5: Specifications	
Power Supply	9 VDC to 28 VDC, non-polarized
Current Draw	25 mA
Coverage	ISN-CP1-CM-W50: Wide angle, 14 m (43 ft) maximum range, 15 zone pairs, 30 fingers ISN-CP1-CM-N100: Long range, 30 m (93 ft) maximum range, 8 zone pairs, 16 fingers
Operating Temperature and Humidity	−20° C (−4° F) to +50° C (+122° F), 95% RH or less, non-condensing
Alarm Contacts	One selectable Form 1A (NO) or 1B (NC) semiconductor relay, 0.1 A at 30 VDC
Tamper Contacts	One Form 1B (NC), 0.1 A at 30 VDC
Alarm LED Indication (Red)	Flashes when power is first applied and when the detector initiates self-diagnosis. Lights when the detector activates an alarm.
Mirror Angle Adjustment	30° vertically (ISN-CP1-CM-W50) 33° vertically (ISN-CP1-CM-N100)
Weight	190 g (6.7 oz)

> For UL Certificated installations, you must set the sensitivity to 100% or 120%. You must set the pulse count to 1.
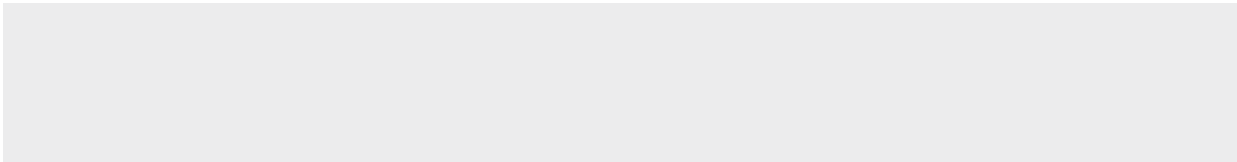
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