

Saturn EL-9000

Location of the Detector

Consider the following when mounting the detector:

- Select a location from which the pattern of the detector is most likely to be crossed by a burglar, should there be a break in.
- Avoid a location that comes in direct contact with radiators, heating/cooling ducts or air conditioners.
- Do not place the detector in front of windows subject to direct sunlight or drafts.
- Do not place bulky objects within 50cm of the detector.
- Install the unit no less than 10cm beneath the ceiling. If installing close to the ceiling, mount the unit at a downward angle using Electronics Line's MB2 mounting bracket (available separately).

Installation Instructions

1. Open the housing by removing the front cover. To do so, unscrew the cover screw located at the bottom of the detector.
2. To remove the PCB, carefully push down the release tab, lift the board away from the back cover via the two release slots located underneath the terminal block. **Note: Do not touch the face of the PYRO sensor, the IR receiver and transmitters.**
3. Knock out the required mounting and wiring holes.
4. Thread the cable through the wiring holes (from the outside of the unit) using the appropriate wiring knockouts. **Note: Electronics Line recommends using 20-22 AWG connection cable.**
5. Seal the wiring hole with the foam plug provided.
6. Choose an appropriate mounting height (2.2m/7.2' recommended) and attach the base to the wall.
7. Wire the terminal block as shown in Figure 2.

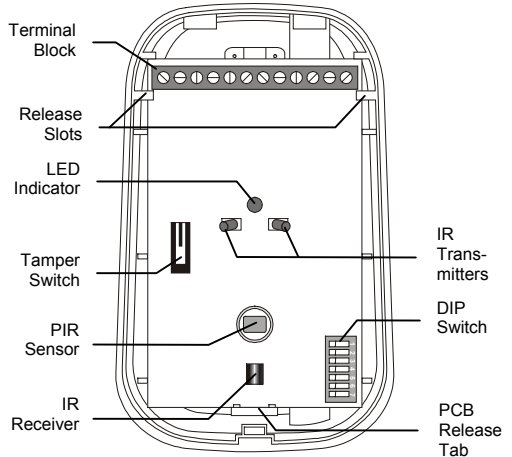


Figure 1: Saturn EL-9000 (cover open)

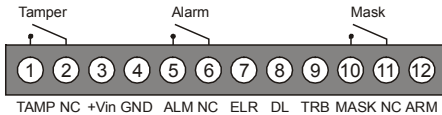


Figure 2: Terminal Block

Terminals 1 & 2: Tamper switch contacts (N.C.)

Terminals 3 (+) & 4 (-): 9-16VDC voltage input.

Terminals 5 & 6: Alarm relay contacts (N.C.)

Terminal 7: Optional end of line resistor.

Terminal 8: Remote LED enable/disable.

Terminal 9: Trouble output (open collector)

Terminal 10 & 11: Mask relay contacts (N.C.)

Terminal 12: Arm/Disarm input for memory function

8. Configure the DIP switch according to Tables 1 and 2.
9. To replace the PCB, place the release slots above the thickest holding posts (about 2.5cm from the top of the back cover) slide the board up as far as it will go and push the bottom of the board until it snaps into place.
10. Attach the front cover making sure to close the plastic housing with the housing screw provided. **Note: Close the cover and walk a few meters away from the detector within 30 seconds of applying power so as not to disturb the Anti-mask adjustment sequence.**

Operation and Adjustment

Warm-up Sequence: The detector needs to warm up for the first 90 seconds after applying 9-16VDC. From the moment power is connected, walk a few meters away from the detector so as not to disturb the Anti-mask adjustment sequence. During the warm-up time the LED indicator flashes green and red (1 pulse/sec), the detector performs a self test sequence and the Anti-masking function automatically adjusts itself to the installation environment. If the Warm-up sequence is successful, the LED will be turned off. If a trouble condition is detected, the LED flashes (Green = Anti-mask Trouble, Red = PIR Trouble). **Note: The unit is to be connected to a power supply or control unit capable of providing a minimum of four hours standby power.**

Walk Testing: A walk test is performed in order to determine the lens coverage pattern of the detector. To do so walk across the scope of the detector according to the detection pattern selected. Confirm that the red LED activates and deactivates accordingly. This test should be performed weekly. **Note: It is preferable to perform the Walk Test with the DIP-switch in its default configuration (see the shaded areas in Tables 1 and 2).**

Pulse Counter Setting: The pulse counter controls the amount of beams that need to be crossed before the detector will produce an alarm. The available options are 1, 2, 3 or Adaptive pulse count. Using the Adaptive pulse count feature, the detector chooses between 1 or 2 pulses based on its analysis of the received signal. To set the pulse counter, refer to Table 1 for the appropriate DIP-switch setting.

Switch 1	Switch 2	Pulse Count
OFF	OFF	1
OFF	ON	2
ON	OFF	3
ON	ON	Adaptive

Table 1: Pulse Count Options

LED Indicator Setting: To enable/disable the LED locally, refer to Table 2 for the appropriate setting for DIP-switch 3. To control LED indication remotely, provide either 0-1.5V or 3.5-16V to the DL pin of the terminal block. The polarity of this function is determined by DIP-switch 6. If disabled, the LED still indicates the warm-up period, PIR failure and alarm memory (during disarm). **Note: Remote LED enable/disable functions only if DIP-switch 3 is ON (LED enabled locally). The LED should be disabled only after successfully walk testing the detector.**

Anti-mask Operation: If the Saturn EL-9000 is masked for a period of over 30 seconds, the Mask relay is activated and the green LED is lit. A Mask event is reset 30 seconds after the mask is removed. To test the Anti-mask function, hold a sheet of white paper 20cm from the detector for 30 seconds then remove the paper checking that the green LED activates and deactivates accordingly. This test should be performed weekly.

Switch	Function	OFF	ON
3	LED indication	Disable	Enable
4	Alarm on Trouble	Disable	Enable
5	Memory Polarity	0-1.5V = Arm 3.5-16V = Disarm	0-1.5V = Disarm 3.5-16V = Arm
6	DL polarity	0-1.5V = Disable 3.5-16V = Enable	0-1.5V = Enable 3.5-16V = Disable
7	Memory	Disable	Enable

Table 2: DIP-switch Options (■ = default settings)

Alarm Memory Function: The Alarm Memory function indicates that an alarm occurred while the system was armed or that a Mask event occurred. This function is enabled using DIP-switch 7 – see Table 2. When using this feature, apply voltage to terminal 12 (Memory polarity is determined by DIP-switch 5). To indicate that an alarm has occurred, the LED flashes slowly (Green = Anti-mask Alarm, Red = PIR Alarm). The Alarm Memory function is reset when the system is next armed. **Note: If LED operation is disabled, Alarm memory is not indicated when the system is armed, only on disarming the system.**

PIR Supervision: The circuit operation of the PIR is checked once per hour. In the event of PIR failure the red LED flashes (2 pulse/sec) and the Trouble output (terminal 9) is activated. DIP-switch 4 (see Table 2) determines whether the Alarm relay is also activated if a Trouble event is present while the system is disarmed (according to the signal received at terminal 12).

Power Supervision: If the power supply is out of the 9-16V range, the red LED flashes.

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Technical Specifications

Operating Voltage: 9-16VDC (nominal 12V)
 Current Consumption: Standby @ 12V – 35mA
 Max. (Alarm) @16V – 45mA
 Maximum Power Ripple: 0.5Vp-p (@ +12VDC)
 Coverage: 15m x 15m
 Pulse Count: 1, 2, 3 or Adaptive (selectable)
 Pyroelectric Sensor: Dual Element
 Alarm Output: N.C. (10Ω)
 Switching Voltage: 30VDC not to exceed 10W
 Switching Current: 0.3A not to exceed 10W
 Alarm Duration: 2 seconds
 Mask Output: N.C. (10Ω)
 Trouble Output: Open Collector
 Tamper Output: N.C.
 PIR White Light Immunity: 6,500 Lux.
 ESD Immunity: ± 10kV per IEC 801-2
 RFI Immunity: 40V/m, 25-100MHz PM
 Operating Temperature: -10° to 60°C (14° to 140°F)
 Storage Temperature: -20° to 70°C
 Digital Adaptive Temperature Compensation
 Reverse Polarity Protection: Diode
 Fire Protection: ABS Plastic Housing
 LED Indicator: Selectable
 Dimensions: 110 x 60 x 45mm

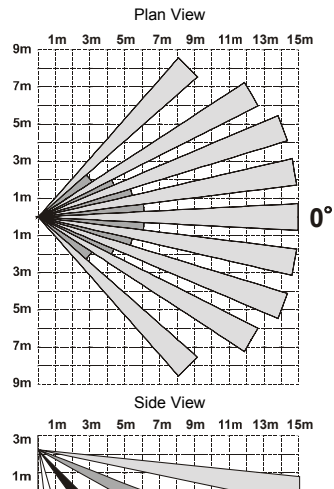


Figure 3: Lens Pattern



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