



# Genius Plus

## Installation Instructions

Double Linear  
Imaging Technology  
PIR Sensor



### GENERAL DESCRIPTION

This Double Quad Element PIR detector is based on the latest "ASIC" (Application Specific Integrated Chip) and SMD technologies.

The Genius Plus monitors the environment by analyzing the conditions and adapts to it constantly. If conditions change, the GENIUS PLUS adapts it maintaining sensitivity levels and detection capability.

By using Double Quad Optic Systems with a diagonally opposed configuration (phase shift discrimination), the GENIUS PLUS is able to achieve a three dimensional thermal image of the protected area. It stores this image and refers to it determine intrusions.

During the standby mode (no LED indications) the GENIUS PLUS constantly monitors the protected area, updating and reconfiguring itself as conditions change.

### GENIUS PLUS FEATURES

- Double Quad Linear Imaging Technology for sharp analysis of body dimensions and differentiation from background and animals.
- Immunity to animals up to 5kg (11 lbs).
- High RF and EM Immunity.
- Environmental immunity.
- 15m (49.2 ft) Detection Range with Wide Angle Lens
- Temperature compensation.
- Compact Design for Residential Installation
- Variable pulse width adjustment.
- Sensitivity adjustment.
- Height installation calibrations free from 1.8m (5.9 ft) to 2.7m (8.9 ft).

### MOUNTING LOCATION

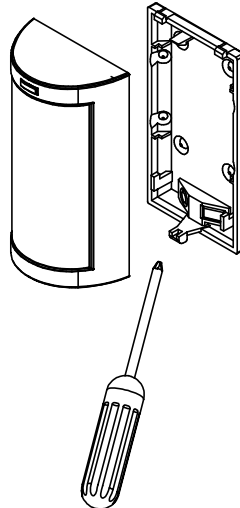
Choose a location most likely to intercept an intruder. See the detection patterns in Fig. 5. The twin dual element high quality sensors detect motion across the beam field; they are slightly less sensitive to motion towards the detector.

While the GENIUS PLUS is capable of detecting intrusions under exceedingly difficult conditions, it is recommended to avoid the following locations:

- Areas where sunlight may shine directly onto the PIR (lens).
- Facing surfaces that may change temperature extremely rapidly.
- Areas with extreme airflows.

NOTE: Recommended installation height is at 2.4m (7.9ft).

### FIG. 1 – REMOVING THE FRONT COVER



### MOUNTING THE DETECTOR

A variety of mounting positions is possible with the standard GENIUS PLUS housing.

1. Open the front cover by pushing with screwdriver the holding pin at the middle of its lower surface and lifting upwards.
2. Snap out the detector PCB.
3. The Genius Plus housing can be mounted in a variety of ways. The circular indentations in the housing indicate mounting holes to be punched out in accordance with the desired mounting position:
4. For surface mounting punch out the 4 indentations marked " B " (see Fig. 2).
5. For Corner mounting gives 45° angles on either the right or the left side. Punch out the indentations marked " C " (see Fig. 2)

The circular and rectangular indentations at the bottom base are the knockout hole for wire entry. You may also use mounting holes that are not in use for running the wiring into the detector.

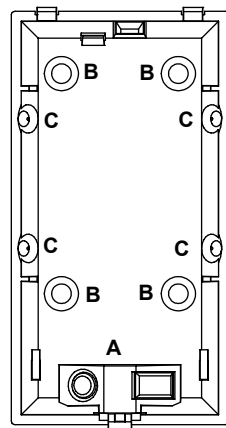
To close the front cover, insert the two small prongs along its upper edge into their corresponding slots in the upper edge of the base. Insert the larger prong at the bottom of the front housing into the slot at the bottom of the base by exerting slight pressure on the prong. The front cover should now fit snugly into the base.

*For detector installation it is recommended to use set of plastic anchors supplied with the detector.*

*Caution: using different or bigger screws can damage the internal electronic board.*

### FIG. 2 - OPTIONAL HOLES

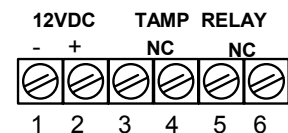
The plastic base include different types of knockdown holes:



- A. Wire access holes  
B. Use for flat wall mounting  
C. Corner mounting - use all 4 holes.

**Seal the wiring and other holes applied to the PIR case.**

### FIG. 3 - TERMINAL BLOCK CONNECTIONS



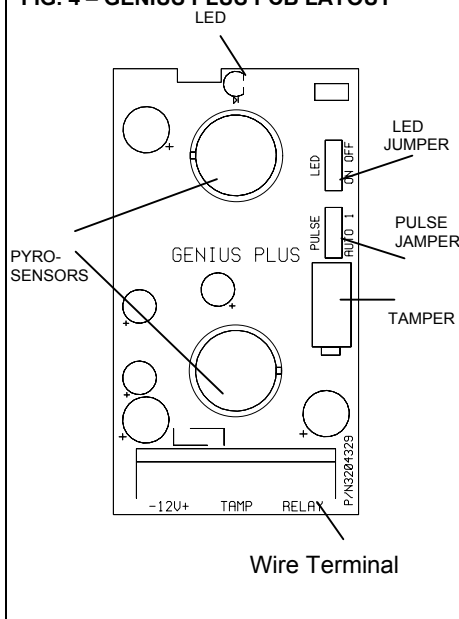
**Terminal 1 - Marked " - " (-12V)**  
Connect to -12V e control panel.

**Terminal 2 - Marked " + " (+12V)**  
Connect to a positive Voltage output of 8.2 -16Vdc source (usually from the alarm control unit)

**Terminals 3 & 4 - Marked " TAMPER "**  
If a Tamper function is required connect these terminals to a 24-hour normally closed protective zone in the control unit. If the front cover of the detector is opened, an immediate alarm signal will be sent to the control unit.

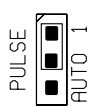
**Terminals 5 & 6 - Marked " RELAY "**  
These are the detector relay contacts output. Connect to a normally closed zone in the control panel.

FIG. 4 – GENIUS PLUS PCB LAYOUT

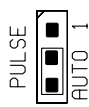


## JUMPER SWITCHS SETTING

**Pulse Jumper** - Provides control for normal or high risk operating environments.



This setting is for a stable environment without air drafts.



The GENIUS PLUS will automatically select the appropriate pulse count level according to the strength of the incoming signals. This setting is for operation in a harsh environment with air drafts or with a small animal less than 25cm (0.8ft) in height and less than 5kg (11.02lbs). In AUTO mode, the GENIUS PLUS will increase its sampling rate and take more factors into account.

## LED Jumper – LED control selection



**LED ENABLE** - The LED will light when the GENIUS PLUS is in alarm condition.



**LED DISABLE** - The LED is disabled.

## WIRE SIZE REQUIREMENTS

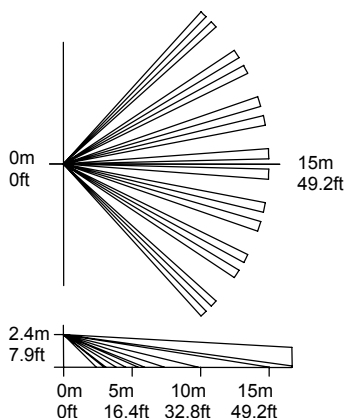
Use #22 AWG (0.5 mm) or wires with a larger diameter. Use the following table to determine required wire gauge (diameter) and length of wire between the detector and the control panel.

Wire Length	m	200	300	400	800
Wire Diameter	mm	.5	.75	1.0	1.5
Wire Length	ft.	800	1200	2000	3400
Wire Gauge	#	22	20	18	16



The Genius Plus provides PET immunity up to 5Kg (11.02 lbs).

FIG. 5 – WIDE ANGLE LENS PATTERN



## WIDE ANGLE LENS PATTERN

COVERAGE	WIDE ANGLE
	90°
	15m x 22m
	49.2ft x 72.2ft

TOTAL DETECTION ZONES	42
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## IMPORTANT:

In an environment with a small animal:

1. The GENIUS PLUS has to be mounted at 2.4m (7ft.) or higher (max 2.7m or 7.9ft.) above floor level.
2. Install the GENIUS PLUS vertically (not tilted forward).
3. Away from furniture 2.4m (7.9ft.) or objects, on which a small animal may jump.
4. Not facing a staircase, ladder or similar object that can be part of the monitored environment (the vertical motion of the animal may be interpreted by the detector as an actual intruder).
5. Flip jumper switch "PULSE" to the "AUTO" (down) position for a harsh environment.

## TEST PROCEDURES

Wait one minute warm-up time after applying 12 VDC power. Conduct testing with the protected area cleared of all people.

## Walk test

- Remove front cover. The pulse jumper must be in position 1. The LED must be enabled.
- Replace the front cover.
- Start walking slowly across the detection zone.
- Observe that the detector's LED lights whenever motion is detected.
- Allow 5 sec. between each test for the detector to stabilize.
- After the walk test is completed, the LED may be disabled.

## NOTE:

Walk tests should be conducted, at least once a week, to confirm proper operation and coverage of the detector.

## TECHNICAL SPECIFICATIONS

Power input	8.2 - 16VDC
Current consumption	Standby 13mA at 12VDC Active 8.5mA at 12VDC
Detection speed	0.15 to 1.8m/sec (0.5 to 6 ft./sec)
Alarm output	N.C 50mA at 24VDC 27ohm in line resistor
Tamper switch	N.C 50mA at 24VDC 10ohm in line resistor
Operating temperature	-20°C to 50°C (-4°F to 122°F)
Operating humidity	Up to 95% (non-condensing)
Storage temperature	-40°C to 80°C (-40°F to 176°F)
Detection method	2 matching dual element with double optic system
RFI protection	≥30V/m at 10 to 1000MHz
EMI immunity	50,000Volt electrical interference due to power surges or lighting
LED Indicator	LED is blinking 8 times during up period and self-testing 12 Sec. LED is ON during alarm.
Dimensions	88 x 48 x 33mm (3.46" x 1.9" x 1.3")
Weight	53 gr. (1.9 oz)

## WARRANTY

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Seller does not represent that its products may not be compromised or circumvented; that the product will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection.

Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

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**Warning: Test this product at least once a week**

## Item 4775

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These instructions supersede all previous issues in circulation prior to April 2003.