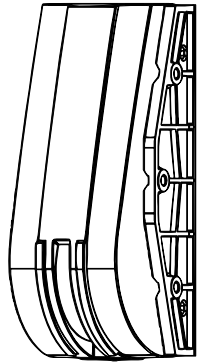# PATROL[i] - 101

WEATHERPROOF CURTAIN PIR & MW DETECTOR FOR OUTDOOR USE

GSN *Electronic Company Ltd.*

PATROL-101 combined detector designed for use in open, outdoor areas and low-temperature environments to -55°C.

PATROL-101 creates a narrow protective curtain allowing free movement within the protected area without triggering the alarm.

PATROL-101 with anti-mask technology, to detect all types of masking attempts.

**PATROL-101** provides pet immune detection up to 30kg.

FEATURES

- DUAL TECHOLOGY PIR & MW
- QUAD ELEMENT PYRO SENSOR
- BUILT-IN HEATER
- SHOCK SENSOR
- ANTI-MASK PROTECTION
- DOPPLER PULSE-COUNT SELECTION (1-7)
- INDIVIDUAL PIR / MW/ ANTI-MASK SENSITIVITY ADJUSTMENT
- IMMUNE TO PETS UP TO 30KG
- AUTOMATIC TEMPERATURE COMPENSATION
- VISIBLE LIGHT DISTURBANCE PROTECTION
- DOUBLE RFI/EMI PROTECTION
- WEATHERPROOF HOUSING

## DETECTOR INSTALLATION MANUAL

1. Run the installation wire through the bracket wiring hole.

2. Mount bracket onto the wall and affix with screws, using the knockouts.

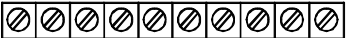Corner installation   Wall installation

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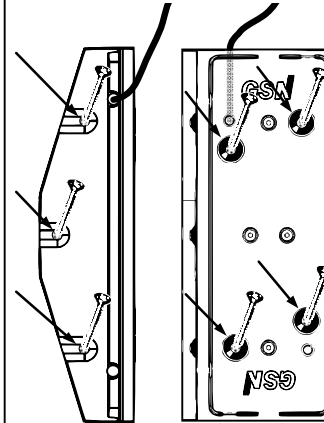
3. Run the installation wire through detector back cover.

4. Mount back cover of the detector to the bracket using four screws.

5. Insert the PCB and connect wires according to the schematic.

6. Close front cover and affix with screw.
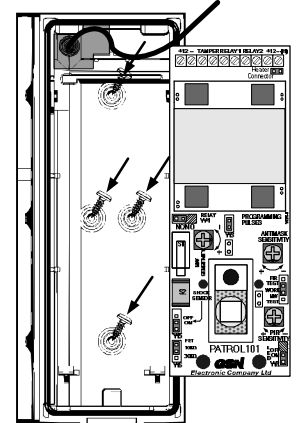
TERMINAL BLOCK CONNECTION

+12V-   TAMPER   RELAY1   RELAY2   +12V-(H)

Terminals Í +12V-Í – for connection to the power supply of the control unit.

Terminals Í TamperÎ – for connection to a 24-hour normally closed protective zone in the control unit.

Terminals Í Relay 1Î – PIR detector relay output.

Terminals Í Relay 2Î – anti-mask relay output.

Terminals +12V- (H) – heater power connects to external 12-16V/1A power unit.

IMPORTANT!
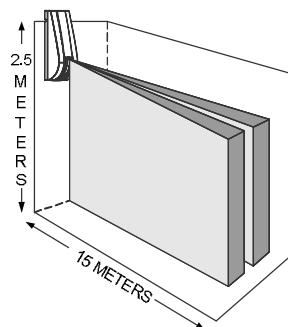When connecting the heater, take into consideration voltage drop and power loss in cables.

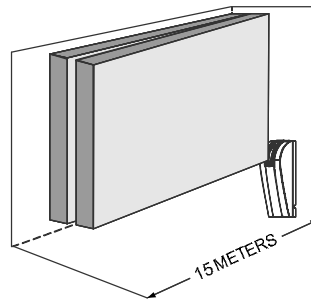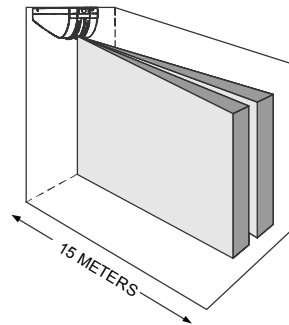
PATROL-101 MOUNTING OPTIONS

Detector can be installed vertically or horizontally (see illustration). Recommended installation height is **2.5m**. Maximum installation height is **5m**.
* For installation over **3.5m**, mount the detector at an angle of **20** degrees.

NOTE! Avoid installing detector where direct sunlight can enter the pyro sensor.

2.5 METERS

15 METERS

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15 METERS

15 METERS

DETECTION AREA

Side view

5M

2.5M

2M

MW DETECTION ZONE

PIR DETECTION ZONE

3м   6м   9м   12м   15м

Top view

2 METERS

0

-30   30

PIR DETECTION ZONE

15 METERS

MW DETECTION ZONE

-60   60

-90   90

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1   2   3   4   5
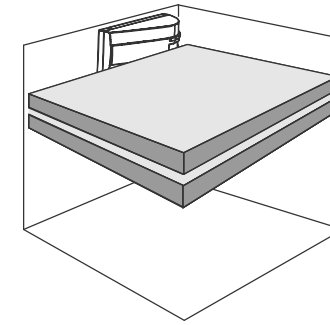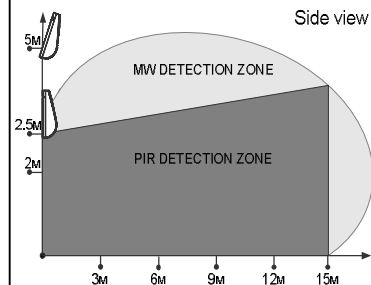
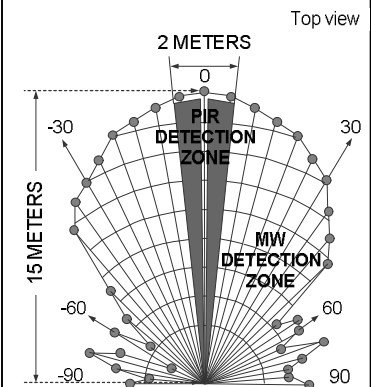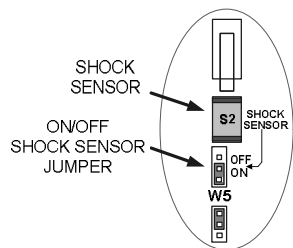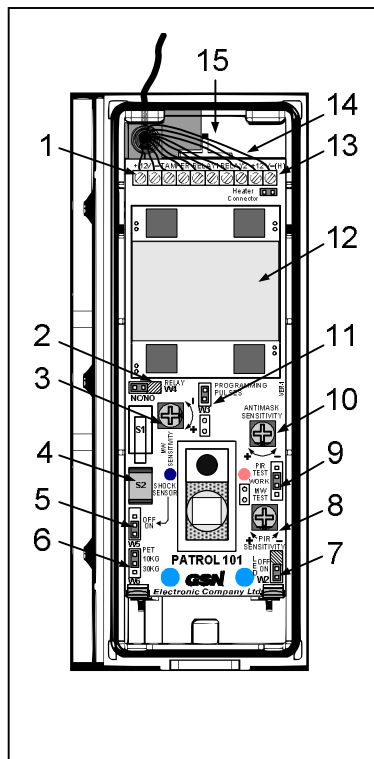6   7   8   9   10

SHOCK SENSOR

PATROL-101 includes a shock sensor that detects external attack. Any physical impact or attempt to separate the detector from the wall will trigger an alarm signal to the control panel through the terminal «TAMPER».

Jumper W5 enables/disables the shock sensor.

- Jumper W5 On - Shock Sensor activated.
- Jumper W5 OFF - Shock Sensor disabled.

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1. POWER SUPPLY CONNECTION
2. JUMPER TO SELECT NC/NO
3. MW SENSITIVITY ADJUSTMENT
4. SHOCK SENSOR
5. ON/OFF SHOCK SENSOR JUMPER
6. ANIMAL WEIGHT JUMPER
7. ON/OFF LED JUMPER
8. PIR SENSITIVITY ADJUSTMENT
9. OPERATING MODE SETTING
10. ANTI-MASK SENSITIVITY ADJUSTMENT
11. PULSE PROGRAMMING JUMPER
12. MW ANTENNA
13. HEATER POWER SUPPLY CONNECTION
14. ANTI MASK RELAY OUTPUT (RELAY 2)
15. PIR DETECTOR RELAY OUTPUT (RELAY 1)

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PIR ADJUSTMENT

1. Remove the front cover.

2. Connect the power and wait for LED to stop flashing (warm-up time 50 sec).

3. Set Jumper W1 to the "PIR TEST" position, RELAY 1 is open.

4. Replace the cover.

5. Use the "PIR SENSITIVITY" potentiometer to adjust the PIR sensitivity, moving within the protected area. The red LED should flash with each step.

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MW ADJUSTMENT

1. Remove the front cover.

2. Set Jumper W1 to the "MW TEST" position, RELAY 1 is open.

3. Replace the cover.

4. Use the "MW SENSITIVITY" potentiometer to adjust the MW sensitivity, moving within the protected area.
The blue LED should flash with each step.

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OPERATION MODE

1. Set Jumper W1 to "WORK" position.

2. Set Jumper W6 according to animal weight.

3. Replace the cover – LED will blink. At the same time, keep the detector field-of-view clear, until the LED stops blinking – the anti-mask function will then be activated correctly.
Use the "ANTIMASK SENSITIVITY" potentiometer to adjust anti-mask sensitivity.

4. Affix the cover with screw.

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CHANGING RELAY SWITCH CONNECTIONS

1. Disconnect the power.

2. Set Jumper W4 to "ON" position.

3. Restore power.

PULSE-COUNTING METHOD

Selectable pulse count 1, 2, 3, 4, 5, 6 or 7 provides users with the option of optimizing detector sensitivity to suit the environment, thus retaining reliable performance at all times. To adjust pulse count for specific operating environments:

1. Remove Jumper W3. The blue LED blinks indicating that pulse counting has begun.

2. Replace Jumper W3 during pause between LED blinking.

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TECHNICAL SPECIFICATIONS

Input voltage……………….9 – 16V

Current consumption:
In standby mode: …………...80mA
In alarm mode:…………….120mA

Heater input voltage……....12 – 14V

Heater current consumption:……………….700mA

Microwave frequency:...10.525GHz

Anti-mask startup (boot) period:……………..…… 50 ± 5sec

Adjustable mask detection:……………….0.2 –20cm

Warm up period:…..…….50 ± 5sec

Detection range:…..…….15meters

Detection speed range:……………….0.2 – 4 m/sec

Relay output:………………………
………...NC/NO; 60V; 100mA; 16Ω

Tamper output:……………………..
……………..NC; 60V; 100mA; 16Ω

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Anti-mask Relay output:…………..
………..NC/NO; 60B; 100mA; 16Ω

Anti-mask alarm activation delay:………………….....40-60sec

Alarm period:…....................3sec

Reset time:……………….5 ± 1sec

Pulse counting:……..............1 – 7

Installation height:………..2.5 – 5m

Light immunity:……………………...
…………….no less than 30000 lux

Operating temperature range:
without heater ………–30°C +60°C
with heater ………...– 55°C +60°C

Storage temperature range:....................– 60°C – +80°C

Protection rating………………IP65

RFI immunity: 30V/м
at a frequency range 30MHz-2GHz

EMI immunity…………….50,000V

Dimensions:…………………………..
…………..55mm x 49mm x 153mm

Weight:………….……………270gr.

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WARRANTY:

GSN Electronic Company Ltd. warrants the product to be free from defects in materials and workmanship under condition of observance of service regulations and to be repaired or replaced under absence of mechanical damages for a limited period of five years from the date of sale.

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