



# LC-103PIMSK

## Professional Passive Infrared & Microwave Detector with Anti-Mask with Pet Immunity

### Installation Instructions



The detector provides an analysis of environmental conditions through the entire movement speed frequency spectrum, allowing focus on intruders and eliminating environmental factors of false alarms. The spectrum analysis is embedded in the VLSI based electronics of the detector assuring high reliability and trouble free operation. Unique function - anti-mask - guarantees detector protection from non desirable approach and any kind of masking beginning from the distance 0.8m and closer.

As the LC-103PIMSK is a combined technology (PIR & microwave) an alarm signal relay activation occurs only when signals from both sensors (PIR & MW) are present at the same time. The effective detection range is the range of which the patterns (PIR & MW) are intersected. The GAIN potentiometer adjustment changes the MW signal intensity so that the effective pattern will be scaled.

Unique function - anti-mask - guarantees detector protection from non desirable approach and any kind of masking beginning from the distance 0.8m and closer.

#### TYPICAL INSTALLATION

##### Select mounting location

Choose a location most likely to intercept an intruder. (Our recommendation is a corner installation). See detection pattern (Fig.3). The quad-element high quality sensor detects motion crossing the beam; it is slightly less sensitive detecting motion toward the detector. The LC-103PIMSK performs best when provided with a constant and stable environment.

**Avoid The Following Locations:** \* Facing direct sunlight. \* Facing areas that may change temperature rapidly. \* Areas where there are air ducts or substantial airflows. *The LC-103PIMSK performs better when provided with a constant and stable environment.*

**NOTE:** LC-103 PIMSK breaks off Anti-Mask alarm signal only after receiving signal from PIR' but not less than 30 sec.

#### MOUNTING DETECTOR BASE

1. To remove the front cover, unscrew the holding screw and gently raise the front cover. (Fig.2-11) 2. To remove the PC board, carefully unscrew the holding screw located on the PC board.(Fig.2-9) 3. Break out the desired holes for proper installing (Fig.1-B or C). 4. The circular and rectangular indentations at the bottom base are the knockout holes for wire entry. You may also use mounting holes that are not in use for running the wiring into the detector.(For option with bracket - lead wire through the bracket, Fig2-7) 5. Mount the detector base to the wall, corner or ceiling. (For option with bracket install bracket).(Fig.6, Fig.7) 6. Reinstall the PC board by fully tightening the holding screw. Connect wire to terminal block. 7. Replace the cover by inserting it back in the appropriate closing pins and screw in the holding screw.

#### DETECTOR INSTALLATION

**Terminal Block Connections** (See Fig.4)

**Terminals 1 & 2 - Marked "T1, T2" (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 3 & 4 - Marked "AM: NC, C"** These are the output relay Anti Mask contacts of the detector. Connect to a normally closed zone in the control panel.

**Terminal 5 - Marked "EOL"** - End of line option.

**Terminals 6 & 7 Marked "PIR: NC, C"** These are the output relay PIR contacts of the detector. Connect to a normally closed zone in the control panel.

**Terminal 8 - Marked "-"** (GND) Connect to the negative Voltage output or ground of the control panel.

**Terminal 9 - Marked "+" (+12V)** Connect to a positive Voltage output of 8.2 -16Vdc source (usually from the alarm control unit).

		AM			PIR			
T2	T1	NC	C	EOL	NC	C	-12V +	
1	2	3	4	5	6	7	8	

**SETTING - UP THE DETECTOR**

**LED CONTROL**

**Switch 1 of DIP-4. Use for Setting "LED" - LED Enable / Disable**

**Position Up "ON" - LED ENABLE** The RED LED will activate when the detector is in alarm condition. **Position Down "OFF" - LED DISABLE** The LED's are disabled.

**NOTE:** the state of the switch "LED" - does not affect the operation of the relay. When an intrusion is detected, the LED will activate and the alarm relay will switch into alarm condition for 2 sec.

**ANTI MASK FUNCTION**

**Switch 2 of DIP-4. Use for Setting "AM" - Anti Mask function**

**Position Up "ON" -** protection against masking the detector from 0.4m and closer. **Position Down "OFF" -** protection against masking the detector from 0.8m and closer.

**PIR SENSITIVITY ADJUSTMENT**

**Switch 3 of DIP-4. Use for Setting "PIR" -** provides sensitivity control of PIR according to the environment.

**Position Up "ON" - gh sensitivity** For stable environments. **Position Down "OFF" - Low sensitivity** For harsh environments. This setting enables special software to modify detection speed.

**PET IMMUNITY SETTING**

**Switch 4 of DIP-4. Use for Settings "PET" 15kg-25kg**

**Position Up "ON" Immunity** to an animal up to 15 kg **Position Down "OFF" Immunity** to an animal up to 25 kg

**SENSITIVITY CALIBRATION**

The MW potentiometer adjusts the detection sensitivity of Doppler between 40% and 100% (factory set to 65%). Rotate the potentiometer clockwise to increase sensitivity. Rotate the potentiometer counter-clockwise to decrease sensitivity.

The PIR potentiometer adjusts the detection range between 68% and 100% (factory set to 84%). Rotate the potentiometer clockwise to increase range, counter-clockwise to decrease range.

**NOTE:** You must reset the detector from Control Panel before the new settings will take effect.

**TEST PROCEDURE**

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

**WALK TEST:** **1.** Remove front cover. Set LED to ON position. **2.** Reassemble the front cover. **3.** Start walking slowly across the detection zone. **4.** Observe that the red LED lights whenever motion is detected. **5.** Allow 5 sec. between each test for the detector to stabilize. **6.** After the walk test is completed, you can set the LED to OFF position.

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

**TECHNICAL SPECIFICATION**

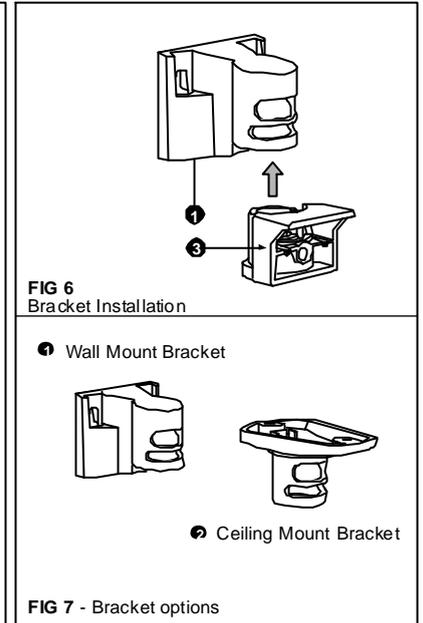
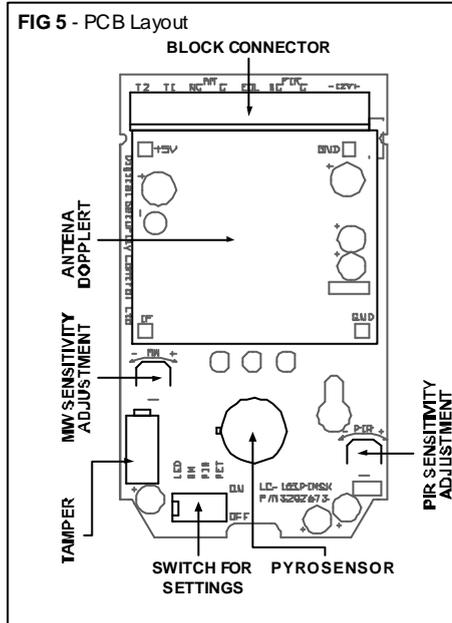
**Detection Method** Quad (Four element) PIR & microwave pulse Doppler  
**Power Input** 8.2 to 16 Vdc  
**Current Draw** Active: 25.5 mA  
 Standby: 18 mA

**Temp. Compensation** YES  
**Alarm Period** 2 +/- 1 sec  
**Alarm Output** N.C 28Vdc 0.1 A with 10 Ohm series protection resistors

**Tamper Switch:** N.C 28Vdc 0.1A with 10 Ohm series protection resistor - open when cover is removed

**Warm Up Period** 1 min  
**LED Indicator:** LED's are blinking during warm up period and self testing,

**Red LED:** ON during alarm  
**Green LED:** PIR CHANNEL  
**Yellow LED:** MW CHANNEL  
**Dimensions:** 118mm x 62.5mm x 41mm (4.65" x2.46" x1.61")  
**Weight:** 120 gr.



**LIMITED WARRANTY:** Digital Security Controls Ltd, warrants that for a period of 12 months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls Ltd shall, at its option, repair or replace the defective equipment upon returns of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls Ltd, such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls Ltd. Digital Security Controls Ltd neither assumes responsibility for, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product. In no event shall Digital Security Controls Ltd be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Motion detectors can only detect motion within the designated areas as shown in their respective installation instructions. They cannot discriminate between intruders and intended occupants. Motion detectors do not provide volumetric area protection. They have multiple beams of detection and motion can only be detected in unobstructed areas covered by these beams. They cannot detect motion which occurs behind walls, ceilings, floor, closed doors, glass partitions, glass doors or windows. Any type of tampering whether intentional or unintentional such as masking, painting, or spraying of any material on the lenses, mirrors, windows or any other part of the detection system will impair its proper operation.

Passive infrared motion detectors operate by sensing changes in temperature. However their effectiveness can be reduced when the ambient temperature rises near or above body temperature or if there are intentional or unintentional sources of heat in or near the detection area. Some of these heat sources could be heaters, radiators, stoves, barbecues, fireplaces, sunlight, steam vents, lighting and so on.

**WARNING:** Digital Security Controls Ltd, recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

**Important information:** Changes or modifications not expressly approved by Digital Security Controls Ltd could void the user's authority to operate this equipment.