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# MH-10

## PASSIVE INFRARED INTRUSION DETECTOR






**CROW**  
ELECTRONIC ENGINEERING LTD.  
INSTALLATION INSTRUCTIONS  
P/N 7101004

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### MH 10 FEATURES

- Variable pulse-width adjustment
- Unique dual polarity pulse count
- Variable range adjustment
- High RFI (30V/M from 10 to 1000 MHz) and EMI immunity
- SMD technology
- Unique dual-element Pyro-electric sensor effectively surmounts false alarms
- Extremely reliable, even in the most difficult installation and operating environments
- Quick change, high quality, dust-free fresnel lenses

### INTRODUCTION

The MH10 is a dual-element passive infrared intrusion detector for electronic security systems. It detects intrusion by determining changes in infrared energy patterns. It emits no radiation and is harmless to humans and animals. The MH10 reduces false alarms to an unprecedented nominal level due to its

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Effective elimination of background noises and nuisance stimuli. The MH10 employs variable pulse-width adjustment and a highly accurate range control to virtually eliminate false alarms without sacrificing detection ability.

The MH10 has a wide range of interchangeable lenses for flexible detection patterns. The MH10 features an anti tamper switch, a pulse-width adjustment jumper, range adjustment and a LED disable jumper.

### OPTIONS

1. MH10T - ATC - Automatic Temperature Compensation - For environments affected by high ambient temperatures. The CROW MH10T features a special automatic temperature compensation circuit to increase sensitivity at high temperatures.
2. MH10U - features a form "C" output relay. To order options, add the required suffix to the "MH" designation. Any combination of options is available.

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### LENS SELECTION

Crow offers a wide selection of lenses to meet your installation requirements.

- Wide angle lens
- Long range lens
- Vertical curtain lens
- Horizontal curtain lens ( pet alley )
- Creep zone mirror ( optional ), allows ultraclose look down zones.

A lens should be selected in accordance with the nature of the room and the specific area requirements.

### CHANGING A LENS

- Using a small screwdriver, snap out the lens locking bars on either side of the MH10 front cover.
- Push out the lens from inside of the front cover.
- Insert a new lens with the grooved surface to the inside.
- Center the lens onto the front cover.
- Snap the locking bars back into place.

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### SELECTING MOUNTING LOCATION

Choose a location most likely to intercept an intruder. See detection patterns and mounting alternatives. The dual-element high quality sensors detect motion across the beam field, they are slightly less sensitive to motion toward the detector.

The MH10 performs better when provided with a constant and stable foreground. The protected area should not exceed the detector's selected detection range.

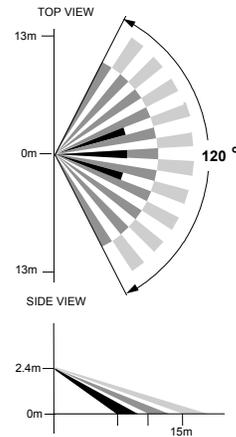
### It is advisable to avoid the following locations:

- facing direct sunlight
- facing sources which can change temperature rapidly
- areas where there are air ducts or substantial air flows.

**Recommended mounting height is 2.4m.**

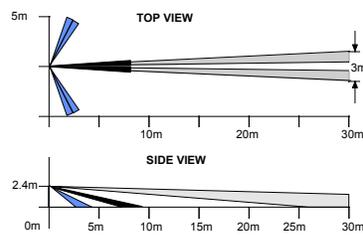
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### WIDE ANGLE LENS

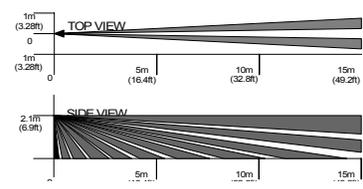


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### LONG RANGE LENS

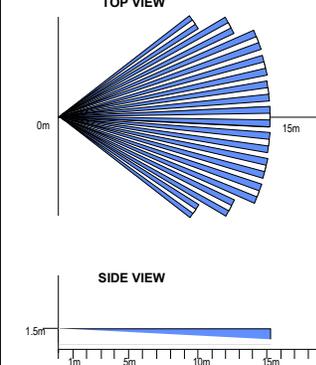


### VERTICAL CURTAIN LENS



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### ANIMAL ALLEY LENS



**Note:** Vertical calibration must be set at +5 to achieve the animal alley detection pattern.

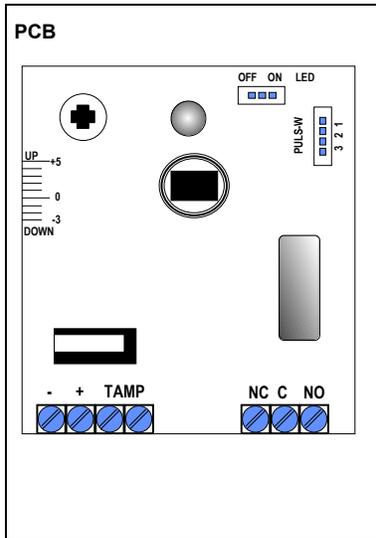
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### MOUNTING INSTRUCTIONS

- Remove the CROW nameplate to expose the screw holding the cover in place.
- Loosen the screw and remove the cover.
- Unscrew the screw holding the PCB to the back cover and remove the PCB.
- Punch out the cable entry knockout on the back cover.
- Determine the mounting position and cable routing. Choose a mounting height to suit the application (generally 2 to 2.5m above floor level).
- Mount the back cover to the wall, using appropriate number of screws.
- Run the cable through the cable entry hole and terminate the wires.

The normally open contact is only on model MH-10U.

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The PCB via the scale on the right side of the board (refer to "Vertical Calibration Chart"), tighten the screw.

- Connect a jumper between the marked terminals to enable or disable the LED (OFF or ON).

**CALIBRATING AND TESTING**

- Adjust pulse width (refer to "Pulse Width Jumper Setting" section).
- Adjust range potentiometer (refer to "Range Adjustment" section).
- Always walk test after adjustment and readjustment.
- When the MH10 performance is satisfactory, screw on the front cover and snap on the Crow nameplate.
- The MH10 is now fully calibrated & operational.

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**TECHNICAL SPECIFICATIONS**

Power Input	8.2 -16 Vdc
Current Consumption	12mA
Sensitivity	Δ1.6°C @ 0.6 m/sec
Alarm Output	N.C. 50 mA @ 24 Vdc (10 Ω in line resistor Form "A")
Operating ambient temperature range	-20°C to +50°C (-4°F to +122°F)
Operating humidity range	Up to 95% (non-condensing)
Storage temperature range	-40°C to +80°C (-40°F to +176°F)
Pyrosensor	Dual element type
RFI protection	≥30 V/m @ 10-1000 MHz
EMI immunity	50,000 V electrical interference
Dimensions	80mm x 60mm x 43mm
Weight	70 gr

**Crow reserves the rights to change specifications without prior notice.**

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**MH10 VERTICAL CALIBRATION CHART**

Mounting Height	Coverage Scale									
	-3	-2	-1	0	1	2	3	4	5	
1m	3	3	4	5	6	6	7	9	15	
1.5m	4	4	5	6	7	7	9	10	15	
1.8m	4	5	6	7	8	8	9	11	15	
2m	5	6	7	8	8	9	10	13	15	
2.4m	6	7	8	8	9	9	11	14	15	
2.7m	7	8	8	9	9	10	12	14	15	
3m	8	8	9	9	10	11	12	14	15	

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**RANGE ADJUSTMENT**

The range potentiometer should be adjusted according to the security risk level at the installation site. For high-risk locations, the range should be adjusted close to MIN. In low risk situations, the range should be adjusted closer to MAX. Always walk test and re-adjust if required.

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**CROW LIMITED WARRANTY**

(Crow) warrants this product to be free from defects in materials and workmanship under normal use and service for a period of five years from the last day of the week and year whose numbers are printed on the printed circuit board inside this product.

Crow's obligation is limited to repairing or replacing this product, at its option, free of charge for materials or labor, if it is proved to be defective in materials or workmanship under normal use and service. Crow shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Crow.

There are no warranties, expressed or implied, of merchantability or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall Crow be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by Crow's own negligence or fault.

Crow does not represent that this product can not be compromised or circumvented; that this product will prevent any person injury or property loss or damage by burglary, robbery, fire or otherwise; or that this product will in all cases provide adequate warning or protection. Purchaser understands that a properly installed and maintained product can only reduce the risk of burglary, robbery or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss or damage as a result. Consequently, Crow shall have no liability for any personal injury; property damage or any other loss based on claim that this product failed to give any warning. However, if Crow is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, Crow's maximum liability shall not in any case exceed the purchase price of this product, which shall be the complete and exclusive remedy against Crow.

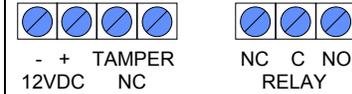
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**TERMINAL BLOCK WIRING**

Power input (8.2 to 16Vdc) to the 12V+ and - terminals.

TAMP terminals should be connected to a normally closed 24-hour zone of the control panel.

Connect RELAY terminals (NC and C) to a normally closed protective zone on the alarm control panel. On MH10 model U a Form C output relay is standard. (NC and NO outputs). TP - TEST POINT - see explanation under CALIBRATION AND TESTING.



**Avoid contact between bare wire and the PCB.**

- Place the PCB in the back cover and screw into place. Before tightening the screw determine the vertical location of

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**PULSE WIDTH JUMPER SETTINGS**

Normal low risk situation - jumper on no.1  
Pulse-width (interruption time) = 50msec.

Moderate nuisance stimuli - jumper on no.2  
Pulse-width (interruption time) = 150msec.

Relative high chance of false alarm - jumper on no.3  
Pulse-width (interruption time) = 300msec.

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These instructions supersede all previous issues in circulation prior to May 1998.