

**DIGI-SPEC**

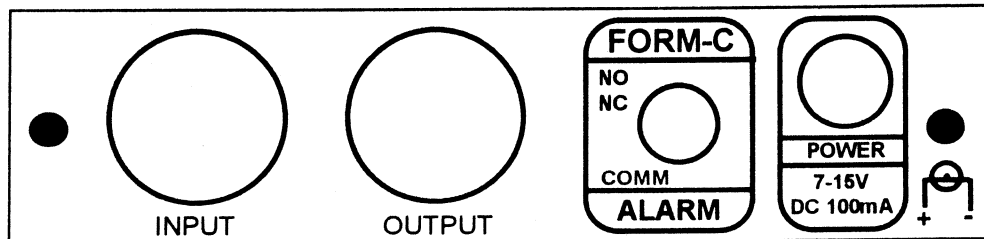
# VMD-LC1

Version 1.0

## GENERAL OPERATING INSTRUCTIONS

The VMD-LC1 is designed to quickly and easily set up a surveillance unit that detects and alarms when motion occurs in a defined area. The only other equipment needed is a video camera and a reporting device such as a monitor or VCR.

## CONNECTIONS - BACK PANEL



**INPUT CONNECTOR:** Connects any video camera using a BNC connector.

**OUTPUT CONNECTOR:** Connects a display unit, recording device, switcher, or other equipment using a BNC connector.

**RELAY CONNECTOR:** Any standard Form-C device can be attached. This is the interface between the motion detector and the person or device monitoring the location. During an alarm, the alarm rate is at least 1 second per alarming condition.

**POWER CONNECTOR:** Each unit has one power supply provided; however, a variety of power supplies are supported such as, a 9V battery or cigarette lighter making the LC1 adaptable to most applications.

**VERTICAL:** Defines the vertical boundaries. There are two trim pots for adjusting the vertical part of the rectangle. Each trim pot is responsible for either the top or bottom edge. Clockwise adjustment lowers an edge and counter-clockwise adjustment raises an edge.

**HORIZONTAL:** Defines the horizontal boundaries. There are two trim pots for adjusting the horizontal part of the rectangle. Each trim pot is responsible for either the left or right edge. Clockwise adjustments move an edge to the right and counter-clockwise adjustments move an edge towards the left.

## SPECIFICATIONS

**Video Input:** 5 to 2V p-p, 75 ohm unbalanced, on BNC.

**Video Output:** 1V p-p, 75 ohm back-terminated, on BNC automatic loop-through on power loss.

**Standards:** NTSC, PAL and SECAM (color or B/W).

**Pixel Resolution:** 288 horizontal by 216 vertical.

**Power supply:** 7 to 15V DC @ 100mA.

**Protection:** Thermal and overload shutdown.

### Adjustments:

1. Horizontal Position Left
2. Horizontal Position Right
3. Vertical Position Top
4. Vertical Position Bottom
5. Sensitivity

**Switch Function:** Alarm On; Alarm Off; Clear. High Reliability Microswitch.

**Indicators:** Alarm LED, lit during alarm output; Power LED lit during power supply input; Alarm Buzzer - piezo transducer @ 2500 Hz.

### Motion Detection Process:

- a) Frame Intensity;
- b) Block differential Contour (matrix convolution method)
- c) Frame to Frame Block Absolute Delta;
- d) Ten Frame Sustained tracking

**Image Acquisition:** Fast Successive Approximation (S-A) type A/D (analog to Digital Converter)

**Processing Speed:** 4 MIPS (Million Instructions Per Minute)

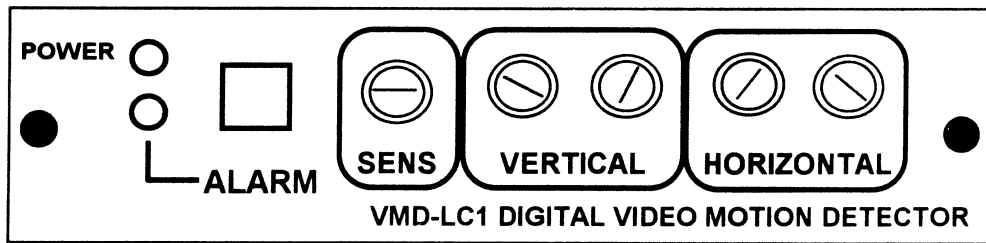
**Technology:** All CMOS

**Alarm Output:** Form-C relay contacts rated at 5A@250V

### DIMENSIONS:

Size: 2.5" x 3.5" x .75"  
Weight: 7 oz.  
Color: Black  
Material: Anodized Aluminum

## FUNCTIONS - FRONT PANEL



There are two basic functions on the LC1: First defining the area to be monitored and secondly, defining the sensitivity level. The combinations of these two items lock in the area where 1) motion is to be detected, 2) when the alarm should sound and 3) when the relay action should occur.

Turning the trim pots in the VERTICAL location will create a taller rectangle and turning the trim pots in the HORIZONTAL location will make a wider rectangle.

During the adjustment process, all active alarms are canceled.

**GREEN LED:** The power indicator. When lit, the device is on.

**RED LED:** The Alarm indicator. When lit, the alarm is enabled. When flashing quickly, the alarm is active. When flashing slowly, the alarm memory is activated.

**ALARM:** The ALARM button is a toggle that ENABLES or DISABLES the alarms. In the DISABLED mode, all motion is ignored. The RED LED is not lit and no alarms are generated. In the ENABLED mode, the RED LED is lit and is in a "ready to detect" motion mode. When motion is detected, the RED LED begins to flash, the buzzer alarms and the device connected to the RELAY CONNECTOR is activated.

To clear the alarms, press the ALARM button.

**SENSITIVITY:** Defines when the alarm should sound and the relay action to occur. Setting the SENSITIVITY is done with a small flat edge screw driver. Turning the pot trim clockwise set the sensitivity level to the most sensitive level. To reduce the sensitivity, turn the pot trim counter-clockwise.

**HINT:** During setup, and after the areas has been defined, set the SENSITIVITY to its most sensitive level and observe what kind of motion causes an alarm condition. Reduce the sensitivity by turning the pot trim counter-clockwise until the desired level is reached.