

# Static Solutions, Inc.

*"Strategies, Solutions, Innovation"*

## USER MANUAL: CM-1700 CONSTANT MONITOR

### DESCRIPTION

The Guardian™ CM-1700 monitors a user's path to ground and the single wire wrist strap the operator wears. If user's ground path is broken, the CM-1700 emits a loud buzzer and displays a blinking red LED light. The operator is always connected to earth ground even when the off/on is switched off. The equipment thus becomes a common point ground even when the monitor is switched off.

### IMPORTANT

**You must connect to earth/electrical ground when using this equipment even if you use a battery as a power supply.**

1. Connect the Guardian™ CM-1700 to the earth/electrical (ground) of the building. This equipment comes with a grounding cord wire. One end of the ground wire is connected to the back of the CM-1700. The other end is connected to the earth/electrical ground. (FIGURE 1.). Test to see the earth ground is correct.
2. Connect the 9VDC power adaptor to the back of the CM-1700; the other end is connected to AC power supply (FIGURE 1.).
3. The Guardian™ CM-1700 may be installed either on top of or under the table or workstation. There are two holes in the equipment which can be used to attach the CM-1700 to either on or under the table by using the screws which are enclosed with the CM-1700. The system may be attached also with two sided adhesive or Velcro™ enclosure hook and loop.

Note: If you want to use 9V battery as power, open the battery compartment in the back of the CM-1700 and attach a 9V battery to the 9V power jack. A 110V to 9V power adaptor (enclosed) can be used as a power supply.

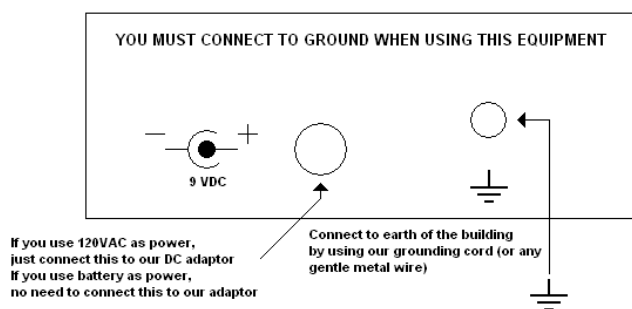


FIGURE 1.

### OPERATION

When the path of the ground to the operator wearing a wrist strap is broken or the installed resistance of wrist strap is higher than the preset value (This mean the impedance of the user, wrist strap and ground is higher than the preset value), the green LED would change from green to a flashing red LED and alarm buzzer.

## **SPECIFICATION**

*Power source:* 9V battery or 9VDC -110 volt/220 volt power adaptor.

*Power:* 9VDC, if the power is less than 7.5V, the battery LED would change from green to flashing red.

*Preset impedance:* The CM-1700 may be adjusted to other values (FIGURE 2.) depending on the weight or height of the user and the operation conditions.

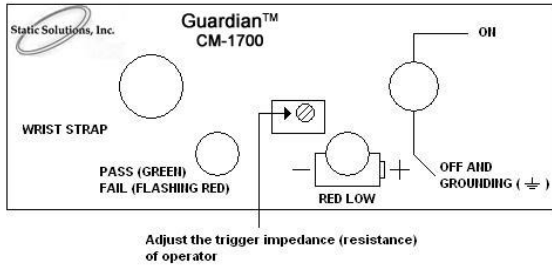


FIGURE 2.

## **ADJUSTMENT**

A 5 meg ohm (original setting) was used to calibrate and set up the CM-1700. To check on this setting merely connect a 5meg ohm resistor (other values may be used such as 10 meg) between the ground and banana jack for the wrist strap. Turn the adjustment knob in Figure 2 until the LED changes from a flashing red LED to a green LED or green to flashing red LED when the resistor is removed.

## **TROUBLESHOOTING**

**The LED is always on in a flashing red state and alarms even the user wears in specification wrist straps.**

1. The wrist strap is broken in the coil cord.
2. The wristband on the operator does not have a good electrical contact to the skin of the wrist. Apply a ESD hand lotion such as HL-3408
3. The equipment is not connected correctly to the earth/electrical ground.
4. The impedance setting is not calibrated correctly to the user due to the weight or height of the operator. The impedance can be adjusted to the user by setting and adjusting the pot inside the rectangular hole in the front panel (FIGURE 2) to a lower sensitivity.
5. The earth wire of the building is not connected correctly to the earth ground.

**The LED is always on the green state even when the user does not wear the wrist strap but lays the wrist strap on the ESD work surface (Table Mat).**

1. The sensitivity of the impedance is too low. Adjust the impedance/resistance setting pot inside the rectangular hole in the front panel (FIGURE 2) to a higher sensitivity setting.

**The battery LED is on flashing red state.**

1. Replace the battery with an alkaline long life battery (if you use battery as power) or check if the AC source (if you use adaptor as power) is attached to a working power supply.

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