Ground Testing

Educational Training Equipment for the 21st Century

Bulletin 553H

H-MVO-1-PB

Ground Integrity Tester

Purpose

The Hampden Model MVO-1-PB Ground Integrity Tester provides a simple and convenient method of assuring the proper operation of hospital ground systems.

Operation

The Hampden Ground Integrity Tester may be operated in either of two modes: ohms or millivolts. In the millivolts mode, it is used to measure the difference in potential between the reference grounding point and exposed conductive surfaces in a patient vicinity.

The potential difference shall not exceed:

- 20 mV for new construction*
- 500 mV for general care areas**

In the ohms mode, it is used to measure the resistance between the reference grounding point and the ground contact of each receptacle in the patient vicinity.

The impedance limit shall not exceed:

- 0.1 ohm for new construction*
- 0.5 ohms for appliance grounding***
- 0.15 ohms for existing construction****

The Model MVO-1-PB is easily zeroed and calibrated in both ohm and millivolt modes by means of the selector switch and potentiometers on the instrument's front. The Hampden Ground Integrity Tester is designed to facilitate the resistance and potential difference measurements recommended by the National Electrical Code, and NFPA 99, Health Care Facilities Code Handbook – 2021, Twelfth Edition

*e.g., refer to paragraph 6.3.3.1.6 of NFPA 99 – 2021

**e.g., refer to paragraph 6.3.3.1.5.2 of NFPA 99 – 2021

***e.g., refer to paragraph 10.3.2.1 of NFPA 99 – 2021

****e.g., refer to paragraph A6.3.3.1.1 of NFPA 99 – 2021

NOTE: Model MVO-60HZ-IT (on reverse side) references paragraph 6.3.3.1.4.1 of NFPA 99 – 2021

Features

- Measures both resistance and potential difference
- Large, legible numerals permit exact readings
- Color coded scale provides qualitative testing
- Meter is self-calibrating to internal standard
- Ohms scale is zeroed without shorting leads
- Uses easily obtainable 9 volt battery
- Convenient access to battery compartment
- Battery condition internally monitored

Description

The Hampden Ground Integrity Tester is available either wall mounted or portable. The portable model is enclosed in a high impact plastic case, 5¼" H x 6" W x 2" D (1.35 cm x 17.5 cm x 6 cm) and weighs 2¼ pounds (1 kg). The wall mounted model (MVO-1-PB-AC) has a surface plate of 13½" H x 9½" W, with a back box of 12"H x 8" W x 4" D.

Hampden Model MVO-1-PB

Green and red segments on the large (3" effective length) scale separate permissible values of ohms and millivolts from those considered too high. Internal power is supplied by a standard 9 volt (transistor) battery. (The MVO-1-PB-AC is hard wired to 120VAC.)

Two test leads are provided.

1. The ohms test lead is #10 AWG fine stranded neoprene covered wire, 3 feet long. One end terminates with a lug that clamps under the binding post shoulder. The other end is a test prod, which is touched to grounded surfaces during tests.
2. The common test lead is #10 AWG fine stranded neoprene covered wire, 10 feet long. One end terminates with a lug that clamps under the binding post shoulder. The other end plugs into the reference grounding receptacle. It is a code approved locking type plug with a green rubber handle.

All Hampden units are available for operation at any voltage or frequ

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