

3M™ Ground Pro Ground Integrity Meter Model CTM051

Proper grounding is crucial for the safe and uninterrupted operation of equipment. In critical environments, a faulty ground connection may result in personnel exposure to dangerous voltages, equipment lockups or malfunctions, and damage to sensitive components. Proper grounding has become one of the most important concerns in facility and tool management.

The 3M Ground Pro Ground Integrity Meter offers a suite of features designed to verify critical grounding parameters in any facility. The Ground Pro measures ground impedance in accordance with ANSI 6.1 and ANSI/ESDA S.20.20 standards. One of the key features of the Ground Pro is its data integrity—its patented technology allows it to provide accurate measurements of ground impedance on a working tool when ground noise is present, an area where most regular instruments fail.

In order to maximize precision, the Ground Pro measures impedance down to milliohms and automatically cancels impedance of test leads so that even milliohm values can be read accurately. In addition to measuring ground impedance, the Ground Pro also measures AC and DC voltage on the ground while separately measuring high-frequency voltage (EMI). This information is greatly beneficial when performing diagnostics of equipment malfunctions and lockups.

The Ground Pro is an essential tool for anyone concerned with ensuring proper grounding of equipment during installation, maintenance and throughout regular use.

Applications

Front-end semiconductors

Photolithography equipment

Back-end semiconductor tools

Disk drive manufacturing

Surface mounted assembly

Industrial robotics

Tool clusters

Medical

Military

Aerospace

Wherever grounding is important

Features

ANSI/ESDA S.20.20 and
ANSI 6.1 compliant measurements

Auto-zero of test lead impedance

Broadband EMI measurements

AC and DC voltage measurements

Audio alarms



The 3M™ Ground Pro Ground Integrity Meter
Model CTM051

Key Advantages

ANSI/ESDA S.20.20 and ANSI 6.1 Compliant

The Ground Pro measures ground impedance in accordance with requirements of ANSI 6.1 and ANSI/ESDA S.20.20 standards.

Accurate Readings in a Noisy Environment

The Ground Pro is designed to provide accurate ground impedance measurements in the presence of noise and ground currents—something a regular multimeter is not known to do.

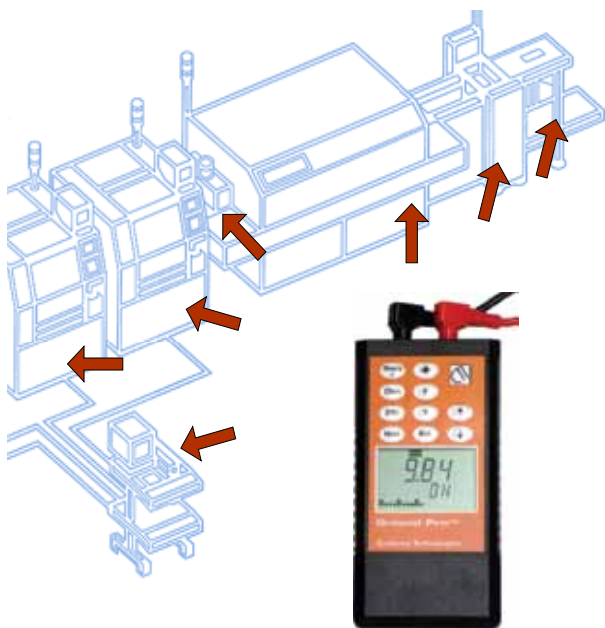
Safety

If a ground connection is miswired, it may contain dangerous voltage. The Ground Pro can measure voltage on such grounds—both AC and DC. An alarm level can be set to alert personnel about such conditions.

EMI

High-frequency noise on a ground increases the probability of equipment malfunction and downtime. EMI can also provide dangerous exposure to sensitive components. The Ground Pro measures high-frequency noise on grounds in a broad frequency range—both average and envelope peak signals.





Why a Multimeter Won't Do

A typical multimeter measures resistance by applying DC voltage to the circuit and measuring voltage drop. Any current in a ground connection, which is a common occurrence in a working tool, can easily be factored into calculations and cause a multimeter to produce an unrealistic result, such as negative or extremely high resistance.

The 3M™ Ground Pro Ground Integrity Meter's patented technology measures ground impedance while completely ignoring noise and currents on the ground, providing superior accuracy in difficult conditions especially in use with a working tool.

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**Electronic Solutions Division
Static Control Products**
6801 River Place Blvd.
Austin, TX 78726-9000
Ordering information: 1-866-722-3736
Technical support: 1-831-459-7488
FAX 800 626-8893
www.3M.com/static

Distributed by: All-Spec, a Hisco Subsidiary
Ph: 800-537-0351 Email: sales@all-spec.com
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Specifications

Ground Impedance

Impedance Range 0.001 - 1.999 Ohms
Automatic auto-zero for test leads

EMI (noise on ground)

Bandwidth 9 kHz - 450 MHz
Measurement Range -40 dBV ... 12 dBV
10mV ... 4 V
Measurement Type Average, Envelope Peak

Voltage on Ground

AC (50 - 500 Hz) 0.001 - 250V RMS
DC 0.001 - 350V

Reference

Individual reference setting for each parameter

Hold

Hold, Hold Max

General

Power-Battery 9V Alkaline
Dimensions (approx.) 4.5" x 3.6" x 1.1"
114 mm x 92 mm x 28 mm
Weight 0.33 lbs.

Why EMI?

High-frequency noise (EMI) on a ground affects the operation of equipment, potentially causing lockups and a variety of other malfunctions. Sensitive components such as magnetic heads are also susceptible to damage caused by excessive noise on a ground. To properly control EMI, one must be aware of the full range of signals present. The Ground Pro measures high frequency noise in a wide dynamic range both average and envelope peak signals. An audio alarm sounds when EMI exceeds a set level.