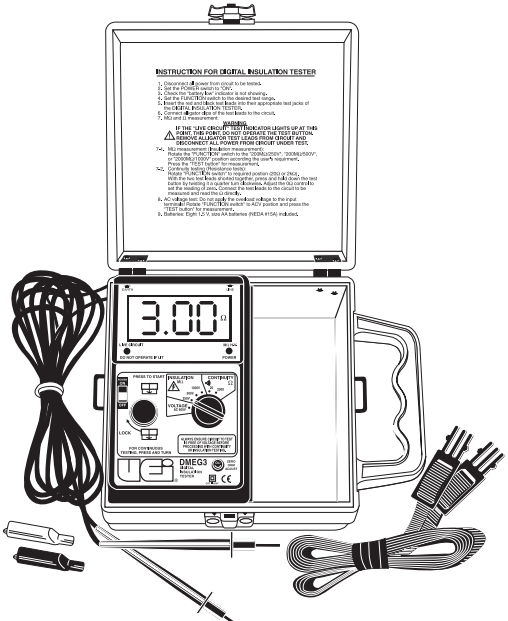
TEST iNSTRUMENTS™

INSTRUCTION MANUAL
DMEG3/IRT3

Insulation Resistance Tester



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Introduction

Your UEi Megohmeter allows you to predict, prevent and identify insulation failures that can cause appliance failure, stop production, create power problems and even put lives at risk. It quickly tests insulation integrity on motors, power distribution systems and other installed wiring.

All insulation has a limited life span and environmental factors such as heat, cold and airborne chemicals can rapidly decrease an insulating material's predicted life. Use this instrument to help you quickly and safely determine your insulation's integrity.

Features include

- Large digital display that shows the test function along with the measured value on the DMEG3 or a high-contrast analog display on the IRT3
- AC Voltage measurement to 600 Volts
- Insulation resistance readings from 0 to 2000 Megohms with the DMEG3 or 200 Megohms with the IRT3
- Three test-voltage ranges (250, 500, 1000 V DC)
- Live circuit (external voltage applied) warning light
- Fuse protected against accidental misuse
- Precision resistance measurement to 0.01 ohms with audible continuity (DMEG3 only)
- 200 mA short-circuit continuity test current for high accuracy (DMEG3 only)
- Precision, low resistance test leads (1000 Volt CAT III rated)
- Audible continuity (DMEG3 only)
- Green LED power-on indicator (DMEG3 only)
- Low battery indication/detection
- Maintains rated voltage on cables with up to 1 mA leak-rate
- Automatic, post-test cable discharge
- Rugged, compact case with latching cover to keep the elements out

Safety Tips

Before using this instrument, read all safety information carefully. In this manual the word **"WARNING"** is used to indicate conditions or actions that may pose physical hazards to the user. The word **"CAUTION"** is used to indicate conditions or actions that may damage this instrument.

This Megohmeter is designed and manufactured in accordance with the following organizational standards:

- IEC1010 CAT III, BS 16th Edition
- EN61010
- IEC Publication 348

These guidelines apply specifically to your instrument:

- **DO NOT** attempt to measure any voltage that exceeds the category based rating of this meter (CAT III, 600 Volts)
- **DO NOT** attempt to use this meter if either the meter or the test leads have been damaged. Return the damaged meter to UEi for repair or replace your test leads
- Ensure meter leads are fully seated and operable by making a quick continuity check of the leads prior to making voltage or insulation resistance measurements
- Keep your fingers away from the test lead's metal probe contacts when making measurements. Always grip the leads behind the finger guards molded into the probes
- **DO NOT** open the bottom of the meter to replace batteries or the fuse while the probes are connected to the meter or this meter is on

This meter was designed for use by service professionals who know the hazards associated with their trade. Exceeding the specified limits of this meter is dangerous and can cause serious injury. To ensure safe and appropriate use, please observe the following safety guidelines:

- Follow manufacturer's specified testing and troubleshooting procedures for the equipment you are working on
- Protect yourself from direct contact with voltages above 60 volts DC or 25 volts AC, as they may constitute a serious shock hazard
- Always turn off power to a circuit (or assembly) under test before cutting, unsoldering, or breaking the current path. Even small amounts of current can be dangerous
- Always disconnect the live (normally red) test lead before disconnecting the common (normally black) test lead from a circuit
- In the event of electrical shock, ALWAYS bring the victim to the emergency room for evaluation, regardless of the victim's apparent recovery

Electrical shock can cause an unstable heart rhythm that may need medical attention.

Higher voltages require greater awareness of physical safety hazards. When it's possible to make clip-on connections to the circuit under test, make the connections without power applied:

1. Turn off the power to the circuit under test.
2. Set the meter to the AC 600 Volt position.
3. Connect the test leads to the meter and then to the circuit under test.
4. Reapply power.
5. Record measurement or adjust equipment as necessary.
6. Turn off power and disconnect test leads.

If any of the following indications occur during testing, turn off the power source to the circuit under test:

- Arcing
- Flame
- Smoke
- Extreme heat
- Smell of burning materials
- Discoloration or melting of components

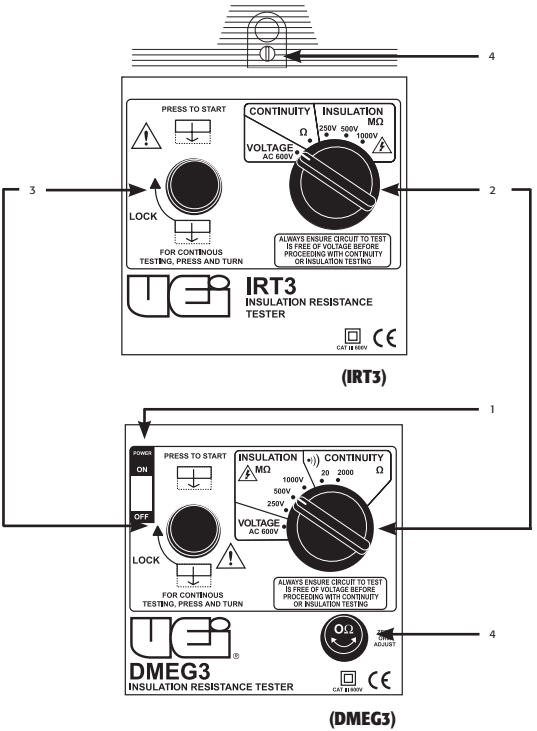
WARNING!

*If any of the above conditions occur, **DO NOT** attempt to remove the meter leads from the circuit under test. The leads, meter, or circuit under test may have degraded to the point that they no longer provide protection from the voltage and current applied. If any of these erroneous readings are observed, disconnect power immediately. Recheck the physical condition of the test instrument, equipment and all settings and connections.*

International Symbols

Dangerous Voltage	Ground
AC Alternating Current	Warning or Caution
DC Direct Current	Double Insulation (Protection Class II)
Either AC or DC	Fuse
Not Applicable to Identified Model	Battery

Controls and Indicators



1. **Power Switch:** Turns instrument power off and on.

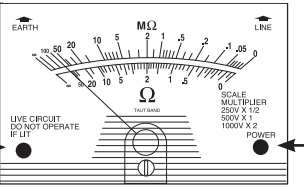
2. **Rotary Function Select Switch:** Selects measurement mode and scale.

3. **Press to Test:** Press this button down to initiate any measurement function. Turn to the right while pressing to lock the button into the test mode.

4. **Resistance Null Adjust:**
   (DMEG3) Used to adjust meter to indicate 0.00 ohms with the function select switch in the continuity position, the red and black leads clipped together and the "Press to Test" button pressed.

   (IRT3) Used to pre-adjust needle movement to 0 volts (infinite ohms) prior to use. Or you can adjust meter to indicate 0 ohms on the green scale with the function select switch in the continuity position, the red and black leads clipped together and the "**Press to Test**" button pressed.

Analog Display (IRT3)

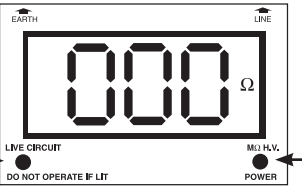


(Fig 1)

Live circuit

Power ON

LCD Display (DMEG3)



(Fig 2)

IRT3 (Fig 1)

- Red light indicates that the "**Press to Test**" switch is pressed
- Voltage is tested without pressing "**Press to Test**" switch

DMEG3 (Fig 2)

- Green light indicates that the **ON - OFF** switch is turned on
- Orange indicates high voltage is being generated by the Megohmeter for insulation resistance testing

CAUTION!

Live Circuit Indicator *- Indicates that live voltage is present on the test leads. The ONLY measurement you can take is AC Voltage if this light is lit.*

Operating Instructions

Prior to operating your insulation resistance tester, inspect your instrument for:

1. Cracks or damage to the housing.
2. Water intrusion or condensation on the display.
3. Damaged test leads.
4. Low batteries.
    - Check the IRT3 by pressing the **Press to Test** button - the red LED light should flash rapidly if batteries are good
    - Check the DMEG3 by turning the instrument power on and pressing the **Press to Test** button if defective, "**Lo Bat**" will be displayed on the LCD
5. Properly installed and fully seated test leads.
    - Black test lead is inserted in the "**EARTH**" jack
    - Red test lead is inserted in the "**LINE**" jack

Replace the test leads if there is any visible or measurable damage. Replace batteries if needed (refer to the maintenance section of this manual). If there is any damage to the instrument, it must be returned to UEi for repair.

Installing Test Leads

Test leads must be installed prior to any measurement or detection procedure.

1. Connect the black test lead to "**EARTH**", ensuring it is fully seated.
2. Connect the red test lead to "**LINE**", ensuring it is fully seated.

Detecting AC Voltage

Any time AC voltage is present on the test leads, the "**Live Circuit**" indicator light will illuminate. This voltage detection feature works regardless of battery condition or powering on the instrument. With test leads installed:

1. Ensure power is off (DMEG3) and the **Press to Test** is NOT pressed.

2. Connect black test lead to the grounded or neutral side of the circuit.

3. Connect red test lead to the hot or powered side of the circuit.

4. Observe "**Live Circuit**" lamp.
    - Lamp illuminated: circuit is live, **DO NOT** test continuity or megohms
    - Lamp off: circuit is not live, testing may proceed

NOTE: *Connecting the black and red test leads to the specific sides of the circuit indicated is not critical to the measurement. Connecting the black "**EARTH**" test lead to ground first is a safety discipline that can reduce the risk of a shock hazard to the operator.*

Measuring AC Voltage

Voltage levels of up to 600 volts AC can be measured with your insulation resistance tester. With test leads installed:

1. Ensure power is on (DMEG3).
2. Place rotary function select switch to the "**AC 600 V**" position.
3. Connect black test lead to the grounded or neutral side of the circuit.
4. Connect red test lead to the hot or powered side of the circuit.
5. Apply power to the circuit under test.
6. Press and hold (or lock) the "**Press to Test**" button.
7. Observe voltage level.
8. Release the "**Press to Test**" button, remove power to the circuit under test and then disconnect test leads.

WARNING!

Connecting alligator clips to live circuits presents a shock hazard. Insulation on these clips deteriorates over time and often wears thin from the inside, through use,. If live voltage must be tested, connect the black clip to a KNOWN ground then use the red test lead without the alligator clip attached to check the hot side of the circuit. Use protective clothing and equipment when appropriate.

Measuring Continuity
Continuity testing allows you to quickly determine if two or more points are connected electrically and it allows you to check for excessive resistance across contacts. With its high resolution, you can compare input to output windings on transformers or help identify a motor-type by checking the resistance of its windings. With test leads installed:

1. Ensure no power is applied to the circuit under test (see detecting AC voltage).

2. Ensure power is on (DMEG3).

3. Place rotary function select switch to the "**Continuity**" position. (the DMEG3 has two continuity ranges)
    - 2000 ohm for high-impedance testing
    - 20 ohm for low impedance, high accuracy testing

4. Test continuity operation by shorting test leads together and pressing the "**Press to Test**" button.

5. Connect black test lead to one side of the circuit (i.e., winding or contact).

6. Connect red test lead to the other side of the circuit (i.e., other end of the winding).

7. Press and hold (or lock) the "**Press to Test**" button.

8. A continuity tone will sound (DMEG3 only) if resistance is below 10 ohms.

9. Observe ohm value.

NOTE: *High precision resistance (continuity) readings can be improved by using the null adjust feature to offset the resistance value of the test leads. To offset this resistance value, follow the instructions through step 4, then adjust the null adjustment knob to indicate zero on the dial or digital display. Your resistance or continuity readings will now display only the resistance in the circuit, not the combined resistance of the leads and the circuit.*

Measuring Insulation Resistance

Insulation resistance testing (IRT) is the process of evaluating an insulating material's integrity. Any time you use IRT procedures; you will be applying a relatively high DC voltage (250, 500 or 1000 Volts) to two separate conducting paths. For example, the "conducting paths" might be the hot and neutral wires in a cable set. With this voltage applied, your meter will measure the extremely small amount of current that flows between the two paths. Using the principles of Ohm's law, the resistance value is displayed.

What needs to be tested: All insulating materials begin deteriorating from the day they are made. Knowing this, a wide variety of insulation specifications have been created to accommodate different environments in which they will be used. Some of those ratings refer to environmental conditions such as indoor use, outdoor use, chemical resistant, high or low temperature, maximum voltage or current ratings and many more. When insulating materials are subjected to conditions other than what they are rated for, and as time takes its toll, deterioration accelerates.

Frequently the life span of an insulating material is known to be less than the life span of the appliance it is being used in. Motor windings are a good example. Industrial manufacturing equipment, commercial refrigeration systems and other processes require predictive and preventive maintenance (PM) procedures to ensure uninterrupted operation. Insulation resistance testing should be part of that maintenance process.

IRT procedures are recommended, and often documented by numerous engineering and maintenance organizations such as IEEE, NETA and IEC. You can access these organizations and the documents they have produced related to insulation resistance testing through the internet. Some documents are fee-based.

You will commonly find IRT procedures performed in these tasks:

- Predictive/preventive maintenance on installed motor windings - recommended for all motors 750 watts (1 HP) or greater
- Predictive/preventive maintenance on commercial HVAC compressors
- Testing integrity of insulation on buried cables powering well-pumps
- Verifying safety standards for appliances and biomedical equipment
- New-installation verification
- Troubleshooting electrical faults
- Fire and flood damaged building non-destructive inspections
- Electrical product manufacturing quality control

Insulation Resistance Testing Methods: Insulation resistance testing can be performed using a variety of methods. The proper method will be determined by the circuit or cable's rated voltage capacity, by the purpose of your test (troubleshooting, preventive maintenance, etc.) and by the function of the circuit you are testing.

Each motor, cable, appliance or other circuit being tested will have its own unique characteristics resulting from its type of insulation, where it's installed and other criteria. Accordingly, specific test values cannot be documented in this manual. Instead, the general behaviors-under-test and some of the generally accepted "rules of thumb" will be provided to assist you in establishing your own test and maintenance practices.

Cable or Conductor Rated Voltage
Whenever possible, use the equipment manufacturer's recommended test voltage. Most conductors (shielded, paired, etc.) have a voltage limit printed on the outer insulation that can be used in the absence of a manufacturer's recommendation. When using the rating printed on the outer jacket, use two times the value, up to the 1000 volts maximum. Commonly used voltages.

Specified Cable/Equipment Voltage Rating	Megohmeter DC Voltage Level
50-100	250
100-440	500
440 and above	1000

Humidity and Dew Point
In oder to make an accurate assessment of a motor's life expectancy, conditions must be similar each time it's tested. If the equipment you are testing is at or below the dew point temperature, water-condensation may collect around the windings and connections. Condensation can make a motor appear to be failing rapidly when it actually has years of serviceable-life left.

Humidity also affects readings at the same time it affects insulation resistance when the motor is running. Seasonal deviations in insulation resistance may be noted, but should not be neglected. The same motor may perform fine in winter when humidity is low and begin to fail in summer when humidity increases.

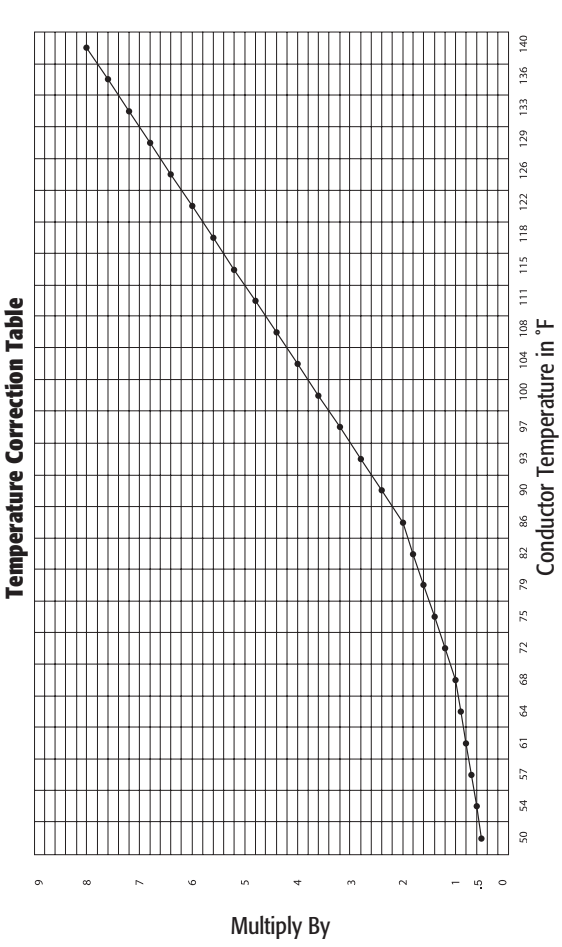
Humidity and dew point information is available for some areas by phone (see your local listing). UEi also makes special purpose instruments to give you accurate and instant humidity, dew point and temperature information.

Temperature Correction

Temperature has a very large impact on your insulation resistance values. When using your meter for predictive or preventive maintenance tasks, the readings must be "temperature corrected" to 20˚C (68˚F).

The rule of thumb is, insulation resistance changes by a factor of 2 for every 10 degrees of change in Celsius-scaled temperature. That means that a cable that measures 150 Megohms at 20 degrees Celsius (or 68 degrees Fahrenheit) will likely measure 75 Megohms at 30 degrees Celsius (or 86 degrees Fahrenheit). Accordingly you would record 150 Megohms on your PM record (75 Meg x 2). Use the following chart to adjust for this correction factor (Fig 3).

Temp in C	Temp in F	Multiply Reading by	Temp in C	Temp in F	Multiply Reading by
10	50	0.5	36	97	3.2
12	54	0.6	38	100	3.6
14	57	0.7	40	104	4.0
16	61	0.8	42	108	4.4
18	64	0.9	44	111	4.8
20	68	1.0	46	118	5.2
22	72	1.2	48	118	5.6
24	75	1.4	50	122	6.0
26	79	1.6	52	126	6.4
28	82	1.8	54	129	6.8
30	86	2.0	56	133	7.2
32	90	2.4	58	136	7.6
34	93	2.8	60	140	8.0



(Fig 3)

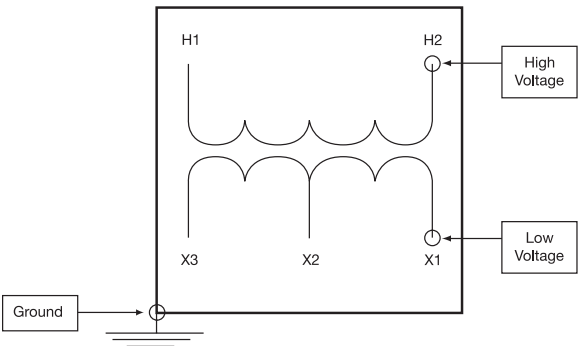
NOTE: *UEi makes a number of temperature products to use in reading motor temperatures.*

Preparing Equipment Under Test

Isolation is a key factor in properly testing any insulation resistance value. Whether you are testing a motor winding, transformer winding or a cable, you must ensure that the component you are evaluating has no path to ground or other circuits. Contactors and switches must be open and terminal connections must be removed prior to testing.

Your insulation resistance tester is designed to place the DC charge on the "**LINE**" terminal while the "**EARTH**" terminal often shares the grounded contact with all other components.

You can only test one cable, winding or component at a time, but they ALL need to be tested independently (Fig 4).



(Fig 4)

When more than one connection is called for, connect the test points together.

E = Earth L = Line

Single Phase Transformer Connection Sequence Table

Sequence	X1	H2	Ground
1	E	L	E
2	L	E	E
3	L	E	
4	E	L	

Motor Connection Sequence Table

Sequence	Stator	Field	Ground
1	E	L	E
2	L	E	E
3	L	E	
4	E	L	

Insulated 3-Conductor Cable Connection Sequence Table

Sequence	L1	L2	L3
1	E	L	E
2	L	E	E
3	E	E	L

Shielded 3-Conductor Cable Connection Sequence Table

Sequence	L1	L2	L3	Shield
1	E	L	E	E
2	L	E	E	E
3	E	E	L	E
4 (Remove Shield from Ground)	E	E	E	L

60-Second (spot reading) Method
Spot readings are often used as predictive/preventive maintenance tools. Readings are generally taken at regular intervals (quarterly, semi-annually, etc.) and recorded on a chart that stays with the equipment being tested. To make an analysis of a motor using this method:

1. Check and record equipment temperature.

2. Check dew point temperature of the ambient air - equipment under test must be above dew point temperature for accurate results.

3. Ensure no power is applied to the equipment under test and all connections are removed in order to totally isolate the motor, cables or equipment from other circuits.
   Use the connection tables to determine where to make connections.
   - If you are testing a motor, the brushes must be removed prior to testing
   - Connect all components that are **NOT** being tested, including motor housing, to ground (EARTH)
   - Test Field and Stator windings independently

4. Turn your instrument power on (DMEG3).

5. Place rotary function select switch to the **INSULATION** position, with the correct voltage selected - Use the same voltage every time.

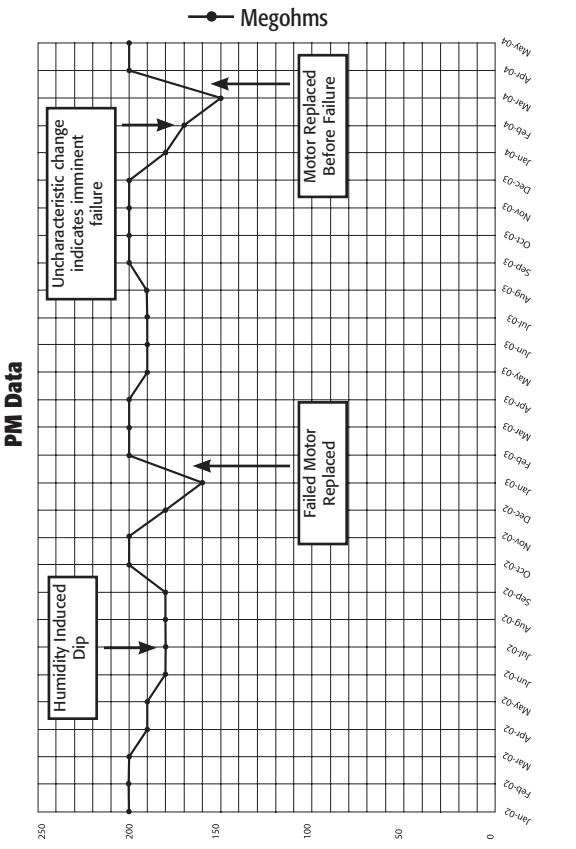
6. Make connections according to the sequence tables provided or as your circumstances require.

7. Using a stopwatch or watch with a second hand, begin a 60-second test at the same time you press and hold (or lock) the "Press to Test" button.

8. At the end of 60-seconds, read and record the insulation resistance value.

9. Apply temperature correction factor and record results on PM Chart (Fig 4).

This chart interprets some possible data.



(Fig 3)

Extended Term Analysis
These methods incorporate comparisons of resistance values recorded at different points of time (up to ten minutes). They can provide useful information about the condition of your equipment even if PM records are not available.

Generally speaking, the resistance measured at the end of 5 or 10 minutes should be higher than it was at one minute. The best way to determine a good or bad reading for your specific application is to solicit information from the manufacturer or evaluate new and progressively older equipment.

60-30 Testing
The ratio of a reading recorded at 60 seconds compared to that recorded at 30 seconds is one method that gives you a Dielectric Absorption Ratio (DAR). This ratio provides you with the Polarization Index (PI) when you divide the reading observed at the longer term by that of the shorter. The rule of thumb regarding this index (60-second reading divided by 30-second reading) is that it has to be higher than "one" to be acceptable. Anything that has a ratio under 1.25 should be watched carefully and anything over 1.4 is good. Because of the time-frames specified, this test can be difficult to perform and is not commonly used.

10-1 Testing
The methods of obtaining the ratios and index numbers are the same in this test method as used in the 60-30 test, but the duration of testing is extended. A measurement is recorded at 1 minute and another one recorded at 10 minutes.

This Polarization Index table applies to both test methods:

Insulation Condition	60-30 Test PI	10-1 Test PI
Bad	Below 1.0	Below 1.0
Unreliable	1.0 to 1.25	1.0 to 2.0
OK	1.4 to 1.6	2.0 to 4.0
Excellent	Above 1.6	Above 4.0

To Make An Extended Term Analysis

1. Check and record equipment temperature.

2. Check dew point temperature of the ambient air - equipment under test must be above dew point temperature for accurate results.

3. Ensure no power is applied to the equipment under test and all connections are removed in order to totally isolate the motor, cables or equipment form other circuits. *Use the connection tables to determine where to make connections.*

4. Turn your instrument power on (DMEG3).

5. Place rotary function select switch to the "**INSULATION**" position, with the correct voltage selected - Use the same voltage every time.

6. Make connections according to the sequence tables provided or as your circumstances require.

7. Using a stopwatch or watch with a second hand, begin your test at the same time you press and hold (or lock) the "**Press to Test**" button.

8. At the end of one minute, read and record the insulation resistance value.

9. Continue testing and record the value at the end of 10 minutes.

10. Evaluate results based on the Polarization Index table.

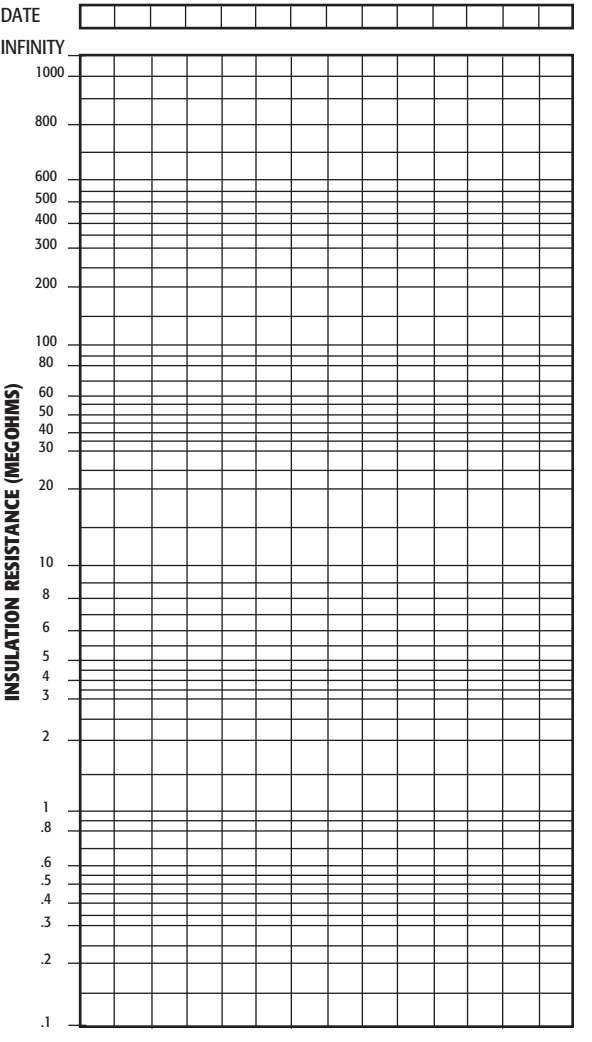
Following page: Copy and use the following PM data sheets to record and monitor insulation resistance values of the equipment you test.

INSULATION RESISTANCE DATA LOG CARD

EQUIPMENT _____ MAKE _____ SER. NO. _____

LOCATION _____ PLACED IN SERVICE _____

COMMENTS _____



DATE	READING	TEMPERATURE		PLOT ADJUSTED READING		RELATIVE HUMIDITY
		AMBIENT	EQUIP.	CORRECTION FACTOR	ADJUSTED READING	

Service
This instrument contains no user serviceable parts other than the fuse and batteries. All servicing is to be accomplished by UEi.

Annual calibration is recommended and can be conducted by a local calibration facility or at UEi's factory headquarters in Beaverton, Oregon.

Cleaning
The external surfaces and empty battery compartment should be inspected for dirt and contamination on a regular basis. They can be cleaned using a damp (NOT WET) cloth and a mild cleaning detergent. Do not allow water, detergent or other liquids to puddle on the surface or flow inside the instrument. In the event of accidental liquid intrusion, return the instrument to UEi for service and evaluation.

Battery Replacement
Battery replacement is required when no powered functions will operate (also check fuse) or when a low battery indication is provided (see "controls and indicators" section of this manual).

Equipment required:

- #2 Phillips screw driver
- Replacement batteries (quantity 6), size: AA (NEDA #15A) alkaline recommended

WARNING!
DO NOT *attempt this maintenance action with power applied to the instrument either through its test leads or by way of the "**Press to Test**" button being pressed.*

To replace the batteries, turn the instrument upside down on a clean, flat surface to expose battery compartment.

1. Remove the battery cover retaining screw.

2. Apply outward pressure (away from the carrying handle) on the battery cover and remove it from the instrument.

3. Remove and replace all six batteries at the same time.

Use caution when removing batteries to ensure that any acidic material leaking from the batteries does not come into contact with your skin and has not damaged the instrument.

Dispose of batteries in accordance with your local solid-waste disposal regulations. Never expose batteries to high temperature or incineration.

Fuse Replacement
Fuse replacement is required when no "Press to Test" functions will operate or when it has been proven defective through evaluation.

Equipment required:

- #2 Phillips screw driver

- Replacement fuse (quantity 1), replace only with the fuse type listed on instrument's back panel

WARNING!
DO NOT *attempt this maintenance action with power applied to the instrument either through its test leads or by way of the "****Press to Test****" button being pressed.*

To replace the fuse, turn the instrument upside down on a clean, flat surface to expose battery compartment.

1. Remove the battery cover retaining screw.
2. Apply outward pressure (away from the carrying handle) on the battery cover and remove it from the instrument.
3. Remove and replace the fuse with specified replacement size and type.
4. Replace battery compartment cover.

Specifications

(DMEG3)

1. Insulation Resistance

Measuring range	0-200MΩ (250V, 500V DC ±10%) Resolution: 1 count/100kΩ
	0-2000Ω (1000V DC ±10%) Resolution: 1 count/1MΩ
Accuracy	±1.5% reading ±5 digit (200MΩ range)
	±3% reading ±3 digit (under 1GΩ/2000MΩ)
	±5% reading ±5 digit (under 2GΩ/2000MΩ)
Output current	1mA DC min. at 0.25MΩ (250V range)
	1mA DC min. at 0.5MΩ (500V range)
	1mA DC min. at 1MΩ (1000V range)
Power consumption	Max. consumption current approximately 250mA

2. AC Voltage

Range	0-600V
Resolution	1V
Accuracy	±1.5% reading ±3 digit
Line frequency range	40-120 Hz.

3. Continuity

Ohm range	0-20Ω / Resolution: 0.01Ω / Accuracy: ±1.5% rdg. ±5 dgt.
Ohm range	0-2000Ω / Resolution: 1Ω / Accuracy: ±1.5% rdg. ±3 dgt.
Open circuit terminal voltage	4 DC min.
Short circuit terminal voltage	210mA DC min.
Power consumption	Max. consumption current approximately 160mA
Buzzer sounds on	10Ω (on 20Ω range)

4. Maximum Voltage

Meet IEC-1010 safety requirements Catagory III

5. Dimension

6.7 x 6.5 x 3.6 inches (170 x 165 x 92 mm)
with housing front cover

6. Weight

2.2 lb. (batteries included)

Specifications

(IRT3)

1. Insulation resistance

Megohm	0-50MΩ & ∞ (250 DC V ±10%)
	0-100MΩ & ∞ (500 DC V ±10%)
	0-200MΩ & ∞ (1000 DC V ±10%)
Accuracy	±5% of indicated value (approximately)
Short circuit	0-50MΩ : 2 DCmA
terminal	0-100MΩ : 2 DCmA
current	0-200MΩ : 2 DCmA
Power consumption	Max. consumption current approximately 190mA

2. AC Voltage

Range	0-600V
Accuracy	±2.5% of full scale
Line frequency range	40-1k Hz.

3. Continuity

Ohm range	±2.5% of full scale
Ohm range	±5% of indiacted value (approx.)
Open circuit terminal voltage	600 DCmV (approx.)
Short circuit terminal voltage	240 DCmA (approx.)
Power consumption	Max. consumption current approximately 120mA

4. Maximum Voltage

Meet IEC-1010 safety requirements Catagory III

5. Dimension

6.7 x 6.5 x 3.6 inches (170 x 165 x 92 mm)
with housing front cover

6. Weight

2.1 lb. (batteries included)

Limited Warranty

The DMEG3/IRT3 is warranted to be free from defects in materials and workmanship for a period of three years from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

1-800-547-5740 • FAX: (503) 643-6322
Service: (800) 308-7709
www.ueitest.com • Email: info@ueitest.com

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

