

Megger[®]

MIT300 Series Insulation and Continuity testers

USER MANUAL

 **SAFETY WARNINGS**

- **Safety Warnings** and **Precautions must be read** and understood before the instrument is used. They **must** be observed during use.
- The circuit under test must be switched off, de-energised and isolated **before** test connections are made when carrying out insulation and continuity tests.
- Circuit connections and exposed metalwork of an installation or equipment under test **must not** be touched.
- The live circuit warning and automatic discharge are additional safety features which may fail and therefore **safe working practices must be observed.**
- The voltage function will only work if the instrument is functional and switched on.
- After insulation tests, capacitive circuits must be allowed to discharge **before** disconnecting test leads.
- The instrument **should not** be used if any part of it is damaged.
- Test leads, probes and crocodile clips must be in good order, clean and with no broken or cracked insulation.
- Ensure that hands remain behind guards of probes/clips when testing.
- National Safety Authorities may recommend the use of fused test leads when measuring voltage on high-energy systems.
- Replacement fuses **must** be of the correct type and rating. Failure to fit the correctly rated fuse may result in a safety hazard and may cause damage to the instrument in the event of an overload.
- The battery cover **must** be in place whilst conducting tests.

NOTE**THE INSTRUMENT MUST ONLY BE USED BY SUITABLY TRAINED AND COMPETENT PERSONS.**

Users of this equipment and/or their employers are reminded that National Health and Safety Legislation requires them to carry out valid risk assessments of all electrical work so as to identify potential sources of electrical danger and risk of electrical injury such as inadvertent short circuits. Where the assessments show that the risk is significant then the use of fused test leads may be appropriate.

CONTENTS

Safety warnings	4	Insulation testing	14
Introduction	2	Test Lock	15
General description	4	SP3 Switched (optional accessory for MIT320)	15
Unpacking the carton	5	Replacing batteries and fuses	16
LCD Display	6	Low battery warning symbol	16
Front panel (digital instruments)	6	To replace batteries	16
Connection panel	7	Fuse replacement (user replaceable)	17
Lid open/closure	7	Preventive maintenance	17
Preparations for use (all instruments)	7	Technical specification	17
Batteries	7	Basic and service errors	19
Preliminary test lead check	7	Accessories and equipment	20
General operating instructions	8	Repair and Warranty	21
General functions	8		
Test lead connection.	9		
Continuity measurement (MIT300, 310, 320)	9		
Test lead Null	9		
Continuity test (MIT300, 310,320)	9		
Continuity Buzzer (MIT300, 310, 320)	10		
Continuity buzzer mode:	10		
Setup mode (MIT320 only)	10		
Insulation testing - General	11		
Insulation test	11		
Test lock	12		
Insulation test ($M\Omega$ alarm ON/OFF (MIT320 only)	12		
$M\Omega$ threshold adjustment (MIT320 only)	13		
Insulation test lock disable (MIT320 only)	13		
AC / DC Voltage measurement	13		
Analogue Instrument MIT310A	14		
Test lead Null	14		
Continuity test	15		
Continuity buzzer test	15		

Symbols used on the instrument are:



Caution: risk of electric shock



Caution: refer to accompanying notes



Equipment protected throughout by Double Insulation (Class II)



Equipment complies with current EU directives.



Equipment complies with 'C tick' requirements

INTRODUCTION

Thank you for purchasing the Megger Insulation Testers.

For your own safety and to get the maximum benefit from your instrument, please ensure that you read and understand the following safety warnings and instructions before attempting to use the instruments.

This user guide describes the operation and functions of the following MIT300 Series of Insulation and Continuity Testers:

MIT300

MIT310

MIT320

MIT310A

GENERAL DESCRIPTION

The MIT300 series variants have the following features:

	MIT300	MIT310	MIT320	MIT310A
Insulation testing				
1 kV Insulation range		■	■	■
500 V Insulation range	■	■	■	■
250 V Insulation range	■	■	■	■
Insulation test full scale	999 M Ω	999 M Ω	999 M Ω	999 M Ω
Insulation limit alarm 0.01 M Ω to 1 G Ω			■	
Continuity				
Voltmeter range (600 V digit)		■	■	■
Continuity buzzer	■	■	■	■
Adjustable buzzer threshold 1 Ω to 20 Ω			■	
Audible buzzer disable			■	
Lead null to 9.0 Ω (1 Ω for MIT310A)	■	■	■	<1 Ω
Stored test lead null	■	■	■	■
Resistance				
10 Ω to 1M Ω resistance range			■	

	MIT300	MIT310	MIT320	MIT310A
Features				
Locking test button	■	■	■	■
Backlight and rotary switch illuminations			■	
Voltage warning	■			
Default voltmeter		■	■	■
Auto-power-down with defeat	■	■	■	
Switched test probe connector			■	
Switched test probe			■	

Unpacking the carton

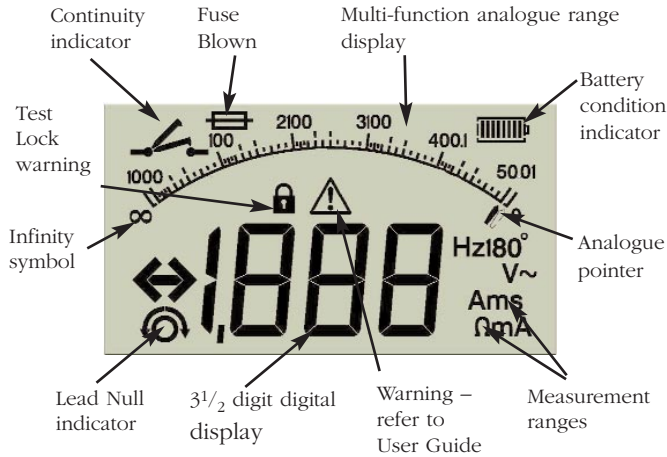
Unpack the carton contents carefully. There are important documents that you should keep for future reference.

Please complete the pre-paid Warranty Card and return it to Megger Limited as soon as possible to help us reduce any delays in supporting you, should the need arise.

Carton contents

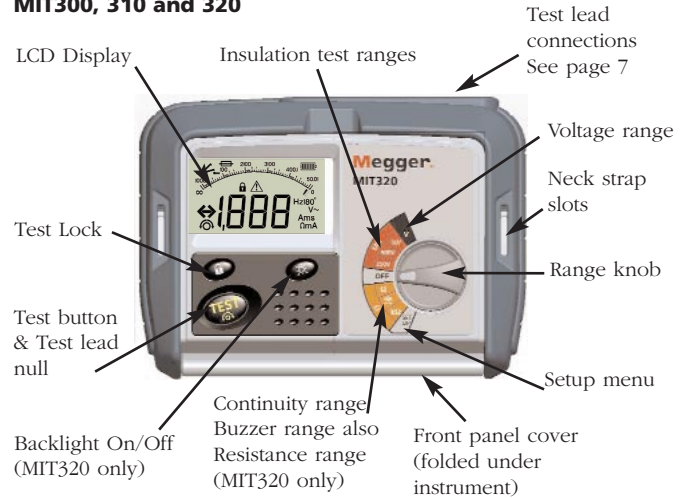
- 1 x MIT300 series insulation tester
- 1 x Red/Black test lead set with clips
- 8 x AA (LR6) batteries fitted
- 1 x Test lead case
- 1 x Warranty card
- 1 x Certificate of test
- 1 x Calibration certificate
- 1 x Owners CD manual
- 1 x Safety warnings

LCD DISPLAY

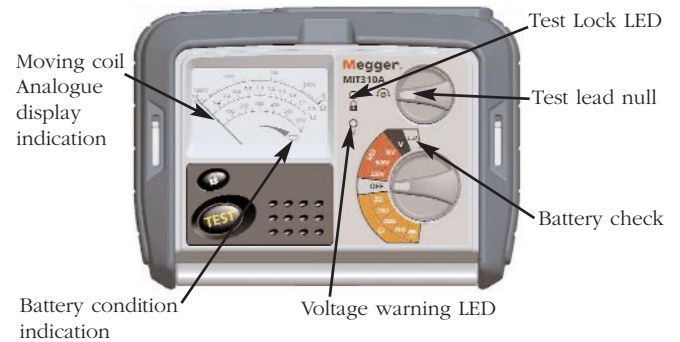


FRONT PANEL (DIGITAL INSTRUMENTS)

MIT300, 310 and 320



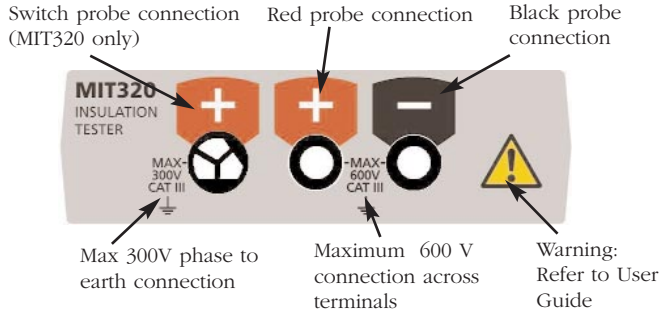
MIT310A



PREPARATIONS FOR USE (ALL INSTRUMENTS)

Connection Panel

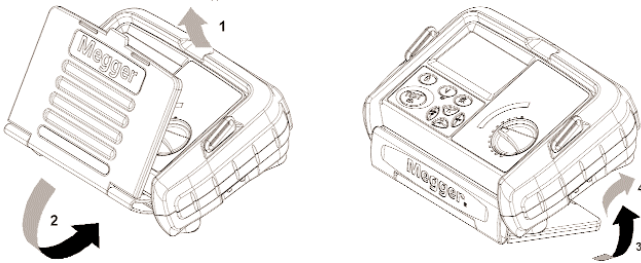
MIT300 Series test lead connections



An interlock sliding panel prevents connection of unsafe test lead configurations.(MIT320 only)

Lid open/closure

1. Open lid by lifting up front panel tab (1).
2. Fold-away underneath instrument (2 & 3) and push into retaining slot (4).



Batteries

The Megger MIT300 series instruments are supplied with batteries fitted. When batteries become exhausted, refer to page 16, battery replacement.

Warning: Do not switch the instrument on with the battery cover removed.

Preliminary test lead check

Functional verification

1. Before each use of the instrument visually inspect the test leads, prods and crocodile clips to confirm that their condition is good, with no damaged or broken insulation.
2. Check continuity of the test leads by firmly shorting the leads together and read the test lead resistance measurement directly from the display, which should be less than 1.0 Ω .

Refer to page 8 for operation guide.

3. Supply voltage

Using an approved method, ensure the circuit to be tested has been fully disconnected from the supply prior to using the instrument.

GENERAL OPERATING INSTRUCTIONS

Safety note:

If a voltage greater than 25 V appears on the circuit under test the instrument will default to a voltage measurement and display the supply voltage.

On supply voltages over 50 V the instrument will prevent the test button from performing an insulation test, protecting your instrument from damage.


General functions

Voltage Testing on High Energy Systems

Use extreme care when using or measuring voltages above 30 V, particularly in high energy systems. Fused test leads are available as optional accessories for local situations where increased protection is required. See accessories section.

Tests lock

The LOCK  indicates when an INSULATION test range is locked ON.

It is activated by holding down the [TEST] button, and pressing the LOCK  button.

Note: See analogue section for MIT310A

Warning: Hazardous voltages can exist on the insulation test range all the time the [TEST] button is locked down.

Voltage warning (MIT300 only)

If a voltage exists on the circuit under test, the instrument will emit a warning beep (greater than 10 V on continuity ranges).

If a voltage greater than 50 V exists, testing will be automatically inhibited.

Voltage warning (MIT310A only)

If a voltage greater than 25 V exists on the circuit under test, the voltmeter will indicate this.

If a voltage greater than 50 V exists, testing will be automatically inhibited. If the TEST button is pressed the RED 'V' LED will light.

Default voltmeter (MIT310 and MIT320)


The default voltmeter automatically operates if a voltage is present across the test probes of greater than 25 V.

In Volts range the meter operates at greater than 2 V.

If the voltage is greater than 25 V the meter automatically displays the voltage.

If the voltage exceeds 50 V any further testing is inhibited for safety. The voltage will be displayed.

Backlight operation (MIT 320 only)

Both the display and test ranges are backlit. The backlight function can be selected at any time while the instrument is switched on by pressing the BACKLIGHT  button.

The backlight function will switch off automatically 20 seconds after the instrument has finished testing.

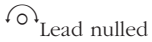
Display warning symbols

 Refer to user manual

Any time the warning triangle is displayed the operator should refer to the user manual for further information.

 Range lock

Displayed at any time the [TEST] button is locked in the on position.



Lead nulled

Indicates that the test lead resistance has been removed from the test result.



Battery condition indication. Refer to page 16..



Fuse blown indicator, appears when an instrument fuse has failed. Refer to page 16.

Test lead connection

The Red/Black test lead set should be connected to the appropriate sockets on the rear of the instrument marked + and – respectively.

Test probes and crocodile clips are supplied for connection to the circuit under test.

Fused test leads are available as an optional accessory, please refer to accessories list at the end of this document.

Application

This instrument may be connected live to earth or between live conductors of systems that have a rated voltage of 600V a.c. rms to earth and an installation (overvoltage) Category III or lower.

This means that the instrument may be connected to any fixed wiring of a building installation, but not to primary supply circuits such as overhead cables. To maintain user safety and ensure accurate measurements, only use the test leads supplied by Megger Limited.

All continuity measurements are AUTO ranging from 0.00 Ω to 100 Ω on Digital/analogue scale).


The MIT310A has manual range selection to 2 k Ω .

From 0.00 Ω to 10 Ω test current is greater than 200 mA. From 10 Ω to 100 Ω test current is greater than 20 mA.

Test lead Null

(See page 14 for MIT310A)

Before using the Continuity range or Buzzer range for the first time, the test lead resistance should be ‘zeroed out’. This ensures any measurement does not include the resistance of the test leads.

1. Connect the test leads to the instrument and firmly short both leads together.
2. Wait for the reading to stabilise and press the [TEST] button.
3. Display of the  confirms test leads zeroing. The display should be 0.00 Ω .

Note: Lead zeroing is retained when the instrument is switched off, or Auto shut-off operates.

To remove the ‘lead zero’ press the [TEST] button again.

Continuity test (MIT300, 310,320)

(See page 15 for MIT310A)

To make a continuity measurement:

1. Turn the instrument ‘On’ by selecting the continuity Ω range.
2. If required, zero test lead resistance, see Test Lead Null (above).
3. Connect the test probes to the isolated circuit under test. The test will start automatically.

CONTINUITY BUZZER (MIT300, 310, 320)

4. The display shows the resistance value. (Maximum 99,9 Ω)
5. On completion of testing switch to the 'OFF' position. Alternatively auto shut off operates after a period of instrument inactivity.



(See page 14 for MIT310A)

Continuity buzzer mode:

The continuity buzzer has a fast check which looks for a resistance greater than 1.0 Mohm and will buzz when found. If a voltage is detected the continuity test will stop (the instrument will not be damaged).

The continuity buzzer will then check for a low resistance path less than 5ohms (or as set on the MIT320), and continue to buzz.

To perform a continuity buzzer test:

1. Set the test range knob to the continuity buzzer  position
2. Connect the test probes to the isolated circuit under test.
3. A continuous beep note sounds when the test leads make contact with resistance less than 5 Ω and contact is maintained. (resistance greater than 5 Ω is indicated by a short or intermittent beeping.
4. Beeping ceases after a few seconds and the resistance value is displayed.
5. The buzzer visual indicator symbol  closes when continuity is detected.

Setup mode (MIT320 only)


Continuity buzzer threshold adjustable

The adjustable buzzer threshold adjustment allows the operator to set the maximum resistance at which the buzzer operates.


To adjust:

1. Switch the MIT320 to [SETUP]. The display should Flash between CON and 5.00 Ω .
2. Press and hold down the [TEST] button

INSULATION TESTING - GENERAL


3. The buzzer threshold resistance is displayed. This will count down from 5 Ω to 1.0 Ω .
4. When the display reaches the desired value release the [TEST] button
5. Press the  button to store the value

To select a threshold value above 5.0 Ω

1. Switch the MIT320 to [SETUP]. The display should Flash between CON and 5.00 Ω .
2. Hold the [TEST] button down until the display shows 1.0 Ω .
3. Release the [TEST] button.
4. Press the [TEST] button again. It will commence counting down from 20 Ω .
5. Release the [TEST] button at the desired value.
6. Press the LOCK  button to store the value.

Buzzer ON/OFF (silent buzzer)

To disable the continuity buzzer:

1. Switch the MIT320 to [SETUP]. The display should Flash between CON and 5.00 Ω .
2. Press and release the [TEST] button until the BUZ sign is displayed.
3. Press and hold the [TEST] button to select the OFF option (Press and hold again to select ON).
4. Press the Lock  to store the value.

(Refer to page 14 for additional MIT310A notes)

Safety note:

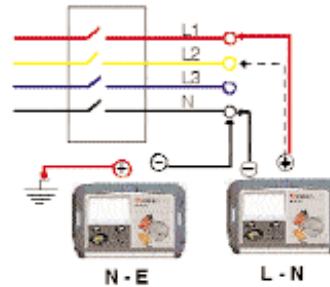
Insulation testing is performed at high DC voltages and could be hazardous if touched. Always observe the safety precautions when performing an Insulation test, and ensure all necessary health and safety precautions are observed.

Automatic Discharge: Capacitive circuit are automatically discharged when the test button is released following an insulation test.

Insulation measurements are performed at either 250 V, 500 V or 1000 V.

Insulation test

FIG.1



The insulation tests apply a known voltage to the circuit under test and measure the resulting leakage current.

The circuit under test must be completely de-energised and Isolated before test connections are made.

To perform an insulation test:

1. Turn the instrument 'On' by selecting the desired 250 V, 500 V or 1000 V [MΩ] range.
2. Connect the test probes to the isolated circuit under test.
3. Press and hold the [TEST] button; allow the display to settle, then shows the insulation value.
The reading will remain displayed for a few seconds after the push button is released.
4. Release the [TEST] button before removing the test leads (to enable the instrument to discharge the circuit under test). If the display shows VOLTS, wait.
5. On completion of testing switch to the 'OFF' position. Alternatively auto shut-off operates after a period of inactivity.


For MIT310A see notes on Insulation Testing page 15

Note: To prevent accidental application of 1 kV, a warning display will flash 1000 V prior to the start of the first 1000 V test.

Note: 50Hz noise from the circuit under test below 100 uA or 25 V is ignored and will not affect test accuracy.

Higher levels of noise will cause the default voltmeter to indicate. Above 50 V (or 200 uA) testing is inhibited.

Test lock


The insulation test can be locked on by pressing the lock  whilst holding down the [TEST] button.

To disable lock press the [TEST] button.


Insulation test MΩ alarm ON/OFF (MIT320 only)

The buzzer can be enabled or disabled for working in office environments.

To enable the buzzer:

1. Switch the instrument to [SETUP].
2. Repeatedly press the [TEST] button until the display shows RON/OFF.
3. Press the [TEST] button to select ON.
4. Press the  button to save.

To disable the buzzer:

1. Switch the instrument to [SETUP].
2. Repeatedly press the [TEST] button until the display shows RON/ON.
3. Press the [TEST] button to select OFF.
4. Press the  button to save.


MΩ threshold adjustment (MIT320 only)

The buzzer threshold adjustment allows the operator to set the resistance below which the buzzer operates. The instrument will beep so long as the insulation value measured remains above the threshold value.

The instrument is supplied with the threshold level set to OFF and the threshold value set to 1.00 MΩ.

To adjust:



1. Switch the instrument to [SETUP]
2. Repeatedly press the [TEST] button until the display shows RES.
3. The initial insulation alarm level is set to 1.00 MΩ.
4. Press and hold down the [TEST] button. The Threshold limit will decrease from 999 MΩ to 1.0 MΩ.

- When the display reaches the desired value release the [TEST] button.
- Press the  button to store the value.

The instrument will now beep every time an insulation test is performed, where the measured value is greater than the threshold value set.

Insulation test lock disable (MIT320 only)

The instrument is shipped with the test lock function enabled. To disable the test lock function:

- Ensure the instrument is switched off
- Hold down the  button and turn the range knob to $M\Omega$ 500 V
- Keep the  button depressed for 10 seconds
- The instrument shall display OFF to indicate the lock function is disabled.

This setting is permanently stored.

To re-enable the test lock function, repeat the above process.

If a voltage greater than 2 V a.c. or d.c. is present at the terminals the measured voltage is indicated on the display. If the fuse is blown the fuse symbol will flash.


For normal voltage measurement:

- Set the range switch to [V]
- Connect the test leads to the circuit under test.
- The display will show the voltage across the test leads automatically.

Note: measured voltage should not exceed 600 V phase to earth.

ANALOGUE INSTRUMENT MIT310A

Additional notes:

Battery Level  = Exhausted battery

Battery condition can be checked by rotating the range knob to the Battery symbol. The position of the needle over the taper symbol will indicate battery condition. Highest charge to the right.

Note: NiMH or NiCAD rechargeable batteries show a lower charge than Alkaline batteries, and may not give much warning before becoming exhausted.

Warning: Always perform a battery test prior to using the instrument to ensure the instrument will function properly.

LED Indicators:

Two RED led indicators show testing status information for Test Lock and Voltage detection


Voltage warning:

If a voltage greater than 50 V exists on the circuit under test and the TEST button is pressed, the RED 'V' LED will light and testing will be automatically inhibited.

Test lead Null (MIT310A only)

Before using the Continuity range or Buzzer range for the first time, the test lead resistance should be 'zeroed out'. This ensures any measurement does not include the resistance of the test leads.

To null the test leads:

1. Connect the test leads to the instrument and firmly short both leads together.
2. Wait for the reading to stabilise and adjust the lead null knob 

until the display pointer indicates 0 Ω .

3. Lead null should be checked periodically and at the start of each session to ensure ZERO is maintained, or adjusted as necessary.

Note: Lead Null can remove up to 2.0 Ω of lead resistance.

Continuity test (MIT310A)

Continuity range extends from 0.00 Ω to 2 k Ω .

Ranges are not auto-ranging. Manual selection of each range is necessary.

Test currents are: 200 mA to 2 Ω , 20 mA to 20 Ω , 2 mA to 200 Ω , 200 mA to 2 k Ω .

To make a continuity measurement:

1. Select the continuity range required.
2. Connect the test leads to the circuit under test.
3. For a single test press and hold down the [TEST] button.
4. Read the resistance from the appropriate range scale.

To increase battery life release it as soon as possible after a test is complete.

Continuity buzzer test

Continuity buzzer operation is the same as that described on page 10. However the buzzer sounds with a circuit resistance of less than 2 Ω

Insulation testing

Insulation testing is the same as page 12, however the result is only displayed as long as the [TEST] button is depressed.

Note: If the batteries are exhausted the instrument may not show a needle movement when testing. We recommend an occasional Insulation test should be performed with the leads shorted together or the battery

test mode should be selected to ensure the batteries are in good working condition.

MIT310A Test Lock

The [TEST] button can be locked down to allow continuous continuity or insulation testing.

To enable the TEST LOCK:

1. Press and hold down the [TEST] button. Press the  button and release the [TEST] button.



2. The TEST LOCK LED  should light.

To remove TEST LOCK:

1. Press the [TEST] button.

The SP3 switch probe allows the user to start a test by pressing the [TEST] button on the probe, instead of the instrument. This allows for complete hands free testing and increases user safety.

To use the SP3 probe:


1. Connect the SP3 probe to the MIT320 using the special 3pole +ve socket (in place of the RED test lead).
2. Select a suitable insulation test range.
3. Press and hold down the SP3 probe button. The MIT320 will start an insulation test.
4. When the result has settled, release the probe test button.

REPLACING BATTERIES AND FUSES



Batteries

Battery type: 8 x LR6 (AA), 1.5 V Alkaline, or 8 x 1.2V NiCAD, or 8 x 1.2V NiMH

Fuse type: 500 mA (F) HBC 50 kA 600 V

Fuse blown symbol 

Low battery warning symbol

The battery condition is continuously displayed by the symbol . When the batteries are exhausted, symbol will show  and testing is inhibited.

If symbol appears with new batteries, check for correct polarity.

Note: Fully charged NiMH or NiCAD rechargeable batteries show a lower charge than Alkaline batteries, and may not give much warning before becoming exhausted.

To replace batteries

Warning: Do not switch the instrument on with the battery cover removed.

1. Switch off the instrument and disconnect (the instrument) from any electrical circuits.
2. The rear cover **must not** be opened if the test leads are connected.
3. To avoid the possibility of electric shock, do not press the test button or touch the fuse when changing batteries.
4. To remove the rear cover release the screw at the bottom of the cover and lift the cover upwards.
5. Remove the dead cells.
6. Refit new batteries observing the correct polarity as marked on the battery compartment.

7. Replace the cover.


Warning: - Incorrect battery cell polarity can cause electrolyte leakage, resulting in damage to the instrument. If the battery condition indicator does not show a full charge, a cell may be reversed.

Note: Battery cells should not be left in an instrument, which may remain unused for extended periods.

Fuse replacement (user replaceable)

To check fuse, select MΩ range.

Open circuit the test leads and press the test button until a reading is obtained.

Display of the fuse symbol  or an error code indicates a ruptured fuse.

The fuse is located behind the rear cover. The rear cover must not be opened if test leads are connected.

To avoid the possibility of shock, disconnect the battery before touching the fuse.

A replacement fuse must be of the correct type and rating.

Fuse: 500 mA (F) H.B.C. 50 kA min 600 V (32 mm x 6 mm)

PREVENTIVE MAINTENANCE

The MIT series instruments require very little maintenance.

Test leads should be checked before use to ensure there is no damage.

Ensure batteries are removed if left unused for extended periods.

When necessary, the instrument can be cleaned with a damp cloth.

Do not use alcohol based cleaners as these may leave a residue.

SPECIFICATIONS

General Specification

Insulation ranges

Nominal Test Voltage: 1000 V, 500 V, 250 V (d.c.)

Measuring Range

All instruments: 10 k Ω - 999 M Ω on all ranges

Short Circuit Current:

1.5 mA nominal

Test Current on Load:

1 mA at min. pass values of insulation (as specified in BS 7671, HD 384 and IEC 364)

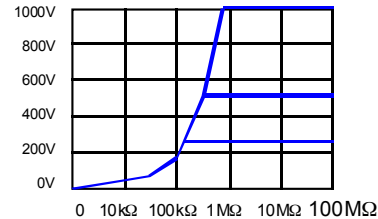
Accuracy (at 20° C)

MIT300, 310, 320, 330: $\pm 3\%$, ± 2 digits

MIT310A:

<2.5% of scale length (or 30% of reading
200 kohm to 10 Megohms)

Terminal characteristics



Continuity ranges

Measuring Range:

0,01 Ω - 100 Ω
(0 - 50 Ω on analogue scale)

Open Circuit Voltage:

5 V ± 1 V

Short Circuit Current:	205 mA, ± 5 mA (0 to 10 Ω) (>20 mA up to 100 ohms)
Accuracy (at 20° C)	
MIT300, 310, 320:	$\pm 3\%$ ± 2 digits
MIT310A:	$\pm 2.5\%$ of scale length (or 30% of reading 0.2 ohm to 200 ohms)
Zero Offset Adjust:	
MIT300, 310,320:	0 – 9 Ω
MIT310A:	0 - 1 Ω
Continuity Buzzer	
MIT300, 310:	Operates at $<5 \Omega$
MIT320:	Adjustable 0.1 Ω to 20 Ω
MIT310A:	Operates at $<20 \Omega$
MIT300, 310, 320:	Response time <20 ms
MIT310A:	Response time <100 ms

Resistance range (MIT 320 only)

(can be used for diode testing)

Measuring Range:	10 Ω - 1 M Ω
Open Circuit Voltage:	5 V
Short Circuit Current:	1.5 mA,
Accuracy (at 20°C):	$\pm 5\%$ ± 2 digits
Voltage range	
Measuring Range:	0 - 600 V a.c. (50/60 Hz) or d.c.

Accuracy (at 20° C)

MIT300, 310, 320:	<450 V d.c. or a.c. (50/60Hz): $\pm 1\%$, ± 2 digits
	>450 V d.c. or a.c. (50/60Hz): $\pm 2\%$, ± 2 digits
MIT310A:	$\pm 2.5\%$ of scale length for 50/60Hz
Temperature coefficient:	$<0,1\%$ per $^{\circ}\text{C}$ on all ranges.
Default voltmeter	
	all test modes except off
MIT310, 320 voltmeter:	>25 V a.c. or d.c. is applied display will operate as a voltmeter
M300:	Beeps and flash 'V' on the display
M310A:	Warning LED lights when [TEST] button is pressed.
Test inhibit:	If more than 50 volts is detected, testing will be inhibited.

AutoPower Down:

Auto power down operates after 30 minutes if left in standby mode.

Environmental

Operating Range:	-10°C to $+60^{\circ}\text{C}$
Operating Humidity:	93% R.H. at $+40^{\circ}\text{C}$ max.
Storage Range:	-25°C to $+70^{\circ}\text{C}$
Environmental Protection:	IP54

BASIC AND SERVICE ERRORS

Dimensions

All units 203 x 148 x 78 mm

Fuses

Terminals:

500 mA (F) 600 V, 32 x 6 mm Ceramic

HBC 50 kA minimum.

Safety

Meets the requirements of EN61010-1 Cat III 600 V phase to earth. Refer to safety warnings supplied.

Automatic discharge

After an insulation test the item under test will be discharged automatically. Any voltage present will be indicated on the display so that the discharge can be monitored.

Power supply

Battery:

8 x 1,5 V cells IEC LR6 type(AA alkaline).

Rechargeable NiCAD or NiMH cells may be used.

Battery condition is constantly shown on the display as a four-section bar graph.

Battery Life

5000 consecutive tests (5 seconds per test) on any test using 2Ah batteries.

Weight

All units 980gms

E.M.C

In accordance with IEC61326 including amendment No.1

Basic and service errors for Insulation and Resistance ranges.

The basic error is the maximum inaccuracy of the instrument under ideal conditions, whereas the service error is the maximum inaccuracy taking into effect of battery voltage, temperature, interference, and system voltage and frequency, where applicable.

Insulation 100 k to 999 M

	%	digits		Range	Service error
Basic error	3	2			
Temperature °C	4		16	(-5 to +60)	9.58% +2digits
Battery volts	0.5		0.25		
Interference	3		9	(100 µA)	
EMC	3		9		
Other	3		9		
Continuity 0.10 Ω to 10 Ω					
Basic error	3	2	9		
Temperature °C	4		16	(-5 to +60)	9.58% +2digits
Battery volts	0.5		0.25		
Interference	3		9	(100 mV)	
EMC	3		9		
Other	3		9		

ACCESSORIES

Order Code

Included Accessories

Test lead set (red & black) with crocodile clips 6220-779

Test lead case 6220-785

Optional Accessories

Fused lead set 2 wire fused probe and clip set 6220-787

SP3 Switch probe 6220-781

Megger Certification Software

Powersuite Pro-Lite16th 6111-697

REPAIR AND WARRANTY

The instrument contains static sensitive devices, and care must be taken in handling the printed circuit board. If an instrument's protection has been impaired it should not be used, but sent for repair by suitably trained and qualified personnel. The protection is likely to be impaired if for example; it shows visible damage; fails to perform the intended measurements; has been subjected to prolonged storage under unfavourable conditions, or has been subjected to severe transport stresses.

NEW INSTRUMENTS ARE GUARANTEED FOR 3 YEARS FROM THE DATE OF PURCHASE BY THE USER.

Note: Any unauthorized prior repair or adjustment will automatically invalidate the Warranty.

INSTRUMENT REPAIR AND SPARE PARTS

For service requirements for Megger Instruments **contact:**

Megger Limited	or	Megger
Archcliffe Road		Valley Forge Corporate Centre
Dover		2621 Van Buren Avenue
Kent CT17 9EN		Norristown PA 19403
England.		U.S.A.
Tel: +44 (0) 1304 502 243		Tel: +1 610 676 8579
Fax: +44 (0) 1304 207 342		Fax: +1 610 676 8625

or an approved repair company.

Approved Repair Companies

A number of independent instrument repair companies have been authorised for repair work on most Megger instruments, using genuine Megger spare parts. A list of approved companies is available from the UK address shown on this page. Spare parts are also available.

Returning an Instrument for Repair

If returning an instrument to the manufacturer for repair, it should be sent freight pre-paid to the appropriate address. A copy of the invoice and of the packing note should be sent simultaneously by airmail to expedite clearance through Customs. A repair estimate showing freight return and other charges will be submitted to the sender, if required, before work on the instrument commences.

Note

Users of this equipment and or their employers are reminded that Health and Safety Legislation require them to carry out valid risk assessments of all electrical work so as to identify potential sources of electrical danger and risk of electrical injury such as from inadvertent short circuits. Where the assessments show that the risk is significant then the use of fused test leads constructed in accordance with the HSE guidance note GS38 'Electrical Test Equipment for use by Electricians' should be used.







Megger Limited
Archcliffe Road, Dover
Kent CT17 9EN England
T +44 (0)1 304 502101
F +44 (0)1 304 207342

Megger
4271 Bronze Way, Dallas,
Texas 75237-1019 USA
T +1 800 723 2861 (USA ONLY)
T +1 214 333 3201
F +1 214 331 7399

Megger
Z.A. Du Buisson de la Couldre
23 rue Eugène Henaff
78190 TRAPPES France
T +33 (0)1 30.16.08.90
F +33 (0)1 34.61.23.77

OTHER TECHNICAL SALES OFFICES

Toronto CANADA, Sydney AUSTRALIA, Mumbai INDIA, Madrid SPAIN and the Kingdom of BAHRAIN.

Megger products are distributed in 146 countries worldwide.

**This instrument is manufactured in the United Kingdom.
The company reserves the right to change the specification or design without prior notice.**

Megger is a registered trademark

**Part No. 6172-xxx V01 Printed in England 0503
www.megger.com**