19. Specification

All quoted accuracies are at +20 °C.

Insulation

Nominal test voltages

MIT400, 405	250 V, 500 V, 1000 V
MIT410, 420,430	50 V, 100 V, 250 V, 500 V, 1000 V
MIT480	50 V, 100 V
MIT481, 485	50 V, 100 V, 250 V, 500 V, 1000 V
MIT40X	10 V to 100 V variable (1 V increments)

Range full scale accuracy (Model dependant)
All ranges ±2% ±2 digits up to 100 MΩ.

Then:	1000 volts	±3% ±2 digits ±0.2% per GΩ
	500 volts.	±3% ±2 digits ±0.4% per GΩ
	250 volts.	±3% ±2 digits ±0.8% per GΩ
	100 volts.	±3% ±2 digits ±2.0% per GΩ
	50 volts.	±3% ±2 digits ±4.0% per GΩ
	Analogue range	1 GΩ full scale

Analogue range: 1 G full scale

Short circuit current: 2 mA +0% -50%

Terminal voltage: -0% +20% ±1 V (Ii <1 mA)

Test current on load: 1 mA at min. pass value of insulation specified in BS7671, HD384 and IEC364, EN61152-2, 2 mA max.

EN61557 operating range: 0,10 MΩ to 1,00 GΩ

Leakage current range: 10 μA to 2000 μA

Leakage current: 10% ±3 digits

Voltage display: 3% ±3 digits ±0.5% of rated voltage

Polarisation Index (PI): 10min / 1minute ratio

Dielectric absorption Ratio (DAR): 60sec / 30sec ratio

Notes:

(1) All ranges measure from 0,00 MΩ upwards.

(2) Above specifications only apply when high quality silicone leads are being used.

Continuity

EN61557 operating range:	0,01 Ω to 99,9 Ω (0 to 100 Ω on analogue scale)
Accuracy:	± 2% ± 2 digits (0 to 100 Ω)
Open circuit voltage:	5 V ± 1 V
Test current:	205 mA (±5 mA) (0.01 Ω to 9.99 Ω)
	20 mA (±1 mA) (10.0 Ω to 99.9 Ω)

Zero offset at probe tips: 0,10 Ω typical

Lead resistance zeroing: Up to 9,99 Ω
Buzzer: Variable limit 1 Ω, 2 Ω, 5 Ω, 10 Ω, 20 Ω

Resistance

EN61557 operating range: 0,01 kΩ to 1000 kΩ (0 to 1 MΩ on analogue scale)
Accuracy: ±3% up to 50 kΩ then ±5% ±2 digits
Open circuit voltage: 5 V ±1 V
Short circuit current: 1.5 mA ±0.2 mA

Voltage range

0 to 600 V d.c. ± 2% ± 2 digits
10 mV to 600 V TRMS sinusoidal (40 – 400 Hz) ±2% ±2 digits
0 to 1000 V on analogue scale
Unspecified input level 0 – 10 mV (40 – 400 Hz)
For non sinusoidal waveforms additional specifications apply:
±3% ±2 digits 101 mV – 600 V TRMS and
±8% ±2 digits 10 mV – 100 mV TRMS

Default Voltmeter

Operates at >25 volts a.c. or d.c., on any range except **OFF**

Frequency: 15-400Hz (15Hz - 99,9Hz) ±0.5% ±1 digit
(100Hz to 400Hz)

Capacitance measurement

MIT420, MIT430, MIT481 and MIT485.
Measurement range: 100 pF to 10 μF
Accuracy: ±5.0% ±2 digits

Distance by capacitance:

MIT420, MIT430,MIT481, MIT485
Arithmetic conversion from capacitance measurement
Default capacitance distance measurement: 50 nF/km
Capacitance range: 40 nF/km to 60 nF/km

Result storage:
Capacity: >1000 test results
Download: Bluetooth wireless
Bluetooth class: Class II
Range: up to 10m

Power supply: 5 x 1,5V cells type IEC LR6 (AA, MN1500, HP7, AM3 R6HP)
Alkaline NiMH rechargeable cells may be used.

Battery life: 2200 insulation tests with duty cycle of 5 sec on 55 sec OFF @ 1000 V into 1 M

Dimensions:
Instrument 220 x 92 x 50 mm (8.66in x 3.63in x 1.97in)
Instrument + case 456 x 178 x 89mm (18in x 7in x 3.5in)

Weight:
Instrument only 590gms, 775gms with boot (20.73oz (27.22oz))
Instrument plus case 1.75kg (3.86lb)

Fuse: Use only a 500 mA (FF) 1000 V 32 x 6 mm ceramic fuse of high breaking capacity HBC 50 kA minimum. Glass fuses **MUST NOT** be fitted.

Safety Protection

The instruments meet IEC 61010-1 to 600 V phase to earth, Category IV. *
Refer to safety warnings (see section 2).
*MIT 405 IEC 61010-1 600 V phase to earth Category III

Application

IEC 61010 defines measurement categories from I to IV relating transient over voltages and the location within electrical installations. This instrument is designed for use at Category IV (Primary supply level) on 600 V phase to earth systems.

E.M.C.

In accordance with IEC 61326-1

Temperature effects

Temperature coefficient	<0,1% per °C up to 1 GΩ
	<0,1% per °C per GΩ above 1 GΩ

Environmental

Operating range:	-20°C to +55 °C
Operating humidity:	95% RH at 0°C to +35°C, 70% RH +35°C to +55°C
Storage temperature range:	-30°C to +80 °C
Calibration Temperature:	+20 °C
Maximum altitude:	2000 m
Dust and water protection:	IP54

20. Basic and service errors

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, system voltage and frequency, where applicable.

20.1 Basic error: See section 19

20.2 Service error:

Insulation range	±15% ±2 digits
Continuity range	±26% ±2 digits
Resistance range	±12% ±2 digits
Voltage range	±10% ±2 digits
Capacitance range	±18% ±2 digits
Distance range	±18% ±2 digits
Frequency range	±5% ±2 digits