

# FT4 Flash Tester



- **Ideal for testing Class 1 and Class 2 equipment**
- **Two ranges of test voltage**
- **Output control has safety zero interlock**
- **'Breakdown', 'Trip Level' and 'Burn' modes of operation**
- **Audible and visual indication of breakdown and excessive leakage current**

## DESCRIPTION

The Megger® FT4 Flash Tester operates from the mains supply and provides a continuously variable a.c. test voltage up to a maximum of 4 kV. The a.c. voltage frequency is that of the supply. A simple function switch permits selection of one of the three modes of operation 'Breakdown', 'Trip Level' and 'Burn'.

In the 'Breakdown' mode the instrument responds only to the high frequency signals produced by the flashing arc of breakdown and trips the test voltage only when this occurs. In the 'Trip Level' mode the output voltage is tripped when the pre-set threshold level of leakage current is exceeded or if breakdown occurs. For the 'Burn' mode of operation the output is maintained irrespective of leakage current or breakdown; the output voltage drops to limit the level of current flowing.

Leakage and breakdown failure are indicated by the illumination of the fail lamp and the sounding of an internal buzzer. In the 'Trip Level' mode, the pre-set leakage current level is variable between 0,3 mA and 3 mA. Leakage current in all modes is indicated on an analogue meter.

In the 'Burn' mode, neither the failure signals nor the circuit tripping occurs, but the voltage drops to limit the current flowing during burning at the fault. The 'Burn' mode is provided to enable the point of breakdown failure to be located. As a safety feature, when the output voltage is tripped due to a failure in the test item, an interlock system keeps the voltage switched off until the circuit is

manually re-set by turning the voltage control to zero. The equipment is designed to BS and IEC safety standards.

Output sockets are provided for the two ranges and there is a common earth terminal. An illuminated power supply switch indicates when the instrument is connected to an energized supply and another lamp illuminates to warn that the output test voltage is being applied. The instrument is robust and built into a strong, portable, plastic case, with a cover to protect the front panel controls and terminals.

## APPLICATIONS

The FT4 is designed for flash testing and a.c. applied voltage testing on electrical equipment, components, printed circuit boards and general electrical machinery.

The requirement for an applied voltage test is becoming increasingly necessary on all types of electrical and electronic equipment, particularly as national standards are harmonized to form international standards (e.g. IEC). The FT4 satisfies the requirements for an applied voltage test on most types of electrical/electronic equipment, as laid down in the BS and IEC specifications. Particular British Standards which require the application of an applied voltage are:-

BS2769 (CCE 20)

Portable electrical motor operated tools.

BS3456 (IEC 335)  
Safety of household electrical appliances  
BS3861/BS 5850  
Electrical safety of office equipment

In addition to the British Standards themselves, the requirements of the Health and Safety at Work Act 1974, and the Electrical Equipment Safety Regulations 1975 specify the need to test equipment for safety, and implies the normal routine procedure advised by British Standards.

The FT4 instrument's tests comply with the requirements of the IEE Wiring Regulations for the testing of site erected insulation, and for testing in non-conducting locations.

The limited test current available from the FT4 permits its use in the field with only similar safety precautions as those which may be employed when using an insulation resistance tester.

**SPECIFICATIONS**

**Test Voltage Range**

0 - 2 kV and 0 - 4 kV a.c. (nominal) continuously adjustable

**Meter Scale Accuracy**

**Voltmeter:** ±2% of f.s.d.  
**Ammeter:** ±5% of f.s.d.

**Short Circuit Current**

5,0 mA max. (for mains supply power +6% and voltage control at maximum)

**Temperature Range**

**Operation:** -5°C to +50°C (23 to 122°F)  
**Storage:** -25°C to +65°C (-13 TO +149°F)

**Humidity Storage**

**Operation:** 80% RH at 40°C (104°F)  
**Storage:** 93% RH at 40°C (104°F)

**Test Frequency**

Frequency of the mains supply

**Trip Level Control**

0,3 mA to 3 mA

Sets the leakage current at which the instrument will trip when 'Trip Level' is selected on the function switch. Accuracy of this control is ±5% of full rotation.

**Functions**

'Breakdown', 'Trip Level', 'Burn' modes of operation

**Detection System Indications**

Operating mode	Leakage detection	Breakdown detection
Breakdown	off	on
Trip Level	on	on
Burn	off	off

**Failure Interlock**

Failure detection switches off the test voltage, until manually reset by turning the voltage control to zero.

**Detector Response Time**

Instrument will trip for a fault duration of >5 ms and not for < 100 µs.

Load Required to Give 5% Drop in Output Voltage

17 MΩ or 1,5 nF

**Visual Indicators (lamps)**

**Power:** Indicates 'ON' built into ON/OFF switch.

**kV On:** Indicates when the test voltage is energised.

**Fail:** Indicates when test failure occurs or if the instrument has been switched ON with the voltage control NOT at the zero position.

**Audible Alarm**

An internal buzzer will sound when the 'Fail' lamp indicates.

**Power Supply**

Mains power supply 110 V ±10%, 120 V ±10%, 220 V ±10%, or 240 V ±6%, 50 Hz/60 Hz

**Fuses**

1 A HBC 20 mm x 5 mm ceramic IEC 127/1

**Safety**

The instrument meets the requirements for IEC 1010-1 (1992), EN61010-1 (1993). The instrument is intended for use with non powered circuits only.

**EMC**

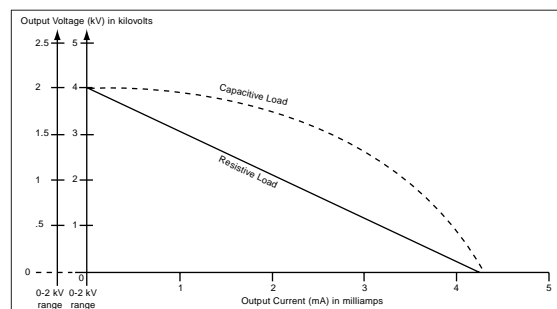
In Accordance with IEC61326 including Amendment No. 1

**Dimensions**

344 mm x 245 mm x 158 mm approx.  
(13 1/2 in x 9 5/8 in x 6 1/4 in)

**Weight**

5,5 kg (12 lb approx.)



**Typical Output Voltage Characteristics**

**Temperature**

Operation:	-10 to +50oC
Storage:	-25 to +65oC
Calibration:	20oC
Co-efficient:	<0.05% per oC
Max. Humidity:	95% RH non-condensing
Maxi Altitude:	2000 m
Safety:	IEC61010 – (1995) Category II, 300 V phase to earth.
EMC:	EN61326 annex A (heavy industrial)
Dimensions:	410 x 250 x 270 mm
Weight:	14.5 kg (excluding test leads)

**ORDERING INFORMATION**

<b>Item (Qty)</b>	<b>Order No.</b>
Flash Tesster	FT4
<b>Included Accessories</b>	
Earth lead with crocodile clip	6220-309
H.V. probe with lead	6420-061
Mains supply lead	25424-860
Accessory pouch, PVC	6420-035
Operating instruction book	6171-150
<b>Optional Accessories</b>	
Accessory pouch, leather	6430-193

**UK**  
Archcliffe Road Dover  
CT17 9EN England  
T +44 (0) 1304 502101  
F +44 (0) 1304 207342

**UNITED STATES**  
4271 Bronze Way  
Dallas TX 75237-1088 USA  
T 800 723 2861 (USA only)  
T +1 214 333 3201  
F +1 214 331 7399

**OTHER TECHNICAL SALES OFFICES**  
Norristown USA, Toronto CANADA,  
Mumbai INDIA, Trappes FRANCE,  
Sydney AUSTRALIA, Madrid SPAIN  
and the Kingdom of BAHRAIN.

**ISO STATEMENT**  
Registered to ISO 9001:2000 Reg no. Q 09290  
Registered to ISO 14001 Reg no. EMS 61597  
**FT4\_DS\_En\_V04**

**www.megger.com**  
Megger is a registered trademark