KEWTECH

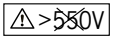
KT300

Insulation / Continuity Tester

Operating Instructions

1. Safety

1.1 Equipment Markings

	Caution - refer to the instruction manual.
	Construction is double insulated.
	Product should be recycled as electronic waste.
	Conforms to EU standards.
	Prohibited to use on Electrical Systems which use voltages above 550V.
CAT IV 300V	Measurement Category IV is applicable to testing and measuring circuits at the origin of the installations supply. They are utility level CAT checks. This part of the installation is expected to have a minimum of one level of over-current protective device between the transformer and connecting points of the measuring circuit. This tester's voltage rating for CAT IV locations is 300V, where the voltage is Phase (line) to Earth.
CAT III 500V	Measurement Category III is applicable to testing and measuring circuits connected after the source of the building's low-voltage MAINS installation. This part of the installation is expected to have a minimum of two levels of over-current protective devices between the transformer and connecting points of the measuring circuit. Examples of CAT III are measurements on devices installed after the main fuse or circuit breaker fixed within the building installation. Such as distribution boards, switches and socket outlets. This tester's voltage rating for CAT III location is 500V where the voltage is Phase (line) to Earth.

1.2 Operational Safety

The KT300 is designed to be used by skilled persons in accordance with safe methods of work. If the KT300 is used in a manner not specified by Kewtech, the protection provided by it may be impaired. Inspect the product before using. If any damage is visible; such as cracks in the casing, damage to any accessories, leads or probes, the unit should not be used.

Do not operate the KT300 with the battery cover off as this will compromise the insulated safety barrier.

To maintain safety, ensure serviceability and to monitor accuracy of the KT300 the tester should be checked on a checkbox such as the Kewtech FC2000 checkbox at regular intervals.

Although fully protected against accidental connection to live circuits the KT300 should only be used on dead circuits. If accidentally connected to a live circuit the Volts Present LED will flash and an audible alarm will sound. Testing will be inhibited.

During insulation testing do not touch the jaws of any clips or the prod tips as they will become energised.

Contents

KT300 Continuity Insulation Tester
ACC020 2 wire test lead set
Batteries
Carry case
Manual

Optional

Kewcheck R2 - socket test lead adapter
Lightmates – test lead adapters for lighting points

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2. DESCRIPTION

The KT300 is compact high specification digital insulation / continuity tester.

2.1 Features

- Insulation test (50V, 100V, 250V, 500V, 1000V)
- Continuity test
- Buzzer
- Continuity Null
- Hands free function
- Breakdown Voltage
- Voltage Present LED
- Auto switch off function for battery preservation.

2.2 Indication

The white display backlight will illuminate on switching on and during testing. To preserve battery life the backlight will switch off after approximately 4 seconds of inactivity. The unit will automatically power off after approximately 3 minutes of inactivity. To switch the tester back on after auto power off, press any button.

The LCD is shown indicating a blown fuse

3. USAGE

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3.1 Battery Installation

Unit requires 4 x AA batteries.

Ensure that all test leads are removed before installing batteries. Remove the rubber over mould and battery cover on the reverse of the unit. Install the new batteries ensuring correct polarity as indicated. After installing batteries and before use ensure the battery cover and over-mould are correctly fitted, switch on the unit and check for correct operation.

Dispose of used batteries as per the local authorities guidelines.

3.2 Operation

Continuity Null

To ensure greater accuracy when performing continuity tests a lead null should be carried out. This will ensure that test lead resistance is taken into account when testing. Turn the rotary dial to the continuity position, short the positive and negative test leads together, then press the continuity null button. The test lead resistance will be shown on the screen and further continuity testing will take into account the test lead resistance. The test leads will remain nulled until the tester is powered off or a new continuity null is carried out. The continuity null function will null test leads up to the value of 5Ω.

Continuity

Turn the rotary dial to the continuity position. Apply test leads to the resistance to be measured and press the test button.To ensure accurate results for the test leads have been nulled.

Buzzer

The buzzer function is used for quick and easy “belling out”. Turn the rotary dial to the buzzer function and apply the test leads to the resistance to be measured. If a resistance of less than 50Ω is measured a single tone will sound and <50Ω will be displayed on the screen. There is no need to press the test button. Once the test leads have been removed from the resistance being measured the tester will make a dual tone and the screen will display >50Ω.

Insulation

Turn the rotary dial to the required test voltage. Push the test button. During the test the screen will indicate the test voltage being applied. The result will then be shown. During insulation testing do not touch the jaws of any clips or the prod tips as they will be energised.

Hands Free

Hands free operation is available for Continuity or Insulation functions. Select the function required with the rotary dial. Press the hands free button.

HANDSFREE will be displayed. Once the test button is pressed the tester will continue to perform the selected test until the hands free is deselected, the test button is pressed or the unit is powered off.

Breakdown Voltage Testing

Breakdown voltage mode uses an increasing test voltage to find possible breakdown within insulation or a particular component being tested. Breakdown is not always bad - for example a surge protector is designed to break down and absorb damaging transients, protecting equipment.

Your tester has been designed to detect breakdown where the voltage collapses (as in a gas discharge tube) or flattens off (as in a metal oxide varistor). It is not designed to detect partial breakdown (where the V/I slope changes), but might do so in some circumstances.

To perform a breakdown test, select the nominal test voltage (50V to 1000V) using the rotary switch. Press Breakdown voltage; the Ramp Symbol appears. Press Test to begin the test. The Test Voltage ramps

from 0V to the selected test voltage (plus 5% margin), where it dwells for 1 second to prove the test piece. The ramp rate is approx 100V/s. If breakdown is detected, the test voltage is discharged, limiting energy.

During and after testing the peak voltage is shown on the upper display. If no breakdown occurs, the ">" symbol is prefixed to indicate the breakdown voltage is higher than the displayed value.

At all times the lower display shows the voltage on the tester terminals. If greater than 25V rms is present before testing, the LED flashes red and testing is inhibited.

Applications:

- Transient Voltage Suppressors
- Spark Gaps
- Gas Discharge Tubes
- Neons
- Diode reverse voltage

Safety Fuse

The KT300 has a user replaceable safety fuse.

If the broken fuse indication is displayed on the screen the fuse can be located by removing the battery cover.

Ensure that all test leads are removed. Remove the rubber over-mould and battery cover on the reverse of the unit. Using a flat bade screwdriver lift out the fuse carrier. Replace the fuse with a Type F 500mA, 600V Fast Blow ceramic fuse.

After replacing the fuse and before use ensure the battery cover and over mould are correctly fitted, switch on the unit and check for correct operation.

4. MAINTENANCE AND SERVICE

If required, clean with a damp cloth and mild detergent. Do not use abrasives or solvents.

With the exception of the batteries and fuse there are no user serviceable parts.

Contact Kewtech for parts and technical assistance.

WARRANTY - 2 years manufacturer's when registered on the website: Kewtechcorp.com/product-registration

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SPECIFICATION

Continuity test range accuracy	
Range	**Tolerance (@20°c)**
0.00 to 9.99 Ω	+ (3% + 2 digits)
10.0 to 99.9 Ω	+ (3% + 2 digits)
100 to 19.99 kΩ	+ (3% + 2 digits)
Open circuit Voltage	>4V, <10V
Zero offset adjust (test lead null)	5 Ω
Typical test time (2 Ω)	>2 seconds
Hazard Warning LED	>25V

Insulation test range accuracy		
Test Voltage	**Ranges (Auto Range)**	**Tolerance (@ 20°C)**
50 V	0.01 to 9.99 MΩ	± (6% + 2 digits)
	10.0 to 49.9 MΩ	± (6% + 2 digits)
100 V	0.01 to 999 MΩ	± (6% + 2 digits)
	10.0 to 99.9 MΩ	± (6% + 2 digits)
250 V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 199 MΩ	± (6% + 1 digits)
500 V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 199 MΩ	± (3% + 1 digits)
	200 to 499 MΩ	± (6% + 1 digits)
1000 V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 399 MΩ	± (3% + 1 digits)
	400 to 999 MΩ	± (6% + 1 digits)

Insulation output voltage			
Voltage	**Load**	**Output Current**	**Tolerance**
50 V	50 kΩ	1 mA	-0% +20%
100 V	100 kΩ	1 mA	-0% +20%
250 V	250 kΩ	1 mA	-10% +20%
500 V	500 kΩ	1 mA	-10% +20%
1000 V	1 MΩ	1 mA	-10% +20%
Short circuit current (into 2k Ω)			< 2 mA
Typical Test Time (10 MΩ)			< 2 seconds

The following table details the operating ranges for the individual functions compliant with the performance requirements of EN61557.

	Measurement Range	Operating Range per EN61557	Other
Continuity	0.00 Ω - 19.99 kΩ	0.1 Ω - 9.99 kΩ	IN>200mA Uq < 7 V
Insulation	0.00 MΩ - 1999 MΩ	0.1 MΩ - 1990 MΩ	IN = 1mA

Power supply	4 x AA LR6 Batteries
Battery life	50 hours
Overvoltage category	CAT III 500V CAT IV 300V
Operating temperature	0 - 40ºC
Storage temperature	-10 to 60ºC
Operating humidity	80% @ 31ºC to 50% @ 40ºC
Safety compliance	BSEN 61010-2-030:2010
EMC compliance	BSEN 61326-2-2:2013
Performance standard	BSEN 61557-1:2007 BSEN 61557-2:2007 BSEN 61557-4:2007
Probes	GS38 compliant
Dimension (mm)	180mm x 85mm x 50mm
Weight (g)	Approximately 450g

For repair and calibration please return to us at :

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