TR-MARK III - 250V Option (TRO-250)

Instruction Manual

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Contents

1 Safety Precautions

The following safety precautions must be observed during all phases of operation, service and repair of this instrument. By purchasing this equipment the purchaser assumes all liability for the operation and use of this equipment. The intended use of the instrument, its design and manufacture, is to be conducted within the precautions or other specific warnings located within this manual. Failure to comply with these precautions and other specific warnings violates safety standards of design, manufacture, and intended use. Raytech GmbH assumes no liability for the operation and use of this equipment.

SAFE OPERATION:
Only qualified knowledgeable persons should be permitted or attempt to operate this test equipment. All test personnel should fully familiarize themselves with the correct application and operation of this and all test equipment prior to operation. Persons directly and indirectly engaged in the operation of this test equipment should keep clear of all high voltage apparatus while conducting tests and measurements.

DO NOT TOUCH TEST LEADS WHILE TEST VOLTAGE IS ON

Your TR-MARK III is equipped with 100V and 250V test voltage. These voltages can be dangerous to humans, animals and equipment.

WARNING!

⇒ Never touch test Leads of TR-MARK III while test voltage is on Check safety indicator on front panel.

BEFORE APPLYING POWER:
Do not vary the input power source voltage level (IE...Connected to a variable AC power source).

The TR-MARK III auto-senses the input power from the mains plus from 100 to 240 vac 50/60Hz. Varying the input voltage will cause the test voltage to vary and result in a higher or lower test voltage than indicated.

KEEP AWAY FROM LIVE CIRCUITS:
Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified service personnel. Do not replace components with power cable connected. To avoid injuries, always disconnect power, discharge circuits, and remove external voltage sources before touching components.

WARNING!

⇒ Never connect TR-MARK III to a transformer, which is energized or connected to power lines.

GROUND THE INSTRUMENT:
To minimize shock hazard, the instruments Ground Terminal must be connected to a properly grounded receptacle. In many cases, the quality of the safety ground provided by the power cord does not fulfil safety needs. Also the power cord supplied with the equipment must be connected an electrical receptacle with an electrical ground (safety earth ground). Non grounded instruments are dangerous and may cause instrument damage.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE:
Do not operate the instrument in the presence of flammable gases or fumes.

DO NOT SUBSTITUTE PARTS OR MODIFY INSTRUMENT:
Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the instrument. Return the instrument to a Raytech service department for service to ensure proper operation and that safety features are maintained.

Instruments, which appear damaged or defective, should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

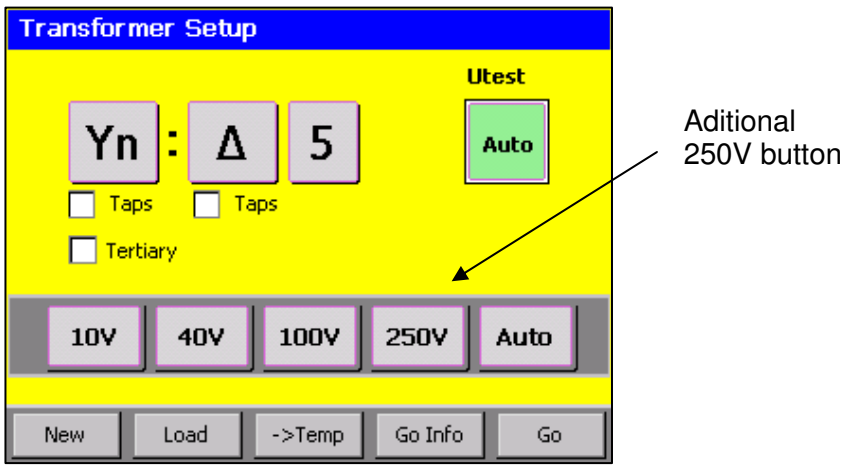
2 Operation

NOTE

⇒ The 250V option does not change anything on the operation concept of TR-MARK III. The extensions are described in this chapter.

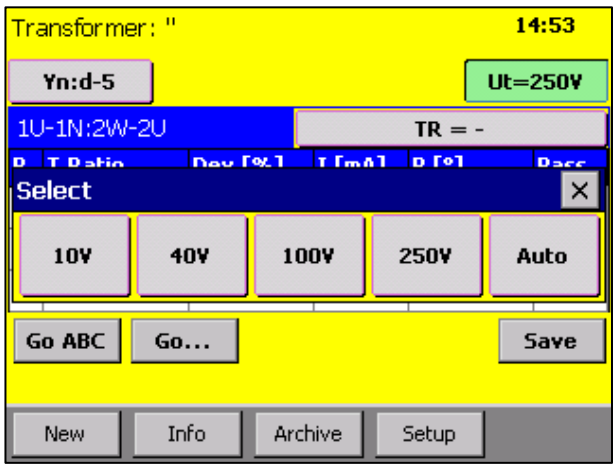
2.1 Creating a 250V Transformer Profile

The procedure of creating a new transformer remains exactly the same as with the common TR-MARK III. The main difference is the additional 250V button when test voltage is chosen.



2.2 Changing Test Voltage in Main Screen

As with a standard TR-MARK III, just touch the test voltage button, and a selection including 250V will appear.



2.3 Import and export of 250V Transformer Profiles

If you are using a firmware version 3.0.97 or higher on a TR-MARK III with the 250V option, profiles with 250V test voltage can be imported and exported as usual.
When using an older firmware version, or a common TR-MARK III, the test voltage of a 250V transformer profile will be reduced to an available voltage automatically.

NOTE

⇒ Test Voltage will automatically be changed, if you are importing a 250V transformer profile to a common TR-MARK III or if you are using a firmware version prior to 3.0.97.

3 Technical Specification

NOTE

⇒ All specifications not mentioned bellow are equal to the standard specifications of TR-MARK III.

Ratio

Resolution: 5 Digits

U_{test}	Range	Accuracy	
250V	0.8 … 5000	±0.06%	Rdg ±1 LSD
	5001 … 10’000	±0.1%	Rdg ±1 LSD
	10’001 … 32’500	±0.3%	Rdg ±1 LSD
	32’501 … 40’000	±0.4%	Rdg ±1 LSD

Phase Angle

Phase Range: ±90 Degree, Resolution: 0.01°

U_{test}	TR-Range	Accuracy
250V	0.8 ... 600	±0.05°
	601 … 5000	±0.10°
	5001 ... 10’000	±0.15°
	10’001 ... 32’500	±0.40°
	32’501 ... 40’000	±0.50°

Current

Resolution: 0.1 mA

U_{test}	Range	Accuracy
250V	0 ... 400mA	±1 mA