UNI-T®

UT581/582
Digital RCD (ELCB)Tester
Instruction Manual

CONTENTS

1. Safety Instructions

This operation manual includes the user guidance and safety instruction when using the tester, please read it before using.

⚠ *Caution*

- *Before using the tester, please read and understand the operating manual including the content.*
- *Keep the operating manual properly, and let it easy to get it for reference during the process of testing.*
- *When using the tester, user must follow the testing procedure as mentioned in the operating manual.*
- *Careful reading the operating manual regarding the safety information and it is content.*
- *Must be followed all the related safety instructions, otherwise it may cause accidents or damage the tester.*

Safety sign“ ⚠ ”has three meaning in this manual, user has to pay the attention to this sign“ ⚠ ”for operation.

⚠ *Danger---identifies conditions and actions that most likely pose hazard(s) or die.*

⚠ *Warning---identifies conditions and actions that will pose hazard(s) or die.*

⚠ *Caution---identifies conditions and actions that will pose hazard(s) or damage the tester.*

⚠ *Danger*

- *This test instrument unit is suitable for using under single phase 230V+10%-15%.(Operational Voltage Scope: 195 – 253 V)*
- *To avoid possible electric shock or personal inquiry. Do not use the test instrument or test leads if they appear damaged or metal part is exposed, or if test instrument is not operating properly. If in doubt, please contact the instrument serviced.*

- *Do not use your finger to touch on any testing cable during the testing stage.*
- *Put off the test leads after testing complete. P.S. test leads can not always plugs on the test instrument.*

⚠ *Warning*

- *Do not open or disassemble the tester un-intentionally during the measurement, it has a high voltage inside and cause a danger for the user. If it needs service repairing, please contact our after-sales services or our agents.*
- *If the test instrument appear abnormal (for example, no completed display, incorrect calculation, housing damage, noise issue during the measurement etc….). please contact our after-sales services or our agents.*
- *Do not use the tester if your hands are in wet.*

⚠ *Caution*

- *Ensure the test lead probe (need to be provided by UNI-TREND Certified One) insert into the corresponding port in order to provide a safe before measurement. It is not encourage to use third parties test lead probe on our tester.*
- *Do not expose the tester in extreme temperature and wet environment.*
- *Soft cloth and mild detergent should be used to clean the surface of the tester. No abrasive and solvent should be used when servicing.*
- *Dry the tester before storing if it is wet.*

This Tester has the follow signs,please pay attention to the content when using

⚠	Identifies danger, warning, caution
⧈	Identifies double or reinforced insulation
⏚	Grounding
CE	CE conforms to Standards of European Union

2. Characteristics

2.0 This tester is suitable for using under single phase 230 V / 50 Hz. (Operational Voltage Scope: 195 – 253 V)

2.1 It uses micro-controller with high accuracy, reliability and satiability.

2.2 Connectivity Checking: 3-LED Lamp signal is correct or not . Correct connectivity: P-E & P-N display two green light signal on but red light is off, If not, you may incorrect to connect it.

2.3 Phrase Switch Selection: Can select positive (0°) or negative (180°) semi-cycle commencing testing.

2.4 Over-range display“OL”indication. “OL mS” signal will be displayed on LCD under the time limitation of the testing condition of over the time limit.

2.5 Auto-data hold: Data hold for a while after each testing transaction.

2.6 Fast Trip Fixed: Current250mA (MAX: 40mS)(UT581 only).

2.7 AUTO RAMP Test: AUTO RAMP can test the trip test and trop current

in sync(UT582 only).

2.8 Power Off Buzzer: Buzzer alarm after turn off 3 minutes.

2.9 Environmental Protection Energy Conservation: This tester can not use Battery operation, it can use cable to charge on under(under A/C 220V/50Hz only).

2.10 Fuse: Fused safety protection directly.

2.11 Double insulation or reinforced insulation safety manufacturing.

3. General Specifications

3.1 Measuring range & Tolerance. (Temperature: 23±5℃; Humidity: 45%~75% RH; Elevation below ≤2000 meter)

UT581:

Functions	Voltage(AC)	Trip Current Setting ($I_{\triangle n}$)	Trip Time (MAX)	Accuracy	
				Trip Current	Trip Time
X 1/2	230V (Tolerance: -15%~+10%) Frequency: 50Hz	10 / 20 / 30 /100 / 300 / 500mA	1000mS	Tolerance: -10%~0%	±0.6% rdg ±4dgt
X 1		10 / 20 / 30 /100 / 300 mA	1000mS	Tolerance: 0%~+ 10%	
		500mA	300mS		
X 5		10 / 20 / 30mA	1000mS		
250mA (Fast Trip)		250mA(Fixed)	40 mS	Tolerance: 0%~+ 10%	

UT582:

Functions	Voltage(AC)	Trip Current Setting (I△n)	Trip Time (MAX)	Accuracy	
				Trip Current	Trip Time
X 1/2	230V (Tolerance: -15%~+10%) Frequency: 50Hz	10 / 20 / 30 /100 / 300 / 500mA	1000mS	Tolerance: -10%~0%	±0.6% rdg ±4dgt
X 1		10 / 20 / 30 /100 / 300 mA	1000mS	Tolerance: 0%~+ 10%	
		500mA	300mS		
X 5		10 / 20 / 30mA	1000mS		
AUTO RAMP TEST		10 / 20 / 30 /100 / 300 / 500mA	(RAMP increase to 10%) I△n from 20%~110% 300*10 mS	Tolerance: -10%~+10%	

3.2 Measuring Range (Functions)

×1/2	as disconnecting measurement, test RCD sensitive.
×1	as connecting measurement of the response time.
×5	as fast connecting measurement of $I_{\triangle n}$×5 time.
250mA	as connecting measurement of the response time. (UT581 only)
AUTO RAMP TEST	as connecting measurement of the size of the current. (UT582 only)

3.3 Application Standard:
IEC 61010-1 CAT III 300V Polluting Grade: Grade II
IEC 61557-1,5
IEC 61010-2-31

3.4 Operational Voltage: 230VAC/50Hz (Voltage Range: 195 – 253 V)

3.5 Working Environment: Temperature: 0℃~40℃
Relative Humidity: ≤80%RH
Elevation: ≤2000 meter

3.6 Storage Condition:
Temperature: -20℃~60℃
Relative Humidity: ≤75%RH

3.7 Product Size: 160mmx70.5mmx100mm

3.8 Product Net Weight: About 500g

3.9 Standard Accessories:

Test Leads(1.5 meter)	1 piece
English Mnaual	1 piece
Carrying Case	1 set

4. Tester Outlook & Accessories (see Diagram)

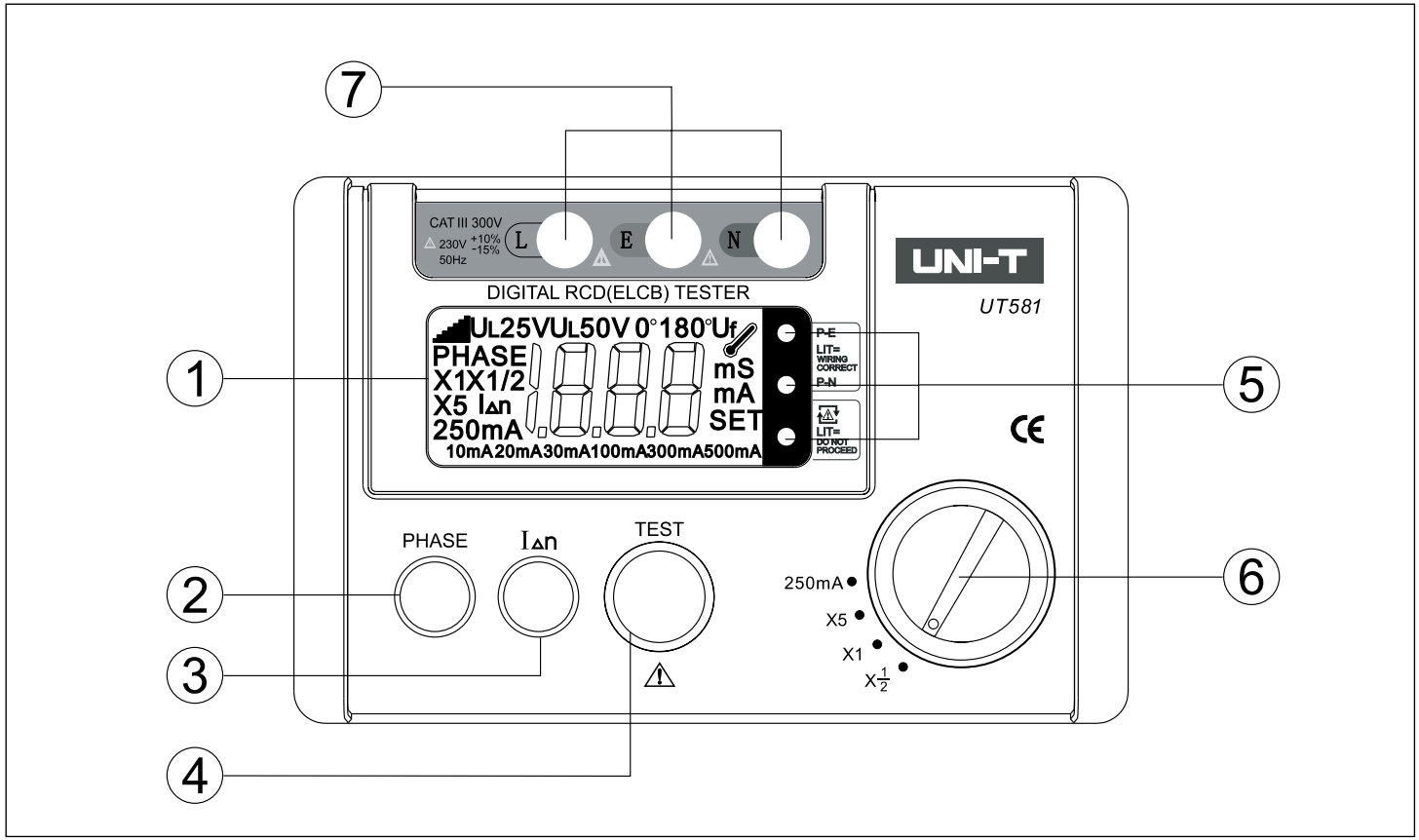

Diagram 1

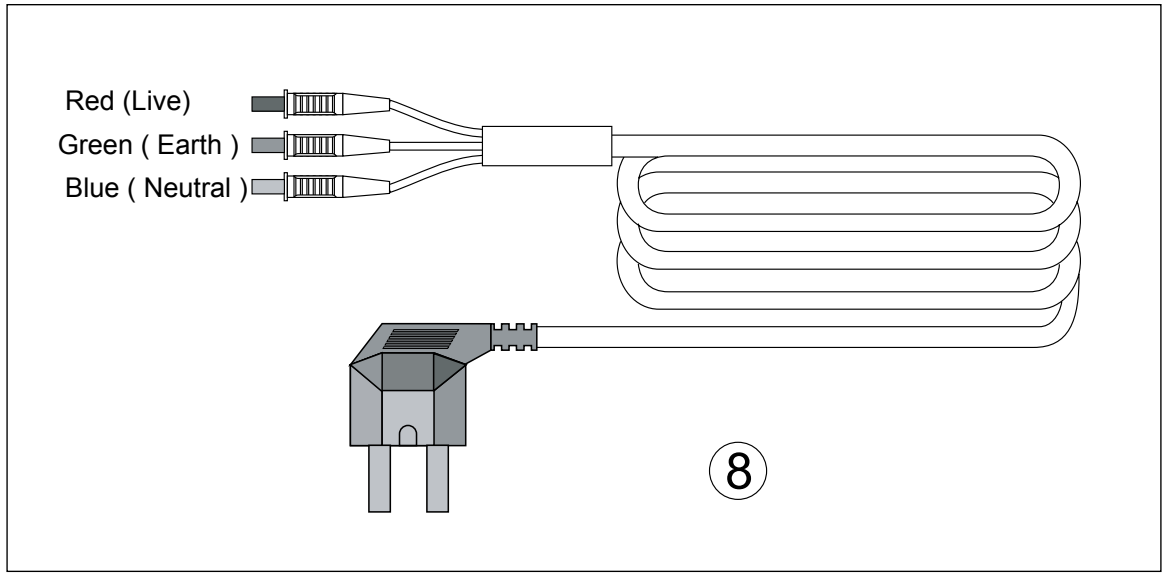

Diagram 2

① LCD Display
② PHASE Button
③ $I_{\triangle n}$ Button
④ TEST Button
⑤ Connecting Lead Testing LED Signal Lamp
⑥ Rotary Mode Switch
⑦ Test Terminal
⑧ Test Lead

5. Measurements

5.1 Test Lead Connection

Test terminal is / are for connecting the correct lead of the tested installation: L to L(Live); N to N(Neutral); E to E(Earthing).

5.2 Test Lead Checking

After connected the test leads with the testers, please plug the power cable on (220V/50Hz current socket), so you can 3-LED lamp whether it is correct. If P-E & P-N are displayed green signal light, but the red color LED do not light up. It is in good normal condition. If not, it may be incorrectly connect with P and N. You need to put off those test leads and check it then plug into the correct one.

Connecting inadequately terminal P & terminal N during the measurement it may cause to have a leakage.

⚠ *Caution:Please check all the relative terminal and settle down it, you can continue the next measurement.*

Danger

- *If the connecting measurement is incorrect, please don't proceed the next measurement (press TEST button). Otherwise, it causes measuring result incorrect or in other dangerous.*

5.3 Press $I_{\triangle n}$ button switch, it causes RCD breakers for the nominal residual currents ($I_{\triangle n}$) as the previous trip current in constant Below LCD display the default connecting current value.
Default Value: $I_{\triangle n}$ ----------30mA
0°/180°------0°

5.4 Measuring Methods

5.4.1Setting Index For Measurement

- Disconnecting Test--------×1/2: Maximum Measuring Time 1000ms
- Connecting Test ----------×1: Maximum Measuring Time 1000ms (Except 500mA)
- Connecting Test ----------×1 (500mA): Maximum Measuring Time 300ms

- Rapid Connecting Test-------×5 (10,20,30mA only): Maximum Measuring Time 1000ms
- Rapid Connecting Test -------250 mA: Maximum Measuring Time1000ms(UT581 only)
- AUTO RAMP TEST----------Auto Ramp Test(UT582 only). 20%~110% Default nominal residual currents($I_{\triangle n}$). Maximum measuring time 300ms×10.

5.4.2 Press TEST(Measure)button

- Disconnecting Test--------- Breaker should not be connected.
- Connecting Test ------------ Breaker should be connected.
- Fast Connecting Test ------- Breaker should be connected.
- 250mA Fast Test------------ Breaker should be connected. (UT581 only)
- AUTO RAMP TEST --------- Breaker should be connected; can display the connected current and time in sync. (UT582 only)

5.4.3 Press PHASE (0°/180°) button, phase switch as repeated Step (5.4.2) to get the fast connecting time.

5.4.4 Need to phase switch and repeated the Step (5.4.2).

⚠ *Warning*

- *Do not use the tester if it is damaged or metal part is exposed.*
- *During the long hours and continually use, the tester may arise in more heating and cause to the unit damage or / and other danger arises, so we do not encourge to use in long hours and it is used on sample random testing purpose only.*
- *Connecting current 300mA / 500 mA (Main current connecting measurement) measure need to have at least 5-minutes variation for next new measurement.*

6. Maintenance & Repair

6.1 Soft cloth and mild detergent should be used to clean the surface of the tester because solvent will corrosive the display and avoid moisture.

6.2 Repair

Contact our after-sales service department or agent when the following thing happens:

A.The tester case is being damage or broken.
B.LCD display is in abnormal.
C.Unreasonable deviation when in normal use.
D.Buttons do not function properly and confusion.
E.Sound during the testing.

Manufacturer:
Uni-Trend Technology (Dongguan) Limited
Dong Fang Da Dao
Bei Shan Dong Fang Industrial Development District
Hu Men Town, Dongguan City
Guang Dong Province
China
Postal Code: 523 925

Headquarters:
Uni-Trend Group Limited
Rm901, 9/F, Nanyang Plaza
57 Hung To Road
Kwun Tong
Kowloon, Hong Kong
Tel: (852) 2950 9168
Fax: (852) 2950 9303
Email: info@uni-trend.com
http://www.uni-trend.com