BESANTEK

BST-LT05
INSTRUCTION MANUAL
DIGITAL LOOP/PSC TESTER

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1. Safety Precautions

Electricity can cause severe injuries, even with low voltage or current.

Therefore, it is extremely important that you read the following Information before using your Digital Loop / PSC Tester.

1.1 This Instrument must only be used and operated by a competent trained person and in strict accordance with the instructions. We will not accept liability for any damage or injury caused by misuse or non compliance with instructions and safety procedures. This instrument injects a high current into the earth.

1.2 This instrument is only intended for Single Phase operation, 230Vac (+13%-15%) with the correct wiring (Phase, Neutral and Earth).
It must never be connected Phase to Phase, damages could result.
When conducting a test, do not touch any exposed metal parts or any conducting parts.

1.3 The non-tripping ELCB function is only available at 2000Ω range, the testing current is 15mA at this range.

1.4 Before use, always inspect the tester and test leads for any sign of abnormal condition or damage. If any abnormal conditions exist (broken test leads, cracked case, display faulty, etc...) do not attempt to take any measurement or use the tester. Return it to the nearest distributor for service.

1.5 The tester has been designed with your safety in mind. However, there is no design can completely protect against incorrect use. Electrical circuits can be dangerous and/or lethal when a lack of caution or poor safety practice is used. Use caution in the presence of voltage above 24V as these pose a shock hazard.

1.6 Pay attention to cautions and warnings which will inform you of potentially dangerous procedures.

1. Safety Notes

Rated environmental conditions:
(1) Indoor use.
(2) Installation Category III.
(3) Pollution degree 2.
(4) Altitude up to 2000 meters.
(5) Relative humidity 80% max.
(6) Ambient temperature 0°C to 40°C.

Observe the International Electrical Symbols listed below :


Double insulation or reinforced insulation.


Caution ! Refer to this manual before using the meter.

3. Sprcifications

General

Temperature	0 ~ 40 °C	
System voltage	230V	+13%
		-15%
System frequency	50Hz	
None Battery system voltage	150V ~ 260V	
Over Temperature Protection	When overheating,the " 🌡 " symbol will show on the LCD, and the meter stop measuring.	
Wiring check	P-E	LEDs illuminate when the wiring polarity of circuit under test is correct
	P-N	
	N-E	LED is light when P and N are reversed or the Earth is not connected.
15mA Loop measurement	**Loop impedance 2000Ω range measurement is carried out with low test current (15mA). The current will not cause tripping out for ELCBs.**	

Loop Impedance

Range	Measuring range	Nominal test current at 0 Ω external loop	Accuracy
20 Ω	0.00~19.99 Ω	23A / 40ms	(2%rdg + 4dgt)
200 Ω	0.0~199.9 Ω	2.3A / 40ms	
2000 Ω	0~1999 Ω	15mA / 400ms	

Prospective Short-circuit Current

Range	Measuring range	Nominal test current at 0 Ω external loop	Accuracy
20 KA	0.00~4.00 KA	23A / 40ms	Consider accuracy of loop impedance
2000 A	0~1999 A	2.3A / 40ms	
200 A	0.0~199.9 A	2.3A / 40ms	

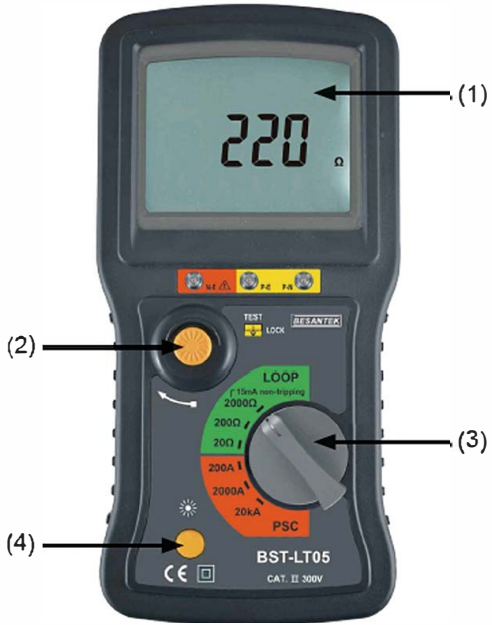
Voltage Display

Measuring range	Accuracy	Remark
150~260 V	(2%rdg + 4dgt)	at 0 Ω external loop

4. Features

- Battery is not used.
- 3 ½ digit LCD (2000-count).
- Backlight function.
- 15mA loop measurement which will not trip ELCBs.
- Convenient and easier for users to measure the loop impedance directly without bypassing the wires.
- Wiring check function.
- Over temperature protection.
- Over voltage protection.
- Built-in voltmeter.
- Built-in earth tester.
- Built-in loop/psc tester.
- Safety standard :
  EN 61010-1 CAT III 300V
  EN 61326-1

5. Instrument Layout



(1) LCD

(2) TEST button

(3) Function rotary switch

(4) Backlight button

(5) L (LINE) terminal

(6) N (NEUTRAL) terminal

(7) E (EARTH) terminal

6. Measurement

(1) Test Lead Connection

According to the below symbol to connect the line of system power.

L for Phase Line

N for Nature Line

E for Earth Line

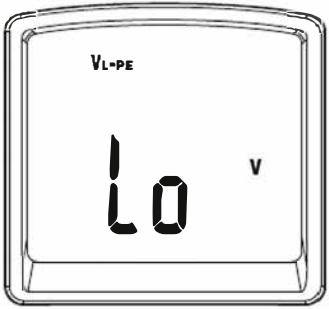
(2) Wiring Check

The system power lines are connected by right way, then the P-E & P-N LEDs must be ON, and N-E LED must be OFF.

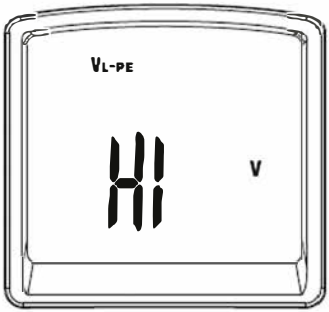
If there are the wrong connection (P & N reverse connection or E does not be connected) then the N-E LED will be ON.

(3) Voltage Measurement
The System Power Voltage will be displayed on the screen whatever the scale range be selected before testing.

If the voltage is less than 150V then the "Lo" Symbol will be displayed on the screen.



If the Voltage is more than 260V then “HI” Symbol will be displayed on the screen.



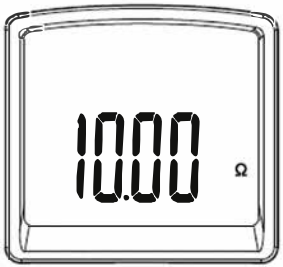
(4) Loop Impedance Measurement

There are 3 ranges (20.00Ω, 200.0Ω, 2000Ω) for the loop impedance measurement.

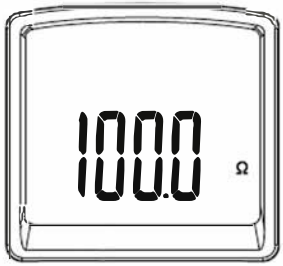
To make sure the wire connection is correct by the LEDs indication, then press the test button to measure the loop impedance and it will be displayed on the screen about 5 seconds.

If press the Test button and turn to lock, then the measurement result will be displayed on the screen until the test button is unlocked.

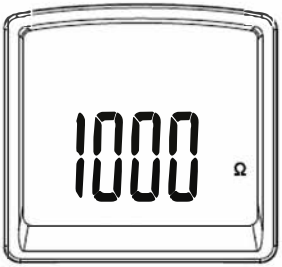
If the loop impedance is 10Ω, then the 20.00Ω range must be selected, and the test result display like the below screen.



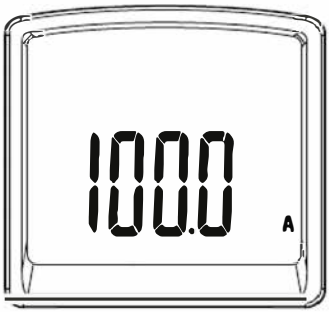
If the loop impedance is 100Ω, then the 200.0Ω range must be selected, and the test result display like the below screen.



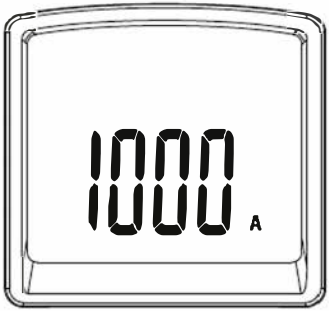
If the loop impedance is 1000Ω, then the 2000Ω range must be selected, and the test result display like the below screen.



(5) Prospective Short-circuit Current Measurement
There are 3 ranges (200.0A, 2000A, 20.00kA) for the loop impedance measurement.
To make sure the wire connection is correct by the LEDs indication, then press the test button to measure the loop impedance and it will be displayed on the screen about 5 seconds.
If press the Test button and turn to lock, then the measurement result will be displayed on the screen until the test button is unlocked.
If the PSC test result = 100A, then the 200.0A range must be selected to test, and the test result display like the below screen.



If the PSC test result = 1000A, then the 2000A range must be selected to test, and the test result display like the below screen.



If the PSC test result = 2000A, then the 20.00KA range must be selected to test, and the test result display like the below screen.

(6) Back Light Function

To press the back light button to turn the back light LED on and off.

When the meter is measuring the back light LED will be off to avoid the LED current effect, if the back light LED is on before testing.

7. Fuse Replacement

If the fuse is blown, open the case, then replace with the same specification fuse.

Fuse : 6.3A / 500V x 2

8. Cleaning and Storage

Periodically, you should wipe the case with a damp cloth and detergent; do not use abrasives or solvents.

Warning

To avoid electrical shock or damage to the meter, do not get water inside the case.