

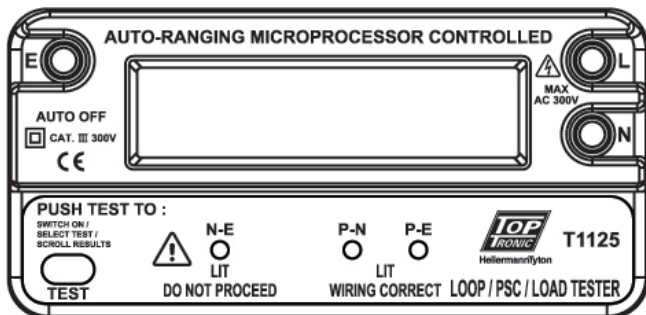


HellermannTyton

# T1125

## LOOP/PSC/LOAD TESTER

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# INSTRUCTION MANUAL

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**YOUR COMMENTS ARE IMPORTANT TO US**

**We have become a market leader in test and measurement in recent years, due to the company's ability to design and bring to the market innovative instruments and devices which offer real customer benefits. The cornerstone of this ability is the company's focus on customer requirements and the emphasis placed on end-user satisfaction. We appreciate customer information and requirement to improve or design new products.**

# 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 Electrical Network Analyzer.

- 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  $\pm 20\%$  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 All RCCB, GFCI and ELCB in the circuit to test must be by passed ONLY for the duration of the test.
- 1.4 Never open the tester except for battery replacement ( See Battery Replacement section ).
- 1.5 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.
- 1.6 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.
- 1.7 Pay attention to cautions and warnings which will inform you of potentially dangerous procedures.

## 2. Specifications

Loop Impedance (L-E)	0.03-2000 $\Omega$ Auto-ranging
Prospective Short Circuit	0 - 6KA @230Vac (L-N)
Operating Voltage	50-275Vac (50 or 60 Hz)
Best Performance at Rated Voltage	230Vac $\pm$ 20% Max. 10A
Operating Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C
Operating Humidity	80% Maximum
Storage Humidity	85% Maximum
Accuracy of Voltages	210-250V : $\pm$ 1% otherwise : $\pm$ 3%
Accuracy Loop Impedances	0-50 $\Omega$ : $\pm$ 2% $\pm$ 3dgt 50-500 $\Omega$ : $\pm$ 3% $\pm$ 3dgt Above 500 $\Omega$ : $\pm$ 15%
Power Source	1.5V(AA)battery x 8
Dimension	175(L) x 85(W) x 75(D)mm
Weight	Approx. 650g (batteries included)
Accessories	Test Leads Shoulder belt Instruction manual Batteries

### 3. 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.



Warning ! Risk of Electric Shock.

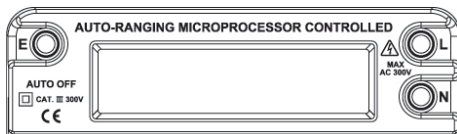


Caution ! Refer to this manual before using the Meter.

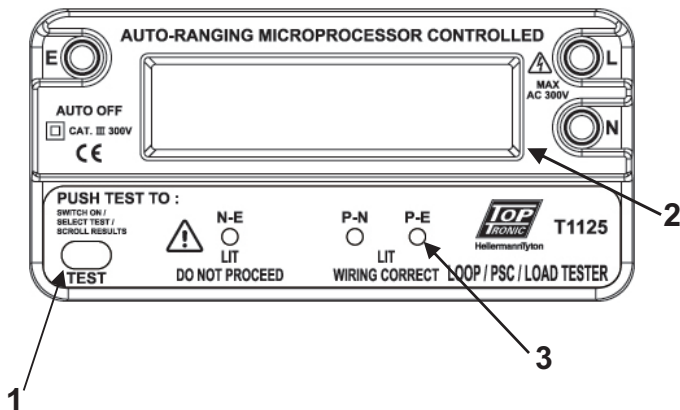
## 4. Features

- 2 Lines x 16 characters liquid crystal display.
- Auto-ranging / Auto-off.
- One push button operation.
- Very low consumption.
- Microprocessor controlled.
- Better than 3% accuracy (0.05-50 $\Omega$ ).
- Wiring integrity check (display + LEDs).
- Over temperature protection and indication.
- Stores previous readings for re-scrolling.
- Displays : L-N voltage at 16A and at 0A.  
L-E loop impedance.  
Prospective short circuit L-N.
- Safety standard :  
EN 61010-1 CAT III 300V  
EN 61326-1

## 5. Connections

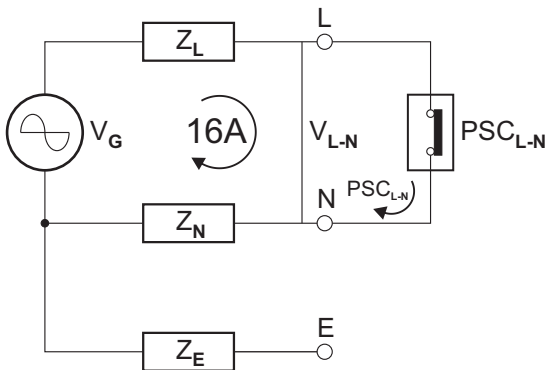


## 6. Instrument Layout



1. Test On.  
Scroll / Menu Select
2. Liquid Crystal Display.
3. High Bright Wiring Check

## 7. What does the Loop / Psc / Load Tester measures ?



$V_G = V_{L-N}@0A$  voltage generator  
(supply transformer).

$Z_L + Z_E = Z_{L-E}$  Impedance of the line wire from the transformer (including the internal impedance of the transformer) plus impedance of the earth path.

$Psc_{L-N}$  = Prospective short circuit between Line and Neutral terminals at the testing point.

$V_{L-N}@16A$  = The voltage which will be between Line and Neutral terminals at the testing point if  $16A$  flows into a resistive load.



## 8. Functions

The tester measures :

- Line - Earth loop impedance.
- Line - Neutral AC voltage at 16A.
- Prospective short circuit current L-N.  
(This is the current which will flow between Line and Neutral. A short circuit should be made between Line and Neutral).
- Transformer voltage  $V_G = V_{L-N} @0A$
- Neutral wire impedance.
- Wiring integrity.

The tester reports :

- Low battery indication.
- Wiring condition.
- No line.
- Over temperature.

## 9. Preparation for Measurement

Before testing always check the followings :

- System voltage  
Your Electrical Network Analyzer is best intended to work with 230 V AC.  
However, if the voltage is lower than 230V, the test could still be done but accuracy of the PSC could deteriorate due to the fact that the current injected is lower than optimal. Your tester can work on a wide range of voltage and compute results, so that these changes will have a minimal effect on the results.
- ELCB / RCCB / GFCI  
It is necessary to bypass the ELCB / RCCB / GFCI for the duration of the Earth / Loop / PSC test.
- Unplug all loads  
In order not to affect the measurement, it is advised to unplug all loads from the installation under test .
- Make a clear sketch of measurement to be able to interpret results.
- Check leads before using tester  
The leads quality and resistance is a factor to influence the accuracy of the results make sure they are always in good conditions.

## 10. Loop / PSC / Load Testing

Turn the instrument ON by pressing "ON / TEST" .  
The LCD display will come to the first screen.

LOOP/PSC/LOAD  
PRESS "TEST"

Pressing "ON / Test" will start the test. This testing procedure is automatic and controlled by the Microprocessor.

----- TESTING!-----

Testing may take a few seconds.  
It allows the instrument to display the results.

Z'L-E = 14.89 $\Omega$   
PSC'L-N = 190.3A

Press Test for the next display.

V@(0A) = 227.1V  
V@(16A) = 208.0V

Disconnect the tester from the circuit under test.  
From this first results, you can scroll through the test results using the Test button.

Scroll through the results again, if the tester is not connected to the circuit or do a new test by connecting the tester to the circuit under test.

## 11. Battery Replacement

- The tester continuously monitors the battery voltage and indicates "Low battery".
- The tester's batteries are situated under the tester.
- Turn off the tester and Disconnect the test leads from it.
- Remove the battery cover and the batteries.
- Replace with eight 1.5V AA batteries and make sure the polarities are right.
- Replace the battery cover.

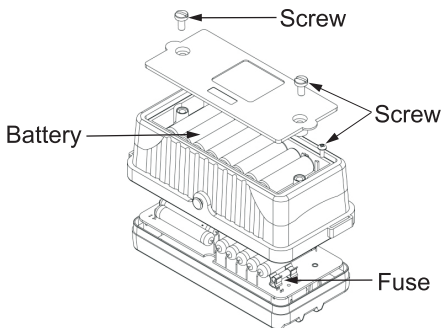
## 12. Fuse Replacement

 **Warning**

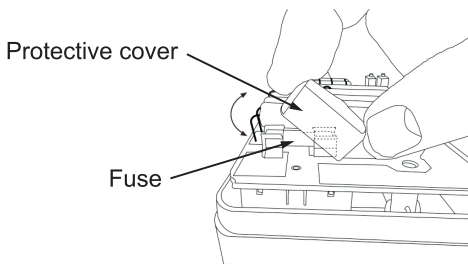
When replacing the fuse, it must be replaced with the same specification as the original.

- Turn off the T1125 and disconnect the test leads from it.
- Open and remove the battery cover. Disassemble the bottom case from the front panel with a screw driver.

- The fuse is located on the upper left of the PCB.



- Remove the protective cover and the blown fuse.



- Replace with a new one (2A/500V ; 5x20mm) and put the protective cover back after replacing the fuse.

### 13. Calibration & Servicing

Both calibration and servicing must be performed by a competent trained and approved person. Contact your nearest authorized distributor about Calibration Certificate and servicing .

Before returning the instrument be sure that :

- the leads have been checked for continuity and signs of Damage.
- the batteries are in good condition.

### 14. Cleaning & Storage

Periodically, you should wipe the case with a damp cloth and detergent; do not use abrasives or solvents. If the meter is not used for long periods or longer than 60 days, remove the batteries and store them separately.



#### **Warning**

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