

TOLSEN

DIGITAL MULTIMETER 38030



INSTRUCTION MANUAL



SAVE THIS MANUAL !

You will need this manual for safety instructions, operating procedures and warranty.
Put it and the original sales receipt in a safe dry place for future reference.

SAFETY INFORMATION

This multimeter has been designed according to IEC-1010 concerning electronic measuring instruments with an overvoltage category(CATIII) and pollution2. Followall safety and operating instructions to ensure that themeter is used safely and is kept in good operating condition.Full compliance with safety standards can be guaranteed only with test leads supplied.If necessary,they mustbe replaced with the type specified in this manual.

SAFETY SYMBOLS



Important safety information, refer to the operating manual.



Dangerous voltage maybe present.



Earth ground.



Double insulation(Protection classII).



Fuse mustbe replaced with rating specified in the manual.

MAINTENANCE

- ☐ Before opening the case,always disconnect test leads from all energized circuits.
- ☐ For continue protection against fire;replace fuse only with the specified voltage and current ratings:F 250mA/600V(Quick Acting)
- ☐ Never use the meter unless the back cover is in place and fastened completely.
- ☐ Do not use abrasives or solvents on the meter.To clean it using a damp cloth and mild detergent only.

DURING USE

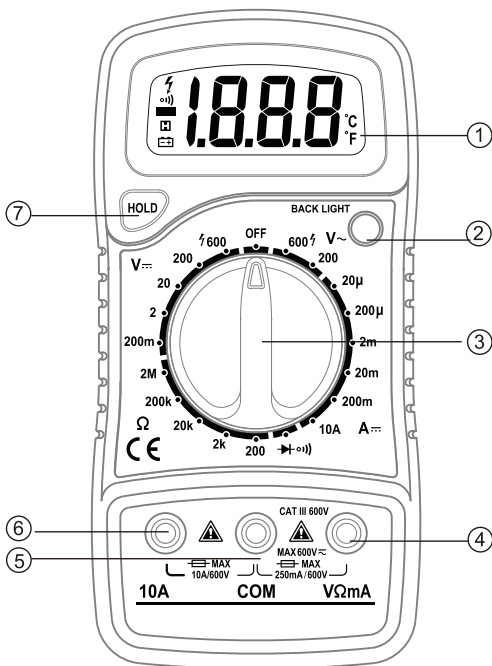
- ☐ Never exceed the protection limit values indicated in specifications for each range of measurement.
- ☐ When the meter is linked to measurement circuit, do not touch unused terminals.
- ☐ Never use the meter to measure voltages that might exceed 600V above earth ground in category II installations.
- ☐ When the value scale to be measured is unknown before hand, set the range select or at the highest position.
- ☐ Before rotating the range select or to change functions, disconnect test leads from the circuit under test.
- ☐ When carrying out measurements on TV or switching power circuits always remember that there may be high amplitude voltage pulses at test points, which can damage the meter.
- ☐ Always be careful when working with voltages above 60V dc or 30V ac rms. Keep fingers behind the probe barriers while measuring.
- ☐ Before attempting to insert transistors for testing, always be sure that test leads have been disconnected from any measurement circuits.
- ☐ Components should not be connected to the hFE socket when making voltage measurement with test leads.
- ☐ Never perform resistance measurements on live circuits

GENERAL DESCRIPTION

The meter is a handheld 3 1/2 digital multimeter for measuring DC and AC voltage, DC current, Resistance, Diode, Transistor and Continuity Test with battery operated.

The backlight of display is optional.

FRONT PANEL



FRONT PANEL DESCRIPTION

① Display

3 1/2 digit, 7 segment, 15mm high LCD.

② Backlight(only for the instruments with it)

When this button is pushed, the Back light of display is on. After about 5 seconds, the Back light is self-off. The Backlight is on again, just push this button once.

③ Rotary switch

This switch is used to select functions and desired ranges as well as to turn on/off the meter.

④ "VQmA" jack

Plug in connector for red (positive) test lead for voltage, resistance and current (except 10A) measurements.

⑤ "COM" jack

Plug in connector for black (negative) test lead.

⑥ M" 10A" jack

Plug in connector for red test lead for 10A measurement.

⑦ Hold button

When this button is pushed, the display will keep the last reading and "H" symbol will appear on the LCD until pushing it again.


SPECIFICATIONS

Accuracy is specified for a period of one year after calibration and at 18 to 28°C (64°F to 82°F) with relative humidity to 80%.

GENERAL

Maximum voltage between terminals and earth ground Fuse protection	: CAT III 600V
Power	: F 250mA/250V
Display	: 9V battery, NEDA 1604 or 6F22: LCD, 1999 counts, updates 2-3/ sec.
Measuring method	: Dual-slope integration A/D converter
Overrange Indication Polarity indication	: Only figure "1" on the display : "-" displayed for negative polarity:
Operating Environment	: 0 to 40 °C

Storage temperature
Low battery indication
Size
Weight

: -10°C to 50°C.
: "" appears on the display
: 138mm X 69mm X 31 mm
: Approx. 170g.

DC VOLTAGE

Range	Resolution	Accuracy
200mV	100uV	$\pm 10.5\%$ of rdg ± 2 digits
2V	1mV	$\pm 0.5\%$ of rdg ± 2 digits
20V	10mV	$\pm 0.5\%$ of rdg ± 2 digits
200V	100mV	$\pm 0.5\%$ of rdg ± 2 digits
600V	1V	$\pm 0.8\%$ of rdg ± 2 digits

Overload Protection: 250V rms. For 200mV range and 600V de or rms.ac for other ranges.

DC CURRENT

Range	Resolution	Accuracy
20uA	0.01uA	$\pm 1\%$ of rdg ± 2 digits
200uA	0.1uA	$\pm 1\%$ of rdg ± 2 digits
2mA	1uA	$\pm 1\%$ of rdg ± 2 digits
20mA	10uA	$\pm 1\%$ of rdg ± 2 digits
200mA	100uA	$\pm 1.5\%$ of rdg ± 2 digits
10A	10mA	$\pm 3\%$ of rdg ± 2 digits



Over load Protection: F 250mA/600V fuse. F 10A/600V fuse.

AC VOLTAGE

Range	Resolution	Accuracy
200V	100mV	$\pm 1.2\%$ of rdg ± 10 digits
600V	1V	$\pm 1.2\%$ of rdg ± 10 digits

Overload Protection: 600V de or rms.ac for all ranges. Frequency range: 40Hz to 400Hz. Response: Average responding, calibrated in rms. of a

DIODE & CONTINUITY

Range	Description
	If continuity exists (about less than $(70 \pm 30)\Omega$), built-in buzzer will sound (only for the instruments with it)
	Show the approx, forward voltage drop of the diode.

Overload Protection: 250V de or rms.ac.

ELECTRIC RESISTANCE

Range	Resolution	Accuracy
200 Ω	0.1 Ω	$\pm 0.8\%$ of rdg ± 3 digits
2k Ω	1 Ω	$\pm 0.8\%$ of rdg ± 2 digits
20k Ω	10 Ω	$\pm 0.8\%$ of rdg ± 2 digits
200k Ω	100 Ω	$\pm 0.8\%$ of rdg ± 2 digits
2M Ω	1k Ω	$\pm 1.0\%$ of rdg ± 2 digits

Maximum Open Circuit Voltage: 3.2V

Overload Protection: 250V de or rms. ac for all ranges,

OPERATING INSTRUCTIONS DC VOLTAGE MEASUREMENT

1. Connect the red test lead to the "V Ω mA" jack and the black lead to the "COM" jack.
2. Set rotary switch at desired DCV position. If the voltage to be measured is not known before hand, set range switch at the highest range position and then reduce it until satisfactory resolution is obtained.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display along with the polarity of the red lead connection.

DC CURRENT MEASUREMENT

1. Connect the red test lead to the "V Ω mA" jack and the black test lead to "COM" jack. (For measurements between 200mA and 10A, remove red lead to 10A jack.)
2. Set the rotary switch at desired DCA position.
3. Open the circuit in which the current is to be measured, and connect test leads in series with the circuit.
4. Read current value on LCD display along with the polarity of red lead connection.


AC VOLTAGE MEASUREMENT

1. Connect the red test lead to "V. Ω .mA" jack and the black test lead to the "COM" jack.
2. Set the rotary switch at desired ACV position.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display

RESISTANCE MEASUREMENT

1. Connect the red test lead to "V. Ω . mA" jack and black test lead to the "COM" jack. (The polarity of red lead is positive "+").
2. Set the rotary switch at desired " Ω " range position.
3. Connect test leads across the resistor to be measured and read LCD display.
4. If the resistance being measured is connected to a circuit > turn off power and discharge all capacitors before applying test probes.

DIODE TEST

1. Connect the red test lead to "V Ω .mA" jack and the black test lead to the "COM" jack (The polarity of red lead is positive).
 2. Set the rotary switch at " " position.
 3. Connect the red test lead to the anode of the diode to be tested and the black test lead to the cathode of the diode.
- The approx. forward voltage drop of the diode will be displayed. If the connection is reversed, only figure "T" will be shown.

CE DECLARATION OF CONFORMITY

WE

SUZHOU TOLSEN TOOLS CO.,LTD.

No.198, Huashan Road, Jinfeng Town,Zhangjiagang City,
Jiangsu Province, China

Declare that the product

38030

DIGITAL MULTIMETER

Complies with the essential health and safety requirements of the following

Directices:

LVD directive 2014/35/EU

Standards and technical specifications referred to:

EN 61010-1:2010

EN 61010-2-030:2010

Authorised Signatory and technical file holder

Signed for and on behalf of:

SUZHOU TOLSEN TOOLS CO.,LTD.

No.198, Huashan Road, Jinfeng Town,Zhangjiagang City,
Jiangsu Province, China

WANG QING

Group Quality Director

on:26/02/2022

A handwritten signature in black ink, appearing to be 'Wang Qing', written in a stylized, cursive manner.

NOTE

To avoid electrical shock, remove test leads from measurement circuits before testing a transistor.

AUDIBLE CONTINUITY TEST

1. Connect red test lead to "V Ω .mA" black test lead to "COM".
2. Set range switch to "•||" position.
3. Connect test leads to two points of circuit to be tested. If continuity exists, built-in buzzer will sound.

BATTERY & FUSE REPLACEMENT

If "BAT" appears on display, it indicates that the battery should be replaced. Fuse rarely needs replacement and blows almost always as a result of operator's error.

To replace battery & fuse (250mA/600V) remove the 2 screws in the bottom of the case. Simply remove the old, and replace with a new one.

Be careful to observe battery polarity.

WARNING

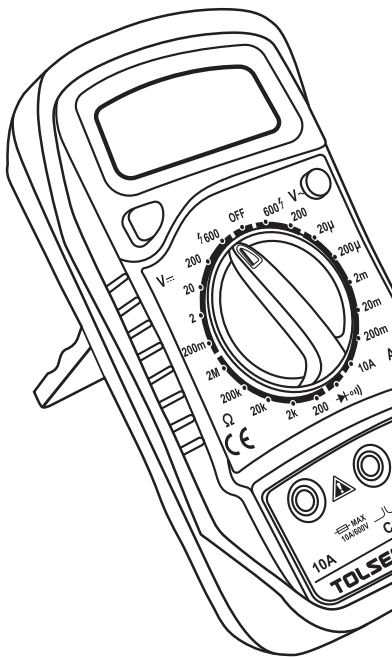
Before attempting to open the case, always be sure that test leads have been disconnected from measurement circuits. Close case and tighten screws completely before using the meter to avoid electrical shock hazard.

ACCESSORIES

Operator's instruction manual

Set of test leads

9 volt battery, NEDA 1604 6F22006P type



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TOOLS CO.,LTD.**

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SCAN TO VISIT
PRODUCT LINK