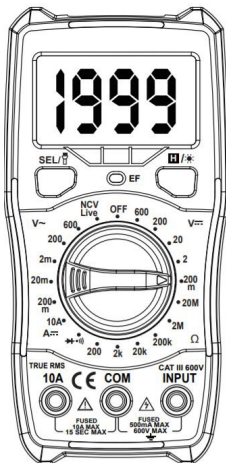



Thank you for purchasing our equipment. Please read this manual carefully and heed the safety warnings and instructions before installing, using or repairing the equipment. This will ensure not only the protection of persons, but also the long life of the equipment.




# SAFETY NOTICE











Pay attention to the following instructions to avoid possible electric shock or damage to the equipment.

- Before using the device, check the multimeter or its case for damage. Look for cracks, missing parts, or bare metal. Pay attention to the insulation around the connectors.
- Place the rotary switch in the correct position and do not change the range during measurement to avoid damaging the equipment.
- If the equipment operates with an effective voltage higher than 60V in DC or 30V in AC, special care must be taken as there is a risk of electric shock.
- Do not use or store the device in high temperature, humidity, explosive, flammable or magnetic environments. The performance of the device may deteriorate after humidification.
- If the battery indicator appears  , replace the battery. When the battery is low, the device may display false readings that can result in electric shock.
- Do not disassemble, modify or repair the equipment. Repairs may only be carried out by the manufacturer's service department.
- For maintenance, the meter surface should be cleaned with a soft cloth and a mild detergent. Do not use any abrasives and solvents to prevent corrosion, damage and accident to the meter surface.
- The device is designed for indoor use.
- Turn off the power when you are not using the device. Remove the batteries when not in use for an extended period of time. Keep checking the battery as it may leak when used for extended periods of time. Replace the battery if it leaks.

## BASIC INFORMATION

Display	LCD
Display size	50x28mm
Polarity marking	Automatic display of "-"
Overrange indication	"OL" is displayed
Low battery indication	It will display " 
Range selection	Automatic or manual
Operating temperature	0°C to 40°C, less than 80% RH
Storage temperature	-10 °C to 50 °C, less than 80% RH
Battery type	2x AAA (1.5V)
Dimensions	154×75×35mm
Weight	approx. 182g including battery

## DESCRIPTION OF THE SYMBOLS

	Direct Current (DC)
	Alternating Current (AC)
	DC or AC
	Earthing
	Weak battery capacity
	Fuse
	Diode
	Continuity test
°C	Degrees Celsius
°F	Degrees Fahrenheit
	Double insulation
APO	Automatic shutdown
	Data storage

# TECHNICAL SPECIFICATIONS

Accuracy is guaranteed for 1 year at 23°C±5°C, less than 80%RH.

## AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200V	100mV	±(1.0% of rdg+5D)
600V	1V	

RESPONSE:

- Average response, calibrated in rms sine wave.

FREQUENCY RANGE:

- 40 Hz ~ 400 Hz

OVERLOAD PROTECTION:

- 600 V DC or 600 V rms for all ranges.

## DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200mV	0.1mV	±(0.8% of rdg+5D)
2V	1mV	
20V	10mV	
200V	100mV	±(1.0% of rdg+5D)
600V	1V	

Overload protection:

220 V rms AC for 200 mV range and 600 V DC or 600 V rms for all ranges.

## Temperature (with K-TYPE probe)

RANGE	RESOLUTION	ACCURACY
-40°C~150°C	1°C	±(1.0% + 4)
150°C~1370°C		±(1.5% + 15)
-40°F~302°F	1°F	±(1.0% + 4)
302°F~1999°F		±(1.5% + 15)

## DC CURRENT

RANGE	RESOLUTION	ACCURACY
2mA	1μA	±(1.5% of rdg+4D)
20mA	10μA	
200mA	100μA	
10A	10mA	±(2.0% of rdg+10D)

Overload protection:  
500mA/600V fuse or 10A/600V fuse

Voltage drop measurement: 200mV

Max. Input current:  
"INPUT" jack: 200mA  
"A" jack: 10A

(For measurements >5A: duration <10 seconds, interval >15 minutes)

Voltage drop: 200mA 10A range: 200mV

## RESISTANCE

RANGE	RESOLUTION	ACCURACY
200Ω	0.1Ω	±(1.0% of rdg+10D)
2KΩ	1Ω	
20KΩ	10Ω	
200KΩ	100Ω	
2MΩ	1KΩ	±(1.5% of rdg+10D)
20MΩ	10KΩ	

OVERLOAD PROTECTION: 15 seconds max. 220 V rms.

## BATTERY TEST

RANGE	RESOLUTION	INTERNAL RESISTANCE
12V	10mV	1200Ω
9V	10mV	900Ω
1.5V	1mV	75Ω

# OPERATING INSTRUCTIONS

## DC AND AC VOLTAGE MEASUREMENT

1. Connect the red test lead to the "INPUT" connector, the black lead to the "COM" connector.
2. Set the RANGE switch to the desired range, if the voltage to be measured is not known in advance, set the switch to the highest range and reduce it until a satisfactory reading is obtained.
3. Connect the measuring leads to the device or circuit being measured.
4. Turn on the power to the measured device or circuit the voltage value will be displayed on the digital display along with the voltage polarity.


## DC CURRENT MEASUREMENT

1. Connect the red test lead to the "INPUT" connector, the black lead to the "COM" connector. For measurements between 200 mA and 10A, connect the red wire to the "10A" jack.
2. Range switch to the desired DCA range.
3. Disconnect the circuit to be measured and connect the measuring leads in series with the load in which the current is measured.
4. The measured value is shown on the display.
5. The "A" function is for intermittent use only. The maximum contact time of the test leads with the circuit is 10 seconds, with a minimum interruption time between tests of 15 minutes.

## RESISTANCE MEASUREMENT

1. Connect the red test lead to the "INPUT" connector, the black lead to the "COM" connector.
2. Set the range switch to the desired  $\Omega$  range.
3. If the resistance to be measured is connected to the circuit, turn off the power supply and discharge all capacitors before measuring.
4. Connect the measuring leads to the circuit to be measured.
5. The measured value is displayed on the display

## DIODE AND CONTINUOUS MEASUREMENT

1. Connect the red test lead to the "INPUT" connector, the black lead to the "COM" connector.
2. Switch the RANGE switch to "
3. Connect the red measuring lead to the anode of the diode to be measured and the black measuring lead to the cathode.
4. The display shows the voltage drop in mV. If the diode is reversed, "OL" is displayed.
5. The instrument selects the diode test function by default. Press the SEL button to continue the test. If the value of the test object is less than 50  $\Omega$ , the meter will give an audible and light signal.

## TEMPERATURE MEASUREMENT

1. Switch the range to  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ , room temperature will be displayed.
2. Connect the K-type thermoelectric pair to the "INPUT" and "COM" connectors.
3. The display will show the temperature value  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ .
4. Press the "SEL" button to switch the temperature measurement unit. The default temperature measurement is in  $^{\circ}\text{C}$ .

NOTE: Thermocouple type TP-01 K Max. 250°C/482°F (300°C/572°F short term). The sensor supplied with the instrument is an extremely fast response thermocouple that is suitable for many general applications.

### BATTERY TEST

1. Connect the red test lead to the "INPUT" connector, the black lead to the "COM" connector.  
Note: The polarity of the red test lead is positive "+"
2. According to the different type of battery under test (1.5V, 9V, 12V), set the range switch to the desired BATT range.
3. Connect the test leads to the battery under test.
4. The result will be shown on the display. The polarity of the red test lead connection is displayed.

### "Hold/☼" function & Electric torch

1. When the "Hold/☼" button is pressed, the display will show the current reading and the "H" symbol will appear on the LCD display as an indicator in the meantime. To exit HOLD mode, press the button again and the "H" indicator symbol will disappear.
2. If you press the button for more than 1 second, the backlight will turn on, if you press the button again for more than 1 second, the backlight will turn off, if you take no action, the backlight will turn off after 30 seconds.
3. Long press the "SEL/☼" button to switch on the electric torch function and long press the "SEL/☼" button again to switch off the electric torch function.
4. Each time the button is pressed and the function switch is turned, the meter alerts with sound and light.

### NCV and N/L test

#### NCV:

Turn the function switch to the "Live" position, "EF" appears on the LCD display and the meter is ready to test the electromagnetic field strength.

When the front of the meter comes within 5 mm of the electromagnetic field, the meter will beep and a symbol will appear indicating the strength of the electromagnetic field. The stronger the electromagnetic field, the faster the beep and the longer the electromagnetic field strength indicator.

**Note:** This measuring instrument is only used to determine the presence of an alternating electric field. Because the test environment may be subject to ambient electric field disturbances or electric field disturbances caused by irregular wiring arrangements, this measurement method can only be used to determine the existence of dangerous voltages.

## **N/L: Assessment of live lines**

Turn the function switch to the "Live" <sup>NCV</sup> position, press the "SEL/⏻" button, the "L I U" symbol appears on the LCD display and the meter enters the live line measurement mode.


**WARNING!** This function is intended for testing live lines. This function may only be used by professionals, use by non-professionals is strictly prohibited!

### **Automatic shutdown:**

If you do not operate the meter for approximately 15 minutes, the meters will give an audible and light indication that the meter is about to shut off.

In the automatic shutdown phase, press the "SEL/⏻" button, turn on the meter with the rotary switch. You can cancel the auto-off function, the "⏻" symbol will disappear from the LCD display.

## **BATTERY AND FUSE REPLACEMENT**

1. Fuses rarely need to be replaced and are virtually always destroyed due to operator error.
2. If the symbol " " appears on the display, the battery needs to be replaced.
3. Replacing the battery: unscrew 1 screw at the bottom of the battery cover, simply remove the old battery and replace it with a new one. Take care to observe the polarity.
4. Replacing the fuse: Remove the case and remove the bottom cover of the meter to replace the fuse (500mA/600V or 10A/600V).

The product has been issued with a CE declaration of conformity in accordance with the applicable regulations.

On request from the manufacturer: [info@solight.cz](mailto:info@solight.cz), or downloadable from [www.solight.cz/en](http://www.solight.cz/en).

**Producer:** Solight Holding, s.r.o., Na Brně 1972, Hradec Králové 500 06, Česká republika