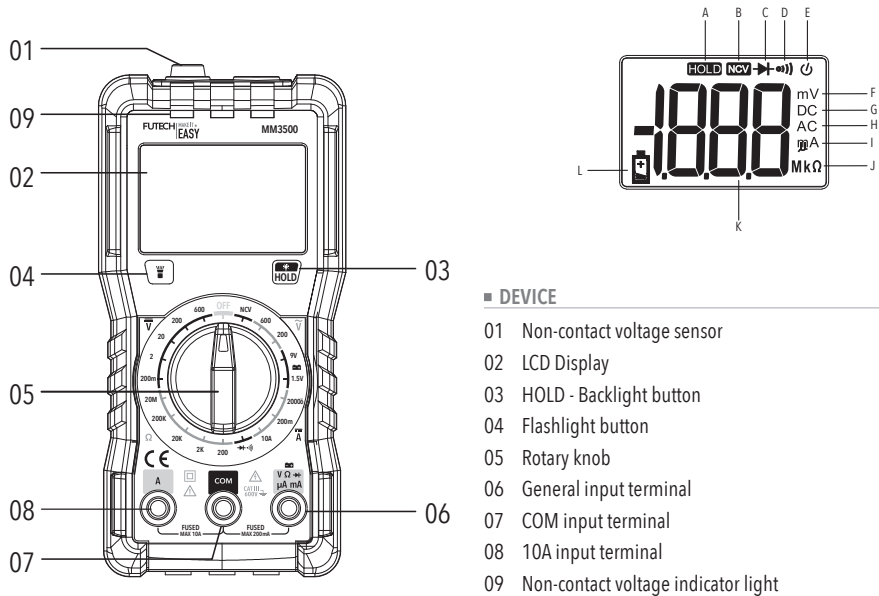


OVERVIEW



■ DEVICE

- 01 Non-contact voltage sensor
- 02 LCD Display
- 03 HOLD - Backlight button
- 04 Flashlight button
- 05 Rotary knob
- 06 General input terminal
- 07 COM input terminal
- 08 10A input terminal
- 09 Non-contact voltage indicator light

■ DISPLAY

- A Hold reading indicator
- B NCV indicator
- C Diode test mode indicator
- D Continuity test mode indicator
- E Automatic shutdown indicator
- F mV unit indicator
- G DC unit indicator
- H AC unit indicator
- I $\mu\text{A}/\text{mA}$ unit indicator
- J $\text{M}\Omega/\text{k}\Omega$ unit indicator
- K Main display line
- L Low battery indicator

SAFETY

Please read the safety instructions provided in the separate booklet provided with the device before using.

- Do not exceed 600V when making category III measurements.
- For all DC functions; to avoid the risk of electrocution due to incorrect readings, use the AC function first to confirm the presence of ANY AC voltage. Then, choose a DC voltage range equal or greater than the AC voltage.
- The input value must not exceed the input limit specified for each range to prevent damage to the instrument.

- Before switching the function range switch, the probes must be separated from the circuit under test.

NOTE

Using the device near large electromagnetic interferences, the reading of the instrument may be unstable. A large error may then occur.

BATTERY

This laser device uses 2x AAA Batteries.

NOTE

When not in use for a long time, please remove the battery and avoid storing it in a place with high temperature and humidity.

FIRST TIME USAGE

Remove all protection foils.

___ INSTALLING THE BATTERY

- Open the battery cover by unscrewing the singular screw.
- Insert 2x AAA batteries while respecting the correct polarities
- Close the battery cover and screw it back on.

USE

NOTE

For any measurement you make using this device. If you do not know what measuring range to use, set the rotary knob [05] to the maximum range, and then gradually reduce it until you reach the desired resolution.

■ HOLDING A MEASUREMENT

The Hold reading mode allows you to keep the current reading on the display. To enter Hold mode:

- Press the Hold-backlight button [03], the reading will be held and the indicator [A] will show on the display [02].
- Press the Hold-backlight button [03] again to return the instrument to its normal measurement state.



■ FLASHLIGHT FUNCTION

The device has a built-in flashlight to allow for operations in darker lighting conditions. To turn on the flashlight:

- Press the flashlight button [04] once to turn on the light
- Press the flashlight button [04] once more to turn the flashlight off again.



■ BACKLIGHT DISPLAY

In darker environments, you may turn on the display's built-in backlight. To do this:

- Press and hold the Hold-backlight button [03] for about three seconds.
- Press and hold the Hold-backlight button [03] again to turn off the backlight.

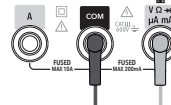


■ MEASURING DC VOLTAGE

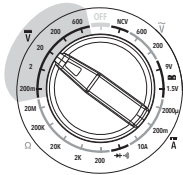
NOTE

ANY voltages above 600V cannot be measured to prevent electric shock and/or damage to the instrument.

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the general input terminal [06].



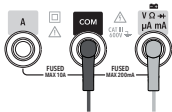
- Rotate the rotary knob [05] to face the required DC measurement range



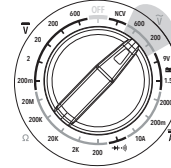
- Connect the other ends of the measurement probes to the circuit under test
- The measured voltage will be displayed on the main display line [K].

■ MEASURING AC VOLTAGE

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the general input terminal [06].



- Rotate the rotary knob [05] to select the required AC measurement range.



- connect the other ends of the measurement probes to the circuit under test to measure the circuit under test.
- The measured voltage value is displayed on the main display line [K].
- If the manual voltage mode is used, the knob [08] needs to be rotated to the appropriate range. Measuring AC will display both voltage and frequency. Measuring DC will display both voltage and the polarity of the measurement

NOTE

If the display reads "OL" it means you have measured a value outside of your selected range.

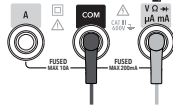
■ MEASURING DC CURRENT

NOTE

The warning symbol next to the input terminal indicates that the maximum input current is 200mA or 10A depending on the terminal used, ignoring this limit may blow your fuse.

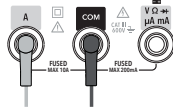
MEASUREMENTS UNDER 200mA

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the general input terminal [06].

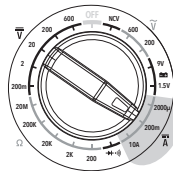


MEASUREMENTS BETWEEN 200mA AND 10A

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the 10A input terminal [08].



- Rotate the rotary knob [05] to face the required A $\overline{\overline{=}}$ measurement range.

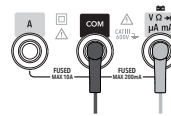


- Connect the other ends of the measurement probes in series to the circuit under test.

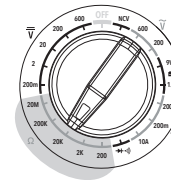
- The measured current and polarity will be displayed on the main display line [K].

MEASURING RESISTANCE

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the general input terminal [06].



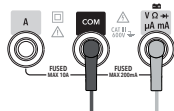
- Rotate the rotary knob [05] to select the required Ω measurement range.



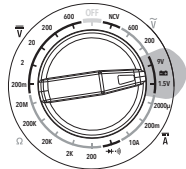
- connect the other ends of the measurement probes to the resistance under test to measure Ω .
- The measured resistance is displayed on the main display line [K].

■ BATTERY MEASUREMENT

- Connect the black measurement probe to the COM input terminal [07] and the red probe to the general input terminal [06].



- Rotate the rotary knob [05] to select the relevant measurement range in the battery measurement mode.



- The other end of the red probe connects to the "+" terminal of the measured battery and the black probe connects to the "-" terminal.

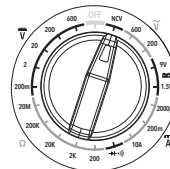
The measured battery voltage will then be displayed on the screen [02].

NOTE

Do not input a voltage more than DC 60V or AC 30V to avoid damage to the meter and personal injury.

■ NCV MEASUREMENT

- Rotate the rotary knob [05] to face the NCV measurement mode.



- Hold the NCV sensor [01] near the test area.

If the instrument detects AC voltage, it will light up the signal strength indicator [09] according to the detected signal strength.

- Sensing low voltage, the indicator [09] will light up green and the display [02] will show "-- L".
- Sensing high voltage, two indicators [09] will light up red and the display [02] will show "-- H". The buzzer will also sound an alarm.

NOTE

Even if no indication is shown, voltage may still exist, do not rely on non-contact voltage detectors to determine if a wire has voltage. Detection operations may be affected by many factors such as socket design, insulation etc...

The voltage sensing indicator may also light up due to the presence of induced voltage

Interfering sources in the environment such as flashing lights, may trigger NCV detection by mistake.

TECHNICAL SPECIFICATIONS

Accuracy: \pm % Reading digits, guaranteed for one year from the date of shipment.

Ambient temperature: 18°C to 28°C. Environment humidity: < 80%.

■ CONDITIONS FOR USAGE

MODEL	MM6500
Protection	600V CAT. III
Fuse	F 200mA/250V F1 0A/250V
Operating environment	Temperature: 0°C - 40°C Relative humidity: <80%
Storage environment	Temperature: -10°C - 50°C Remove battery before long time storage
Temperature coefficient	0.1 accuracy <18 °C or >28°C
Max display value	1999
Power supply	2 x 1.5V AAA Batteries
Dimensions	150 x 70 x 50 mm
Weight	195g

■ PRECISION INDEX

— DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200mV	0.1mV	\pm 0.5% reading + 2 digits
2V	0.001V	
20V	0.01V	
200V	0.1V	
600V	1V	\pm 0.8% reading + 2 digits

Overload protection: PTC 600V DC or AC RMS.

— DC CURRENT

RANGE	RESOLUTION	ACCURACY
2000 μ A	1 μ A	\pm 1.0% reading + 2 digits
200mA	0.1mA	\pm 1.5% reading + 2 digits
10A	0.01A	\pm 3.0% reading + 2 digits

Overload protection: F200mA/250V Fuse F10A/250V Fuse.

___ AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200V	0.1V	± 1.2% reading + 10 digits
600V	1V	

Overload protection: PTC 600V DC or AC RMS.

Frequency Range: 40Hz to 400Hz.


Display: Average (sine wave RMS).

___ RESISTANCE

RANGE	RESOLUTION	ACCURACY
200Ω	0.1Ω	± 0.8% reading + 2 digits
2kΩ	0.001KΩ	
20kΩ	0.01KΩ	
200kΩ	0.1KΩ	± 1.2% reading + 3 digits
20MΩ	0.01MΩ	

Maximum open circuit voltage: 2.4V.

___ DIODE AND CONTINUITY TEST

FUNCTION	DESCRIPTION
	Continuity test and diode measurement are executed in smart mode without the need to press any switching button; when the measured resistance is less than about 30 ohm, it displays the on-resistance value, while the internal buzzer beeps, and the continuity indicator [09] (green LED) lights; When measuring a diode, the approximate diode forward voltage is displayed.

Overload protection: PTC 600V DC / AC RMS.

___ NCV NON-CONTACT AC VOLTAGE DETECTION

RANGE	DESCRIPTION
Low field	Display-L, NCV indicator [09] (green LED) lights, and the buzzer sounds an alarm.
High field	Display-H, NCV indicator [09] (two red LEDs) lights, and the buzzer sounds an alarm.

___ NCV NON-CONTACT AC VOLTAGE DETECTION

RANGE	DESCRIPTION
1.5V	The load resistance is about 100, showing the battery voltage value.
9V	The load resistance is about 400, showing the battery voltage value.





DECLARATION OF CONFORMITY

Futech (Belgium) declares under its own responsibility that this device:

- MM3500 Multimeter

is in conformity with the standards

- EN61326-1:2013
- EN61326-2-2:2013
- EN61000-3-2:2014
- EN61000-3-3:2013
- EN61010-1:2010
- EN61010-2-030:2010
- EN61010-2-033:2012

under directive

EMC - 2014/30/EU

EMC - 2014/35/EU

Lier, Belgium,
March 30, 2023
Patrick Waüters

USER MANUAL

other languages:



DA DANSK



DE DEUTSCH



ES ESPAÑOL



ET EESTI KEEL



FI SUOMEN KIELI



FR FRANÇAIS



IS ÍSLENSKA



IT ITALIANO



NL NEDERLANDS



NO NORSK



PT PORTUGUÊS



SL SLOVENŠČINA



SV SVENSKA



Facebook
@futechtools



LinkedIn
futechtools



World Wide Web
futech-easy.com



YouTube
@futechtools