

Online Capacity Tester MK70 User and PC-Software Manual



Introduction:

With this processor controlled capacity tester you can measure the the C20 capacity of the 12V battery. The discharge current will be set automatically. For batteries below 25Ah C20 capacity it will be the C1 rate (e.g. for 18Ah battery it will be 18A). For batteries above 25Ah C20 capacity the discharge current will always be 25A. The cut off voltage (The voltage limit where you want to stop the discharge) is set to 1,6V / cell. The tester calculates the C20 capacity referring to the Peukert values of the battery.

As a further option you can also make a single cycle test of the battery. You can set the charging in hours. In the menu of the tester you decide if you start with a charge or discharge cycle. Starting with a charge cycle, the battery will be charged until the programmed charging time is over. The battery then will be discharged with the related C20 discharge current until 1,6V / cell. Finally the battery will be charged again. If you start with a discharge cycle the battery will also be charged after discharge.

If you set the charging time to "0 hours", the battery will only be discharged.

The test results are saved to the USB stick connected to the tester.

The standard delivery includes the battery tester MK70 and a USB stick with software CD and the user manual.

24V Charge test connection is also included.

Control buttons



Display change:
Press button to change the next menue



START STOP:
Will run the menu command



Up - Button:



Down - Button:

Will be used in a menu to change value.

Start up procedure

Software installation

Start the installation file.

Connecting the tester to the battery

Use the red crocodile lead to connect to the positive terminal of the battery and the black to connect to the negative terminal. After connecting the tester to the battery you can see the software version and the serial number of the tester for a few seconds. After that, you will be able to see the voltage of the battery connected on the display.

Menu System:

The main menu consists of 8 screens. You can change between the screens with the Display Change button.

1. Voltage screen

This shows the voltage of the battery that you have connected.

2. Battery a/h capacity screen

This screen allows you to set the C20 a/h capacity of your battery. You do this by pressing the yellow the Up/Down button. If the C20 a/h capacity of the battery is not defined on the labelling of your battery please ask your battery dealer for the correct value.

3. Discharge

The battery you wish to test needs to be fully charged before you start the test. Press Start/Stop button if you want to start the discharge test. Remember to set the correct a/h capacity of the battery in screen 2 before starting the discharge test.

4. Charging time

If you wish to start a test with a charger attached you will need to select a charge time. You can change the charging time between 1-16 hours using the yellow Up/Down button. **ATTENTION: Please make sure that this is set to 00 if you are just using the Discharge option to test one battery.**

5. Charging

This option has three stages; it will charge the battery, discharge the battery and then charge the battery again. You will need to set the correct a/h capacity of the battery in screen 2 and then set a charge time in screen 4. Attach a 12 volt charger to the

positive and negative charger plugs on the front of the tester. Press Start/Stop to start the test. Remember to turn the charger on after you have pressed start.

6. 24V Charger test

This option will allow you to watch/record the charging curve of a 24 volt charger and charge two 12 volt batteries. You can then see the amps and volts that the charger produces over a set charge time. You need to connect a 24 volt charger to the positive and negative charger plugs on the front of the tester and also connect two batteries. To connect two batteries to the tester you need to connect the red positive crocodile clip to the positive of one battery and the black negative crocodile clip to the negative of the other battery. You then need to link the spare positive terminal of one battery and spare negative terminal of the other with the link cable included in your MK tester box. Press Start/Stop to start the test, remember to make sure that you set a charge time in menu screen 4 and turn your charger on after you press start.

7. Pendrive (USB stick) suspend

This function must be used before remove the USB stick from the tester. If the Pendrive is not suspended, it may happen that the measured data will be lost.

8. Read Test Results

The MK tester will store your last three test results. Press Start/Stop and you can view each of the three results. You will be able to see the a/h capacity of the tested battery, % Pass or Fail of the battery and how many minutes the test ran for. Press the Display Change button to cycle through the three results. Test one is the last test that you completed. To exit this menu press Start/Stop.

During the test:

During the test you can see the following on the tester screen:

Elapsed time: This is the time since the beginning of the actual process (charging or discharging)

Voltage: The voltage of the battery (during discharging), or the actual charging voltage (during charging)

% capacity of your battery you will see the calculated C20 capacity.

When the battery test is finished, the tester will show the as a test result the indication "Pass" or "Fail". Battery <60% will be indicated as "Fail"

You can stop the discharge or charge any time if you press the start/stop button.

Technical Data:

| | |
|-----------------------------------|-------------------------------|
| Measured Voltage Range | 6V – 18 V |
| Max. Input Voltage | 16V |
| Min Input Voltage | 6 V |
| Discharging current (0,1 – A) | 0,3 – 25 A |
| Current accuracy | $\pm 2 \% \pm 0,05 \text{ A}$ |
| Voltage accuracy | 2% |
| | |
| Cut off voltage | 6 – 15 V |
| Charging time | 1 h – 99 h |
| Max Number of cycles | 1 |
| Dimensions | 200 x 140 x 90 mm |
| Weight | 1,5 kg |

PC-Software instruction:

With this software you can download the measured data of the Capacity tester, draw and print charging / discharging curves or test documentation. The device reads the measurement data through USB port (or USB port in case of MK-2 testers)

Minimum hardware requirements

Pentium I processor, 32 MByte RAM
2 MByte free capacity on the hard drive
VGA adapter, 800x600 resolution with 256 colour.

Recommended hardware requirement:

Pentium II processor, 64 MByte RAM
SVGA graphics adapter, 1024x768
Pentium II processor, 64 MByte RAM
SVGA adapter, 1024x768 resolution 32K color depth

Operation system::

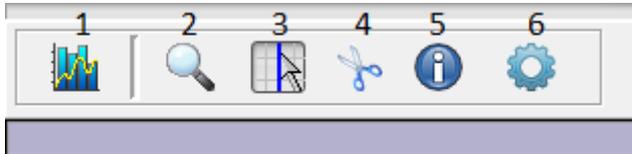
Windows 9x / ME / 2000 / XP / WINDOWS 7 / WINDOWS 8

FILE MENU

| | |
|-----------------|--|
| Open - | Open the data file (*.AKK) |
| Save | Save file to directory |
| Export to Excel | To create a Microsoft Excel .xls file. |
| Test report | Creates a complete test report, with discharge curve. |
| Settings | To change the language or graph colors |
| Correction | To set the current and voltage correction values Set the correction values. The software re-calculates all the values (I, U) according to the selected correction. Voltage: It multiplies ALL voltage values with the multiplier, or adds the offset value. Current: It multiplies ALL current values with the multiplier, or adds the offset value. |
| Rename | Renames the data file. |

Measurement file

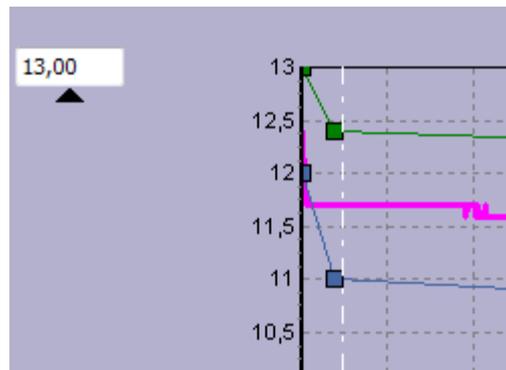
After opening a data file (*.AKK) there are several possibilities.



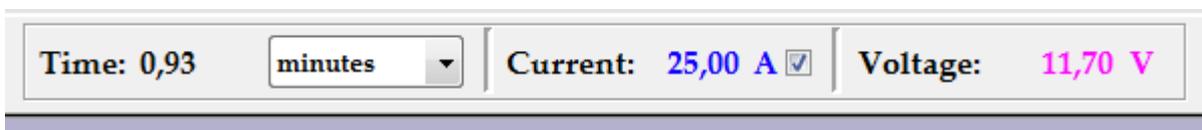
1. Returns to the original graph size.

2. Zoom tool Zooms any part of the graph

Zooming is also possible by altering the minimal and maximal values on the X or Y axes



3 Marker tool With this tool you can see the measured time/voltage/current values of any point of the measurement.



4. Cut tool

To cut any part of the graph

5. Info

To see the measurement information

6. Graph settings

TEST REPORT



By clicking the test report button () , a new window will be opened, where you can see the test report of the measurement.

Here you can put your company logo , company data, and all parameters of the measurement. It also shows the graph of the measurement , and results of the test.

At the bottom there are four buttons :

1

2

3

4



1. Print the test report
2. Save the graph as a BMP file
3. Save the test report in as PDF
4. Copies the graph to the clipboard