

OPERATION MANUAL

Constant Current Load Tester
36V100A



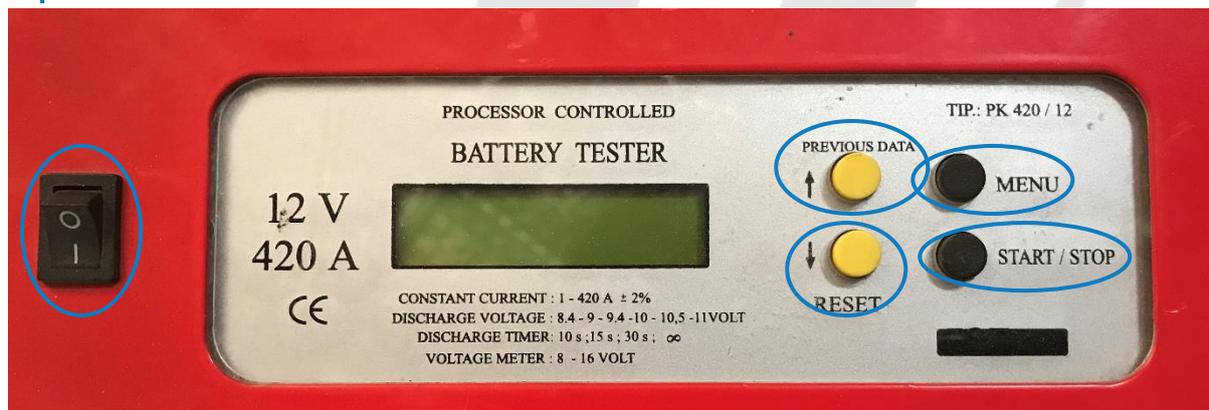
General Description

This tester is used for examination of the starting ability of 36V batteries, measurement of the 1-20Ah capacity or of the reserve capacity, and the controlling of 36V generators.

Technical Parameters

Discharging Currents	1A to 28A with 1A steps, 301A to 100A with 5A steps
Current Stability	Better than $\pm 2\%$ or $\pm 0.2A$
Cut-off Voltage	1VPC to 1.95VPC with 0.05VPC Steps
Switch Off Voltages	22.5V-27V, 47.4V-48V 10% current accuracy
Voltage Measuring Accuracy	22.5V to 34.2V (in 0.6A steps)
	Between 22.5V to 48V
Discharging Time	Better than 1% (if the voltage is over 25.2V) Below 25.2V the current error changes according to the voltage
Sampling Time	1 to 60 seconds with 1 second step, or infinite time
Discharged Ah Measurement	0.1 to 360 seconds
No. of Possible Measurement	0.1Ah to 100000Ah 0.4% accuracy
Parallel Connection	15
Dimensions	Max. 4 testers at a time (paralleling unit is an option) 260 x 220 x 270mm

Operational Device



- Ⓞ **ON/OFF** to switch the tester on and off
- Ⓞ **START/STOP** starts or stops measuring
- Ⓞ **RESET** clears the measuring result from the display
- Ⓞ **PREVIOUS DATA** shows result of last measurement
- Ⓞ **MENU** starts the menu for setting parameter

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🌐 valen.com.au

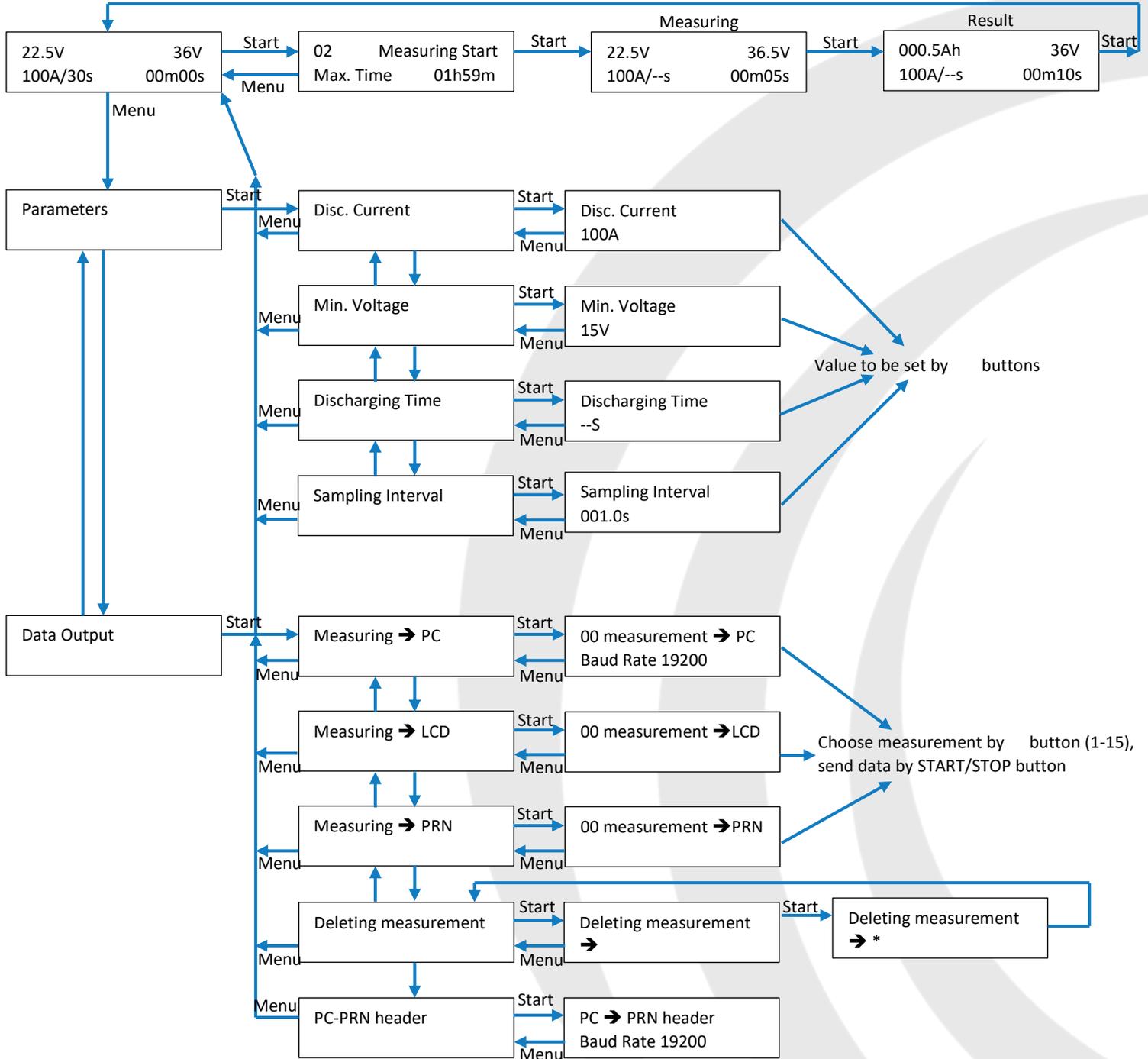
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Menu System



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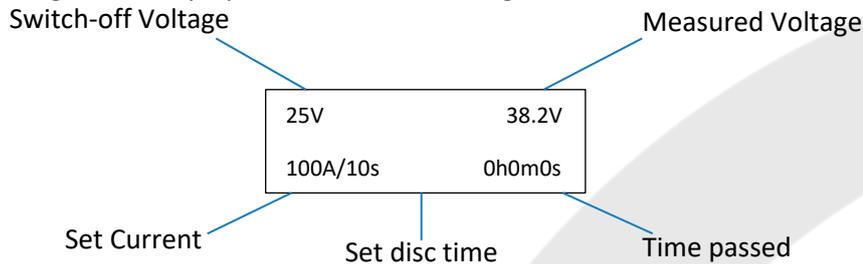
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Setting up for Measuring

When switching on the display, it shows the following:



Press START for a measure that equals in all parameters of the former measure. The possible maximum measuring time appears on the display. If this corresponds to the expected measuring time, then press START again for 1 second then the measuring starts. At the end of the test the display shows the a kivett Axh-t and the time of measuring. If the expected measuring time is longer than the disposable storage time, then by the help of the MENU button it is possible to get back to setting parameters or deleting the memory.

For a measure of new parameters, set the necessary data in the following way. When the starting picture appears press MENU, and at Parameters press START to enter the parameters menu to set the test parameters.

- Ⓒ Discharge current
- Ⓒ Discharge cut-off voltage
- Ⓒ Discharge time: no time limit when setting infinite, measuring only stops when voltage reaches the limit.
- Ⓒ Sampling time

Stepping between the parameters is possible by $\uparrow\downarrow$ buttons. The required parameters can be chosen by the START button. The desired value can be set by the $\uparrow\downarrow$ buttons. Stepping 'upwards' in the menu is possible by the MENU button. After setting any parameter you can exit the setting parameters menu by pressing the MENU button, without stepping over to the end of the row of parameters.

For example; setting the discharge current from 80A to 100A is possible by the following buttons starting from the initial page on the display: MENU – START – START – $\uparrow\downarrow$ – MENU – MENU.

You can follow the voltage of the battery and the passed time of the measure on the display.

You can stop measuring by pressing the STOP button at any time. For restarting, we have to delete the Ah by pressing RESET or START button. By another pressing of the RESET button, the temporary voltage is displayed.

Testing of Starting Ability: Load the battery with half of the starting current suggested in EN for 15seconds. During this time the voltage of the battery able to start cannot fall under 28.8V, not even after 2-3 following loads.

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Measuring Capacity

Reserve Capacity: set the voltage limit to 31.5V 25A load current, infinite time and e.g. 1minute sampling time, then start the measure according to the above. At the end of the measuring, we can read the measured battery's reserve capacity (RC) in minutes.

Measuring by 1xC-: Set 28.8V bottom voltage, 1xC(A) discharge current, infinite time and e.g. 1minute sampling time, then start measuring. By the T/min. shown at the end of the measuring the 20hour capacity can be easily calculated with a simple antecedent. At 100% wet batteries can provide 1xC for 35minutes.

Data Loading

During the test, the tester stores the measured data in its own memory. The stored data can be loaded to the PC by the RS232 serial port for further analysis, printing or storing.

The PC's programme (AKKU.EXE) does not need installation, it is enough to save it to a HDD. Connect the tester through an RS232 serial port. Start the AKKU.EXE programme on the PC. Set the serial port in the software. Press FILE-Read Measure menu or Read Measure icon, then set the transfer speed to 19200 baud. Pressing the MENU -↓- START – START buttons on the tester, step into 'Test > PC' menu, then if you've made several tests, select the required test by the ↑↓ buttons. Then press the START button. Test results are then downloaded to the PC and then can be analysed in the programme.

Data Transfer

The test results can be downloaded in the menu to PC, by displayed, or can be printed directly to an SP printer. It is possible to set the heading of the printed test result tape here, that can be downloaded from the PC programme to the tester.

It is possible to reset tests in the same menu. When deleting, all tests will be deleted at the same time. When using the data transfer menu, please follow the instructions in the Menu system.

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Self-Checking Function

At the end of the test, the tester switches on the relays used during the test one by one, to check if they operated correctly. If the test was longer than 3seconds. If there is a wrong connection or relay, it displays an error message. This is possible to clear with the RESET button and the test results can be seen, but it is possible that the discharge current was less than what was selected because of a relay fault. Repeat the test and have the tester repaired.

Systems of Testers:

- ☉ The elements of the system are 12V420A testers that can function one by one as separate testers, it is possible to connect a max. of 4 testers at a time to the paralleling device by the help of an RS232 cable. One of the 4 testers is of an advanced function tester, a so-called Master, while the other three are of equal positioned Slaves.
- ☉ A master always has to have a tester connected to it. The number of Slaves can be 1, 2, and 3 depending on the necessary discharge current.
- ☉ The below table shows the possible discharge currents:

Slave	Max. Current	Min. Current	Max. Current by Infinite Time
1	840A	200A	320A
2	1260A	300A	480A
3	1680A	400A	640A

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