

# OPERATION MANUAL

Constant Current Load Tester  
48V100A



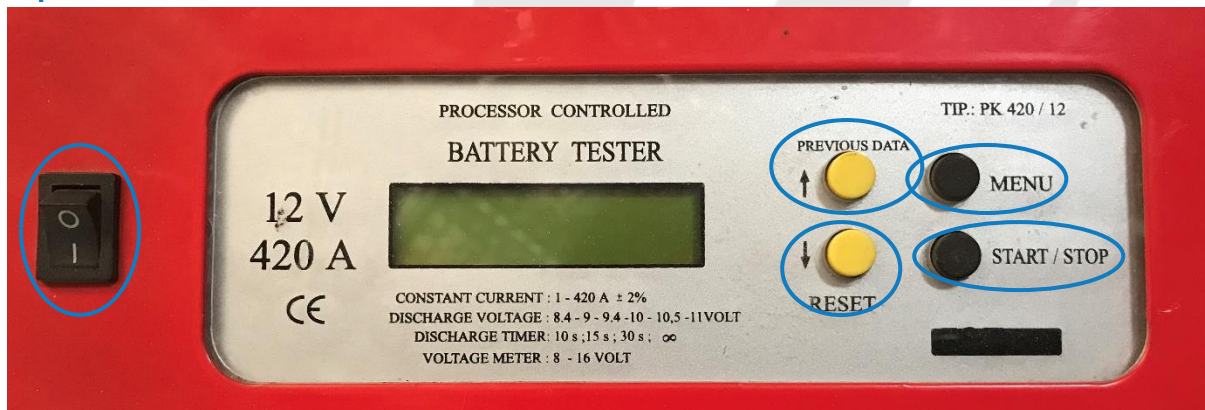
### General Description

This tester is used for examination of the starting ability of 48V batteries, measurement of the 1-20Ah capacity or of the reserve capacity, and the controlling of 48V generators.

### Technical Parameters

Discharging Currents	1A to 20A with 1A steps, 20A to 100A with 5A steps
Current Stability	Better than $\pm 2\%$ or $\pm 0.2A$
Average Current Accuracy	$< \pm 1\%$ or $\pm 0.1A$
Cut-off Voltage	1VPC to 1.95VPC with 0.05VPC Steps
Switch Off Voltages	30V-36V, 55.2V-64V 10% current accuracy
Voltage Measuring Accuracy	30V to 45.6V (in 0.6A steps)
Discharging Time	30V to 64V
Sampling Time	$< 1\%$
Discharged Ah Measurement	1 to 20 hours with 1 hour step, or infinite time
No. of Possible Measurement Parallel Connection	0.1 to 240 seconds
	0.1Ah to 100000Ah 0.4% accuracy
	15
	Max. 4 testers at a time (paralleling unit is an option)

### 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

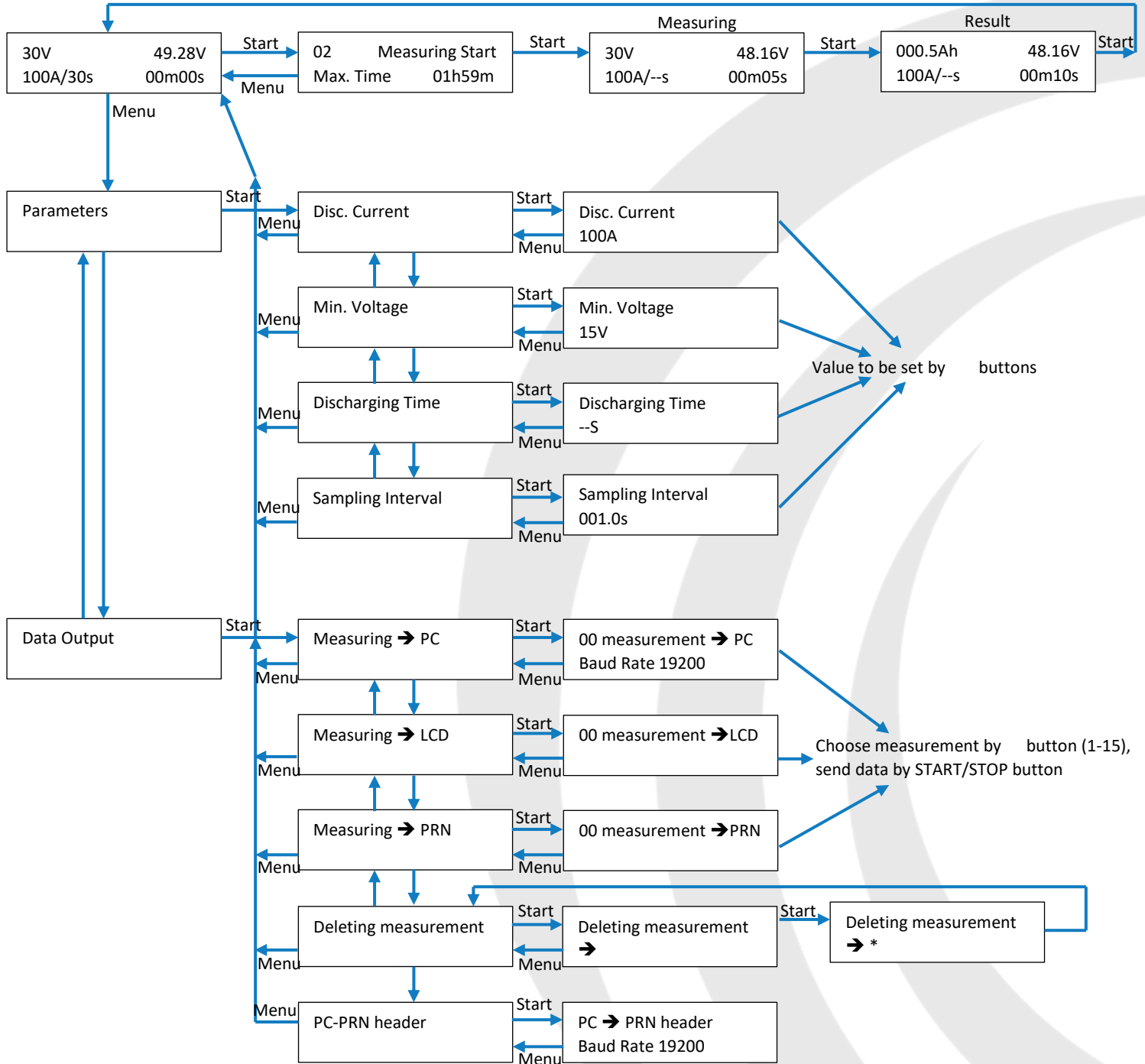
#### AUSTRALIA:

☎ 1300 734 253  
 ✉ sales@valen.com.au  
 🌐 valen.com.au

#### NEW ZEALAND:

☎ 0800 734 253  
 ✉ sales@valen.co.nz  
 🌐 valen.co.nz

### Menu System



#### AUSTRALIA:

☎ 1300 734 253  
✉ sales@valen.com.au  
🌐 valen.com.au

#### NEW ZEALAND:

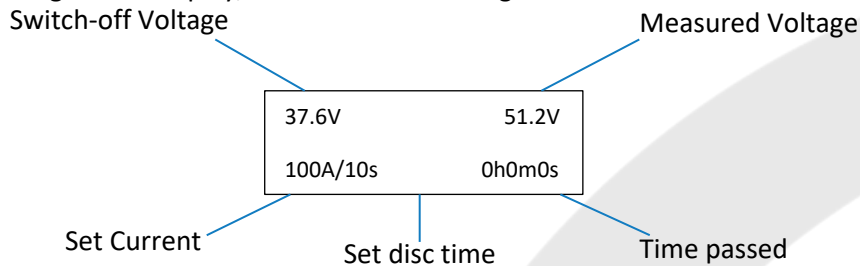
☎ 0800 734 253  
✉ sales@valen.co.nz  
🌐 valen.co.nz



End-to-End Solution Provider of  
Industrial Batteries & Energy Storage

### 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 measurement, 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 memory.

### Measurement of New Parameters

Set the necessary data in the following way:

At the start screen, press the MENU BUTTON, and at Parameters, press the START button. From this, you enter the menu where you can set 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 the up and down arrows. The required parameter can be chosen by the START button. The desired value can be set by the up and down arrows. Stepping 'upwards' in the menu is possible by pressing the MENU button.

After setting any parameter you can exit the setting parameters menu point 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 – ↑ – ↑ – MENU – START

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

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

### Suggested Testing of Starting Ability

Load the battery with half of the starting current suggested in EN for 15 seconds. During this time, the voltage of the battery able to start cannot fall under 38.4V, not even after 2-3 following loads.

#### AUSTRALIA:

- ☎ 1300 734 253
- ✉ sales@valen.com.au
- 🌐 valen.com.au

#### NEW ZEALAND:

- ☎ 0800 734 253
- ✉ sales@valen.co.nz
- 🌐 valen.co.nz



End-to-End Solution Provider of  
Industrial Batteries & Energy Storage

## Measuring Capacity

### Reserve Capacity

Set the voltage limit to 42V, 24A load current, infinite time and e.g. 1 minute sampling time, then start the measurement. We can read the battery's measured reserve capacity (RC) in minutes.

### Measuring by 1xC-

Set 38.4V bottom voltage, 1xC(A) discharge current, infinite time and e.g. 1 minute sampling time, then start the measurement. By the T/min shown at the end of the measurement, the 20 hour capacity can easily be calculated with a simple antecedent. At a 100%, wet batteries can provide 1xC for 35 minutes.

## 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 RS232 serial port for further analysis printing or storing.

The PC's programme (AKKU.EXE) does not need installation, it is enough if you save it to a HDD. Connect the tester through an RS232 port. Start the AKKU.EXE programme on the PC. Set the port in the software.

Press FILE – Read Measure menu or Read Measure icon, then set the transfer speed to 19200 baud. Press the MENU – ↓ – START – START buttons on the tester, step into Test – PC menu point, then if you have made several tests, select the required test by the ↑ ↓ buttons. Then press the START button. Test results are then downloaded to the PC and can be analysed in the programme.

## Data Transfer

The test results can be downloaded in the menu point to PC, be displayed, or can be printed directly to a 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 point. When deleting, all tests will be deleted at the same time. When using the data transfer menu, please follow the instruction in the menu system.

## 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 3 seconds. 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 the selected, because of a relay fault. Repeat the test and have the tester repaired.

### AUSTRALIA:

☎ 1300 734 253  
✉ sales@valen.com.au  
🌐 valen.com.au

### NEW ZEALAND:

☎ 0800 734 253  
✉ sales@valen.co.nz  
🌐 valen.co.nz



End-to-End Solution Provider of  
Industrial Batteries & Energy Storage

## Systems of Testers

The elements of the system are 48V/100A testers, that can function one by one as a separate tester. It is possible to connect maximum 4 testers at a time to the paralleling device by the help of an RS232 cable. One of the 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 or 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

### AUSTRALIA:

☎ 1300 734 253  
✉ sales@valen.com.au  
🌐 valen.com.au

### NEW ZEALAND:

☎ 0800 734 253  
✉ sales@valen.co.nz  
🌐 valen.co.nz



End-to-End Solution Provider of  
Industrial Batteries & Energy Storage