

OPERATION MANUAL

CONSTANT CURRENT LOAD TESTER (CCOLT) 24V100A

Version: 4.0



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The story so far.

Regal Electro was first founded in 1981 in Cape Town, South Africa, supplying mostly security components and batteries to security installers. In 1998, the business was sold and the Managing Director, Philip Daries, immigrated to Australia. The year 1999 saw the opening of the newly renamed Regal Electro, a battery and security component supplier based in Lake Cargelligo, NSW.

Over the next few years, it became apparent that there was a growing need in the industry for a battery supplier who knew not only the characteristics of various technologies, but also understood the technical manufacturing procedures to ensure a quality product.

The growing team at Regal Electro worked to position the company as a premium supplier of fine energy solutions, offering a complete packaged solution to a wide range of clients.

In 2009, Regal Electro opened its very own custom built premises in Hallam, VIC to ensure fast service and delivery to its clients. 2010 saw the establishment of a presence in New Zealand.

To keep up with every-increasing growth, the Lake Cargelligo Head Office moved into a brand new purpose built facility in 2012. In 2015, Regal Electro successfully completed its first ENLIFEN Energy Storage Optimiser (ESO) prototype which was put proudly on display at the Comms Connect Exhibition in Melbourne.

In 2017, Regal Electro went through another major change with the rebranding and reinvigorating of its core product range, Power Charge. The Power Charge range was renamed Valen, which in Latin means 'Power'. Brisbane operations also began at this time.

A Sydney head office and logistics centre was opened in Lawson in April 2018 with the view to further improve the level of service offered to clients.

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In July 2018, Regal Electro made the key strategic decision to go through another rebranding and changed the company name to Valen. This decision was made to strengthen the brand and recognition within the industrial battery market.

As of today, Valen has grown exponentially since its humble beginnings to become a trusted advisor to clients throughout Australia and New Zealand. Valen is an industry leader in energy storage for mission critical applications and continues to innovate and evolve, keeping abreast of new technologies as they emerge.

A company built on its Core Values.





Wow Customers through Service

- Our customers want service and we want our employees to go above and beyond for our customers.
- We expect our employees to deliver a WOW experience with customers.



Move Fast & Remain Focused to Get Results

- We are serious about results and we must never lose focus on our goals and our sense of urgency to achieve.
- Do something once and do it right.
- We believe in working hard and putting in extra effort to get things done.



Upbeat Positive Attitude

- If our employees have a positive attitude and constantly strive to give your best effort, eventually we will overcome our immediate problems and find you are ready for greater challenges.
- Positive and negative are directions that lead to different outcomes. We expect our employees to move in the right direction each day.



Challenge the Status Quo

- We are committed to great results and good is the enemy of great. We want our employees to embrace & drive change



Play as a Team

- Working effectively as a team creates momentum, improves morale.
- The difference between success and failure is a great team and we expect our employees to work together as a team.





THANK YOU FOR INVESTING IN A 24V CCOLT BATTERY TESTER

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INTRODUCTION

The Valen Constant Current Load Tester (CCOLT) is designed for use on larger batteries battery systems testing their performance by applying a constant current load. Current drain, cut-off voltage and duration can be manually pre-set with the CCOLT monitoring voltage and time elapsed during a test to give an absolute and accurate result of the battery performance.

The CCOLT will automatically disconnect the load once the selected cut-off voltage is reached. Tests may be downloaded via software for filing, reporting or analysing the results.

A hard protective carry case with foam insert cut to the shape of the Valen CCOLT is also available. This case is ideal for technicians who need to travel to ensure the CCOLT remains protected and undamaged.





TECHNICAL PARAMETERS

Discharging Currents	1A to 20A with 1A steps, 20A to 100A with 5A steps	
Current Stability	Better than ±2% or ±0.2A	
Cut-off Voltage	1VPC to 1.95VPC with 0.05VPC steps	
Switch Off Voltages	15V to 22.8V (in 0.6A steps)	
Voltage Measuring	Between 15V to 32V	
Accuracy	Better than 1% (if the voltage is over 16.8V) Below 16.8V the current error changes according to the voltage	
Discharging Time	1 to 20 hours with 1 hour step, or infinite time	
Sampling Time	0.1 to 240 seconds	
Discharged Ah Measurement	0Ah, 1Ah to 100000Ah 0.4% accuracy	
No. of Possible Measurement	15	
Parallel Connection	Max. 4 testers at a time (paralleling unit is an option)	



- 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 results of last measurement
- Menu: starts the menu for setting parameter



BASIC CASE

BASIC CASE

Pressing the button for 2s you enter sending data





DATA SENDING





SETTING UP FOR MEASUREMENT

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 tme 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

At the starting screen, press the MENU button. The cursor will blink at the switch-off voltage. With the ♥↑ buttons on the display, you can set the proper final voltage. For the measurement of a general starting ability the switch-off voltage is 9.6V.

By pressing the MENU button again, the cursor jumps to the discharge current. Now you can set the constant flowing current using the \oint button. Generally, for measuring the starting ability, set the half of the starting current value EN/2 given according to the EN standard.

By pressing the MENU button again, you can set the time of discharging. The range can be set from 1-60 seconds or in case of measuring capacity, to infinite time. For measuring the starting ability set 15 seconds in general. By pressing the MENU button again, you'll get back to the basic screen, where by pressing the START button you can start the test.

You can stop the measuring by pressing the STOP button at any time. For restarting we have to delete the Ah by pressing the RESET or START buttons.

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 19.2V. Not even after 2 to 3 following
- loads

Measuring reserve capacity:

- Set the voltage limit to 21V, 25A load currency, infinite time and e.g. 1 minute 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 9.6V bottom voltage, 1xC (A) discharge current, infinite time, and then start measuring
- By the T/min. shown at the end of measuring the 20 hour capacity can be easily calculated with a simple antecedent. At the 100% wet batteries can provide 1xC for 35 minutes

Generator testing (optional):

- Connect the tester to the battery installed in the car. Set the voltage limit to 10.5V, current to 1A, time to infinite /--/. Start the tester.
- The current can be set under loading, by this defining the load capacity of the generator (up to 13.6V).



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 serial port. Start the AKKU.EXE programme on the PC. Set the serial port in the software.
- Press FILE-Read measure menu ior Read measure icon, then set the transfer speed 19200 baud. Pressing the MENU ↓ START START buttons on the tester, steps into 'Test > PC' menu point, and then if you have made several tests, the required test by using the ↓ buttons. Then press the START nutton. Test results are then downloaded to the PC and can be analysed in the program.

Data Transfer:

- The test results can be downloaded in the menu point to PC, be displayed, or can be printed directly to a SP
 printer. It is possible to set the heading of the printed test result tape here, that can be downloaded from the PC
 programme o the tester.
- It is possible to reset tests in the same menu point. When deleting, all the 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 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 12V42OA 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 paralelling device by the help of an RS232 cable. One of the 4 testers is of an advaned funcion 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 currents.
- 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