



OPERATION MANUAL

RE856 BATTERY TESTER

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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.

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

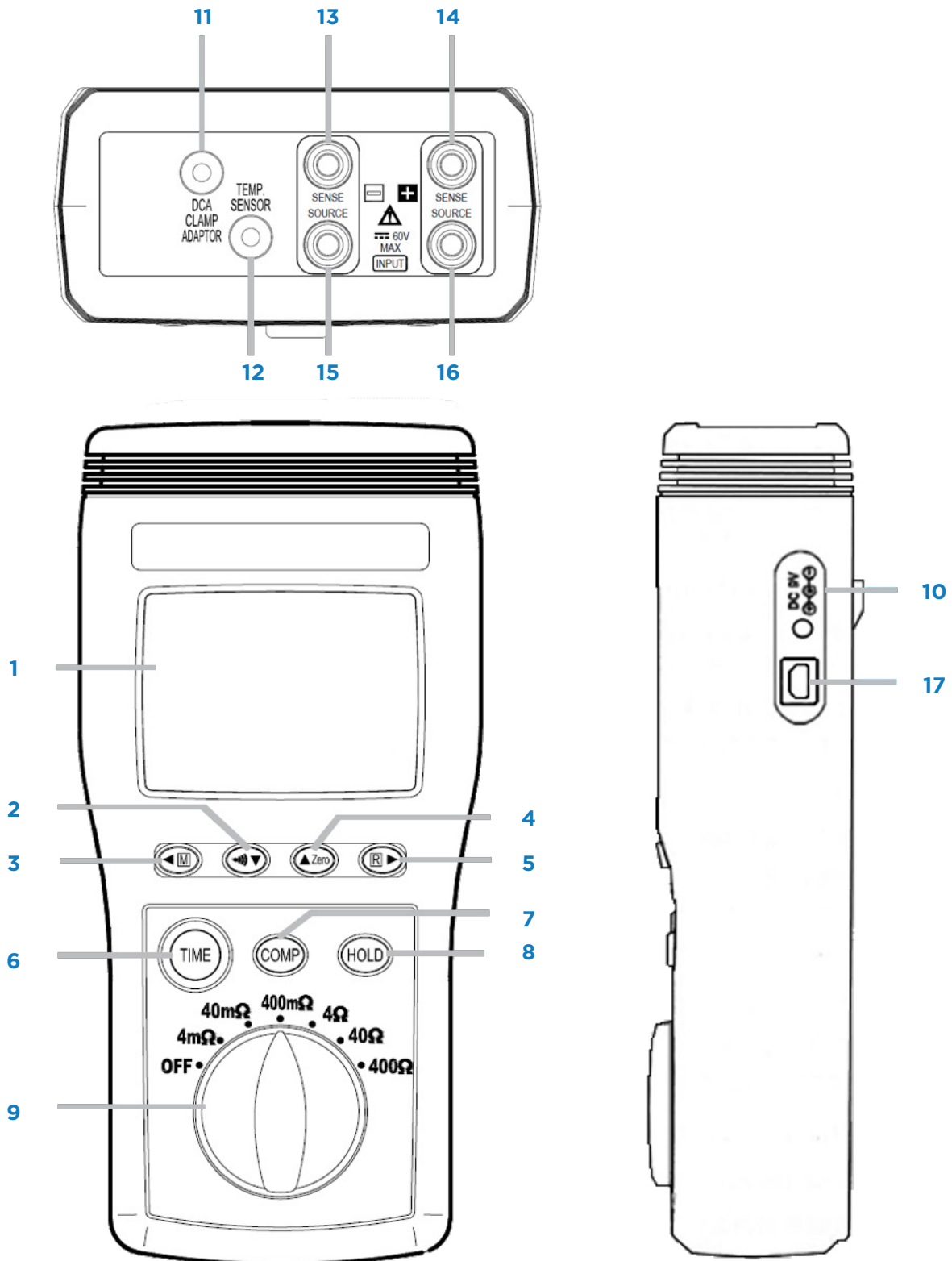
- Working effectively as a team creates momentum, improves morale.
- The difference between success and failure is a great team and we expect our employees to work together as a team.

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FEATURES

- The RE856 Battery Tester has been designed for measuring the internal resistance, open-circuit voltage and terminal temperature of the secondary batteries, including lead-acid batteries, nickel-cadmium batteries, lithium-ion batteries and nickel-metal hydride batteries.
- Use the AC four-terminal method to measure the internal resistance by eliminating lead resistance and contact resistance to achieve accurate results.
- Dual display to show the internal resistance and voltage of the battery simultaneously.
- The RE856 has 99 sets of composite comparator function, which can be set at resistance and voltage values to get the reliable detection of battery deterioration.
- RE856 also comes with pin-type leads which can easily contact the battery electrolytes supplied as standard to get accurate 4 terminal measurement.
- Clip type leads with a temperature sensor.
- Clamp adaptor for DC current measurements.
- Manual and auto data logging and read stores up to 999 sets.
- Auto data logging micro SD card 4GB up to 99 blocks.
- USB PC interface.

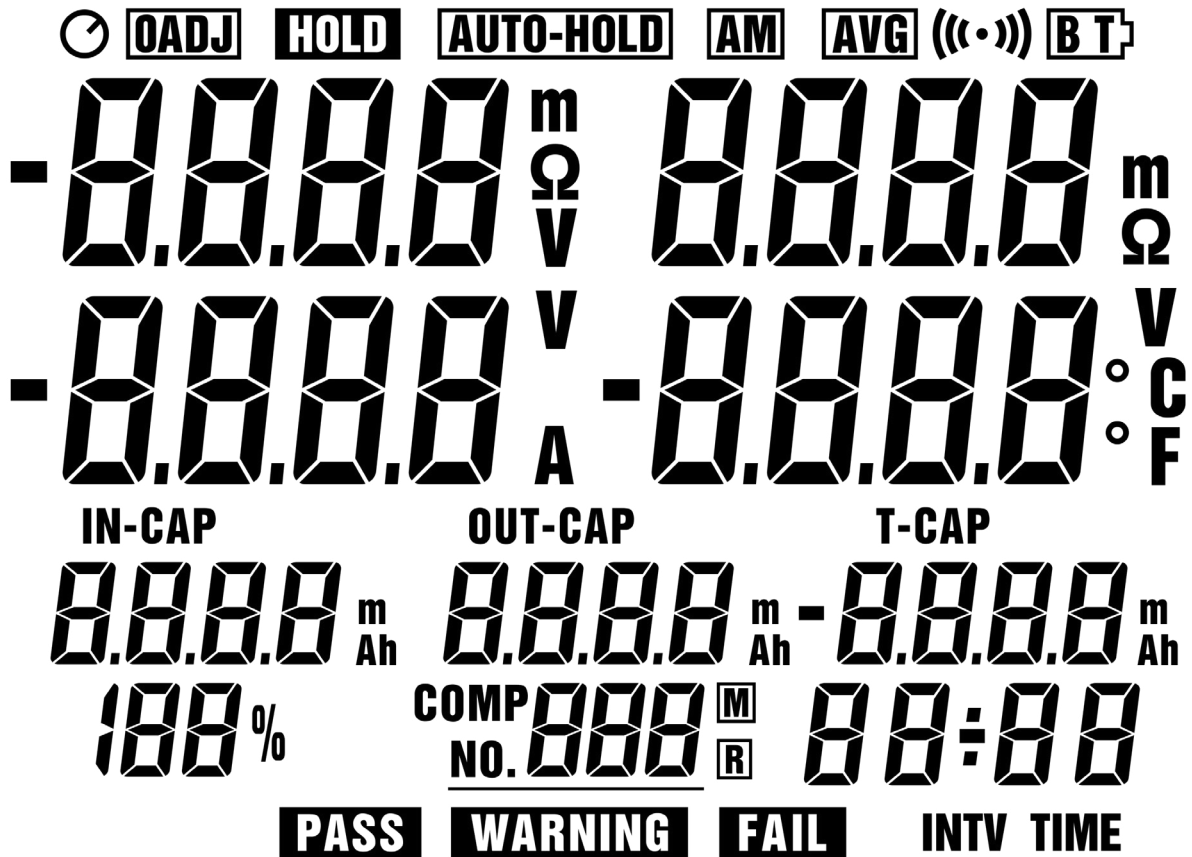
NAMES & FUNCTIONS OF PARTS



Switches & Input Terminals

1. LCD Display
2.  key:
 - To turn the beeper on or off
 - To decrease the displayed value
 - Hold this key for 2 seconds to change the temperature units
3.  key:
 - To store one set of readings to memory
 - To move the cursor to the left
 - Hold this key for 2 seconds to auto-memory mode, press this key again to exit
 - Hold this key for 4 seconds to auto-data logging mode, press this key again to exit
4.  key:
 - To turn the zero adjustment function on or off
 - To increase the displayed value
5.  key:
 - To manually record data reading mode, press this key again to exit
 - To move the cursor to the right
6.  key:
 - To change the day-hour, minute : seconds
 - Hold this key for 2 seconds to set the real-time setting mode, press this key again to exit
 - Hold this key for 4 seconds to auto-memory and auto-data logging interval time setting mode, press this key again to exit
7.  key:
 - To turn the comparator function on and off
 - Hold this key for 2 seconds to set the comparator setting mode, press this key again to exit
8.  key:
 - To turn the data hold function on and off
 - Hold this key for 2 seconds to turn the auto-hold function on, press this key again to exit
9. Rotary switch: power on/off and resistance range selector switch.
10. AC adaptor input jack: connects to the black plug of the AC adaptor.
11. DCA clamp adaptor input jack: connects to the yellow plug of the clip type test lead.
12. Temperature sensor input jack: connects to the blue plug of the clip type test lead.
13. SENSE - input terminal: connects to the yellow banana plug of the test lead.
14. SENSE + input terminal: connects to the yellow banana plug of the test lead.
15. SOURCE - input terminal: connects to the black banana plug of the test lead.
16. SOURCE + input terminal: connects to the red banana plug of the test lead.
17. USB cable interface: PC interface connector.

Screen Display



	Auto power off function is enabled	T-CAP -8888 m Ah	Measured battery total capacity
OADJ	Resistance zero-adjustment function is on	100%	The calculated remaining capacity of the battery
HOLD	Display is locked	COMP	Shown when the comparator function is on
AUTO-HOLD	Auto-hold function is on	NO. 888	Indicates the number of data memory or the comparator table number
AM	Auto-memory function is on	M	Flashes once when data is stored to memory
AVG	Average function is on	R	Shown when the read function is on
((•••))	Beeper is turned on	00:00	Indicated the elapsed time or the real-time
BT	The battery is low	PASS	Indicates that the tested battery is satisfactory for operation
-8888 m Ω	Measured voltage or comparator resistance high limit setting	WARNING	Indicates that the tested battery is beginning to deteriorate
8888 Ω	Measured resistance or comparator resistance low limit setting	FAIL	Indicates that the tested battery has deteriorated
-8888 V A	Measured DC current or comparator voltage low limit setting	INTV	Shown when setting memory interval time function is on
-8888 V °C	Measured temperature or comparator voltage low limit setting	TIME	Shown when setting real-time function is on
IN-CAP 8888 m Ah	Measured battery charge capacity		
OUT-CAP 8888 m Ah	Measured battery discharge capacity		

SPECIFICATIONS

General Specifications

Measuring method	Resistance: AC four-terminal method Temperature: NTC thermistor DC current: hall sensor
A/D conversion	Dual slope method
Display	LCD
Sampling rate	1.3 sets (resistance voltage, temperature and DC current measurements)/second
Open-circuit terminal voltage	5V max.
Input over range	'OL' display
Low battery detection	BT displayed
Test current fault detection	'- - -' displayed
Auto power off	If no key operated for 10 minutes
Averaging function	OFF, 4, 8 or 16 times
Beeper function	For warning and fail results (can be turned on or off)
Comparator setting	Resistance / voltage high / low limits
No. of comparator settings	99 sets
Comparator output	LCD display of PASS , WARNING or FAIL results and beeper for warning and fail results

Resistance		Low	In	High
		WARNING	WARNING	FAIL
Voltage	Low	WARNING	WARNING	FAIL
	High	PASS	WARNING	FAIL

Manual and auto-data memory	999 sets (can be read by meter and downloaded by PC)
Auto-data logging	Micro SD card 4GB (max. 99 blocks)
Operating environment	0°C to +40°C 80% RH (no condensation)
Storage environment	-10°C to +50°C 80% RH (no condensation)
Power source	Meter = 6x AA size 1.5V alkaline batteries DCA current adaptor = 1x 9V battery
Max. power consumption	1.0VA
Continuous operating time	5.5 hours approx.
Max. altitude value usable	2000m or less
Size	Meter = 198(L) x 94(W) x 49(T) DCA current adaptor = 193(L) x 69(W) x 31(T)
Weight	Meter = 530g approx. (including batteries) DCA current adaptor = 240g approx. (including batteries)
Accessories	Clip-type test lead with temperature sensor, pin-type test lead, DCA current adaptor, zero-adjustment board, operation manual, batteries, AC adaptor, USB cable, CD PC software (also available at www.valen.com.au), carrying case.

Electrical Specifications

Conditions to Guarantee Accuracy

Temperature	23°C ± 5°C
Humidity	80% RH or less (no condensation)
Temperature coefficient	0.10 x (specified accuracy)/°C (<18°C to >28°C)
Zero-adjustment	After zero adjustments for each range

Resistance measurement

Range	Resolution	Measurement Current	Accuracy
4mΩ	1uΩ	400mA approx.	± (3% readings ± 20 digits)
40mΩ	10uΩ	40mA approx.	
400mΩ	100uΩ	4mA approx.	
4Ω	1mΩ	400uA approx.	± (0.8% reading ± 6 digits)
40Ω	10mΩ	40uA approx.	
400Ω	100mΩ	4uA approx.	

Measuring current frequency: 1kHz ± 30Hz

Voltage measurement

Range	Resolution	Accuracy
6V	1mV	± (0.1% readings ± 6 digits)
60V	10mV	

Maximum input voltage: 60VDC maximum, no AC voltage input.



DO NOT EXCEED THE MAXIMUM PERMISSIBLE INPUT VOLTAGE TO THE MEASUREMENT TERMINAL. THIS COULD RESULT IN INJURY OR DAMAGE TO THE UNIT.

Temperature measurement

Range	Resolution	Accuracy
-20°C to +60°C	0.1°C	± 1.0°C
-4°F to +140°F	0.1°F	± 1.8°F

DC current measurement

Range	Sensitivity	Resolution	Accuracy
600A	0.6A - 600.0A	0.1A	± (2.0% reading ± 2 digits)

Optional accessories PROVA 15 (including plug wire)

DC current measurement

Range	Sensitivity	Resolution	Accuracy
4A	6mA - 4A	1mA	± (2.0% reading ± 2 digit)
30A	60mA - 30A	10mA	± (2.0% reading ± 3 digit)

OPERATION

Preparation

The following safety information must be observed to ensure maximum personal safety during the operation of this tester.

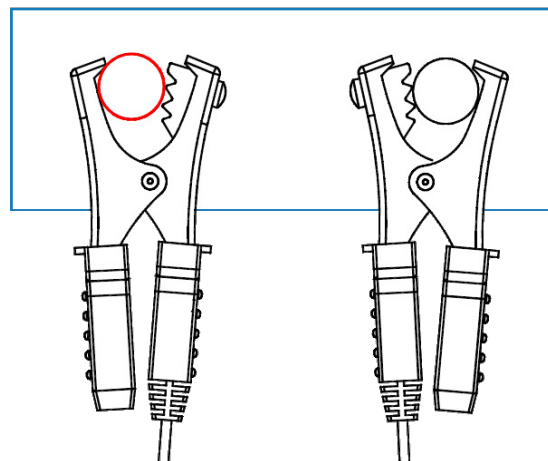
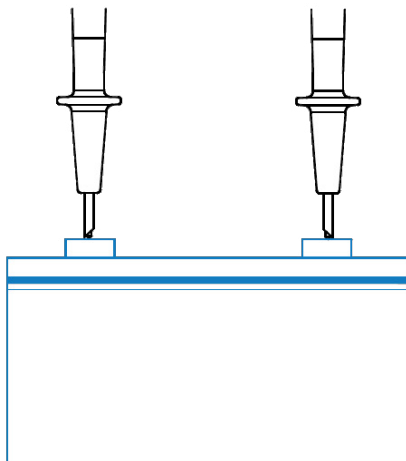
- To avoid electric shock when replacing the batteries, first disconnect the leads from the object to be measured.
- When replacing the batteries, do not install old batteries with new ones and do not mix different types of batteries.
- Check the battery polarity carefully when inserting the batteries.
- Do not short circuit used batteries, disassemble them, or throw them in a fire. Doing so may cause the batteries to explode.
- Be sure to dispose of used batteries properly:
 - Remove the battery cover
 - Insert the batteries into the battery compartment

Operation

⚠ WARNING!

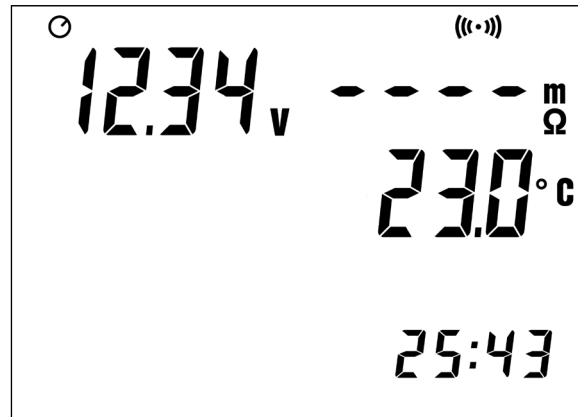
- Do not attempt to measure DC voltage exceeding 60V. Do not attempt to measure AC voltages.
- Do not attempt to measure the voltage of a generator. This would result in an AC voltage being applied to the voltage generating output terminals, which is dangerous.
- After measuring a high voltage battery, before continuing to measure a low voltage battery first short the measurement leads together. This will discharge the DC elimination capacitor which is connected across the leads. Otherwise an excess voltage may be applied to the low voltage battery.


1. Connect to the RED test lead to the SOURCE + terminal.
Connect to the BLACK test lead to the SOURCE - terminal.
Connect the YELLOW test lead to the SENSE + terminal.
Connect the BLUE test lead to the SENSE - terminal.
2. Connect the BLUE miniature plug of the clip-type test lead with temperature sensors to the TEMP. SENSOR jack.
3. Rotate the resistance range switch to the desired position.
4. Carry out the zero-adjustment (for details, see the Zero Adjust Function section).
5. Connect the red clip (probe) of the test lead to the positive (+) side of the battery and the black clip (probe) to the negative (-) side.
The outer shield conductors of the clip (probe) are connected to the SOURCE terminals, and the inner clip (probe) conductors are connected to the SENSE terminals. When contacting the clips (probe) with the battery terminals, press the inner clip (probe) conductors and ensure they're pushed inside, and all of the SOURCE and SENSE conductors make good contact.



Operation

- Read the battery internal resistance, DC voltage and temperature directly from the display. When using the clip type test lead, the temperature sensor is detected, and the temperature is automatically displayed.




- Press the  key for 2 seconds to change the displayed temperature unit.
 NOTE: when the measured DC voltage or battery internal resistance value is overload, 'OL' is displayed. A resistance indication '- - -' means the AC test current fault measurement could not be made, because there is a break in the test lead circuit, or the leads are not making good contact with the object being measured, or if it's resistance is extremely large compared with the measurement range.

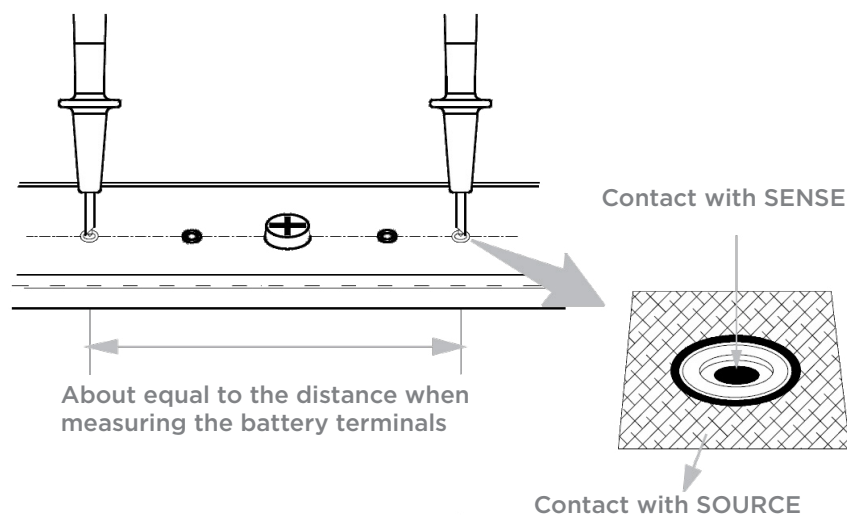
Zero-adjust Function

The zero-adjustment function is to zero the range of resistance. The reading during zero-adjustments would be taken as zero and will be used to calibrate subsequent measurements.


Pin-type Test Lead Zero Adjustment

Use the supplied zero-adjustment board to carry out the zero-adjustment according to the AC four-terminal method.

- Rotate the resistance range switch to the desired position.
- Press the  key to turn the zero-adjustment function on, **0ADJ** is displayed and flashing.
- As shown in the image below, push the pin-type test leads onto two holes in the zero-adjustment board. Choose holes symmetrically on both sides of the centre screw, so the distance between the leads is about equal to the distance when measuring the battery terminals.

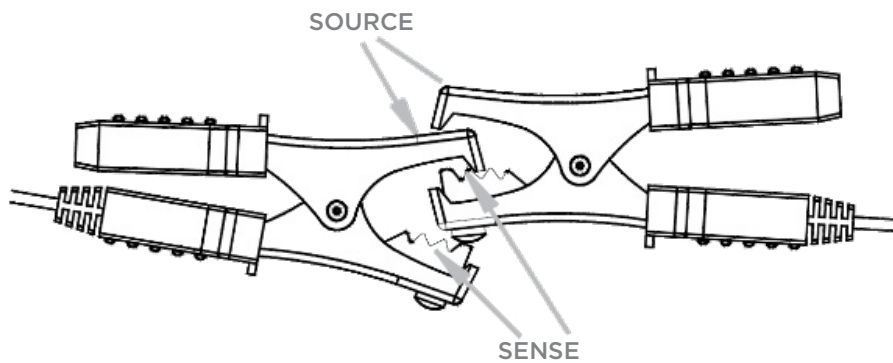


Pin-type Test Lead Zero-Adjustment

4. When the resistance reading is lower than 200 digits and stable, the zero-adjustment is automatically carried out. The **0ADJ** would then stop flashing, and the beeper sound would also stop.
5. Remove the pin-type test leads from the zero-adjust board and start the measurement, connect the leads to the battery to test.
6. Press the  key to exit this function.
NOTE: if the terminal spacing of the battery to be measured is larger than the zero-adjustment board, use the outer most holes for adjustment. The zero-adjustment is valid for the currently selected range only, as long as the power remains on. Powering on the meter would reset all zero-adjustment values.

Clip-type Test Lead Zero-Adjustment

Short the SOURCE and SENSE of the clip-type test lead with the temperature sensor together as shown in the image:



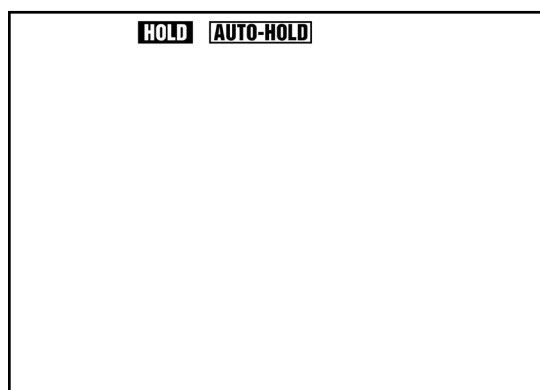
Hold and Auto-Hold Functions

Hold Function

Press the  key, **HOLD** appears on display is locked. Press the  key again to exit.

Auto-Hold Function

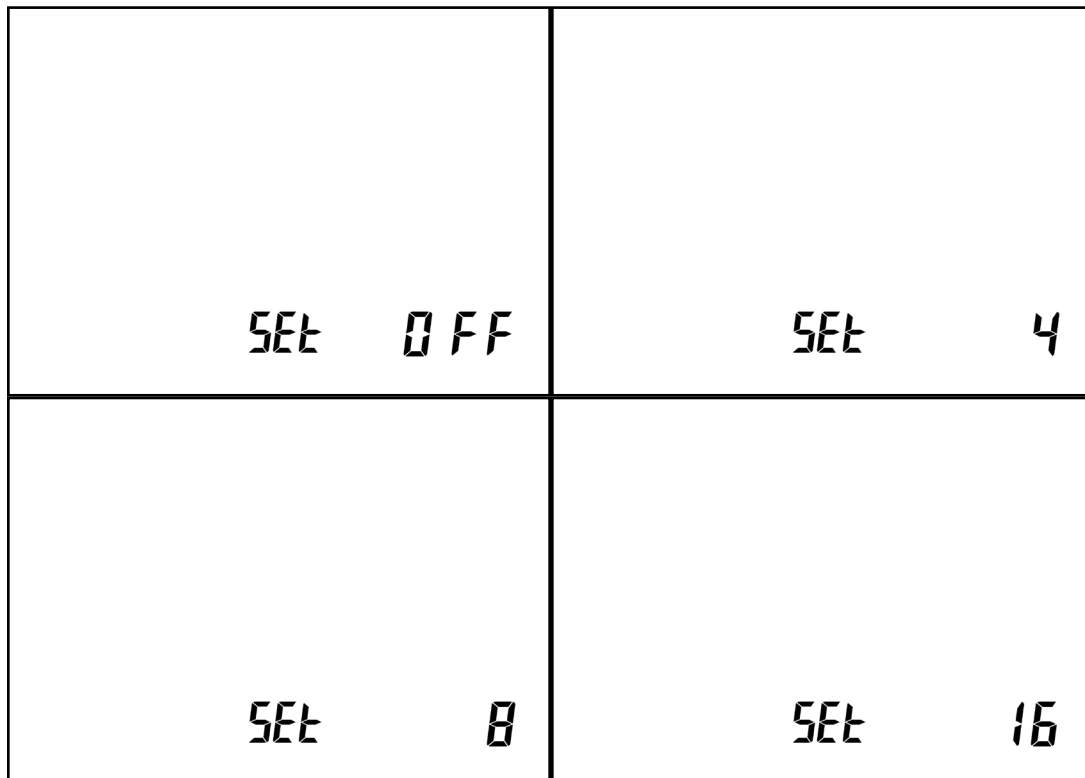
1. Press the  key for 2 seconds to start the auto-hold function, **AUTO-HOLD** appears on the display.
2. The meter holds the reading on the display until it detects a new stable reading. The meter beeps and displays the new reading. When the measured reading is stable, **HOLD** appears on display.
3. Press the  key again to exit.



Moving Average Function

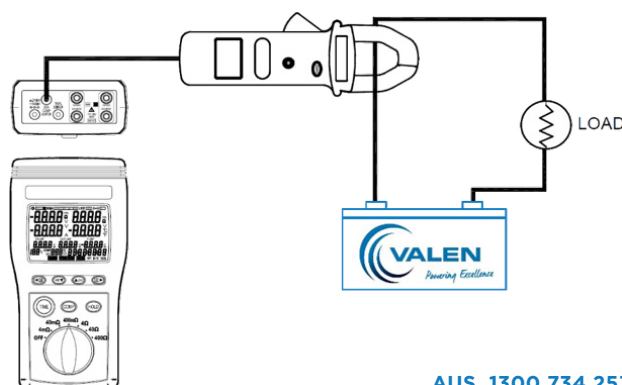
If the resistance measurement value is unstable, this can be corrected with the moving average function.

1. Press and hold down the **TIME** key, then rotate the resistance range switch to any range to turn on the meter, to samples select mode, 'SET' appears on display.
2. Press **Zero** / **Hold** key to select the desired 'OFF (no average)', '4', '8' and '16' samples for the average.
3. Press the **TIME** key again to store the setting and exit.




DC Current Measurement

1. Connect the yellow miniature plug of the DCA current adaptor to the meter DCA CLAMP ADAPTOR jack.
2. **USE DCA CURRENT ADAPTOR:**
Press the **Power** key of the DCA Current Adaptor to turn on the adaptor; the POWER LED will light up. If the LOW BATTERY LED lights, replace the battery.
USE PROVA 15 DCA CURRENT ADAPTOR:
Press battery tester **Zero** key for 3 seconds to select the decimal point of the current reading to 0.000A (for 4A range) or 0.00A (for 30A range).
3. Make sure the transformer jaw is empty, then press the **Zero** key to null out stray magnetism, the LCD then shows 0.0A.
4. Clamp the current transducer (jaw) around one of the conductors under test. Make sure the clamp jaws are entirely closed.
5. Read the meter current value.



Disable Auto Power-off Function

If no switch operation for 10 minutes, the meter automatically powers off. Auto data memory and continuous data logging mode will auto-disable the auto power-off function. For continuous measurement, in some cases it may be necessary to disable the auto power-off function.

1. Rotate the resistance range switch to OFF position, turn off the meter.
2. Press and hold down the **HOLD** key, then rotate the resistance range switch to any range to turn on the meter, the  symbol will disappear.

Setting the Real-time

1. Press the **TIME** button key for 2 seconds, the 'SET TIME' appears on the display.
2. Press the **▲Zero**, **↵**, **◀|** and **|▶** keys to set up the real time; day : hour : minute : second.
3. Press the **TIME** button to store the setting and exit.

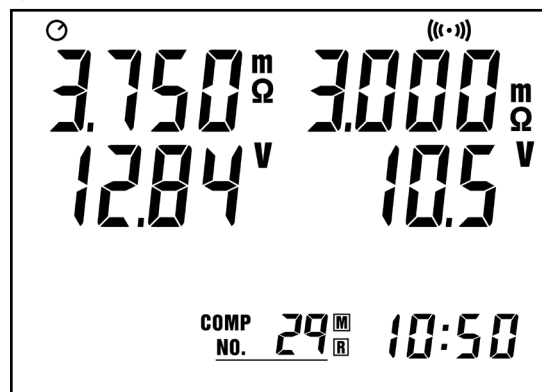
Using Comparator Function (99 sets)

Comparator

The comparator function compares the measured values with pre-set high and low limit values for internal resistance and voltage and determines the range that the measuring value should be. The unit then displays with corresponding symbol and sounds a beeper with the WARNING and FAIL cases.

Comparator Settings

1. Rotate the resistance range switch to **|▶** range.
2. Press and hold down the **COMP** key for 2 seconds; the display will show **COMP** to the comparator setting mode.
3. Use **▲Zero** or **↵** key to change the comparator number from 01 to 99.
4. Press **|▶** key one time, the high limit resistance of the one-digit will be flashing, use the **▲Zero** and **↵** keys to select the desired value. Repeat this step to set the next three digits, the decimal point and the resistance units.
5. Press **|▶** key one time, the low limit resistance of the one-digit will be flashing, use the **▲Zero** and **↵** keys to select the desired value. Repeat this step to set the three digits, the decimal point and the resistance units.
6. Press **|▶** key one time, the high limit voltage of the one-digit will be flashing, use the **▲Zero** and **↵** keys to select the desired value. Repeat this step to set the three digits, the decimal point.
7. Press **|▶** key one time, the low limit voltage of the one-digit will be flashing, use the **▲Zero** and **↵** keys to select the desired value. Repeat this step to set the three digits, the decimal point.
8. Repeat step 3 to 7 to set the next comparator number.
9. Press the **COMP** key again to exit.



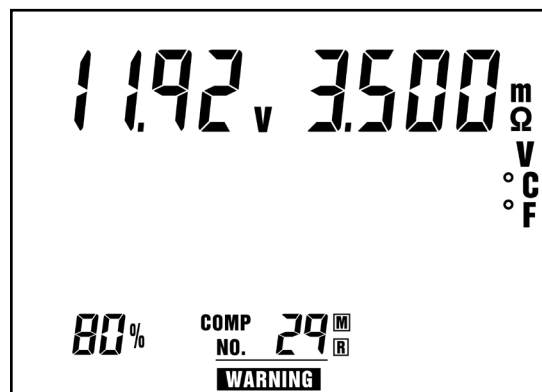
Comparator Table

Resistance		Low Limit Resistance		High Limit Resistance	
		Low	Middle	High	
Voltage Comparison Value	Low	WARNING Beeper	WARNING Beeper	FAIL Beeper	
	High	PASS	WARNING Beeper	FAIL Beeper	

Voltage comparison value = (high limit voltage value + low voltage value)/2.

Start/Stop Controls for the Comparator

1. Press key to set the beeper on, the indication will appear on display, and the beeper will sound when getting the **WARNING** or **FAIL** result. Press key again to set the beeper off.
2. Press the key to start the comparator function, the **COMP** indication will appear on display, and the comparator will be operating once the measurements are taken.
3. Press and keys to select the desired comparator number (01-99). The selected comparator number remains in memory even when the power is turned off.
4. Press the key again to stop the comparator function.

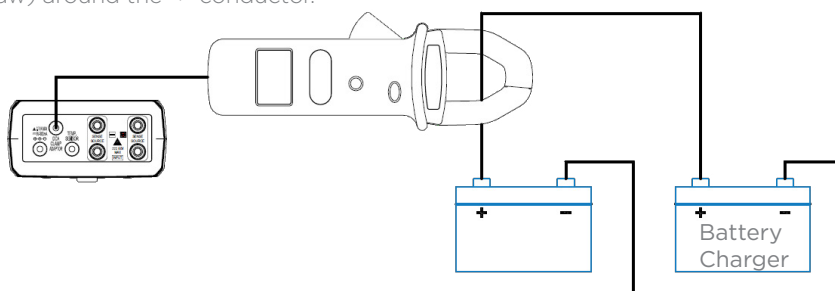


Battery State of Charge (SOC) Indication

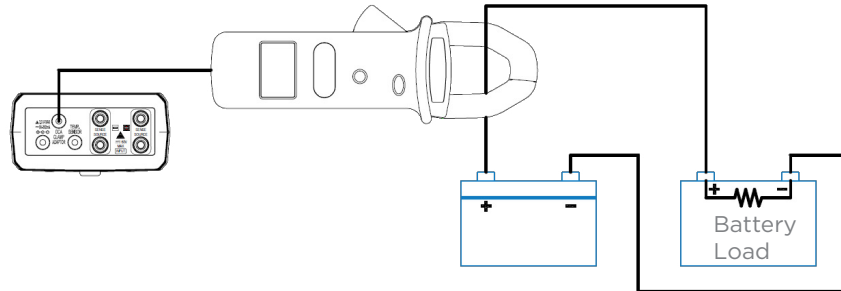
The battery high limit resistance, low limit resistance, high limit voltage and low limit voltage values are specified in *Comparator Settings*, and current measured battery voltage and resistance values, then compute the battery state of charge (SOC) percentage.

Battery Charge/Discharge Capacity Measurement

1. Disable auto power-off function (see *Disable Auto Power-off Function*).
2. Perform the DC current measurement (see *DC Current Measurement* steps 1 to 3).
3. Connect the full discharged battery to the battery charger. Using the DCA current adaptor, clamp the current transducer (jaw) around the '+' conductor.



4. Power on the battery charger, the meter will display the charge current value with a plus sign and the battery accumulated charging capacity (**IN-CAP**).
5. Connect the battery load to the battery and use the DC current adaptor. Clamp the current transducer (jaw) around the '+' conductor.





6. The meter will display the discharge current value with a minus sign and the battery accumulated discharge capacity (**OUT-CAP**).
7. The battery charge/discharge remained capacity is: **T-CAP = IN-CAP - OUT-CAP**

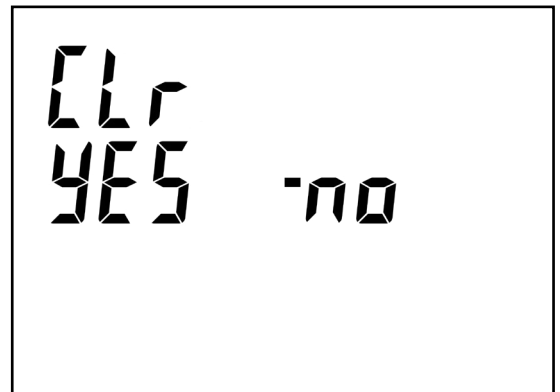
Data Memory Function

Manual and Auto Data Memory Function (999 sets)



To clear the Memorised Data

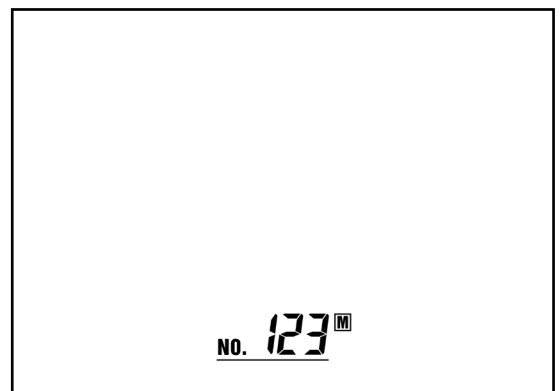
When the memory is full, the memory number '999' will appear on the display and memory function will be stopped.

1. Rotate the resistance range switch to the OFF position to turn off the meter.
2. Press and hold the  key then rotate the resistance range switch to turn on. The display shows 'Clr, YES, m, no' symbols.
3. Press  key to select 'YES' to clear the memorised data.











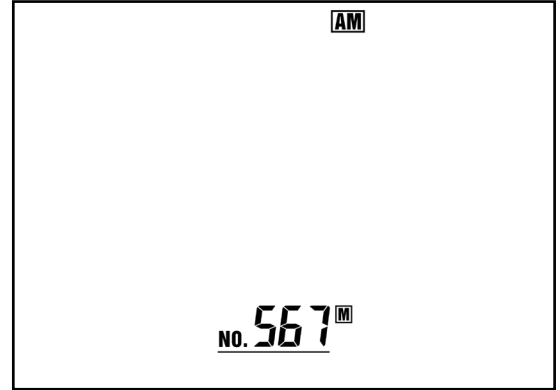
To Manual Memorised the Reading

Memorise the reading one by one to the memory by pressing the  key, and 'NO.XXX  will appear on display for one sec. to indicate the memorised location.








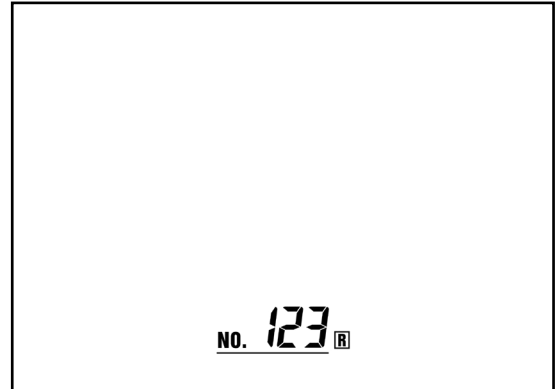
To Auto Memorise the Reading

1. Press the  key for 4 seconds; the display will show SWT INTV. Using the  or  keys, select the desired interval time from 3 seconds to 255 seconds. Press the  key to exit.
2. Press the  key for 2 seconds to auto memory mode; the  symbol will appear on display. When storing one reading, the 'NO.XXX' will appear on display for one second to indicate the memorised location.
3. Press the  key again to exit.










To Recall the Memorised Reading

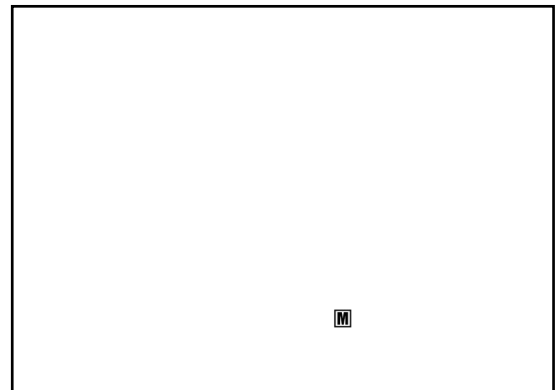
1. Press the  key to review the memorised readings. The display will show 'NO.XXX.
2. Press the  and  keys to scroll through the memorised readings.
3. Press  key again to stop viewing the memorised readings.
4. The memorised data can be read by transferring to PC.



Auto Data Logging Function

Micro SD card 4GB (maximum 99 blocks).

1. Press the  key for 4 seconds; the display will show the SET INTV. Using the  or  keys, select the desired interval time from 3 seconds to 255 seconds. Press the  key again to exit.
2. Press the  key for 4 seconds to begin the continuously logging mode; the display will show the  symbol flashing.
3. Press the  key again to exit.
4. The continuous data logging cannot be read from the meter directly. Users can read the data by transferring to PC.
5. The continuous data logging cannot be cleared by the meter, only the PC.



MAINTENANCE

Cleaning

Repairs or servicing are not covered in this operation manual and should only be performed by qualified personnel. Please return the meter to VALEN if this is the case. Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.

Battery Check and Replacement

If the battery power is not sufficient, the **BT** symbol will be shown on display. Replacement of six new 1.5V alkaline AA batteries is required.

Prevention of Battery Fluid Leakage

When the battery power is low, replace the new batteries to avoid further battery fluid leakage possibility. When the meter will not be in use for an extended period of time, please remove the batteries out of the meter to prevent the possibility of battery fluid leakage damage.

SOFTWARE

Hardware Requirements and Setup

PC Hardware Requirements

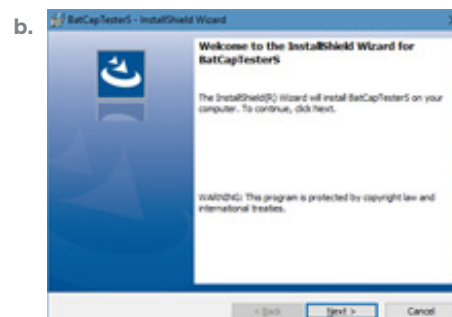
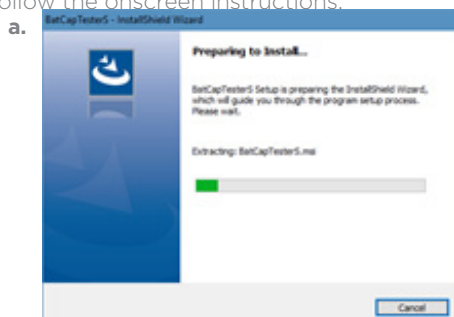
- HDD, CD Rom, 486PC or above, with available COM port/USB port
- EGA or higher
- 4M bytes or more memory size

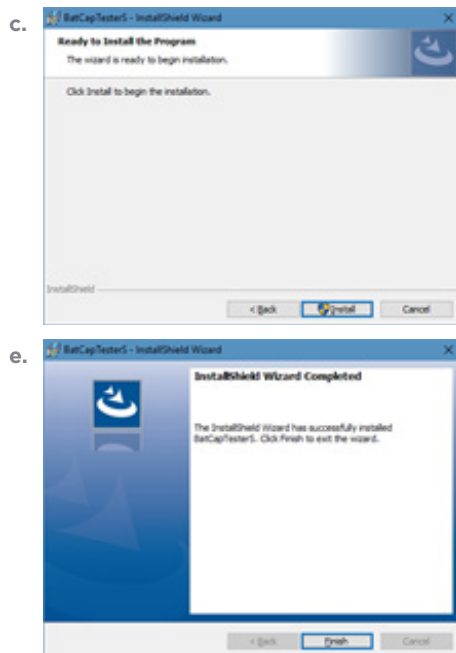
PC Hardware Setup

1. Switch off all power related to the PC.
2. Connect the USB cable to an available port.
3. Switch on all related power.
4. Connect the optical plug end of the supplied cable to the meter.

Software Requirements and Setup

1. Start up Windows operating system.
2. Close all other applications.
3. Insert the disk into the CD drive.
(if autorun does not start, open the CD drive then run 'Install\setup')
4. Follow the onscreen instructions:





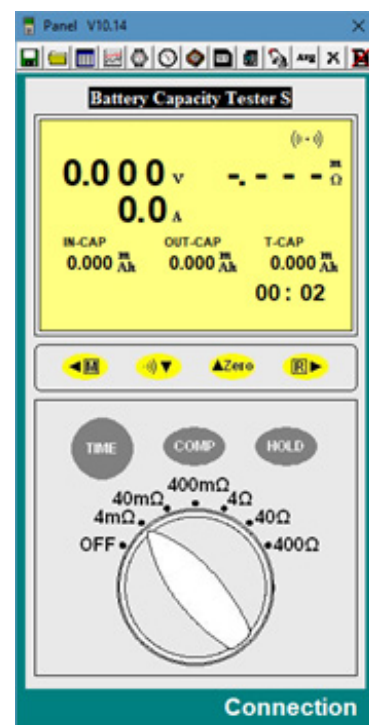
d. If a 'User Account Control' windows opens asking 'Do you want to allow the following program from an unknown publisher to make changes to this computer?' click 'Yes'

Online Operation

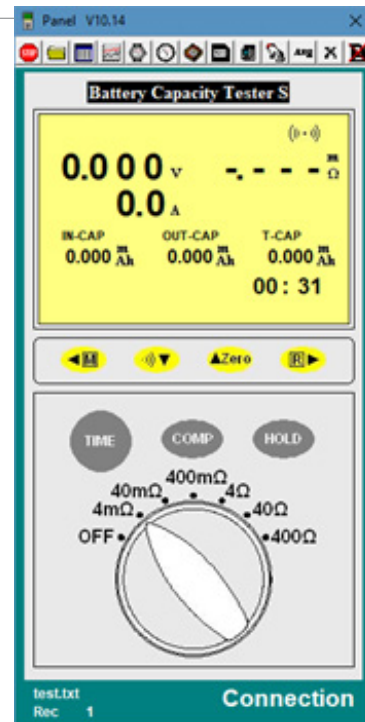
Run the Software

1. Click 'Run BatCapTesterS.exe icon on the dektop.

2. Main software screen



- Click the button in the top left corner of the main screen. A dialogue box will open - input a file name then click **Save** to begin saving data to the file just created. Click the button to stop recording.



Download Data

Download Data from Hard Disk

Click the button second from the left on the main screen. A dialogue box will open - input the file name/select a file and then click the **Open** button.

Download Data from EEP ROM

Click the button seventh from the left on the main screen.

No.s	Time	V	mΩ	Amp	Temp	In-Cap(mAh)	Out-Cap(mAh)	T-Cap(mAh)
1	01:00:40:53	0.000 (V)	~	0.0 (A)		0.000 (mAh)	0.000 (mAh)	0.000 (mAh)
2	01:00:41:00	0.000 (V)	~	0.0 (A)		0.000 (mAh)	0.000 (mAh)	0.000 (mAh)

Download Data from SD Card

Click the button sixth from the right on the main screen. The data logger window, shown below, will open. Click on a SET number to view the set's details. For example, in the window to the right, there are two sets to choose from. The list below is an example of an opened set.

Data Logger

3878912 K 3878400 K

Loading: 100.00 %

Set	Time	Records
1	17/01/01 12:21:12	13
2	17/01/01 12:21:26	4

Data List

Download 100%

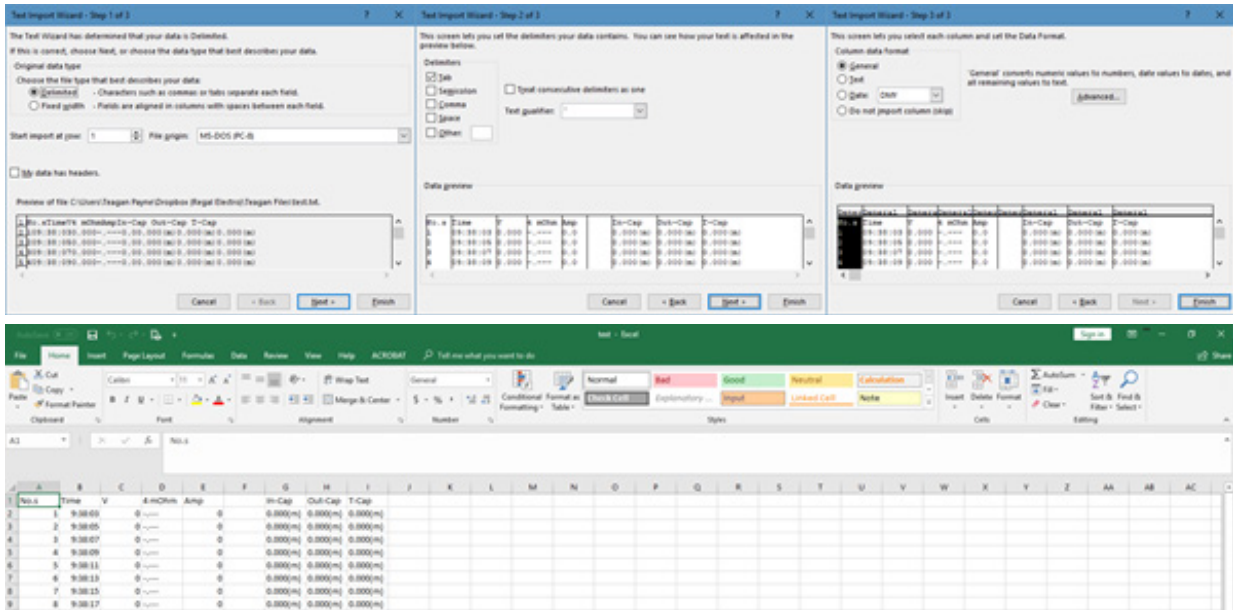
RTC Time: 2017010112:21:16 Interval Time: 0 sec

No.s	Time	V	mΩ	Amp	Temp	In-Cap	Out-Cap	T-Cap
1	12:21:16	0.000V	~	0.000A		0.000mAh	0.000mAh	0.000mAh
2	12:21:19	0.000V	~	0.000A		0.000mAh	0.000mAh	0.000mAh
3	12:21:22	0.000V	~	0.000A		0.000mAh	0.000mAh	0.000mAh
4	12:21:26	0.000V	~	0.000A		0.000mAh	0.000mAh	0.000mAh

Data Convert

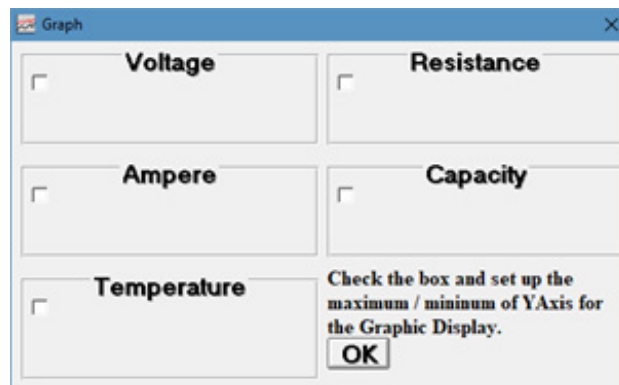
Excel

Open Microsoft Excel and locate the saved file in Excel format, for example, test.xls. The 'Text Import Wizard' then appears. Follow the steps from 1 to 3 to complete.



Graph

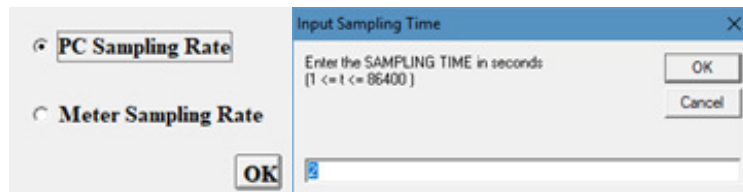
Open a saved data file in the software program and click the button forth from the left.



Sampling Time

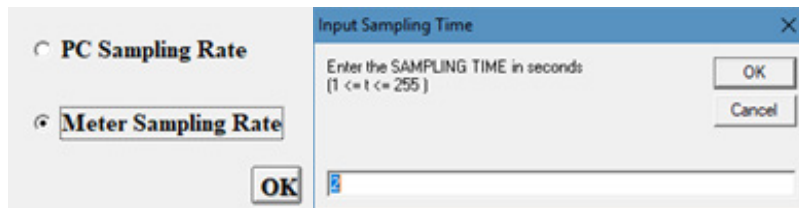
PC Sampling Time

PC sampling rate is the rate at which the PC collects readings while connected to the meter. Click the button fifth from the left on the main menu.



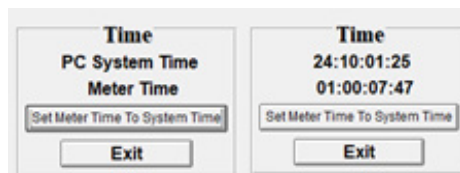
Meter Sampling Rate

Meter sampling rate is the rate at which the meter stores readings. Click the button fifth from the left on the main menu.



Real-time Clock (RTC)

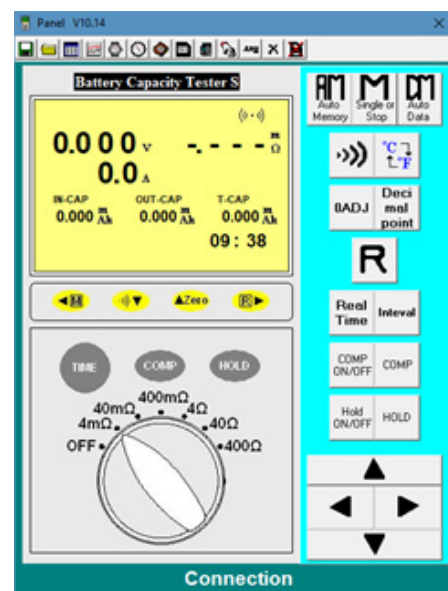
Click the sixth from left on the main menu.



Click the **PC System Time** to show PC system time: **24:10:01:25** or **Meter Time** to show meter time: **01:00:07:47**. Click to set the meter time to the PC system time.

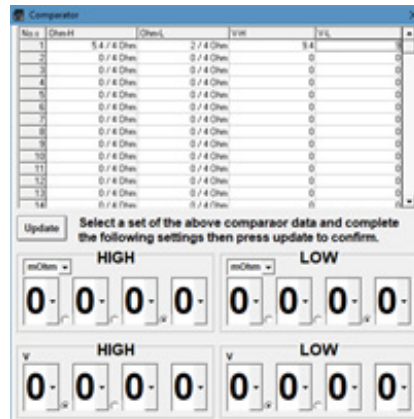
Meter Buttons

Click the button forth from the right on the main menu.



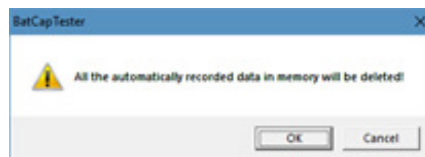
Set Comparator

Click the button fifth from the right on the main menu. Click **Update** to set the meter.



Erase EEPROM

To erase the EEPROM, click the button second from the right on the main menu. Click **OK** to confirm.



Delete the SD Card Memory

To delete the SD card memory, click the button first from the right on the main menu.

