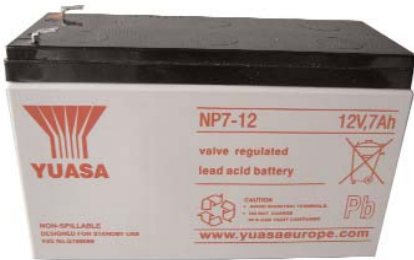
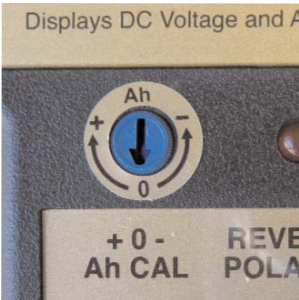


IMPORTANT: To test a lead acid battery accurately, you need to know which type you're testing?

TYPE SLA: Standby SLA (Sealed Lead Acid) batteries. Normally permanently on charge. Used in standby applications such as alarm systems, power supplies, stair lifts etc.



To measure the Ah capacity available in standby SLA batteries, adjust the Ah calibration control with a screwdriver to the '0' Ah CAL position (i.e. approx six-o'clock) below.

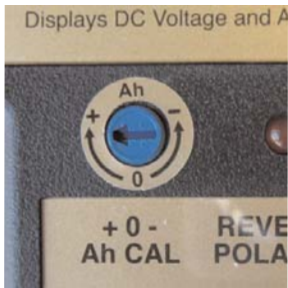


NOTE: This position is calibrated to typical standby SLA batteries. If required, adjustment can be made to suit any specific brand.

TYPE GEL: Cyclic GEL (Gelified Electrolyte) batteries. Normally charged then discharged repeatedly. Often used in mobility scooters and golf trollys etc. These batteries are specified as 'GEL' technology. If it doesn't state 'GEL' on the battery, it should be tested as a standby SLA battery above.



To measure the Ah capacity available in cyclic GEL technology batteries, adjust the Ah calibration control to the '+' Ah CAL position (i.e. approx nine-o'clock) below.

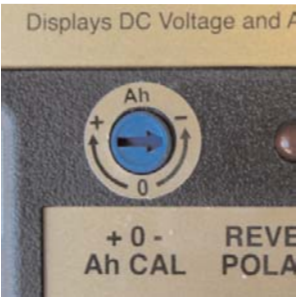


NOTE: This position is calibrated to typical GEL technology batteries. If required, adjustment can be made to suit any specific brand.

Type FLA: Car FLOODED (Flooded Lead Acid) batteries. Commonly used in motor vehicles and have removable caps so that you can visually check that the acid/water level is above the battery plates.



To measure the Ah capacity available in car FLOODED batteries, adjust the Ah calibration control to the '-' Ah CAL position (i.e. approx three-o'clock) below.



NOTE: This position is calibrated to typical car FLOODED batteries. If required, adjustment can be made to suit any specific brand.

Step by step battery testing sequence.

1: Observing polarity, connect the test leads clips exactly as shown for the types of battery terminals pictured above.



Grip clips tightly around tab terminals



Insert clips fully inside battery terminals



Grip tightly around posts using spikes



Do not connect to high resistance bolts

POWERING UP..

2: After connection, provided there is sufficient voltage in the battery, the message 'POWERING UP' is displayed

SET CALIBRATE

3: The message 'SET CALIBRATE' reminds you to check that the Ah CAL position is adjusted to test a standby SLA, cyclic GEL or car FLOODED battery.

TESTING VOLTS..

PLEASE WAIT..

4: The message 'TESTING VOLTS' followed by 'PLEASE WAIT' indicates that the battery tester is automatically selecting to test a 6V or 12V battery.

12.66 VOLTS

5: When the battery voltage appears, record it onto a label for future reference.

PRESS TO TEST

6: When ready, press and hold the test button (approx 1 second) to test the Ah capacity available in the battery.

TESTING Ah..

7.2 Ah

7: Record the Ah reading obtained onto a label for future reference.

TEST COMPLETE

8: If required, press the test button again, to verify the Ah reading obtained.

IMPORTANT: Capacities below 8Ah will be displayed with a decimal point up to 7.9Ah. Capacities above will be rounded up from 08Ah - 99Ah. Capacities above 99Ah will be displayed as 'OVER 100Ah'.

Battery Size Ah:	Recharge Replace:	Battery Size Ah:	Recharge Replace:
1.20Ah	0.78Ah	17.00Ah	11.00Ah
2.10Ah	1.36Ah	24.00Ah	15.00Ah
2.80Ah	1.82Ah	38.00Ah	24.00Ah
4.00Ah	2.60Ah	65.00Ah	42.00Ah
7.00Ah	4.55Ah	78.00Ah	50.00Ah
12.00Ah	7.80Ah	100.00Ah	65.00Ah

NOTE: Recharge or replace battery irrespective of Ah size when available capacity falls below 65%. Examples:

ACT Meters Ltd
Church Road
Rainton
Middlesbrough
WA11 8HD
United Kingdom
Lic. Tel: +44(0)1744 886680
US Freecall: 1-877-712-2276
Web: www.actmeters.com
Email: sales@actmeters.com

9: Recharge or replace when the Ah capacity available in the battery falls below 65% of the stated battery Ah size.

NOTE: Although not listed, a 150Ah battery can be tested and should be recharged or replaced below 97Ah.

FLAT BATTERY

10: This message indicates low battery voltage or Ah capacity. Recharge or replace the battery and re-test.

HIGH VOLTAGE

11: This warning message indicates that the input voltage exceeds 15V, Remove immediately!

12: Still confused? Read 'Battery Testing Tips' overleaf. Call or email your question. Tel: +44(0)1744 886660 Email: batterydoctor@actmeters.com

6/12V GOLD-PLUS

Intelligent Battery Tester

Operating Manual

This pictorial guide shows how to test popular types of lead acid batteries with the new GOLD-PLUS.

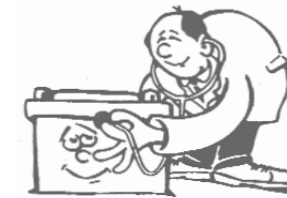
**“They say a picture speaks a thousand words
but if all else fails read the manual”**

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USA Freecall: 1-877-712-2278
Email: sales@actmeters.com
Web: www.actmeters.com



Battery Testing Tips



1: Don't buy flat batteries!

Because lead acid batteries normally self-discharge about 3% per month, it is very important to decipher the date of manufacture code stamped on the battery. This is essential for inventory rotation and to avoid stocking old discharged batteries. If you cannot decipher the date code, contact your supplier or battery manufacturer. Be aware that new batteries can take many months to ship from far eastern manufacturers, before going through your distributor to you.

2: Check the voltage.

To avoid potential battery failure problems, it is essential to check the voltage level in new lead acid batteries to ensure that they have been sufficiently charged by the manufacturer before leaving the factory. Any new out-of-the-box battery with less than 6.1V for 6V and 12.2V for 12V must be recharged overnight and retested before use. Generally, a new battery will have above 6.2V for 6V and 12.4V for 12V batteries.

3: Constant charge voltage.

Lead acid batteries require a constant voltage, irrespective of Ah capacity size in order to charge efficiently. The optimum charge voltage required is 2.3vpc (volts per cell) which is 6.9V for a three cell 6V battery and 13.8V for a six cell 12V battery. The voltage tolerance is 2.2vpc min and 2.4vpc max. The time taken to fully charge is dependent on battery Ah size.

4: Recharge immediately!

To prevent damage caused by sulphation, lead acid batteries must be recharged immediately after every use. A new 'out-of-the-box' battery should have about 70% of its stated Ah capacity. A battery with a terminal voltage of less than 6.1V for 6V and 12.2V for 12V batteries must be fully charged overnight and retested before use.

5: Batteries hate heat!

For maximum life and performance, a lead acid battery should be maintained at between 20 - 25C (68 - 77F). At significantly higher or lower temperatures the Ah capacity available could vary by up to 50%. Be aware that lead acid batteries hate heat. The hotter the battery, the shorter its life!

6: Equal capacity.

To ensure maximum efficiency and to avoid charging problems, where two or more lead acid batteries are connected in parallel or series, make sure that they are the same make, type and Ah size and after testing have about equal Ah capacity available.

7: When to recharge or replace?

To ensure efficiency, battery manufacturers recommend to recharge or replace the battery when its available Ah capacity falls below 65%. However, if your requirements recommend a higher or lower percentage, then recharge or replace accordingly.

Any questions? Please give us a call on +44 (0)1744 886660 or email batterydoctor@actmeters.com

GOLD-PLUS Specifications

Operating Voltage:	5V - 15V DC Max
Reverse Polarity:	Red LED indication
Battery Types:	Standby SLA, Cyclic GEL & Car FLOODED Battery Sizes: 6v 1.2Ah - 12Ah 12v 1.2Ah - 100Ah
Ah Capacity Test:	Simulated full 20 hour load test (C20hr) performed in just 20 seconds. Repeat Ah test takes just 5 seconds
Applied Pulse Load:	6A for 1.2Ah - 9.9Ah batteries 18A for 10Ah - 100Ah batteries
Ah Calibration:	Calibrated at 0 (zero) position to new, fully charged, popular brand Standby SLA batteries at 20 - 25C (68 - 77F). Ah control (00 - 99) for Cyclic GEL and Car FLOODED batteries according to Ah size
Battery Table:	Recharge or replace battery when 'FLAT BATTERY' or Ah capacity falls below 65%
Display Type:	Back-lit 13 digit LCD
Flat Battery Warning:	6v <5.25VDC, 12v <12.0VDC
Repeat Test Operation:	Can perform repeat tests or continuously as required
DCV Accuracy:	+/- 2% of displayed reading
Ah Accuracy:	+/- 10% fully charge premium brand C20hr rated SLA batteries at 20 - 25C (68-77F)
Case Construction:	High impact ABS
Moisture Protection:	IP54
Size:	H210 x W110 x D41mm
Weight:	0.6kg
In The Box:	GOLD-PLUS Intelligent Battery Tester, ACT-GPTL Test Leads, ACT-430N Soft Carry Case, 25xBTL (Battery Tested Labels) Operating Instructions and Declaration of Conformity
Warranty:	1 Year from date of Invoice
Address:	ACT Meters Ltd The Old Smithy Church Road Rainford Merseyside WA11 8HD United Kingdom
Post Code:	WA11 8HD
Country:	United Kingdom
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