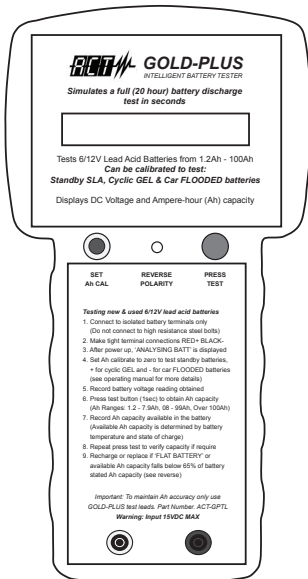


# Operating Instructions

## GOLD-PLUS

### 6V/12V Intelligent Battery Tester



**WARNING: ISOLATE THE BATTERY BEFORE USE**

WARNING: THE GOLD PLUS INTELLIGENT BATTERY TESTER IS DESIGNED TO TEST 6V AND 12V SLA, GEL AND FLOODED BATTERIES FROM 1.2AH TO 100AH. DAMAGE OR INJURY MAY RESULT IF CONNECTED TO VOLTAGE ABOVE 15VDC. ISOLATE BATTERY FROM CHARGE SUPPLY BEFORE TESTING. IF THE GOLD PLUS IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.

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REF: GOLDPLUS010513

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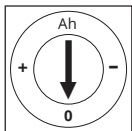
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# WARNING: ISOLATE THE BATTERY BEFORE USE

## STEP 1 Set the Calibration Control to the Battery Type Under Test

### TYPE SLA

Standby SLA (Sealed Lead Acid)

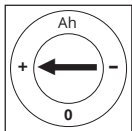


Normally permanently on charge. Used in standby applications: alarm systems, power supplies, stair lifts etc. To measure the Ah capacity available in standby SLA batteries, adjust the Ah calibration control to the 'zero' position as shown.

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

### TYPE GEL

Cyclic GEL (Gelified Electrolyte)

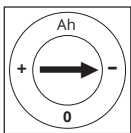


Normally charged then discharged repeatedly. Often used in mobility scooters and golf trolleys etc. These batteries are specified GEL technology. If it doesn't state 'GEL' on the battery, it should be tested as a standby SLA battery as shown. To measure the Ah capacity available in cyclic GEL technology batteries, adjust the Ah calibration control to the '+' position shown above.

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

**TYPE FLOODED**

## Car FLOODED (Wet Cell)



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 ' - ' position as shown.

NB: This position is calibrated to typical car FLOODED (WET) batteries. If required, Ah adjustment can be made to suit any specific brand.

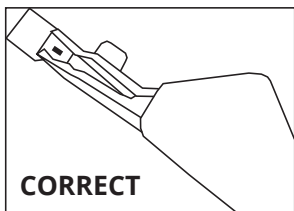
**Calibrating to Non Standard Battery Types**

Follow the procedure below:

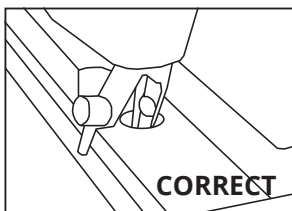
1. Set Ah calibration to zero position
2. Connect to new fully charged battery
3. Make tight connections RED + BLACK -
4. Record battery voltage reading
5. Press test button (1sec) to obtain Ah capacity
6. Adjust Ah calibration as close as possible to match stated Ah capacity
7. Repeat test to verify capacity if required
8. Note Ah position to test these types of batteries

## STEP 2 Make the Correct Connection

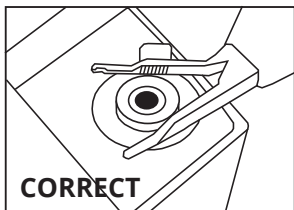
Observing polarity, connect the test lead clips exactly as described for the types of battery terminals shown below, RED+ and BLACK-  
**WARNING:** Maximum input voltage 15VDC



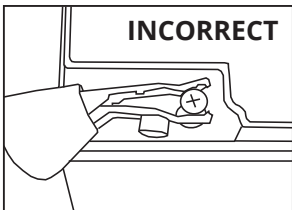
Grip clips tightly around tab terminals



Insert clips fully inside battery terminals

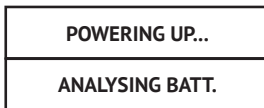


Grip tightly around posts using spikes



DO NOT connect to high resistance bolts

**STEP 3**



Provided there is sufficient voltage in the battery, the message 'POWERING UP' followed by 'ANALYSING BATT' is displayed. During analysis, a pulsed load removes any excess surface charge.

**STEP 4**



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

**STEP 5**



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

**STEP 6**

**12.66 VOLTS**

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

**STEP 7**

**PRESS TO TEST**

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

**STEP 8**

**TESTING AH...**

**7.2Ah**

Record the Ah reading obtained onto a label for future reference.  
NOTE: Ah capacity is automatically displayed in three ranges:  
1.2Ah - 7.9Ah, 08Ah - 99Ah, then 'OVER 100Ah'.



**STEP 9**

**TEST COMPLETE**

If required, press the test button again to verify the Ah reading obtained. NOTE: Ah capacity available is determined by battery temperature and state of charge.

***Recharge or replace when Ah capacity available in the battery falls below 65% of the stated battery Ah size. Check results against the table found on the reverse side of the tester to confirm.***

**FLAT BATTERY**

'FLAT BATTERY' indicates low battery voltage or Ah capacity. Recharge or replace the battery and retest.

**HIGH VOLTAGE**

'HIGH VOLTAGE' indicates that the input voltage exceeds 15V. REMOVE IMMEDIATELY

### **Annual Calibration**

Like most test equipment, it is important for the GOLD PLUS Intelligent Battery Tester to be calibrated to maintain accuracy. We recommend calibration to be carried out every 12 months to ensure general wear and tear does not impair the accuracy of the GOLD PLUS.

As the manufacturer of the GOLD PLUS, it is critical that our battery testers are either sent to us or an approved calibration laboratory for annual calibration. For more information on how to get your GOLD PLUS calibrated, please email [technical@actmeters.com](mailto:technical@actmeters.com) or call +44(0)1744 886660. This applies to all customers within the UK, Europe, United States and Canada.

### **Battery Testing Advice**

#### 1. Don't Buy Flat Batteries

Because SLA batteries normally self discharge at 3% per month, it is very important to decipher the date of manufacture code stamped into 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 up to 6 months to ship from the manufacturer to your distributor.

### 2. Check the Voltage

To avoid potential battery failure problems, it is essential to check the voltage level in new batteries to ensure that they have been sufficiently charged by the manufacturer before leaving the factory. Any battery with less than 12.30VDC should be returned to your supplier as suspect. A new, out of the box battery should show above 12.60VDC.

### 3. Constant Voltage

In order for SLA batteries to charge up fully, it should be charged at a constant voltage of between 13.2VDC (min) and 14.4VDC (max). Optimum charging voltage is normally 13.8VDC. Time taken to fully charge will vary depending on the Ah size of the battery and the level of current available from the charger.

### 4. Batteries Hate Heat

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

|                             |  |
|-----------------------------|--|
| Operating Voltage           | 6V and 12V DC  |
| Reverse Polarity Protection | Red LED Indication   |
| Max Input Voltage           | 15VDC  |
| Battery Types               | SLA (AGM), GEL & Flooded (WET)   |
| Battery Sizes               | 6V (1.2Ah – 12Ah) and 12V (1.2Ah to 100Ah)   |
| Ah Capacity Test            | Simulated 20 hour (C20) load test to 10.50VDC  |
| Ah Calibration              | Calibrated at 0 (zero) position to brand new fully charged premium brand SLA batteries rated at C20hour at 20C (68° F) |
| Ah Result                   | Based on the battery under test temperature and state of charge  |
| Ah Adjustment               | Provides $\pm$ Ah adjustment to brand new fully charged standby SLA, cyclic GEL and car FLOODED lead acid batteries    |
| Battery Table               | Recharge or replace battery when Ah capacity available falls below 65% of the battery's stated capacity                |
| Display Type                | Back-lit LCD   |
| Flat Battery Warning        | 6V <5.30VDC, 12V <10.50VDC   |
| Repeat Test Operation       | Can perform repeat tests continuously  |
| DCV Accuracy                | $\pm$ 2% of displayed reading  |
| Ah Accuracy                 | $\pm$ 10% Fully charged premium brand C20hour rated SLA batteries at 20 - 25C (68F - 77F)                              |
| Applied Pulse Load          | 6A 1.2Ah - 7Ah, 18A 8Ah - 100Ah  |
| Ah Cal Adjustment           | Approx $\pm$ 25 dgts   |
| Case Construction           | High impact ABS  |
| Size                        | 210(H) x 110(W) x 41(D)mm  |

EN 61326-1:2006, Class B (Emissions)  
EN 55011:2007, A2 Radiated Emissions Only  
EN 61326-1:2006, Basic Requirements (Immunity)  
EN 61000-4-2: 1995, A1, A2  
EN 61000-4-3: 2006, A1  
2004/108/EC (Where Applicable)