Operating Instructions

ACT 612

6V/12V Intelligent Battery Tester

ACT Meters Ltd

www.actmeters.com
+44(0)1744 886660

WARNING: ISOLATE THE BATTERY BEFORE USE

DISCONNECT IMMEDIATELY SHOULD "POLARITY REVERSED" OR "VOLTAGE TOO HIGH" WARNINGS LIGHT

WARNING: THE ACT 612 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 ACT 612 IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.

ACT Meters Ltd
The Old Smithy
Church Road
Rainford
Merseyside
WA11 8HD
United Kingdom

www.actmeters.com
sales@actmeters.com
+44(0)1744 886660
US Freecall: 1-877-712-2278
Canadian Freecall: 1-866-921-8888

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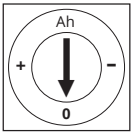
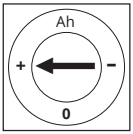
STEP 1 Set the Calibration Control to the Battery Type Under Test

TYPE SLA Standby SLA (Sealed Lead Acid)



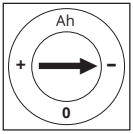
Normally permanently on charge. Used in standby applications: alarm systems, power supplies, stair lifts etc. To measure the Ah capacity available in standby SLA batteries, adjust the Ah calibration control to the 'zero' position as shown. NB: This position is calibrated to common standby SLA batteries. If required, Ah adjustment can be made to suit any specific brand. Refer to 'Calibrating to Non Standard Battery Types' section for guidance.

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 common GEL technology batteries. If required, Ah adjustment can be made to suit any specific brand. Refer to 'Calibrating to Non Standard Battery Types' section for guidance.

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 common car FLOODED (WET) batteries. If required, Ah adjustment can be made to suit any specific brand. Refer to 'Calibrating to Non Standard Battery Types' section for guidance.

Calibrating to Non Standard Battery Types

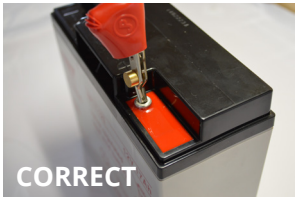
Follow the procedure below:

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. If “POLARITY REVERSED” or “VOLTAGE TOO HIGH” warnings light, disconnect immediately.

Grip clips tightly around tab terminals



Insert clips fully inside battery terminals

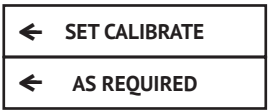
Grip tightly around posts using internally mounted spikes

DO NOT connect to high resistance bolts

STEP 3

Provided there is sufficient energy in the battery, the message 'POWERING UP' is displayed. During this period, a pulsed load removes excess surface charge.

STEP 4



The message 'SET CALIBRATE AS REQUIRED' reminds you to check that the Ah Calibration position is correctly adjusted to test the battery type under test as in Step 1 to Step 3.

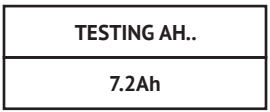
STEP 5

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

STEP 6

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

STEP 7



Record the Ah reading obtained onto a label for future reference. NOTE: Testing batteries above 100Ah will not damage or impair the ACT 612, but the maximum value displayed will be “OVER 100Ah”.

STEP 8

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 of common battery sizes on the tester to confirm.

FLAT BATTERY

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

Annual Calibration

Like most test equipment, it is important for the ACT 612 Intelligent Battery Tester is 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 ACT 612.

As the manufacturer of the ACT 612, it is critical that our Intelligent Battery Testers are either sent to us or a calibration laboratory approved by ACT Meters for annual calibration. For more information on how to get your ACT 612 calibrated, please email sales@actmeters.com or call +44(0)1744 886660.

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 over 6 months to ship from the manufacturer to the end user.

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 (no load) should be returned to your supplier as suspect. A new, out of the box battery should show above 12.5VDC (no load).

3. Charging Voltage

In order for SLA batteries to charge up fully, they 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 between 20ºC - 25ºC (68ºF - 77ºF). 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
Over Voltage Protection	RED LED Indication (MAX 30V - 10 seconds)
Battery Types	SLA (AGM), GEL & Flooded (WET)
Battery Sizes	6V (1.2Ah – 10Ah) 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 20˚C (68˚F)
Ah Result	Based on the battery under test temperature and state of charge
Ah Adjustment	Provides ± 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	± 2% of displayed reading
Ah Accuracy	± 5% Fully charged premium brand C20 hour rated SLA batteries at 20ºC - 25ºC (68ºF - 77ºF)
Applied Pulse Load	6A 1.2Ah - 7.9Ah, 18A 8Ah - 100Ah
Ah Cal Adjustment	Approx ± 25 dgts
Case Construction	High impact ABS with holster
Size (including holster)	84(H) x 170(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)

NOTE: ACT Meters Ltd reserves the right to change specification without prior notice.