



# Battery Analyzer

**12V/800A**

- PROTECTED AGAINST DAMAGE IN CASE OF IMPROPER HANDLING!
- AUTOMATICALLY STORES SET PARAMETERS AND MEASUREMENT RESULTS!
- BUILT-IN PRINTER (version with printer) FOR PRINTING STORED RESULTS AND PARAMETERS!

- Starting Capacity / 100 to 800 A - 3 to 15 s.
- Current Capacity in % of  $I_N$  and Internal Resistance  $R_b$  in  $m\Omega$ .
- Reserve Capacity  $R_C$  in min / 25 A.
- Capacity  $C$  in Ah /  $C/20$ .
- Battery charger /  $C/10$ .
- Automatic battery analysis following these steps.
  - Charging.
  - Measuring Capacity or Reserve Capacity.
  - Charging.
  - Measuring Current Capacity and Internal Resistance.
  - Measuring Capacity test.

**Battery**

## STARTING CAPACITY

The ability of the battery to start the vehicle's engine.

### Test mode according to the EN60095-1 standard:

Load the battery with a current of 60% of  $I_n$  for 5 to 10 s; the voltage should not drop below 9.5 V.

### Test result:

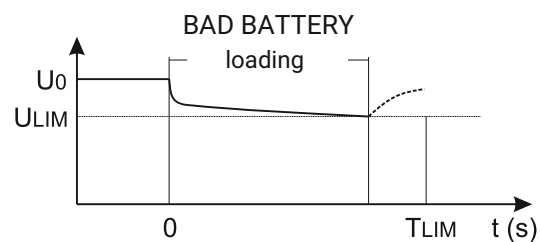
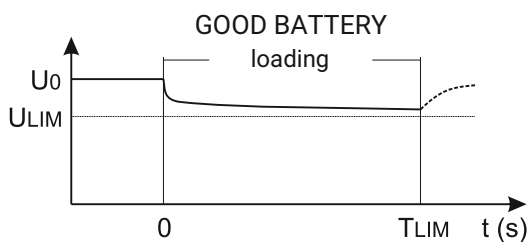
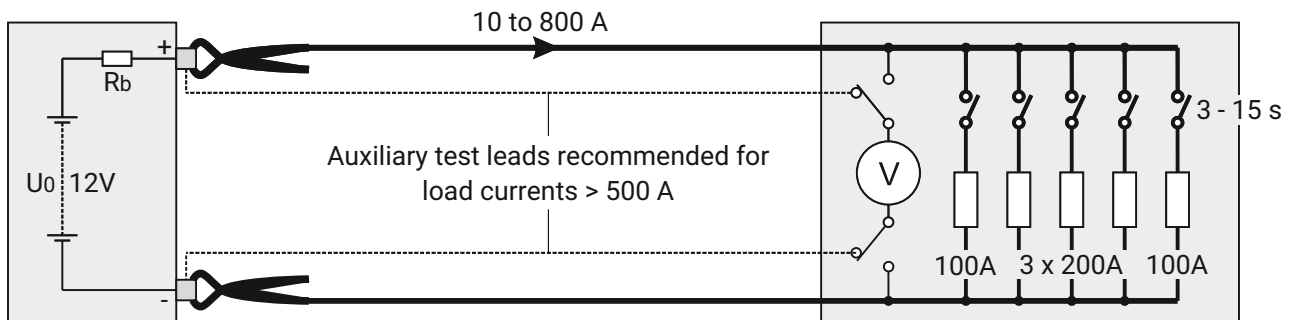
PASS (good) or FAIL (bad)

### Adjustable parameters:

Load current (100 to 800 A - in increments of 100 A)

Load time (3 s to 15 s - in increments of 1 s)

Threshold voltage  $U_{lim}$  (8.0 to 10.5 V - in increments of 0.1 V... due to different standards)



## CURRENT CAPACITY / INTERNAL RESISTANCE

Current capacity is the current that the battery can generate at a voltage of 7.5 V across the terminals of the loaded battery. Internal resistance  $R_b$  is the resistance of the battery that causes the battery voltage to drop from  $U_0$  to 7.5 V under load.

### Test method:

Load the battery with a stepwise increase in current from 10 to 800 A until the voltage drops to 7.5 V.

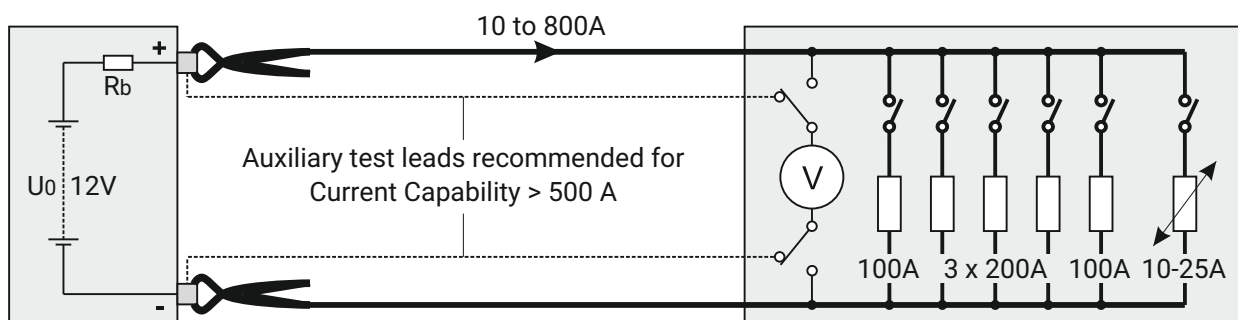
Measurement takes only a few seconds.

### Test result:

Current given as a percentage of  $I_n$ . Internal resistance  $R_b$  given in  $m\Omega$ .  $R_b = (U_0 - 7.5 \text{ V}) / \text{current capacity (A)}$ .

### Adjustable parameter:

Rated current (50 to 1550 A in increments of 10 A)



## RESERVE CAPACITY

The time in minutes needed the battery voltage to drop to 10.5 V under a constant load of 25 A.

### Measurement method according to the standard:

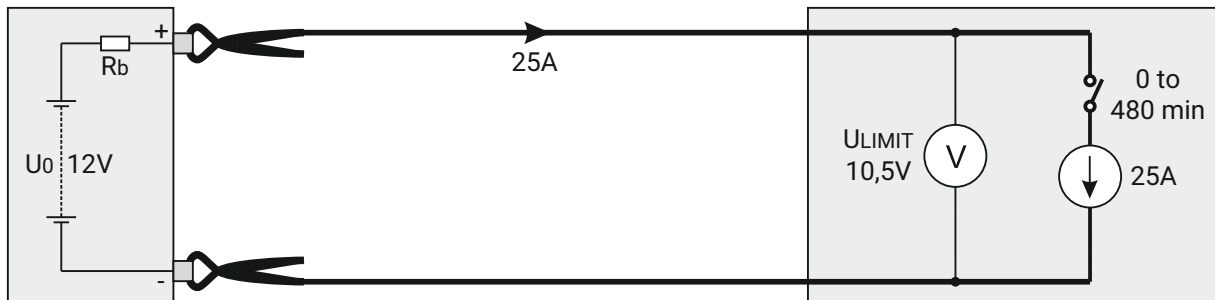
Load the battery with a current of 25 A and measure the time until the voltage drops to 10.5 V. The measurement duration can range from 0 to 480 minutes (depending on the reserve capacity and condition of the battery).

### Test result:

Reserve capacity in minutes.

### Adjustable parameter:

None



## CAPACITY

Capacity in Ah under a constant current load of  $C/20$  until the battery voltage drops to 10.5 V.

### Measurement method:

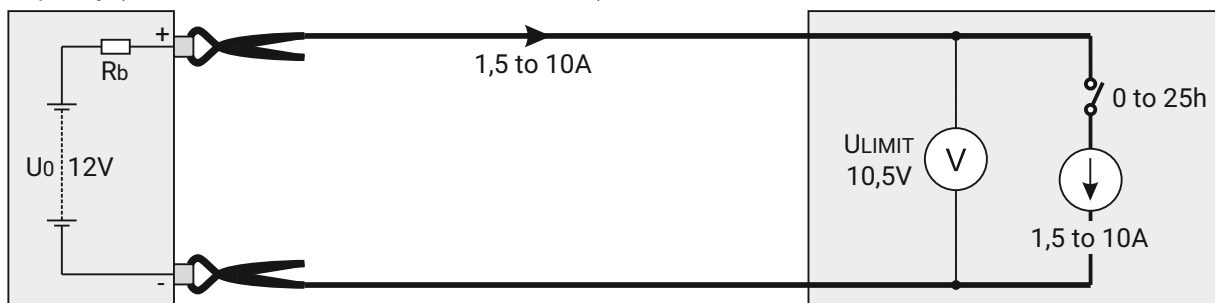
Load the battery with a constant current of  $C/20$  and calculate the capacity continuously until the voltage drops to 10.5 V. The measurement duration can range from 0 to 25 hours (depending on the capacity and condition of the battery).

### Test result:

Capacity in Ah.

### Adjustable parameter:

Rated capacity (from 30 to 200 Ah in increments of 1 Ah).



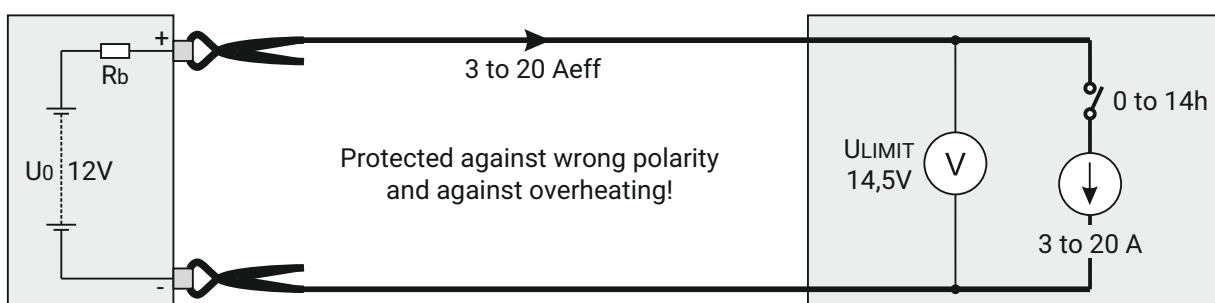
## BATTERY CHARGING

### Charging method:

With a pulse current of constant effective value  $C/10$  for 14 hours or until the voltage reaches 14.5 V, then stop charging.

### Adjustable parameter:

Rated capacity (from 30 to 200 Ah in increments of 1 Ah).



## TECHNICAL DATA

General	
Basic data of tested batteries	12 V / capacity 30 to 200 Ah.
Analyzer power supply voltage	7 to 15 V (power from tested battery) or 230V / 50 Hz (power from mains).
Result memory	Automatic storage of all results after the test/measurement is completed.
Display	Intensely red LED, display height 20 mm.
Connection of tested battery	Crocodile clip, cable 35 mm <sup>2</sup> . Cable length 1.3 m.
Dimensions (W x D x H) / weight	41.5 x 40.0 x 15.5 cm / 13 kg.
Start Capacity	
Test current at 11.5 V +/-10%	100, 200, 300, 400, 500, 600, 700, or 800 A.
Test duration	Adjustable from 3 to 15 s.
Test result	PASS (good battery) or FAIL (bad battery). Voltage after the elapsed time (0.5 to 14.5 V).
Limit voltage value during loading	Adjustable from 8.0 to 10.5 V.
Current Capacity and Internal Resistance of the Battery Rb	
Test current	Automatically adjustable 10 to 800 A.
Result memory	Current in % of I <sub>n</sub> (0 to 999 %) Battery resistance in mΩ (0.0 to 999 mΩ)
Reserve Capacity	
Test current	25 A +/-1%
Limit voltage (measurement interruption)	10.5 V
Measurement result	Reserve capacity in minutes (0 to 999 min).
Capacity	
Test current	C/20 (capacity adjustable from 30 to 200 Ah).
Limit voltage (measurement interruption)	10.5 V
Measurement result	Capacity in Ah (0 to 250 Ah).
Battery Charging	
Charging current	C/10 (capacity adjustable from 30 to 200 Ah).
Charging characteristic	Pulse current of constant effective value up to 14.5 V or max. 14 hours, then automatic charging interruption.
Automatic Battery Analysis	
Battery charging	With a current of C/10 up to 14.5 V or maximum 14 hours.
Measurement of Capacity or Reserve Capacity	With a load current of C/20 or 25 A
Battery charging	With a current of C/10 up to 14.5 V or maximum 14 hours.
Measurement of Current Capacity and Internal Resistance	With a current of 10 to 800 A.
Testing Starting Capacity	With a load current of 100 to 800 A - 3 to 15 s.

### CE mark

LVD 73/23/EEC ...Low Voltage Directive  
EMC ... Electromagnetic compatibility  
Standards considered:

EN61204-3, EN61326 ... EMC  
EN60335-1, EN61010-1 ... LVD

### Observed functional standards

SIST EN60095-1

### Printer (a version without a printer is also available).

High-quality thermal paper printer with a width of 57 mm for printing all saved parameters and results.

AV Elektroinžinieria spekter Vrzdenelec 11b 1354 Hepul 1354 Hepul Fax: 01 7527106	Date: _____ Battery No.: _____	<b>AUTO PROCEDURE</b>	<b>1. CHARGER</b> Parameters: I = 200 Ah U max = 14.5 V or T max = 14 h Results: U = 13.1 V T = 14 h	<b>2. RESERVE CAPACITY</b> Parameters: I = 25 A Results: T load = 214 min	<b>3. CHARGER</b> Parameters: Nominal Cap. = 200 Ah I max = 14.5 V or T max = 14 h Results: U = 14 V T = 14 h	<b>4. START-UP CAPACITY</b> Parameters: I <sub>n</sub> = 870 A Results: I = 87 % I <sub>n</sub> R <sub>i</sub> = 17 mΩ	<b>5. START-UP CAPABILITY</b> Parameters: A T load = 10 s U min = 9.5 V Results: Start-up Capability PAS U = 10.8 V
---	-----------------------------------	-----------------------	---	---	--	---	--

