

# MEASUREMENT AND TEST EQUIPMENT

## ▶ BAT/26523

### CHARACTERISTICS

- 30 measurement ranges
- 8 functions
- 3.5 Digit LCD
- automatic polarity indication
- Size: 88 x 173 x 40
- Weight: 340 gr
- Measurement device and cables put up in a practical case

DC voltage	200 mV => 1000 mV
Alternating voltage AC	200 mV => 700 mV
Direct current DC	200 µA => 20A
Alternating current AC	200 µA => 20A
Resistance	200 Ohm => 20 Mohm
Frequency	20 KHz
Capacity	2000 pF => 20 µF
Transistor hFE test	0 ~ 1000
Temperature	0°C => 1000
Diode test	



## ELECTRONIC BATTERY TESTER + DIGITAL VOLTMETER



## ▶ BAT/23030

Appropriate for all types **12 VOLT** batteries, also for maintenance-free batteries.

Selector switch 100 to 800 Amp. (20-160Ah), to examine all types of batteries of cars and heavy weight vehicles. Power supply 9V battery (not included). Indication "low battery" when the battery is low.

**Reading of the battery state:** the display indicates the capacity of the battery in volt.

**Reading under charge:** The operator adjusts the cold-start capacity with a selector switch and then presses the button "TEST". The instrument does the test electronically.

**Voltmeter:** scale to 19,99V: this instrument can also be used as a voltmeter for the carrying out of several measurements.



# BATTERY ACCESSORIES

## MEASUREMENT AND TEST EQUIPMENT

### BATTERY IMPEDANCE TESTER



### BATTERY CAPACITY TESTER USB

▶ **BAT/48145**

#### FEATURES

- Test Condition Without Shutting Down Battery
- Simultaneously Measure Battery Resistance, Voltage, Current, Temperature
- Auto-hold and Auto-data storage
- Comparator Function
- Rates Conditions as Pass, Warning, or Fail
- Memory and Read function
- Compact and Lightweight
- USB PC Interface

Battery Types Tested	Compact storage batteries, Alkali and lead-acid batteries.				
Battery Capacity	0 to 1200 Ah				
Resistance	Ranges: 4mΩ, 40mΩ, 400mΩ, 4Ω, 40Ω, 400Ω Resolution: 1mΩ, 10mΩ, 100mΩ, 1mΩ, 10mΩ, 100mΩ Accuracy: ±(3%reading ± 20digits) on 4mΩ range. ±(0.8%reading ± 6digits) on 4mΩ other ranges.				
Measurement Condition	Current: Approx. 40mA, 4mA, 400mA, 40mA, 4mA Frequency: 1kHz±30Hz				
DC Voltage	Range: 6V, 60V Resolution: 1mV, 10mV Accuracy: ±(0.1%rdg±6digits)				
Temperature	Range: -20°C to 60°C (-4 °F to 140°F) Resolution: 0.1°C / 0.1°F Accuracy: ±1°C / ±1.8°F				
DC Current	Range: 600A Resolution: 0.1 A Accuracy: 600A : ±(2%rdg±2dgt)	Optional Accessories: PROVA 15 (including plug wire)	Range	4A	30A
			Resolution	1mA	10mA
			Accuracy	±(2%rdg±2dgt)	±(2%rdg±3dgt)
Open Circuit Voltage	5V max				
Manual Data Memory	999 data sets				
Continuous data memory	6000 data sets (only us PC download)				
Comparator	Setting: Resistance upper and lower limits and voltage threshold limit. Memory: 99 sets of values				
Operating Environment	0°C to 40°C (32°F to 104°F), 80%RH or less, non-condensing.				
Maximum Input Voltage	60VDC				
Power Supply or AC Adapter	Six AA size 1.5V alkaline batteries				
Battery life	5.5 hours				
Dimensions/Weight	Approx. 198(L)x 94(W)x 49(H)mm /Approx. 530g				
Accessories	Clip - type test lead with temperature sensor, Pin - type test lead, 3092CP DCA current adapter, Zero adjustment board, Instruction manual, batteries, AC adapter, USB cable, CD PC software, Carrying case.				

### TESTER FOR SINGLE COVER BATTERIES



▶ **BAT/23022**

This tester can test the state of the battery and the functioning of the voltage regulator, and when the resistance is switched off, it can measure the voltage. 6 +12V

### TESTER FOR 6-24V DC SYSTEMS



▶ **BAT/18777**

Multifunctional device for a car electrician.

### VOLTTESTER FOR 6,5V UP TO 32V DC



▶ **BAT/18799**

With magnetic strip.  
The point: neg. & the clip: pos.

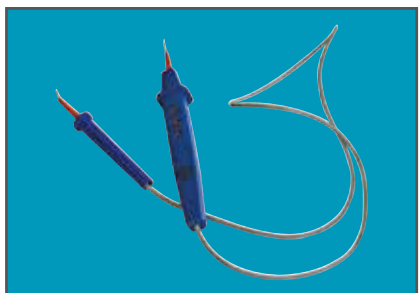
### CONTINUITY TESTER FOR 12V SYSTEMS



▶ **BAT/18797**

Indicates the voltage through colored LEDs.

### VOLTAGE TESTER



▶ **BAT/18129**

Voltage tester 110/220/380V - LED

### ACID HYDROMETER



▶ **BAT/13883**

Acid hydrometer



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## MEASUREMENT AND TEST EQUIPMENT



### THERMAL IMAGING SCANNER

#### FEATURES

- IR resolution: 120 × 90 pixels
- Thermal sensitivity/NETD: <math><0.10^{\circ}\text{C}</math> (0.27°F) / <math><100</math> mK
- Image adjustment: Automatic adjust/lock image
- Field of view (FOV): 45° × 34°
- Minimum focus distance: 0.5 m (1.6 ft.)
- Image frequency: 9 Hz
- Focus: Focus free
- Wi-Fi: Peer-to-peer or network
- Detector type: Uncooled microbolometer

#### BAT/48306

The infrared camera is a powerful and extremely cost-effective, easy-to-use troubleshooting tool for building, electrical, and mechanical applications. All include MSX® technology that provides extraordinary thermal imaging detail.

Wi-Fi connectivity to smartphones and tablets via the Tools Mobile app makes sharing images and sending reports from any location easier, enabling you to make critical decisions faster. By providing thermal images to help you find hidden problems along with accurate temperature measurements, an Ex-Series camera is the ideal budget-friendly replacement for old-school IR thermometers.



#### EASY TO USE

Intuitive, user-friendly interface for measurements in thermal or MSX mode

- Fully automatic and focus-free
- Simple button navigation to on-screen settings, imaging modes, and measurement tools
- MSX adds digital camera detail to IR images for better perspective and interpretation

#### CONVENIENTLY SHARE IMAGES AND FINDINGS

Download images, create reports, and show what you've found instantly

- Wi-Fi connectivity to mobile devices via FLIR Tools Mobile app
- Rapid Wi-Fi or USB image transfer for documentation
- Analyze and edit images, and create convincing reports with FLIR Tools

#### COMPACT AND RUGGED

Built for portability and use in harsh environments

- Lightweight (1.2 lb / 0.575kg) and withstands 2-meter drop test
- Hard transport case included for convenience on-the-go
- 2-year warranty coverage on camera, 5 years on batteries, 10 years on detector

#### CHARACTERISTICS

- Measuring range: - Density: 0 g/cm<sup>3</sup> to 3 g/cm<sup>3</sup>  
- Temperature: 0°C to 40°C  
- Viscosity: 0 mPa.s to 1000 mPa.s
- Sample volume: 2 ml
- Dimensions (L x W x H): 140 x 138 27 mm
- Data memory: 1024 measured results
- Power supply: two 1,5V alkaline batteries



### DIGITAL HYDROMETER

#### BAT/47703

- Easy operation
- Compact, lightweight design enabling one-hand measurement
- No-hassle measurement of hard-to-reach samples
- Large LCD display with backlight
- Measuring cell with inspection window and backlight
- The communication is done via infra red, if your pc or laptop doesn't have a standard infra red access gate you need to use a USB to Infra red receiver.
- Install the driver on the laptop, connect the infra red stick in the pc and then put the digital hydrometer in front of the USB stick, then select export all data from the hydrometer and the data will be sent automatically to your desktop.

### BATTERY ACID TESTER

#### BAT/47704

The battery tester is a heavy-duty, chemical-resistant hydrometer which is direct reading and accurate at all electrolyte temperatures. Its advanced design incorporates important practical features which simplify battery service as never before.

- Handy compact size for use with hard-to-get batteries
- Large, easy-to-read scale with quick-check colored sectors
- Readings, independent of vertical positioning of instrument
- Fast, bubble-free intake of fluid sample
- Automatic air-lock prevents fluid loss and air bleed
- Unexcelled temperature compensation and measuring accuracy
- Sturdy, shock-resistant materials, noncorrosive throughout



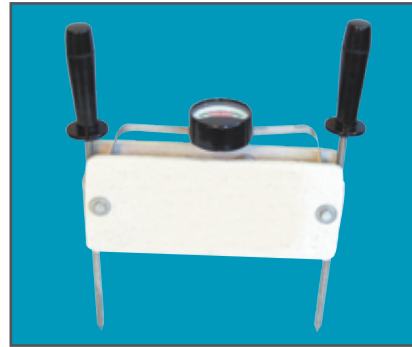
### DISCHARGE TESTER



▶ **BAT/19635**

For 6 & 12 VOLT starting and semi-traction batteries. With two selectable charging possibilities: 125 or 250 Amps. Tests automatically every 10 seconds.

### DISCHARGE TESTER



▶ **BAT/19634**

Up to 120 Amps for 6 & 12 Volt starting and semi-traction batteries.

### CONDUCTIVITY TESTER



▶ **BAT/48773**

Controls the conductivity values (micro Siemens) of your demineralised water.

### ZIVAN CAPACITY TESTER



▶ **BAT/14934**

For traction and stationary batteries.

## BATTERY ANALYSIS DEVICE

▶ **BAT/41753**

With the battery analyzes device you can analyze and discharge your batteries. With help of the short-test within 10 seconds the current state of charge and the battery internal resistance is shown. The tester accepts all kinds of batteries such as NiCD, NiMH, Lead, LeadeGel, car battery, Li-Ion, Li-Polymer and Li-FePo4-batteries from 1.2volts – 36volts.

By discharging without PC-Software the tester chooses the discharge current automatically, depending on the nominal voltage of the battery. A 12volt battery with 2,0Ah is discharged within 10 minutes on average. With the PC software you can change the discharge current on your own. The battery can even be discharged by interval.

The premium version includes:

- Battery analyzes device
- PC-software KPS lite
- 12volts power supply
- USB adapter-cable

Output voltage	1,2V - 36V
Input voltage	12V/0,8A





# BATTERY ACCESSORIES

## MEASUREMENT AND TEST EQUIPMENT



### AQ-TRON DISCHARGE CAPACITY TESTER FOR 6V & 12V BATTERIES – 6V 80AH / 12V 80AH



#### ▶ BAT/48524

BAT/48524 is microprocessor device for capacity testing lead-acid 6V and 12V batteries with nominal capacity up to 800Ah (C10) or 1600Ah (C20). It is developed as a consequence of need for small, easy for use, safe, reliable and relatively cheap device for servicing and maintenance of starter, stationary and industrial batteries. BAT/48524 is high frequency dissipative discharger with fine regulation of testing current. It can be used for testing 20 hours capacity C-20 ( $I=C_n/20$ , 1.75V per cell) or for reserve capacity testing Rc ( $I=25A$ , 1.75V per cell). Discharging current is setting according to battery nominal capacity and test type. It measures, regulates and shows current, voltage, duration and discharged capacity in each second of test. LCD display shows the test flowing and results are stored in flash memory. With software for BAT/48524 it is possible to connect device with PC computer via RS232 serial port. Software gives opportunity of showing discharge graphs (testing) in real time, possibility of reading discharge data in case that device wasn't connected with PC, printing and storing the results, creating reports etc.

Discharge current	1-80A, Cn/20 (1600Ah), step 0.5A
Battery type	Un: 6V and 12V; Cn from 10Ah to 800Ah (1600Ah C20)
Discharging voltage range	from 4V to 18V until 1.75V per cell (min. 1.3V/Cell)
Accuracy	Better than 3 %
Resolution	100mA and 20mV (10-bit A/D)
Current pulsation	Up to 0.3A
Energy circuit	MOSFET transistors, power resistor
Cooling	Controlled forced air
Control characteristic	Constant current
Control variable	Current, voltage, capacity Ah, time
Display	LCD display with 2x 16 characters
Control elements	Main switch, START/STOP/RESET/SELECT, SCROLL UP and SCROLL DOWN buttons
Housing	Steel red box
Dimension (WxDxH)	245 x 400 x 160 mm
Weight	10 kg

#### CHARACTERISTICS

- Type of voltage converter: dissipative high frequency transistor-resistor discharger with analogue-digital regulation of discharging current (12 bit D/A converter);
- Supply 230V  $\pm$  10%, 50Hz 30W
- Nominal input current: 0.5A
- Instruments: LCD display 2x16 characters, ampermeter 0-100.00A, voltmeter 0-20.00V
- Cables with Pb plugs: l=2m, S=16mm<sup>2</sup>
- Ambient temperature: 5 do +40°C

BAT/48524 complies with Directives 89/336/EEC-Electromagnetic compatibility (EMC) and 2006/95/EC-Low voltage equipment (LVD)...

## BATTERY CAPACITY TESTER

#### ▶ BAT/35342: 12V - 420A

Battery capacity tester for starting and semi-traction batteries

#### ▶ BAT/35344: 24V - 100A

Battery capacity tester for semi-traction and traction batteries

#### ▶ BAT/35346: 48V - 100A

Battery capacity tester for semi-traction and traction batteries



With this processor controlled instrument, very accurate measurements can be carried out, by discharging the battery with a selected constant current.

It's possible to test the starting capacity, to see if it's possible to start an engine. It's also possible to measure the reserve capacity of any battery; only the desired parameters have to be selected (current, output current, time) and the test can be started. The tester discharges the battery automatically with the selected discharge current to the selected output-current.

**Alternator test:** when you use the tester for an alternator test, you have to connect it to the alternators and increase the discharge current while you keep an eye on the voltage. Thanks to this method, the maximum power of every alternator can be determined. The desired information can be downloaded at your PC.

## CAPACITY TESTER FOR BATTERIES AND CHARGER FOR CYCLIC BATTERIES 12V+24V (UP TO 200 CYCLES)



Microprocessor controlled capacity tester with data logger. **No PC-Tester cable is needed. All tests are stored on a USB Pendrive.**

Even 200 cycles are possible with all current - voltage - time values.

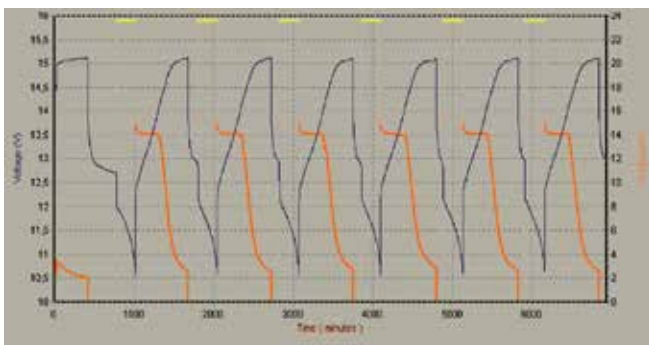
With this tester, the capacity of 12V semi-traction, traction, deep-cycle, gel, AGM, ... batteries (cyclical batteries) can be tested

The device can be programmed from up to 200 charge- and discharge cycles; it measures the charged and discharged capacity (Ah) and the duration of every cycle.

The device gives a picture of the capacity of the battery (do I have enough capacity) and of the charging process of your battery charger (can my charger charge the battery enough and correctly).

After the charge/discharge process, the USB can be connected to the PC and reproduces the correct charging/discharging curves.

These curves tell you everything about the battery and the charger. You see the REAL charge characteristics, you can print them... or you give a full report of the charging and discharging process. It's also possible to zoom in on the curve and to export the data to Excel.



	BAT/35016	BAT/35018
Technical Data:	12 V Version	24 V Version
Measured Voltage Range:	6-18 V	12-32 V
Max. Input Voltage :	16 V	30 V
Min Input Voltage:	6 V	12 V
Discharging current:	0.3-25 (0.1 A steps)	0.3-25A (0.1 A steps)
Current error:	+2% + 0.05A	+2% + 0.05A
Cut off voltage	6 -15 V	12-30 V
Charging time:	1h -99 h	1h -99 h
Max Number of cycles:	200	200
Dimensions	200*140*190 [mm]	200*140*190 [mm]
Weight.	2 Kg	2 Kg

## BATTERY REGENERATION APPARATUS



### ▶ BAT/31601

This device serves as regenerator (to repair) of 12V batteries, which are sulphated by too deep discharge, self-discharge, too long standstill etc.

The device has a special charge programme to desulfate 12V batteries & it has an adjustable current setting of 1-5 A.

It can be used for lead acid start batteries, semi-traction, traction or deep-cycle batteries, AGM and GEL batteries.