



# BATTERY ACCESSORIES

## BATTERY TESTERS



### EXP-1000

#### EXPANDABLE ELECTRICAL DIAGNOSTIC PLATFORM

##### BAT/26728

With the EXP-1000 you can diagnose every part of the electrical system; battery to starter to alternator, more accurately and decisively than ever before.

#### FEATURES

##### Dynamic Conductance Battery Testing Technology

- Combines direct temperature measurement with deep scan technology to improve accuracy and decisiveness

##### Advanced Electrical System Diagnostics with Digital Signal Processing

- Digital Signal Processing (DSP) delivers improved accuracy and the ability to analyze the amplitude level and frequency of the ripple pattern to identify open or shorted diodes and open-phase conditions

##### DMM Function for Advanced Diagnostics

- AC/DC Volts • AC/DC Amps • Volts/Amps Mode
- Scope Mode • Temperature • Diode Test
- Ohm Meter

##### Patented Conductance Cable Drop Test

- Interactive test routines using dual cable sets for more effective analysis of voltage drop across ground circuit, starter system, alternator system, and generic system testing

##### Enhanced Communications Capabilities

- IR printer option
- Data card reader/writer for future upgrades

##### Superior User Interface

- Large graphical display screen
- Scroll bar capability
- Alphanumeric keypad, icon-based menus and hot keys improve screen flow



#### CONDUCTANCE TECHNOLOGY

Conductance describes the ability of a battery to conduct current. It is a measurement of the plate surface available in a battery for chemical reaction, which determines how much power the battery can supply. High relative conductance is a reliable indication of a healthy battery, while conductance declines as the battery deteriorates.

Years of laboratory and field test data have determined that battery conductance is an indicator of battery state-of-health showing a linear correlation to a battery's timed-discharge capacity test result. If conductance can be measured, discharge capacity can be predicted, giving a reliable predictor of battery end-of-life.

Other testing alternatives like voltage and specific gravity testing are not predictive. Timed discharge testing is very time-consuming and expensive, and impedance testing does not correlate directly and linearly with discharge capacity. Thus, conductance testing is a very effective and economical battery management tool.



##### BAT/26724

The Midtronics® SCP Battery Conductance Tester provides a simple method to screen the state-of-health of popularly sized 6 volt and 12 volt sealed lead-acid batteries.

#### SPECIFICATIONS

Model Number: SCP-100

Applications: Use of sealed lead-acid batteries for security systems, emergency lighting, mobility vehicles, uninterruptible power supplies, more

##### Operating range:

- 6 and 12 volt nominal batteries from 1.2 to approximately 55 ampere hours in capacity
- Voltmeter: +6.0 to +14.0 VDC
- Conductance: 20 to 1200 siemens
- Operating Temperature: -18 to 50°C (0 to 120°F)

#### BENEFITS

**Simple:** Easy to setup, even easier to use!

**Quick:** Battery voltage and conductance displayed in less than 10 seconds.

**Safe:** Utilizes patented conductance technology, a passive method that minimizes technician risk and battery stress.

**Accurate:** Conductance method recognized by IEEE standard for the testing of lead-acid batteries with proven correlation to battery capacity.

**Economical:** Efficient and accurate battery tester priced to fit into every technician's tool kit.

- Tests 6V and 12V batteries
- Helps to ensure the operation of critical systems despite power loss
- Prioritizes battery replacements and additional testing for cost-effective system management
- No external power source needed



Add battery testing to your preventative maintenance routine and identify bad batteries before your customers get stranded. You will increase battery sales and have satisfied customers.

**BAT/26723**

Complete with an integrated printer, the Midtronics MDX-300 series makes it easy and more affordable to determine and present the current state of a battery and electrical system. The MDX-300 series perform a quick, simple, and accurate battery or system test in seconds without heat, sparks, or user interpretation. The results can then be printed and reviewed immediately with customers to add impact to preventative maintenance routines and customer service.

**SPECIFICATIONS**

- Integrated printer provides immediate results to review with the customer
- User-defined headers on printout
- Tests 12-Volt batteries and electrical systems for cars and light trucks
- Tests starting and charging system voltage and displays results
- Tests batteries from 100 to 900 CCA
- Bad cell detection
- Reverse polarity protection
- Tests discharged batteries down to one Volt
- Multiple rating system compatible (CCA, SAE, DIN, EN, IEC)
- Tests multiple battery chemistries, including standard (flooded), AGM, and Gel
- 19 languages



MDX-335P

**MDX-600 SERIES BATTERY CONDUCTANCE AND ELECTRICAL SYSTEM ANALYZER**

The MDX-600 series combines industry standard conductance technology for battery testing with more than 25 years of experience and innovation gained from selling essential tools to nearly every car and truck OEM in the world. MDX Series advanced features include:

- Multiple vehicle applications, battery types, and rating systems
- Large back-lit screen and improved user interface
- Integrated printer option
- Improved Replaceable Cable Design

**APPLICATIONS**

- Automotive / Motorcycle / Truck / 6 & 12 Volt batteries / 12 & 24 Volt charging systems

**BATTERY TYPE**

- Regular flooded / AGM flat plate / AGM spiral / Gel

**TEST RANGE**

- JIS, SAE, EN, DIN, IEC / 6 and 12 Volt batteries

**ADVANCED STARTER/ALTERNATOR TESTING**

- Quick starter analysis without disabling the ignition / Advanced menu-driven interface for a complete charging system analysis in seconds

**SUPPORTED LANGUAGES**

- 24 languages



MDX-645/MDX-655

MDX-645P/MDX-655P

Ref.	Includes:
<b>BAT/26721</b>	MDX-645 Battery Conductance Analyzer including 120 cm cable (6 and 12 Volt batteries)
<b>BAT/26722</b>	All of the MDX-645 features, including 120 cm cable plus an Integrated Printer
<b>BAT/26725</b>	Battery and Electrical System Analyzer combines the full MDX-645 capabilities for battery testing with in-vehicle capabilities for analyzing the starting and charging systems including 300 cm cable (6 and 12 Volt batteries and 12 and 24 Volt charging systems)
<b>BAT/26726</b>	All of the MDX-655 features, including 300 cm cable plus an Integrated Printer





# BATTERY ACCESSORIES

## BATTERY TESTERS



### BAT/48293

#### Battery Tester & Electrical System Analyzer

- 12V Car & Motorcycle batteries
- Fully Graphical Interface
- LCD Display
- TouchPad with Sensor technology
- WET, AGM, EFB, GEL
- CCA, SAE, EN, IEC, DIN, CA, JIS, EN
- Starter Test
- Alternator Test
- Data transfer to PC



### BAT/48294

#### Battery Tester & Electrical System Analyzer

- 12V Car & Motorcycle batteries
- Fully Graphical Interface
- LCD Display
- Integrated Printer
- TouchPad with Sensor technology
- WET, AGM Flat, AGM Spiral, EFB, GEL, Ca
- CCA, SAE, EN, IEC, DIN, CA/MCA, JIS, EN1, EN2
- Starter Test
- Alternator Test
- Data transfer to PC

### KEY FEATURES

- Simple and easy to use
- Test batteries on and off the vehicle
- Accurate results in milliseconds
- Battery Life Analysis
- Analysis Result : Good or Replace
- Large easy to read LCD display.
- Test results based on JIS, EN, DIN, SAE and IEC Standards.
- Languages: English,
- Quick test—input battery volume (AH), then it can show the battery status.
- Vehicle cranking system test—cranking time, voltage and status.
- Vehicle charging system test—load voltage, unloaded voltage, ripple status and charging system status.
- Store the testing result, print function

## BATTERY ANALYSER

### BAT/47914

This Battery tester is designed to test the condition of the automotive battery using conductance method. Unlike the conventional method of draining the battery by applying resistance load to it and obtain the result from the meter gauge; this analyzer utilizes a series of pulsed voltage across the battery cells and observes the AC current that flows in response to it.



System voltage	12 Volts
Input voltage range	9V~15V
Power requirements	No internal batteries required. Power on when hooked up during testing.
Testing range	100 ~ 2000 CCA, 100 ~ 1000 DIN, 100 ~ 1000 IEC, 100 ~ 1700 EN
Weight	0.5kg

### THE BENEFITS OF THIS TEST METHOD ARE

- Conductance correlates directly to the battery capacity Passive testing method is safe.
- Never discharges or drain the battery.
- Able to test condition of discharged battery. Consistent and repeatable results.
- Provides unique indication of battery conditions.



## BATTERY MONITOR

### BAT/47915

### SPECIFICATIONS

- Shows voltage information when user is close to the vehicle, no need to open app;
- Check vehicle starting (cranking) system automatically when each time engine started;
- Check charging system (alternator);
- Alert mobile phone automatically if something wrong;
- Review voltage history in graph mode;
- Stored all the history data in app;
- Stored history data in hardware up to 90 days;
- Check battery voltage each 2 minutes automatically;
- Check starting voltage each 10ms when engine is starting;
- Engine starting detect automatically;
- Ultra-low power consumption, average current: 0.6mA;
- Connect with battery directly;
- Free app for iOS & Android users;
- Compatible with all 12-volt vehicle batteries;
- Each link technology, no pairing;



### KEY FEATURES

- Android 4.3+, iPhone 4S+, iPad3+
- Alert user if charge is low
- Review charge history in graph mode
- Show the state of charge of battery in real time
- Check starting and charging systems
- All 12V car battery

## AUTO EXACT EXPRESS TEST / CHARGE CENTER

### BAT/47508

AC Voltage: 220 V ~ 240Vac 50Hz

#### DIAGNOSTIC CHARGING

Maximum Charge Current 50 Amp DC  
 Engine start 150 Amp@ 7.2V (5seconds)  
 Maximum Charge Voltage 16Vdc

#### TESTING

Application	12V Batteries / 12V START - STOP Batteries / 12V & 24V Charging/Starting System
Operation Range	200 ~ 3,000 CCA (SAE)
Rating System	SAE, DIN, EN, IEC, JIS (Battery Type No.)
Voltmeter	1.5 V ~ 30V via Battery Clamp / 1.5 V ~ 60V via Test Probe
Automated Load Test	200 Amp (Max.)
Display	Back-Lit Display, 4 Lines 16 Characters LCD
Thermal printer	Integrated
Languages	English, French, Spanish, German, Italian, Portuguese
Features	Easy-Link Communication to PC via USB Date /Time Function, Test Counter and Stores Previous 1,000 Tests OverTemperature / Current /Voltage, Reverse Polarity and Short Circuit Protection Fully Customizable Printout
Included accessories	1 Roll of Printer Paper 1 Detachable Charging /Test Lead: 6-Gauge (13.3mm <sup>2</sup> ), Approx. 8 Feet (2.5M)
Dimensions	Approx. L 330mm x W 300mm x H 200mm



## BATTERY & ELECTRICAL PERFORMANCE PLATFORM WITH PRINTER

### BAT/47510

Application	6V & 12V Batteries / 12V <b>START - STOP</b> Batteries / 12V & 24V Charging/Starting System
Operation Range	40 ~ 3,000 CCA (SAE)
Rating System	SAE, DIN, EN, IEC, JIS (Battery Type No.)
Voltmeter	1.5 V ~ 30V via Battery Clamp / 1.5 V ~ 60V via Test Probe
Display	Back-Lit Display, 4 Lines 16 Characters LCD With Adjustable Brightness
Thermal printer	Integrated
Detachable Test Lead	70 inch/180 cm
Languages	English, French, Spanish, German, Italian, Portuguese
Features	Easy-Link Communication to PC via USB Date /Time Function, Test Counter and Stores Previous 1,000 Tests Fully Customizable Printout Temperature Sensor & Temperature Compensation
Included accessories	1 Roll of Printer Paper, Detachable Test Lead 6 AA Batteries, Heavy-duty Blow Molded Plastic Case
Dimensions	Approx. L 275 x W 135 x H 80 (mm)





# BATTERY ACCESSORIES

## BATTERY TESTERS

### 2 IN 1 DIGITAL VOLTMETER & MINI TESTER FOR TESTING BATTERY / ALTERNATOR

#### ▶ BAT/47507

- Back-lit LCD display with 4 digit readout
- Ranges: 4.5 ~ 39.99V
- OCV vs. State of Charge for Battery Tester
- Available Testing Battery Voltage: 6V, 12V & 24V
- LED indicator for Alternator test
- Reverse polarity & over voltage protection
- Cable length: 20.9 inch / 53 cm
- Dimension: L 120 x W 70 x H 18 (mm)



### MOTORCYCLE & POWER SPORT BATTERY & ELECTRICAL SYSTEM ANALYZER

#### ▶ BAT/47505



### MOTORCYCLE & POWER SPORT BATTERY & ELECTRICAL SYSTEM ANALYZER WITH PRINTER

#### ▶ BAT/47506



REFERENCE	BAT/47505	BAT/47506
Application	12V Motorcycle & PowerSport Battery 12V Charging/Starting System	
Operation Range	Battery OE Code Number & 2.3-30 AH	
Voltmeter	1.5V ~ 30V	
Display	Back-Ut Display, 2 Lines 16 Characters LCD	
Thermal printer	NA	Integrated
Test Lead	31 inch / 80 cm	
Languages	English, French, Spanish, German, Italian, Portuguese	
Included accessories	1 9V Battery	2 rolls of Printer Paper 4 AA Batteries
Dimensions	L 198 x W 114 x H 53 (mm)	L 195 x W 114 x H 50 (mm)



## BATTERY & ELECTRICAL SYSTEM ANALYZER WITH PRINTER

### ▶ **BAT/45009**

Application	6V & 12V Batteries 12V & 24V Charging/Starting System
Operation Range	40 ~ 2000 CCA (SAE)
Rating System	SAE, DIN, EN, IEC, JIS (Battery Type No.)
Voltmeter	1.5V ~ 30V
Display	Back-Lit Display, 2 Lines 16 Characters LCD
Thermal printer	Integrated
Detachable Test Lead	31 inch/800 cm
Languages	English, French, Spanish, German, Italian, Portuguese
Included accessories	Heavy-duty Blow Molded Plastic Case 2 Rolls of Printer Paper: 37 mm (W) x 7.5M (L) - 4 AA Batteries
Dimensions	Approx. L 195 x W 114 x H 50 (mm)



## BATTERY & ELECTRICAL SYSTEM ANALYZER

### ▶ **BAT/27627**

Application	6V & 12V Batteries 12V & 24V Charging/Starting System
Operation Range	40 ~ 2,000 CCA (SAE)
Rating System	SAE, DIN, EN, IEC, JIS (Battery Type No.)
Voltmeter	1.5V ~ 30V
Display	2 Lines 16 Characters LCD
Test Lead	31 inch/800 cm
Languages	English, French, Spanish, German, Italian, Portuguese
Included accessories	Heavy-duty Blow Molded Plastic Case - 19V Batteries
Dimensions	L 198 x W 114 x H 53 (mm)



### ▶ **BAT/48138**

Replacement paper roll  
57 mm (W) x 30m (L)  
1 roll/bag

### ▶ **BAT/47509**

+ Amp Clamp (measures amperage/  
charging current) + Volt Test Probe  
(Red test probe measures DC voltage)

### ▶ **BAT/47515**

+ Amp Clamp (measures  
amperage/charging current)  
+ Volt Test Probe (Red test probe  
measures DC voltage)





# BATTERY ACCESSORIES

## BATTERY TESTERS



### 100AMP BATTERY LOAD TESTER

#### ▶ BAT/19665



#### FEATURES

- Test battery state of charge, battery cranking ability, charging system output and starter condition
- Complete test in 10 seconds

REFERENCE	BAT/19665
Application	6V & 12V Batteries 12V Charging/Starting System
Operation Range	Up to 1,000 CCA (SAE)
True Loading Capacity	100 Amp
Display	Analog Meter
Test Lead	20 inch / 50 cm

### 125AMP DIGITAL BATTERY LOAD TESTER/ CHARGING SYSTEM ANALYZER

#### ▶ BAT/26622



#### FEATURES

- Automatically turns off the load after 10 sec. and holds the voltage
- Unique 3 Step design: LED polarity checking function, battery load test and charging system test readout
- Microprocessor controlled design guarantees an easy and accurate load test

REFERENCE	BAT/26622
Application	12V Batteries 12V Charging/Starting System
Operation Range	Up to 1,000 CCA (SAE)
True Loading Capacity	100 Amp
Display	3 Digital LED display
Test Lead	20 inch / 50 cm

### 500AMP CARBON PILE BATTERY LOAD TESTER

#### ▶ BAT/37281



- Color-coded, temperature compensation pass fail bands on the voltmeter insure precise battery load test results.
- Separate voltmeter and ammeter provide easy to monitor battery load tests.
- Tests batteries up to 1,000CCA.
- Tests 12V batteries, alternators, regulators & starters.
- Built with warning beeper.
- Meets UL standards.

# MEASUREMENT AND TEST EQUIPMENT

## DIGITAL CLAMP MULTIMETER WITH DATA-HOLD FUNCTION AND BACKLIGHT



### BAT/34937

- DC voltage: 200mV / 2V / 20V / 200V / 600 V
- AC voltage: 200mV / 2V / 20V / 200V / 600 V
- AC current: 2/20/200A/400A
- Resistance: 200 / 2K / 20K /200K / 2M / 20M
- Overrange: "OL"
- Continuity buzzer
- Diode test
- Low-battery indication
- Maximum display: 1999
- LCD display size: 20 x 30mm
- Ranging mode: auto / manual
- Data hold
- Backlight
- Dimensions: 205 x 70 x 37mm
- Weight (with battery): 210g
- Power supply: 2 x 1.5V AAA batteries (incl.)
- Accessories: manual / test leads / batteries / carrying bag Auto power-off

### FEATURES

- Digital clamp meter with a resolution to 1mA AC
- 3 1/2-digit LCD display with automatic polarity indication
- Data-hold and backlight function
- AC current measurements: max. 400A (via transformer jaws)
- AC voltage (max. 600V) and DC voltage (max. 600 V) measurements
- Resistance measurements: max. 20 Mohm
- With carrying bag

### 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**

### DETECTOR



▶ **BAT/23024**

Precision instrument. 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. Pilot light for switched-on resistance. Large indicating scale. **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.

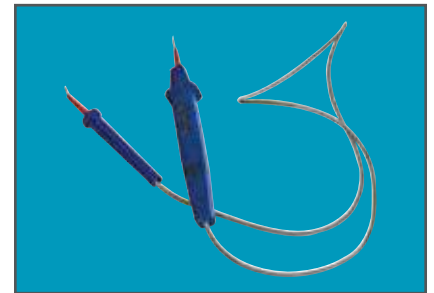
### CONTINUITY TESTER FOR 12V SYSTEMS



▶ **BAT/18797**

Indicates the voltage through coloured LEDs.

### VOLTAGE TESTER



▶ **BAT/18129**

Voltage tester 110/220/380V - LED

### ACID HYDROMETER



▶ **BAT/13883**

Acid hydrometer

### ACID HYDROMETER



▶ **BAT/39644**

Acid hydrometer. Simple and clear read off. Temperature compensation in acid proof cover

### DIGITAL MULTIMETER



▶ **BAT/13865**

Digital multimeter to measure voltage and resistance.



# BATTERY ACCESSORIES

## 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\text{ mK}</math>
- 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 an 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





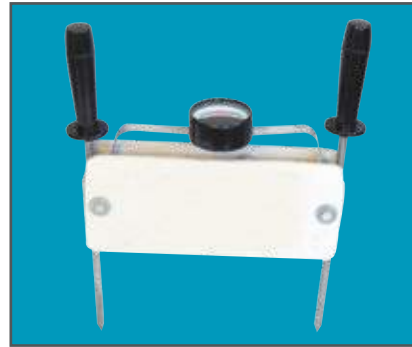
### DISCHARGE TESTER



▶ **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/21594**

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



#### ▶ AQ DCT 25A12V

AQ DCT 25A12V is microprocessor device for capacity testing lead-acid 6V and 12V batteries with nominal capacity up to 250Ah (C10) or 500Ah (C20). It is developed as a consequence of need for small, easy for use, safe, reliable device for servicing and maintenance of starter and industrial batteries. AQ DCT 25A12V is dissipative discharger with fine regulation of testing current. It can be used for testing 20 hours capacity C-20 ( $I=Cn/20$ , 1.75V per cell) or for reserve capacity testing Re ( $I=25A$ , 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 AQ DCT 25A12V 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	0.5-25A, Cn/20 (250Ah), step 0.1A
Battery type	Un: 6V and 12V; Cn from 10Ah to 250Ah (500Ah C20)
Discharging voltage range	from 4V to 18V until 1.75V per cell (min. 1.5V/Cell)
Accuracy	Better than 3 %
Resolution	50mA and 20mV (10-bit A/D)
Current pulsation	Up to 0.15A
Energy circuit	MOSFET transistors, power resistor
Cooling	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 325 x 160 mm
Weight	6kg

#### CHARACTERISTICS

- Type of voltage converter: dissipative 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 0-50.00A, voltmeter 0-20.00V
- Cables with Pb plugs: 1=2m, S=6mm<sup>2</sup>
- Ambient temperature: 5 do +40°C

AQ DCT 25A12V 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.

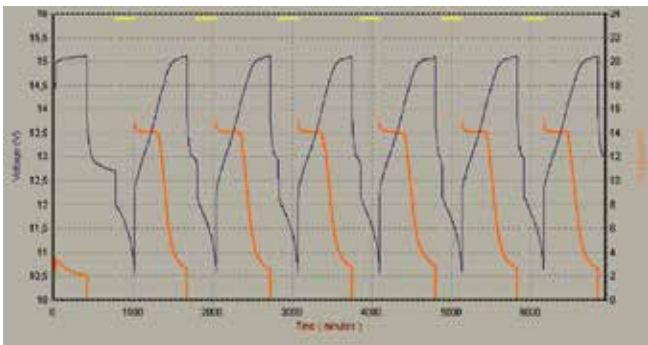
With this tester, the capacity of 12V semi-traction, traction, deep-cycle, gel, AGM, ... batteries (cyclical batteries) can be tested

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.