



- ✓ **Impedance measurement** possible at different frequencies and signal shapes.
- ✓ DC voltage measurement:  
±2.45 VDC (Res. 0,00001V)  
±24.5 VDC (Res. 0,0001V)  
±100 VDC (Res. 0,001V)
- ✓ Storage of **300000** readings
- ✓ Up to **1000 battery definitions** can be transferred from a database to the device.
- ✓ **RF-ID** Battery identification with transponders.
- ✓ USB – Interface.
- ✓ **10 hours** of continuous operation.

## Mobile battery tester

# TMC – 2001TEC



The **TMC-2001TEC** is a universal, multifunctional test device for the user-friendly and professional maintenance of battery systems. Together with our comprehensive **CS-Manager software** (included free of charge), this tester forms a professional and complete battery management system that can also be established centrally on a server. The measuring device is designed for safe and mobile use on site. A logistically flawless recording of measured values is perfectly supported by the transfer of battery definitions and the use of a **RF-ID transponder system** integrated in the device.

With this test system, in addition to voltage measurement (AC/DC), the resistances of a battery block can also be recorded very quickly at different frequencies. The optional temperature measurement completes the extensive possibilities to determine the condition of a battery system. The measuring device can be comfortably attached to the belt and worn.

## Analog section

	Range	Resolution
Voltage DC	± 2,45 VDC	0,00001 V
	± 24,5 VDC	0,0001 V
	± 100 VDC	0,001 V
Voltage AC	1,600Vrms	0,001 Vrms
Resistance	3000 mΩ	100 μΩ
	300 mΩ	10 μΩ
	30 mΩ	1 μΩ

## Interfaces

- USB
- RF-ID Transponder System

## Software

A complete battery management software, CS-Manager, is included.

The CS-Manager software is based on a SQL-Database. **It is possible to install this database on a central server.**

## Delivery Scope

- **TMC-2001TEC** data logger
- Battery charger
- One pair of test leads (4-wire)
- Batterie Management PC Software, as download
- Transport case

Dimensions (L x W x H)  
96mm x 154mm x 33mm

## Measuring method

In contrast to simple test devices, the **TMC-2001TEC** loads the battery with a regulated current waveform. Different signal shapes (sine, triangle, square)

and different frequencies (30Hz - 8kHz) can be defined. By default, a frequency of 1kHz is used. When testing, this current waveform can be a controlled current change of 100mApp or 1App. The resistance is calculated from the current and the resulting voltage curve. For this purpose, several high-precision and synchronous A/D converters are integrated in the system. High-precision filter techniques map the effective resistance exactly.

High frequencies are used to map resistances with losses that are as ohmic as possible. These losses occur at the pole bridges, grids, the electrolyte, ...

The lower the selected frequency, the higher the influence of the charge transfer resistance. This resistance affects the battery's ability to charge or discharge.

## AC voltage measurement

The tester is designed to measure the superimposed AC voltage at block level.

Interference signals can have a high bandwidth. For this reason, a real analogue rms converter has also been built in. With a permissible error of 1%, the bandwidth is 30kHz for >300mVrms and 100kHz for >1Vrms.

Due to a powerful controller, effective digital filtering techniques were implemented.

***Please contact us for further information.***

***We are open to talk to you about possible customised versions of the tester.***