

ENERGIC Plus[®]



IN CHARGE OF YOUR BATTERIES



We are Energetic Plus. Nice to meet you

What do we offer?

- Professional battery maintenance & reconditioning tools
- Industrial battery chargers
- Jump starters
- Battery accessories



Professional battery maintenance and reconditioning



Battery reconditioning

REPLUS Battery Regenerator

Our Energetic Plus battery regenerator successfully removes sulphation due to an electrical high-frequency pulsation process.

This process restores the battery capacity, giving you the ability to reuse old and sulphated batteries. You can also use the battery reconditioner for annual maintenance to strongly prolong the lifespan of your batteries.

Benefits?

- Removes excessive sulphate
- Prolongs the lifespan of your battery
- Generates detailed reports in Word, Excel or PDF
- Fully automatic, easy to handle
- Free software included with wireless data transfer to computer
- Combination of charging/discharging
- Works with all types of lead-acid-based batteries:

gel batteries, (semi-)traction batteries, starter batteries



Battery reconditioning

What is sulphation?

During use, small sulphate crystals can be formed. This is completely normal and not harmful. After a certain period however, this unshaped lead sulphate converts to a crystalline form that deposits on the negative plates. This leads to the development of **large crystals**, which **reduce the battery's active material that is responsible for high capacity and low resistance**. **Sulphation also lowers the charge acceptance.**

Cause of sulphation?

- The battery was inactive for too long
- The battery was discharged too deeply
- The wrong charger was used
- A bad cell was left untreated
- The battery has reached temperatures too high / low
- The charge cycles weren't observed



Battery reconditioning

Effects of sulphation

- Reduced lifespan of your battery
- Reduced battery capacity (from 6 hours battery life to only 2)
- The need to charge during the day becomes necessary
- Higher handling and electricity costs
- Lower specific gravity of the acid in all elements
- Higher internal resistance per element
- High costs when replacing an old battery by a new one
- ...

1 solution:
REPLUS regenerator



Battery reconditioning

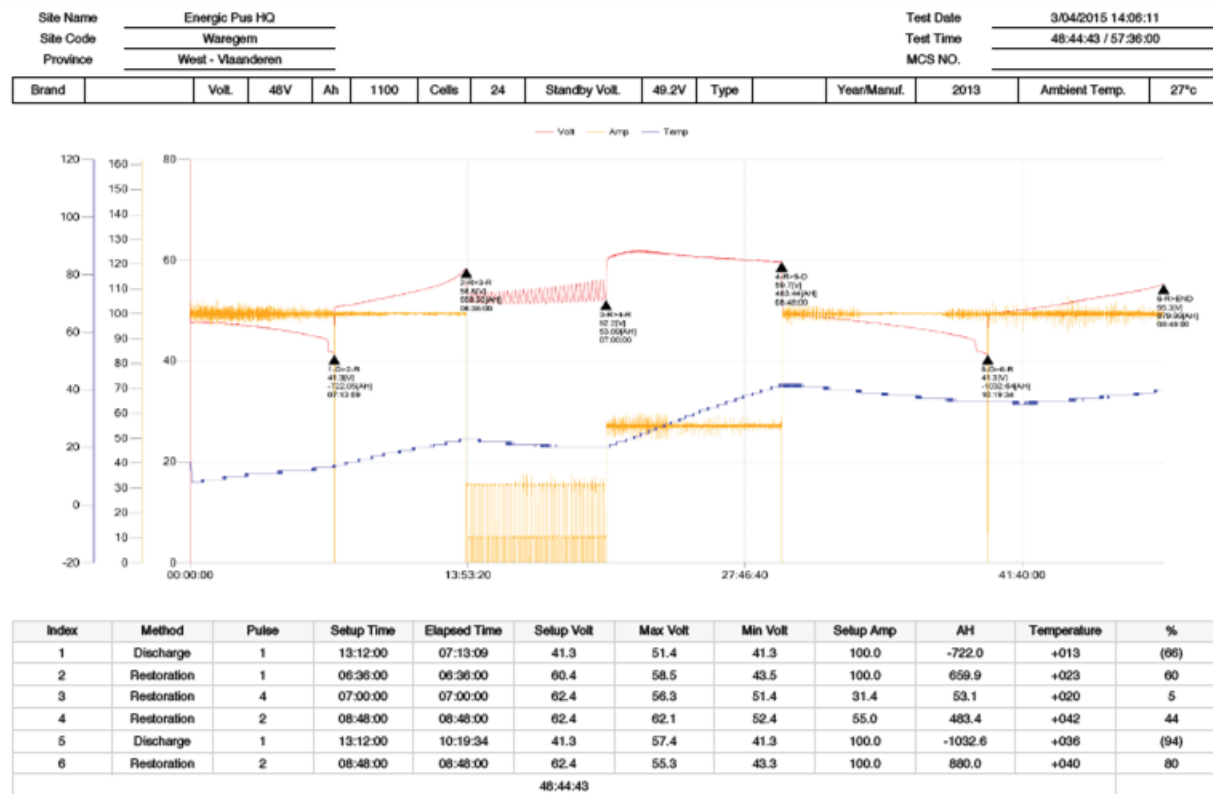
The REPLUS battery regenerator removes the excessive sulphate from the battery

- High-frequency pulse/wrinkle current
- 6 cycles of controlled discharging/charging
- Max 42 hours for a complete regeneration process
- Detailed reports from each cycle
- Regeneration without putting too much stress on the battery
- The process is temperature-controlled
- Everything is stored and can be checked afterwards on computer
- Free 1-day training at customer's facility
- ...



Battery reconditioning: reports

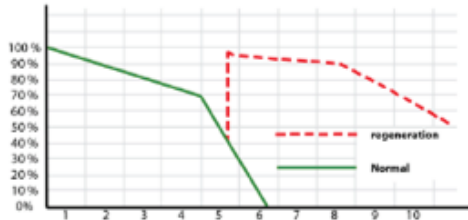
The Replus software allows you to create fully detailed reports in PDF, WORD or Excel that give you an excellent idea of the condition of the battery before and after the process.



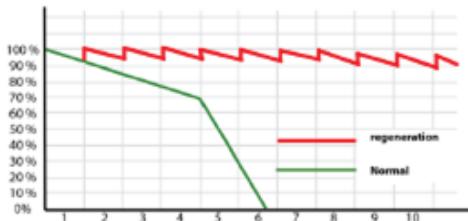
This is how you should interpret the report: when you compare 1 and 4, you notice that the time needed to discharge the battery is much longer in step 4. This is a direct result of the restoration in mode 2 and 3. When comparing step 5 to step 2, you can see that the set battery voltage is reached much later than in step 2. This means that your battery lasts longer and has been restored to a good condition.

Battery reconditioning: reports

There are two ways to use the battery regenerator



Reconditioning regeneration allows you to restore old (5, 6, 7 ... years), medium to well-maintained batteries that have 'silted up' as a result of natural sulphation, to a 90%-100% productivity



Maintenance regeneration allows you to keep your battery in optimal, sulphate-free condition, by means of a yearly short regeneration.



Battery reconditioning

Not convinced yet?

Take a look at our [reference page](#) on energicplus.com and see how others experience this product!



BMS system: wireless detection of bad cells

Unique system

- Wireless detection of bad cells 2-80 V + free analysing software
- The voltage is measured every 3 minutes during the discharge process
- The condition of each cell receives a colour indication
- When using the BMS system in combination with the REPLUS/BDX, you'll get a full overview of the condition of your battery down to **every cell**.



Battery monitoring

BMS system: wireless detection of bad cells

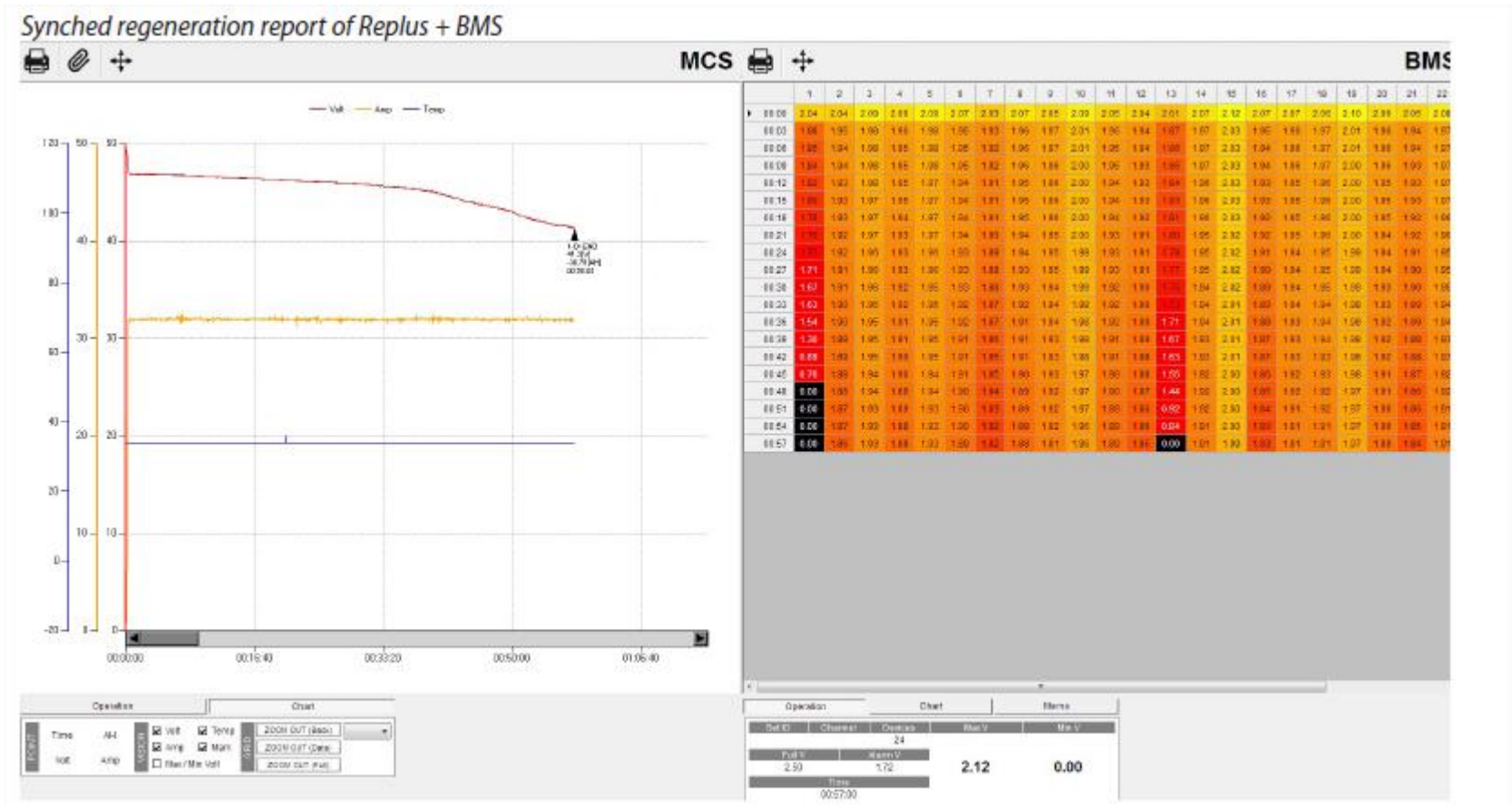
Thanks to the BMS software programme, you can now easily detect which element is no longer keeping its charge and needs to be replaced or regenerated.

The software checks the actual voltage of each sender every 3 minutes and stores this value in a table. Colour codes indicate the charge condition of each cell (empty to full) continuously, as a result of which the performance curves are very detailed.

Cell No	00:00	00:03	00:06	00:09	00:12	00:15	00:18	00:21	00:24	00:27	00:30	00:33	00:36	00:39	00:42	00:45	00:48	→3min
#1	2.11	2.11	2.04	2.03	2.02	2.01	2.01	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.98	
#2	2.13	2.13	2.05	2.05	2.03	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.00	
#3	2.14	2.14	2.06	2.06	2.04	2.04	2.04	2.03	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.01	2.01	
#4	2.14	2.14	2.03	2.02	1.99	1.99	1.98	1.97	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.93	1.93	
#5	2.16	2.16	2.03	2.02	1.98	1.98	1.98	1.96	1.95	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.90	
#6	2.13	2.13	2.01	2.00	1.97	1.96	1.96	1.95	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.91	
#7	2.13	2.13	2.02	2.01	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	
#8	2.10	2.10	2.02	2.01	2.00	2.00	1.99	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	
#9	2.16	2.16	2.01	2.00	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.92	1.92	1.91	
#10	2.15	2.15	1.98	1.96	1.92	1.92	1.91	1.89	1.89	1.88	1.87	1.86	1.86	1.85	1.84	1.83	1.83	
#11	2.10	2.10	1.91	1.89	1.84	1.83	1.82	1.80	1.78	1.77	1.75	1.73	1.71	1.68	1.65	1.61	1.56	
#12	2.14	2.15	1.98	1.96	1.92	1.92	1.91	1.89	1.88	1.87	1.86	1.85	1.84	1.83	1.82	1.81	1.80	
Sum	25.58	25.59	24.14	24.01	23.57	23.63	23.58	23.42	23.34	23.28	23.22	23.14	23.08	22.99	22.94	22.83	22.74	
Avg	2.13	2.13	2.01	2.00	1.97	1.97	1.97	1.95	1.95	1.94	1.94	1.93	1.92	1.92	1.91	1.90	1.90	

Battery monitoring

BMS system: wireless detection of bad cells

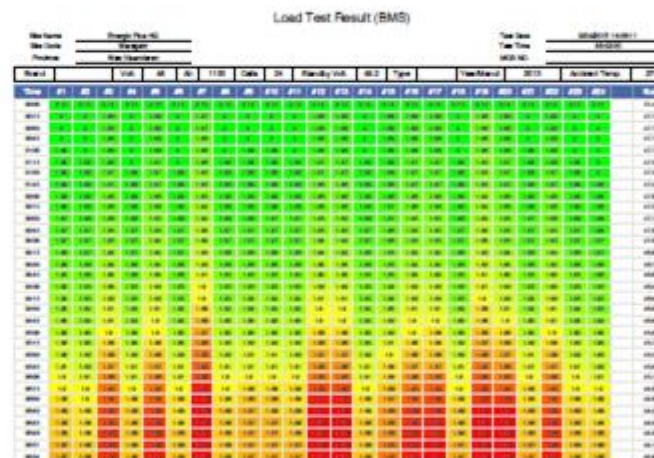


Battery monitoring

BMS system: wireless detection of bad cells

If you combine the regenerator with the BMS, then this can be controlled by 1 software package that gives you all the info you need to have a fully detailed view on the condition of your battery down to cell level, during a complete load test.

On this particular graph it is clear that the battery has 2 weak cells that need to be replaced.



With just 2 clicks, you can create these fully detailed reports that you can then easily save as a PDF, Word or Excel file. This professional information will give you a full understanding of the battery. These reports can be used to inform the customer on the current condition of his battery or can be kept by yourself as a track record of the condition of your own batteries. P.S.: BMS systems can be used with any battery discharger!

Battery discharger MPD-1007E

A discharge or capacity test is the only way to properly verify a battery's capacity, and this can now be performed with the DC Load Bank MPD-1007E.

During the discharge test, no manual adjustments to the current must be made, as the MPD-1007E is an automatic constant current discharger. The discharger is equipped with an exact sensing function of the current through digital control, regardless of the voltage range.

The MPD-1007E can be used as a stand-alone discharger, or it can be connected in synch with the Replus battery reconditioners in order to increase the discharge power of the Replus regeneration machines.

Features:

- Perfect synch possible with Replus [battery regenerators](#) and Energic Plus [BMS system](#)
- Automatic switching according to discharge current
- Designed for testing 12V up to 96V-batteries
- Discharging range : 1 A – 200 A (Up to 1000 Ah c5 forklift battery)
- Discharge auto-shutdown for time duration, setup voltage & capacity
- Over-discharge battery protection
- Built-in circuit breakers for emergency shutdown and overload protection
- Reverse polarity protection

165TA2362



Battery discharger MPD-1007E



Digital density meter

With this **digital hydrometer**, you can measure up to **50% faster** than using the traditional method. The direct temperature compensation makes sure you get the results fast and with an **accuracy of 99.9%**

All measurements are saved and can be transferred to PC completely wirelessly. No more waste and wrong measurements. With the digital hydrometer, you can work more efficiently and precisely.

Features:

- Solid housing
- Ideal for fast measuring routines
- Direct measurement out of the storage container
- Only 2 ml of sample needed for measurement
- Results can be perfectly traced
- Inspection window to check if your sample is filled without bubbles
- Bluetooth data transfer to your PC

164TA9799



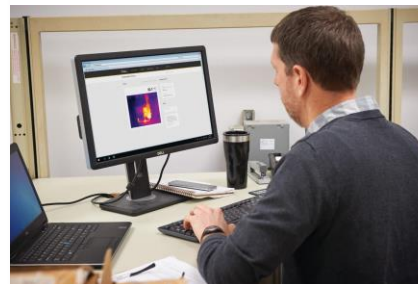
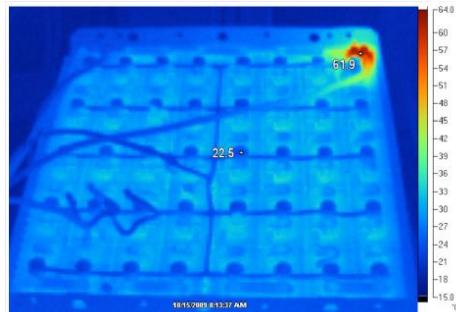
Energic Plus workshop: battery maintenance

FLUKE®

The Fluke 279 FC thermal multimeter helps you find, repair, validate and report many electrical issues:

- **Locate the problem immediately** by checking hotspots and detect heating of fuses, wires ...
- **Expand your measurement capabilities** with iFlex, a flexible current clamp to get into tight, hard-to-reach spaces for current measurement
- **Communicate your results** by means of the Fluke Connect software

165TA3756



Some of our reconditioning tool references



Linde



Hako



KLM

STILL



K'ARCHER



swissport

HYSTER



ORA-VE
Véhicules Electriques

TOYOTA

JUNGHEINRICH

CROWN
lift trucks



CATERPILLAR



Want to learn or discover more?

Check our catalogues and brochures

Downloadable on www.energicplus.com, in several languages



Visit our website

The screenshot displays the ENERGIc Plus website interface. At the top left is the ENERGIc Plus logo. To its right is a navigation bar with a world map icon, a language dropdown menu set to 'EN', and a search bar with a magnifying glass icon. Below this is a yellow navigation menu with the following items: Products (highlighted), Repairs, Savings Calculator, Downloads (with a dropdown arrow), News, About, Testimonials, and Contact. A breadcrumb trail below the menu reads 'Home » products'. The main content area is divided into four product categories, each with an image, a title, a short description, and a 'More info' button.

ENERGIc Plus

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Home » products

Battery reconditioning & maintenance

To measure is to know. Extend the lifespan of your batteries with the help of our battery reconditioner and other battery monitoring devices.

[More info](#)

High-frequency battery chargers

High-frequency chargers are lighter, more compact and more efficient. These chargers consume less energy, resulting in lower costs in the long term. Try our efficiency calculator to calculate your savings!

[More info](#)

Traction Battery Chargers

Our traction battery chargers provide superior reliability and performance for traction batteries of all types, used on any type of vehicle or portable equipment.

[More info](#)

On-board chargers

A built-in charger is ready to charge the battery at any given time. You no longer need to provide an external charger and charging area, which saves you plenty of space and time. In most cases, you simply need to connect the charger to a socket to start charging. Ideal for rental applications.

[More info](#)

Questions? Feel free to contact us

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