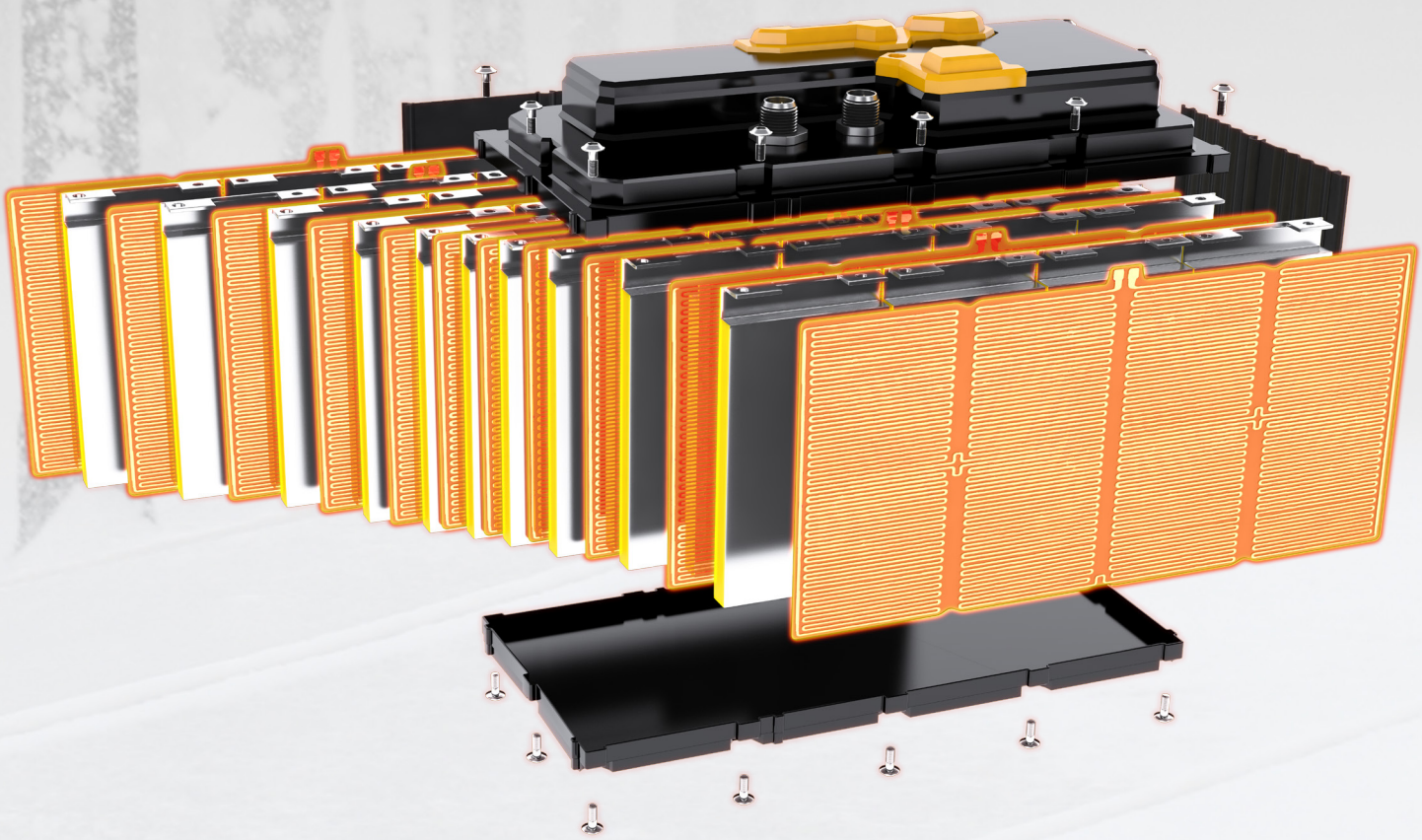
BACKER
HTI



BATTERY SOLUTIONS

INCREASED LIFETIME · INCREASED CAPACITY · FASTER CHARGING TIME · RELIABILITY

BACKER HEATING TECHNOLOGIES INC.

EVERYDAY · EVERYWHERE

Our heating products together with our measurement and control devices offer our customers complete solutions. Our engineers will not only suggest solutions, they can also take part in and contribute to your product development by using our advanced technical tools and lab facilities. Our extensive experience and competence as well as our reliable quality and service guarantee your success. Our ambition is to not only be a supplier, but your preferred partner.

Together we can make it happen!

MEMBER OF BACKER-GROUP

Backer develops, produces and sells customized solutions and components for electric heating, measurement and control. The original technology was stainless steel tubular elements. However, the constant growth of the Group, both organically and through acquisitions, has enabled the integration of several new technologies. Today the Group offers a far wider product range, with a vast number of technologies for several industry sectors and a large variety of applications.

PRODUCTION LOCATIONS

- Backer HTI main office located in the US
- Engineering and sales support in Sweden
- Production facilities in Sweden, China, Poland, and Vietnam.

Customized solutions

INDUSTRY SECTORS

AUTOMOTIVE

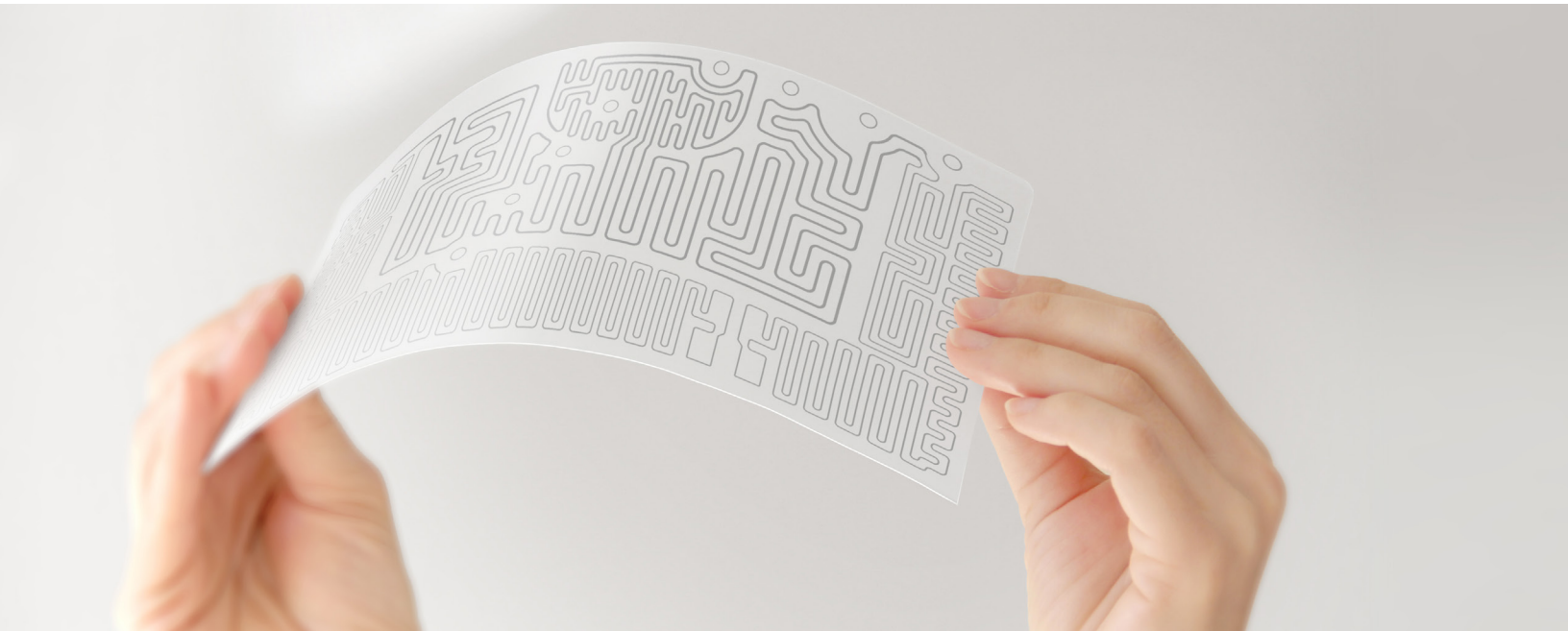
LIFE SCIENCE

RAILWAY

BATTERY

COMFORT

COMMERCIAL EQUIPMENT



BATTERY HEATING SOLUTIONS

INCREASED LIFETIME · INCREASED CAPACITY · FASTER CHARGING TIME · RELIABILITY

With the push for everything to go Green these days, we pride ourselves in being a supporter and supplier of meeting the needs of going Green. One aspect of this is the demand for more efficient batteries both for Hybrid and Electric cars. As batteries are exposed to lower temperatures, the temperature of the battery itsslef can drop, causing chemical reactions to occur more slowly and producing a lower current than they would at room temperature. In situations below -20°C, these reactions can happen so slowly and generate so little power, that the battery can appear dead when it reality it is not. However, by adding heating to these batteries, both lifetime and efficiency will increase, with the charging rate not being as affected by those sometimes extreme temperatures outside.

Typical applications	Lithium Ion	Lithium Metal Polymer
Lead-acid	Sodium Ion	
Nickel Metal Hydride	Zebra	

PRODUCT DEVELOPMENT

We work together in a gate model to make sure we reach target in cost and production SOP

Evaluation / Design / Development: (A-SAMPLES)
- Specification work
- Feasibility
- First proposals
- Design preparation
- Prototype design

Prototype development: (B-SAMPLES)
- Initial testing
- Verification and analysis of A-samples

Production development: (C-SAMPLES)
- Production work / final design
- Documentation and preparation

Preproduction
- Functional test and evaluation
- Production engineering

Testing & validation
- DVP Work
- PPAP

Approval to start: First serial delivery
- Project management
- Final report
- Final design

DVP PERFORMANCE TESTING

- To validate the design, we perform the test needed to fulfill specification
- Temperature profile (sensor and image)
- Resistance to climate and environment
- Electrical durability and resistance
- Specific customer requirements

QUALITY

We strive to deliver the highest quality products combined with a flexible way of working. This permeates the whole process including sales, product development, manufacturing, customer service and logistics. Backer HTI delivers products that meet all relevant standards and tests, certifying products according to customer specifications. We are also able to carry out tests in modern labs, constantly improving our product performance and energy efficiency.

CERTIFICATIONS

Backer is certified
according to ISO 9001 · ISO 14001

Our facilities in China, Poland & Vietnam
are certified according to ISO 14001,
ISO 9001 and IATF 16949
Third-party approvals:
VDE / ETL / S / UL

BACKER HTI

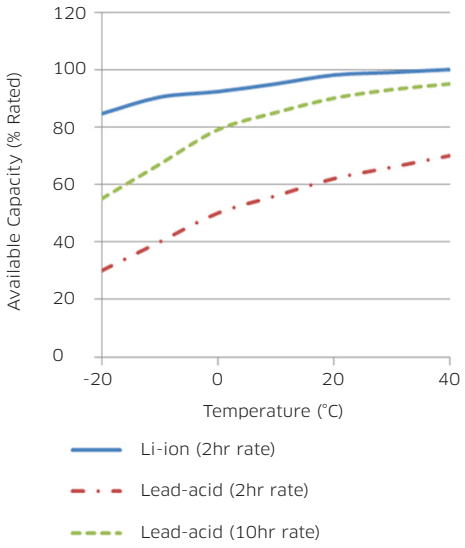
Innovations for the future

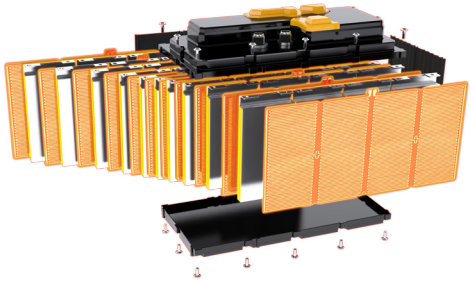
A partnership with Backer HTI gives you a dedicated team of designers, project engineers and technical experts in the fields of electric heating, measurement and control, ready to provide you with the optimal solutions for your needs.

BATTERY HEATING

Capacity vs temperature

Both lead acid and lithium-ion lose capacity in cold weather environments, but as shown in graph above lithium-ion loses significantly less capacity as the temperature drops into the -20°C range. The rate of discharge influences the lead acid performance, so two different rates have been shown for the lead acid battery.





Internal heating

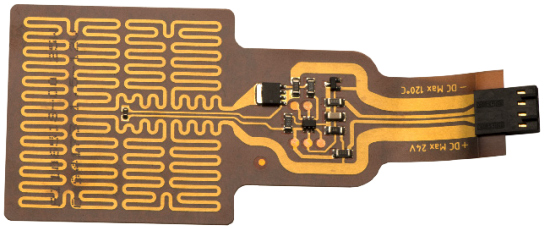
- Dry surface heater
- Larger area
- Laminated to aluminium plate to improve heat transfer

Material

- PTC max temp +80°C
- PET max temp +100°C
- PEN max temp +150°C
- Kapton max temp +300°C
- Mica max temp +500°C

Electrical data

- 1,5-850V
- 265 to 2500W



Heat plate

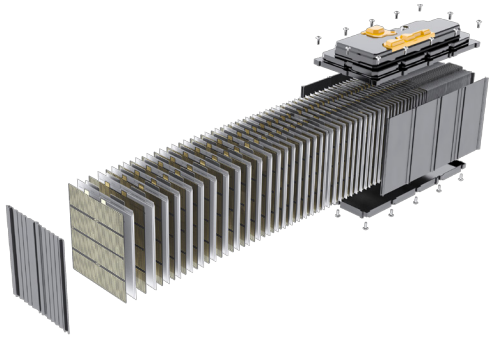
- Dry surface heater
- Larger area
- Laminated to aluminium plate to improve heat transfer

Material

- PET max temp +100°C
- PEN max temp +150°C
- Kapton max temp +300°C

Electrical data

- 1,5-850V
- 50 to 550W



Prismatic cell and pouch batteries

- Dry surface heater
- Small or larger area
- Laminated to aluminium pouch to improve heat transfer

Material

- PTC max temp +80°C

Electrical data

- 1,5-850V
- 5 to 550W

Wrap around

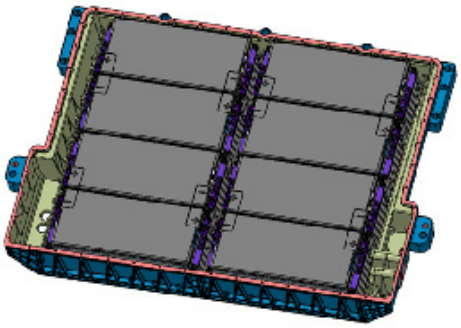
· Dry surface heater
· Larger area
· Laminated to aluminium plate to improve heat transfer

Material

· PTC max temp +80°C
· PET max temp +100°C
· PEN max temp +150°C
· Kapton max temp +300°C

Electrical data

· 1,5-850V
· 50 to 1350W



House

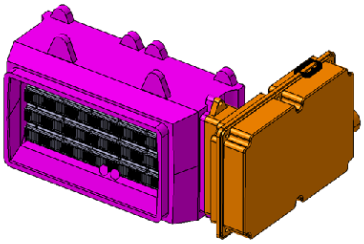
· Dry surface heater
· Larger area
· Laminated to aluminium plate to improve heat transfer

Material

· PTC max temp +80°C
· PET max temp +100°C
· PEN max temp +150°C
· Kapton max temp +300°C
· Mica max temp +500°C

Electrical data

· 1,5-850V
· 20 to 750W



Thru flow

· Dry surface heater
· Larger area
· Laminated to aluminium plate to improve heat transfer

Material

· PTC max temp +80°C
· PET max temp +100°C
· PEN max temp +150°C

Electrical data

· 1,5-850V
· 25 to 550W

Fluid

· Wet surface heater
· Free floating

Material

· PET max temp +100°C
· PEN max temp +150°C
· Silicone max temp +230°C
· Mesh Heater +150°C

Electrical data

· 1,5-850V
· 265 to 750W

TEMPERATURE CONTROL

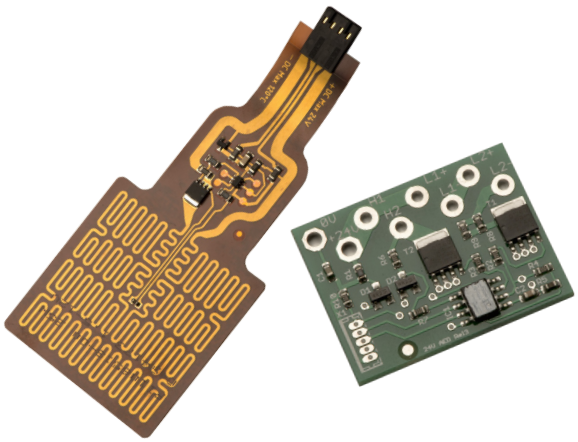
ELECTRONIC CONTROL SYSTEMS

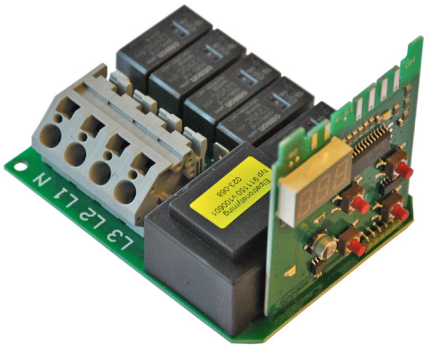
Control and energy balance

Flexible foil heaters provide excellent thermal transfer where you need it most. Heaters are used in thermal control design to protect components under cold-case environmental conditions or to make up for heat that is not dissipated. It is usually necessary to arrange some form of control to ensure that the desired temperature is maintained; accurate temperature control is therefore needed. This can be achieved with electromechanical thermostats of bimetallic type when temperatures and surface ratings are low, while electronic thermostats are preferred when temperatures and surface loads are high. We can fit thermostats, temperature fuses and sensors of thermo element type, thermistors and resistance sensors directly to elements in accordance with customer specifications. This helps to ensure reliable control.

Integrated control/smart heater

The demand for smart simple solutions creates new applications and we can offer solutions with integrated thermal controllers and sensors communicating through RS232, WiFi or Zigbee.





Motorcontroller

- Soft Starter
- Soft Starter with brake
- Compressor Soft Starter

The P-Line range of Soft Starters covers a wide spectrum from 0.1 – 110 KW motors, making them ideal for a variety of Soft start/stop applications. The units incorporate an optional High Torque Kick start feature, the initial torque is adjustable by the user and the units offer fully adjustable start and stop ramp times.

Inverters

We supply electronic control systems to meet the high demands of control and safety of the automotive heating devices. Our control systems are designed according to customer requirements and to ensure that safety and valid regulations are met.

CUSTOMIZED SOLUTIONS

Customers often come to us with an idea about a new project/solution, a need for our expertise or because they want to enter a partnership with us. We are more than happy to share our facilities, vast experience and expertise at this initial stage. The earlier we are involved in a project, the more we can control the optimization of core issues, such as the choice of materials, components and technology, temperature control, energy consumption and sustainability, cost efficiency and compliance with all applicable norms, regulations and standards.

BACKER HTI

Backer Heating Technologies, Inc.
1390 Gateway Drive
Elgin, IL 60124, USA
Tel: 1-847-931-1304

backerhti.com

EVERYDAY · EVERYWHERE

Backer Heating Technologies Inc. 2019-04-03 rev. 2