

MICROPOWER

POWERFUL SOLUTIONS IN BATTERY CHARGING

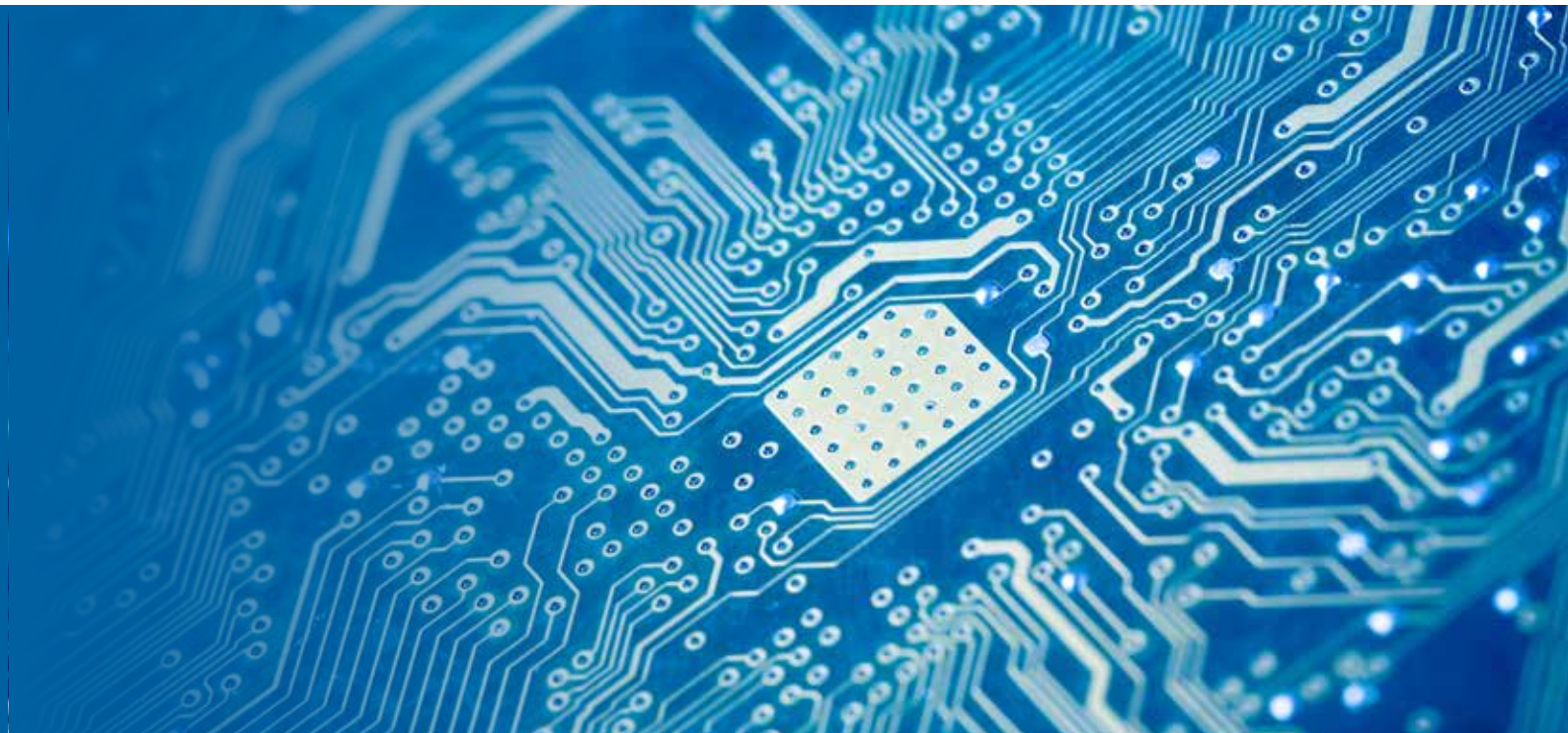


MICROPOWER CHARGING SOLUTIONS

Micropower is a leading provider of systems and solutions for battery charging. We provide our expertise all over the world. Due to our technical skills, lift trucks, golf cars, towing tractors, floor cleaners and a long line of industrial applications work longer, smarter and deliver better results for our customers.



” No one knows more about battery charging than we do. And when there is something new to know, we learn about it. In other words, research and development are the cornerstones of what we do.



Powerful solutions in battery charging since 1984

The Micropower Group includes three Research and Development centers; Växjö and Stockholm, Sweden, and Salo, Finland. Highly skilled technical staff at all three locations perform comprehensive charger and component testing to worldwide safety standards and specifications, and to unique customer specified requirements. All three locations include EMC tests and measurement capabilities.

An environmental test center is located in Växjö (Sweden), where our products can be subjected to a wide range of input voltages and frequencies, output power and ambient temperatures for design validation and long term reliability testing. All three centers are continuously testing new charger and battery technologies alongside existing products and technologies.

Micropower ACCESS is our new battery management system. This system includes the ACCESS battery chargers and is used to monitor and control entire

battery fleets, providing continuous battery and charger status information that can be used to increase battery life and significantly lower fleet operating costs.

The Micropower group has a complete range of chargers for material handling and motive power applications. We also produce customized charging and power supply solutions for military and defense use.

We work cooperatively with most battery manufacturers, not only for standard lead acid batteries, but also for those manufacturing special battery types for use in many different applications, including the newest Lithium battery types.

The Micropower group delivers more than 220,000 battery chargers to customers and retailers around the world every year. The group has become a true global supplier and is exporting to a growing number of countries.

The Micropower group

Micropower ED Marketing AB, in Växjö, Sweden, is the center for development, marketing and sales of traction battery chargers. Sales is done globally. The company also supports group companies and representatives worldwide.

Powerfinn OY in Salo in southern Finland develops, produces, markets and sells customized battery chargers, power supplies and DC/DC converter solutions.

Ecotec LTD in Piqua, Ohio, United States markets and sells industrial motive power high frequency battery chargers imported from Micropower's manufacturing facilities in Sweden and Finland. The chargers are marketed throughout North America under the Ecotec label.

Micropower Shanghai Ltd in Shanghai, China is the newest company in the Micropower group. The company provides sales and service of battery chargers for forklifts on the Chinese market. The products are both imported and locally made.

Primepower is a R&D and sales company for battery chargers, battery boosters and DC/DC converters for automotive and industrial applications. The company is located in Växjö, Sweden.

SM Power in Stockholm, Sweden is a product development company for smaller power battery chargers and power supplies to integrate into electrical equipment. Typical products are 6 and 12 V battery chargers but also a large number of other electronic products.

SEIAB is a manufacturing facility for production of both high frequency and 50/60 Hz battery chargers. Printed circuit boards are manufactured for the Micropower chargers as well as contract manufacturing for customers outside the group. The company is located in Växjö, Sweden.

Group advantages: by having control of the in-house manufacturing process of parts and final assembly of the battery chargers and related products, the Micropower group ensures that the products are of the highest quality. The result of this is very low warranty and service costs.

The Micropower Range of High Frequency chargers: they have higher power factor, higher efficiency, are much lighter and much more compact compared with most competitors chargers.

ACCESS

– our most effective solution for battery charging

Micropower ACCESS is a newly developed battery charging system from Micropower. It consists of highly efficient programmable high frequency chargers, BMU battery monitoring units (one per battery) and USB service tool.

Communication between the units is wireless, by radio. Programming and follow up is made through personal computer using the service tool. The system can be used with or without battery monitoring. Chargers can be used as stand alone chargers and also as fast chargers or opportunity chargers! For batteries 24 to 80V, current 40-400A.

- *Charger with built in battery management system*
- *30 Preprogrammed charging curves for "all" types of batteries*
- *For multi shift operations all around the world*
- *Fast Charging and opportunity charging with standard chargers*
- *Stores data from last 2000 charge cycles*
- *Can Bus control makes it suitable for Li-Ion batteries*
- *Multi voltage charger, easy to program battery voltage, Ah, charging curve and other functions such as equalize charging or automatic battery watering.*
- *BBC Best Battery Choice: Helps the truck operator to change to the best battery in a fleet, only one green LED shows the best battery in a group*
- *Radio communication between Chargers in BBC system, Charger-BMU-Service tool/PC eliminating cables=easy and no installation costs.*
- *Very high efficiency, up to 94%=less energy losses/more energy efficient*

ACCESS Battery charger



USB Service tool



BMU Battery Monitoring Unit

MICROPOWER IP 54 BATTERY CHARGERS

– the best solution for ambient with dust in the air.

Optionally ACCESS, MTM-HF or SMC-HF high frequency battery chargers can be provided as built-in chargers for dusty ambient. The chargers will be mounted in IP 54 Cabinets, professionally designed, easy to open and close with key. The air intake and outlet are provided with approved filters. Cabinet standard color is grey.

- *Dust and water protecting cabinet=chargers can work properly with a minimum of disturbances*
- *Dust and water protecting cabinet=flammable particles are kept away, less risk for fire*
- *Dust and water protecting cabinet=less service generally needed*



The Micropower Range of High Frequency chargers: they have higher power factor, higher efficiency, are much lighter and much more compact compared with most competitors chargers.



ACCESS XL

– extremely powerful solution for fast charging or opportunity charging of batteries.

The Micropower ACCESS XL is a newly developed powerful charging system from Micropower consisting of built-in ACCESS top efficient programmable high frequency chargers. Up to four chargers are connected in parallel in professionally designed cabinets, provided with proper ventilation for each charger unit. A master is fitted in the door, from which programming can be done. The system also includes BMU battery monitoring units (one per battery) and USB service tool, one for each system. Communication between the units is made wirelessly, by a radio. Programming and follow up is generally made through personal computer using the service tool. The ACCESS standard chargers 24V/60A – 24V/400A, 36V/80 – 36V/300A, 48V/60A – 48V/320A and 80V/60A – 80V/200A are suitable and programmable for fast or opportunity charging.

ACCESS XL fast or opportunity chargers are available for 24V/800A, 36V/600A, 48V/640A and 80V/400A.

- **For all types of batteries**
- **BBC Best Battery Choice: Helps the truck operator to change to the best battery in a fleet, only one green LED shows the best battery in a group**
- **Radio communication between Charger-BMU-Service tool/PC eliminating cables=easier and cheaper installation**
- **Very high efficiency, up to 94%=less energy losses/more energy efficient**
- **Build-in to an IP54 cabinet= up to four times more power installed due to the parallel connection of the chargers controlled by CAN Bus from a master unit.**
- **Dust and water protecting cabinet=chargers can work properly with a minimum of interruptions**
- **Dust and water protecting cabinet=flammable particles are kept away, less risk for fire**
- **Dust and water protecting cabinet=less service generally needed**

The Micropower Range of High Frequency chargers: they have higher power factor, higher efficiency, are much lighter and much more compact compared with most competitors chargers.

MTM-HF

– advanced multicharger

The compact MTM-HF charger has a large number of pre-programmed charging curves for different types of batteries and applications. Programming is easy to make from the key board on the front panel.

This charger can, independently of variations in mains voltage, charge a battery with constant current and constant voltage. The charger has a large number of pre-programmed charging curves for different types of batteries. For batteries 24V to 80V and charging 40-320A.



- *Programmable, easy programming of battery sizes, charging curve and other functions*
- *Processor controlled high frequency charger=better and even charging also at variations in electric supply/voltage*
- *Very high efficiency, up to 94%=less energy losses/more energy efficient*
- *Frequently used by AGV manufacturers due to its flexibility*

SMC-HF

– efficient small automatic charger for large battery

SMC-HF the very efficient small automatic charger for the large battery. The SMC-HF is a compact processor controlled automatic battery charger. All sizes are provided with temperature regulated fan control. For batteries 12 to 80V, current 20-200A.

- *For all types of batteries and suitable as power supply*
- *Pre-programmed with multiple charging profiles and easy to use*
- *With Power Factor Correction, PFC*
- *Analogue control or Can Bus control makes it suitable for Li-Ion batteries*
- *Very high efficiency, up to 94%=less energy losses/more energy efficient*
- *The smaller size makes it suitable for on-board applications*



The Micropower Range of High Frequency chargers: they have higher power factor, higher efficiency, are much lighter and much more compact compared with most competitors chargers.

SMC-HF IP65

– shock- and waterproof space saving charger

Micropower SMC-HF is the perfect onboard charger. Charging takes place automatically with IUlaU characteristics. For charging batteries in cyclic use or as maintenance charging of starter batteries. The charger is filled and sealed to achieve IP 65. For batteries 12 and 24V, current 3-29A.

- *Pre-programmed and easy to use*
- *Protected against wrong polarity, short circuit and against over heating*
- *Filled with polyurethane sealant makes it water proof, shock proof and vibration proof.*
- *Very compact*



ROBUST

– advanced programmable processor controlled charger for harsh ambient conditions.

The compact Powerfinn ROBUST charger is an automatic charger with a large number of pre-programmed charging curves for different types of batteries and applications. Cooling is done passively or by cooling fan (optional). This charger can, independently of variations in mains voltage, charge a battery with constant current and constant voltage. For batteries 24, 36 and 48V and current 20-100A.

- *IP54 protected for tough environment*
- *Analogue control or Can Bus control makes it suitable for Li-Ion batteries*
- *Very high efficiency, up to 95%=less energy losses/more energy efficient*
- *Version with passive cooling=Very compact version*
- *Various options such as temperature control, drive inhibit and relay function available as options.*



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We provide our expertise all over the world. Due to our technical skills, lift trucks, golf cars, towing tractors, floor cleaners and a long line of industrial applications work longer, smarter and deliver better results for our customers.

Read more at www.micropower.se where you also can see other Micropower chargers and charger related products.

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99-14-011 rev. 02