

ROBUST BATTERY CHARGER

ROBUST SHARP NON-REPORTING • ROBUST ACCESS REPORTING

A NEWLY DEVELOPED, VERY COMPACT PROGRAMMABLE
CHARGER FOR HARSH EVIROMENTS.

24-36-48V; 20-80A



MicroPower TM

POWERFUL SOLUTIONS IN BATTERY CHARGING

The Robust charger



The Robust Sharp and Robust Access battery chargers in brief

The very compact ROBUST charger is high frequency 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.

The Robust charger can, independently of variations in mains voltage, charge a battery with constant current and constant voltage.

The charger can be used for batteries 24, 36 and 48V and currents 20-80A.

There are two versions of the Robust battery charger:

- ROBUST SHARP; NON-REPORTING CHARGER
- ROBUST ACCESS; A REPORTING CHARGER. Compatible with other Access chargers.

Robust Sharp and Robust Access; advantages

- Protection class IP54 protected for tough environments.
- 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.
- Light and compact, easy to handle.
- New, very attractive design.

Robust Sharp; Non-reporting charger

A fully automatic battery charger. The charger is of non-reporting type.

Preprogrammed for a large number of charging algorithms.

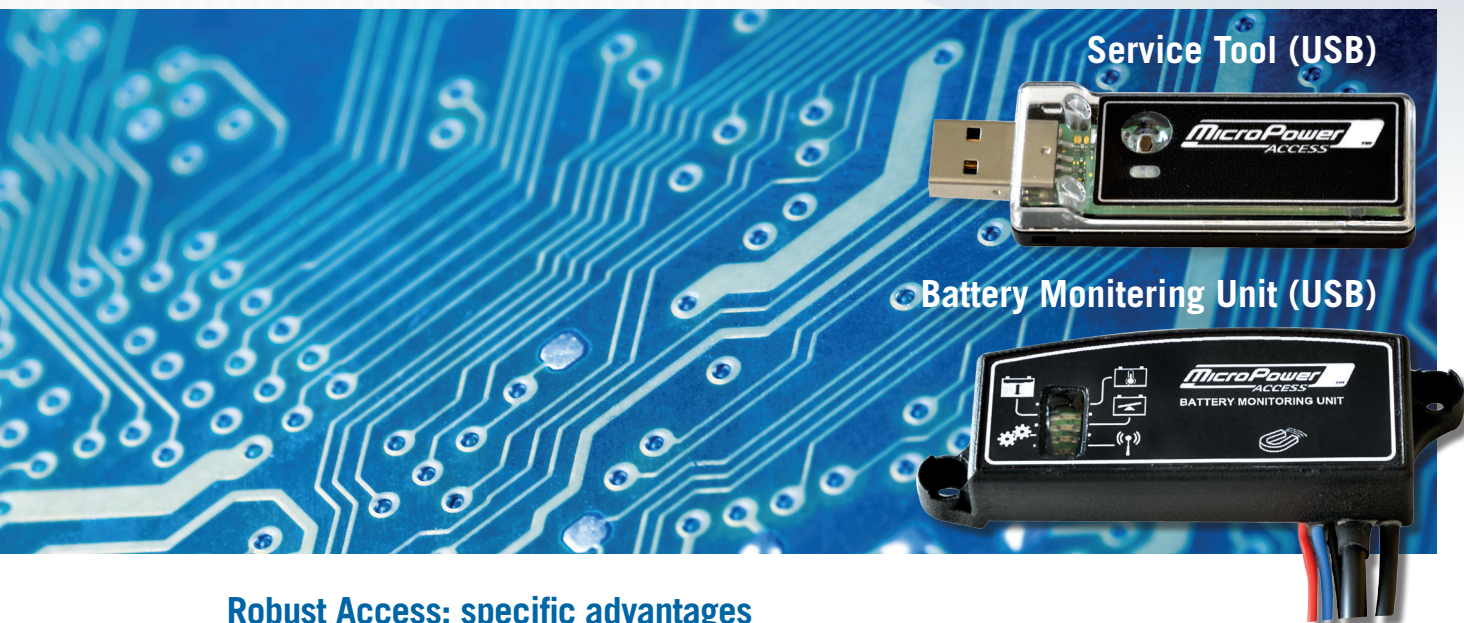
Robust Access; a reporting charger

The Robust Access battery chargers are fully compatible with the other Micropower Access battery chargers and the Access battery monitoring system. The Charger is provided with a radio module.

With this system including battery monitoring units; the BMU:s and the Access Service tool you can monitor and log the whole charging process.

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. The system should in this case include battery monitoring units BMU:s for temperature control.



Robust Access; specific advantages

- Charger with built in battery management system.
- 30 Preprogrammed charging curves for "all" types of batteries.
- For multi shift operations all around the world.
- Suitable for 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: Help 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.

Batteries always fully charged

Robust Access stays in contact with the battery via radio. When it's time to exchange batteries Robust Access already knows which one is best suited for your forklift and clearly directs you to the battery with the best charge.

Take charge of your batteries

Battery-monitoring unit (BMU) can be installed on each battery. The BMU stays in contact with the battery charger and service tool via radio. Battery status and statistics can be downloaded with the aid of the PC-based service tool. The service tool also allows parameters to be changed; they can be divided into groups to manage different types and sizes of batteries.

Green light for battery change

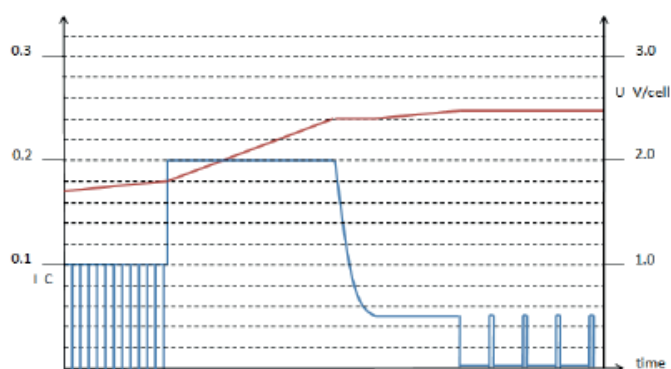
Robust Access clearly indicates which battery to choose by showing a green light in the display. Everything is taken care of automatically so that battery exchange is quick and easy as possible.

Some Robust Sharp and Robust Acces common options

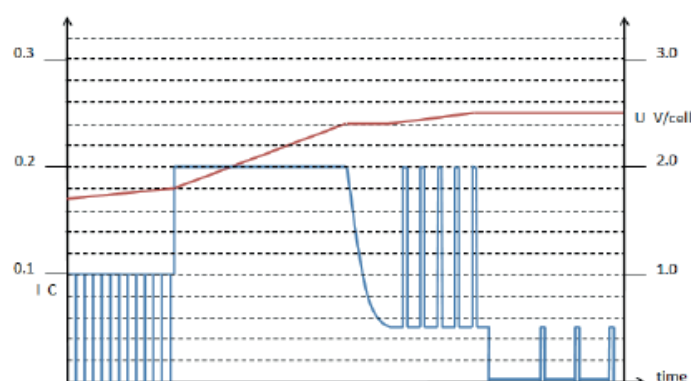
- IP 65 version
- Drive inhibit and relay function

Common algorithms/charging curves

LK10-06 freely ventilated (Temperature sensor supported)



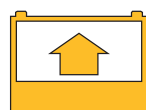
LK10-04 wet puls (Temperature sensor supported)



The Robust chargers front panel lights and push buttons



Error



Charging



Ready



Mains



Radio (Only Robust Acces version)



STOP -button



F1 -button

F1 - function LED



F2-button

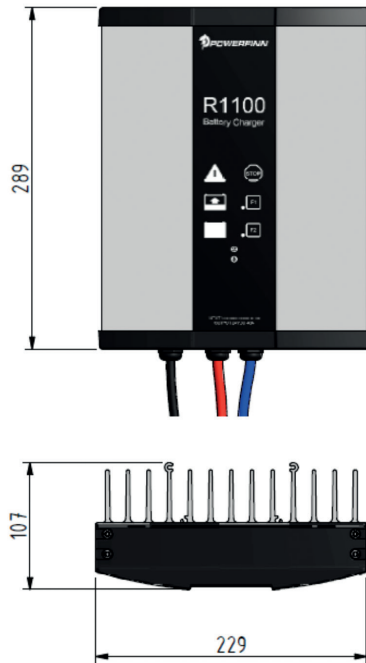
F2 - function LED

Mains: Blue=Main is connected.

Radio: Green= Radio module is on* (Only Robust Acces version)

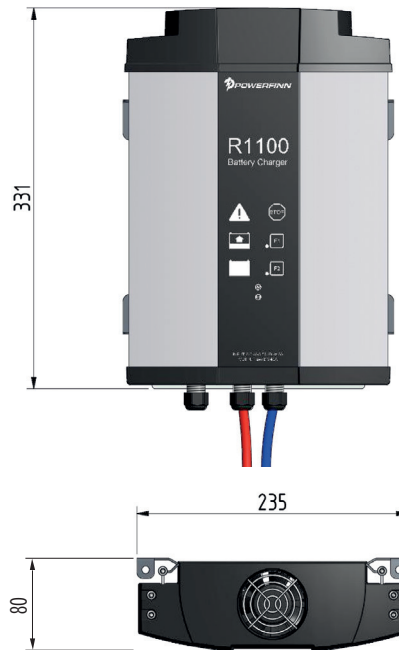
* When the chargers are assembled with optional radio module. This module allows access to configuration and history log of the charger.

Dimensinal sketch of Robust Sharp R1100 for passive cooling



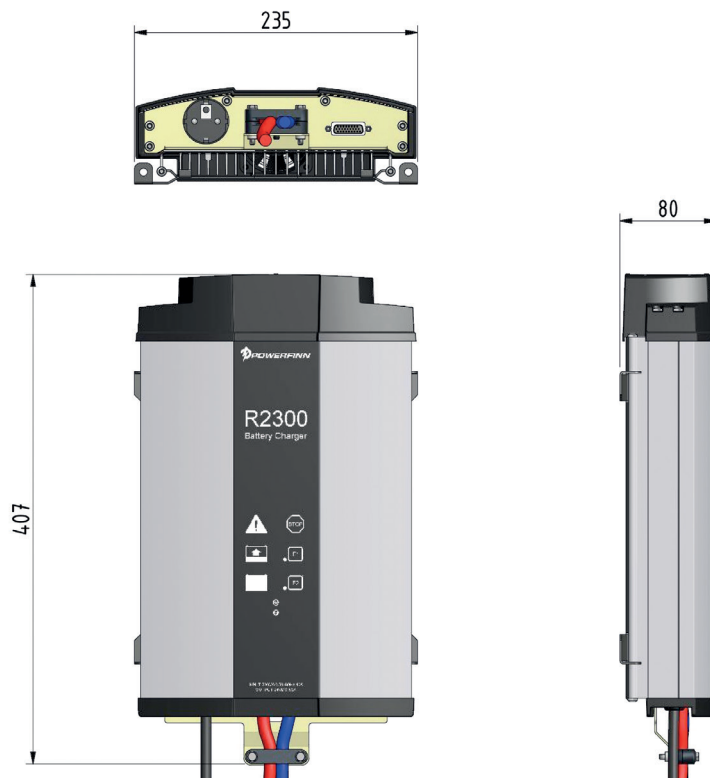
Dimensinal sketch of Robust Sharp and Robust Access R1100 with cooling fan.

Robust Access is provided with radio



Dimensinal sketch of Robust Sharp and Robust Access R2300 with cooling fan.

Robust Access is provided with radio



Robust Sharp R1 100 technical data: charger for passive cooling, (without cooling fan)

Type	Battery volt (V)	current(A)	Charging time 8h** (Ah/5h)	Mains current* (A)	Weight kg
Robust	24	40	306	5.6	8
	36	22	168	4.7	8
	48	20	153	5.6	8

Robust Sharp and Robust Access R1 100 technical data: charger with cooling fan Robust Access is provided with radio

Type	Battery volt (V)	current(A)	Charging time 8h** (Ah/5h)	Mains current* (A)	Weight kg
Robust	24	40	306	5.6	5.5
	36	22	168	4.7	5.5
	48	20	153	5.6	5.5

* 1-phase 220 – 230V; 50 – 60 Hz

** Chemical acid circulation (ionic mixing)

Note: Operational range -35 degrees C to +55 degrees C

Primary cable length 2.5 m without contact

Secondary cable length 3 m without battery connector

Robust R2300 Sharp technical data: charger for passive cooling, (without cooling fan)

Type	Battery volt (V)	current(A)	Charging time 8h** (Ah/5h)	Mains current* (A)	Weight kg
Robust	24	80	495	11.2	8
	36	53	406	11.1	Future
	48	40	306	11.2	Future

Robust Sharp and Robust Access R2300 technical data: unit with cooling fan Robust Access is provided with radio

Type	Battery volt (V)	current(A)	Charging time 8h** (Ah/5h)	Mains current* (A)	Weight kg
Robust	24	80	495	11.2	8
	36	53	406	11.1	8
	48	40	306	11.2	8.5

*Coming: Robust Sharp and Robust Access R3000 will be introduced during first half of 2016.
Sizes will be: (preliminary) 24/100, 36/70 and 48/60.*

* 1-phase 220 – 230V; 50 – 60 Hz

** Chemical acid circulation (ionic mixing)

Note: Operational range -35 degrees C to +55 degrees C

Primary cable length 2.5 m without contact

Secondary cable length 3 m without battery connector

WARNING!

CONCERNING THE ROBUST BATTERY CHARGER WITH RADIO TRANSMITTER!

Changes/modifications not approved by the responsible party could void the user's authority to operate the equipment. This transmitter must not be relocated or operated in conjunction with any other antenna or transmitter.

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body (excluding extremities: hands, wrists, feet and ankles).

THE MICROPOWER GROUP

Micropower is an independent producer of battery chargers and systems for industrial use. Micropower E.D. Marketing AB's head office is located in Växjö, Sweden.

Today the company, which was founded in 1984, is a leading player in the north European market for forklift battery chargers.

The Micropower Group enjoys the great advantage of retaining control over all important production process stages from transformer winding and control card manufacture to inspections and tests prior to delivery to customers. We have customers worldwide.

Chargers are produced in our factories in Sweden and Finland.

Micropower E.D. Marketing AB is certified according to ISO 9001 and ISO 14001 standards.

The following companies belong to the Micropower Group:

Parent company:

Micropower Invest AB

Subsidiaries:

Micropower E.D Marketing AB
SEIAB, Smålands Elektronik Industri AB
Primepower AB
Powerfinn Oy
Micropower Fastighets AB
HF SM Power Innovations AB
Ecotec Limited
Micropower Shanghai Ltd



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