

ZEPIA Energy

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ZE 600/800/1600



User Manual (GB)

ZE Charger

User Manual

- Read this instruction before the charger is taken into use.
- Keep this manual within easy reach for the user of this battery charger
- Hydrogen gas will be produced when charging lead-acid batteries and hydrogen gas is explosive.
- Open flames and sparks should be kept away from batteries they may produce explosions.
- The charger should be switched off before the charger/battery plug is disconnected.
- It is related with real danger to touch any parts inside the charger. Do not do any repair work with the main switch ON and to be real sure disconnect the mains connector.

General

The ZE Charger is suitable both for Freely Ventilated- (Wet) and Valve Regulated- (Dry) lead/acid batteries. The charger is small and is very light (1,5 kg.) and can therefore easily be fitted close to the battery. (The charger can be delivered with program compensating for the equipment base load.)

The charger operates in high frequency and should be connected to a standard 230V mains connection with ground. The built in micro controller controls the charging process according to the chosen charging algorithm. .

During charging the charging progress is displayed with a status indicator LED on the front panel. The micro-controller is also controlling the charging progress with regards to temperature in the charger and time. If a fault occurs in some cells or the temperature rises the charging current will be limited. If you have a special requirement of charging algorithm or application, please contact ZEPIA Energy.

Installation

The ZE Charger is mainly suited for indoor use.

It can be used positioned horizontally on a table or a shelf, hang on a wall using the free supplied bracket or as a built-in charger in the vehicle or machinery. When it is built in it has to be shock absorbed.

The charger can be with fixed connection to the battery or with conventional connectors.

Position the charger in such a way that the air supply will not be obstructed.

When the charger is fitted on a wall or mounted in a vehicle it should be horizontal to limit dust and moisture to enter it.

Function

Check that battery type and size correspond to the setting of the charger. Also check that the polarity between the charger and the battery is right. Positive + to positive + and negative – to negative -.

Connect the battery to the charger and switch on the charger.

The charging starts after a few seconds and the status indicator, **Orange LED**, is lit up.

Orange LED remains on until the battery is fully charged. If the charger is connected to a fully charged battery the charger will be charging for 1 hour. This is the minimum charging time.

Green LED, is lit up when the battery is ready to be used.

Maintenance charging will continue as long as the battery is connected.

ZE 600/800: The charger will be reset as soon as the charger is switched off and then on.

1600W version is reset by the red knob on the front or by disconnecting the mains cable.

The charging time depends on the size of battery and the depth of discharge.

A freely ventilated battery (Wet) can be discharged to max. 80% and a valve regulated (Dry) with max 70%.

OBS: Switch off the charger before the battery is disconnected. If the battery is disconnected without switching of the charger, sparks may be produced.

Trouble shooting and service

RED flashing LED

may mean that the battery is not properly connected.
Check cables, connection terminals, plugs and other connections to the battery.
Rectify if possible.
Measure the voltage at the battery and at the charger.
If the connecting points and the voltage is correct, contact ZEPIA Energy for consultation.

Standard setting -free ventilated / valve regulated with parallell consumption , J-program

Free ventilated, open lead acid			Valve regulated, Gel	
Charging phase	Voltage level	Time	Voltage level	Time
I1-phase	>1,4V/cell	max 12 h	>1,4V/cell	max 12 h
U1-phase	2,4V/cell	max 12 h	2,35V/cell	max 12 h
U2-phase	2,3V/cell	unlimited	2,3V/cell	unlimited

Traction batteries, M-/B-program

Free ventilated, open lead acid			Valve regulated, Gel	
Charging phase	Voltage level	Time	Voltage level	Time
I1-phase	>1,4V/cell	max 12h	>1,4V / cell	max 12 h
U1-phase	2,4V/cell	max 5h	2,35V/cell	max 7 h
I2-phase	max 2,8V/cell	min 1h max 4h	max 2,8V/cell	min 1h max 4h
U2-phase	2,26V/cell	unlimited	2,26V/cell	unlimited

Technical data

Size: 600-800W/1600W L 230 x B112 x H 75 i mm / L 258 x B 136 x H 89 i mm
Weight: 600-800W/1600W 1,5 kg / 2,3 kg
Ambient Temperature: -25 °C - +40 °C
Mains Voltage: 90 Volt - 255 Volt AC, 45 Hz - 400 Hz (<200V will mean limited effect)
The charger should be connected to a "c" characteristic fuse.
Power Factor: ~1
Rated Voltage: 12 Volt, 24 Volt, 36 Volt 48 Volt DC
Rated Current: 15 Amp, 20 Amp, 30 Amp, 40 Amp, 50 Amp, 60Amp
Secondary Cables: 2 m 6/10 mm²
Protection: 1, IP 21 (when fitted horizontally) Available in IP44.
General: Temperature controlled cooling fan.
Protected against wrong polarity and short circuit
This charger can be used as a voltage supply. (Special program)
CE-certified in accordance with valid EN-standards.

Charging algorithms

The ZE Charger is designed for freely ventilated and valve regulated batteries. All chargers are equipped with app. 15 different charging curves.

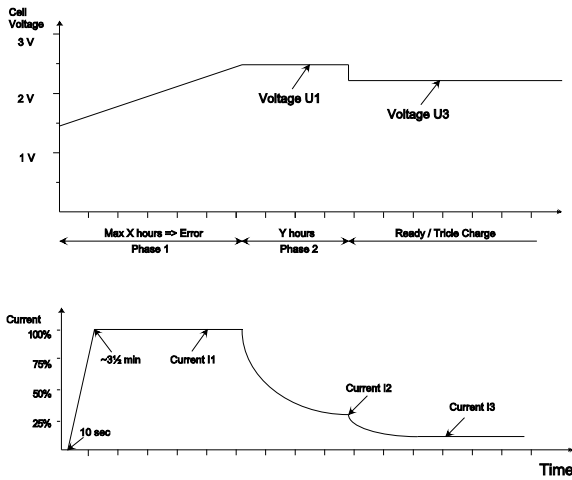
Every charging algorithm covers a specific battery capacity, which means that faulty adjustment will have an impact on the battery lifetime.

When ZEPIA Energy is informed of battery capacity and type the charger will be delivered with the correct setting.

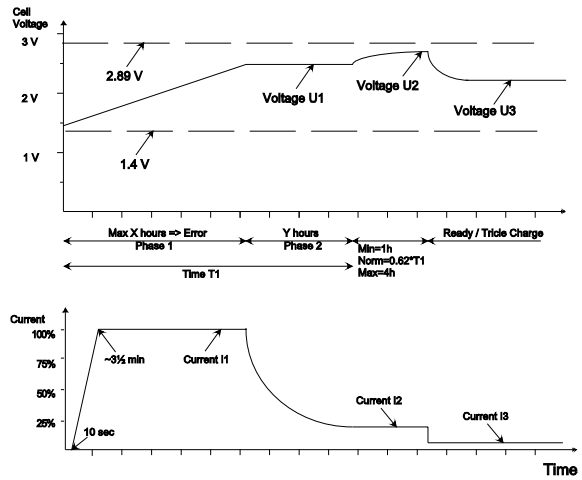
If you change to another type or size of battery, please contact ZEPIA Energy for change of charging algorithm.

If the wrong algorithm is chosen the warranty will be void.

Standard, IUoU



Traction, IUIU



Charging characteristics according to chosen software version and switch position.

Accessoires for ZE Chargers

Temp / Voltage sensor, Remote display, Distribution relay-EDR

CE and Euronorms:

EN 60 335-2-29(1991) +A2(1993) EN 55022 Class B, EN 61000-3-2, EN 61 000-3-3
EN 61 000-4-2, EN 61 000-4-4, EN 61 000-4-11, ENV 50 140, ENV 50 204

NOTE: Chargers that are ordered with setting "0" will only function when the correct setting according to battery capacity and type is done.



1600W



600/800W



Rotating switch for change of charging curves. Available left to LED.

Connection of Temp sense unit and external LED panel