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ES 20-25 / 44-48

RU 26-31 / 44-48

NL 32-37 / 44-48

IT 38-43 / 44-48

GYSFLASH 10.36/48 PL

SAFETY INSTRUCTIONS



This manual contains safety and operating instructions, to be followed for your safety. Please read it carefully before using the device for the first time and keep it for future reference. This machine should only be used for charging or power supply operations comprised within the limits indicated on the machine and in the instructions manual. The operator must observe the safety precautions. In case of improper or unsafe use, the manufacturer cannot be held liable.



The device is destined to be used indoors. Must not be exposed to the rain.

This unit can be used by children aged 8 or over and by people with reduced physical, sensory or mental capabilities or lack of experience or knowledge, if they are properly monitored or if instructions for using the equipment have safely been read and risks made aware of. Children must not play with the product. Cleaning and maintenance should not be performed by an unsupervised child.

Do not use to charge domestic batteries or non rechargeable batteries.

Do not operate the device with a damaged power supply cord or a damaged mains plug.

Do not use the device if the charging cable appears to be damaged or assembled incorrectly in order to avoid any risk of short circuiting the battery.

Never use on a frozen or damaged battery.

Do not cover the device.

Do not place the device near a fire or subject it to heat or to longterm temperatures exceeding 50°C

Do not obstruct the machine's air intake, which facilitates air circulation.

The operating mode of the automatic charger and the restrictions applicable to its use are explained later in this manual.



Fire and explosion risks!

A charging battery can emit explosive gases.

- During the charge, the battery must be placed in a well ventilated area.
- Avoid flames and sparks. Do not smoke near the device.
- Protect the battery's electrical contact surfaces against short-circuits.



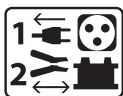
Acid projection hazard !

- Wear safety goggles and protective gloves





- If your eyes or skin come into contact with battery acid, rinse the affected part of the body with plenty of water and seek immediate medical assistance



Connection / disconnection :

- Ensure that the charger's power supply is disconnected before connecting or disconnecting to the battery terminals.
- Always ensure the Red clamp is connected to the "+" battery terminal first. If it is necessary to connect the black clamp to the vehicle chassis, make sure it is a safe distance from the battery and the fuel/exhaust pipe. The charger must be connected to the mains.
- After charging, disconnect the charger from the mains, then disconnect the negative clamp from the car body and then disconnect the positive clamp from the battery, in this order.



Connection :

- *Class I device*
- This device must be connected to an earthed power supply
- The connection to the power supply must be carried out in compliance with national standards.



Maintenance :

- If the power cable is damaged, it must be replaced by the manufacturer, its after sales or by an equally qualified person to prevent any accidents.
- Service should be performed by a qualified person
- Warning! Always remove the power plug from the wall socket before carrying out any work on the device.
- Under no circumstances should solvents or other aggressive cleaning agents be used.
- Clean the device's surfaces with a soft, dry cloth.



Regulations :

- The Machine is compliant with European directives.
- The declaration of conformity is available on our website.
- EAEC Conformity marking (Eurasian Economic Community).
- Equipment in compliance with British requirements. The British Declaration of Conformity is available on our website (see home page).
- Equipment in conformity with Moroccan standards.
- The declaration C_o (CMIM) of conformity is available on our website (see cover page).



Waste management:

- This product should be disposed of at an appropriate recycling facility. Do not throw away in a household bin.

GENERAL DESCRIPTION

GYSflash 10.36/48 PL is ideal for charging most lead-acid (Gel, AGM, Liquid,...) and lithium batteries of the Lithium Iron Phosphate (LFP / LiFePO4) and «standard» lithium-ion types such as Nickel Manganese Cobalt (NMC), Lithium nickel cobalt aluminium oxide (NCA), Lithium Cobalt Oxide (LCO), Lithium Polymer (Li-Po), Lithium Manganese Cobalt Oxide (MCO), etc.

This charger is perfectly suited for charging :

- 36 V lead batteries (18 cells in series)
- 48 V lead batteries (24 cells in series)
- 36 V Lithium batteries (12 cells in series)
- 48 V LFP batteries (15 cells in series) - 48 V LFP batteries (16 cells in series)
- «Standard» Lithium-ion batteries 48 V (13 cells in series)
- «Standard» Lithium-ion batteries 48 V (14 cells in series)



The Gysflash 10.36/48 PL is equipped with a function that :

- when charging a lead-acid battery, adjusts the output voltage automatically according to the ambient air temperature. This adjustment allows for a very accurate lead-acid battery charge adapted to the temperature.
- When charging a lithium battery, the charge is prevented if the ambient temperature is below 3°C.

In both cases, the adjustment can take between 1 and 10 minutes before the charge starts or stops.

CALIBRATION CABLE

Procedure for the calibration of the charging leads in order for the charger to compensate any voltage drop due to the length or condition of the cables. It is strongly recommended to perform this procedure each time the cables are modified or changed.

1. Before undertaking the procedure, make sure that the charger is disconnected from the mains socket.
2. Short-circuit the ends of the charging leads.
3. Press buttons **BATTERY VOLTAGE** and **BATTERY TYPE** simultaneously.
4. Plug in the mains plug while holding down the two buttons until the indicator light **OK** or **!** lights up.

Results :

- Indicator **OK** is on : the calibration was successful.
 - Indicator **!** is on: the calibration failed, disconnect the mains plug and restart the procedure.
5. Unplug the mains plug until the charger switches off.

START UP

1. Connect the charger to the battery.
2. Plug the charger to the mains (single phase 220-240Vac 50-60Hz).
3. Unlock the charger by pressing button **BATTERY TYPE** for 3 seconds.
4. Select the charging voltages (or the number of cells in your battery) by pressing button **BATTERY VOLTAGE**, to select the battery technology press button **BATTERY TYPE**.
5. Lock the mode by pressing button **BATTERY TYPE** again for 3 seconds (or wait 10 seconds without pressing a button). After roughly five seconds, the charge starts automatically.
6. During the charge, the device indicates charge progress. When indicator **OK** flashes, the battery is ready to start the engine. Once indicator **OK** is steady, the battery is fully charged.
7. The charge can be interrupted at any time by unplugging the mains plug or pressing the **BATTERY VOLTAGE** button.
8. After the charge, disconnect the charger from the mains, then disconnect the clamps from the battery.

CHARGE MODES

• **Description of charging modes and currents :**

- 36 V ● Pb **Lead CHARGE mode (43.8 V/10 A max) :**
Mode for charging 36 V lead-acid batteries from 20 Ah to 230 Ah. Automatic seven step charge cycle.

- 36 V ● LFP **Lithium Iron Phosphate Charging Mode (43.2 V/10 A max) :**
Mode for charging 36 V LiFePO4 batteries from 10 Ah to 230 Ah. Eight-step automatic charging cycle.

- 36 V ● Li **Standard Lithium-ion charging mode (41.5 V/10 A max) :**
Mode for charging 36 V Li-ion standard batteries from 10 Ah to 230 Ah. Eight-step automatic charging cycle.

- 48 V ● Pb **Lead CHARGE mode (58.4 V/8 A max)**
Mode for charging 48V Lead-acid batteries from 15Ah to 160 Ah. Automatic seven step charge cycle.

- 48 V ● 54.0V
- LFP

Lithium Iron Phosphate Charging Mode (54 V/8 A max) :

Mode for charging 48V LiFePO4 batteries with 15 cells in series from 8 Ah to 160 Ah.. 8 step automatic maintenance charge cycle.

- 48 V ● 58.0V
- LFP

Lithium Iron Phosphate Charging Mode (57.6 V/8 A max) :

Mode for charging 48 V LiFePO4 batteries with 16 cells in series from 8 Ah to 160 Ah. 8 step automatic maintenance charge cycle.

- 48 V ● 54.0V
- Li

Standard Lithium-ion charging mode (54 V/8 A max) :

Mode for charging standard 48 V Li-ion batteries with 13 cells in series from 8 Ah to 160 Ah. 8 step automatic maintenance charge cycle.

- 48 V ● 58.0V
- Li

Standard Lithium-ion charging mode (58.1 V/8 A max) :

Mode for charging standard lithium-ion batteries with 14 cells in series from 8 Ah to 160 Ah. 8 step automatic maintenance charge cycle



UVP wake up

Some Lithium batteries incorporate a UVP protection (Under Voltage Protection) which disconnect the battery in case of deep discharge. This protection prevents the charger from detecting the battery. In order for the Gysflash 10.36/48 PL to charge the battery, the UVP protection must be disabled. To do this, select the Lithium charging mode and press the button **BATTERY TYPE** for 10 seconds. The charger will then deactivate the UVP protection and automatically start charging.

• Battery type selection :

Using button **BATTERY TYPE** , , select your battery type from the following three technology categories :



Lead-acid, AGM, GEL, etc.



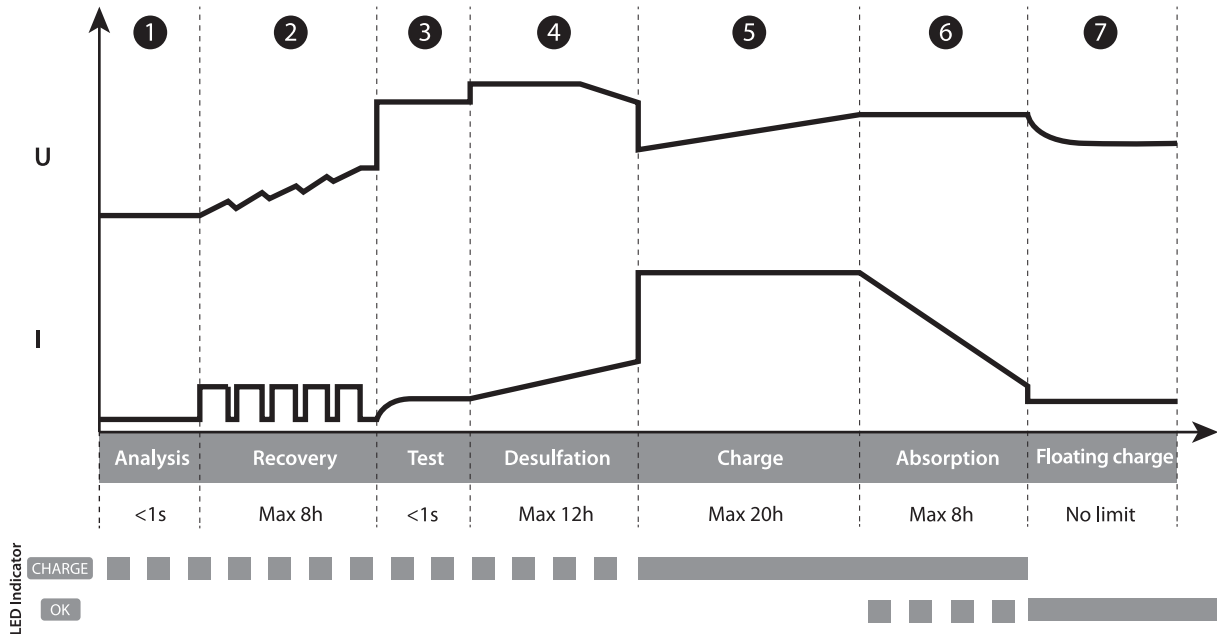
LiFePO4



NMC, NCA, Li-Po, LCO, MCO, ...

• Load curve Lead :

The GYSflash 10.36/48 PL uses an advanced 7-step lead charging curve that guarantees the optimal performance of your lead-acid battery.



Step 1 : Analysis

Analyses the state of the battery (charge level, polarity inversion, wrong battery...)

Step 5 : Charge (36V - 10 A / 48V - 8 A)

Fast charge at maximum current to reach 80% charge level.

Step 2 : Recovery (36V - 4 A / 48V - 3 A)

Recovering damaged elements after deep and prolonged discharge.

Step 6 : Absorption (36V - 43.8 V / 48V - 58.4 V)

Constant voltage charge to reach 100% charge level.

Step 3 : Test

Sulfated battery test

Step 7 : Floating mode (36V - 40.8 V / 48V - 54.4 V)

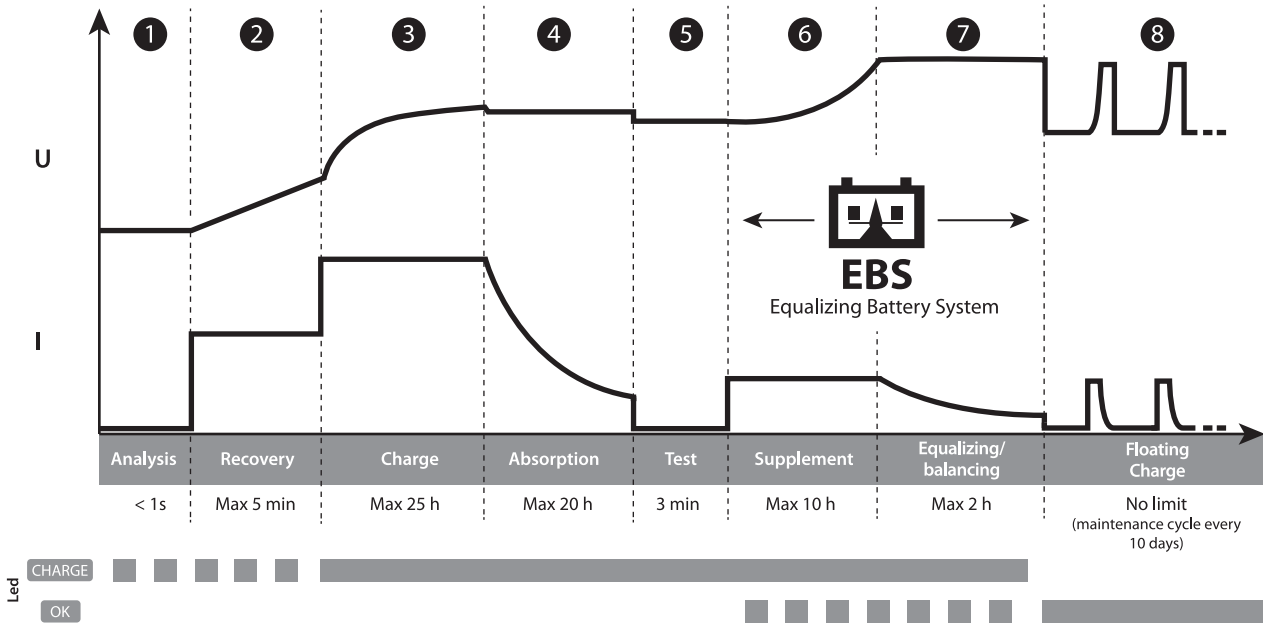
Maintaining the battery charge level at its maximum.

Step 4 : Desulfation (36V - 47.4 V / 48V - 62 V)

Battery desulfation algorithm.

• Lithium charging curve :

The GYSflash 10.36/48 PL uses an advanced 8-step Lithium charging curve that guarantees the optimal performance of your lithium battery.



Step 1 : Analysis

Analyses the state of the battery (charge level, polarity inversion, wrong battery...)

Step 5 : Test
Charge hold test.

Step 2 : Recovery (36V - 2 A / 48V - 2 A)
Recovery algorithm following a deep discharge.

Step 6 : Complement
Reduce current charge to reach 100% charge level.

Step 3 : Charging (36V - 10 A / 48V - 8 A)
Fast charging at maximum current up to 90% of the charge level.

Step 7 : Equalization / Balancing
Balancing the battery cells

	48V / 54.0V	48V / 58.0V	36V
LiFePO4	54 V	57.6 V	43.2 V
Li-ion	54 V	58.1 V	41.5 V

Step 4 : Absorption
Constant voltage charging to bring the charge level to 98%.

	48V / 54.0V	48V / 58.0V	36V
LiFePO4	51.8 V	55.2 V	41.4 V
Li-ion	52.7 V	56.7 V	40.5 V

Step 8 : Floating mode
Maintain the battery charge level at its maximum with maintenance charge every 10 days.

	48V / 54.0V	48V / 58.0V	36V
LiFePO4	51.75 V	55.2 V	41.4 V
Li-ion	52.7 V	56.7 V	40.5 V

• Estimated charge time :

Charging current	Lead-acid							Lithium						
	8 A				10 A			8 A				10 A		
Battery capacity	20 Ah	50 Ah	100 Ah	160 Ah	60 Ah	150 Ah	230 Ah	8 Ah	30 Ah	120 Ah	160 Ah	30 Ah	140 Ah	230 Ah
Charge timing 0% >90%	2 h	6 h	12 h	20 h	6 h	15 h	23 h	1 h	3.5 h	15 h	20 h	3 h	14 h	23 h












• Protections :



The GYSFLASH 10.36/48 PL has several features to protect it against short circuits and polarity reversal. It has an anti-spark feature which prevents sparks whilst connecting the device to the battery. This charger has double insulation and is safe to use with the battery in situ as it will protect the vehicle's on-board electronics.

The GYSFLASH 10.36/48 PL is equipped with an integrated temperature sensor that allows it to adapt its charging current according to the ambient temperature in order to prevent internal electronics from overheating.

TROUBLESHOOTING, CAUSES, SOLUTIONS

	Troubleshooting	Causes	Solutions
1	Indicator  flashes.	<ul style="list-style-type: none"> • Polarity reversal • Battery voltage is too high • Clamps in short-circuit 	<ul style="list-style-type: none"> • Check that the clamps are connected correctly • Check that the selected voltage matches the battery voltage.
2	The indicator  is on.	<ul style="list-style-type: none"> • Failure during charging, battery not recoverable • External temperature too low to charge a lithium battery 	<ul style="list-style-type: none"> • Change the battery and press BATTERY VOLTAGE  to restart a charge. • Charge the lithium battery in a temperate place or press button BATTERY VOLTAGE .
3	Indicator  rstays on even after pressing BATTERY VOLTAGE  button	Thermal protection	Ambient temperature is too high (>50°C), cool the room and let the charger cool down.
4	Indicator  flashes.	Charger in sleep mode	Press button BATTERY VOLTAGE  or connect a battery to the charger to exit sleep mode.
5	Indicator  stays on.	Charge interrupted by pressing BATTERY VOLTAGE  .	Press BATTERY VOLTAGE  again to restart the load

WARRANTY

The warranty covers faulty workmanship for 2 years from the date of purchase (parts and labour).

The warranty does not cover:

- Transit damage.
- Normal wear of parts (eg. : cables, clamps, etc..).
- Damages due to misuse (power supply error, dropping of equipment, disassembling).
- Environment related failures (pollution, rust, dust).

In case of failure, return the unit to your distributor together with:

- The proof of purchase (receipt etc ...)
- A description of the fault reported.