PRESENTATION

BSU

& CHARGERS

BATTERY SUPPORT UNIT

www.gys.fr

MAJ SEPT 2022

*Battery Support Unit [BSU]

or Stabilized Power Supply

A charger that **maintains a vehicle's battery** at a **perfectly stabilised voltage**. It **compensates for the energy demand** during all "ignition on / engine off" work. It is an essential every-day workshop tool; it **guarantees the performance** of the battery and the vehicle's on-board electronics.

SUMMARY

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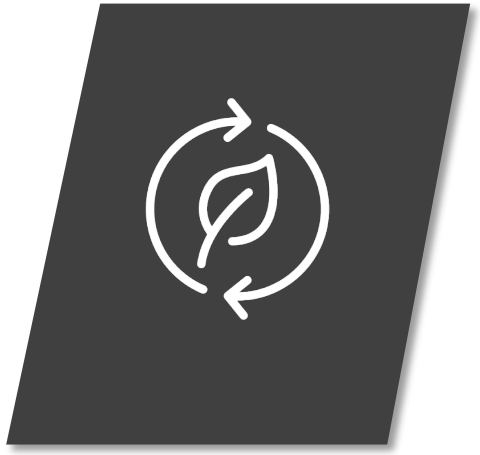
1

THE BATTERY, THE LIFEBLOOD OF A VEHICLE

1.1 The battery is the nerve-centre of a vehicle

Modern vehicles incorporate more and more electronics for a variety of reasons:



ENVIRONMENTAL

Limiting consumption and CO_2 emissions

FOR SAFETY

Airbags, driving aids, etc...

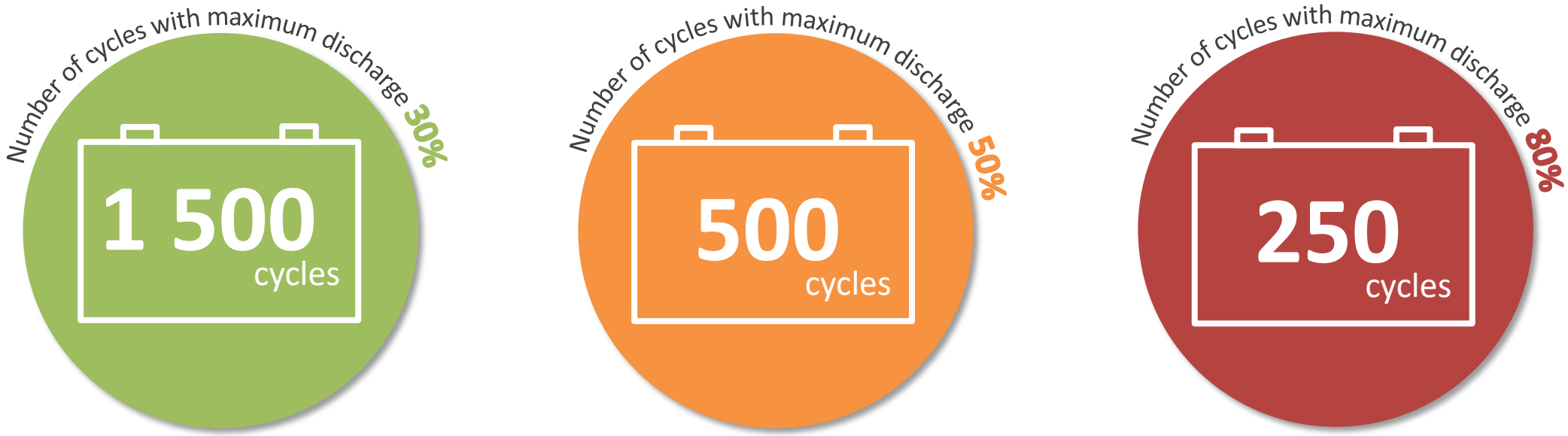
FOR COMFORT

Heated seats, on-board computer...

Without the battery, none of these features would be possible.

1.2 Why is it important to keep a battery charged?

An AGM battery, especially when used in vehicles with a Stop-Start system, should not be allowed to fall below **50% discharge**. Anything below this will shorten the **service life** of the battery **considerably**.



It is possible to **double or even triple the life of a battery** by maintaining a 70% charge level (30% discharge).

The battery discharges **even when not in use**.
Short journeys **do not provide a full recharge via the vehicle's alternator**, and can even **harm** a battery if additional power is not supplied by a charger.

1.3 GYSFLASH PRO; High-performance power sources!

- ✓ Up to **120 A**
- ✓ Charges batteries from **10 to 1800 Ah**
- ✓ **Up to 4 GYSFLASH CNTs** can be combined for more power

- ✓ Contains **13 predefined charge curves** to accommodate all different battery technologies
- ✓ Ability to **create your own charge curves** (ideal for vehicle manufacturers)

- ✓ Suitable for different battery voltages: **6, 12, 24, 36 and 48 V**
- ✓ Suitable for **lead and lithium batteries** (including traction batteries)

- ✓ "SOS Recovery" - **automatic desulphation** system

1.4 Charging is environmentally friendly and economical

ECOLOGICAL

By encouraging **regular recharging** of batteries, the impact on the environment is significant. The **replacement rate is lower**, and leads to a **substantial reduction in waste**.

ECONOMY

A battery can have a considerable cost. **Increasing the lifespan** of a battery by a factor of 2 or 3, will also **reduce the potential expenditure** by the same amount.

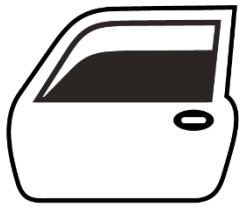
2

SHOWROOM DISPLAYS ARE ENERGY-INTENSIVE

2.1 Presenting a vehicle in a showroon requires an additional energy source

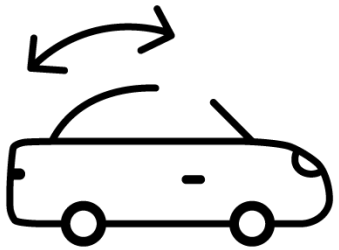
Presenting a vehicle at a dealership is a **crucial aspect** of a successful sale. However, the **operation** of the many **electronic elements** in the vehicle generates **considerable power consumption**.

Examples of electricity consumption in a vehicle:



Electric windows

10 to 13 A



Sunroof

15 A

Indicator lights

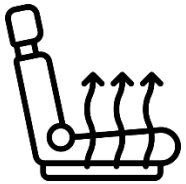
6 to 11 A

Depending on technology

High-beams

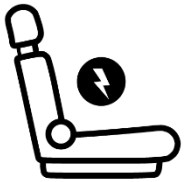
8 to 25 A

Depending on technology



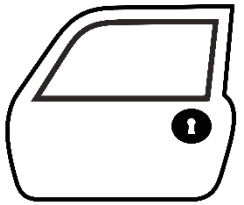
Heated seat

15 A



Electric seat

3 A



Door locking

22 A

Windscreen wipers

11 to 16 A

2.2 What happens if there is no BSU (Battery Support Unit)?

With the motor off, the only resource for **powering the electronics** in the display vehicle is the **battery**.

Without support, the battery will be **discharged rapidly** and the on-board electronics of the display vehicle **could be affected.**

The **reputation** of the dealer would suffer, **the sale would be unlikely**, and **the cost** to the dealer could be very high.

2.3 GYSFLASH PRO, guarantees that display vehicles are 100% operational!

The GYSFLASH PRO range:

Compensates for energy demands up to **120 A**

Automatically restarts in the event of a power outage

Includes a **lock function** to prevent tampering with the charger

("Showroom Lock")

Fits comfortably under the vehicle and is very **inconspicuous** (disconnectable cables for easy access to the engine bay)

Replaces the **battery** if it is not present ("no battery" function)

2.4 The brand image of the dealer is protected, and customer satisfaction is improved

The benefits of a **BSU**-type **battery backup device** are evident:

- **Peace of mind** for the dealership, who do not have to worry about the vehicle's battery health
- **Satisfaction for the potential customer**, who had the opportunity to test the multiple features of the vehicle, and can start to project himself behind the wheel
- Investment in a charger/BSU **pays for itself very quickly** in a professional environment
- **No vehicle motors running** in the showroom
- An **elegant and tidy showroom** with a discreet BSU

3

THE NECESSITY OF A STABILISED POWER SUPPLY IN THE WORKSHOP

3.1 Diagnostic and reprogramming processes require a stable power supply

Performing workshop procedures on modern vehicles requires **two actions** that have a **significant impact on the battery**:

1

DIAGNOSTIC PHASE

(PASS THROUGH)

Identifying possible problems

2

REPROGRAMMING

(GET AWAY)

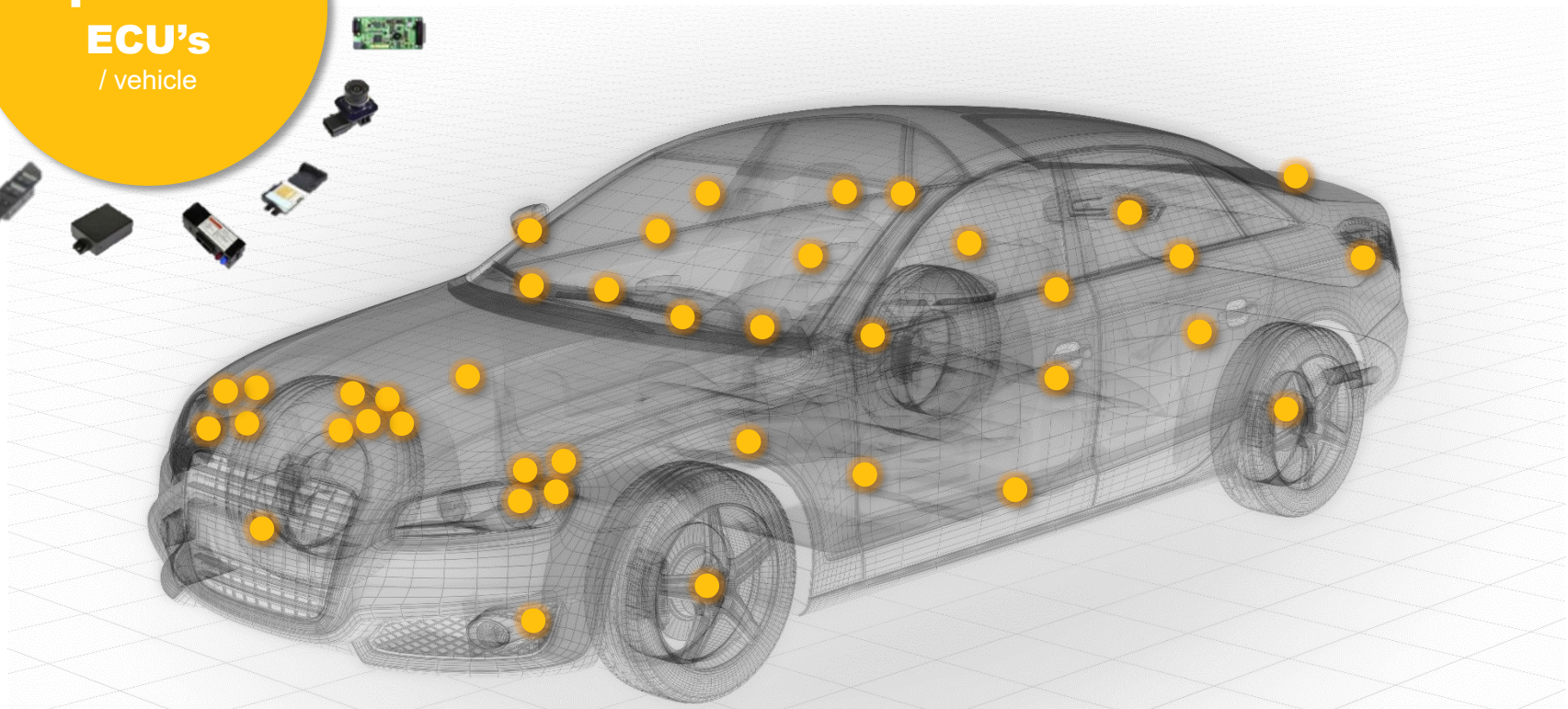
Reprogramming of ECUs

These two stages **engage all electronic consumers** for several minutes, if not more than an hour.

The energy resources required by reprogramming are illustrated below:

	DURATION OF THE ASSIGNMENT	CONSUMPTION (A)	
Engine ECU	*30 – 60 min*	*30 – 50 A*	*70 – 80 A*
HDI engine ECU	*30 – 60 min*	*60 A*	*100 A*
Gearbox ECU	*30 – 60 min*	*20 – 40 A*	*60 – 70 A*
Control/Settings of the lights	*30 – 60 min*	*10 A*	*25 A*
Manufacturer update	*30 – 60 min*	*15 – 35 A*	*60 A*
Mapping update	*45 min*	*15 A*	*40 A*

3.1 Diagnostic and reprogramming processes require a stable power supply



REPROGRAMMING

~ 150 €

VS

REPLACEMENT

~ from 200 € to 1 500+ €

depending on the damaged unit

+ labour costs

3.2 The cablibration of ADAS sensors is also energy intensive

ADAS stands for Advanced Driver Assistance Systems**;** it is comprised of **various electronic driving aids:**

ADAPTIVE CRUISE CONTROL (ACC)

automatically adjusts the car's speed and distance from other vehicles on the road

ADAPTIVE LIGHTS

designed for safe driving at night or in low light conditions by following the movements of the steering wheel

AUTOMATIC EMERGENCY BRAKING (AEB)

assists in improving road safety by quickly identifying critical situations and alerting the driver

BLIND SPOT DETECTION

warns when another vehicle or object is in the blind spot

LANE CHANGE ASSIST OR LANE DEPARTURE

uses cameras to track whether the driver is inadvertently straying from their lane

TRAFFIC SIGN RECOGNITION

detects traffic/road signs

When work is done on the bodywork or windscreen, **the system must be recalibrated**. The operation can take up to **1 hour** and generates a **peak current of 40 A**.

3.3 "Chiptuning" is becoming more popular, and requires a significant energy input

Reprogramming the ECU, or Engine Control Unit, involves **modifying the engine's electronic management system**, or **mapping**. This operation, also called "**chiptuning**" or "**ecotuning**", affects the performance of the engine and can **increase its capabilities** (power, reduce consumption, switch to ethanol, etc.) or allow modifications.

- The process can take up to **1.5 hours**, and requires a current of **120 A**.

3.4 What happens if this energy consumption is not compensated for?

As with a showroom display, **the engine is switched off** during these procedures.
If there is no additional power source, the **diagnostics** and **reprogramming** may cause:

- A **complete and rapid** discharge of the battery
- Unusable or **damaged ECUs**
- **Uncompleted and invalidated** tests or reprogramming
- Possible need to **return the vehicle** back to the manufacturer
- A **loss of profit**

The loss of **time** and **money** can be significant for the company, not to mention the **customer dissatisfaction** if the vehicle is returned with a damaged battery.

3.5 GYSFLASH PRO, confidence in a job well done!

The GYSFLASH PRO range

- Covers power requirements up to 120 A
- Maintains a **stable voltage** throughout the vehicle's electrical systems, regardless of which consumers are being tested. The **voltage can be adjusted from 12V to 14.8V** in 0.1V increments, in order to meet the requirements of different vehicle manufacturers.
- **Automatic warning** in case of overconsumption

3.6 Confidence for both the user and the customer

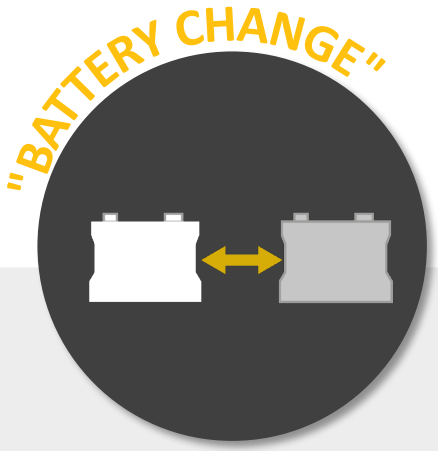
The inclusion of a **GYSFLASH PRO** during a diagnostic or reprogramming phase does not save time, but it does avoid losing time.

By choosing a product from this range, the user is investing in **safe and worry-free** workflow.

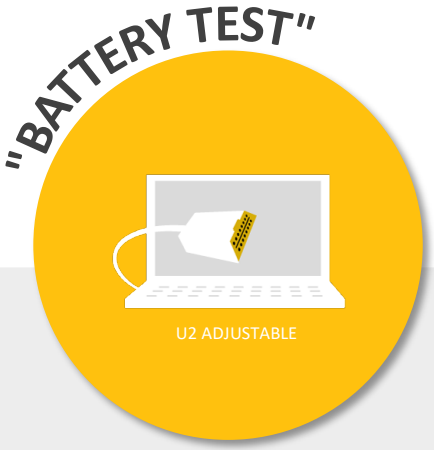
The **energy requirements of the vehicle are met**, the on-board electronics are preserved, and the user is in control.

The customer can be sure that their vehicle will be returned with the battery in the **best possible condition**.

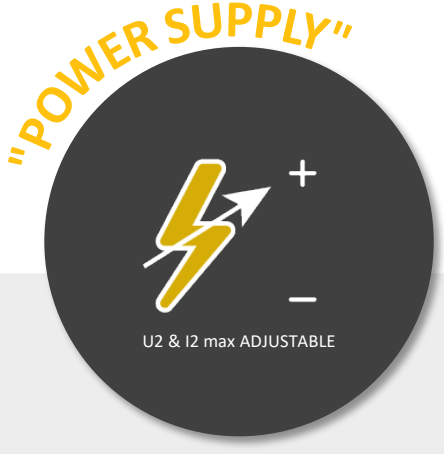
3.7 Other features of the GYSLFASH PRO range



Saves vehicle memory during a battery change.



Measures the **battery voltage** and **checks** the vehicle's **starting and charging circuit**.



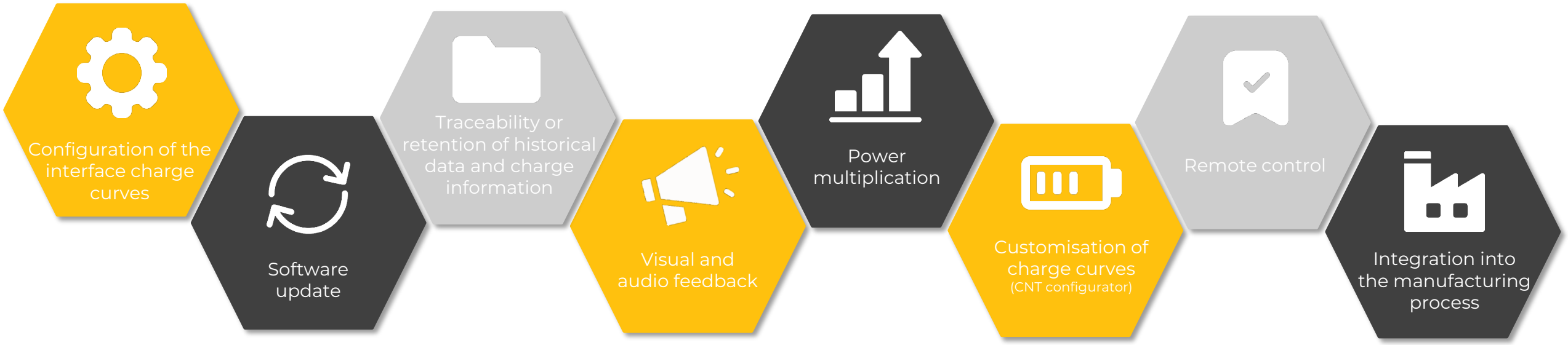
Transforms the charger/BSU into a **stabilised DC power supply**, outside of the automotive environment. The voltage is adjustable in 0.1V increments, from 1V to 16V or from 1V to 30V, depending on the **GYSFLASH** model.

4

GYSFLASH PRO CNT: CONNECTIVITY = EXPANDING POSSIBILITIES

4.1 The GYSFLASH PRO connected "CNT" range opens new opportunities...

The increased connectivity on the **GYSFLASH PRO CNT** extends the range of functionality for professional users:



4.2 How to adapt the GYSFLASH PRO to meet the needs of professional users

Whether you are a garage owner, a dealer, an engineer, or simply a user who wants to have access to all the product's features, each sector has a **pre-defined configuration**.

13 specific lead/lithium charge curves are available, and accessible using **pre-defined configurations**.

Through the USB port, it is possible to:

1. Load one of the **predefined configurations**, or **import new ones** created beforehand on a computer, via the CNT configurator

2. **Transfer these configurations**, or new charge curves, to other GYSFLASH units

3. **Save** the defined **configurations**

4.3 How to keep the GYSFLASH PRO CNT software up to date

The **GYSFLASH PRO CNT** is a major development focus for GYS. Following technological evolutions and understanding customers' needs are crucial in order for us **to continually improve the software** of our products.

The USB port is the input and output point for **updating the GYSFLASH PRO CNT**.

These updates are **available free of charge** at www.gys.fr.

Once purchased, **these chargers/BSUs can keep up with new developments** without the need to replace the products with new ones.

4.4 Traceability: why keeping track of battery maintenance is a measure of professionalism

Battery failure is the leading cause for vehicles to be returned to garages.

Prove the quality of the service

Without **proof of intervention** on the battery, the customer may be left with doubts about the **quality of the service** provided by the technician, which may lead to a possible future breakdown and damage the relationship.

Protecting yourself from complaints

Providing **traceability of the condition** of the battery on entering and leaving the garage enables technicians to **protect themselves from any complaints,** and to demonstrate that they are reliable.

Traceability is a key asset when developing customer relations

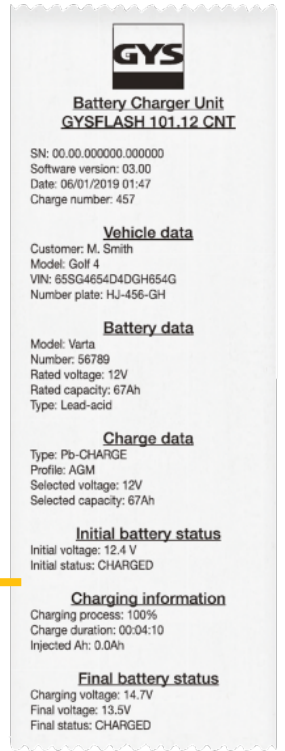
4.5 How to save or document battery status data

Up to **1 000** **pieces of charge data** can be stored on the internal memory of a GYSFLASH PRO CNT.

The information can be **exported to a USB stick** and is **readable on a computer** using a spreadsheet (Excel, Numbers, etc.).

The printer is an ideal accessory to **document the charge data** on a receipt

Ref. 026919



Battery Charger Unit
GYSFLASH 101.12 CNT

SN: 00.00.000000.000000
Software version: 03.00
Date: 06/01/2019 01:47
Charge number: 457

Vehicle data
Customer: M. Smith
Model: Golf 4
VIN: 65SG4654D4DGH654G
Number plate: HJ-456-GH

Battery data
Model: Varta
Number: 56789
Rated voltage: 12V
Rated capacity: 67Ah
Type: Lead-acid

Charge data
Type: Pb-CHARGE
Profile: AGM
Selected voltage: 12V
Selected capacity: 67Ah

Initial battery status
Initial voltage: 12.4 V
Initial status: CHARGED

Charging information
Charging process: 100%
Charge duration: 00:04:10
Injected Ah: 0.0Ah

Final battery status
Charging voltage: 14.7V
Final voltage: 13.5V
Final status: CHARGED

4.6 How can vehicle data be collected or recorded more easily?

1D / 2D barcode scanner

Ref. 027718

Facilitates data collection and scans:

- The vehicle identification number (VIN)
- The barcode of the battery
- The CRIT'Air anti-pollution sticker (information on the number plate, the vehicle model, the date of first registration, the Euro standard...)

Ref. 026919

USB AZERTY Mini Keyboard

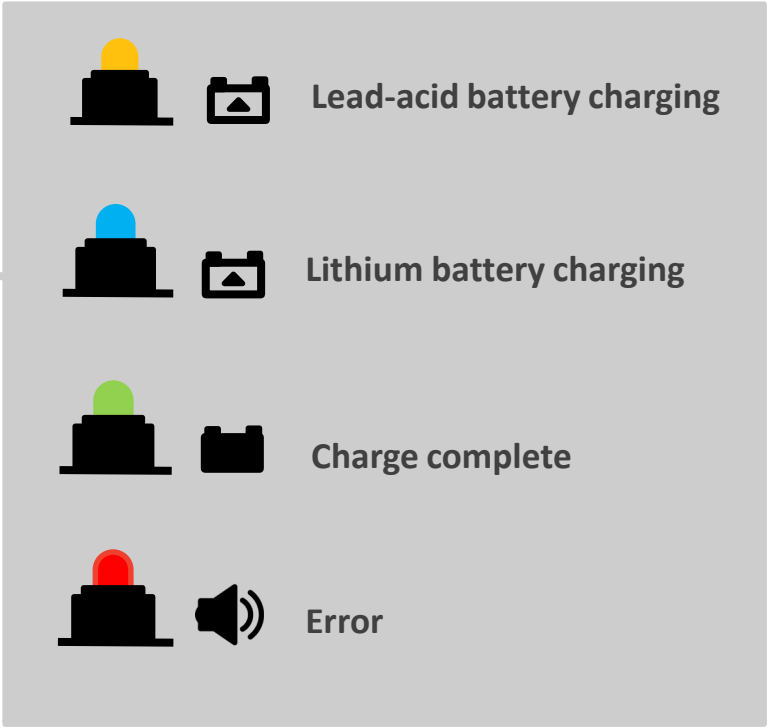
Ref. 027725

It is connected to the SPM printer and simplifies data entry. (Available in AZERTY and QWERTY)

4.7 Keeping track of the battery charge status

The **Smart Light Module** (SLM) is the ideal way to monitor the information provided by the **GYSFLASH PRO CNT** at a distance

Ref. 027978



4.8 CNT Configurator, the path to limitless possibilities...

Vehicle manufacturers have a very **sophisticated knowledge** of batteries, and their **optimal charging characteristics.** Most of the available solutions on the market do not allow them to **fine-tune each stage** of the charging process.

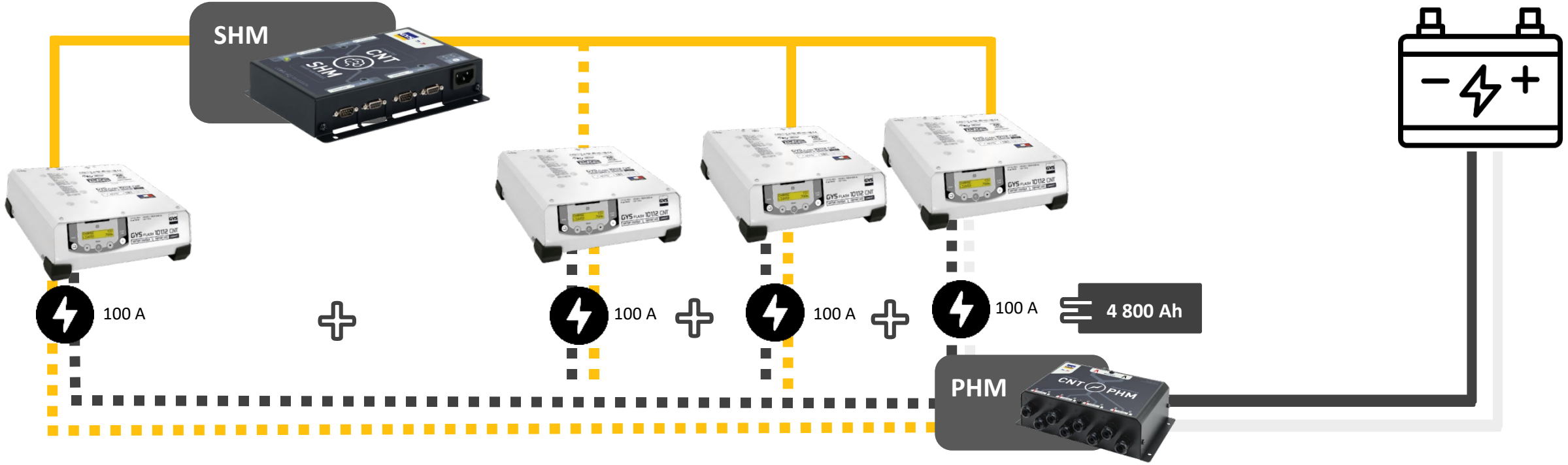
Taking this into account, GYS have developed the **first online charge curve configurator**, accessible **free of charge** from our website.

This provides professional users with a **practical system that meets their technical needs**, and demonstrates their expertise.

4.9 How to increase the potential of the GYSFLASH PRO CNT with the connected modules

120A is not enough? Get more power by paralleling up to **4 GYSFLASH PRO CNT** units together

Many situations may require **more power**, the **PHM** (Power Hub Module) and **SHM** (Smart Hub Module) have been engineered to **increase the modularity** and power of the GYSFLASH PRO CNT range.



The PHM combines the power of up to 4 identical GYSFLASH units, and the SHM combines their communication capabilities (1 GYSFLASH controls the others)

4.10 How to remotely control the GYSFLASH PRO CNT

For more advanced applications of the **GYSFLASH PRO CNT**, the Smart USB Module (**SUM**) and Smart Wireless Module (**SWM**) are indispensable accessories; they provide **communication between the charger/BSU and the user's computer system** (computer, tablet, etc.).

CNT-SUM Module

CNT-SWM Module

4.10 How to remotely control the GYSFLASH PRO CNT

There are numerous advantages:

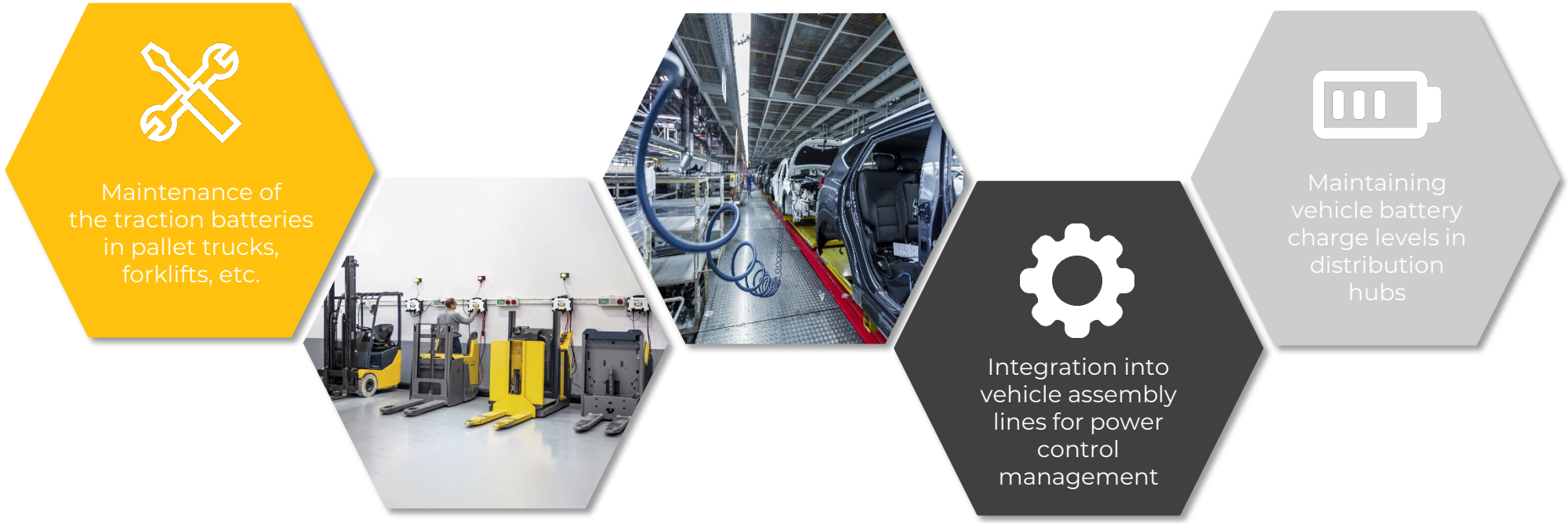
- Instantaneous transmission of **real-time charging information** to the computer or tablet
- **Remote control** operation
- **Real-time** monitoring of charger status

CNT-SUM
Ref. 025974

CNT-SWM
Ref. 070837

4.11 Manufacturing also requires stabilized power supplies

There are many applications for **stabilized power supplies in manufacturing**:



> Interest in this type of system is growing, and not all possible avenues have been explored yet. GYS are committed to **fulfil all the requirements** of the industry.

The **GYSFLASH 148.12 & 158.12 CNT** have been developed in collaboration with a premium car manufacturer specifically for **integration onto vehicle assembly lines**.

5 Protection is maximized

Anomalous undervoltage protection

Limits the risk of overheating on a failing battery by ceasing the charge in the event of abnormally low voltage (active in BSU mode).

Battery overvoltage protection

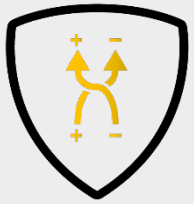
Protects the charger in the event of a power surge from the battery.

Internal thermal protection of the charger

Protects the charger from internal overheating.

Battery disconnection protection

Stops the charge if the battery becomes separated from the charger, to ensure that no voltage remains in the clamps.



Reverse polarity protection

Prevents the possibility of reverse polarity on the battery.

Charge time protection

Identifies unrecoverable batteries and disables the charge in order to avoid unnecessary risk of explosion.

6

INTRODUCTION TO THE RANGE

6.1 The GYSFLASH PRO range

Horizontal 12 V

GYSFLASH 30.12
Ref. 029224

GYSFLASH 50.12 FV
Ref. 026056

GYSFLASH 100.12
Ref. 029415

Horizontal multi-voltage

GYSFLASH 30.24 *(6 / 12 / 24 V)*
Ref. 029231

GYSFLASH 50.24 *(6 / 12 / 24 V)*
Ref. 029620

Vertical 12 V

GYSFLASH 102.12
Ref. 029606

6.2 The GYSFLASH PRO CNT horizontal range

Horizontal 12 V

GYSFLASH 51.12 CNT FV
Ref. 068179

GYSFLASH 101.12 CNT
Ref. 025790

GYSFLASH 121.12 CNT FV
Ref. 026971

GYSFLASH 125.12 CNT FV
Ref. 028883

Horizontal multi-voltage

GYSFLASH 51.48 CNT FV
(6 / 12 / 24 / 36 / 48 V)
Ref. 072015

GYSFLASH 101.24 CNT FV
(6 / 12 / 24 V)
Ref. 025967

GYSFLASH 148.12 CNT FV
Ref. 069916

GYSFLASH 158.12 CNT FV
Ref. 069909

6.3 The GYSFLASH PRO CNT vertical range

Vertical 12 V

GYSFLASH 103.12 CNT
Ref. 072008

GYSFLASH 123.12 CNT FV
Ref. 025677

Vertical multi-voltage

GYSFLASH 53.48 CNT FV
(6 / 12 / 24 / 36 / 48 V)
Ref. 025998

GYSFLASH 103.24 CNT FV
(6 / 12 / 24 V)
Ref. 025684

6.4 Selection guide - GYS recommendation

	Dealers (showroom)	Dealers / Garages	Body shops	Car manufacturers	Other industries
GYSFLASH PRO HORIZONTAL					
30.12	★★	★	★	★	
50.12 FV	★★★	★★	★★	★	
100.12	★★★★	★★★	★★★	★	
30.24	★★	★	★	★	★
50.24	★★★	★★	★★	★	★★
GYSFLASH PRO VERTICAL					
102.12	★	★★★	★★★	★	
GYSFLASH PRO CNT HORIZONTAL					
51.12 CNT FV	★★★	★★	★★	★★★	★
101.12 CNT	★★★★	★★★	★★★	★★★	★
121.12 CNT FV	★★★	★★★★	★★★★	★★	★
125.12 CNT FV	★★★	★★★★	★★★★	★★★	★
128.12 CNT FV	★	★★★★	★★★★	★★★★	★
158.12 CNT FV	★	★★★★	★★★★	★★★★	★
101.24 CNT FV	★★	★★★★	★★★★	★★	★★★
51.48 CNT FV	★★	★★	★★	★★★	★★★★
GYSFLASH PRO CNT VERTICAL					
103.12 CNT	★	★★★	★★★	★★★	★
123.12 CNT FV	★	★★★★	★★★★	★★★	★
103.24 CNT FV	★	★★★★	★★★★	★★★	★★★★
23.48 CNT	★	★	★	★★★	★★★★
53.48 CNT	★	★★	★★	★★★	★★★★

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Go behind the scenes of the company in video