



mega macs X

# User Manual



manuals

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# **1. About these Instructions**

Original operating instructions

In these instructions, we have clearly structured the most important information so that you can use your product quickly and efficiently.

## **1.1. Scope of Functions**

The range of functions of the software may vary depending on the country, the licenses acquired, and/or the optionally available hardware. This documentation may therefore describe functions that are not available on the individual device. Missing functions can be enabled by acquiring a corresponding license subject to charge and/or additional hardware.

## **1.2. Notes about the Use of these Operating Instructions**

These operating instructions contain important information relevant to operator safety.

Go to [www.hella-gutmann.com/manuals](http://www.hella-gutmann.com/manuals) to find all the manuals, instructions, references and lists about our diagnostic devices, tools and much more.

Please also visit our Hella Academy under [www.hella-academy.com](http://www.hella-academy.com) and expand your knowledge with various online tutorials and other training courses.

Please read the instructions completely. Pay special attention to the first pages containing the safety instructions. They exclusively deal with your safety during the work with the diagnostic device.

When working with the diagnostic device, it is recommended to read the individual work steps in the instructions again to prevent hazard of persons and equipment or operating errors.

The diagnostic device shall be operated exclusively by personnel qualified in vehicle engineering. Information and knowledge included in this training is not explained in these operating instructions.

The manufacturer reserves the right to modify these instructions and the diagnostic device itself without prior notice. We therefore recommend checking it for any updates. These operating instructions must accompany the diagnostic device in case of sale or any other transfer.

These operating instructions shall be kept for the entire service life of the diagnostic device and shall be accessible at any time.

## 2. Symbols Used

### 2.1. Marking of Text Parts



#### **DANGER**

Text parts marked in this way indicate an imminent dangerous situation, which will lead to death or severe injuries if not avoided.



#### **WARNING**

Text parts marked in this way indicate a possibly dangerous situation, which may lead to death or severe injuries if not avoided.



#### **CAUTION!**

Text parts marked in this way indicate a possibly dangerous situation, which may lead to minor or slight injuries if not avoided.



These symbols indicate rotating parts.



This symbol indicates dangerous electric voltage/high voltage.



This symbol indicates the risk of crushing limbs.



This symbol indicates a potential injury of the hand.



#### **IMPORTANT**

All texts labeled **IMPORTANT** refer to a hazard in the diagnostic device or environment. The advices or rather instructions stated here must therefore be observed by all means.



#### **NOTICE**

Texts marked with **NOTICE** contain important and helpful information. It is recommended to observe these texts.

**Struck-through waste bin**

This marking indicates that the product must not be discarded as domestic waste.

The bar underneath the waste bin indicates whether the product was "placed on the market" after 13 August 2005.

**Refer to manual**

This marking indicates that the user manual must always be read and always be available.

## 2.2. Symbols on the Product

**DANGER**

Text parts marked in this way indicate an imminent dangerous situation, which will lead to death or severe injuries if not avoided.

**WARNING**

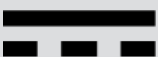
Text parts marked in this way indicate a possibly dangerous situation, which may lead to death or severe injuries if not avoided.

**CAUTION!**

Text parts marked in this way indicate a possibly dangerous situation, which may lead to minor or slight injuries if not avoided.

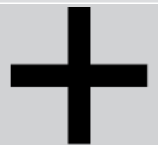
**Refer to manual**

This marking indicates that the user manual must always be read and always be available.

**Direct current voltage**

This symbol indicates direct current voltage.

Direct current voltage means that the electrical voltage does not change throughout a longer period of time.

**Polarity**

This symbol indicates a plus connection of a voltage source.

**Ground connection**

This symbol indicates a ground connection of a voltage source.



## **3. User Information**

### **3.1. Safety Precautions**

#### **3.1.1. General Safety Precautions**



- The diagnostic device is intended for use on motor vehicles only. It is a precondition for the use of the diagnostic device that the user has knowledge of automotive technology and is therefore aware of the sources of danger and risks in the workshop and on motor vehicles.
- Please read the entire user manual thoroughly and carefully before using the mega macs X.
- All notes given in the individual sections of the instructions apply. All symbols on the mega macs X as well as the following measures and safety precautions must also be observed.
- Furthermore, pay attention to all general instructions from labour inspectorates, trade associations and vehicle manufacturers as well as all laws, legal ordinances and instructions which have to be commonly obeyed by a repair shop.

#### **3.1.2. Safety Precautions – Risk of Injury**



When working on the vehicle, there is a risk of injury through rotating parts or rolling of the vehicle. Therefore regard the following:

- Protect vehicle against rolling away.
- Additionally place gear selector lever of AT vehicles to park position.
- Deactivate the start/stop system to avoid an inadvertent engine startup.
- Connect the device to the vehicle only when ignition is switched off.
- Do not reach into rotating parts while the engine is running.
- Do not run cables near rotating parts.
- Check the high-voltage parts for damage.

### **3.1.3. Safety Precautions for the mega macs X**



To prevent incorrect handling and consequent injuries to the user or damage to the diagnostic device, observe the following:

- Only connect the original power adapter to the power cord.
- Always use the original battery.
- Protect the diagnostic device from long periods of exposure to solar radiation.
- Protect the diagnostic device and the connecting cable from hot components.
- Protect the diagnostic device and the connecting cable from rotating parts.
- Regularly check the connecting cables/accessory parts for damage (destruction of the diagnostic device due to short circuit).
- Always connect the diagnostic device according to the instruction in the user manual.
- Keep the diagnostic device away from fluids such as water, oil or gasoline. The mega macs X is not waterproof.
- Protect the diagnostic device from strong impacts and do not drop it.
- Use the charging tray only if it is free of dust and dirt.
- The charging tray and the mega macs X become warm during the inductive charging process. This is due to the charging principle.
- The diagnostic device is equipped with a cooling system. The corresponding vent slots must not be covered (**fire hazard**).
- If the diagnostic device shows signs of malfunction, contact Hella Gutmann or your trading partner immediately.

### **3.1.4. Safety Precautions for High Voltage/Line Voltage**



Very high voltages occur in electrical systems. Due to voltage flashover on damaged components, such as marten damage or touching live components, the risk of electric shock is likely. High voltage via the vehicle and line voltage via the building's mains supply can cause severe injury or even death if adequate care is not taken. Voltage flashover can occur e.g. on the primary and secondary side of the ignition system, the connection to the vehicle, the lighting systems or the wiring harness with plug connections. Therefore regard the following:

- Only use power supply cables with grounding contact.
- Only use a checked or the attached power cord.
- Always use the original cable set.



- Regularly check cables and adapters for damage.
- Perform any assembly work such as the connection of the diagnostic device to the vehicle or the replacement of components only when ignition is switched off.

### **3.1.5. Safety Precautions for Hybrid/Electric Vehicles**



Very high tensions occur on hybrid and electric vehicles. Due to voltage flashover on damaged components, such as marten damage or touching live components, the risk of electric shock is likely. High voltage at or in the vehicle can lead to death in case of inattention. Therefore regard the following:

- Only the following qualified employees are allowed to de-energize the high-voltage system:
  - High-voltage technician
  - Skilled electrician for predetermined operations – Hybrid or rather electric vehicles
  - Skilled electrician
- Place and attach warning signs and barriers.
- Check the high-voltage system and the high-voltage lines for damage (visual inspection!).
- De-energizing the high-voltage system:
  - Switch off ignition.
  - Disconnect the service disconnect plug.
  - Remove the fuse.
  - Disconnect the ground side of the 12-V vehicle electrical system.
- Regard the vehicle manufacturer's instructions.
- Securing the high-voltage system against re-activation:
  - Withdraw the ignition key and keep it safe.
  - Keep the service disconnect plug in a safe place or secure the battery master switch against re-activation.
  - Insulate the battery master switch, the plug connections etc. with dummy plugs, covering caps or insulating tape with the corresponding warning notice.
- Test for absence of voltage with a voltage tester.
- Ground and short-circuit the high-voltage system (necessary only if voltage is higher than 1000 V).



- Voltage below 1000 V: Cover the parts which are close to the system or which are energized e.g. with insulating cloth, hoses or plastic coverings. Voltage higher than 1000 V: Cover the parts with insulating plates/protective panels specially developed for this purpose so that sufficient protection against contact to adjacent parts is ensured.
- Regard the following before re-energizing the high-voltage system:
  - All tools and utilities are removed from the hybrid/electric vehicle.
  - Remove the grounding and short circuit of the high-voltage system. Do not touch any of the cables now.
  - Attach the protective paneling that has been removed before.
  - Remove the protective measures at the switching system.

### **3.1.6. Safety Precautions for Testing/Measuring Devices**



- Perform measurements only on electric circuits that are not directly connected to the line voltage.
- Never exceed the maximum permissible voltage load of 42 V peak alternating voltage (AC) or 60 V direct current voltage (DC) respectively.
- Do not exceed the voltage limits indicated on the connecting cables.
- The voltage values to be measured must be shielded extra or even twice from dangerous line voltage. The voltage limits printed on the test leads must not be exceeded. Pay attention that the allowed measuring range of 60 V/DC / 42 V peak is not exceeded when measuring positive and negative voltage at the same time.
- Never perform measurements on ignition systems.
- Regularly check the test and measuring devices for damage.
- Always connect the test and measuring devices to the measurement module (MT-USB) first.
- Do not touch the connections/measurement points during the measurement.

## **3.2. Disclaimer of liability**

### **3.2.1. Software**

#### **3.2.1.1. Safety-Related Software Modifications**

The present device software provides numerous diagnostic and configuration functions. Some of these functions affect the behavior of electronic components. These components also include components in safety-related vehicle systems, e.g., airbag or brakes. The following notes and instructions also apply to future updates and related software extensions.

#### **3.2.1.2. Performing Safety-Related Software Modifications**

- Work on safety-related areas, e.g. the occupant safety system and the brake system, is only allowed to be performed if the user has read and accepted this note.
- The user of the diagnostic device must comply fully with all work steps and conditions given by the device and the vehicle manufacturer, and follow the related instructions without fail.
- Diagnostic programs that make safety-related software modifications in the vehicle may and are only allowed to be used if the related warning notes including the declaration given in the following are accepted without reservation.
- It is imperative that the diagnostic program is used correctly, as programs, configurations, settings, and indicator lamps can be deleted/cleared with it. These changes affect and modify safety-related data and electronic controls, in particular safety systems.

#### **3.2.1.3. Prohibition of safety-related software modifications**

Changes or modifications to electronic controls and safety-related systems are not allowed to be made in the following situations:

- The ECU is damaged and it is not possible to read out the data.
- The ECU and its allocation cannot be read out unambiguously.
- Reading out is not possible due to data loss.
- The user does not have the related training and knowledge necessary.

In these cases the user is not allowed to change programs, configurations, or to make other changes in the safety system. To avoid any danger, the user has to contact an authorized dealer instantly. Only an authorized dealer can guarantee the safe function of vehicle electronics together with the factory.

#### **3.2.1.4. Waiver of the Use of Safety-Related Software Modifications**

The user undertakes not to use any safety-related software functions if one of the following conditions arise:

- There are doubts about the specialized skills of third parties to use these functions.
- The user does not have the prescribed training qualifications.

- There are doubts about the correct function of the safety-related software engagement.
- The diagnostic device is transferred to a third party. The **Hella Gutmann Solutions GmbH** is unaware of this fact and has not authorized the third party to use the diagnostic program.

### **3.2.2. Disclaimer of liability**

#### **3.2.2.1. Data and information**

The information in the database of the diagnostic program has been compiled based on automotive and importer information. Great care was taken to ensure the correctness of the information. The **Hella Gutmann Solutions GmbH** accepts no liability for any mistakes and the resulting consequences. This statement also applies to the use of data and information that are found to be incorrect or that were incorrectly displayed, also to errors that occurred inadvertently during compilation of the data.

#### **3.2.2.2. Burden of Proof on the User**

The burden of proof is on the user of the diagnostic device, that he has paid attention to technical explanations, notes on operation, equipment care as well as maintenance and safety without exception.

### **3.2.3. Data protection**

The customer agrees that its data may be stored for implementing and executing the contractual relationship and that technical data may be stored for performing security-relevant data audits, statistical analysis and quality control. The technical data shall be stored separately from personal data and shared only with our contractors. We are obliged to treat all customer data that we receive confidentially. We may only disclose customer data if statutory provisions permit or require such disclosure or if the Customer has agreed.

### **3.2.4. Documentation**

The listed notes describe the most common causes of errors. However, there are often further causes of existing faults which cannot be listed here, or there are further sources of error which as yet are unknown. The **Hella Gutmann Solutions GmbH** is not liable for failed or unnecessary repair work.

The **Hella Gutmann Solutions GmbH** does not accept any liability for the usage of data and information that are found to be incorrect or that were incorrectly displayed, also for errors that occurred inadvertently during the compilation of the data.

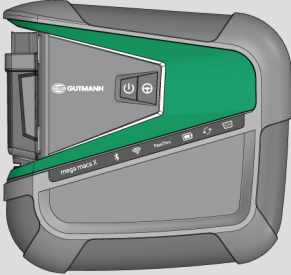
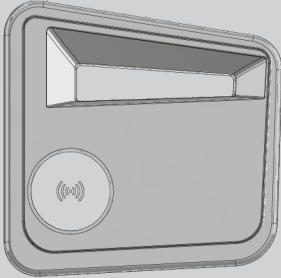
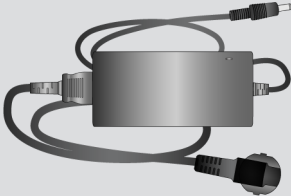

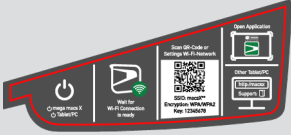

Notwithstanding the above, the **Hella Gutmann Solutions GmbH** does not accept any liability for any losses in relation to loss of profit, goodwill, or any other loss, including financial loss.

The **Hella Gutmann Solutions GmbH** accepts no liability for damages or operating trouble resulting from failure to observe the "mega macs X" user manual and the special safety precautions.

The burden of proof is on the user of the diagnostic device, that he has paid attention to technical explanations, notes on operation, equipment care as well as maintenance and safety without exception.

# 4. Product Description

## 4.1. Delivery Contents

Count	Name	
1	mega macs X	
1	Charging tray	
1	Power adapter and power cord	
1	USB cable (type C > type A) for PassThru	
1	Sticker (can be removed) with notes for first start-up	
1	Quick start guide	

### 4.1.1. Checking Delivery Contents

Please check the delivery contents upon receiving your device so that complaints can be issued immediately regarding any potential damage.

Proceed as follows to check the delivery contents:

1. Open the package supplied and check for completeness based on the delivery slip. Should you identify any damage to the package, then open the package in the presence of the delivery service and check the diagnostic device for hidden damage. Any transport damage to the package supplied and damage to the diagnostic device shall be registered in a damage report by the delivery service.
2. Take the diagnostic device out of the packaging.



### **⚠ CAUTION!**

#### **Danger of short circuit due to loose parts in or on the diagnostic device**

Danger of destruction of the diagnostic device/the automotive electronics

Never put the diagnostic device into operation if you suspect that there are loose parts inside or on the diagnostic device. In this case please contact the Hella Gutmann repair service or a Hella Gutmann trading partner immediately.

3. Check the diagnostic device for mechanical damage and shake it slightly to ensure that there are no loose parts inside.

## **4.2. Intended Use**

The **mega macs X** is a mobile diagnostic device for detecting and rectifying faults in automotive electronic systems.

The **mega macs X** provides access to comprehensive technical data sets such as wiring diagrams and service data, set values and descriptions of vehicle systems. A lot of this data is directly transferred to the diagnostic device from the Hella Gutmann diagnostic database via online connection. Therefore, the mega macs X should be permanently online.

The mega macs X software is not suitable for repairing electrical machines and devices or home electrics. Diagnostic devices from other manufacturers will not be supported.

If the mega macs X is used in a way not authorized by **Hella Gutmann**, the protection of the diagnostic device may be influenced.

The diagnostic device is intended for industrial use. Outside of industrial environments, e.g., in commercial areas or in the center of a town, radio interference suppression measures may need to be taken.

The diagnostic device is intended for use on motor vehicles only. It is a precondition for the use of the diagnostic device that the user has knowledge of automotive technology and is therefore aware of the sources of danger and risks in the workshop and on motor vehicles.

## **4.3. Using the Bluetooth® Function**

The terms of use of the Bluetooth® function may be restricted or prohibited through law or corresponding legal regulations in certain countries.

Pay attention to the provisions in force in the respective country before using the Bluetooth® function.