



# MRS Wallbox

## Release Notes

**Version 2.4.0-Connected**

**Prepared for MRS Electronic**



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## Introduction to MRS Wallbox Release Notes

### Notices

This section lists the important notices related to MRS Wallbox.

- The release date of this version is **September 14, 2023**.
- The Bluetooth Low Energy (BLE) component has been removed from the Wallbox system.

### Release Summary

The following table contains the count of items impacting this release:

Release Summary	Count
New Features	4
Enhancements	3
Fixes	1
Known Issues	0
Limitations	4

# 1. New Features

This section discusses the new features included in this release.

## 1.1. Solar Power Integration

The Wallbox **Connected Variant** can now cater EV charging through the excess power generated from Photovoltaic (Solar) cells. The Wallbox reads instantaneous power values through a two-way meter over the RS485 protocol and makes an intelligent decision based on the user configuration.

The two-way meter connectivity is displayed through the (🔌) icon both on the Local Web Portal and Local Display unit.

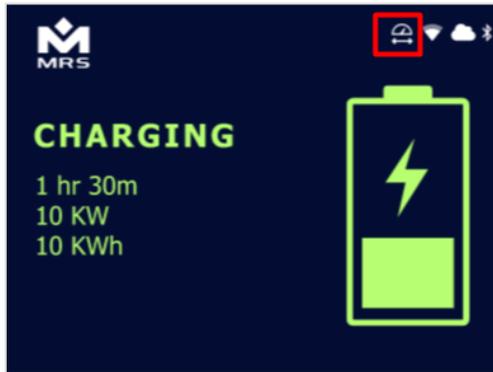


Figure 1: Two-Way Meter Icon

The solar operating modes are **Normal, Eco, Eco+**.

### Normal Mode

In this mode, the Wallbox acts like a normal connected variant and charges the EV through electricity grid in a range of **4.2kW** to **22kW** electricity.

### Eco Mode

In this mode, the Wallbox relies on PV power for maximum power input and draws minimal charging power from the electricity grid. To ensure a smooth and interruption-free charging experience, a minimum power of 4.2 kW is drawn from the electric grid in absence of PV power.

### Eco+ Mode

In this mode, the Wallbox ensures that it does not receive any input from the electric grid as it relies on PV power to reach the minimum threshold of **4.2kW** before starting the charging process.

**!** **Important**

If two-way meter connectivity is not present i.e., the (🔌) icon is not shown, the charging will not be initiated in the ECO+ mode.

### Associated Enhancements

Listed below are the front-end and back-end enhancements made to accommodate the solar-powered charging feature into the Wallbox system:

- **ABB Global B23 112-100** and **Hager ECP140D** two-way energy meters are now integrated with the Wallbox that determine the charge flow and gauge the wattage of solar-produced electricity. Based on this input, the charging mode can be chosen.
- The **Local Web Portal** has been upgraded to have a **Solar Interface** option in the **Wallbox Settings** tab.

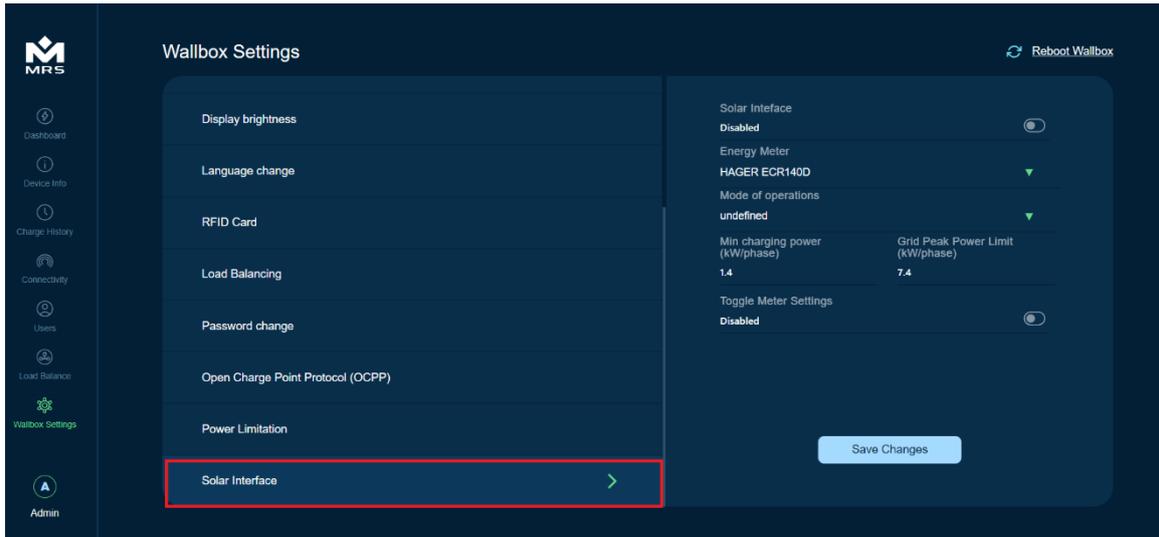


Figure 2: Wallbox Settings Tab

Upon enabling the Solar Interface toggle in this tab, you can configure the energy meter for the following parameters:

Parameters	Description
<b>PV Settings</b>	
Energy Meter	Lists the energy meters connected to the Wallbox. Users can choose one to read the electricity values from.
Mode of Operations	Lists the mode of operations including <b>Normal</b> , <b>Eco</b> , and <b>Eco+</b> .
Minimum Power of Charging (kW)	Allows you to define a minimum threshold for solar-powered charging as per the operational mode selected.
Grid Peak Power Limit (kW)	Allows you to define a maximum power allowed to be drawn from the electricity grid.
<b>Meter Settings (Only visible if the “Toggle Meter Settings” toggle is turned on)</b>	
Baud Rate	Depicts the baud rate at which the meter communicates with the Wallbox.
Slave ID	Allows you to provide a Modbus slave ID for the meter.
Stopbits	Allows you to enable or disable the stop bits of meter.
Parity	Allows you to select the parity feature of meter.

If the Solar Interface toggle is turned on, a mode of operation must be selected through its dropdown, or the changes will not be saved.

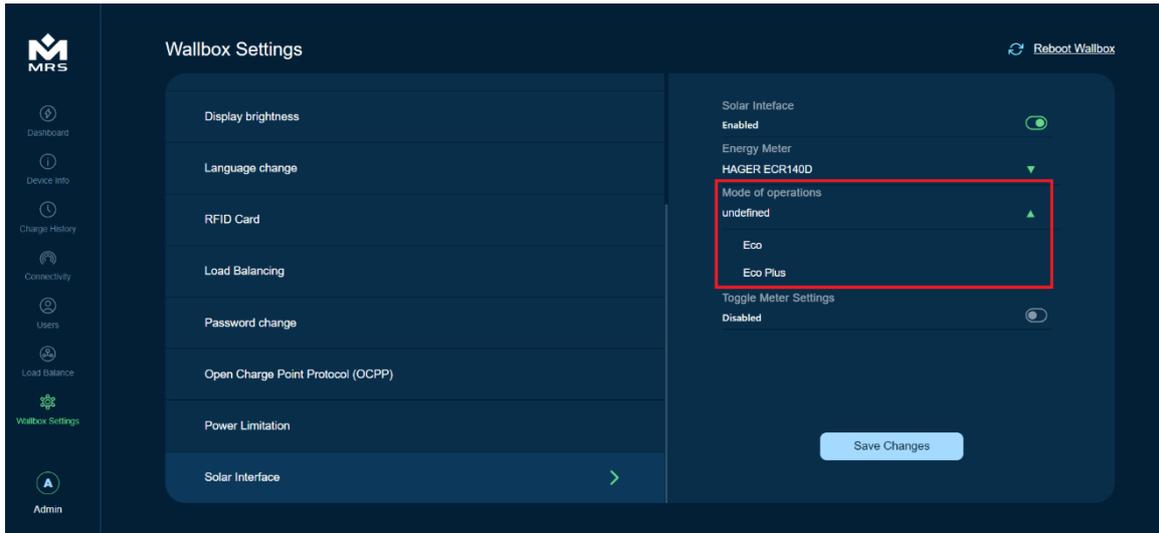


Figure 3: Mode of Operations



### Important

Once the configuration settings have been updated and the Save Changes button is clicked, the Wallbox automatically reboots to apply the changes.

## 1.2. OCPP Reservation Profile

The **OCPP Reservation** profile has now been enabled for the OCPP-enabled Wallbox devices. The **Reserve Now** feature of this profile allows EV users to reserve a complete charge point or a specific connector in a charge point for a selected time bracket using an RFID.

The users can reserve their charging spot through their web based OCPP provider.



### Information

Currently, the Wallbox only supports 1 connector per device.

Once reserved, a charge point may return to normal state in one of the four conditions:

- The expiry time advertised at the OCPP server has passed
- The reservation holder plugs in the EV for charging
- The user cancels the reservation
- The reservation request gets declined due to any technical fault

For further information of the implementation of this feature, please refer to **OCPP 1.6 Standard** document.

## 1.3. Support for Multiple Languages

The Wallbox system now supports German and Chinese languages for the Local Display unit and German language for the Local Web Portal. To toggle between the different

language options, use the **Language Change** option in the **Wallbox Settings** tab of the Local Web Portal.

**i Information**

Upon updating the language selection, all the screens of Local Web Portal and Local Display unit are automatically updated.

### 1.4. Support for mDNS Protocol

The Wallbox system now supports Multicast Domain Name System (mDNS) to setup a Wallbox device in the Local Web Portal. With this feature implemented, the Local Web Portal for a device can be accessed through its *Device Name* instead of its *IP Address*.

**! Important**

The mDNS protocol works only when the Wallbox device and Local Web Portal are being operated on the same network.

For the Wallbox devices that are to be used for the first time or after a factory reset, a default device name is assigned on the pattern given below:

Default Device Name	Pattern	Example
Wallbox_Mac Address	https://Device_Name/	https://wallbox_b8f00980f314/

Now, when the users update their device name from the Local Web Portal (Wallbox Settings > Device Name), its URL is updated accordingly. This means that the user will need to login to the Local Web Portal through the newly set name.

## 2. Enhancements

This section lists the enhancements made to this release.

### 2.1. New EV Statuses Added

To better illustrate the current state of a Wallbox device, the Local Web Portal dynamically updates the view of the **Dashboard** tab. The following table demonstrates the different states of Wallbox along with their colored screenshots.

Idle State	Reserved State	Unavailable State	Charging State
			

Along with the Local Web Portal, the Local Display also shows if a car is reserved, such as shown below:

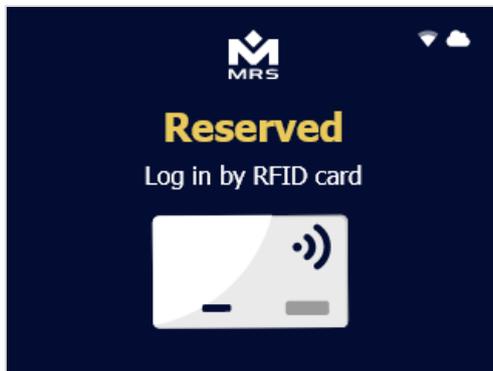


Figure 4: Reserved Status on Local Display

### 2.2. Charge Point Availability

The **Availability** feature of the OCPP *Core Profile* is now displayed to users through the Local Web Portal and the Local Display unit. If a Wallbox is set to **Unavailable** state, the Local Display and Local Web Portal display it to inform the users before plugging in their vehicle.

### 2.3. Local Web Portal Upgraded

The **Dashboard** tab of the Local Web Portal has been updated to display an enhanced UI for the following new features:

### 1. Live Charging Graph Added

A live charging graph is now displayed while the vehicle is in the *Charging* state. This allows the users to assess the power consumption against the time passed while their vehicle is being charged.

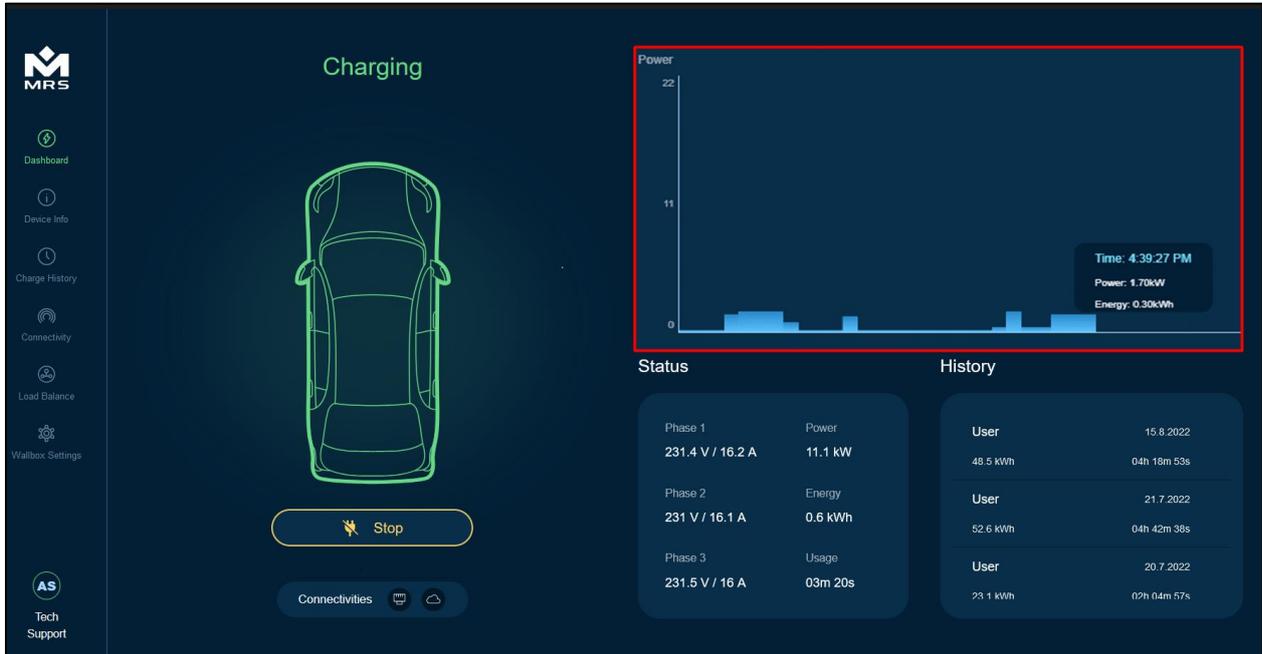


Figure 5: Live Charging Graph



#### Important

Once the vehicle exits the *Charging* state, the **Dashboard** tab is dynamically updated to display the five vital charging graphs as previously.

### 2. Charging Process Start/Stop

The Local Web Portal now allows stopping the charging process even when RFID-authentication is disabled. Previously, the charging could only be stopped via portal when the RFID-authentication was enabled.

## 3. Bug Fixes

This section lists the bug fixes made to this release.

### 3.1. Time Display in Local Web Portal Fixed

The **Time** menu item in *Wallbox Settings* of the Local Web Portal has been fixed to display the calendar and clock icons aligned with their respective fields. Previously, when the **use NTP** checkbox was unchecked, the icons for time and date appeared misaligned on the screen.

## 4. Limitations

This section lists all the limitations associated to this release.

1. Over the Air (OTA) updates can be initiated from Cloud by an Admin user only. Wallbox has no mechanism to check or request for updates.
2. Load balancing supports only one device with *A priority*. Behaviour with multiple *A priorities* is not defined.
3. Internet connectivity on PC is required to download the charging history while it is not mandatory to have internet connectivity on the Wallbox.
4. Details for Admin account cannot be changed except for the password.