

## Magnum 6kW 2-Phase smart Charger – Manual

### 1. Installation

Magnum Smart charger should be installed indoors or at least sheltered from rain and snow protection. To install it at the wall, please install quick-click hanging system bar with 2 x 6mm x 50 mm bolts or similar length screws (if installed on a wooden wall). Please remember that Magnum smart charger is a portable unit, but still its weight is about 15 kg so it needs accurate mounting of the quick-click bar.

Magnum Smart charger, if used as a stationary unit, should be connected to 16A or 32A 3-phase EU connector (red). You can order Magnum Smart charger with any of these: 16A/32A and 4pin/5pin. Phases can be changed directly in plug (it has a special, rotating connectors face-side). There is no need to have 32A 3-phase delivery at home, but 32A plugs can be used. For proper installation consult or call electrician.



### 2. Operating conditions

Magnum Smart charger can be used lying flat or hanging (preferred installation due to better cooling). If you use Magnum Smart charger while travelling, remember to avoid covering inlet and outlets of heat. It is also a good idea to protect it from snow or rain, for example – leave it under your car.

For stationary installation no special rules apply.

### 3. Speed of charging

Magnum Smart charger tries to automatically optimize your charging speed and load, therefore, the following situations may occur:

- your AC network is not loaded, car battery is not full – charging speed will be maximized
- your AC network is overloaded – charging speed will be reduced by Magnum Smart charger
- your car battery is almost full – charging speed will be reduced by car

### 4. Special routines

Magnum Smart charger has special routines to accelerate charging Outlander PHEV and Nissan Leaf. For other cars it behaves like any 6 kW charger. If you need to learn more about special modes, please contact us.

### 5. Do/Don't

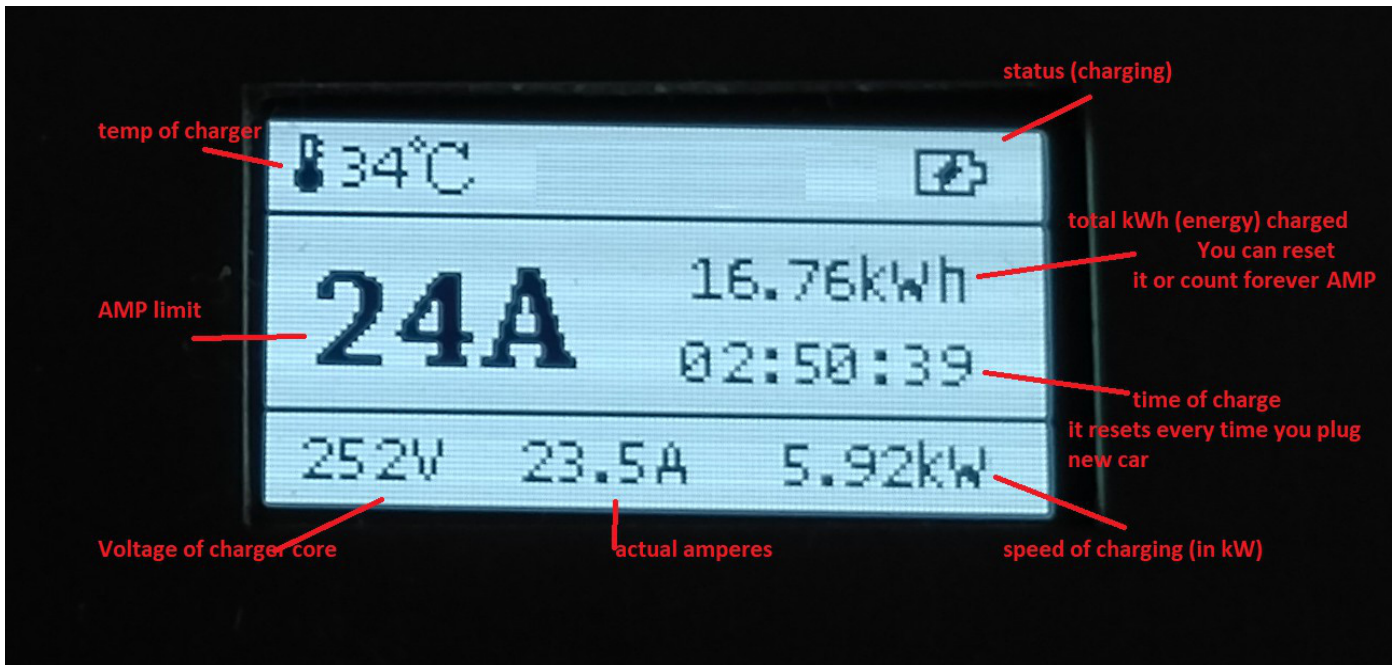
You CAN:

- Switch off power source of Magnum Smart charger while not charging, also by its input connector (you can use it also to reset counter – in such situation please switch off for at least 5 seconds).
- Disconnect your car at any moment.
- Press button at delivery plug to restart charging
- Move or carry Magnum Smart charger while not charging and not connected to the mains and all cables disconnected.

You Should Not

- Switch off power source of Magnum Smart charger while charging.
- Move or carry Magnum Smart while charging, connected to the mains or cables connected.
- Open Magnum Smart charger, modify or change its firmware
- Pour water, wash it with water, etc.

## 6. Main Screen



**Temperature of charger** – it is a temperature of core. It can be about 30-50C while charging and slightly more (like 60-65C) after disconnecting your car. This is normal, because fan cooling is stopped and core heat goes out by natural gravitational cooling.

**AMP limit** – your charger can be set to 20A or 24A (5 or 6 kW). If your grid is 16A per phase – no problem with 24A level. If your grid is 10A per phase or so – ask for 20A version.

**Voltage of charger core** – this is a voltage of “superphase” used to charge your car. It will be higher than your normal voltage per phase. Do not be shocked even if you see 265V or so – this is only an internal measurement and while load it will drop down to about 240-250V (still over your standard grid voltage – just to accelerate charging). Charger can increase that voltage, when dropped too much or when AC overload detected (then speed will be reduced for a while).

**Actual amperes** – car side amperes

**Speed of charging** – actual amperes multiplied by actual voltage of output

**Time of charge** – time since car is connected. Any disconnection reset this.

**Total kWh** – total kWh charged since last reset (power-off).

**Status** – charging or waiting for connection

## **7. FAQ**

### **1. Can I use Magnum Smart charger in Norway with their 230V 3-phase network?**

No. It won't work. (Norway has a different network than other European countries) Or better to answer – it will work with a reduced speed to 4 kWh and show an error.

### **2. Can I use Magnum Smart charger outdoors?**

Yes, but it must be protected from rain, dust or snow, along with all cooling ducts unblocked.

### **3. Can I leave Magnum Smart charger inside car while using it for charging?**

Yes, but expect it will be warm inside later. If the car is in the sun – it is much better to leave it outside. High temperature reduces efficiency

### **4. Why Magnum Smart charger has no buttons?**

We do not need any. It is an intelligent machine. It also self-recognizes you want to load your car.

### **5. Can I charge Type1/Type2/Tesla US cars with one charger?**

Yes. You need just cables we provide. Tesla US connector, Mennekes (Type2) and J1772 (Type1) are available. Your charger is delivered with one of these types. If you want more – ask us.

### **6. Can I have longer/shorter cables for supply/car connection?**

Of course. Just tell us what do you need and we will produce that.

**Questions? Contact us at <http://www.snelautoladen.nl>**