Opening the charging station and any changes to the configuration must be done by a qualified electrician and must comply with local regulations and laws for safety in the use of electricity. Failure to comply with the regulations in this manual will result in the end the warranty period.
## CONTENT

<table>
<thead>
<tr>
<th>1</th>
<th>INTRODUCTION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Technical Specifications</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Dimensions and weights</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>INSTALLATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Mounting</td>
<td>4</td>
</tr>
<tr>
<td>2.2</td>
<td>Electrical connection</td>
<td>6</td>
</tr>
<tr>
<td>2.3</td>
<td>Connection to the LAN network</td>
<td>6</td>
</tr>
<tr>
<td>2.4</td>
<td>Internet connection</td>
<td>6</td>
</tr>
<tr>
<td>2.5</td>
<td>RS485 and CAN connection</td>
<td>8</td>
</tr>
<tr>
<td>2.6</td>
<td>Connection of the MASTER ONE with the Green Motion PRIVATE ONE</td>
<td>10</td>
</tr>
<tr>
<td>2.7</td>
<td>Support</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>ANNEXES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>MASTER ONE housing dimensions (mm)</td>
<td>12</td>
</tr>
</tbody>
</table>
## 1 INTRODUCTION

### 1.1 Technical Specifications

<table>
<thead>
<tr>
<th><strong>POWER INPUT</strong></th>
<th><strong>SMART POWER MANAGEMENT SYSTEM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>1 x 230 VAC 50 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>1 x 8 Arms</td>
</tr>
<tr>
<td>Standby-consumption</td>
<td>&lt;30 W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CHARGING STATIONS CONTROL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Types</td>
</tr>
<tr>
<td>Slow-charge stations as well as multi-standard Combo and CHAdeMO quick-charge stations</td>
</tr>
<tr>
<td>Smart control</td>
</tr>
<tr>
<td>Control up to 100 charging stations</td>
</tr>
<tr>
<td>Power management</td>
</tr>
<tr>
<td>Dynamic load balancing</td>
</tr>
<tr>
<td>Station communication</td>
</tr>
<tr>
<td>RS 485, CAN, Ethernet cable</td>
</tr>
<tr>
<td>Maximal line length</td>
</tr>
<tr>
<td>200 meters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>USER INTERFACE &amp; CONTROL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>User interface</td>
</tr>
<tr>
<td>Screen display, Keypad</td>
</tr>
<tr>
<td>Mobile phone app</td>
</tr>
<tr>
<td>iOS and Android</td>
</tr>
<tr>
<td>Control of access</td>
</tr>
<tr>
<td>RFID, Mobile app, Credit and debit card NFC, Apple pay, SMS and Parking ticket</td>
</tr>
<tr>
<td>Network interface</td>
</tr>
<tr>
<td>Ethernet cable (RJ45); 3G/4G</td>
</tr>
<tr>
<td>Remote management</td>
</tr>
<tr>
<td>Software management system (eMobility cockpit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ENVIRONMENTAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
</tr>
<tr>
<td>-25 °C to 45 °C</td>
</tr>
<tr>
<td>Altitude</td>
</tr>
<tr>
<td>Up to 2000 m (6500 ft.)</td>
</tr>
<tr>
<td>Setting</td>
</tr>
<tr>
<td>Wall; stand mounting; indoor or outdoor</td>
</tr>
<tr>
<td>Humidity</td>
</tr>
<tr>
<td>&lt;95% relative humidity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MECHANICAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
</tr>
<tr>
<td>350 x 588 x 112 mm</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>10 kg</td>
</tr>
<tr>
<td>Housing material</td>
</tr>
<tr>
<td>Stainless steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>REGULATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
</tr>
<tr>
<td>IEC 61851-1</td>
</tr>
<tr>
<td>Protection rating</td>
</tr>
<tr>
<td>IP44</td>
</tr>
<tr>
<td>Communication protocol</td>
</tr>
<tr>
<td>OCPP 1.6J</td>
</tr>
</tbody>
</table>
1.2 Dimensions and weights

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>350 mm</td>
</tr>
<tr>
<td>Height</td>
<td>588 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>112 mm</td>
</tr>
<tr>
<td>Column height</td>
<td>1010 mm</td>
</tr>
<tr>
<td>Total height</td>
<td>1580 mm</td>
</tr>
<tr>
<td>Station Weight</td>
<td>10 Kg</td>
</tr>
<tr>
<td>Column Weight</td>
<td>30 Kg max</td>
</tr>
</tbody>
</table>

2 INSTALLATION

2.1 Mounting

2.1.1 Mounting on the column (optional)

Fixing the column with 4 x M8 stainless steel threaded rods on a 350 x 350 mm (minimum) concrete base.

The power input electrical cable is introduced from the center. The power input cable should have a 1.5-meter service loop length (length measurement from the floor).

Below is a schematic representation of the charging station column mounted on the floor (measurement units in mm):
The MASTER ONE should be fixed on the column with 2 x M8 stainless steel screws. Screw through the charging station (do not forget the flat washers).

2.1.2 Mounting on the wall

Fixing the MASTER ONE to the wall with 2 screws Ø6 mm, 170mm apart.
The fixation height should be at 129cm from the ground level, for optimal accessibility.
The power input electrical cable and the internet connection cable is introduced above or below the MASTER ONE. The cables should have a 50cm service loop length.
2.2 Electrical connection

The electrical installation of the MASTER ONE must be performed by a qualified electrician. The MASTER ONE should be connected to the single-phase 230 V\textsubscript{AC} on the terminals N-L-PE. Maximum power consumption of the MASTER ONE is 30 W.

\textbf{Electric shock hazard!} Please make sure that the main power supply is turned off before trying to connect the power to the MASTER ONE. In any case, working under voltage shall be avoided.

2.3 Connection to the LAN network

The network cable can be introduced above or below the MASTER ONE and it should be connected onto the RJ45 socket, which is located under the screen. If the MASTER ONE is equipped with the contactless payment module the RJ45 socket is located on the switch.

2.4 Internet connection

There are two possible means of internet connection, by UMTS 3G or by RJ45 cable.

For UMTS 3G/4G connection, the modem is installed by Green Motion when ordering the charging station. 3G/4G network coverage must be checked before installation of the MASTER ONE is carried out. Green Motion does not recommend using the 3G/4G network in an underground car parking or in areas that have poor mobile network services.

Green Motion can also install a fiber optic SC port to ethernet RJ45 converter (multimode type or single mode type). (Quote on demand).

The charging station and the payment system are configured in DHCP. It is not possible to assign fixed IP addresses to the equipment. If it is essential to use a fixed IP address, Green Motion can install an additional router in the charging station.
Green Motion charging stations communicate with the Green Motion server at:

<table>
<thead>
<tr>
<th>Description</th>
<th>Internet Address (FQDN)</th>
<th>IP Address</th>
<th>Port No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Motion SA Server</td>
<td>108.129.36.195</td>
<td>108.129.36.195</td>
<td>83</td>
</tr>
<tr>
<td>Green Motion SA Service Update</td>
<td>fw.greenmotion.ch</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td>Green Motion SA Service Update</td>
<td>fw.greenmotion.ch</td>
<td>-</td>
<td>443</td>
</tr>
<tr>
<td>Green Motion SA Service Update</td>
<td>-</td>
<td>52.17.50.171</td>
<td>80</td>
</tr>
</tbody>
</table>

Incoming data (NAT/PAT) is not necessary.

The following ports of exit must be authorized for the use of the payment system:

**Firewall Configuration - Greenmotion**

If the EFT/POS terminal is inside a closed network, you may need to open firewall ports to use the terminal properly. Find below the list of all used ports and IP addresses. This configuration is valid for Greenmotion. Please note, Postfinance is not available to this date.

<table>
<thead>
<tr>
<th>Target Host</th>
<th>Internet Address</th>
<th>IP Address</th>
<th>Port No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PayTec Download-Server (PCI 2.x)</td>
<td>ptload.paytec.ch</td>
<td>82.220.35.201</td>
<td>8320</td>
</tr>
<tr>
<td>PayTec Download-Server (PCI 3.x)</td>
<td>ptload.paytec.ch</td>
<td>82.220.35.201</td>
<td>8322</td>
</tr>
<tr>
<td>PayTec Service Center</td>
<td>tms.paytec.ch</td>
<td>82.220.35.201</td>
<td>8321</td>
</tr>
<tr>
<td>PayTec TechLog Server</td>
<td>log.paytec.ch</td>
<td>82.220.35.201</td>
<td>8330</td>
</tr>
<tr>
<td>PayTec Remote Maintenance Server</td>
<td>rt.paytec.ch</td>
<td>82.220.35.202</td>
<td>22</td>
</tr>
<tr>
<td>SIX Multipay Initialization</td>
<td>sinit.ep2.telekurs.com</td>
<td>153.46.253.149</td>
<td>2252</td>
</tr>
<tr>
<td>SIX Multipay Authorization</td>
<td>fe.ep2.telekurs.com</td>
<td>153.46.253.145</td>
<td>2251</td>
</tr>
<tr>
<td>SIX Multipay Submission</td>
<td>misubm.ep2.telekurs.com</td>
<td>153.46.253.151</td>
<td>2254</td>
</tr>
<tr>
<td>Postfinance Initialization</td>
<td>ep2.postfinance.ch</td>
<td>138.189.254.100</td>
<td>1637</td>
</tr>
<tr>
<td>Postfinance Authorization</td>
<td>ep2.postfinance.ch</td>
<td>138.189.254.100</td>
<td>1639</td>
</tr>
<tr>
<td>Postfinance Submission</td>
<td>ep2.postfinance.ch</td>
<td>138.189.254.100</td>
<td>1641</td>
</tr>
</tbody>
</table>

(Source: Paytec)
2.5 RS485 and CAN connection

The connection between the MASTER ONE and the controlled charging stations is made via a RS485 bus or a CAN bus by a twisted shielded pair cable which is connected onto the terminals located under the screen. The maximum RS485 bus or CAN bus line length is 200 meters.

The CAN bus must have a termination resistance of 120 ohm at each end:

The termination resistance can be activated on the MASTER ONE by putting a plug on the "JMP2" which is located under the screen (if it is located at one end of the BUS).

The termination resistance can be activated on the MASTER ONE by putting a plug on "J15" and on "J14".
2.6 Connection of the MASTER ONE with the Green Motion PRIVATE ONE charging stations

The connection between the MASTER ONE and the PRIVATE ONE charging stations is made via a CAN bus by a twisted pair cable (DATA Dca-flex C 2x2x0.75).

The maximum RS485 bus or CAN bus line length is 200 meters.

The MASTER ONE can be located at any point along the BUS. The termination resistance must be activated if it is located at one end of the CAN bus.
On the PRIVATE ONE charging station, the CAN bus cable is connected onto the terminals 17 (CAN+) and 18 (CAN-):

This schema may vary according to the controlled P1 charging station.

There must be a shielded twisted pair cable (e.g. As DATA Dca-flex C 2x2x0.75 shielded) are used. The cable must not be longer than 2 cm. The shield and the cables that are not used for the CAN, must be connected to the ground terminal or GND. It is forbidden to use the free cables for other functions.
The termination resistance can be activated by activating the upper DIPSwitch number 2:

![Deactivated](image1.png) ![Activated](image2.png)

On the MASTER ONE, the CAN bus cables is connected onto the terminals CAN- and CAN+:

<table>
<thead>
<tr>
<th>+12V</th>
<th>GND</th>
<th>A</th>
<th>B</th>
<th>GND</th>
<th>CAN-</th>
<th>CAN+</th>
<th>GND</th>
<th>EM</th>
<th>GND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Power</td>
<td>RS485</td>
<td></td>
<td></td>
<td></td>
<td>CAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.7 Support

Green Motion telephone support is available Monday to Friday from 08:00 to 12:00 and from 13:00 to 17:00 (16:00 on Friday) CET

Email: support@greenmotion.ch
Tel: +41 21 544 04 46
3 ANNEXES

3.1 MASTER ONE housing dimensions (mm)