**1. Purpose of the instruction**

Installation of the cable management system (CMS) for models of Terra x3 (23/53), Terra x4 (24/54/54HV), Terra xx4 (94/124/184) with charging cable configurations C, CC, CG, CJ, JJ, CCT, CJT.

**NOTE –**
The CMS has been designed to work up to 6.5 m charging cable.

Based on the number of cables on the charger, up to two CMS can be installed (one on the left and one on the right of the front side).

**NOTE –**
Installation on Terra x4 chargers with three connectors (CJG) is possible, but only two connectors can be handled by the cable management system.

**2. Unpacking**
- Remove the packaging material and reuse or recycle it.
- Make sure that all parts are delivered according to the order.
- If you find damage or the parts are not according to the order, contact the local representative of the manufacturer.

**3. CMS main components**
- CMS counterweight system
- Installation components
- Cable clamp kit for CE cables
- Cable clamp kit for UL cables

**CMS counterweight system**
- M6 bolt for bottom side installation
- Stud bolt and nut for top side installation

**Installation components**
- CE kit - XFC.S1107.0 - BP-1394/96-ABB2
- UL kit - XFC.S1108.0 - BP-1396-ABB4

**4. Release of the counterweight system**
- Remove the locking bolt to unlock the internal counterweights system.
- Save this screw! It will be used to install the CMS on the top side.

**5. CMS counterweight adjustment: Step 1**
- Remove the CMS head by unscrewing the 4 screws.
- Remove the 2 mechanical stops by unscrewing the 4 screws (2 on each stop).

**6. CMS counterweight adjustment: Step 2**
- Remove the internal counterweights by pulling the CMS cord.
- Remove the 2 bumpers.
- Remove one part of the counterweight system by unscrewing the 2 fastners.

**7. CMS counterweight adjustment: Step 3**
- Reinstall the 2 bumpers on the counterweight system (which now consists of 2 parts).
- Reinstall the counterweight system inside the CMS duct.

**8. CMS counterweight adjustment: Step 4**
- Reinstall the 2 mechanical stops by screwing the 4 screws (2 on each stop) with a 2.8 Nm / 2.1 ft-lb torque.
- Reinstall the CMS head by screwing the 4 screws with a 6.2 Nm / 4.5 ft-lb torque.

**NOTE –**
- During this operation hold in position also the cord.
- Hold the rope and tilt the CMS to slide the counterweights down until they stop.

**9. Installation of CMS on the charger**

The CMS can be installed in 2 ways:

**Solution 1 - Stud-bolt (top side) and self-tapping bolt (bottom side)**
- Lift the CMS upright.
- Place the CMS on the charger and install the 2 fastners:
  - Top side: M10 hex bolt (D) removed at step 4 of this procedure (locking bolt).
  - Bottom side: M6 self-tapping hex bolt (E) supplied with CMS.
- Install nut on the stud bolt (C).

**Solution 2 - Bolt (top side) and self-tapping bolt (bottom side)**
- Lift the CMS upright.
- Place the CMS on the charger and install the 2 fastners:
  - Top side: M16 hex bolt (D) removed at step 4 of this procedure (locking bolt).
  - Bottom side: M6 self-tapping hex bolt (E) supplied with CMS.

**10. Installation of rope holder**
- Insert the rope inside the rope holder.
- Tie a “capuchin knot” (loose end passes three times inside the spire) on the rope letting out 10...15 cm / 4...6 in.
- Cut the excess rope with a “hot knife” or cut and then block/seal the end with a “hot iron”.
- Insert the stopper on the rope and slide it to the triple knot.
- Insert the stopper inside the rope holder.
11. Installation of cable insert on the charger cable
Consult the "Table 1: Counterweight number and cable clamp - CE Cable type" or "Table 2: Counterweight number and cable clamp - UL Cable type" to choose the right components to be installed on the cable clamp.
- Install the "Clamp insert" on the charger cable at the distance (D) suggested on the column "Suggested clamp insert distance (D)" on the tables.
- Lock the Clamp insert in position by inserting the 2 springs.
- Take the "clamp kit bag" labeled XFC.S1107.0 - BP-1396-ABB and choose the components of the kit based on the table below. Furthermore, the table also indicates the number of counterweights to be used based on the type of cable.
- Install the screw and the hex nut to secure the holder and the cable clamp.
- Install the rope holder on the cable clamp.
- The installation is complete and the CMS will help to handle the cable of the charger.

12. Installation of rope holder clamp on the cable clamp
- Install the right cable clamp on the cable insert.
- Install the rope holder on the cable clamp.
- Install the screw and the hex nut to secure the holder and the cable clamp.

13. Table 1: Counterweight number and cable clamp - CE Cable type
Take the "clamp kit bag" labeled XFC.S1107.0 - BP-1396-ABB and choose the components of the kit based on the table below. Furthermore, the table also indicates the number of counterweights to be used based on the type of cable.

<table>
<thead>
<tr>
<th>Charger cable data</th>
<th>CMS</th>
<th>CMS - Charger cable clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Standard</td>
<td>Manufacturer</td>
</tr>
<tr>
<td>CE CCS2 Phoenix Contact</td>
<td>150 A</td>
<td>25.9</td>
</tr>
<tr>
<td>CE CCS2 Phoenix Contact</td>
<td>200 A</td>
<td>28.1</td>
</tr>
<tr>
<td>CE CCS2 Phoenix Contact</td>
<td>250 A</td>
<td>32.0</td>
</tr>
<tr>
<td>CE CCS2 REMA</td>
<td>125 A</td>
<td>26.4</td>
</tr>
<tr>
<td>CE CCS2 REMA</td>
<td>200 A</td>
<td>32.6</td>
</tr>
<tr>
<td>CE CCS2 REMA</td>
<td>300 A</td>
<td>36.6</td>
</tr>
<tr>
<td>CE CCS2 BRUGG</td>
<td>300 A</td>
<td>36.6</td>
</tr>
<tr>
<td>CE Chademo Sumitomo</td>
<td>125 A</td>
<td>31</td>
</tr>
<tr>
<td>CE Chademo Sumitomo</td>
<td>200 A</td>
<td>36</td>
</tr>
<tr>
<td>CE AC Type-2 Phoenix Contact</td>
<td>22 kW</td>
<td>17.0</td>
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<tr>
<td>CE AC Type-2 Raydall</td>
<td>43 kW</td>
<td>28.7</td>
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<tr>
<td>CE AC Type-2 ITT Cannon</td>
<td>43 kW</td>
<td>23.8</td>
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</tbody>
</table>

14. Table 2: Counterweight number and cable clamp - UL Cable type
Take the "clamp kit bag" labeled XFC.S1108.0 - BP-1396-ABB and choose the components of the kit based on the table below. Furthermore, the table also indicates the number of counterweights to be used based on the type of cable.

<table>
<thead>
<tr>
<th>Charger cable data</th>
<th>CMS</th>
<th>CMS - Charger cable clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Standard</td>
<td>Manufacturer</td>
</tr>
<tr>
<td>UL CCS1 REMA</td>
<td>150 A</td>
<td>32</td>
</tr>
<tr>
<td>UL CCS1 REMA</td>
<td>200 A</td>
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</tr>
<tr>
<td>UL CCS1 REMA</td>
<td>300 A</td>
<td>39</td>
</tr>
<tr>
<td>UL CCS1 Amphenol</td>
<td>125 A</td>
<td>36</td>
</tr>
<tr>
<td>UL CCS1 Amphenol</td>
<td>200 A</td>
<td>41.5</td>
</tr>
<tr>
<td>UL Chademo Sumitomo</td>
<td>125 A</td>
<td>32</td>
</tr>
<tr>
<td>UL Chademo Sumitomo</td>
<td>200 A</td>
<td>43 (Max 45.2)</td>
</tr>
</tbody>
</table>

15. Spare parts
In the table the available CMS spare parts and relative GID to order it.

<table>
<thead>
<tr>
<th>Spare part</th>
<th>Description</th>
<th>Global ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS Rope</td>
<td>Internal counterweight connection rope</td>
<td>6AGC113617</td>
</tr>
<tr>
<td>CE Clamp kit</td>
<td>Cable clamp components - CE cables</td>
<td>6AGC114518</td>
</tr>
<tr>
<td>UL Clamp kit</td>
<td>Cable clamp components - UL cables</td>
<td>6AGC114609</td>
</tr>
<tr>
<td>CMS counterweight</td>
<td>Internal counterweight block</td>
<td>6AGC106307</td>
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</tbody>
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