1 SAFETY INSTRUCTIONS

This Quick installation guide contains the basic information necessary to commission the CFW300, as it has been written to be used by qualified personnel with suitable training or for obtaining this type of equipment. The personnel must follow all the safety instructions described in this manual during the installation, operation, maintenance, and repair of the equipment. Failure to follow these instructions may result in death, serious injury, and considerable material damage.

DANGER!

The procedure recommended in this warning are only applicable if the user is aware of the equipment and its operation.

ATTENTION!

The information in this section is for the safety of the person and the equipment.

NOTE!

High-voltage power sources present.

Components sensitive to electrostatic discharge.

Do not touch them.

Mandatory connection to the protective ground (PE).

Connection of the shield to the ground.

3 PRELIMINARY RECOMMENDATIONS

Never connect the main power supply before touching any electrical components associated with the inverter. Danger! The CFW300 can start up without high voltage in certain conditions. After eight minutes, it will not start. In this case, after eight minutes, the inverter will start up again.

The XC10 connector is not USB compatible, therefore, it cannot be connected to USB ports. The XC10 connectors serve only as interface between the CFW300 frequency inverter and its accessories.

NOTE!

Components sensitive to electrostatic discharge.

Do not touch them.

Mandatory connection to the protective ground (PE).

Connection of the shield to the ground.

8.1 ENVIRONMENTAL CONDITIONS

1. Exposure to sunlight, rain, high humidity or sea air.
2. Fluctuations in common powers of the inverter. 
3. Excessive vibration.
4. Contaminated, dirty, or dirty particles or oil.

Environment conditions permitted for the operation of the inverter:

Temperature:

Table 3: Terminal box of the CFW300 inverters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 100 - 120 V ac</td>
<td>1.0</td>
<td>0.18</td>
<td>2.0</td>
</tr>
<tr>
<td>B</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
<td>0.18</td>
<td>2.0</td>
</tr>
<tr>
<td>C</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
<td>0.18</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
<td>0.18</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Table 4: Available options for each side of the terminals according to the input rated voltage and voltage of the inverter.

<table>
<thead>
<tr>
<th>Frame Size</th>
<th>Terminals</th>
<th>Voltage</th>
<th>Terminals</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
<tr>
<td>G</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
</tbody>
</table>

9.3.1 Input connections

Table 2: Available options for each side of the terminals according to the input rated voltage and voltage of the inverter.

<table>
<thead>
<tr>
<th>Frame Size</th>
<th>Terminals</th>
<th>Voltage</th>
<th>Terminals</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
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</tr>
<tr>
<td>G</td>
<td>300 V Line</td>
<td>3 phase power supply</td>
<td>U = 200 - 240 V ac</td>
<td>1.0</td>
</tr>
</tbody>
</table>
6.9.3 Short Circuit Current Ratings (SCCR)

- The CFW300 inverter is designed to handle short circuits of no more than twice its SCCR (SCCR is a system rating, independent of load factor) at 380...480 Vac, when protected by fuses or circuit breakers as specified in Table 10. This is in accordance with the European standard EN 60204-1.

- The CFW300 inverter is designed for stand-alone power supplies with current capacity over the specified values of use protection circuits, such as fuses or circuit breakers, proper for those supplies.

**ATTENTION:**

This opening of the branch-circuit protective device may be an indication that a fault current has interrupted. To reduce the risk of fire or electric shock, current-carrying parts and other components of the inverter or cabinet should be unplugged and replaced. If functional examination of the protective device cannot be carried out, the complete inverter may be replaced.

6.9.2 Power Supply Reactances

In order to prevent damages to the inverter and assure the expected useful life, you must have a minimum line impedance that provides a line voltage drop of 1%. For more details, refer to the user’s manual available at www.weg.net.

6.9.3 Dynamic Braking

**NOTE:**

The dynamic braking is available on 200 models from frame size 8 onwards.

Refer to Table 9 for the following specifications of the dynamic braking: maximum current, minimum braking resistance, line current and cable gauge.

Refer to the user’s manual available at www.weg.net for correct installation, rating and protection.

6.9.4 Output Connections

The characteristics of the cable used to connect the motor to the inverter, as well as its interconnection and routing, are extremely important to avoid electromagnetic interference in the equipment. Keep motor cables away from other cables (signal cables, control cables, etc.), according to Table 4. For more information, refer to the user’s manual available at www.weg.net.

6.9 GROUNDING CONNECTIONS

**DANGER:**

- The inverter must be connected to an appropriate ground (PE).
- Use a minimum wire gauge for ground connection equal to the indicated in Table 6. Table 7 and Table 8. Make sure the size of the ground bus bar, to a single ground point or a common ground point (Protection: 100 A, 63 A, 40 A, 25 A, respectively). If the power circuit inverter can be separated from the rest of the installation by means of a circuit breaker, the inverter should be connected to the ground bus bar by a ground conductor of at least 1.5 mm² cross section.
- Do not share the grounding with other equipment that operates with high currents (e.g., high voltage motors, washing machines, etc.).

6.9.5 Control Connections

- For the correct connection of the control, use: CFW300 inverters include a digital panel, with 4 Display Mode button and 20 alphanumeric keys, a programmable logic controller, with 7 input and 5 output。(1) (e.g., WEG, 147/202 Vdc, etc.).
- Do not use a ground for digital panel and separated from the other wiring (power, control, 110 V/220 Vdc, etc.).
- Bypass, controllers, automotive cables or power supply must be connected to the cable to the ends of the terminals, following the control cable’s instructions. Avoid cross-connections between the control and the power cables according to Table 4.

6.9.6 INSTALLATIONS ACCORDING TO EUROPEAN DIRECTIVE OF ELECTROMAGNETIC COMPATIBILITY

The CFW300 inverter series, when properly installed, meet the requirements of the directive of the electromagnetic compatibility (EMC) Directive (2004/108/EC).

These inverters were developed for professional applications only. Therefore, the emissions limits of harmonic distortion and immunity levels for the CFW300 inverters, when installed with external filter, comply with the directive for electromagnetic compatibility (EMC) (2004/108/EC).

6.9.6.1 Conformal Installation

- Shielded output cables (motor cables) with shielded connectors at both ends, motor and inverter. By means of a circuit breaker, the inverter is electrically isolated from the load in a high frequency connection. Maximum motor cable length and conducted and radiated emission levels according to Table 7.

- Grounding of the inverter according to the instructions of the Section 6.9 GROUNDING CONNECTIONS.

- Grounding layout according to Table 6.

- Use short wiring to ground the external filter or inverter.

- Grounding the mounting plate using a fastening bolt as shown. Rail conductors have lower impedance at high frequencies.

- Use cord grips to retain on cables.