ABB solar inverters
Quick installation guide
TRIO-50.0-TL-OUTD

In addition to the information given below, it is mandatory to read and save the safety information and installation instructions shown in the installation manual. The technical information indicates the surface and management software for this product is available in the website. The equipment must be used in accordance with this manual and other ABB documentation. Otherwise, the protections provided and performance guaranteed by the inverter may be affected.

The inverter must be chosen by a specialized technician who has a good knowledge of the installation conditions, the devices that will be installed downstream and the inverter, and whether it will be integrated into an existing system that uses different inverters. The choice of installation location will depend on the site design (i.e., inverter type). However, different AC and DC wiring boxes will depend on the site design.

1. **Choice of installation location**
   - **AC disconnect switch**: 50cm
   - **AC wiring box**: to mount the bracket. Put at least four screws in the upper side
   - **Single AC cable gland PG42**: 6
   - **DC cable glands**: 6
   - **Anti-condensation valve**: 2
   - **Positive (+) side string fuses**: 1
   - **Ground brackets**: 2
   - **DC disconnect switch**: 1
   - **4 + 1 DC surge protection device**: 1 + 1
   - **Positive (-) side string fuses**: 1
   - **Metallic locking forks**: 20 units
   - **Conductive springs**: 20 units
   - **Spacers**: 20 units
   - **50mm secondary NDA cap**: 20 units
   - **Service cable gland PG21**: 20 units
   - **Service cable gland PG38**: 20 units
   - **AC disconnect switch**: 20 units
   - **Ground bracket attachment points**: 20 units
   - **Plastic locking links**: 20 units

2. **Installation site and position**
   - Consult technical data to confirm the environmental specifications will be met.
   - Installation of the unit in a location exposed to direct sunlight is acceptable.
   - Do not install in closed spaces where air does not freely circulate.
   - Always ensure that the flow of air around the inverter is not blocked, so as to prevent overheating.
   - Do not install in inclined locations more than 15°.
   - Do not install in inclined locations more than 30°.
   - Do not install in inclined locations more than 75°.
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3. **Transport and handling**
   - The inverter must be transported using the means shown in the figure.
   - The unit can be transported with a maximum inclination as indicated in the figure.
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4. **Lifting and transport**
   - If possible, install at eye-level so that the LEDs can be easily seen.
   - Install this model and other inverters to be installed considering the size and weight.
   - Position multiple inverters side-by-side, maintaining minimum distances (measured from the outermost edge of the inverters).
   - Multiple inverters can also be placed in a staggered arrangement. Minimum clearances for staggered arrangements include the width of the inverter plus additional allowances for inverters arranged above or below.

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5. **Mounting on a vertical wall**
   - Mounting on a vertical wall.
   - The bracket is supplied in two separate parts, assemble it using the four M5x40 screw holes shown in the figure.

6. **Adjustments on a flat surface**
   - Position the bracket perfectly on the wall and use it as a clamping template.

7. **Adjustments on a flat surface**
   - Position the bracket perfectly on the wall and use it as a clamping template.
Confirm the IPn arm's polarity is correct and has no ground leakage current.

When exposed to sunlight, the PV panels supply direct current (DC) to the inverters. The DC disconnect switch disconnects the DC current from the inverters. The inverter will stop producing power, but DOES NOT disconnect the AC from the grid.

To prevent electrocution hazards, all the electric connections must be carried out with external disconnect switches. The IPn allows the user to connect the inverter to the AC grid when it is not necessary. After an interruption, the inverter will automatically reactivate the AC connection.

Switching the IPn arm ON from OFF or OFF from ON is a process where each pole of the AC power module is connected to the input terminals.

To isolate the AC connection, carry out the following operations:

1. Disconnect the inverter from the AC grid.
2. Turn the inverter OFF.
3. Pull out the AC wiring box from the electrical room.
4. Remove the quick disconnect connector covers, and take the necessary precautions to clamp the caps.
5. Insert the green LED test connector into the green LED terminal blocks.
6. If the green LED does not light up, the AC wiring box and the switch must be replaced.
7. If the green LED lights up, the AC wiring box can be replaced.

Caution! To ensure the security of the AC connection, the inverter must be protected against over current.

1. The AC connection is three-phase (three wire connection 3W+PE or four wire connection 4W+PE + Neutral).
2. The output frequency range may vary depending on specific country grid standards (Table 2).
3. When wiring is complete, attach the front cover to the AC wiring box (Figure 6, tightening torque: 2-4N).