

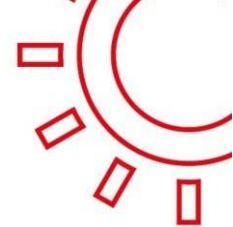


# INSTRUCTIONS

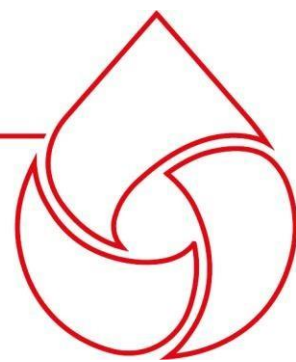
INSTALLATION AND OPERATION  
OF THE TSUN KIT

MS400/MS800

**AVIA** SOLAR



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## 1. PRODUCTION INFORMATION

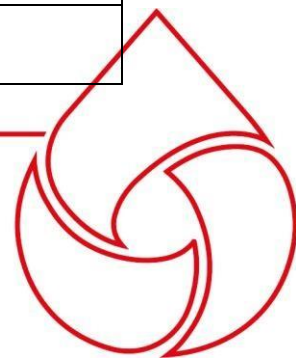
A microinverter is a device that converts the direct current (DC) generated by solar panels into alternating current (AC), which can be used to power homes or businesses. It is a compact and efficient device that is easy to install and maintain. The microinverter is available in two models, the TSOL-MS400/TSOL-MS800. The kit also includes photovoltaic modules and a mounting structure.

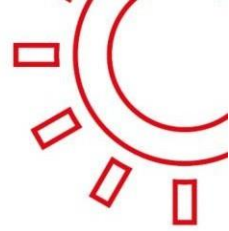
Before installation, make sure that the following conditions are met: Choose the right installation position, the angle of the PV panel in relation to the sun is important. The optimal PV installation angle is between 30 and 40 degrees.

## 2. SECURITY

The TSun MS400/ TSun MS800 microinverter has been designed and tested in accordance with international safety requirements. However, certain precautions must be taken when installing and operating the inverter. The installer must read and observe all recommendations, cautions and warnings from this installation manual.

✓ All activities, including transport, installation, commissioning and maintenance, must be carried out by a qualified, trained technician.
✓ Before installation, verify that the equipment is free from transport or handling damage that could compromise the insulation of the wires or disturb the structure of the unit. Carefully select the installation site and observe the specified requirements with regard to cooling. Unauthorised removal of safety devices, misuse, incorrect installation and operation may lead to serious safety hazards or risk of shock or damage to equipment.
✓ Before connecting the microinverter to the power grid, contact your local power company to obtain the relevant permits. This connection may be carried out by qualified technical personnel only. It is the responsibility of the fitter to provide external disconnectors and overcurrent protection.
✓ Only one photovoltaic module can be connected to one inverter input. Do not connect a battery or other power sources. The inverter is only suitable for use if all technical parameters are observed and applied.
✓ Do not install the equipment in harsh environments, i.e. flammable, explosive, corrosive materials present, extremely high or low temperatures, humidity. Do not use the equipment if the safety features are faulty or not activated.
✓ Use personal protective equipment, including gloves and eye protection, during installation.
✓ Inform the manufacturer of non-standard installation conditions
✓ Do not use the equipment if there is any anomaly. Avoid makeshift repairs.

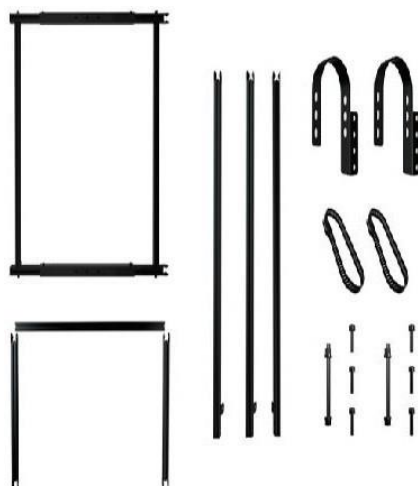




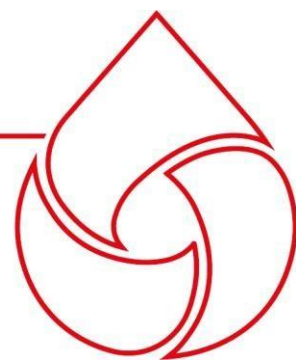
✓ Repairs should only be carried out using authorised spare parts, fitted as intended, by approved contractors or an authorised service technician.
✓ Legal responsibility for commercial components is delegated to individual manufacturers.
✓ Extreme caution should be exercised each time the inverter is disconnected from the public grid, as some components can maintain a sufficiently large load to pose a shock hazard. Before touching any part of the inverter, make sure that the equipment is safe in terms of temperature and voltage.
✓ Electrical installation and maintenance must be carried out by a qualified electrician. and should comply with local installation rules.

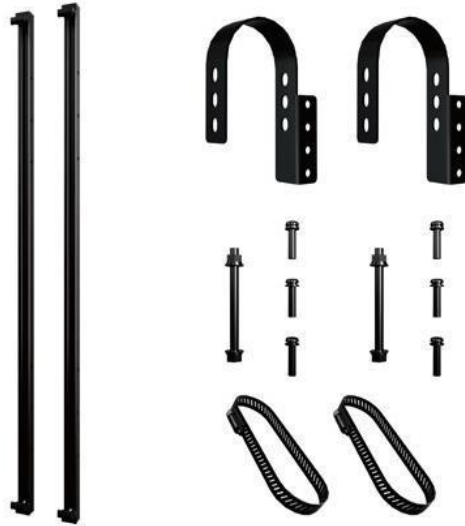
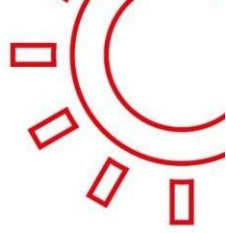
### 3. CONSTRUCTION

There are two types of construction for the installation of the balcony set. Instructions are available from the distributor and can be found in the appendices.



*Easy Solart Kit Transformer design*



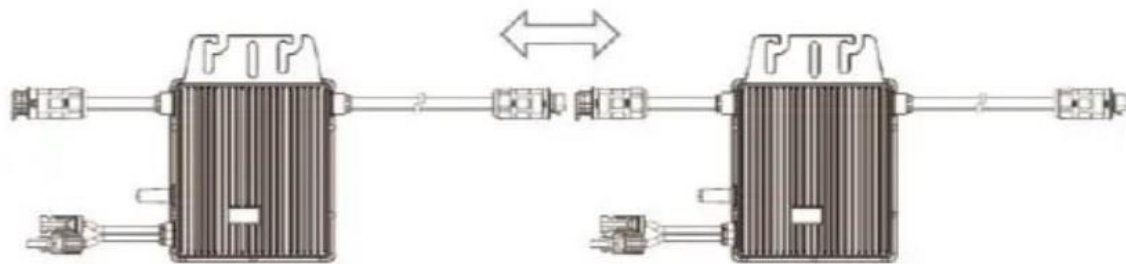


*Easy Solar Balcony Vertical design*

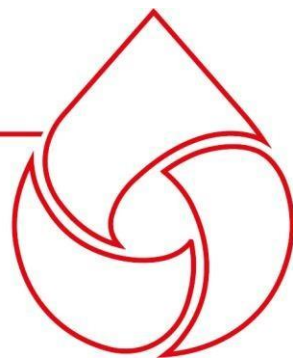
## 4. LINKING MICROINVERTERS IN SERIES

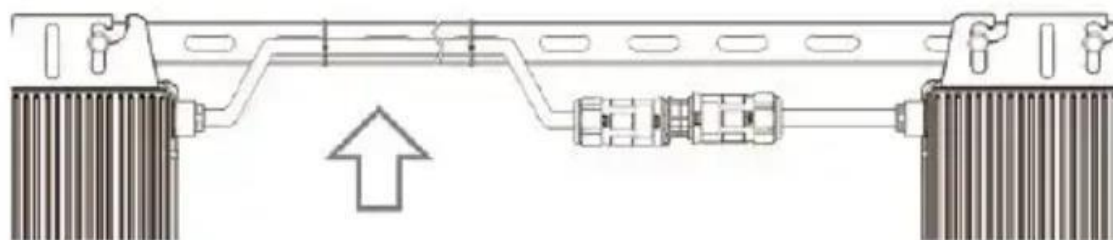
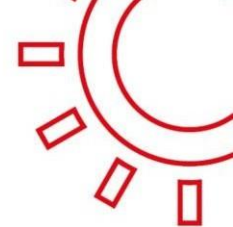
Microinverters can be connected in series using AC cables. Connect the female AC connector of one microinverter to the male AC connector of another unit to form a continuous AC circuit.

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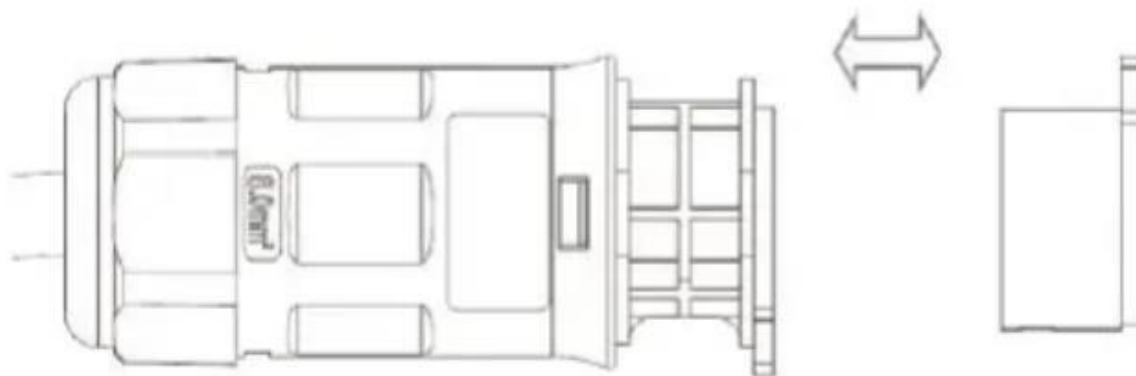


Use nylon cable ties to secure the AC cables to the frame.





Use the connector protection cap to ensure that the unused AC connector is closed.

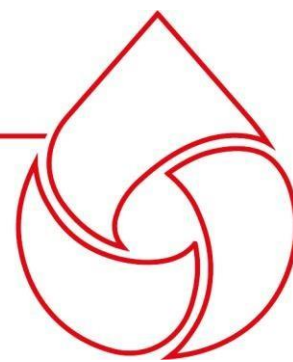


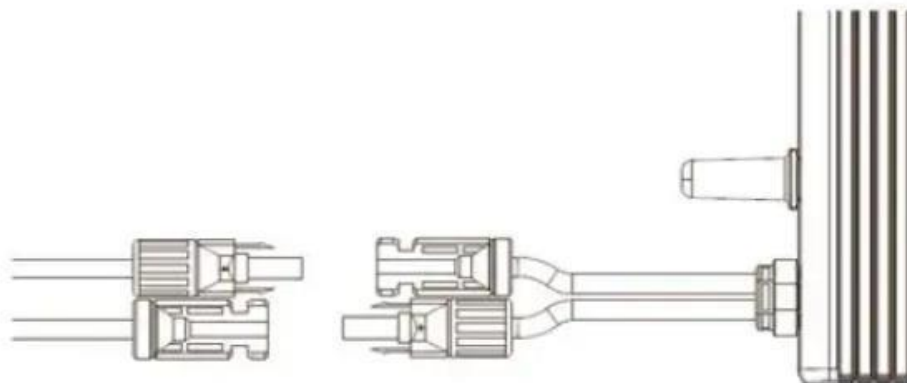
## WARNINGS

- Ensure that all AC cables are properly connected and that none are pinched or damaged.
- The use of 4mm cable is recommended

## 5. CONNECTION OF PHOTOVOLTAIC PANELS

Install the photovoltaic modules and connect the DC cable to the microinverter with compatible connectors.





## WARNINGS

- Ensure that all DC cables are properly connected and that none are pinched or damaged.
- The DC wires of this photovoltaic system may be live.

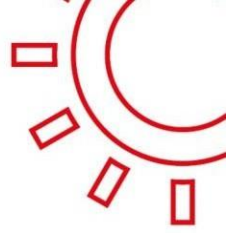
## RECOMMENDATIONS

If the DC cables are too short, use an extension cable to connect the photovoltaic modules to the microinverter. Contact the photovoltaic module manufacturers for the DC connector requirements on the photovoltaic panel side. It is necessary that the connectors are compatible with the microinverter and the photovoltaic panel. Connector type: MC4



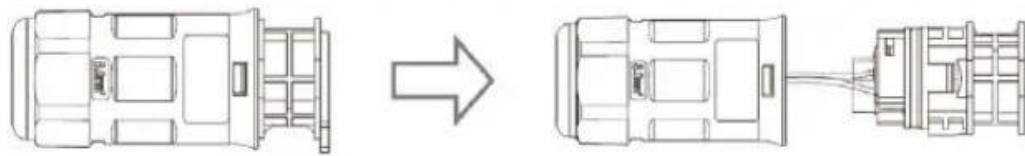
*MC4 connector*



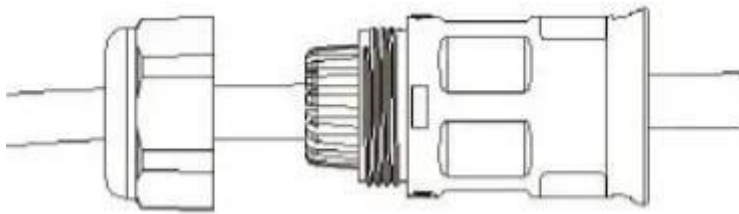


## 6. LINKING MICROINVERTER TO MAINS

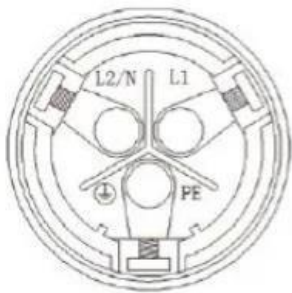
Use the AC connector from the packaging to make a cable to connect the microinverter to the mains.



Pass the AC cable through the connector cover and connect the cable to the appropriate port.

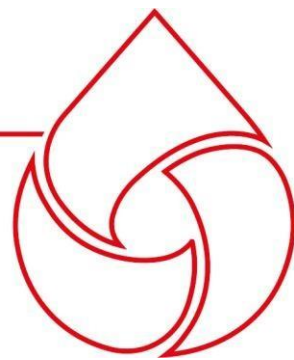


A diagram of the port is shown in the figure below:

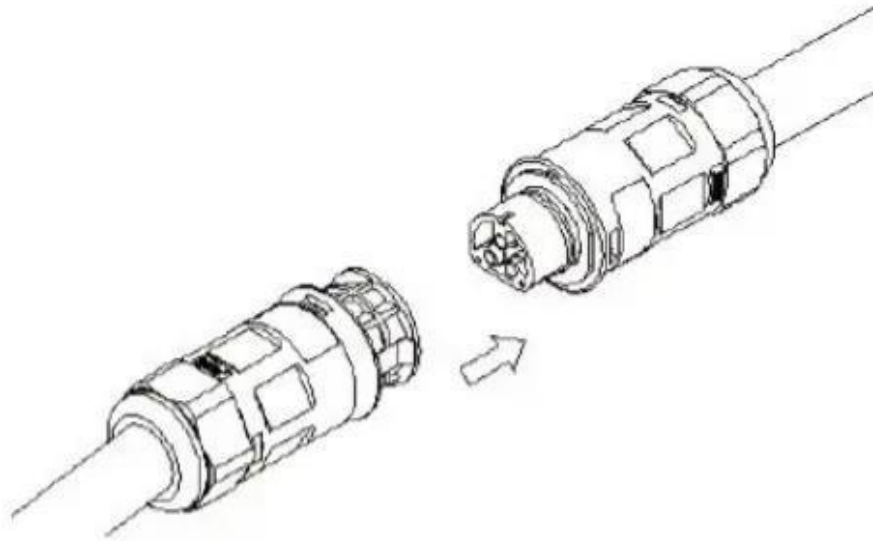


L: Phase	Brown/red wire
N: Neutral	Blue/black wire
PE: Grounding	Yellow/green wire

Use the AC connector, connect to the microinverter then connect the AC cable to the mains distribution box. Make sure everything is connected as recommended.





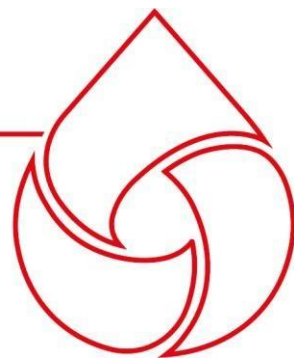
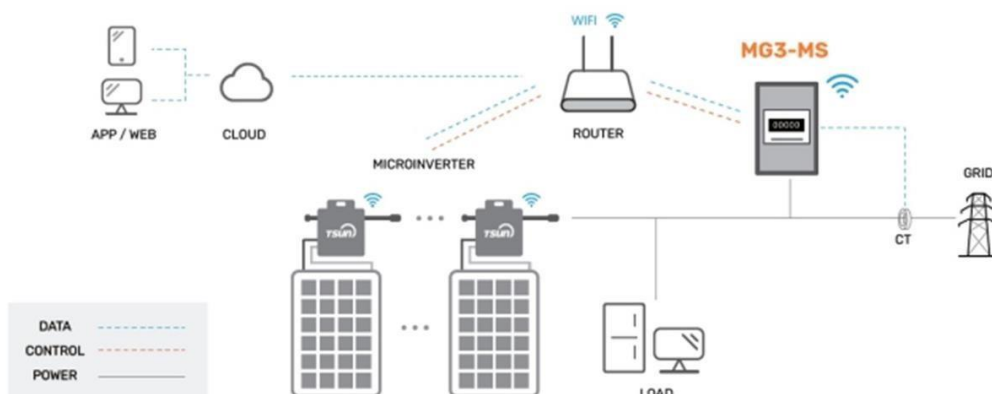


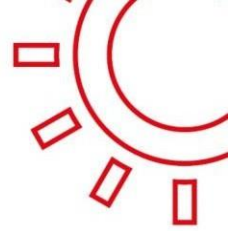
## WARNINGS:

- Do not install the AC connection switchgear
- Ensure that all AC cables are properly connected and that none are pinched or damaged.
- We recommend the use of 4 mm<sup>2</sup> cable

## 7. ENERGY EXPORT LIMITATION - TALENT MG3 MS DTU (OPTIONAL)

The Talent MG3 MS DTU is a device used in applications that are connected to the power grid but do not allow electricity to be transmitted, feeding back into the public grid.





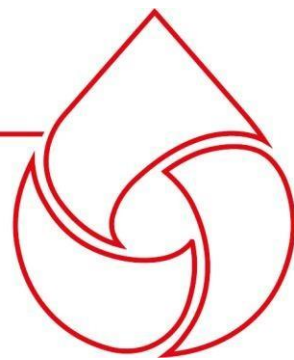
The device monitors the parameters of the internal energy network and controls the operation of photovoltaic installations. If the device detects an energy export outside the household, it will send information to the generating installation via the WLAN to limit energy production or, in the case of non-consumption, to switch off. Configuration instructions are available from the distributor.

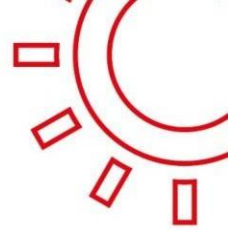
## 8. TWO-WAY COUNTER - RECOMMENDATIONS

A bi-directional meter is a measuring device used in installations of photovoltaic plants, where electricity production can be supplied to the grid as well as taken from it. In short, this meter is capable of recording both the amount of electricity supplied to the grid (production) and taken from the grid (consumption).

Basic features of the two-way counter:

1. Energy production:
  - Measures the amount of electricity generated by a photovoltaic installation.
  - It records how much energy is transferred from the photovoltaic panels to the grid.
2. Energy Consumption:
  - Measures the amount of electricity drawn from the electricity grid.
  - It records how much energy is consumed by electrical appliances in the building.
3. Direction of Energy Flow:
  - It allows the direction of energy flow to be monitored, i.e. whether energy is being fed into the grid or taken from the grid.
4. Energy Balance:
  - It calculates the energy balance, i.e. the difference between the amount of electricity generated and the amount consumed.
  - It allows the energy balance of the installation to be tracked.
5. User information:
  - It provides the user with information on energy consumption and production, which can be useful for optimal consumption management.





## 6. Readability for Network Operators:

- It makes it easier for grid operators to monitor and control the amount of energy transferred between the PV installation and the nationwide grid.

The energy meter for the installation is set up by a representative of the distribution system operator. According to statutory regulations, the new solar panel user is obliged to inform the DSO of the date of connection of the PV installation 30 days before the planned connection. To this end, he fills in an application form, sends it by correspondence or electronically and waits for the arrival of the utility's electrician. Depending on the workload, this can take place after a few days or even a month. Importantly, the replacement with a two-way meter is free of charge.

## 9. IMPLEMENTATION

1. Make sure the inverter is connected to the mains.
2. Switch on the inverter according to the procedure described in the operating manual.
3. Monitor the data displayed and ensure that the photovoltaic system is working properly.
4. Log in to the user interface and check the status and performance data.

Remember to keep the system connected to the Internet. Instructions for configuration can be found in the appendices and in the box with the device.

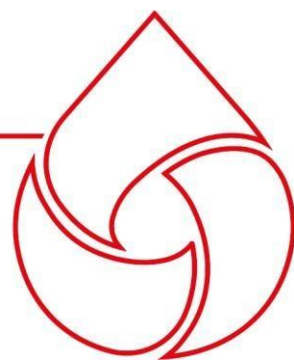
## RECOMMENDATIONS

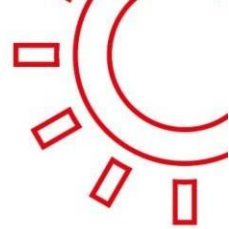
Only qualified personnel should connect this system to the electricity grid.

## NOTE

Do not connect the microinverters to the grid or supply AC circuits until all installation procedures have been completed and prior approval has been obtained from the utility company.

When the installation is complete, switch on the main AC breaker of the electricity grid. Your system will start generating power after waiting for about two minutes. The LED will flash green and red during start-up





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