

Installation manual

CheckWatt CM10 and Kostal Hybrid inverter PLENTICORE plus

Updated 2025-01-14

Installation of CheckWatt CM10 and Kostal hybrid inverter PLENTICORE plus should be done according to the respective installation manuals. The following documentation specifically describes how communication is established between CheckWatt CM10 and Kostal hybrid inverters.

Communication between CM10 and inverter is carried over modbus TCP/IP via ethernet cable CAT6 FTP.

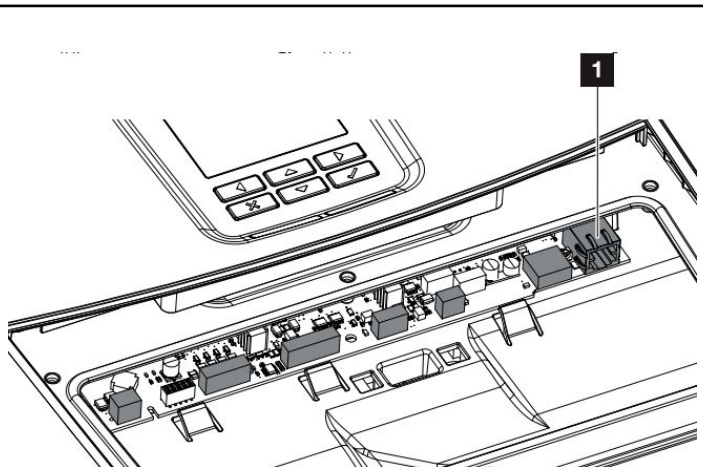
Max inverters per CM10: 1



Installation: Internet connection and communication

Connect your computer via an Ethernet cable to the LAN (Ethernet cable to the **RJ45 port**) on the Kostal hybrid inverter's Smart Communication Board.

For more information on how to connect a computer to the inverter, please refer to the Kostal Plenticore Plus operational manual, which can be found on their website.



Access the Kostal WebServer by entering the inverter's IP address in your web browser.

Then log in as an installer.

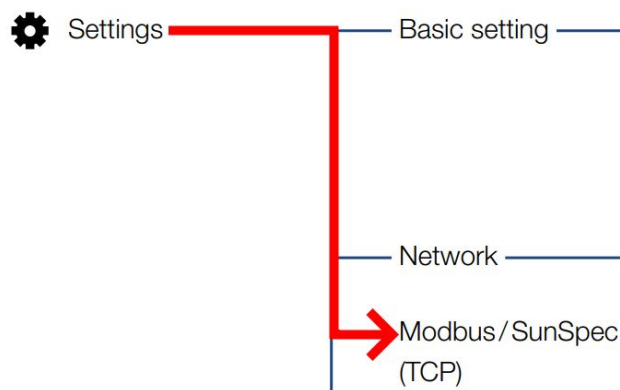
You can find the IP address on the inverter's screen..



Navigate through the Settings menus to **Modbus / SunSpec (TCP)** and activate the Modbus / SunSpec (TCP) protocol for the inverter. Verify that the byte order is set to **Little-endian**.

Next, go to **Battery Setting** and select **External via protocol (Modbus TCP)** under **Battery Control**.

Note: Remember to save before closing the page. Now, you can disconnect the computer. The next step will explain the connection to the CheckWatt CM10.

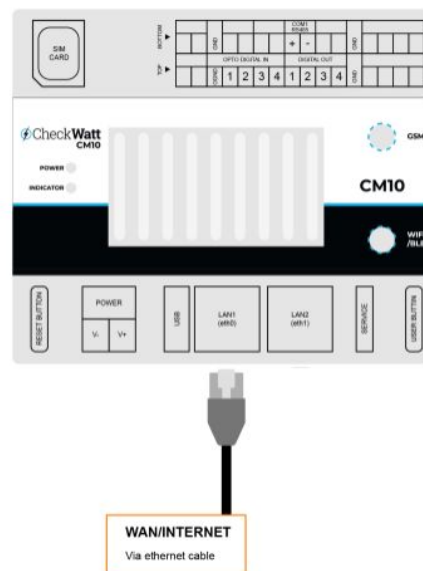


Installation: Internet connection and communication

Connect the WAN (Ethernet cable) between the property's router* and **LAN 1 (eth0)** on the CM10 for internet connection to the CM10.

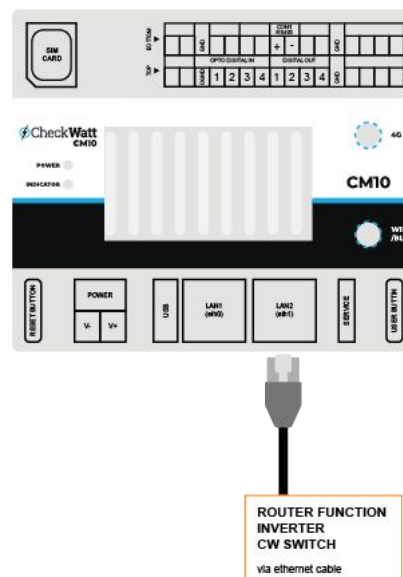
**or other network equipment such as PLC-modem, wifi-repeater or network switch.*

NOTE! LAN 1 and LAN 2 must not be mixed up as they have different functions.



Connect the LAN (Ethernet cable) to **LAN 2 (eth1)** on the CheckWatt CM10.

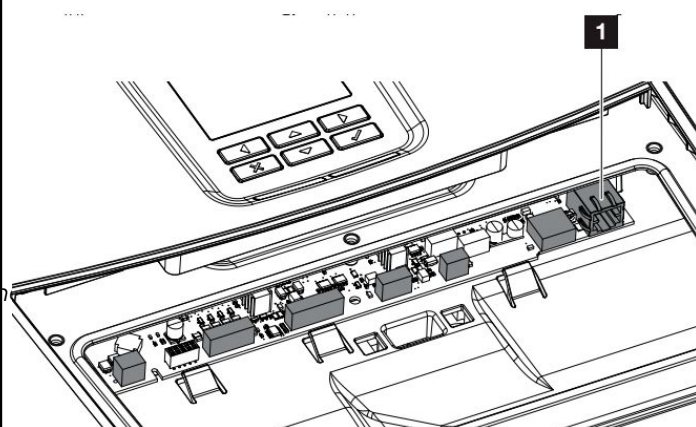
NOTE! LAN 1 and LAN 2 must not be mixed up as they have different functions.



Connect the LAN (Ethernet cable) to the **RJ45** port on the Kostal hybrid inverter's Smart Communication Board.

The installation is now complete.

The Kostal inverter will now be provided with internet via the CheckWatt CM10.



Settings in Kostal-portal

Navigate to **Settling time**
via **Service menu**

The screenshot shows the 'Service menu' in the Kostal-portal. The menu is divided into two columns: 'General' and 'Grid parameterization'. The 'Settling time' option is highlighted in the 'Grid parameterization' column. Other options include Energy management, Generator settings, Battery settings, External hardware settings, Digital inputs, CEI inputs, Switched outputs, Overvoltage protection, Extra options, Operating mode, and Device restart.

| General | Grid parameterization |
|----------------------------|--------------------------------------|
| Energy management | Parameterization report |
| Generator settings | Reactive power settings |
| Battery settings | Start-up ramp |
| External hardware settings | UVRT/OVRT |
| Digital inputs | P(f) |
| CEI inputs | P(U) |
| Switched outputs | P _{AVE} |
| Overvoltage protection | Settling time |
| Extra options | Grid and system protection |
| Operating mode | Grid and system protection self-test |
| Device restart | |

Mode should be set to
Power limit gradient.

Max. power gradient
should be set to 30% of
the systems max
power.

Click **Save**

Example:

For a 5 kW
inverter+battery the
Max. Power gradient is
calculated as
 $5000 \cdot 0.3 = 1500 \text{ [W/s]}$

Settling time

If the reactive power ($Q, \cos \varphi$) is being controlled externally using a ripple control receiver or Modbus, the settling time is used.

Settling time [s] = 5 Tau

If the active power is being controlled externally a settling time (PT1) or a max. power gradient can be specified as an option.

Mode

A distinction is made between high-priority specifications imposed by grid safety management (remote control technology, ripple control receiver) and lower-priority local specifications (e.g. energy manager via Modbus).

High-priority specifications imposed by grid safety management (remote control technology, ripple control receiver or Modbus):

Max. power gradient [%P_{enn}/s] = [W/s]

Local lower-priority specifications (e.g. energy manager via Modbus):

Max. power gradient [%P_{enn}/s] = [W/s]

*P_{enn} = 15000 W

Save