

# SELF CONSUMPTION: “UNIVERSAL SOLUTION CCM”



CcM 4



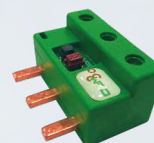
CcM 2



CcM 2-W



CcM-W



CcM3-C



CcM1-C

## CcMaster

Monitor all your photovoltaic plants with a single platform with maximum accuracy. Control both grid consumption and PV production, regardless of the brand or model of the inverter(s) installed.

### USER ADVANTAGES:

- Self-consumption assessment. Overview of all the electrical consumption variables (energy, active and reactive power, power factor, harmonics distortion) and energy injected into the grid together with all data provided by the inverter.
- Energy meter providing accurate financial information, allowing analysis of system efficiency, comparison of the actual consumption with the electricity bill and assessment of surplus compensation.
- Submetering by phase included in three-phase installations with the possibility of monitoring the entire installation or just a part of it to establish energy efficiency policies.
- Versatile and scalable. Possibility of extending your own devices and converting your installation in a smart one.
- Setting consumption alerts for the grid and/or the inverter.

### INSTALLER ADVANTAGES:

- Easy to install and versatile communications.
- Universal solution compatible with all inverters brands and power ranges, as well as with other Modbus devices.
- Same physical installation and same platform for all photovoltaic plants. Savings in installation and maintenance costs.
- Unified and general supervision and control centre.
- Local technical support.
- Possibility of customization.

# MONSOL

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# Reading the parameters of inverters with MODBUS protocol



and much more...

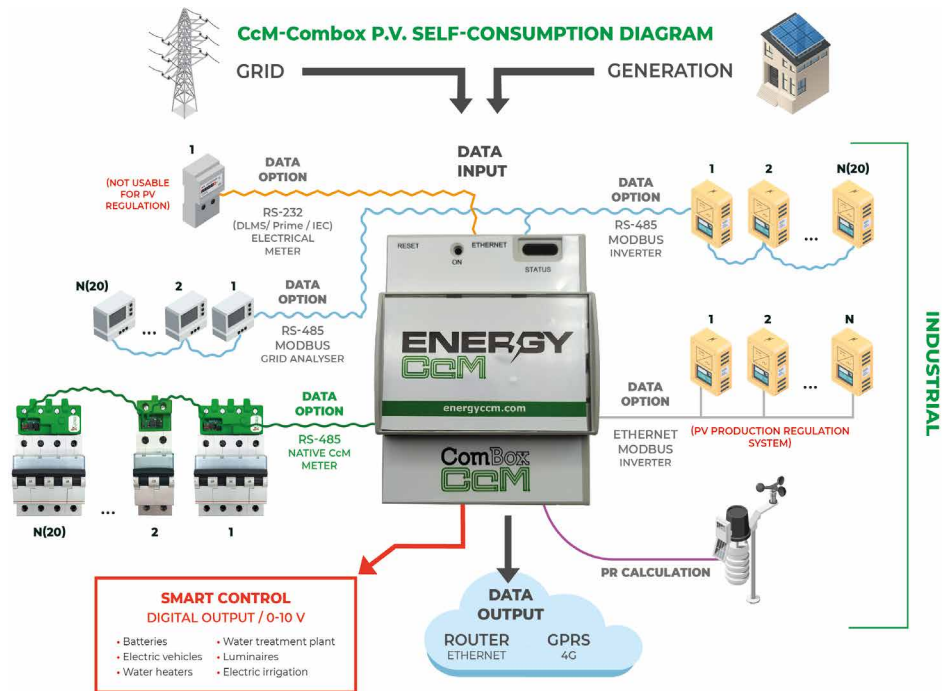
## INDUSTRIAL

### Inverter and zero energy grid injection available in this solution.

Our CcM-Combox device is a high processing capacity PLC with multiple inputs and outputs and with the ability to interact with all inverters under Modbus protocol.

It is recommended to use this solution when the photovoltaic installation requires to:

- Read the inverters in less than 2 seconds.
- Act over the inverter for regulation, zero injection or load management.
- Calculation of PR or availability using radiation or weather station.
- Multiple inverters (>6) or several different models and brands.
- Technical customization of the installation (irrigation systems, pumps, industrial processes, etc.) or from the information to be displayed on the interface.

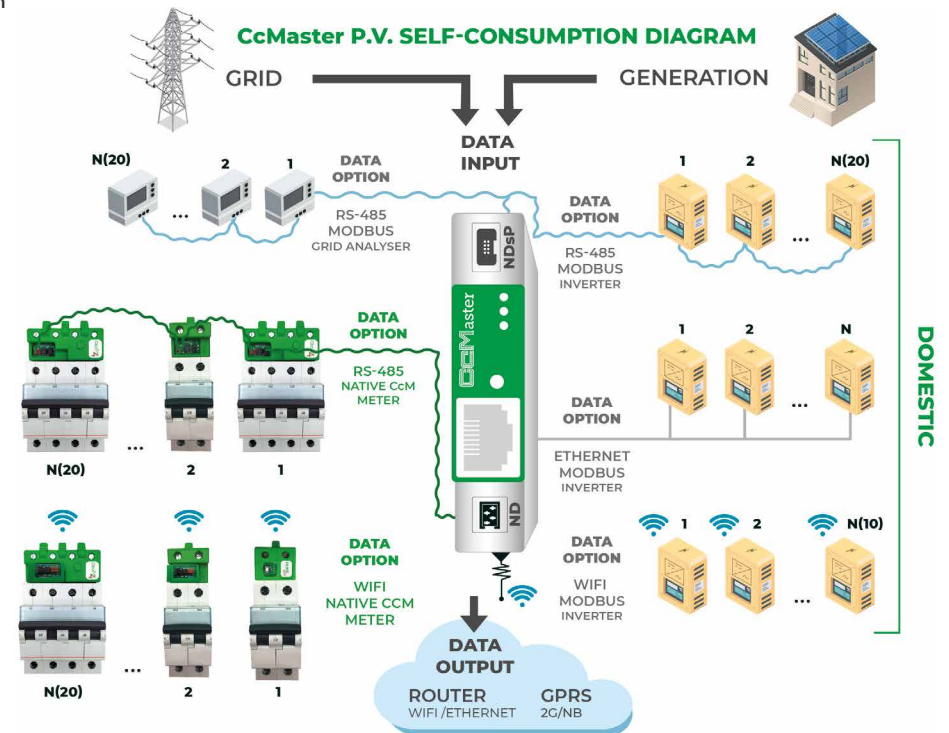


Exclusive distributor of the industrial solution

## DOMESTIC

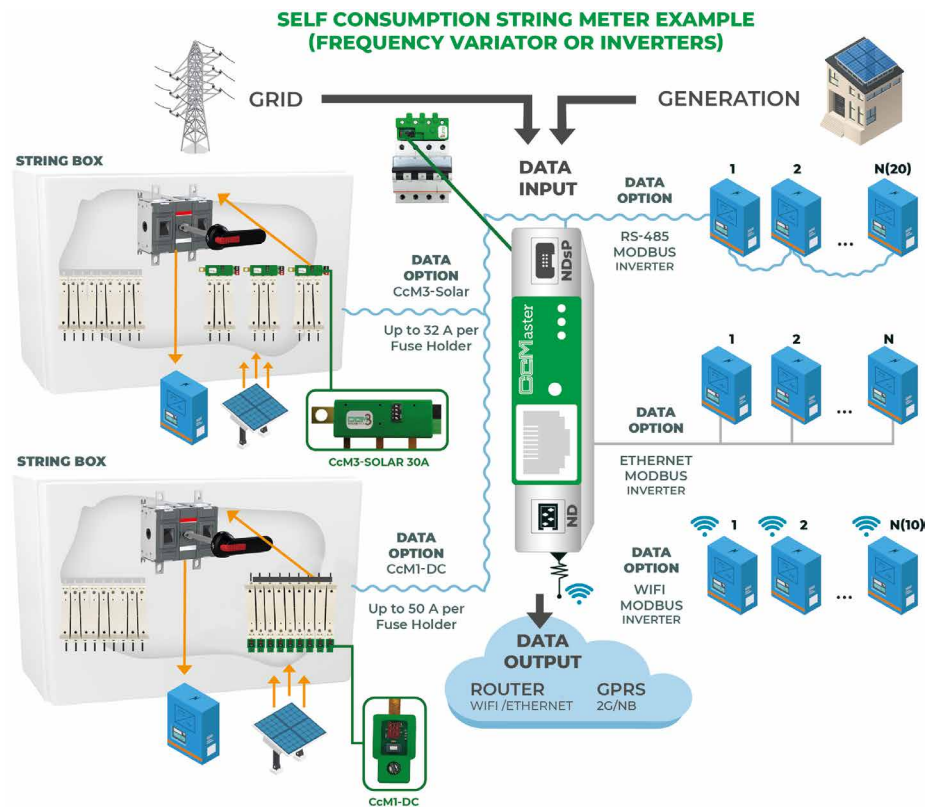
Our CcMaster device is installed and run in PLUG & PLAY mode. The physical installation is standard, self-powered, and gives a universal response to self-consumption installations with zero injection, where only inverters and grid consumption need to be read. Designed for easy installation, it is configurable from the same display and its start-up is semi-automatic.

Versatile communication with the device via WiFi, Ethernet, RS-485 or GPRS (NB-IoT/2G) and free data visualization in mobile application and web platform.



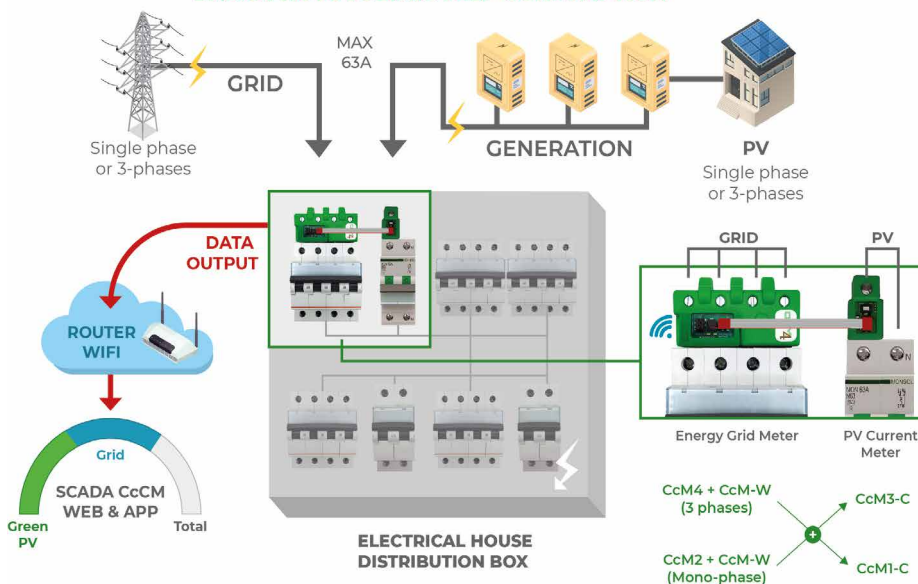
## STRING SOLUTION

This solution is an extension fully compatible with CcM's **Domestic** or **Industrial** solutions, allowing a reading of the photovoltaic production series by series. It is perfect for use in installations with inverters or frequency converters with only one or two current inputs, which still need to connect a large number of panels due to their power. It is therefore necessary to join the strings in a busbar before the inverter or converter. This allows a complete monitoring of the whole photovoltaic installation. As a practical example, it is very useful for brands such as Victron or Solar Edge and their high power range.



## Without reading the inverter parameters

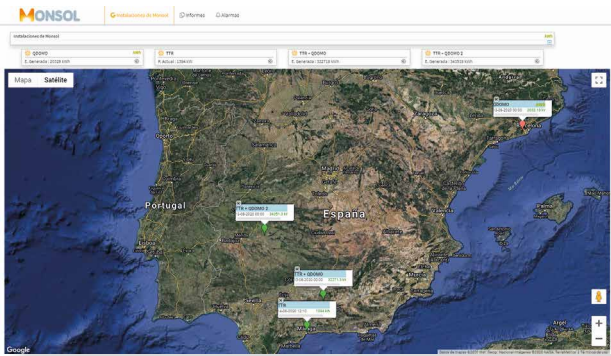
### BASIC PHOTOVOLTAIC SELF-CONSUMPTION



### BASIC

This solution provides the self-consumption curve in a very simple and efficient way. It consists of two meters of the CcM Family: an energy meter or **Principal Meter** that measures all the electrical parameters of the grid, and a current meter or **Secondary Meter** that measures the production of the photovoltaic plant. Both devices are located in the respective input circuit breakers. It is therefore not necessary to interrogate or read the inverters to know their production. The data is sent to the Energy CcM server via the WiFi connection hosted in our **Principal Device**.

# Our Scadas



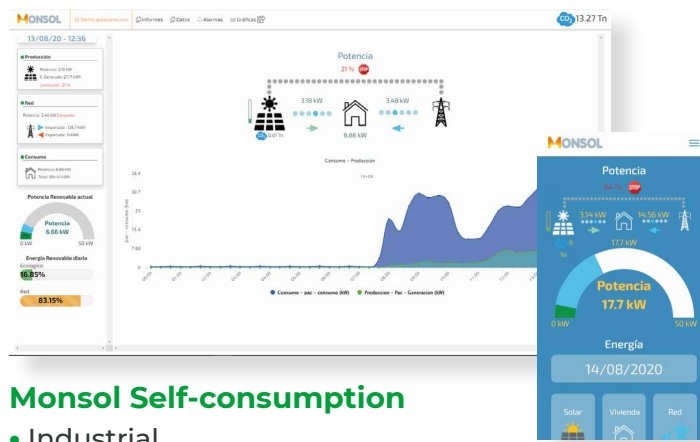
## Control center

\*Customizable for large scale customers and maintaince providers.



## Energy CcM Scada

- Domestic
- String
- Basic

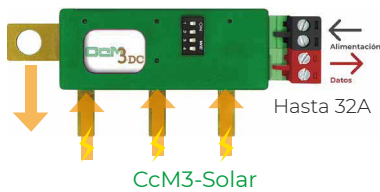


## Monsol Self-consumption

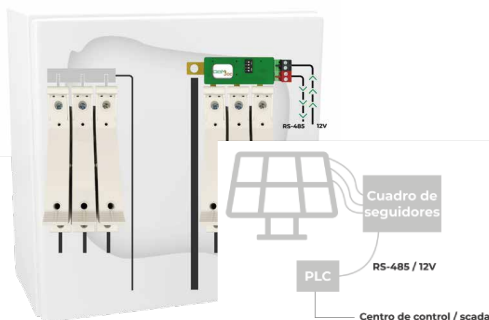
- Industrial

# For power generation and Zero Injection

## Measurement of currents in busbar panels and tracker panels.

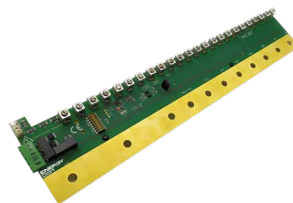


### Tracker Panel

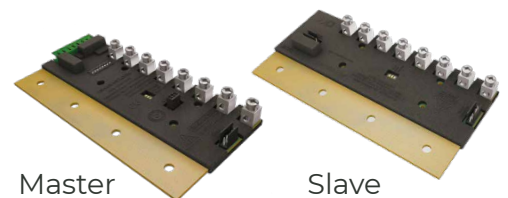


## STRING BOX CURRENT METERS

### CcM-Shunt 1500



### CcM-Hall 1500



- Up to 1.500 V
- Up to 20A per input (2 series)
- Up to 24 inputs per device (48 series)