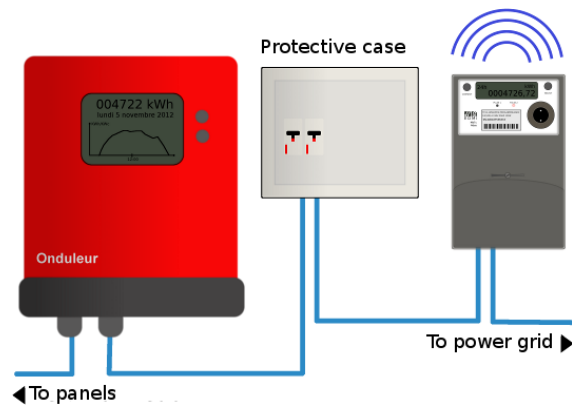


Installation manual

Rbee Solar meters MK7C & MK10A



UK



1 Introduction

The Rbee Solar production monitoring system consists of communicating meters and a web consultation and parameterization application. This document describes the installation of the meters and the verification of proper operation.

If you have a problem, you can contact MyLight Systems Support (France) or your distributor:

support@mylight-systems.com or at +33 (0)4 69 84 42 94 (9h -18h)

INFORMATION

Consult the web portal documentation for more information:

<https://www.mylight-systems.com/produits/>

2 Sécurité des biens et des personnes

2.1 Intended use

The Mk7C and Mk10A are connected meters used to monitor solar installations. They need to be installed according to local electricity standards. However, they do not require any special protection during installation between the grid and the photovoltaic system. These products are designed to be installed indoors. Only for the Mk10A, in case of outdoor use, the product must be sheltered so that water does not run over the meter. Their operating range is defined in the document Datasheet Rbee meters 0016. If these meters are used in a way that is not specified in this document, the protection provided by the device may be compromised.

During all installation phases, strictly follow the instructions and warnings in each chapter to avoid any situation that could endanger the operator and damage the equipment. Any operation that does not comply with the instructions provided will immediately void the warranty.

Do not manipulate the wire clamping screws when the meter is powered on. Turn the power back on once the protective cover is completely replaced to protect the operator.

The SIM card must be changed by a qualified technician as described in paragraph 3.1. below.

2.2 National certification and authorization

The product should only be used in approved countries (to be defined). Use this product only in accordance with the documentation supplied and the standards and directives applicable at the place of installation.

2.3 Qualified technicians

The operations identified in this document must only be carried out by qualified personnel. All personnel must have the following qualifications:

- Training in the installation and commissioning of electrical equipment
- Electrical clearance.
- Training on the hazards and risks associated with the installation and use of electrical equipment and installations
- Knowledge of standards and guidelines applicable in the region of installation

2.4 Product marking

- Double or reinforced insulation
- Three-phase alternating current
- Single-phase alternating current
- Caution: risk of electric shock.

3 Putting Rbee Solar meters (Mk7C and Mk10) into service

The Mk7C meter is a direct-connection single-phase meter with a capacity of 100 A.

The Mk10 meter is available in two models, the first one for direct connection up to 100 A (Mk10-WC) and the second one to connect 3 CTs (Mk10-CT). The Mk10-WC can therefore be used to monitor the production of a three-phase installation of maximum output 70 kWc. The Mk10-CT meter operates with Current Transformers (CTs). The setting of the transformation ratio and of the number of CTs must be carried out before delivery or remotely by contacting Support (GSM/GPRS connection).

3.1 GSM/GPRS communications

Once connected, the meters store the metering data (Wh) in their internal memory at 10 minute intervals. The data is transmitted to the Rbee Solar servers twice a day between 00.00 and 02.00 and 12.00 and 14.00 (GMT). Once the meter has been installed, you must parameterize the installation in the web application by connecting to your portal. When the meter connects for the first time, it will transmit the data for the last 48 hours and its GPRS subscription will begin on that date.

Communications with the Rbee Solar servers are via the internal GSM/GPRS modem. The meter must therefore be in a location covered by a mobile network. The Rbee Solar offering is in partnership with SFR and permits operation throughout Europe. The SIM card will connect to the best mobile (GPRS) network available.

The SIM card is factory pre-installed in the meter's modem

All the SIM cards and the subscriptions are managed by MyLight Systems, so you do not have to concern yourself with their administration. In addition, a 2-year subscription is included in the hardware offering.

Should your installation location not be covered by a mobile network, please contact MyLight Systems Support.

It is advisable therefore to verify before installation whether coverage is available.



Caution : Do not forget to reconnect the modem's RJ45 cable at the time of installation.

When the meter **has been installed and supplied with power**, you will have the possibility of verifying the reception level on the LCD screen. Press the screen's right-scroll button (select) several times to display the GSM signal strength (to the left of the screen).

Interpretation of the reception level:

| | | |
|---------------------|-----------------------|--|
| > 15 | Good | |
| 10 à 15 | Ok | |
| 5 à 10 | Poor | |
| < 5 ou 99 | Do not install | |

If your signal is **less than 5 or equal to 99**, it is dangerous or even impossible to install the meter. You must then check whether the mobile network is stronger or available in the vicinity of the meter's current location. In this case, you can connect an antenna with a cable extension in order to move away from the place which has poor reception. If you do not have this antenna, contact your distributor.

CAUTION

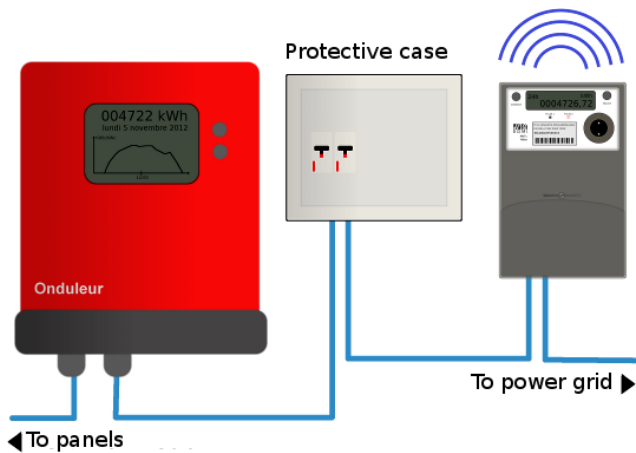
When the meters are not supplied with power, the GSM modem is cut off and the meter will always display 99.

External antennas



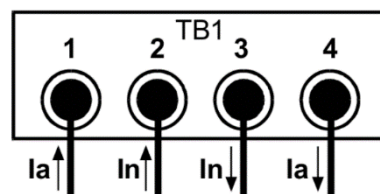
3.2 Electrical installation

The meter must be positioned after the inverter's AC protective case. You must comply with the standards in force for the installation of electrical equipment.



The meter can be installed on the wall or on an electrical panel or inside a case.

3.2.1 Mk7C wiring

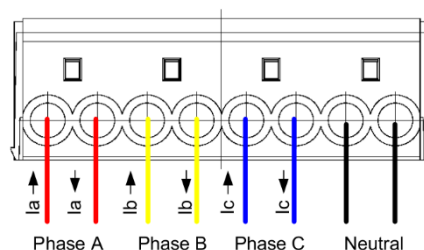


Connect the inverter's output to the meter's input (TB1). Phase must be connected to terminal 1, neutral to 2. Then connect the Mk7C meter's output to the power grid. Terminal 3 is neutral, 4 is phase.

When the meter is correctly supplied with power, the LCD screen comes on.

Be sure to plug the GSM/GPRS modem's RJ45 jack into the meter's RJ45 port.

3.2.1 Mk10-WC wiring



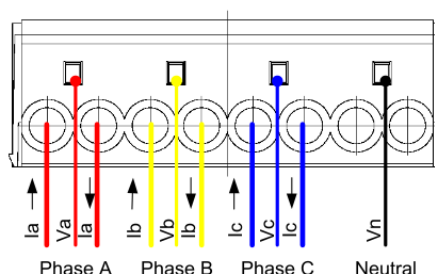
In the case of direct three-phase connection (up to 100 A), you must connect the 3 phases and the neutral respectively to the following terminals:

| Phase | Input (inverter) | Output |
|---------|------------------|--------|
| Phase 1 | 1 | 3 |
| Phase 2 | 4 | 6 |
| Phase 3 | 8 | 10 |
| Neutral | 12 | 14 |

When the meter is correctly supplied with power, the LCD screen comes on.

Be sure to plug the GSM/GPRS modem's RJ45 jack into the meter's RJ45 port.

3.2.1 Mk10-CT wiring



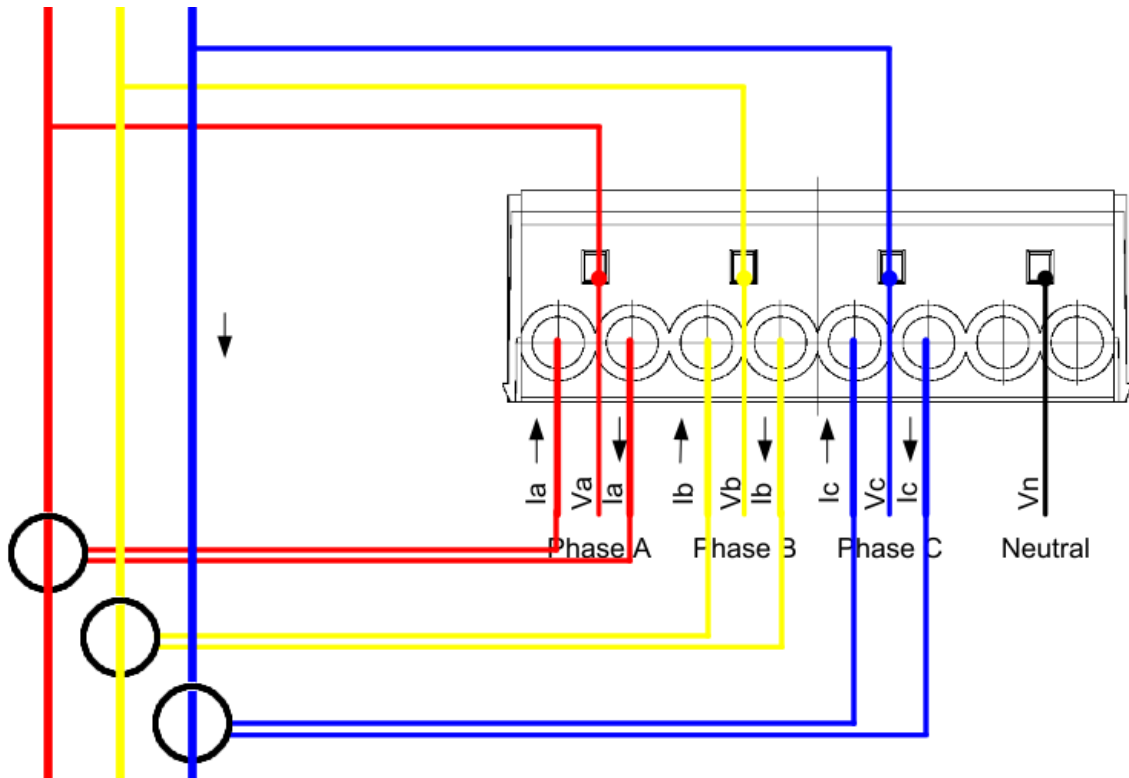
For an installation > 70 kWc, you must use Current Transformers (CTs) to measure the current. The transformation ratio must be specified with the order.

L1
L2
LB

You must then connect each CT on the Phase A, B and C inputs and finally supply the meter with power by connecting the phases and neutral on the Va, Vb, Vc and Vn inputs.

CAUTION

Comply with phase order and coherence between Va,b,c and Ia,b,c. Reversal would result in a totally incorrect measurement.



| Phase | Input | Output |
|-------------------|-------|--------|
| Phase 1 (TI - Ia) | 1 | 3 |
| Phase 2 (TI - Ib) | 4 | 6 |
| Phase 3 (TI - Ic) | 8 | 10 |
| V1 | 2 | |
| V2 | 5 | |
| V3 | 9 | |
| Neutral | 13 | |

4 Value of metering and accuracy

Rbee Solar single-phase and three-phase meters are MID approved and have a class 1 accuracy (1%) necessary to green certificate metering.

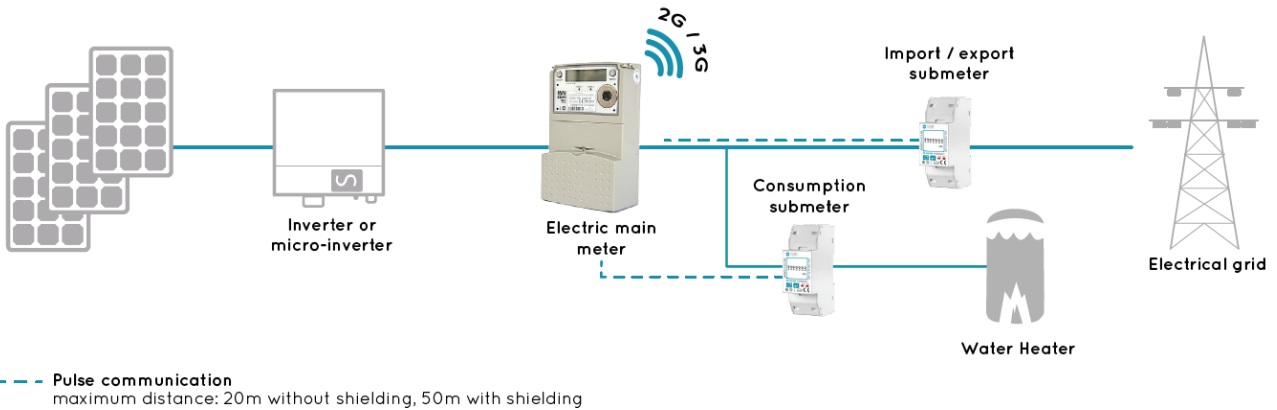
INFORMATION

Because of the MID European certification of Rbee Solar meters, the metering data has legal value and complies with the accuracy levels in force for energy invoicing.

5 Self consumption monitoring wiring

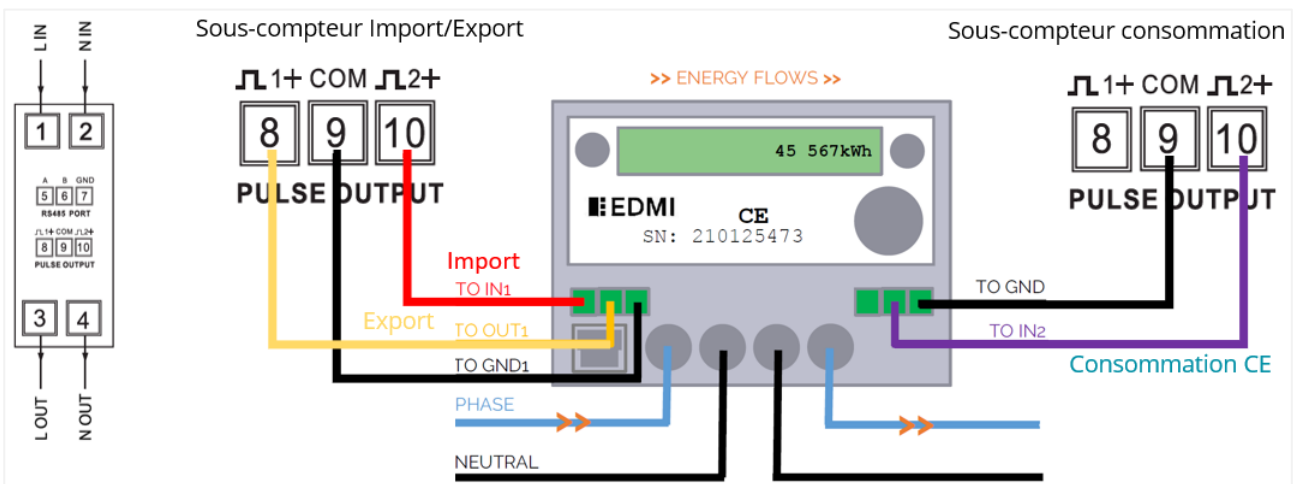
As part of a self-consumption installation, two sub-meters must be installed in accordance with this principle diagram :

SINGLE-PHASE / THREE-PHASE



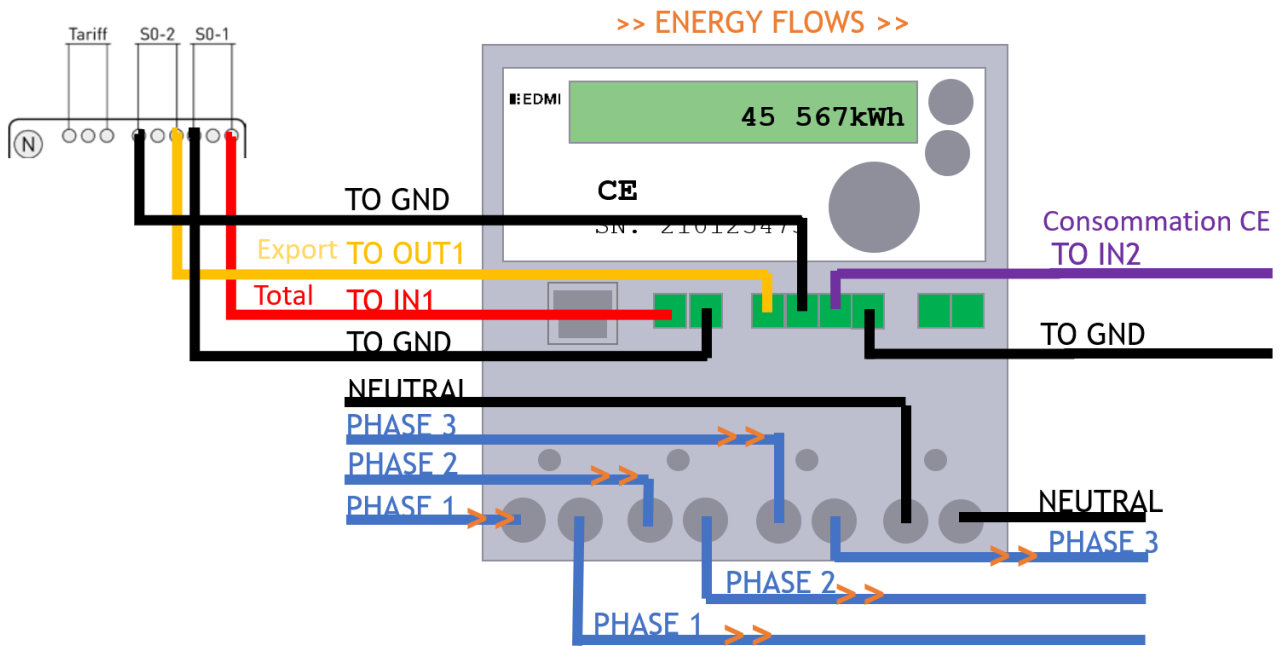
5.1 MK7C Meter Wiring (Single Phase)

For this wiring, use the MC1D01RM meter.



5.2 MK10A Meter Wiring (Three Phase)

For this wiring, use the TDA80 and TTA meters.



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