

Manual: QA EASTRON SDM630 Sharing (ESG)

Measurement of the consumption of a consumption location with the EASTRON SDM630 three-phase electricity meter for energy sharing in the SHE system.

Introduction

QA EASTRON SDM630 Sharing (ESG) provides communication with the **EASTRON SDM630 Modbus RTU** three-phase electricity meter and makes its measured values available in the controller. The application reads voltage, current, active power and active energy – per phase and in total – and automatically creates child devices with tiles for these quantities.

The **ESG** (Energy Sharing Group) variant is intended for measuring the consumption of individual consumption locations (CL) in energy sharing – typically apartments in an apartment building. The meter is assigned to the consumption location (CL) via the **Modbus group** and the **Unit ID** and is bound to the **sharing licence (SSE)**. The measured consumption of the consumption location enters the sharing application (**QA Energy Sharing Apartment Buildings**, or **QA Energy Sharing Spot Duo**) as a basis for sharing control and for allocation in the Energy Data Centre (**EDC**).

The application does not communicate with the bus directly – communication on the RS485 Modbus RTU line is provided by the master application **QA Modbus Master**, which serves all meters connected to one line and prevents collisions.

For clear visualisation and for working with the measurement history and charts, we recommend connecting to Mervis SCADA.

Upstream and downstream applications

Upstream applications

- **QA Modbus Master** – mandatory; provides communication on the Modbus RTU line via a Modbus TCP / Modbus RTU converter. The meter and the Modbus Master application must have the same **Modbus group** number.

The prerequisite for operation is a physically installed **EASTRON SDM630 Modbus RTU** meter on the supply line of the consumption location, connected to the RS485 bus of the converter.

Downstream applications

- **QA Energy Sharing Apartment Buildings** (recommended) or **QA Energy Sharing Spot Duo** – take over the consumption data of the consumption location as a basis for energy sharing control. A sharing application is not required for the measurement and display of values alone; it is always required for including the consumption location in sharing.

The measured values can also be used by other QA applications of the SHE ecosystem (e.g. QA Consumption Control) or by the user's own logic in the unit.

Installation and initial setup of the QA

Installation

Purchase the application in the Smart Home and Energy e-shop (<https://eshop.smarthomeenergy.cz>). After the purchase you receive an e-mail with a link to the activation form, in which you choose one of the two installation methods:

- **Installation via the SHE Installation Application (recommended)** — the application is installed into the unit automatically and allows future automatic updates. Requires the “superuser” credentials for the unit. See the separate “Installation Application” manual for details.
- **Standalone installation file (*.fqax)** — install the file manually into the unit according to the unit manufacturer's instructions (logged in as “superuser”). This option does not allow automatic updates.

You can try the application functions before purchase in the trial version — the TRIAL unlocks the full functionality for 2 days.

The application is installed separately for each measured consumption location; on the unit desktop it is displayed in the room (section) of the given consumption location (e.g. **Apartment 1**). After a successful installation, the following are displayed:

- the **Meter** tile (main card, e.g. **Meter Apartment 1**),
- the **Installation** card,
- child tiles **Energy Period**, **Energy Today**, **Power Total**, **Power L1 / L2 / L3**, **Current Total**, **Current L1 / L2 / L3** and **Voltage L1 / L2 / L3**.

Operating prerequisites

- **Controller:** Fibaro HC3 or HC3L (or Yubii Home / Home Pro).
- A physically installed **EASTRON SDM630 Modbus RTU** three-phase electricity meter on the supply line of the consumption location, connected to the RS485 bus.
- A **Modbus TCP / Modbus RTU converter** in the same local network as the controller (not included with the application) and the installed **QA Modbus Master** application, which serves this converter.
- A unique Modbus address (**Unit ID**) within the line and communication parameters matching those of the converter, both set on the meter.
- A valid **sharing licence (SSE)** from Smart Home and Energy and registration of the consumption location in the **EDC**.
- A free slot for uploading the application in the controller.

Opening the application control card

To open the application cards in a web browser, move the cursor over the tile (**Meter**, **Installation**) and click the **eye** icon in its top-right corner. The card detail opens.

Warning: Not all cards and tiles are displayed to all users. Each user selects which cards and tiles are displayed on the Display Settings card (sheViewControl application) – levels SHORT, ADVANCED and ADMIN. If you cannot see a described card, check the settings on this card.

User settings

Initial setup procedure

1. According to the meter manual, set a unique Modbus address (**Unit ID**) and, on the meter, communication parameters matching those of the converter. Note down the address.
2. First put the converter and the **QA Modbus Master** application into operation according to the separate manual, and note down the **Modbus group** number of the line to which the meter is connected.
3. **"Installation" card**
 - Set **Modbus Group** to the same number as in **QA Modbus Master** and **Unit ID** to the meter address (the values in the screenshots belong to a sample installation, do not copy them).
 - Check that the **License Validity** item shows Valid and that **SSE Number** and **SSE Name** match your sharing installation; if needed, load the licence with the **Update** button.
 - If the licence is still not valid after the update, contact Smart Home and Energy.
4. Press **SAVE** and wait until **Run status** changes to Running.
5. On the **Meter** card, check that the values are updated (the **Update** value) and match the meter display. In the **QA Modbus Master** application, the meter appears in the overview of Modbus devices.

"Installation" card

 **Warning:** When saving settings, always wait until Run status changes to Running. Do not press SAVE before that. Pressing it repeatedly before the restart is complete may cause configuration errors.

Modbus Settings

- **Modbus Group** — group number that assigns the meter to the **QA Modbus Master** application (and its converter). All meters on one line have the same group number as their Modbus Master. Change the value with the -- / - / + / ++ buttons.
- **Unit ID** — meter address on the Modbus bus; it must match the address set on the meter and be unique within the line. Change the value with the -- / - / + / ++ buttons. Do not confuse it with the ID in the card header — that is the device number in the controller.

License SSE

- **License Validity** — state of the sharing licence (e.g. Valid).
- **Valid until** — licence expiry date (--- for a licence without time limit).
- **SSE Number** — sharing licence number.
- **SSE Name** — name of the sharing installation to which the consumption location is assigned (e.g. the name of the owners' association).

The **Update** button reloads the licence data from the Smart Home and Energy server. This button does not save the configuration.

The **Run status** row shows the run state of the application. Save the settings with the **SAVE** button. The application version is shown at the bottom of the card (e.g. sheEastronSDM630ESG 1.03.03).

"Meter" card

The main card of the application (the tile bears the name of the consumption location, e.g. **Meter Apartment 1**) displays a summary of the measured values:

- **Value** — total active energy of the consumption location (kWh, rounded to tenths); the same value is shown on the tile.

- Name of the sharing installation (**SSE Name**).
- **Energy Period** — energy consumed during the measurement period (Wh), i.e. over a short time interval, not over the whole day; **Period time** — elapsed time of the current quarter-hour period (mm:ss; e.g. 10:00 = 10 minutes from the start of the quarter-hour).
- **Energy Today** — energy consumed since midnight (kWh).
- **Active Power Total** and **Phase** — current active power in total and on phases **L1** | **L2** | **L3** (W).
- **Current Total** and **Phase** — current in total and on the phases (A).
- **Voltage** — voltage on phases **L1** | **L2** | **L3** (V).
- **Consumption Total** and **consumption Phase** — active energy in total and per individual phase (kWh).
- **Update** — date and time of the last reading of the values.

The card is for information only and requires no settings.

Value tiles

The application automatically creates child tiles:

- **Energy Period** (Wh) and **Energy Today** (kWh),
- **Total** and **Active L1** / **Active L2** / **Active L3** (power, W),
- **Total** and **L1** / **L2** / **L3** (current, A),
- **L1N** / **L2N** / **L3N** (voltage, V).

The values can be used in scenes and other applications of the unit. The meaning of each symbol on the tile is shown when you move the mouse cursor over the symbol.

Notes

- The periods for reading values from the meter are controlled by the **QA Modbus Master** application; an overview of communication with all meters on the line is available on its card.
- If the **Update** value on the **Meter** card does not change, check that **Modbus Group** and **Unit ID** match the settings of **QA Modbus Master** and of the meter (each meter on the line must have a different address) and check the communication state on the **QA Modbus Master** card.
- The sharing licence (SSE) is assigned by Smart Home and Energy; the customer arranges the registration of consumption locations in the **EDC** on their own.
- The basic variant of the application, QA EASTRON SDM630 (without sharing, with optional child devices and its own converter settings), is described in a separate manual.
- For clear visualisation, measurement history and charts, we recommend connecting to Mervis SCADA.