

Manual: QA HDO

Central reception of the HDO high and low tariff signal and its distribution to the downstream applications of the SHE ecosystem.

Introduction

QA HDO is the input gateway for the HDO (TOU) signal (high / low tariff of the distribution network). The application receives the signal from a defined source (digital input, external EX01PV SHE module or global variable), clearly displays its current state and history and creates statistics that the downstream applications of the SHE ecosystem (e.g. QA Spot Pro) use for tariff prediction and price calculation.

The application cooperates with Mervis SCADA for visualisation and with other QA applications of the Energy Management family — for spot prices, DHW heating, control of heat pumps, wallboxes and more.

Upstream and downstream applications

Upstream applications

Optional:

- **QA EX01PV** — if the HDO signal is routed via the external EX01PV SHE module. Alternative signal sources (digital input integrated in the unit or global variable) do not require an upstream QA application.

Downstream applications

Optional:

- **QA DHW Boiler** — blocks the required DHW heating using grid electricity, depending on the HDO signal state.
- **QA Heat Pump** — control of heat pump operation in response to the tariff.
- **QA Consumption Control** — input data for the control of energy flows in the house.
- **QA Spot Pro** — the HDO statistics are used for tariff prediction and spot price calculation.
- **QA DHW Mode** — DHW heating time schedules with regard to the tariff.

QA HDO can also provide the signal to other QA applications of the SHE ecosystem that react to the current tariff of the distribution network.

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 activation form provides a link to download the Installation Application. Install it into the unit; it then automatically downloads and installs the purchased licences. It provides automatic updates of all SHE applications and easy licence management (requires the "superuser" credentials for the unit). See the separate "Installation Application" manual for details.
- **Standalone installation file** — the activation form provides links to download an encrypted *.fqax file bound to the entered unit S/N. 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.

After a successful installation, the **TOU** tile with the current tariff state and the **Installation** card appear on the unit desktop.

Operating prerequisites

- The HDO signal is available in the unit in one of the supported forms — digital input integrated in the unit, external EX01PV SHE module or global variable.
- To use the HDO statistics in the spot price prediction, installation of **QA Spot Pro** is recommended (optional).

Opening the application control card

To open the application card in a web browser, move the cursor over the **TOU** tile and click the **eye** icon in the top-right corner of the tile. The card detail with the current state and statistics 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

For QA HDO, the following tile and card are displayed on the unit desktop:

- **TOU** — information tile with the current tariff state (e.g. LOW, HIGH). When opened, it displays the tariff statistics for the last 7 days.
- **Installation** — selection of the HDO signal source and of the values corresponding to the individual tariffs.

After the installation is complete, set up the **"Installation" card** — select the signal source type, the specific source and the values corresponding to the individual tariffs. The **"TOU"** tile is for monitoring only and requires no settings.

"TOU" tile

Summary information tile with the current tariff state — e.g. **LOW**, **HIGH**. It shows at a glance which distribution tariff is currently active.

When the tile is opened, the **Statistics** are displayed — a table of the tariff state by hour for the last 7 days. The rows correspond to the hours of the day (0–23), the columns to the individual days; each cell records the tariff state (**High** / **Low**). The **Tariffs** and **Values** buttons switch between displaying the tariff state and displaying the values of the input signal.

These statistics are used by the downstream applications of the SHE ecosystem (e.g. QA Spot Pro) for tariff prediction and price calculation.

"Installation" card

The card is used to select the HDO signal source and the values that correspond to the individual tariffs.

Warning

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

Input configuration

- **TOU SOURCE TYPE** — selection of the input type (EX01PV, digital input integrated in the unit, global variable).
- **SOURCE: TOU** — specific source within the selected type (e.g. **DI01Sum** for the EX01PV module).
- **VALUE TIDE TARIFF** — signal value corresponding to the peak tariff.
- **VALUE HIGH TARIFF** — signal value corresponding to the high tariff.
- **VALUE OF TOU LOW TARIFF** — signal value corresponding to the low tariff.
- **VALUE NIGHT TARIFF** — signal value corresponding to the night tariff.

After completing the settings, save the configuration with the **SAVE** button and wait until Run status changes to **Running**.

Notes

For long-term archiving of the tariff state, HDO switching charts and linking with historical spot prices, we recommend connecting to **Mervis SCADA** (value export, charts, history).