

Modbus slave connector

Original text as published before the redesign of this article. Wording unchanged.

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This article describes the Modbus Slave Connector, which enables an external system to define and adjust the operating mode (self-consumption, peak shaving etc.) and grid import and export limits used by an energy management strategy. Reduxi executes the strategy within the specified limits and continuously controls the connected devices to maintain them. The limits can be updated in real time, allowing the external system to dynamically influence energy consumption, production, and grid interaction.

To use this functionality, the Modbus Slave Connector must first be enabled in Reduxi.

The screenshot shows the Reduxi Configurator interface. On the left is a sidebar with a tree view containing 'Devices', 'Strategies', 'Utility Rate Plan', 'Settings', 'Grid', 'Network', 'System', 'Identifier', 'Open VPN', 'Connector', 'Cloud', 'MQTT v3', 'Flex', 'Modbus' (highlighted with a red arrow), and 'Configuration'. The main panel is titled 'Settings / System / Connectors / Modbus connection'. It features a 'Modbus slave connector' section with an 'Enable' toggle set to 'Yes'. Below this are fields for 'Transport' (set to 'TCP/IP'), 'Host' (set to '0.0.0.0'), 'Port' (set to '502'), 'Address' (set to '1'), 'Apply interval' (set to '60' seconds), and 'Strategy' (set to 'Energy manager'). At the bottom is a 'Modbus registers' table.

Address	Width	Type	Signal	Units / meaning
0	2 reg	UINT32	Import limit	Max grid import power, watts
2	2 reg	UINT32	Export limit	Max grid export power, watts
4	2 reg	UINT32	Goal	EMS mode ordinal 0: MAXIMIZE_PRODUCTION, 1: SELF_CONSUMPTION, 2: MAXIMIZE_CONSUMPTION, 3: PEAK_SHAVING

A 'Save' button is located at the bottom right of the main panel.

The operating mode and the grid limits are configured through the Modbus registers as listed in the table at the bottom.

Parameters

- **Transport:** Select the Modbus communication type, either TCP/IP or RTU.
- **Host:** Enter the IP address of the Modbus master. Use 0.0.0.0 to allow connections without an IP address restriction.
- **Apply interval:** Defines how often Reduxi reads the register values and applies them to the selected strategy.
- **Strategy:** Select the Reduxi strategy to which the Modbus Slave Connector will apply the received limits and operating mode.

Note, the adjustment provided by the modbus slave connector is applied only to the default strategy:

The screenshot shows the 'Strategy / Energy manager' interface. It has a tabbed view with 'Optimization modes' selected. Below the tabs is a table with columns: 'Name', 'Event description', 'Export limit', 'Goal', 'Import limit', and 'Advanced'. The 'Default mode' row is highlighted with a red border. It shows an export limit of 10 kW and an import limit of 17,3 kW, with the goal set to 'Self-consumption'. An 'AI energy manager' row is also visible below it. At the bottom right are '+', 'Save', and a '* premium feature' label.

Name	Event description	Export limit	Goal	Import limit	Advanced
Default mode	/	10 kW	Self-consumption	17,3 kW	[Edit icon]
AI energy manager *					[Edit icon] [Trash icon]