

Functional description

App Tariff Switch



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Introduction

Copyright

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Disclaimer

Janitza electronics GmbH takes no responsibility for errors or defects within this functional description and takes no responsibility for keeping the contents of this operating manual up to date.

Comments on the manual

We welcome your comments. In the event that anything in this manual seems unclear, please let us know and send an EMAIL to: info@janitza.de



Follow the instructions in the operating manual when installation and operating the device!

Meaning of the symbols

The following pictograms are used in the operating manual at hand:



Dangerous voltage!

Danger to life or risk of serious injury. Disconnect system and device from power supply before beginning work on them.



Caution!

Please follow the documentation. This symbol warns of possible dangers that can arise during installation, commissioning and use.



Note

Mode of operation of the "Tariff Switch" app

- You can use the "Tariff Switch" application to switch between up to 4 different tariffs on the master and slave devices (up to 31 slaves).
- Switching takes place via the controller for the digital outputs, Modbus register address #2000 or via a time control.
- The master device checks which tariff is to be activated and switches to this itself and on the slave devices that are set.



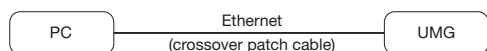
The following slave devices can be used:

UMG 103, UMG 104, UMG 604, UMG 605, UMG 508, UMG 511, UMG 96RM

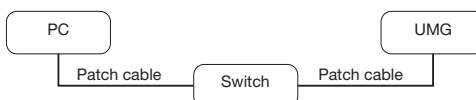
Integrate Power Analyser into the GridVis

To integrate the Power Analyser into the GridVis evaluation and configuration software an Ethernet connection must be established to the device and the TCP/IP address defined.

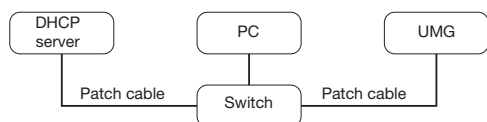
- Establish a connection between the PC and the device (see connection example) via a direct connection or via a switch/router. It is recommended to use CAT5 cable.
- Determine or set the addressing mode ("fixed IP" or "DHCP"). If "fixed IP" mode is selected then set the TCP/IP address of the device.



*Fig. Example connection:
Direct connection between UMG and PC. Both
devices require a fixed IP address.*



*Fig. Example connection:
Configuration using a switch UMG and PC
require a fixed IP address.*



*Fig. Example connection:
Integration into a network with DHCP server.
UMG and PC are assigned their IP addresses
automatically from a DHCP server.*

Fixed IP address

In simple networks without a DHCP server, the network address has to be set directly in the device.

With a direct PC-UMG connection, note:

- Use a crossover patch cable.
- The first three segments of the IP addresses for the device and the computer should be identical. The last segments must be different! The subnet mask must match in all four blocks.

Example:

Computer's IP address: 192.168.000.**020** with the subnet mask: 255.255.255.0

UMG's IP address: 192.168.000.**021** with the subnet mask: 255.255.255.0

DHCP mode

DHCP allows for the fully automatic integration of a UMG into an existing network without additional configuration. When started, the UMG automatically obtains the IP address, the network mask and the gateway from the DHCP server.



Attention

The connection of the UMG to an existing Ethernet network may only be carried out after discussion with the network administrator!

Integrating the UMG 604 / 605

- Change the device to programming mode. To do so press buttons 1 and 2 simultaneously for approx. 1 second. With the password query deactivated the programming mode is then started and identified with the text "PRG". The first digit of the address flashes.
- Set the address 205 for the selection "**DHCP-Modus**" (=2) or "**Fixed IP address**" (=0).
 - To do so, use button 2 to set the first digit to the value 2. Then switch to the second digit with button 1 and set it to a value of 0 with button 2. Set the third digit to a value of 5 in the same way.
 - Once the address is set, switch to the setting with button 1. Use button 2 to set the parameter to the corresponding value (cf. "Addressing mode" table).
 - For further settings use button 1 to go back and enter the next address.
 - If no button is actuated for ca. 60 seconds, or if buttons 1 and 2 are pressed simultaneously for ca. 1 seconds, then the device exits programming mode and changes back to display mode.

Address	Description
205	DHCP mode 0 = Fixed IP 1 = BootP 2 = DHCP client 3 = Zeroconf

Table: Addressing mode

- With the selection of "Fixed IP address", other additional network parameters must be set:
 - Setting the device IP address
 - Change to programming mode. Set the address 300 as described and set the first three digit block of the device IP address (cf. IP addresses table).
 - Then set the address 301 and allocate the second block of the device IP address.
 - Complete the entries with the addresses 302 and 303.
 - Setting the subnet mask
 - Set the subnet mask, using the same method as for configuring the device IP address, with addresses 304 to 307 (cf. IP addresses table).
 - Setting the standard gateway
 - Set the standard gateway (if present), in the same way as the IP address, with addresses 310 to 313 (cf. IP addresses table).
 - Note: Gateway adjustment is normally not required for the configuration.
- Read out the device address with "DHCP mode" selection:
 - Change to the programming mode as described. Set the address to 300, using buttons 1 and 2 and note down the three digit block in the Contents area. Carry out the same step for addresses 301 to 303 (cf. table under step 10).

Address	Description	Address	Description	Address	Description
300	IP address, xxx --- --- ---	304	IP mask, xxx --- --- ---	310	IP gateway, xxx --- --- ---
301	IP address, --- xxx --- ---	305	IP mask, --- xxx --- ---	311	IP gateway, --- xxx --- ---
302	IP address, --- --- xxx ---	306	IP mask, --- --- xxx ---	312	IP gateway, --- --- xxx ---
303	IP address, --- --- --- xxx	307	IP mask, --- --- --- xxx	313	IP gateway, --- --- --- xxx

Table: ID addresses

Integrating the UMG 508 / 511

- Start the configuration menu from the home display with button 1 ("ESC"). Change to the "Communication" entry with button 3 and open this with button 6.
- Similarly to above, set the selection to "DHCP". To do so mark the "DHCP" entry and open this via button 6. Select the corresponding entry "DHCP" or "Off" with button 3 or 4 and confirm this with button 6. Deactivate the entry in the case of networks without DHCP servers ("Off").
- With the DHCP mode deactivated ("Off") further network parameters must be set:
 - Setting the device IP address
 - Select the entry "Address" with button 3 or 4 and open this with button 6. Change the first digit of the address via button 3 or 4. Then switch to the second digit with button 5 and set this in a similar manner to above. Complete the IP address and confirm the entries with button 6.
 - Setting the subnet mask
 - Select the entry "Netmask" with button 3 or 4 and open this with button 6. Set the subnet mask in a similar manner to the setting of the IP address for the device.
 - Setting the standard gateway
 - Select the entry "Address" with button 3 or 4 and open this with button 6. Set the IP address for the Standard Gateway (if present) in a similar manner.
 - Note: Gateway adjustment is normally not required for the configuration.
- Reading out the device address:
 - Start the configuration menu from the home display with button 1 ("ESC"). Change to the "Communication" entry with button 3 and open this with button 6.
 - Note the addresses under "Address" and "Netmask".

Setting the IP address of the computer for a direct connection

PCs on company networks normally use DHCP. If you would like to assign a fixed IP address for the PC (e.g. for a direct PC to UMG connection), proceed as follows:



Attention

Settings in a company network can vary.



Attention

The connection of the UMG to an existing Ethernet network may only be carried out after discussion with the network administrator!

- Open the Network and Sharing Center in the Windows Control Panel.
- Open the status window via the LAN connection (fig. Network and Sharing Center).
- By selecting "Properties", it is possible to assign a fixed IP address to the PC (see fig. Process for defining a fixed IP address under Windows 7).

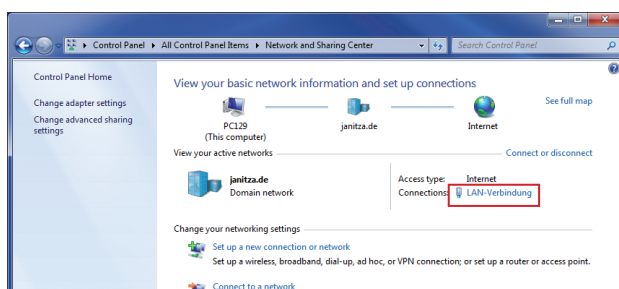


Fig.: Network and Sharing Center

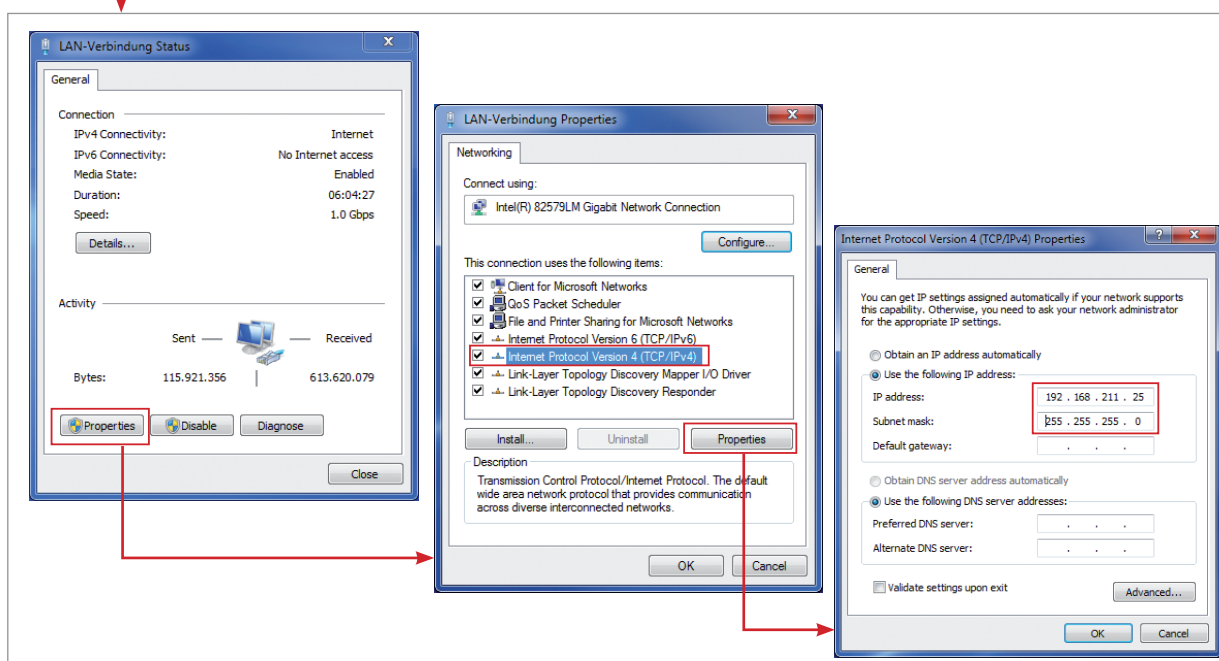


Fig.: Process for defining a fixed IP address under Windows 7.

Insert the device in the GridVis software

- Open the GridVis software and load or create a project.
- Open the "Device" node in the project window and activate the context menu for the "Device" node with a right click of the mouse.
- Select the "Add new device" context menu item (cf. fig. Add new device).



Fig.: "Add new device"

- Select the type of device, listed under the device category, and confirm the selection with "Next".

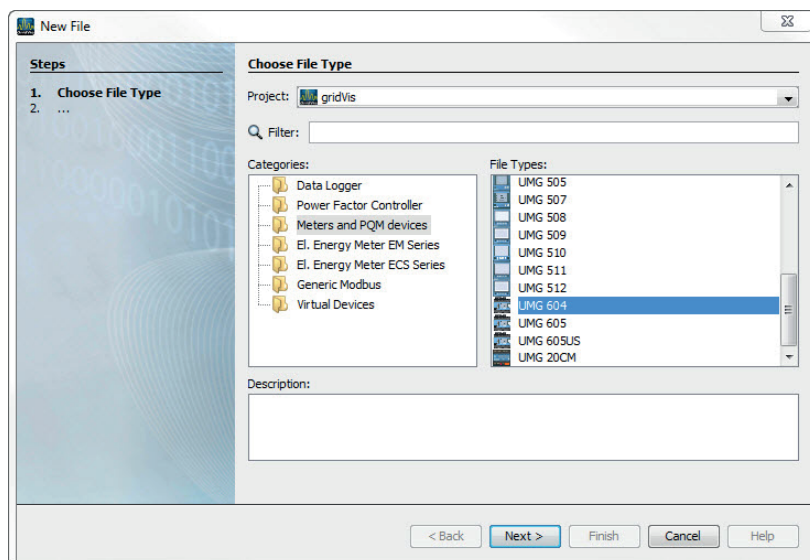


Fig.: "Add new device" - Device selection

- Set the connection type to "TCP/IP" and enter the corresponding device IP address (cf. chapter "Integrate UMG 604 / 605" or "Integrate UMG 508 / 511")

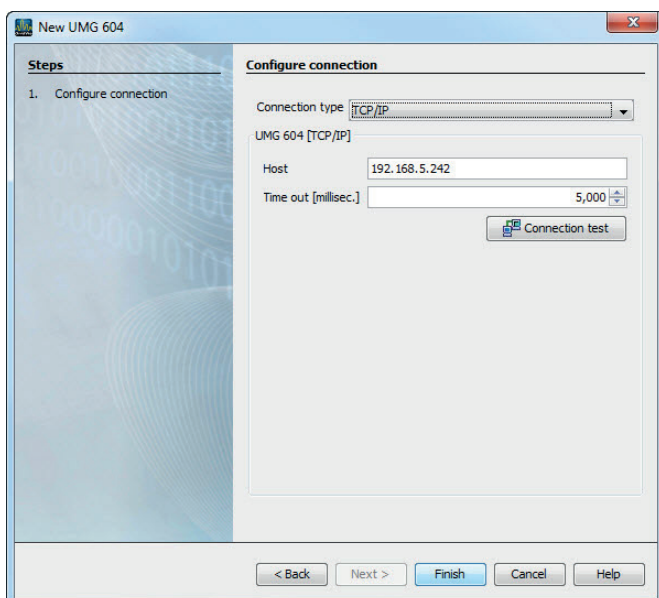


Fig.: Configure device integration

- Carry out a connection test after entering the device IP address. If the connection with the UMG has been established then device information - such as the serial number for example - will be displayed. The device can now be used and configured within the software.

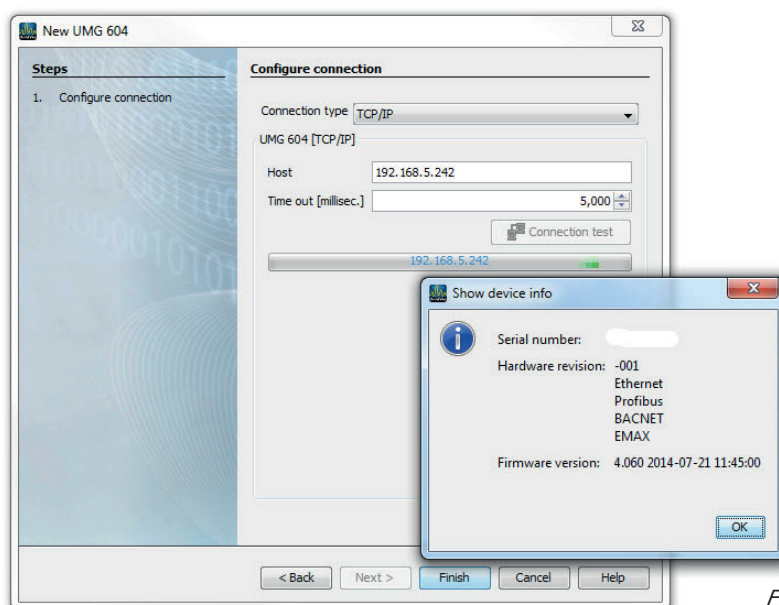


Fig: Successful connection test for device

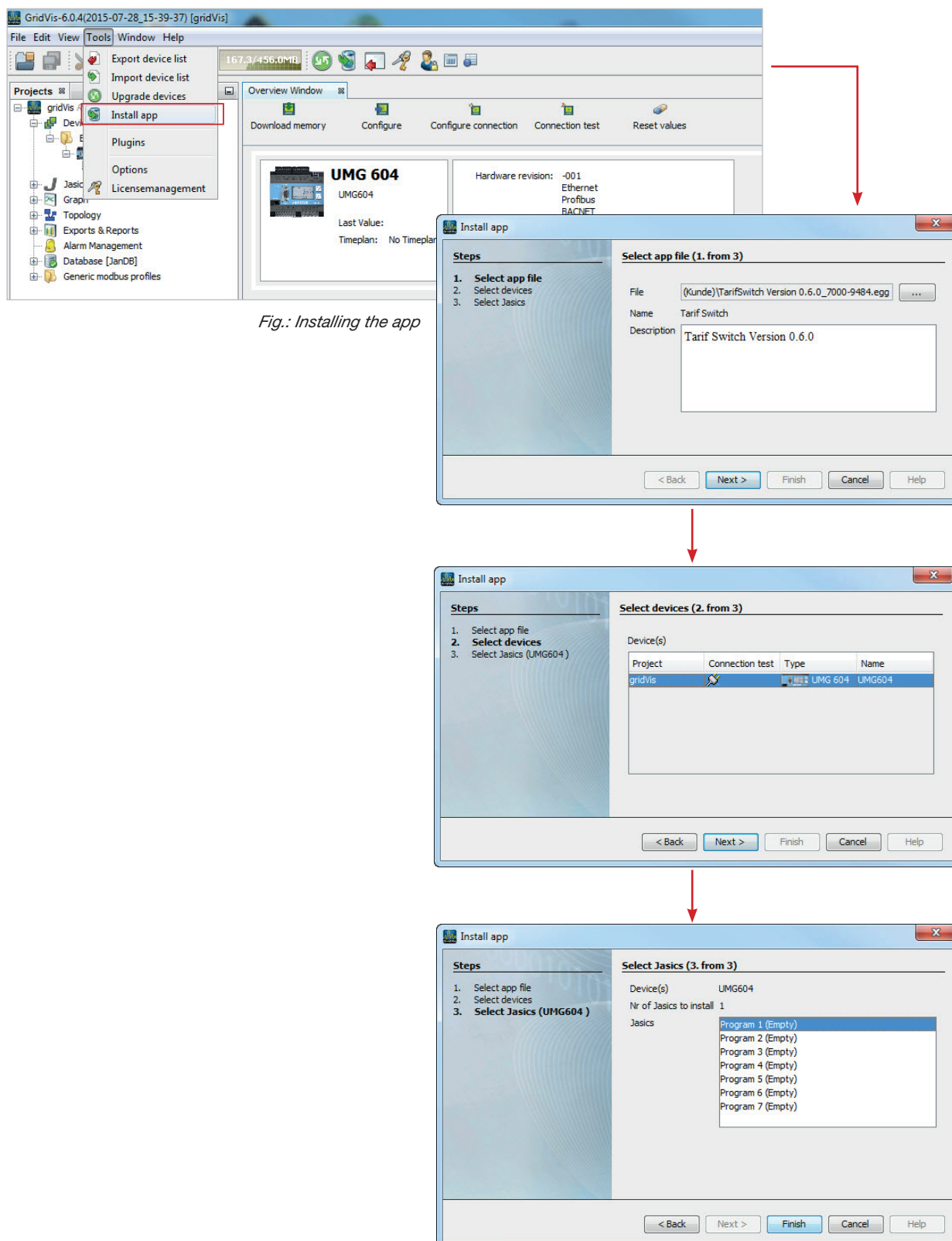


Further information on using the GridVis software can be found in the internet at:

<https://wiki.janitza.de/display/GRIDVIS70EN/GridVis-Documentation+7.0>

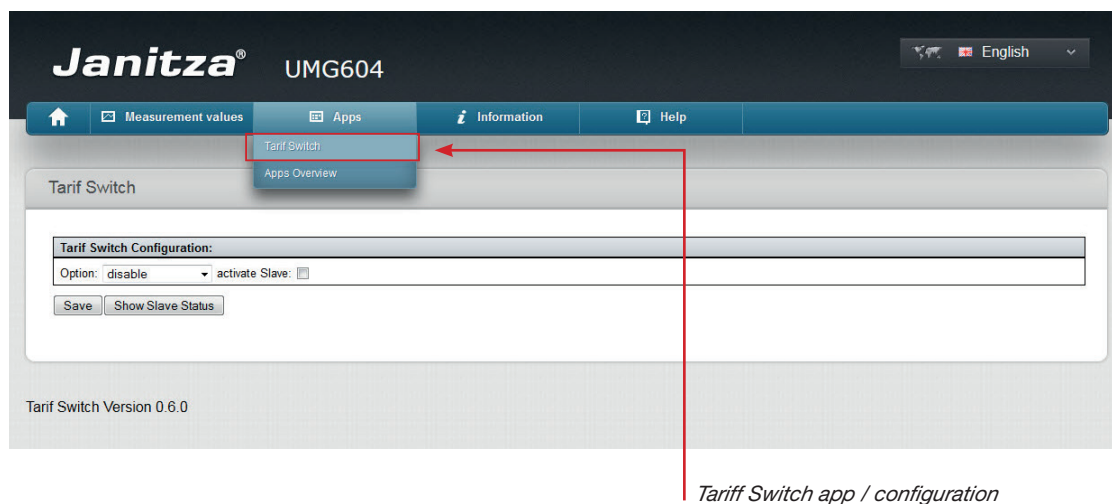
Installing the “Tariff Switch” app

- To install the app, launch the GridVis software. Click on “Tools / Install app” and use the “...” button to select the app. Then select the master device that is connected to GridVis for installation and select a program location.



Configuring the "Tariff Switch" app

- Enter the IP address for the Power Analyser into the address bar of the web browser (Windows Internet Explorer, Firefox etc.). As soon as a connection has been established with the Power Analyser, the web server of the device appears.
- Start the app configuration by selecting the "Configuration" menu and then "Tariff Switch".



Selecting options

Disable	The "Tariff Switch" application is disabled
Digital input 1	Tariffs are switched via digital input 1
Digital input 2	Tariffs are switched via digital input 2
Modbus-address	Tariffs are switched via Modbus register address #20000
Time	Tariffs are switched using the time control

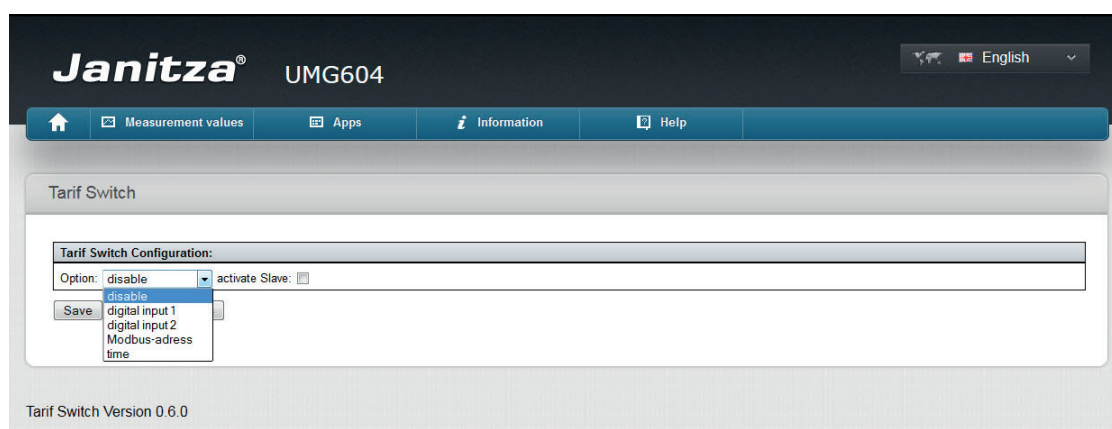


Fig.: Option selection and slave control in the "Tariff Switch" app

Selecting options: Digital input 1 or 2

- When you select the "Digital input 1" or "Digital input 2" option, you must set the configuration for digital input switching.
 - You can switch between tariff 1 and tariff 2 when controlling via the digital inputs.
 - Choose between the "High signal tariff 1 - low signal tariff 2" and the "high signal tariff 2 - low signal tariff 1" options.
 - Choose "Save" to complete configuration.

The screenshot shows the 'Tarif Switch' configuration page for the Janitza UMG604 device. The 'Option' is set to 'digital input 1' and 'activate Slave' is unchecked. The 'digital Input 1' dropdown is set to 'high Signal tariff 1 - low Signal tariff 2'. Below this, there are two buttons: 'Save' and 'Show high Signal tariff 2 - low Signal tariff 1'. The version 'Tarif Switch Version 0.6.0' is displayed at the bottom.

Selecting options: Modbus address

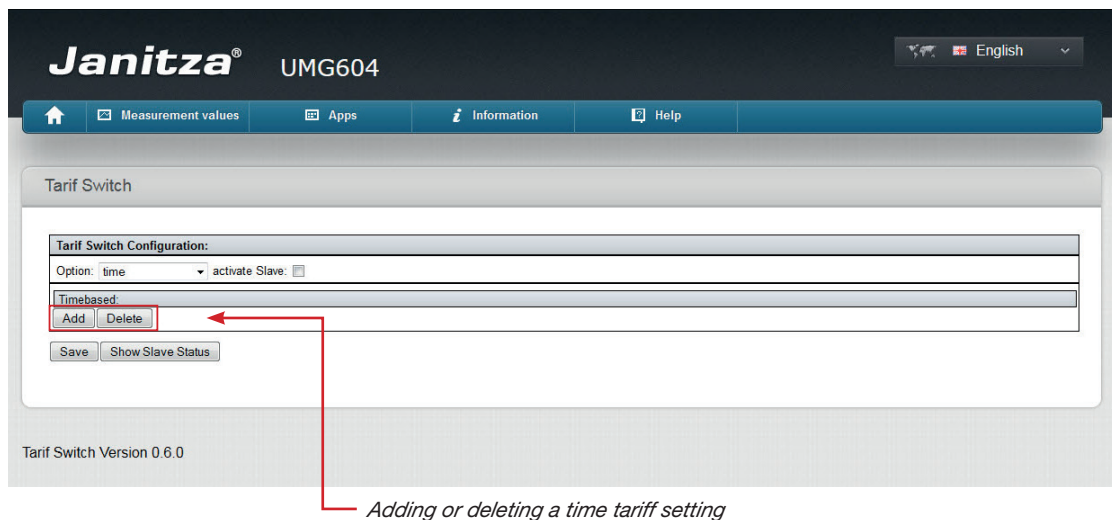
- If you select the "Modbus address" option, you must set the switch values for register address 20000.
 - For each tariff, specify a value at which the appropriate tariff is to be activated.
 - The specified value must be sent to Modbus address 20000 to ensure that the tariff is switched.
 - Choose "Save" to complete configuration.

The screenshot shows the 'Tarif Switch' configuration page for the Janitza UMG604 device. The 'Option' is set to 'Modbus-address' and 'activate Slave' is unchecked. Under 'Configuration Modbus #Reg20000', there are four input fields for Tariff 1, Tariff 2, Tariff 3, and Tariff 4. The values entered are 158, 1564, 2, and 32 respectively. Below these fields are 'Save' and 'Show Slave Status' buttons. The version 'Tarif Switch Version 0.6.0' is displayed at the bottom.

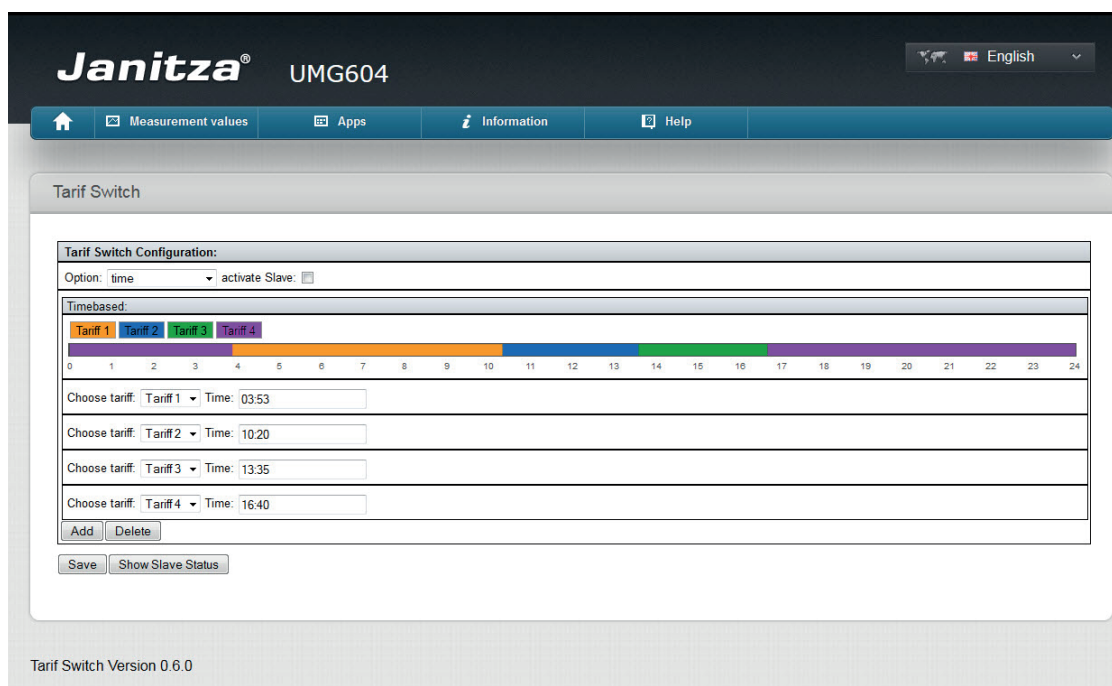
Example: Sending the value 1564 to Modbus address 20000 activates tariff 2. Value 32 on Modbus address 20000 activates tariff 4.

Selecting options: Time

- If you select the "Time" option, the tariffs can be switched by entering a time.
 - Choose "Add" to create a switch for the desired tariff and set the switching time.



- A tariff and a time must be set for each switch.
- Switches that are set are marked in the time bar.
- Choose "Delete" to delete the last switch.



Example: Tariff 1 starts at 03:54 and ends at 10:20; tariff 2 is active from 10:21 to 13:35; tariff 3 starts at 13:36 and ends at 16:39, and tariff 4 is active from 16:40 to 03:53.

- Choose "Save" to complete configuration.

Activate slave control

- Set the corresponding option indicator for one of the desired controllers for the slave devices. Up to 31 slave devices (UMG 103, 104, 604, 605, 508, 511 and UMG96RM) can be connected.
- The slave devices must be configured when slave control is activated. To do this, specify the number of slave devices — these are then triggered starting with device address 1.
- Choose “Save” to complete configuration.

Janitza® UMG604

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Tarif Switch

Tarif Switch Configuration:

Option: digital input 1 | activate Slave: ☒ | digital Input 1: high Signal tariff 1 - low Signal tariff 2

Configuration for Slave Devices:

Number of Slave Devices: 3

Save | Show Slave Status

Tarif Switch Version 0.6.0

Activate slave control option

Specify the number of slave devices

Example: Slave control is activated and the 3 slave devices are set up. The slave devices are triggered using device address 1, 2 and 3.

Status of the slave devices

- Choose “Display slave status” to call the status display for the slave devices.
- The overview of slave devices informs you of the type and availability for the devices.

Colour information

Green	The last tariff that was sent has been sent to the slave device successfully.
Yellow	Slave device is available but does not support the last tariff that was sent.
Red	The last tariff that was sent could not be sent to the slave device.

Janitza® UMG604

Measurement values | Apps | Information | Help

Tarif Switch

Tarif Switch Configuration:

Slave Address: 1 | ■ | Type: UMG 103

Slave Address: 2 | ■ | Type: UMG 104

Configsite

Tarif Switch Version 0.6.0

Fig.: Status of the integrated slave devices

