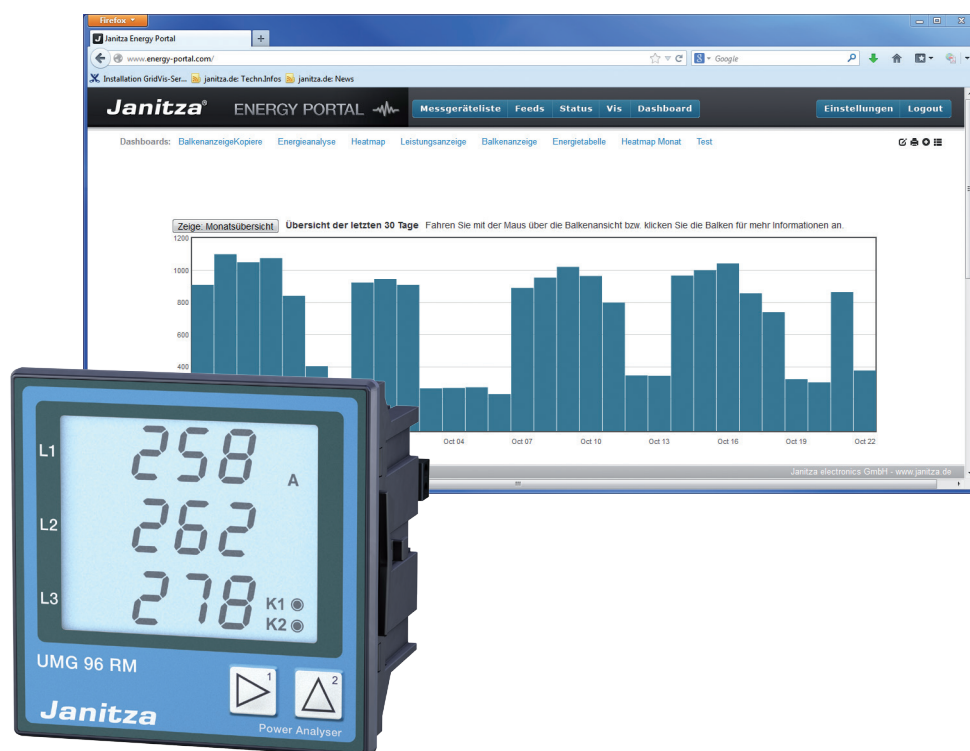


Functional description

Push Service

für das UMG 96RM-EL



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Introduction

Copyright

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Trademarks

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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

"Push Service" UMG96RM-EL

"Push service" function

With effect from firmware version 1.16, UMG96RM-EL devices support push technology for the transfer of measured values to the Energy Portal. The measured values for selection can be selected using the "*UMG96RM-EL Push Service Configuration*" program.

The current 200 ms measured values are averaged at 10 minute intervals and stored temporarily with the date and time in the device's RAM. The measured values are then transferred to the Energy Portal according to the transmission interval.

Please note that the data cannot be read out with GridVis and that data are stored in the RAM memory for a maximum of one day only. In the event that the device's auxiliary power supply fails, data that have not yet been transferred will be deleted from the device. The UMG96RM-EL does not have an internal clock and is therefore assigned to an NTP server.

In the event that the internet connection to the Energy Portal fails, the data for 25 measured values will be stored temporarily for one day. Should the internet connection not be restored after one day, gaps in the data in the Energy Portal are possible.

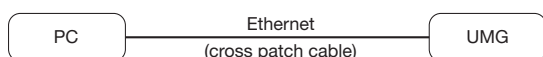
Important features

- A maximum of 25 measured values can be transferred
- Both an NTP server and DNS server are required
- Data are encoded and transferred to the Portal via port 80
- The averaging interval is set to 10 minutes and cannot be changed
- Measured values from the volatile memory (RAM) cannot be read out with GridVis.
- Failure of the auxiliary voltage will cause data loss of measured values that have not yet been transferred
- The measured values can be stored temporarily for a maximum of one day, irrespective of whether 1 measured value or 25 measured values have been selected.
- The device time is synchronised with an NTP server every 64 seconds
- All measuring devices transfer measured values with a time delay of X

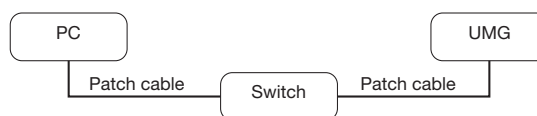
Integrating the power analyser into GridVis

To integrate the power analyser into the GridVis analysis and configuration software, an ethernet connection must be established to the device, and the device TCP/IP address must be determined.

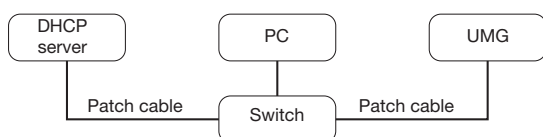
- Establish a connection between a PC and the device, either by direct connection or via a switch/router (see example connection topologies). We recommend using CAT5 cables.
- Determine which addressing mode to use ("Static IP" or "DHCP") and select it. If you have chosen "Static IP" mode, enter the device's TCP/IP address.



*Fig. Example connection topology:
direct connection between UMG and PC.
Both devices require a static IP address.*



*Fig. Example connection topology:
established using a switch. The UMG and
PC require a static IP address.*



*Fig. Example connection topology:
integration into a network with DHCP server.
The UMG and PC are assigned an IP address
automatically by a DHCP server.*

Static IP address

In simple networks with no DHCP server, the network address must be set right on the device itself.

When making a direct connection from a PC to the UMG, please note the following:

- Use a cross patch cable
- The first three segments of the IP address and the computer should be the same. The last segment must be different! All four blocks of the subnet mask must match.

Example:

IP address of the computer: 192.168.000.020 with subnet mask: 255.255.255.0

IP address of the UMG: 192.168.000.021 with subnet mask: 255.255.255.0



Please note

Connection of the UMG to an existing ethernet may only be carried out after consulting the network administrator!

Dynamic IP address assignment (DHCP mode)

DHCP makes it possible integrate a UMG into an existing network automatically without the need for any additional configuration. When started, the UMG automatically obtains the IP address, the subnet mask and the gateway from the DHCP server.

Setting a static IP address manually

- Switch to programming mode. To do so, press buttons 1 and 2 at the same time and hold for approx. 1 second. With the password prompt deactivated, programming mode is then started, and the label "PRG" is displayed.
- Pressing the 2 button three times takes you to the TCP/IP settings for device addressing.
- Select the desired digit using the 1 button. Selection is indicated by the digit flashing. The selected digit can be adjusted with the 2 button.
- Use the 1 button to select the next digit and set it with the 2 button again.
- Once Byte 0 of the TCP/IP address is set, Bytes 1 to 3 of the address can be set with the 1 button. Then the display jumps back to Byte 0 (**none** of the digits are flashing).

Example display when setting an IP address

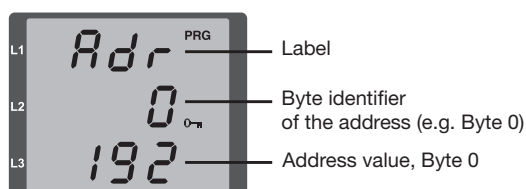


Fig. TCP/IP address, Byte 1
A TCP/IP address consists of 4 Bytes with the following structure:



Example: 192.168.000.021



*Fig. TCP/IP address
Byte 2, value 000*



*Fig. TCP/IP address
Byte 3, value 021*

Once the TCP/IP address is set on the device, the subnet mask (SUB) and the gateway address (GAT) must be set:

- Setting the subnet mask manually (SUB on display):
In programming mode, the 2 button takes you to the subnet mask settings (SUB on the display). Use the 1 button to select the desired digit and set it with the 2 button. Repeat this step for every digit in Byte 0 to 3, the same as when setting the device's TCP/IP address. Once the display returns to Byte 0 (none of the digits flashing) you can set the gateway.

- Setting the gateway address manually (GAt on display):

In programming mode, the 2 button takes you to the gateway address settings (GAt on the display). Use the 1 and 2 buttons to set the desired gateway address in Byte 0 to 3, in the same way as the above descriptions.

In order that the manual settings for device TCP/IP address, subnet mask and gateway address cannot be overwritten by a DHCP server, dynamic IP address assignment must be deactivated (dYN IP, oFF)!

Dynamic IP address assignment (dyn)

- Switch to programming mode. To do so, press buttons 1 and 2 at the same time and hold for approx. 1 second. With the password prompt deactivated, programming mode is then started, and the label "PRG" is displayed.
- Switch through the screens to display dynamic IP address assignment (dYN IP) by pressing the 2 button multiple times.
- Use the 1 button to activate the "on" or "oFF" parameter (parameter flashes).
on = Dynamic IP address assignment activated
off = Dynamic IP address assignment deactivated
- Use the 2 button to change the parameter and confirm with the 1 button. Quit programming mode or wait for around 60 seconds.
- The addresses can be viewed in programming mode in the same way as the manual settings.

Example display when setting an IP address

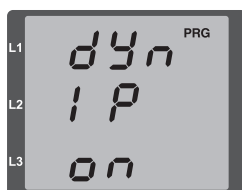


Fig. Dynamic assignment (dYN IP) of the TCP/IP address activated

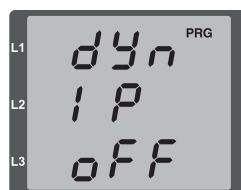


Fig. Dynamic assignment (dYN IP) of the TCP/IP address deactivated



When the key symbol is displayed next to the IP address, dynamic IP address assignment is activated. The device/gateway address and subnet mask are provided by the DHCP server and applied automatically!



Changes are only applied after exiting programming mode.



The addresses can be viewed in programming mode in the same way as the manual settings.

Setting the IP address of the computer for direction connection

Normally PCs on company networks are run with DHCP activated. If you want to assign a static IP address to the PC (e.g. for a direct connection between PC and UMG) proceed as follows:



Please note

The settings on a company network may differ from this.



Please note

Connection of the UMG to an existing ethernet may only be carried out after consulting the network administrator!

- Open the Network and Sharing Center in the Control Panel.
- Click on LAN Connection to open the status window (Fig. Network and Sharing Center).
- By clicking on Properties you can assign a static IP address to the PC (see Fig. Procedure for defining a static IP address in Windows 7)

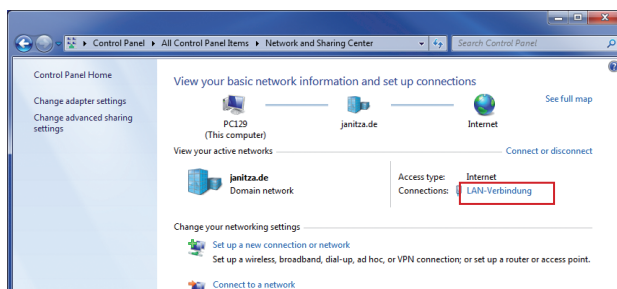


Fig.: Network and Sharing Center

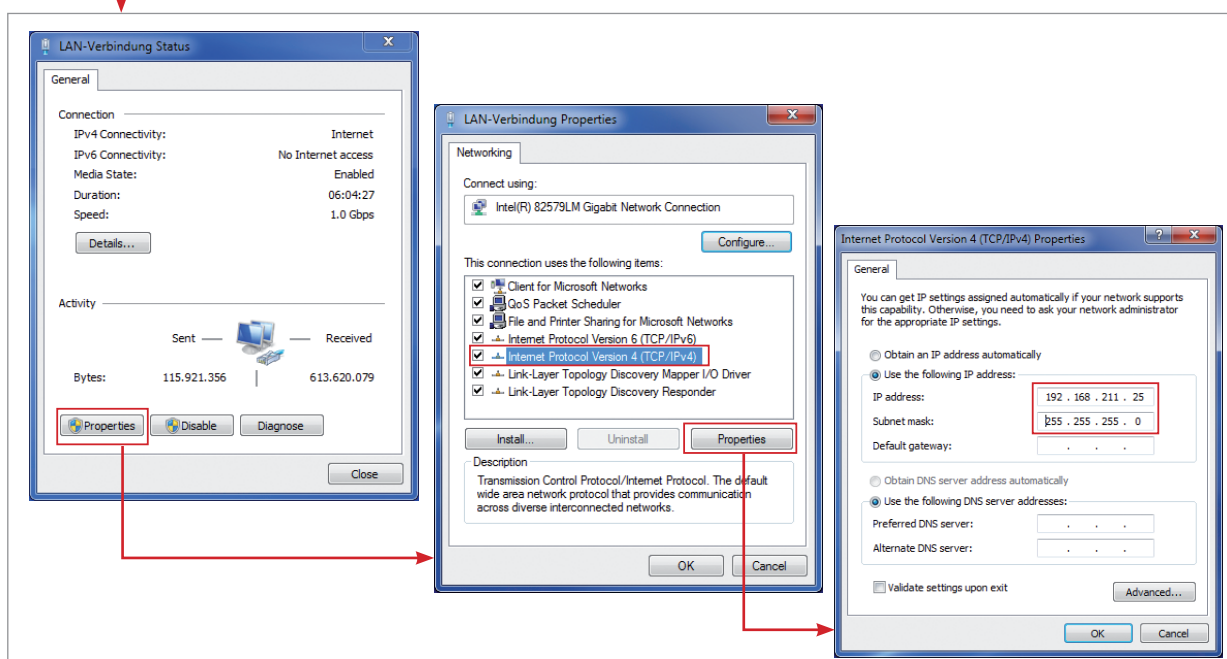


Fig.: Procedure for defining a static IP address in Windows 7.

"Push service" configuration

No GridVis software is required to configure the push service during commissioning. The push service can be configured in an applet. All parameters relevant to the push service can be set in this program. No special installation is required for this program. Simply unzip the ZIP file to a folder and open the EXE file.

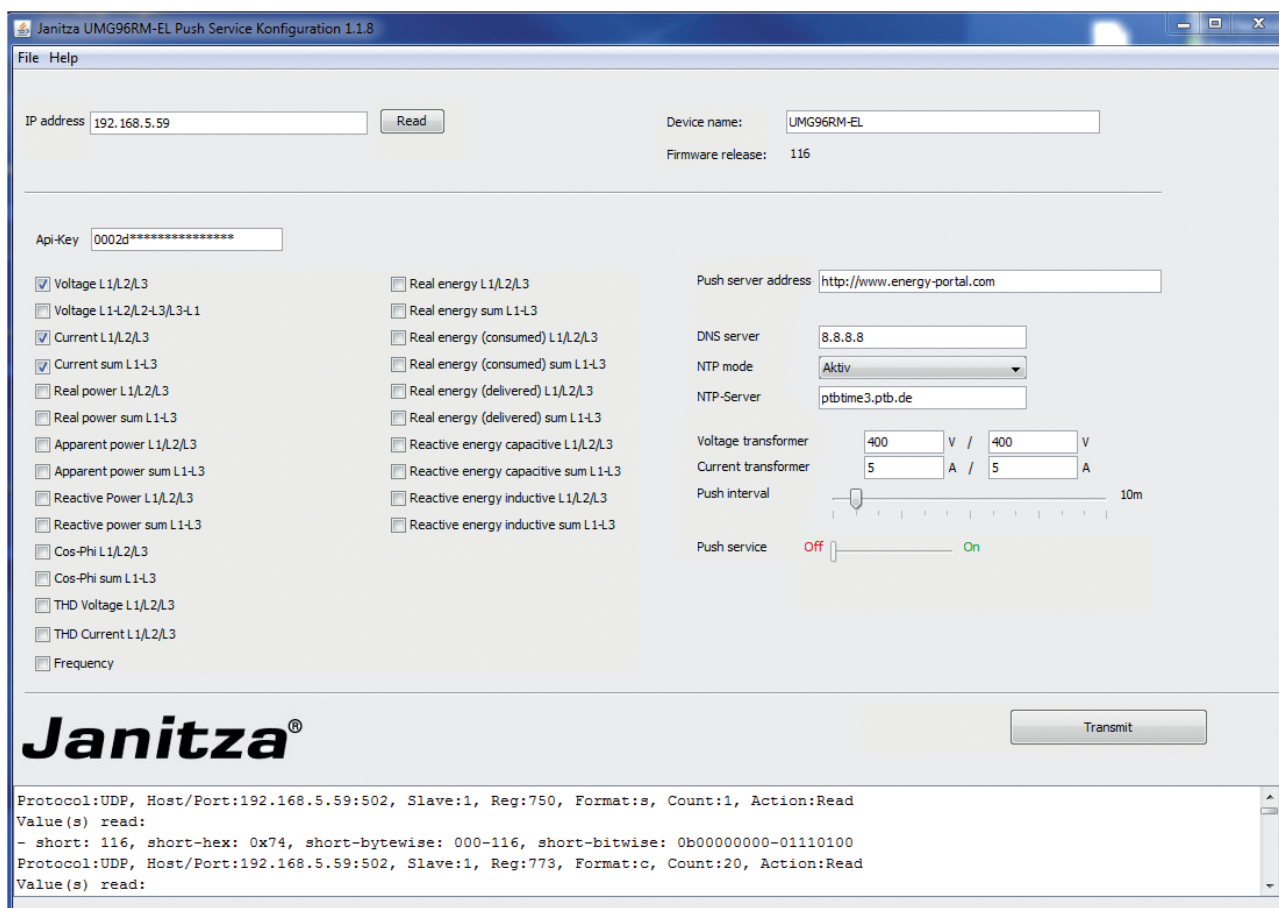


Fig.: "Push service" configuration program

Procedure:

The UMG96RM-EL must be connected via Ethernet. Enter the device's IP address in the "IP Address" field. The device is then read out by clicking on the "OK" button.

Please note that this program is not suitable for network installation and must be run on a local computer.

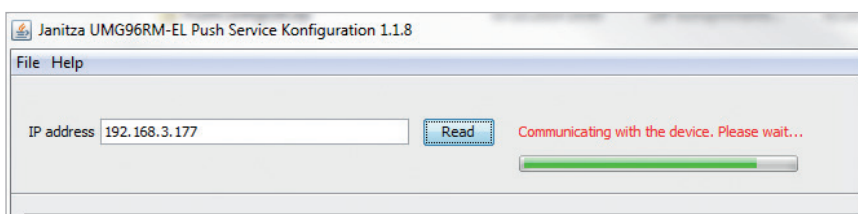


Fig.: Device IP address entry in the configuration program

Port 502 must not be blocked by a firewall. After reading out the device, the current configuration is displayed in the program.

The UMG96RM-EL transfers the measured values to the Energy Portal via port 80. The Portal can detect the Energy Portal account to which the measured values belong by means of a key, further referred to as an API-key. You can find your personal API-key in the "Settings" menu in the Energy Portal.



Fig.: API-key entry in the Energy Portal

Copy this API-key and enter it into the "API-key" field in the configuration program.

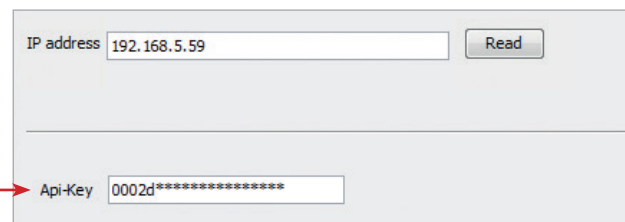


Fig.: API-key entry in the configuration program

The measured values that are to be transferred to the Portal can be selected simply by clicking on them. A maximum of 25 measured values can be selected.

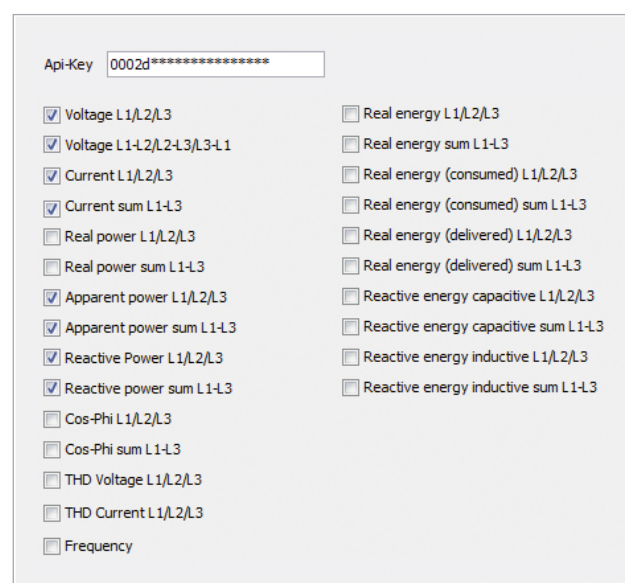


Fig.: Selection of measured values in the configuration program

The basic settings can be found on the right-hand side of the configuration program.

Assign a unique name to the device. This device name will be displayed in the Energy Portal.

The device name must not exceed 20 characters and must not contain any special characters.

The push server address is set to <http://www.energy-portal.com> by default and must not be changed.

If the program is started when no DNS (name server) has been set, a name server from the internet (Google NameServer) will be entered by default. The name server is required as the UMG96RM-EL must resolve the push server address and NTP server address to an IP address. If your network possess its own DNS server, you can of course use this.

The UMG96RM-EL does not have an internal clock and instead uses a timer that is synchronised with an NTP server. If your network possess its own NTP server, you can set it in the NTP field or use a public NTP server such as ptbtime3.ptb.de.

Finally, you must set the converter data, if this has not already been done on the device itself. Transmission intervals of min. 10 minutes can be selected. Values of less than 10 minutes will not be applied. The push service can also be activated and deactivated by means of a slider.

After transferring the configuration, the device will perform a restart. The push service will transfer the first measured values to the Portal after 20 minutes. The device will then be displayed in the list of measuring devices and measuring device status.

Fig.: "Push service" configuration

Janitza ENERGY-PORTAL								Metering Point	Devices	Dashboards	
Devices Status											
Serialnumber	Description	last announcement	Last Value	E-Mail Warning	E-Mail warning Time hh:mm:ss	Special Timezone	Edit	delete			
24002332	UMG96RM-EL	2 sec	_ULN2	x	01:00:00						

Fig.: List of measuring devices in the "Energy Portal"

Troubleshooting

In the event that the device is not displayed in the Energy Portal after a period of 20 minutes, please check the following:

- That the device is connected to the internet. That port 80 is not blocked.
- That the DNS server is available and that the device is able to resolve the names to an IP address. Check that the DNS server is available (UDP port 53).

In the event that the measured values are displayed in the Portal with an incorrect time:

- Check that the NTP server is available (UDP port 123).

In the event of connection errors, have the aforementioned items checked by your IT department. If your IT department concludes that the aforementioned ports are enabled and that communication is still not possible, a Wireshark capture must be performed in order to log the Ethernet packages either directly upstream of the device or upstream of the upstream switch. We would be happy to offer assistance in evaluating the capture.

The push service of the UMG96RM-EL has undergone several months of rigorous testing. Nevertheless, errors cannot be ruled out in their entirety, although experience has shown that connection errors can usually be attributed to incorrect port enabling or incorrect configuration.