

# HWg-PWR MANUAL



## Package contents

A complete shipment contains the following items:

- HWg-PWR unit
- Printed manual + datasheet

## Safety information

The device complies with regulations and industrial standards in force in the Czech Republic and the European Union. The device has been tested and is supplied in working order. To keep the device in this condition, it is necessary to adhere to the following safety and maintenance instructions.

**HWg-PWR connects directly to a 230VAC supply; therefore, it should be installed by qualified personnel only!**

**Using the device in a manner other than prescribed by the manufacturer may cause its safeguards to fail!**

**The power supply outlet or disconnection point must be freely accessible.**

**The device must not be used under any of the following conditions:**

- The device is noticeably damaged
- The device does not function properly
- Unfastened parts can move inside the device
- The device has been exposed to moisture or rain
- The device has been serviced by unauthorized personnel
- The power adapter or power supply cable are noticeably damaged
- If the device is used in a manner other than designed for, the protection provided by the device may fail.
- The electrical system must include a power switch or a circuit breaker and overcurrent protection.

If you have any problems with installing or operating the device, you may contact technical support:

**HW group s.r.o.**

<http://www.hw-group.com>

Email: [support@HWg.cz](mailto:support@HWg.cz)

U Pily 3

143 00 Praha 4

Tel. +420 222 511 918

When contacting technical support, please note the exact type of your device (at the type plate) and, if possible, the firmware version.

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## What is HWg-PWR

HWg-PWR is an Ethernet-enabled device for remote monitoring and metering of electricity, heat, water or gas consumption using electricity, water, gas, heat, or other meters equipped with the M-Bus interface. In addition to metering, the device also supports alarming through e-mail or SNMP traps whenever allowed values are exceeded.

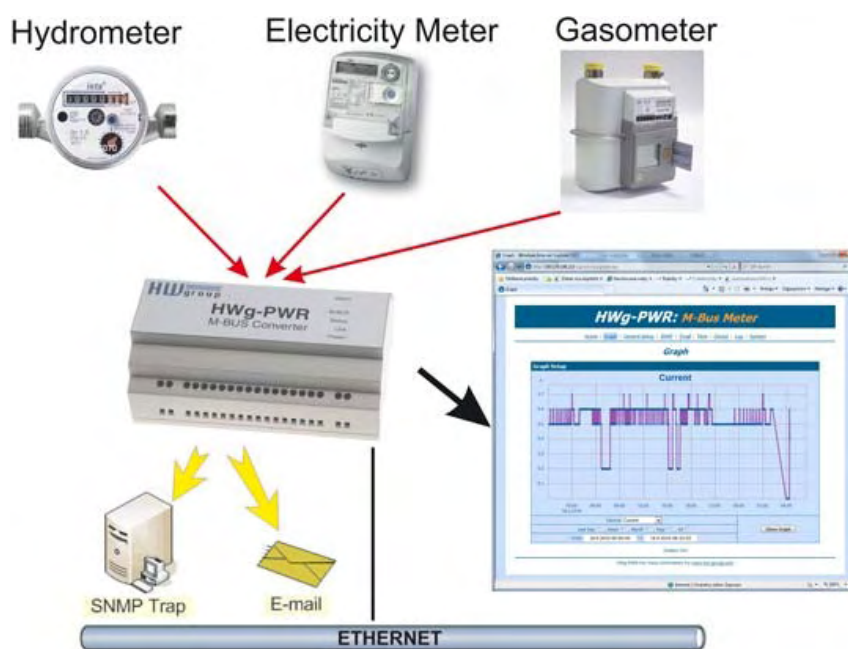
HWg-PWR is designed for remote reading of values from meters equipped with the M-Bus interface. Each meter can provide multiple variables, depending on the meter type and model. Typically, electricity meters provide the total electricity consumption and also the immediate value at the time of reading, line voltage and/or line current; water meters indicate total water consumption as well as immediate consumption or liquid flow rate; and so on.

**Note:** HWg-PWR is designed to be universal; hence, all discovered values are read out from every connected meter, until a specified limit is reached. To improve user comfort, it is possible to enable or disable each discovered value (disabled value is hidden from view), and to turn on or off the recording of measured readings for each enabled value (in order to increase the available recording time for the remaining values).

The M-Bus protocol allows to read value names, units, or tariff information from the meters. The user can customize all of these data (e.g. change the unit of measurement or its multiplier).

## Usage examples

- Remote monitoring of electricity meters in small server rooms and BTS
- Monitoring of energy consumption in rented premises
- Reading out energy consumption in remote or inaccessible areas
- Control over energy costs
- Checking for individual line overloads in three-phase wirings
- Checking for undervoltage in electric wirings
- Monitoring the flow of liquids



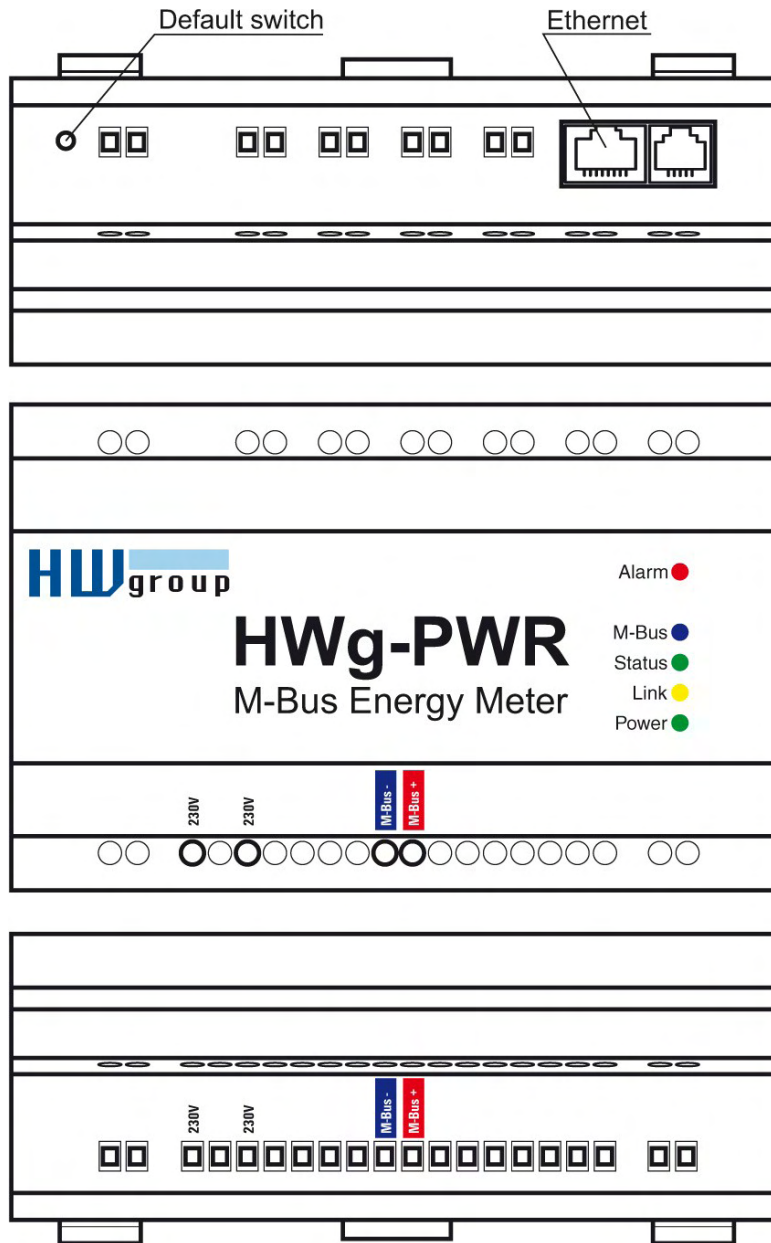
## Basic HWg-PWR features

- **Ethernet:** RJ45 (10BASE-T)
- **WEB:** Embedded WEB server / GUI
- Works with up to three M-BUS meters (electricity, gas, ...)
- Unlimited number of measured variables\*
  - Instantaneous power input
  - Total consumption
  - Line voltage
  - Line current
  - Flow speed
  - etc.
- Works with up to 30 values (this limit is independent from the number of meters)
- Automatic detection of meters and supported values
- Support for certified and calibrated meters
- Support for single-phase and polyphase electricity meters
- Support for single-tariff and multi-tariff meters
- **Logging of measured values** with the option to **plot graphs**
- Configuration of allowed ranges for measured values
- Independent counters for periodic consumption readouts (daily, weekly, monthly, annually, ...)
- Configuration of the unit of measurement and its exponent
- **Periodic e-mailing of measured values** over HTTP and by e-mail
- **DIN rail mount** with a power supply for M-BUS
- **M2M communication protocols:** SNMP, XML, Modbus/TCP
- **Response to thresholds:** SNMP trap, Email
- **Support for programmers:** [HWg SDK](#)
- **Supported software**
  - **HWg-PD Trigger:** Control of other IP devices, alert redirection to SMS
  - **HWg-PDMS:** Logging, export to MS Excel
  - **[Third-party SNMP software](#)**  
(HP OpenView, IBM Tivoli, Nagios, Zabbix, Monitor one, The Dude, Paessler IPCheck, Ipswitch WhatsUp, Axence nVision, CBR little:eye, LoriotPro, GFi NSM, SNMPc 7, CA NSM, ActiveXperts NM, Intellipool NM, MSC Operations Manager 2007)

\* Displayed variables depend on the actual meter



## Description of connectors and connections



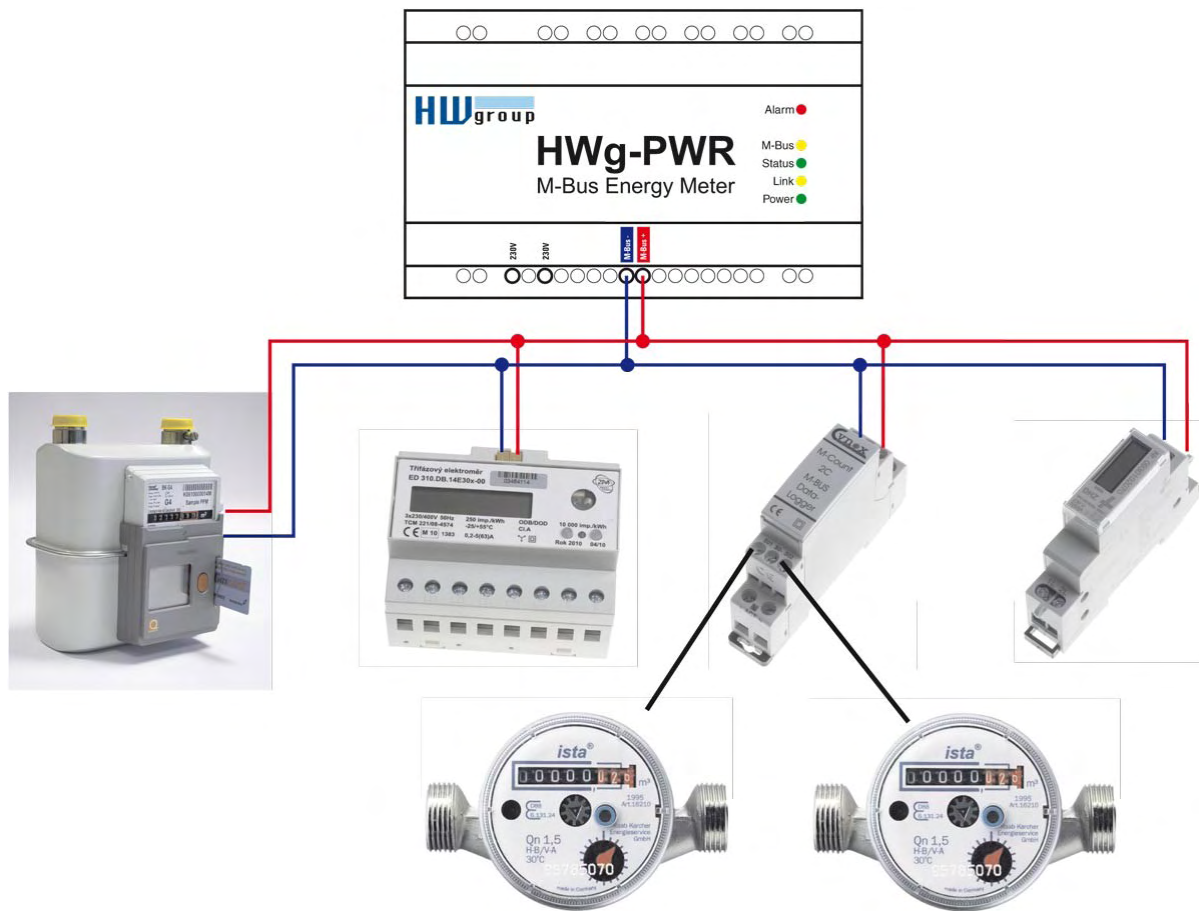
### LED indicators

- Power (green) – lights up when the device is powered.
- Alarm (red) – lights up whenever a monitored variable is in alarm.
- M-Bus (blue) – flashes whenever M-Bus communication takes place.
- Status (green) – HWg-PWR status
  - Solid on – HWg-PWR is in regular operation
  - Slowly flashing – HWg-PWR is starting up
  - Rapid flashing – firmware is being uploaded
- Link (amber) – flashing indicates activity on the Ethernet interface.

### Restoring factory defaults

Press and hold the Default Switch button, connect power, and hold the button pressed for 10 more seconds. HWg-PWR resets itself to factory defaults. Be careful when working with HWg-PWR in a distribution box.

## Connecting meters to HWg-PWR





## Technical specifications

Ethernet port	
+ Interface	RJ45 (10BASE-T / 100BASE-Tx)
+ Compatibility	Ethernet: Version 2.0/IEEE 802.3
+ Supported protocols	IP: ARP, TCP/IP (HTTP, SMTP), UDP/IP (SNMP, SNMP Traps, DHCP, SNTP)
+ SNMP	Ver:1.00 compatible, partial ver. 2.0 implementation
M-Bus	
+ Bus rating	30-40V / max. 40mA
Environment	
+ Operating / storage temperature	-5 to +50 °C (+23 to +122 °F) / -5 to +75 °C (+23 to +167 °F)
+ Relative humidity (non-condensing)	5 to 95 %
LED indicators	
+ POWER (green)	lights up when the device is powered
+ LINK (red)	flashes whenever communication takes place over the Ethernet interface
+ Status (red)	HWg-PWR status: <ul style="list-style-type: none"> <li>- Solid on – HWg-PWR is in regular operation</li> <li>- Slowly flashing – HWg-PWR is starting up</li> <li>- Rapidly flashing – firmware is being uploaded</li> </ul>
+ Alarm (red)	lights up whenever a monitored variable is in alarm
+ M-Bus (amber)	flashes whenever communication takes place over M-Bus
Buttons	
+ Default switch	When depressed at power up, resets the device to factory defaults
Miscellaneous	
+ Supply voltage	230 V/ 10VA; terminal block
+ Dimensions	143 x 90 x 57 [mm]
+ Fixing	DIN rail; device is intended for installation into a distribution box
+ Mass	390 g



## First steps

### 1) Connecting the cables

**HWg-PWR connects directly to a 230VAC supply; therefore, it should be installed by qualified personnel only!**

- Connect the unit to the Ethernet (a patch cable to a switch, or a cross-over cable to a PC).
- Connect the M-Bus with meters. Pay attention to the polarity!
- Connect HWg-PWR to the electrical network.
- The green Power LED lights up.
- If the Ethernet connection works properly, the LINK (amber) LED lights up after a short while, and then flashes whenever data transfer takes place (activity indication).
- After power up, the amber LINK LED flashes rapidly to indicate IP address negotiation over DHCP.
- The green M-Bus LED indicates communication over the M-Bus.

### 2) Configuring the IP address – UDP Config

**UDP Config** utility – root directory of the supplied CD (Windows and Linux versions).

Available for download at [www.HW-group.com](http://www.HW-group.com), Software > UDP Config.

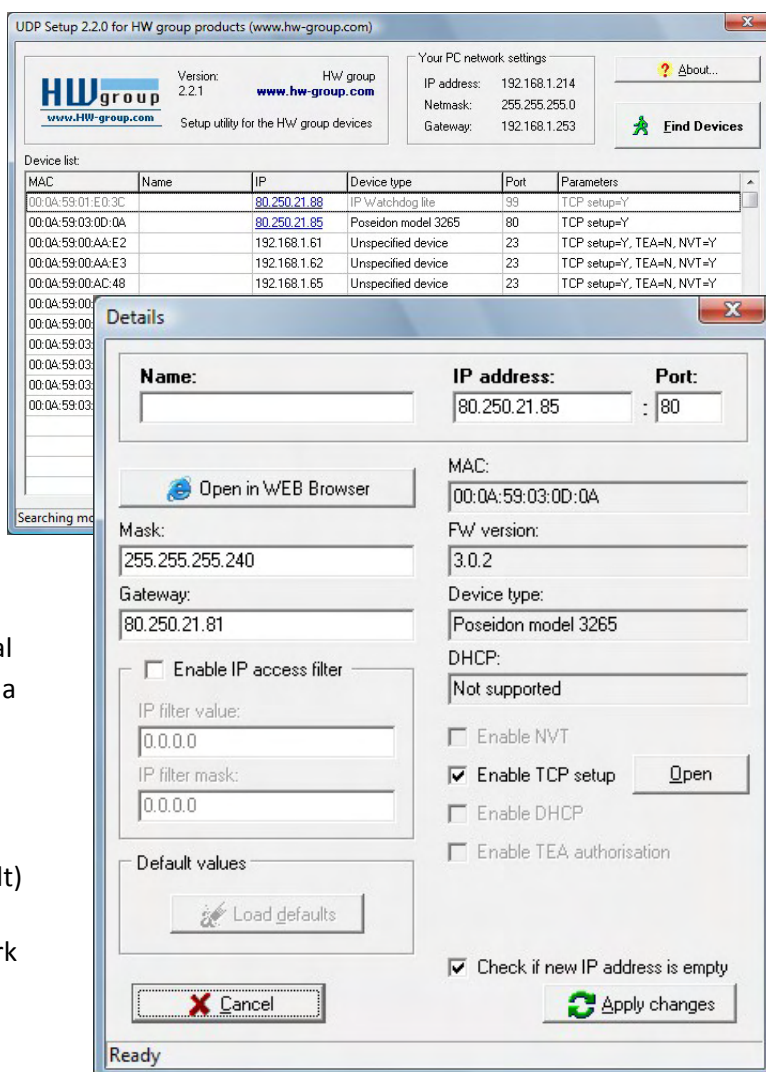
- Click the icon to launch UDP Config. The program automatically looks for connected devices.
- To search for devices, click the Find Devices icon.

The program searches for devices on your local network. Double-click a MAC address to open a basic device configuration dialog.

#### Configure the network parameters

- IP address / HTTP port (80 by default)
- Network mask
- Gateway IP address for your network
- Device name (optional)

Click the **Apply Changes** button to save the settings.



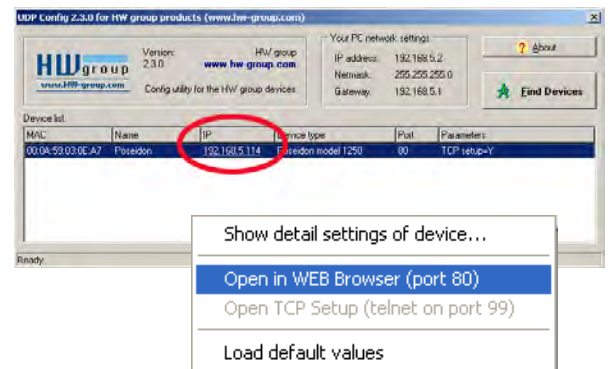
### Restoring factory defaults

- Right-click a device MAC address. Within 60 seconds after powering up the unit, factory defaults can be restored using UDP Config.
- Disconnect the power jack, connect the jumper near the RJ11 sockets, power up the device and wait for 15 seconds. Then, disconnect the power and disconnect the jumper. The device is ready in its factory default configuration.

### 3) WWW interface of the device

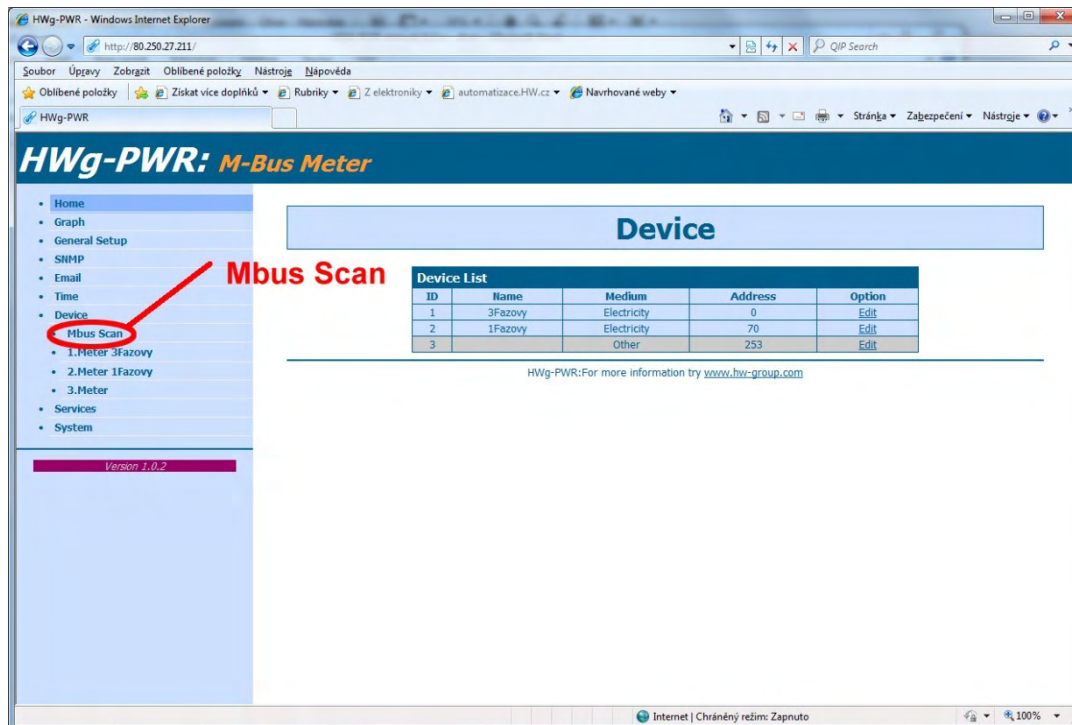
To open the WWW interface of the device:

- Enter the IP address into a web browser
- Click the IP address in UDP Config
- Click the underlined IP address in UDP SETUP



## Adding connected meters and measured values

Start the WWW interface of HWg-PWR and go to the *Device* menu. The list of detected meters is empty. Individual meters are always added to HWg-PWR manually. A tool for automatic discovery of meter addresses is also available in the *Mbus Scan* submenu (only finds meter addresses, does not add them to the system):



### Automatic discovery of meters:

1. At the *Device Base Parameters* page, fill in the *M-Bus Scan* section:

The screenshot shows the HWg-PWR: M-Bus Meter web interface. The title bar indicates the browser is Windows Internet Explorer at the URL http://80.250.27.211/. The page has a sidebar menu on the left with options like Home, Graph, General Setup, SNMP, Email, Time, Device, Mbus Scan, 1.Meter 3fázový, 2.Meter 1fázový, 3.Meter, Services, and System. The main content area is titled "Device Base Parameters" and contains three sections:

**Base Information**

Name	Value
Device Name	HWg-PWR Doma
Time	14:01:51
Date	09.07.2010

**M-Bus Scan**

Name	Value
Address	From: 0 To: 252
Serial Baudrate	2400
Serial Parity	Even

Below the M-Bus Scan table is a "Scan" button.

**M-Bus Scan Status**

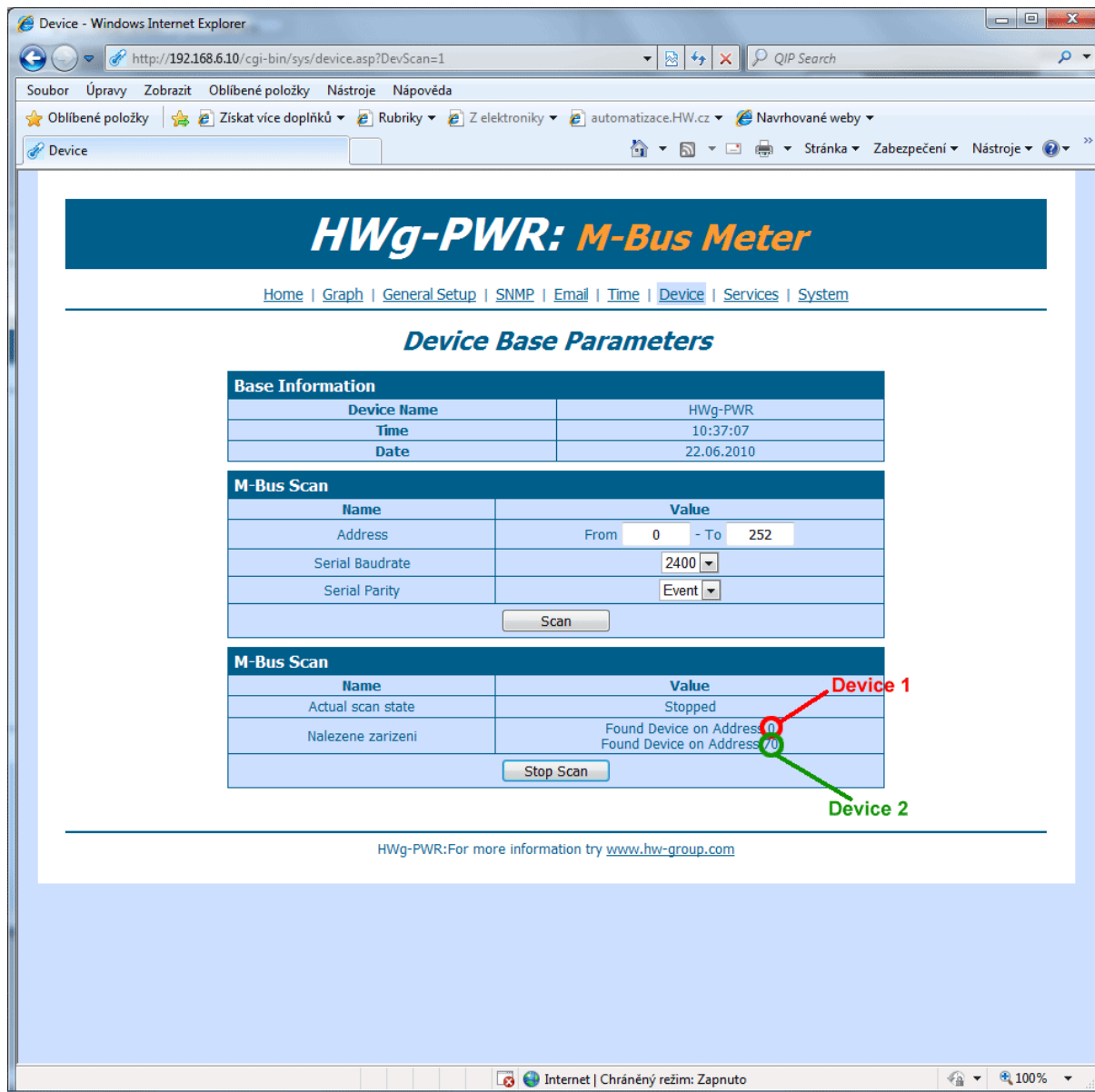
Name	Value
Actual scan state	Stopped
Found devices	

Below the M-Bus Scan Status table is a "Stop Scan" button.

At the bottom of the page, there is a link: HWg-PWR: For more information try [www.hw-group.com](http://www.hw-group.com).

- **Address** – Range of M-Bus addresses where the meters can be discovered. The default is 0-252; however, a smaller range can speed up the discovery process significantly.
  - **Serial Baudrate** – Communication speed. The default is 2400 but this can differ for various meters – see the meter documentation.
  - **Serial Parity** – Communication parity. The default is Even but this can differ for various meters – see the meter documentation.
2. Click **Scan**.
  3. The *M-Bus Device Scan Status* section displays the discovery progress (*Actual scan state*) and discovered meters (*Found Device*).
  4. After the scan is complete, *Actual scan state* changes to *Stopped*.

5. Write down the addresses of discovered devices and return to the *Device* page.



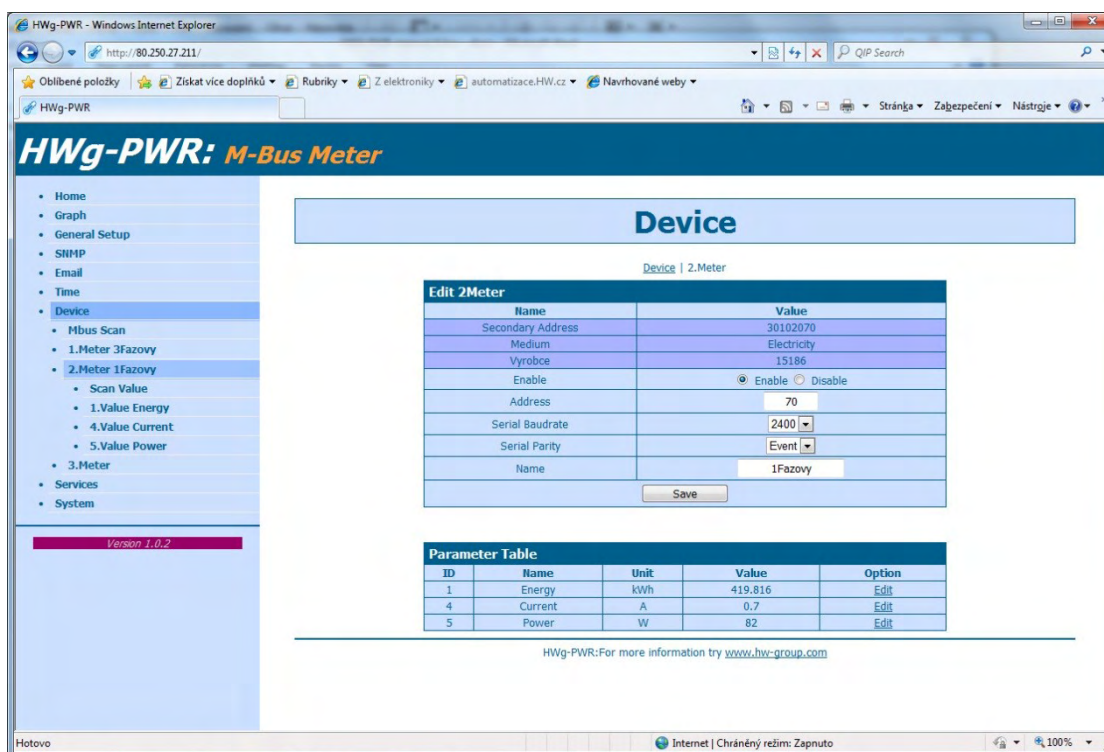
**Note:** If HWg-PWR does not find any connected meters, re-check the M-Bus connection (in particular its polarity) and the baudrate and parity configuration, or try to look up these values in the documentation of your meter. Repeat the search until you find all meters.

When only some of the meters are found but not all, the problem may be in different communication parameters. Repeat the search with other Serial Baudrate and Serial Parity settings.

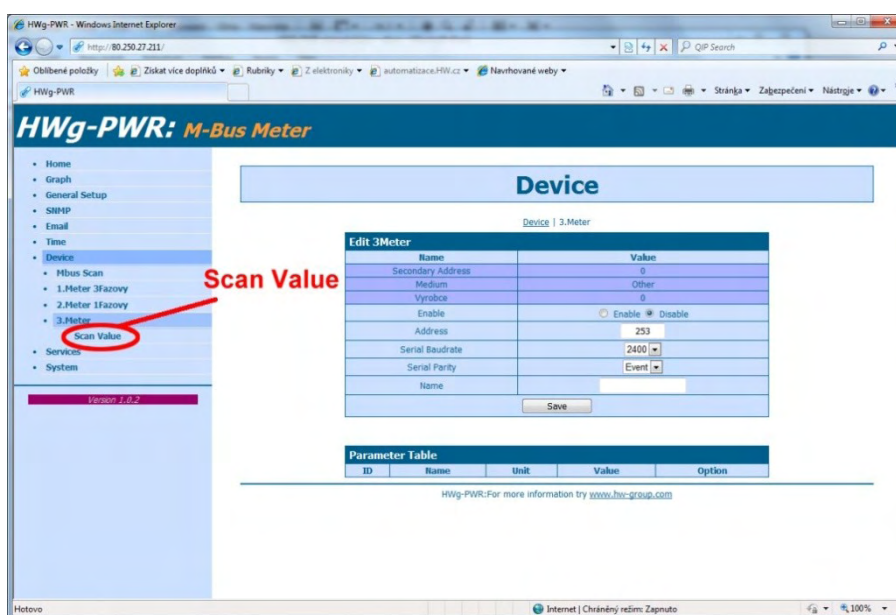


## Adding discovered meters to HWg-PWR

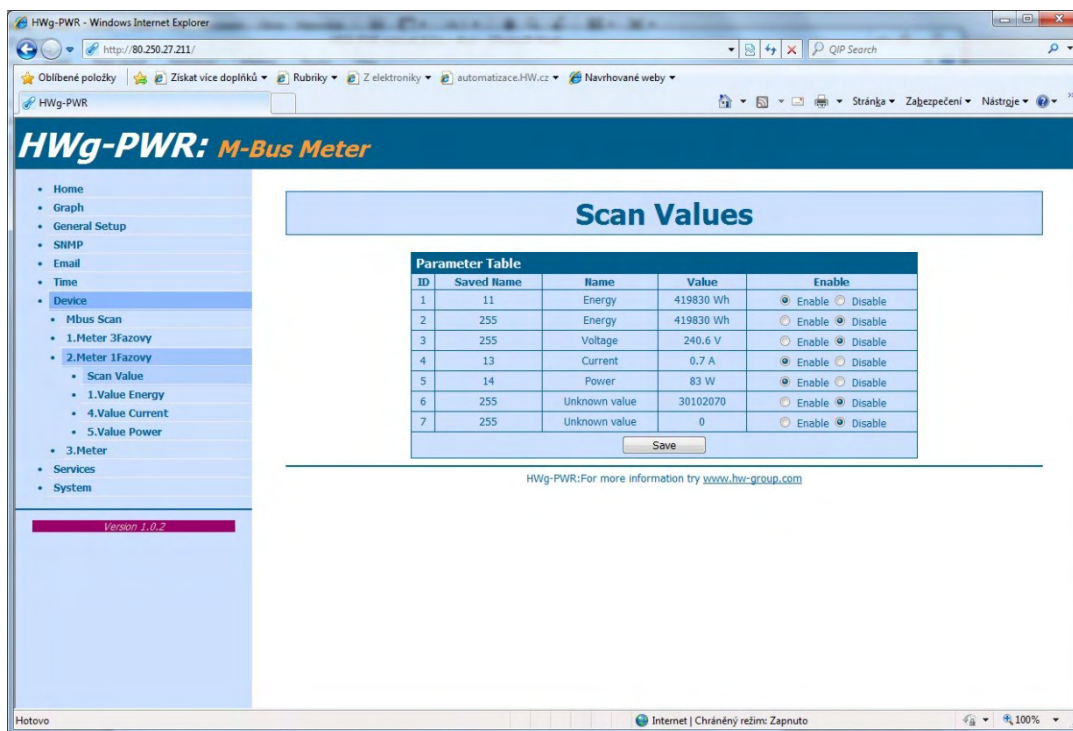
1. In the Device menu, select the desired meter. The *Edit xMeter* section displays.



2. In the *Address M-Bus* field, fill in the address discovered by scan or written on the meter or in the meter documentation. Set the *Serial Baudrate* and *Serial Parity* parameters – see the meter or its documentation.
3. Turn on the meter in the system (change *Enable* to *Enable*).
4. Click *Save* to save your changes.
5. The *Secondary Address*, *Medium* and *Manufacturer* fields are read out automatically and displayed when the page is refreshed.
6. Now select the *Scan Value* submenu of the corresponding meter (from the menu).



7. A list of values provided by the meter is displayed. Individual values can be turned on (*Enable*) and off (*Disable*):



8. Click *Save* to save your changes.

**Important:** In order to find meter variables, the meter must be enabled and saved. It is not possible to scan values without saving the meter configuration first!

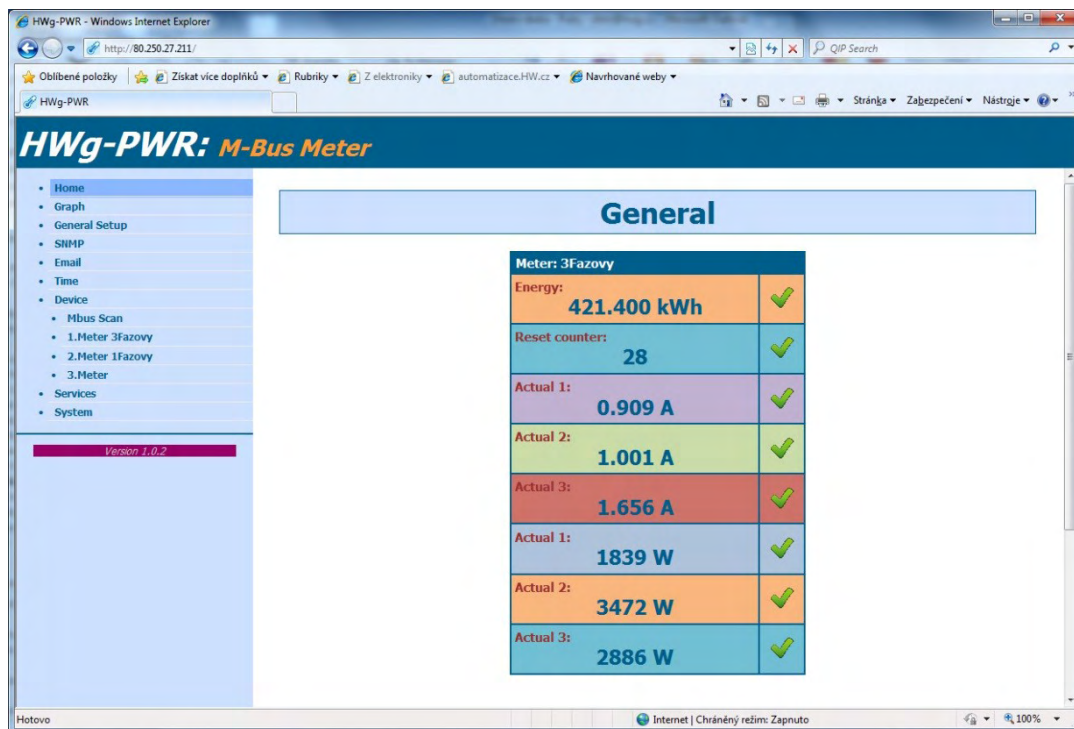
Repeat steps 1 to 3 to add all required meters.



## WWW interface

### Home tab

The Home tab displays current readouts of all enabled values of a meter, together with status symbols.



The value is within its allowed range (Saferange)



The value is out of its allowed range (Saferange)



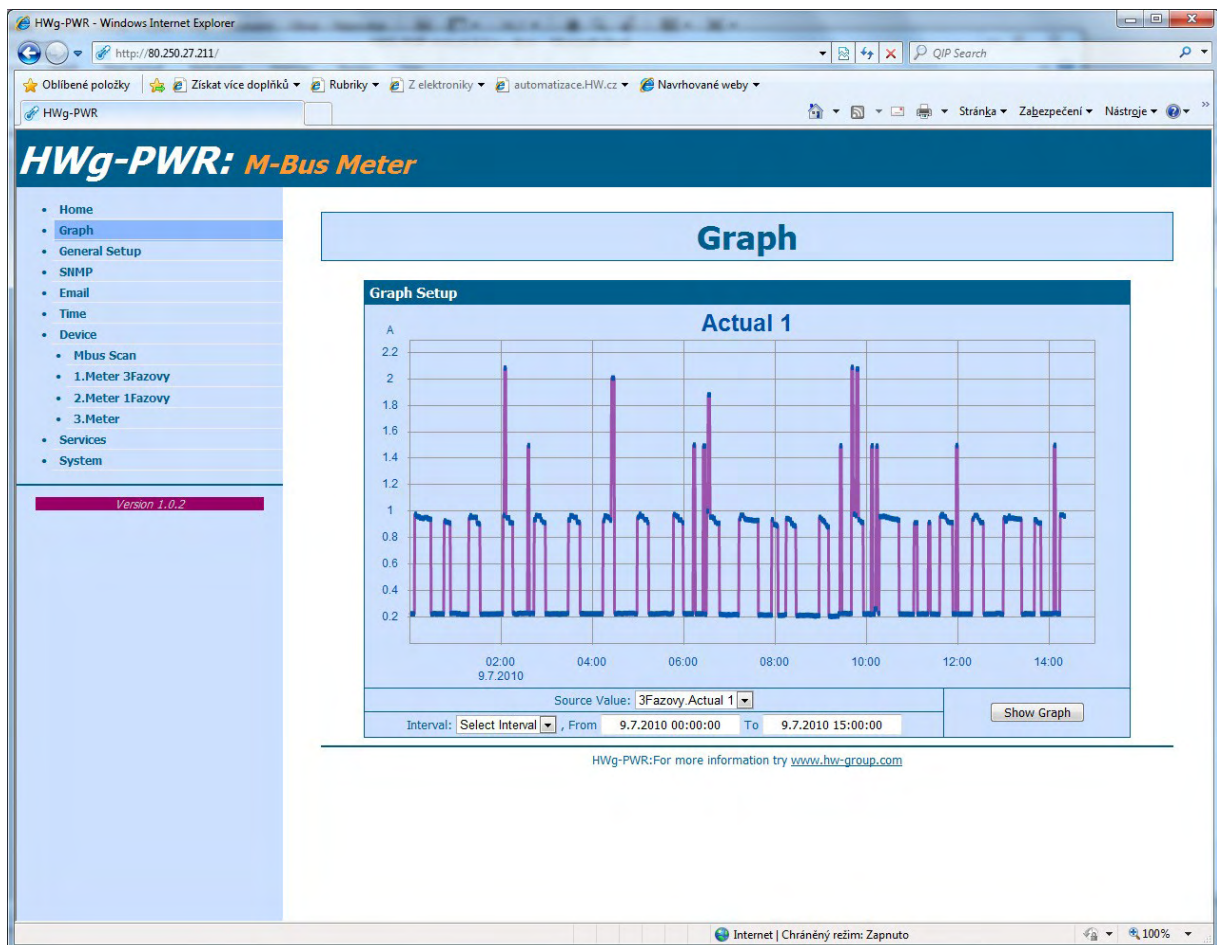
M-Bus communication error – meter stopped responding

## Graph tab

The *Graph* tab lets you plot a graph of the measured values. To plot a graph, you need to specify:

- **Source Value** – List of all variables with enabled logging in the *Meter-name.value* format.
- **Interval** – Time interval to be plotted. You can select one of the pre-defined intervals (*Hour, Day, Week, Month, Year*), or manually fill in the start date (*From*) and the end date (*To*). If you select an interval for which there is no valid data, the graph will be empty.

After selecting the parameters, click *Show Graph* to generate the graph. This operation may take some time, depending on the number of measured values.



## General Setup tab

The General Setup tab is used to configure basic operating parameters of HWg-PWR.

**General Setup**

Name	Value	Description
Device Name	HWg-PWR Doma	0 to 16 characters
WWW Info Text	HWg-PWR: For more information try <a href="http://www.hw-group.com">www.hw-group.com</a>	
Periodic restart	Off	Periodic restart time

Save

Name	Value	Description
DHCP	<input type="checkbox"/>	DHCP Enable/Disable
IP Address	192.168.6.10	A.B.C.D
Network Mask	255.255.255.0	A.B.C.D
Gateway	192.168.6.1	A.B.C.D
DNS Primary	192.168.6.1	A.B.C.D
DNS Secondary		A.B.C.D
HTTP Port	80	Default 80
SysLog IP Address	0.0.0.0	A.B.C.D only for DemoMode, 0.0.0.0 = Disabled

Save

Name	Value	Description
Username		Admin username/password for device configuration changes [0 to 16 characters]
Password		

Save

HWg-PWR: For more information try [www.hw-group.com](http://www.hw-group.com)

### Base section

- **Device Name** – Custom name of the HWg-PWR device in order to distinguish multiple HWg-PWR units in a network. The device name can be up to 16 characters long.
- **WWW Info Text** – Custom text in the WWW interface footer. Useful for contact information about the operator of that particular HWg-PWR, if the device is accessible on a public IP.
- **Periodic restart** – Enables periodic restart of HWg-PWR to prevent problems in noisy Ethernet networks or to limit the consequences of hacker attacks.

### Network section

- **DHCP** – Enables IP address assignment by a DHCP server, if available. Ask your network administrator if unsure about the correct setting.
- **IP Address** – IP address of HWg-PWR. Assigned by your network administrator.
- **Network Mask** – Network mask. Assigned by your network administrator.
- **Gateway** – IP address of the default gateway. Assigned by your network administrator.

- *DNS Primary / DNS Secondary*— IP address of your DNS server. Assigned by your network administrator.
- *HTTP Port* – Port number where the built-in WWW server listens. Changing the port number is useful in situations where multiple HWg-PWR units need to be accessible from an external network through a router. Ask your network administrator if or whether you need to change this value. The default port is 80.
- *SysLog IP Address* – IP address of a syslog server. Syslog servers help troubleshoot problems with Ethernet devices.

#### ***Security: Device Admin section***

- *Username / Password* – User name and password for securing access to HWg-PWR.

## SNMP tab

The SNMP tab is used to configure SNMP communication parameters and target destinations for SNMP Trap alarms.

**SNMP**

Name	Value	Description
System Name	HWg-PWR	0 to 16 characters
System Location		0 to 16 characters
System Contact	HWg-PWR:For more information try <a href="http://www.hw-group.com">http://www.hw-group.com</a>	
SNMP port	161	Default port 161

Community	Read	Enable
public	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
private	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Destination	Community	IP Address	Port	Enable
A.	Test1	192.168.1.3	162	<input type="checkbox"/>

Save

HWg-PWR:For more information try [www.hw-group.com](http://www.hw-group.com)

### General SNMP Settings section

- *System Name* – Name of HWg-PWR within SNMP.
- *System Location* – Location of HWg-PWR within SNMP.
- *System Contact* – Contact information of the HWg-PWR administrator within SNMP.
- *SNMP port* – Port number for SNMP communication. The default is 161.

### SNMP Access section

- *Community* – Name of the SNMP community for accessing HWg-PWR over SNMP. Two communities can be defined. Each *Community* can have the following permissions defined:
  - Read
  - Write

### SNMP Trap Destination section

- *Destination* – Index of the target destination for SNMP traps. Only A can be set, other indexes are reserved for future use.
- *Community* – Name of the Community where the SNMP trap is sent.
- *IP Address* – Target IP address for SNMP Traps.
- *Port* – Target port for SNMP Traps. Default is 162.
- *Enable* – Activation of the target destination. Useful for disabling all SNMP traps without regard to the settings for individual values.



## E-mail tab

The *E-mail* tab is used to define the e-mail server and the parameters for sending alarm e-mails (beginning or end of an alarm). HWg-PWR only supports unencrypted SMTP connections.

**HWg-PWR: M-Bus Meter**

- Home
- Graph
- General Setup
- SNMP
- Email**
- Time
- Device
- Mbus Scan
- 1.Meter 3Fazovy
- 2.Meter 1Fazovy
- 3.Meter
- Services
- System

Version 1.0.2

### Email

Name	Value	Description
SMTP Server	mail.hw.cz	IP Address or DNS Name
SMTP Port	25	Default 25
Authentication	<input checked="" type="checkbox"/>	Enable/Disable
Username	smtp	0 to 32 characters
Password	••••••••	0 to 32 characters
FROM	HWg-PWR@digitol.cz	Device email address
Subject	Doma	Beginning of email subject
TO	olmr@hw.cz	Email Recipient
CC		Email Copy

Save

#### Send Test Email

```

Email Test
SMTP Server address: mail.hw.cz, IP: 80.250.3.99
Connect to SMTP server 80.250.3.99:25 OK
SMTP: 220 alik.hw.cz ESMTP Postfix (Debian/GNU)
SMTP: 250 alik.hw.cz
SMTP: 334 VXNlcm5hbWU6
SMTP: 334 UGFzc3dvcmQ6
SMTP: 235 2.7.0 Authentication successful
SMTP: 250 2.1.0 Ok
SMTP: 250 2.1.5 Ok
SMTP: 354 End data with <CR><LF>.<CR><LF>
SMTP: 250 3.3.6 Ok: queued as 5C3A1628884B
  
```

Test

HWg-PWR: For more information try [www.hw-group.com](http://www.hw-group.com)

### Email Settings section

- **SMTP Server** – IP address or domain name of your SMTP server.
- **SMTP port** – Port number where the SMTP server listens. The default is 25.
- **Authentication** – Enables authentication. Check this box if your SMTP server requires authentication.
- **Username** – Username for authentication to the SMTP server. If the Authentication box is not checked, this field is irrelevant.
- **Password** – Password for authentication to the SMTP server. If the Authentication box is not checked, this field is irrelevant.
- **FROM** – E-mail address of the sender, that is, the HWg-PWR unit. The address may be necessary for the SMTP server and it can be used to identify the HWg-PWR unit, or for filtering and further processing of alarm messages.
- **Subject** – E-mail subject. Contents of this field can be used to identify the HWg-PWR unit, or for filtering and further processing of alarm messages.
- **TO** – E-mail address of the recipient of alarm messages. Only one e-mail address can be entered.

- **CC** – E-mail address of the recipient of a copy of the alarm message. Only one e-mail address can be entered.

The *To* and *CC* fields cannot accept distribution lists or multiple e-mail addresses. If you need to send alarm messages to more recipients, ask your SMTP server administrator to create a distribution list accessible through a single e-mail address.

### Send Test Email section

After configuring *Email Settings*, use this button to send a test e-mail.

### Time tab

The *Time* tab is used to configure system time and automatic synchronization with a timeserver.

**SNTP Setup**

Name	Value	Description
SNTP Server	europe.pool.ntp.org	IP Address or DNS Name
Time Zone	+1	Number -12 ... +13
Summertime	<input checked="" type="checkbox"/>	last Sun Mar 2:00 - last Sun Oct 2:00
Interval	1h	Sync period: Off/1h/24h

Save

**SNTP synchronize**

Sync

**Time Setup**

Name	Value	Description
Time	14 : 26 : 13	hh:mm
Date	09 . 07 . 2010	DD.MM.YYYY

Save

HWg-PWR: For more information try [www.hw-group.com](http://www.hw-group.com)

### SNTP Setup section

- **SNTP Server** – IP address or host name of the time synchronization server. Default is *time.nist.gov*.
- **Time Zone** – Timezone where HWg-PWR is located. Used to set correct system time. Necessary for correct logging of measured values.
- **Summertime** – Enables daylight savings time. Used to set correct system time. Necessary for correct logging of measured values.
- **Interval** – The period for synchronizing time with the server.

### SNTP Synchronize section

The *Sync* button immediately synchronizes time with the time server. Can be used to test the settings.

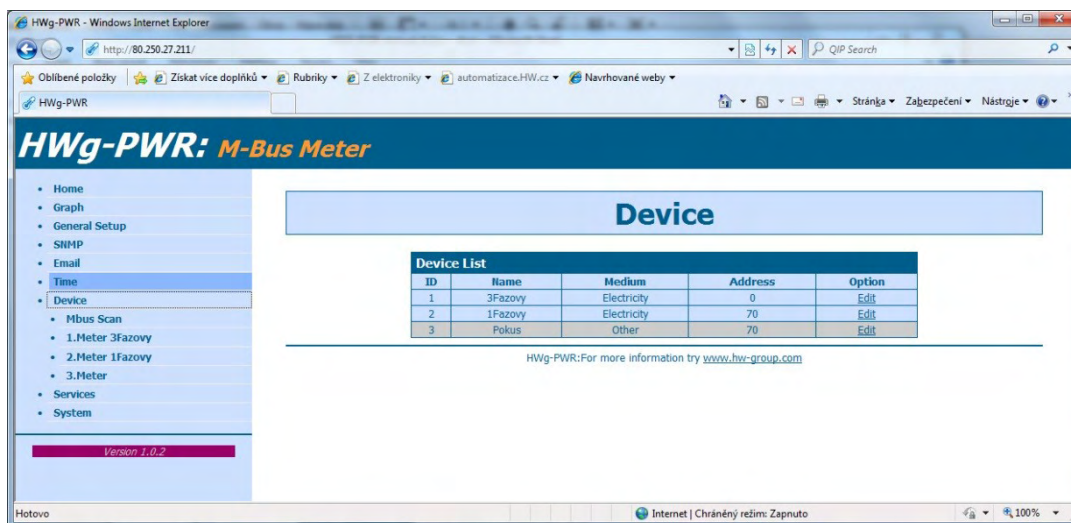
### Time Setup section

The *Time Setup* section lets you enter current date and time manually, when synchronization with a time server is unavailable.



## Device tab

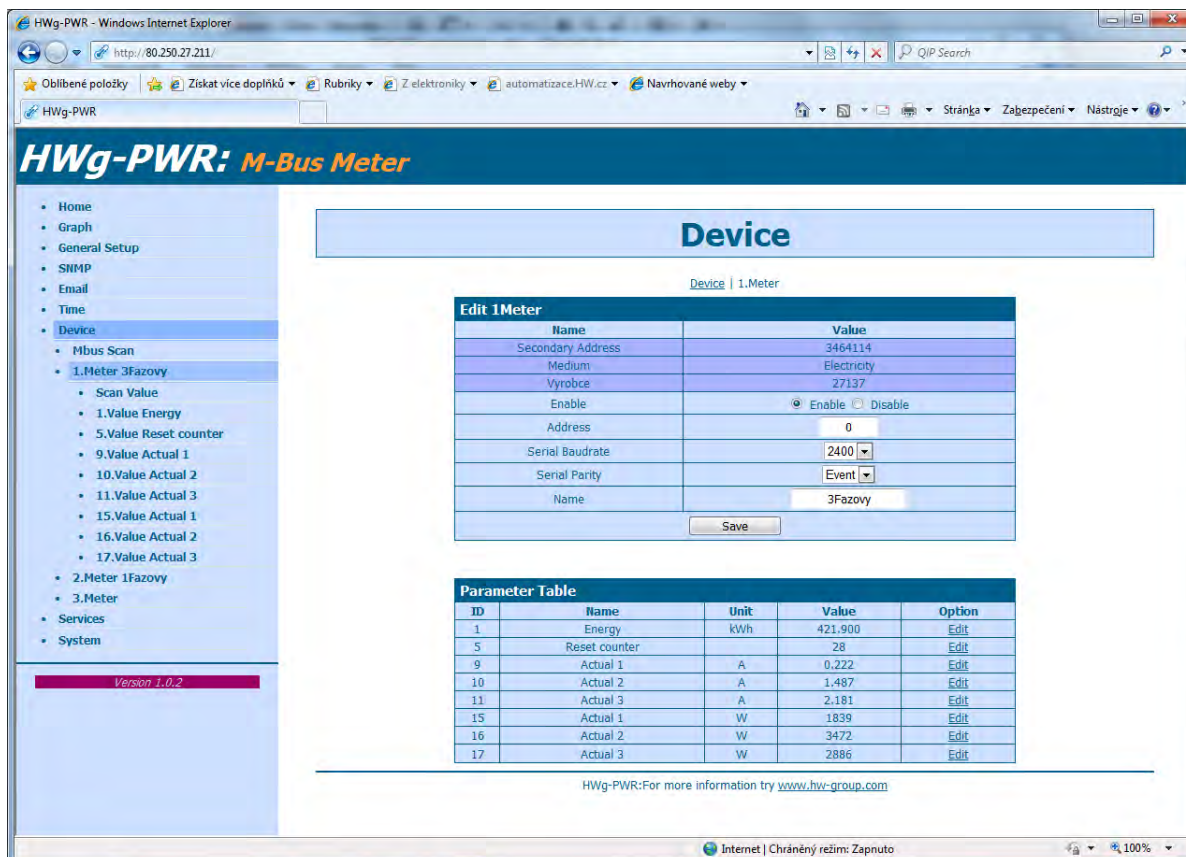
This tab is used to discover connected meters (Device), set their parameters, and to subsequently find and configure the values provided by individual meters.



## Device List section

The Device List section lists all connected meters together with their type (*Medium*) and address (*Address*) on the M-Bus. To edit a meter, click “*Edit*” on the corresponding line. Each meter is assigned a unique *ID* within HWG-PWR for use in XML and SNMP communication.

## Edit xMeter section



- *Secondary Address* – Secondary address on the M-Bus. This address is used to identify a meter if there are more meters with the same primary address (*Address* field) on the bus. Secondary Address is non-editable and consists of a manufacturer-defined part and the Address field (last 2 characters).
- *Medium* – Type of the meter (electricity, gas ...). The medium is not editable.
- *Enable* – Enables or disables the meter within HWg-PWR. When a meter is disabled, values are not detected or read but the configured parameters remain stored. This can be used to temporarily turn off the reading and recording for a meter (during maintenance etc.)
- *Address* – Primary address on the M-Bus. The address is entered as one byte (0-255).
- *Serial Baudrate* – M-Bus communication speed for the particular meter. By default, 2400 Baud is configured. Meters with different communication speeds can coexist on a single bus; this parameter sets the speed for a particular meter.
- *Serial Parity* – M-Bus communication parity. As with the baudrate, parity can be specified individually for each meter.
- *Name* – Meter name. Identifies the meter within HWg-PWR – in graphs, XML and SNMP.
- *Scan Value* – Reads out the values and their parameters from the meter. See *First Steps*.

### ***Parameter Table section***

The *Parameter Table* section displays information about discovered values from a particular meter – their names (*Name*), units of measurement (*Unit*) and current readings (*Value*). Each value is assigned a unique ID within HWG-PWR for use in XML and SNMP communication. To edit a value, its parameters and properties, click “*Edit*” on the corresponding line.

*Edit y.Value on x.Meter section*

**HWg-PWR: M-Bus Meter**

Device | 1.Meter | 1.Value

Name	Value
Enable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Name	Energy
Unit	kWh
Exponent	-3
Tarif	0
Zero Offset	0.000
Logging Enable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Enable SafeRange	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SafeRange Hi	0.000
SafeRange Lo	0.000
SafeRange Hyst	5.000
Email if change state	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SNMP Trap if change state	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Save

HWg-PWR: For more information try [www.hw-group.com](http://www.hw-group.com)

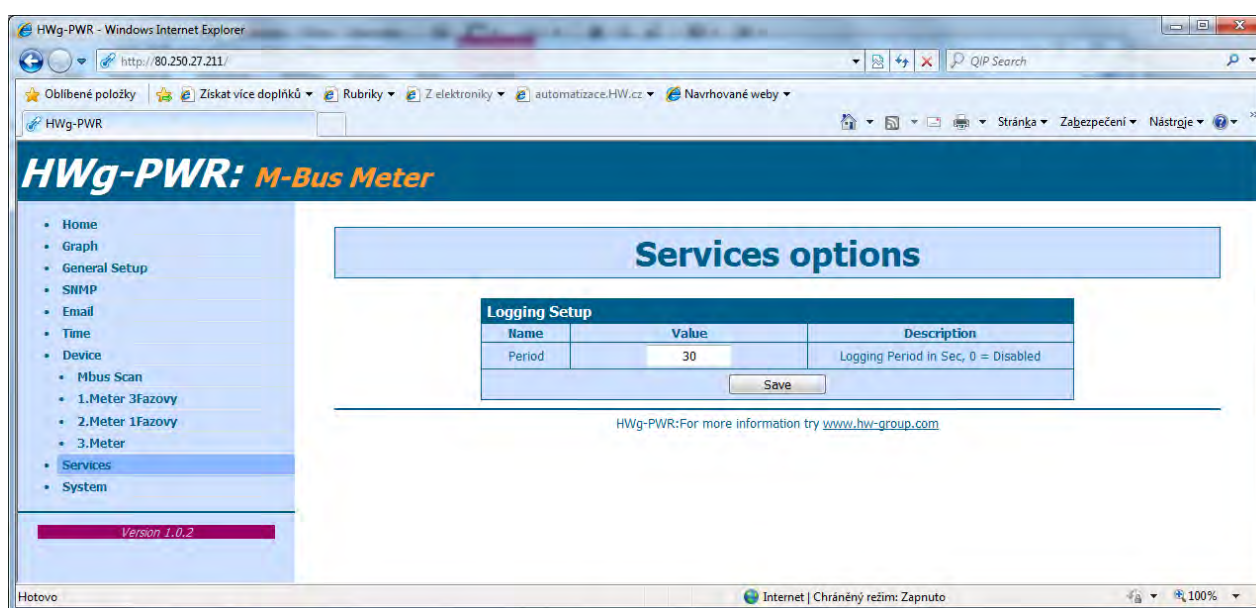
- **Name** – Value name. Identifies the value (variable).
- **Unit** – Physical unit of measurement. Identifies the unit of the value being measured. Together with its exponent, it can be used to convert the value to a custom format and unit (W/kW, kWh/MWh, dm<sup>3</sup>/l and so on).
- **Exponent** – Allows you to change the order of the displayed unit of measurement.
- **Tarif** – Identifies the tariff in multi-tariff meters.
- **Zero Offset** – Bias. Allows a modification of the displayed value by adding (subtracting) a fixed number. Typically used to monitor differences for a given time period.
- **Logging Enabled** – Enables the recording of readouts into the internal memory. Recording interval is specified at the Log tab. When logging is enabled for fewer variables, more records can be stored.
- **Value Alarming** – Enables alarming for the current value. This is useful for making sure that a value (line current, flow rate etc.) stays within its allowed range. This function can inform you about overconsumption or suspiciously low consumption and help avoid further problems.
- **SafeRange Hi** – High limit. Alarm occurs if the measured value exceeds the value specified here.
- **SafeRange Lo** – Low limit. Alarm occurs if the measured value falls below the value specified here.
- **SafeRange Hyst** – Allowed hysteresis. Suppresses false alarms if the measured value oscillates near the threshold. The hysteresis only applies in the direction

into the *SafeRange*. That is, alarm always starts when *SafeRange Hi* or *SafeRange Lo* is crossed but only ends when the threshold plus (or minus) *SafeRange Hyst* is reached.

- *E-Mail if Change State* – Specifies whether an e-mail should be sent whenever an Alarm begins or ends.
- *SNMP Trap if change state* – Specifies whether a SNMP Trap should be send whenever an Alarm begins or ends.

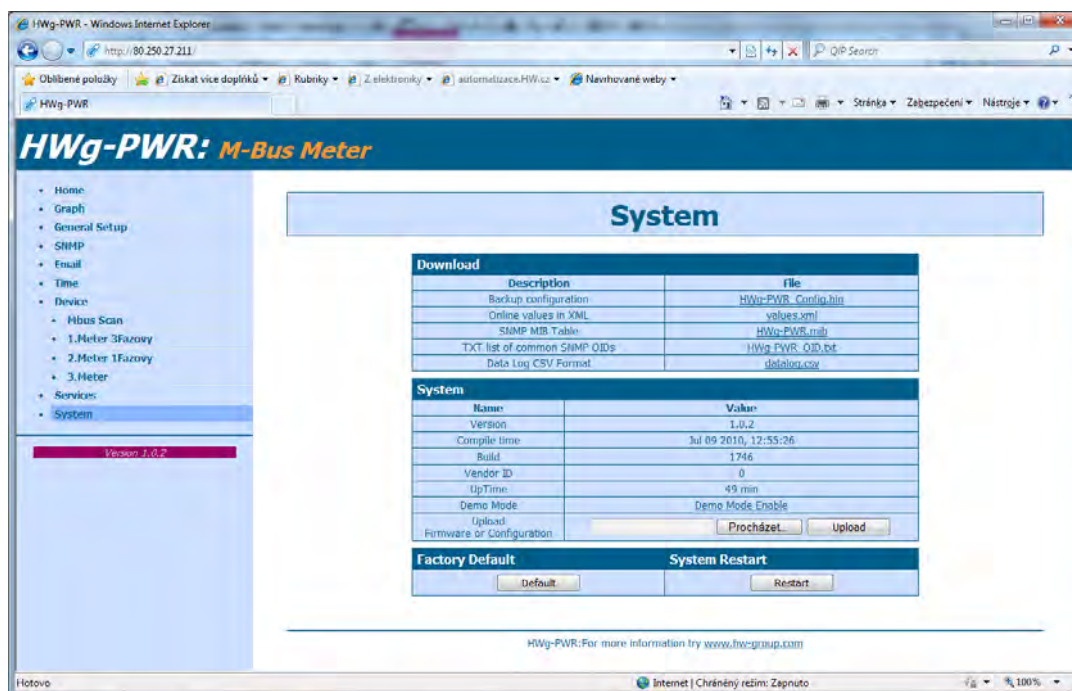
## Services tab

The *Services* tab lets you specify the period for storing readouts. The number of recorded values and logging period determine the lifespan of the records. The shorter the period, the sooner the memory fills up.



## System tab

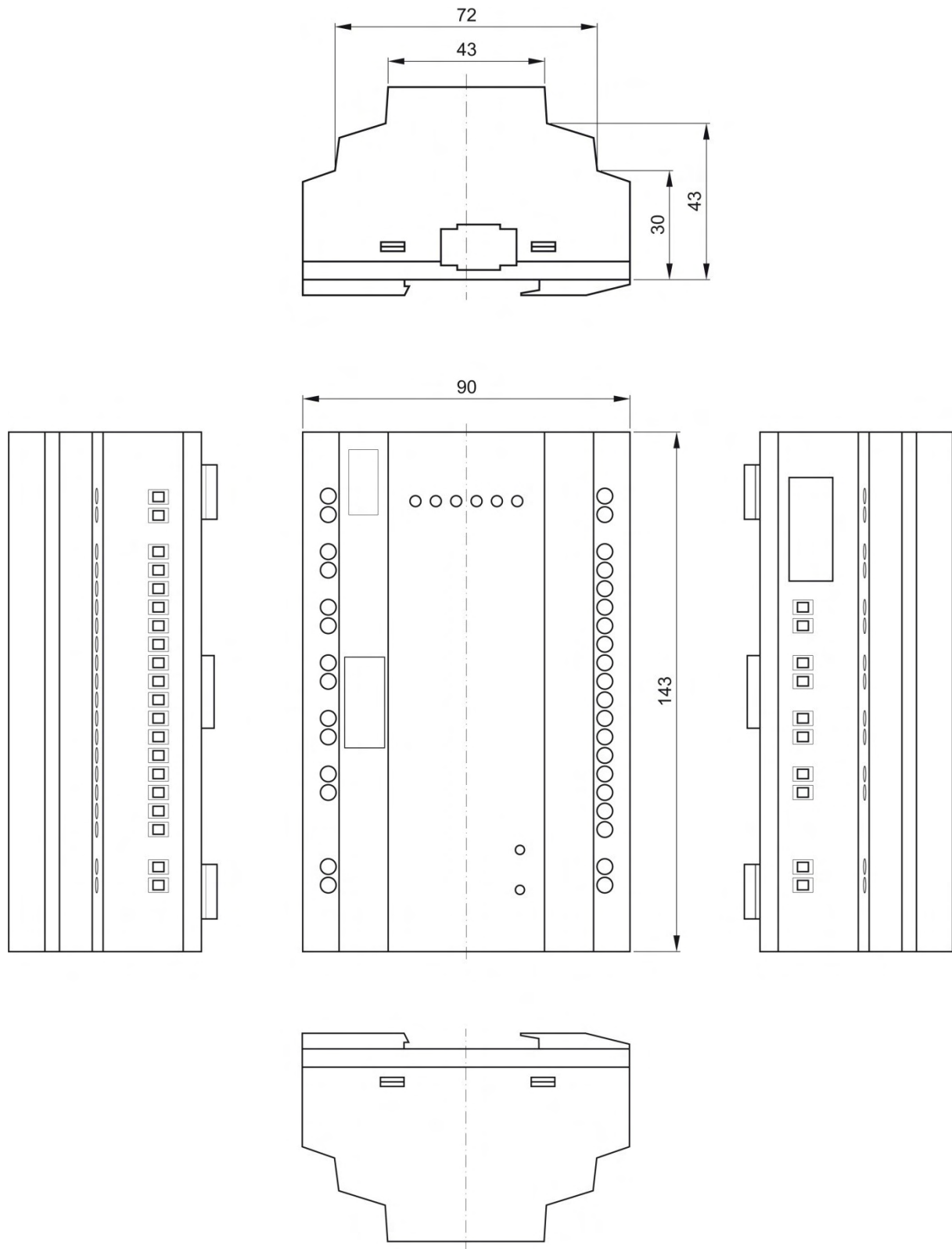
The *System* tab is used to access the most important system information, such as uptime or firmware version, and to perform operations such as HWg-PWR restart or firmware update.



## Download section

- *Backup configuration* – Click to save the current HWg-PWR configuration. Saved configuration can be later restored. ([http://hwg-pwr.hwg.cz/HWg-PWR\\_Config.bin](http://hwg-pwr.hwg.cz/HWg-PWR_Config.bin))
- *Online values in XML* – Address of a XML file with current readouts. Intended for automated processing at remote servers. (<http://hwg-pwr.hwg.cz/values.xml>)
- *SNMP MIB Table* – Address of the MIB file that contains the definitions of SNMP variables. (<http://hwg-pwr.hwg.cz/HWg-PWR.mib>)
- *TXT list of common SNMP OIDs* – Overview of the most important OIDs from the MIB table. ([http://hwg-pwr.hwg.cz/HWg-PWR\\_OID.txt](http://hwg-pwr.hwg.cz/HWg-PWR_OID.txt))
- *Data Log CSV Format* – Address of a CSV file with a logged history of readouts. Intended for automated processing at remote servers. (<http://hwg-pwr.hwg.cz/log.csv>)



**Mechanical**









## Accessories

<b>DHZ 5/63-M-BUS</b>	Single-phase 63A electricity meter with M-Bus
<b>ED 310.DB HWG</b>	Three-phase, two-tariff, 63A electricity meter with M-Bus and S0
<b>M-Count 2C</b>	Converter and datalogger, 2x pulse output (S0) / M-Bus



DHZ 5/63-M-BUS



ED 310.DB HWG



M-Count 2C



## Manufacturer

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