

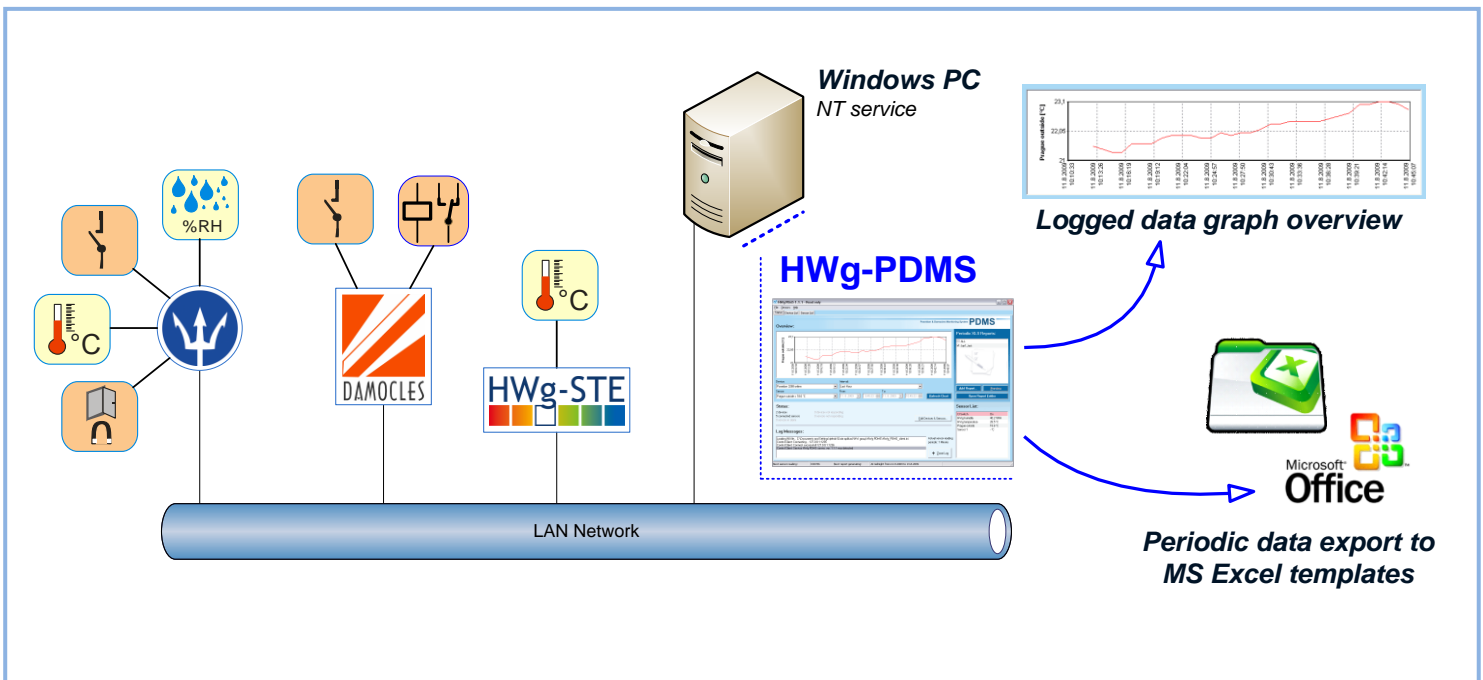
HWg-PDMS MANUAL

Windows application for IP sensor data collection and MS Excel reporting

Introduction

HWg-PDMS is a Windows application that collects data from probes connected to IP sensor devices (Damocles, Poseidon, HWg-PWR, HWg-STE, HWg-Ares and more). The application consists of two parts. The first part allows you to display and configure device and sensor parameters. The second part collects information from the devices and stores it into an internal database. Data collection runs as a Windows system service and starts automatically when the computer is started.

Data is periodically stored into an internal SQL database and can be automatically exported in the background to user-defined Excel reports (using the XML format).

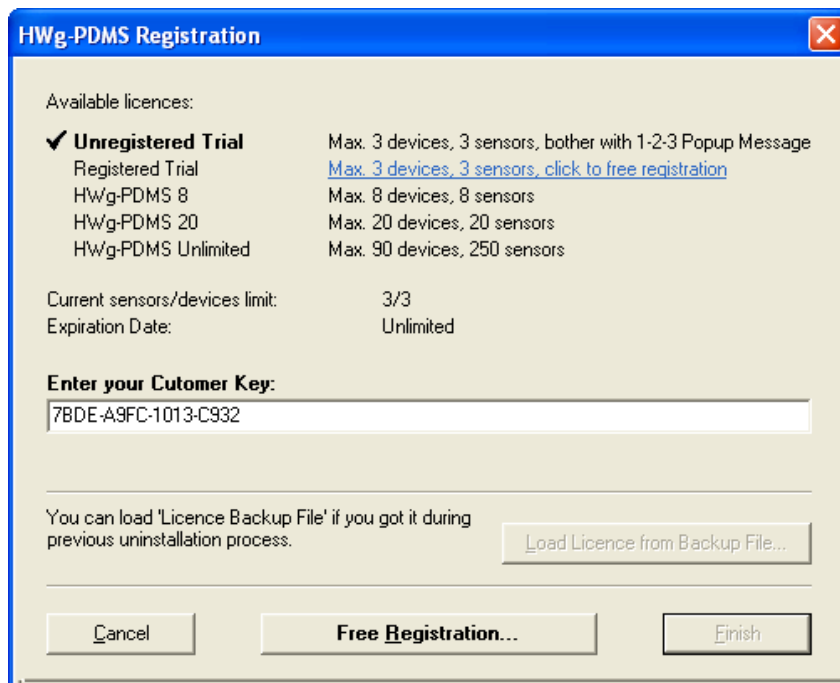


Installation

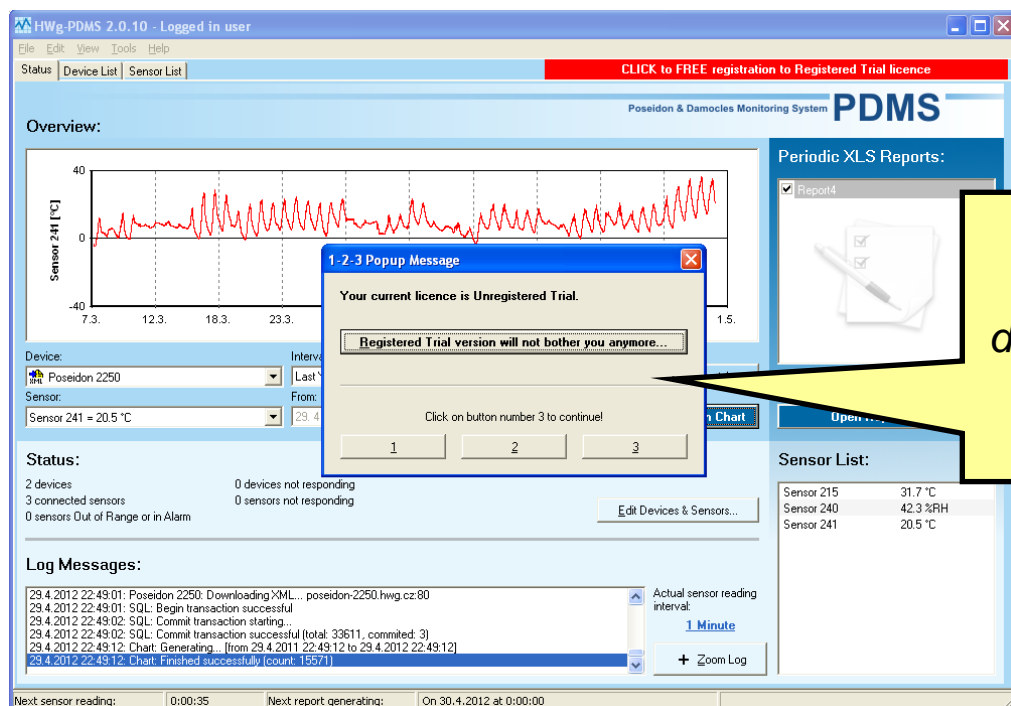
HWg-PDMS is very simple to install – just choose your language. After installation, enter your user key in **Help/Registration** to activate your purchased license.



Without the user key, only 3 sensors can be monitored.
The 3 sensor limit is sufficient to monitor e.g. 1 temperature sensor and 1 combined temperature+humidity sensor. From this point of view, one sensor equals one data point.



Unregistered “**Trial version**” prompts the user to confirm a (1) (2) (3) nag screen whenever a sensor chart is updated. Enter your e-mail to disable the (1) (2) (3) nag screen in the free version.



**Free registration
disables the (1) (2) (3)
nag screen.**

If the application needs to be reinstalled, it is necessary to back up the license. When uninstalling, a backup file with your license is created. This file is then used when reinstalling -- click the **Load Licence from Backup File** button. The license cannot be transferred to another computer.

User interface

The “**Status**” tab is the main HWg-PDMS screen. It displays the states of monitored devices and sensors.

Overview (Sensor chart) (1)

Displays a chart of values vs. time for one selected device and sensor. Empty value indicates missing data in the database.

The screenshot shows the HWg-PDMS 2.0.10 interface. The main window title is "HWg-PDMS 2.0.10 - Logged in user". The interface includes a menu bar (File, Edit, View, Tools, Help) and a status bar with a red banner that says "CLICK to FREE registration to Registered Trial licence". The main content area is titled "Poseidon & Damocles Monitoring System PDMS".

The "Overview" section features a line chart for "Sensor 241 [°C]" showing temperature fluctuations over time. Below the chart, there are controls for "Device" (Poseidon 2250) and "Sensor" (Sensor 241 = 21.0 °C). The "Interval" is set to "Last Year (365 Days)". There are buttons for "Save Chart As...", "Refresh Chart", and "Edit Devices & Sensors...".

The "Status" section shows:

- 2 devices
- 3 connected sensors
- 0 sensors Out of Range or in Alarm
- 0 devices not responding
- 0 sensors not responding

The "Log Messages" section displays a list of system events, including connection attempts and database transactions.

The "Periodic XLS Reports" section shows a list of reports, with "Report4" selected. There are buttons for "Add Report...", "Preview", and "Open Report Folder".

The "Sensor List" section shows a table of sensors:

Sensor	Value
Sensor 215	31.8 °C
Sensor 240	40.8 %RH
Sensor 241	21.0 °C

A yellow callout box points to the "Device" and "Sensor" selection area, containing the text: "Device and sensor selection (2) To display a chart, first select a device and then a sensor connected to that device. The chart displays the measured values."

Chart settings (3)

Sets the time interval for plotting the chart. Click **Refresh Chart** to plot the chart using the selected interval. Click **Save Chart as...** to export the chart as a JPG or BMP file.

Device status (4)

The Status section displays the number and states of active devices and sensors. To add devices or sensors, click **Edit Devices & Sensors**. For details, see the “Connecting sensors and devices” section.

Log messages (5)

The **Log Messages** section displays the most recent system messages. To view the entire application log, click **Zoom Log**.

Current Sensor Reading Interval (6)

Current period for reading the sensor values. Click the link to display a corresponding edit dialog.

The screenshot shows the HWg-PDMS 2.0.10 interface with several sections and callouts:

- Reports (7):** A yellow callout box explains that this section allows defining one-time and periodic reports, including configuration and preview. It notes that MS Excel 2007 or later is required for full functionality.
- 4:** Callout pointing to the 'Interval' dropdown menu, currently set to 'Last Year (365 Days)'.
- 5:** Callout pointing to the 'Log Messages' section, which displays system messages such as 'Connecting...', 'Downloading XML...', and 'SQL: Begin transaction successful'.
- 6:** Callout pointing to the 'Actual sensor reading interval' dropdown menu, currently set to '1 Minute'.
- 8:** Callout pointing to the 'Sensor List' table, which shows the following data:

Sensor	Value
Sensor 215	31.8 °C
Sensor 240	40.8 %RH
Sensor 241	21.0 °C
- 9:** Callout pointing to the 'Next sensor reading' and 'Next report generating' status line at the bottom, showing '0:00:38' and 'On 30.4.2012 at 0:00:00' respectively.

Sensor List (8)

List of all connected sensors and their most recent values. Click a sensor name to go to the device website (if available).

Status line (9)

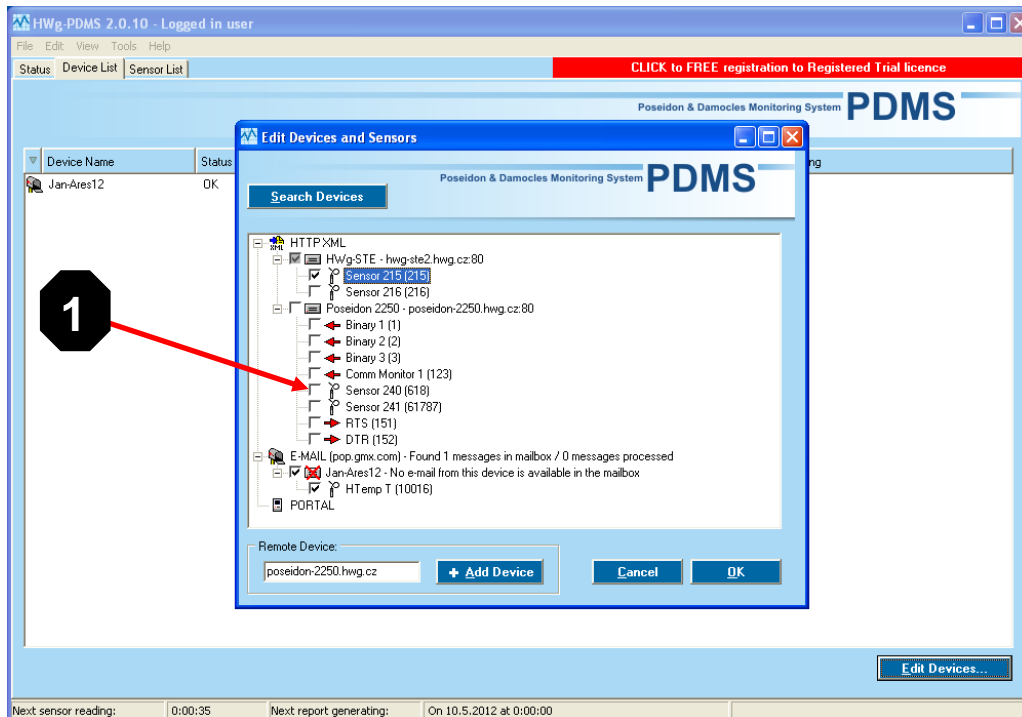
The status line of the application displays the remaining time to the next sensor reading and to the next automatic report generation.

Connecting sensors and devices

Use the **Edit Devices and Sensors** dialog (menu **Edit** or CTRL-E).

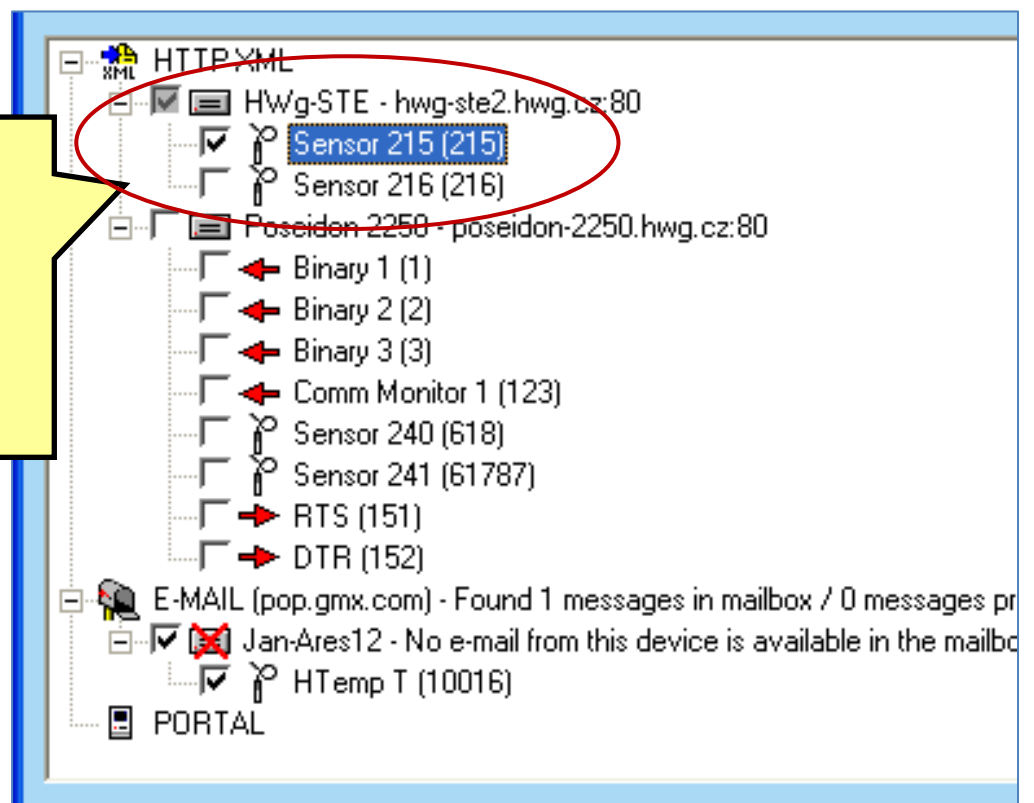
To monitor sensors, devices must be first added to the list. When a device is found, a list of available sensors appears. **Check the individual sensors to enable them (1).**


When the dialog is displayed, HWg-PDMS autodetects devices in the local network. Then, PDMS connects to the devices at specified addresses and to the configured POP3 server. To manually add a new device in a remote network, enter its address (URL or IP) in the corresponding field. After a device is added to the list, you can check the device to add all of its sensors.



HWg-STE is the selected device.

For this device, PDMS only displays sensor 215.



 The number of monitored sensors is limited by the license type. Free Trial license of HWg-PDMS allows to monitor **3 sensors only**.

For some devices, it is possible to read the values from the device log. **Right-click** the device in the “**Device List**” section.

HWg-PDMS 2.0.10 - Logged in user

File Edit View Tools Help

Status Device List Sensor List CLICK to FREE registration to Registered Trial licence

Poseidon & Damocles Monitoring System **PDMS**

Device Name	Status	Device Address	MAC Address / IMEI	Last Successful Sensor Reading
Jan-Ares12	OK	-	861785000296040	16:49:30, 8.5.2012
HWg-STE	OK	hwg-ste2.hwg.cz:80	00:0A:59:01:D2:E9	-
Poseidon-2250	OK	poseidon-2250.hwg.cz:80	00:0A:59:03:11:06	1:18:32, 9.5.2012

- Get Actual Values Now
- Get Data Log Now
- Get E-mails from Mailbox Now
- Rename Device...
- Change Device Address...
- Portal Settings...
- Deactivate Device
- Active Periodical Reading Sensor
- Active Data Log Download

Right-click the device to display this menu.

Edit Devices...

Next sensor reading: 0:00:25 Next report generating: On 10.5.2012 at 0:00:00

- Get Actual Values Now
- Get Data Log Now**
- Get E-mails from Mailbox Now
- Rename Device...
- Change Device Address...
- Portal Settings...
- Deactivate Device
- Active Periodical Reading Sensor
- Active Data Log Download

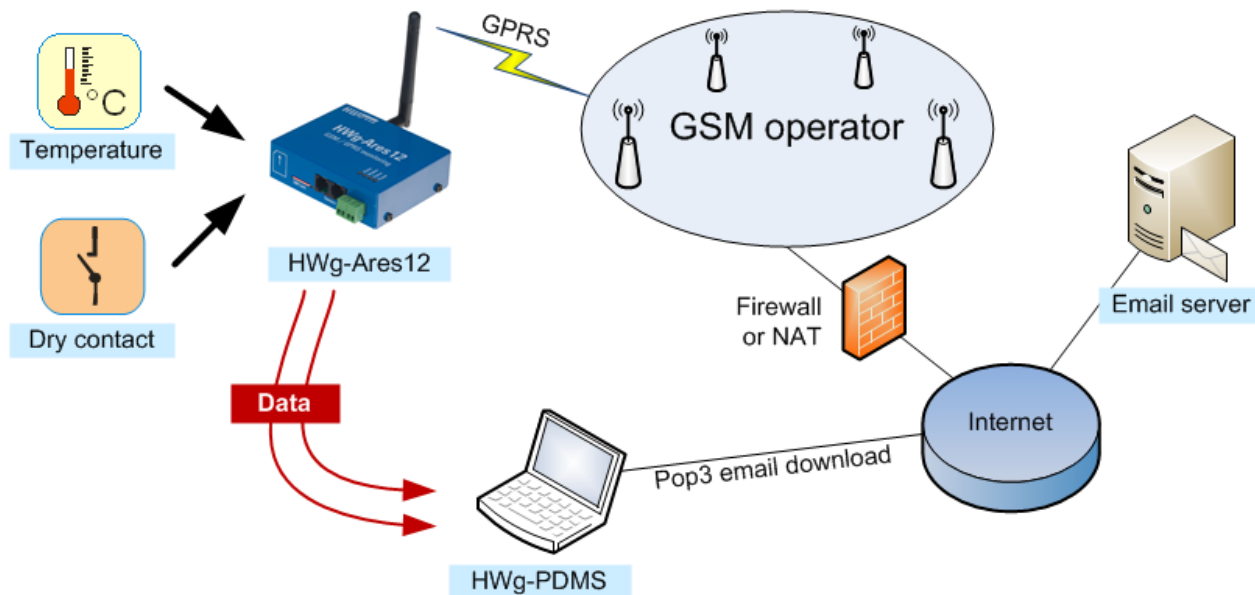
Downloads data from the device log to the internal database.

Takes place automatically every few hours.

Your sensor does not have an accessible IP address? – use e-mail

If you want to use HTTP XML (polling) to connect a device, HWg-PDMS must be able to connect to the sensor IP address.

This can be difficult if your IP sensor is in a server room behind a NAT (Network Address Translation) and you need to connect to this sensor remotely (e.g. from home). In this case, try to **use e-mail to transfer data**.



Reports

Measured data can be summarized into reports. Reports are generated as a XML database + import macros for MS Excel 2007 or higher. For correct function of reports, macros need to be enabled in MS Excel.

In MS Excel, it is possible to further analyze the data, create custom charts and add custom logic (macros) for processing the measurements. MS Excel reads data for a particular week/month into the first sheet and creates the required outputs. Reports can be created manually (one-time) or automatically (periodic).

When creating a report, select the sensors and the period to transfer to MS Excel.

Add Report

Name: Report2

Interval: From - To

From: 29. 4. 2011 To: 29. 4. 2012

Generate report automatically

Send report via e-mail

Unavailable devices include into the report (values -998)

Invalid sensors include into the report (values -999)

Counter increments add into the report (Damocles only)

Averages of values add into the report (sensors only)

Averages Interval: 5 Minutes

Note: This report will never be generated automatically.

Sensor List:

- HTTP XML
 - HWg-STE - hwg-ste2.hwg.cz:80
 - Sensor 215 (215)
 - Poseidon 2250 - poseidon-2250.hwg.cz:80
 - Sensor 240 (618)
 - Sensor 241 (61787)
- E-MAIL
- PORTAL

Buttons: Cancel, Save & Preview, OK

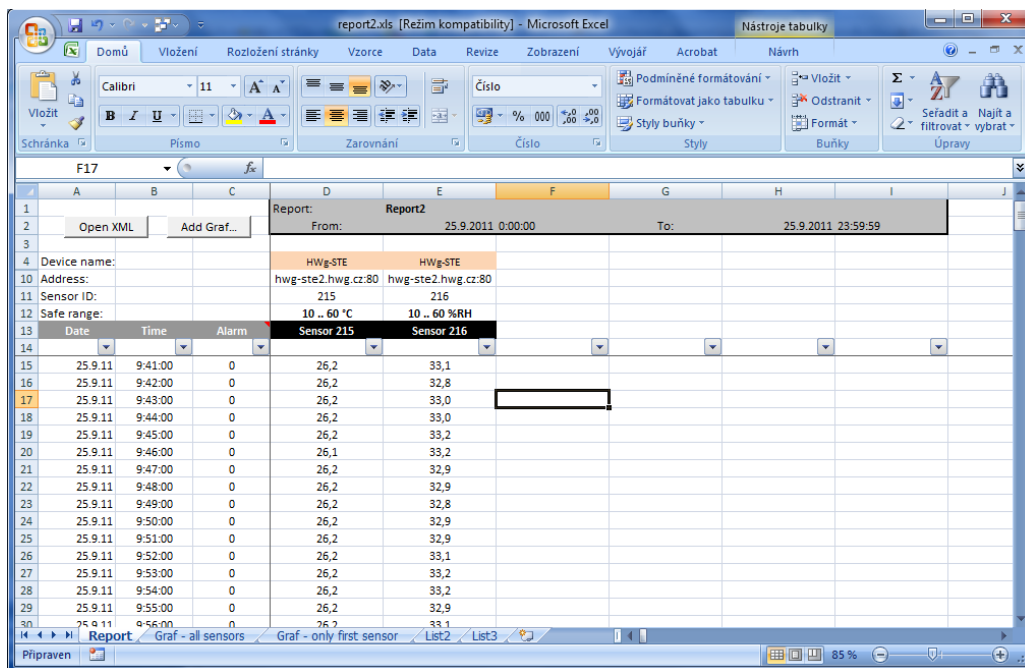
Averages the values, creates a fixed number of rows in the periodic output.

Opens the chart in MS Excel and reads the data.

By default, faulty sensors and unavailable devices (values -998 and -999) are not included in the report. It is possible to average several subsequent measurements with “**Average Interval**”.

To save the report, click OK. To save the report in HWg-PDMS and immediately display it in MS Excel, click **Save & Preview**.

Macros must be enabled in MS Excel. By default, three sheets are provided – **Report**, **Graf - all sensors**, and **Graf - only first sensor**.

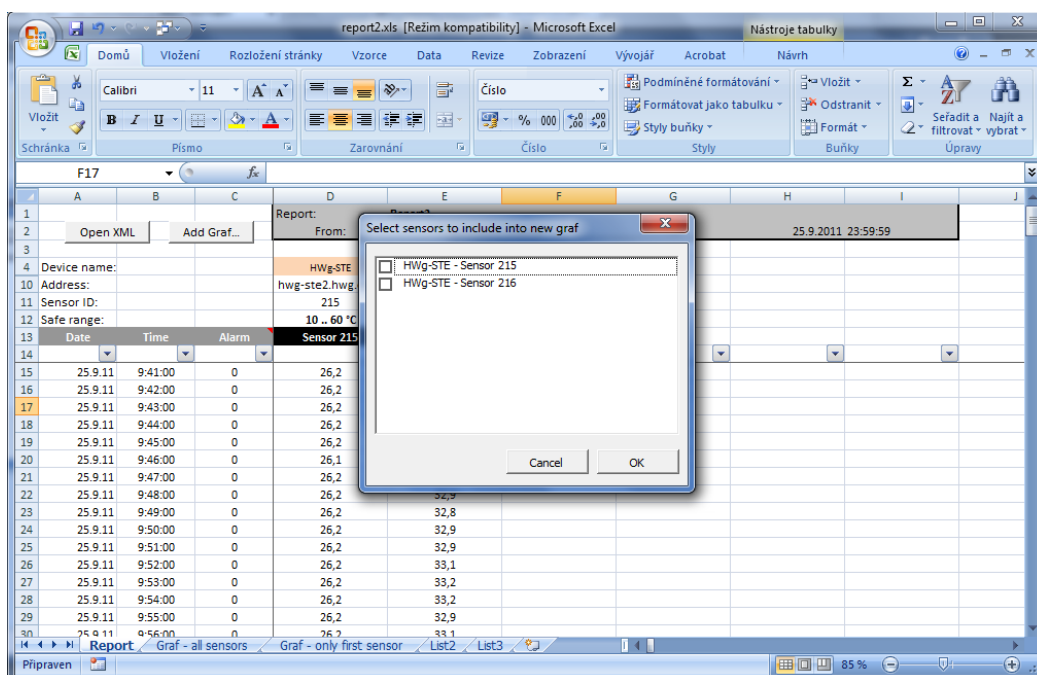



Date	Time	Alarm	Sensor 215	Sensor 216
25.9.11	9:41:00	0	26,2	33,1
25.9.11	9:42:00	0	26,2	32,8
25.9.11	9:43:00	0	26,2	33,0
25.9.11	9:44:00	0	26,2	33,0
25.9.11	9:45:00	0	26,2	33,2
25.9.11	9:46:00	0	26,1	33,2
25.9.11	9:47:00	0	26,2	32,9
25.9.11	9:48:00	0	26,2	32,9
25.9.11	9:49:00	0	26,2	32,8
25.9.11	9:50:00	0	26,2	32,9
25.9.11	9:51:00	0	26,2	32,9
25.9.11	9:52:00	0	26,2	33,1
25.9.11	9:53:00	0	26,2	33,2
25.9.11	9:54:00	0	26,2	33,2
25.9.11	9:55:00	0	26,2	32,9
25.9.11	9:56:00	0	26,2	33,1

The **Report** sheet contains all measured values from all sensors.

Click **Open XML** to read the data (e.g. a weekly record) from a XML file to Excel.


Retrieved values are automatically plotted at the **Graf - all sensors** and **Graf - only first sensor** sheets. To create a custom chart, click **Add Graph**. Here you can choose the sensors to include in the chart.



 It can take a long time to import data consisting of tens of thousands of records (lines). It is therefore advisable to limit the size of reports, e.g. by averaging sensor values.

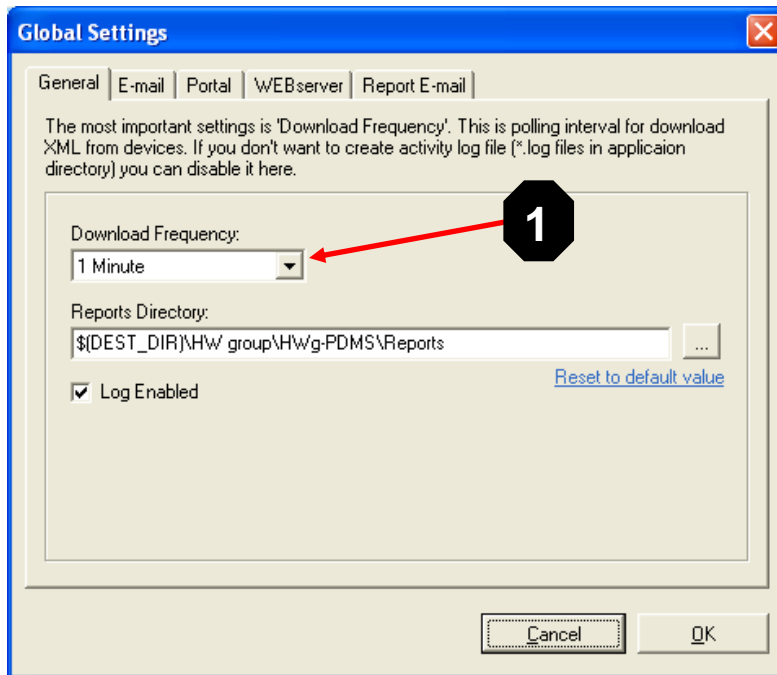
Users can add more sheets with custom data processing.

File menu - Global Settings

 Authentication is required to access this menu. By default, you are logged in automatically, unless the password was changed in a special utility. In this case, you need to log in manually.

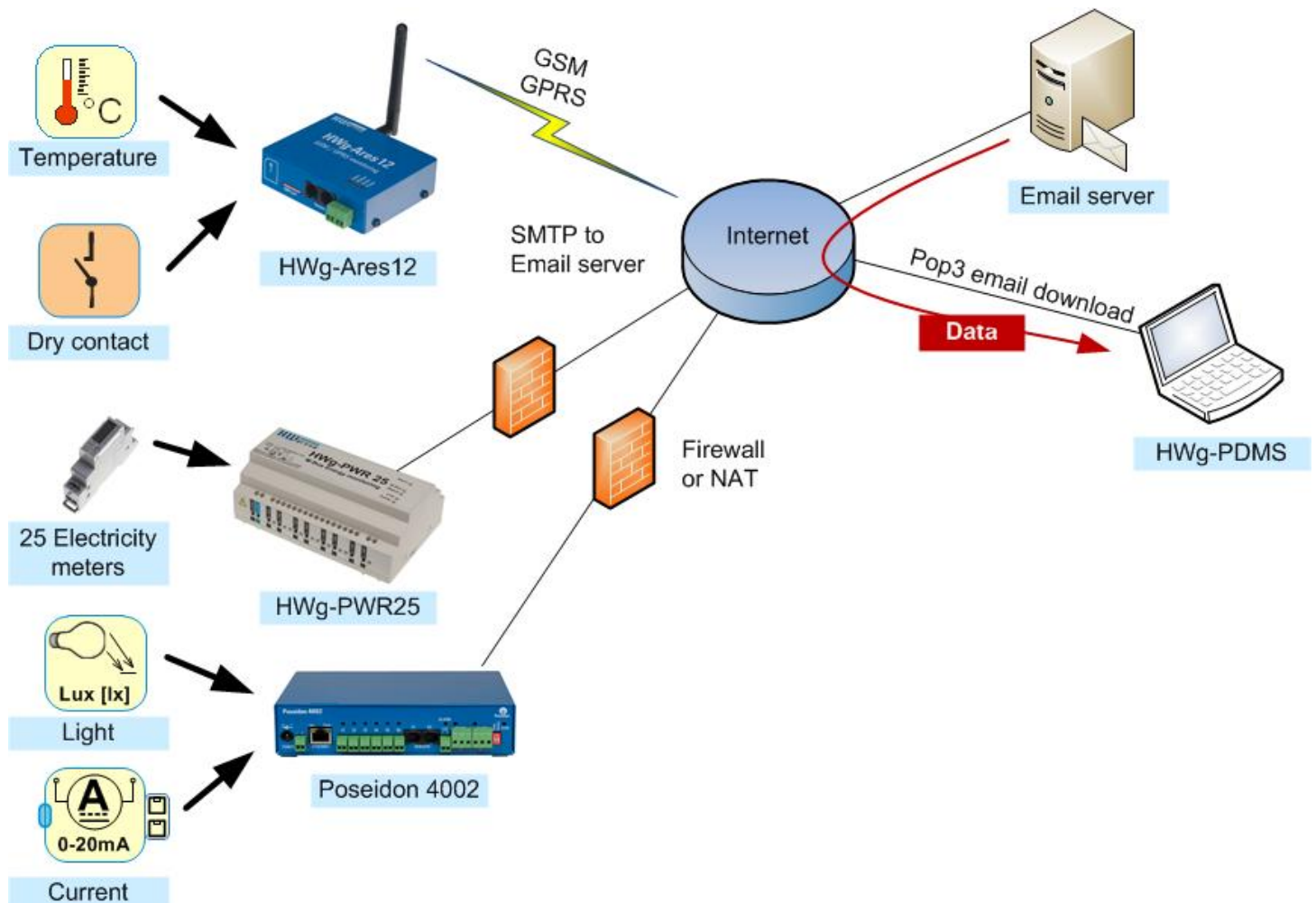
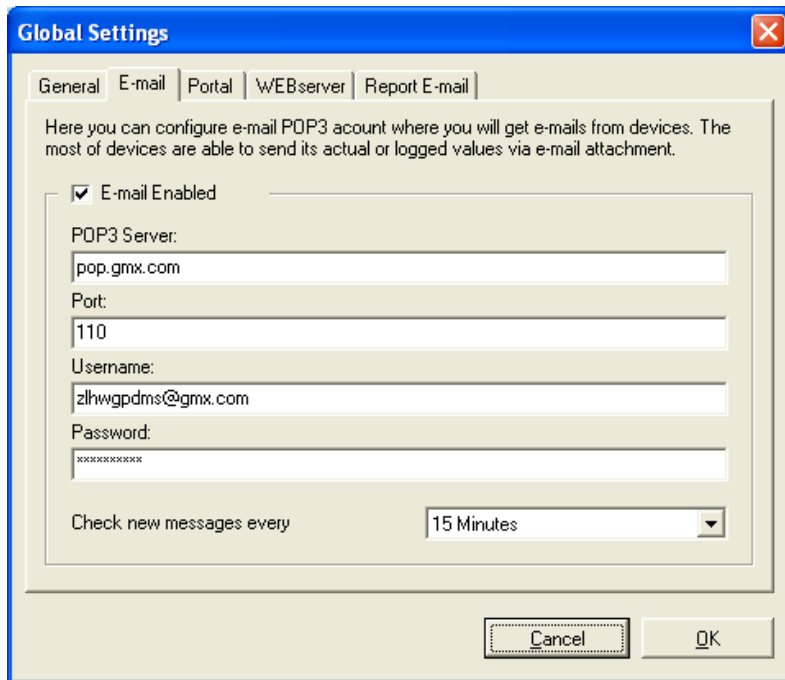
Global Settings – General

Configures the sensor polling period **(1)** and the folder for storing reports. You can also disable logging of messages to a log file.



Global Settings – E-mail

Configures the POP server parameters that HWg-PDMS uses to read messages from sensors. The application **deletes downloaded e-mails**. Therefore, it is necessary to use a dedicated e-mail account with POP3 access for each PDMS installation.



Global Settings – Report E-mail

Configures the outgoing e-mail server (SMTP) and recipients of HWg-PDMS reports. Connection can be configured according to SMTP server requirements – authentication (username/password), TLS encryption. It is recommended to verify the configuration by pressing the button **(1)** to send a test e-mail.

The screenshot shows the 'Global Settings' dialog box with the 'Report E-mail' tab selected. The dialog contains the following fields and controls:

- SMTP Server: some_smtp@domain.com
- SMTP Server Port: 25
- Authentication:
- STARTTLS:
- SMTP Username: (empty)
- SMTP Password: (empty)
- Outgoing Address (FROM): from@domain.com
- TO: to@domain.com
- CC: (empty)
- Send Test E-mail button (highlighted with a red arrow and a black octagon containing the number 1)
- Cancel button
- OK button

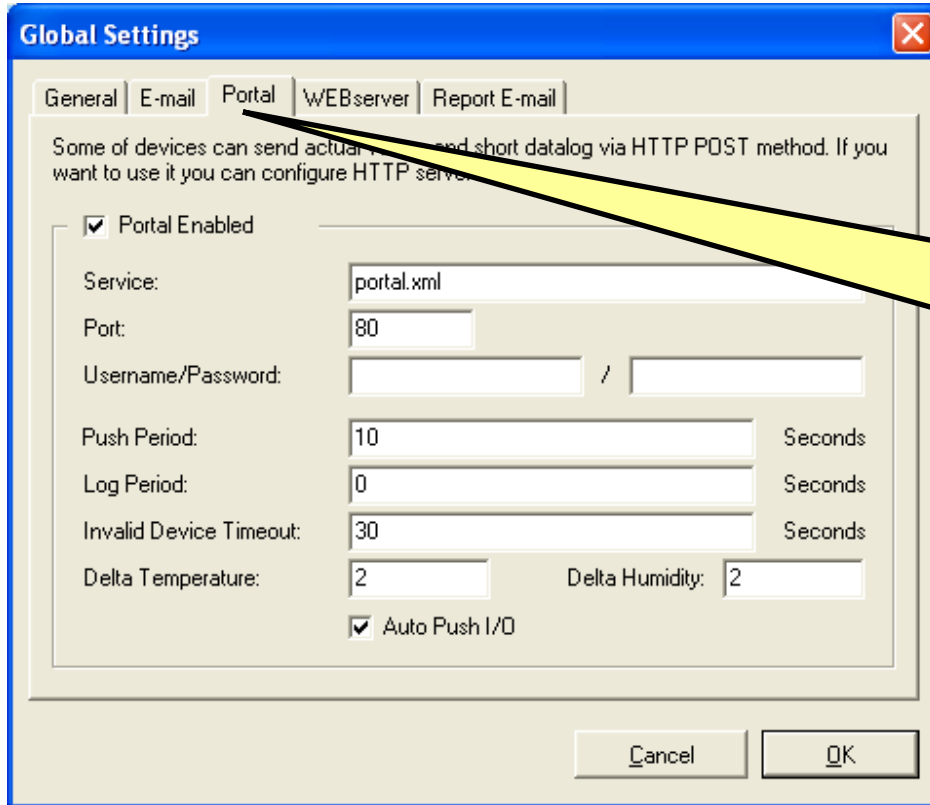
Creates a XLS overview and e-mails it as an attachment.

1

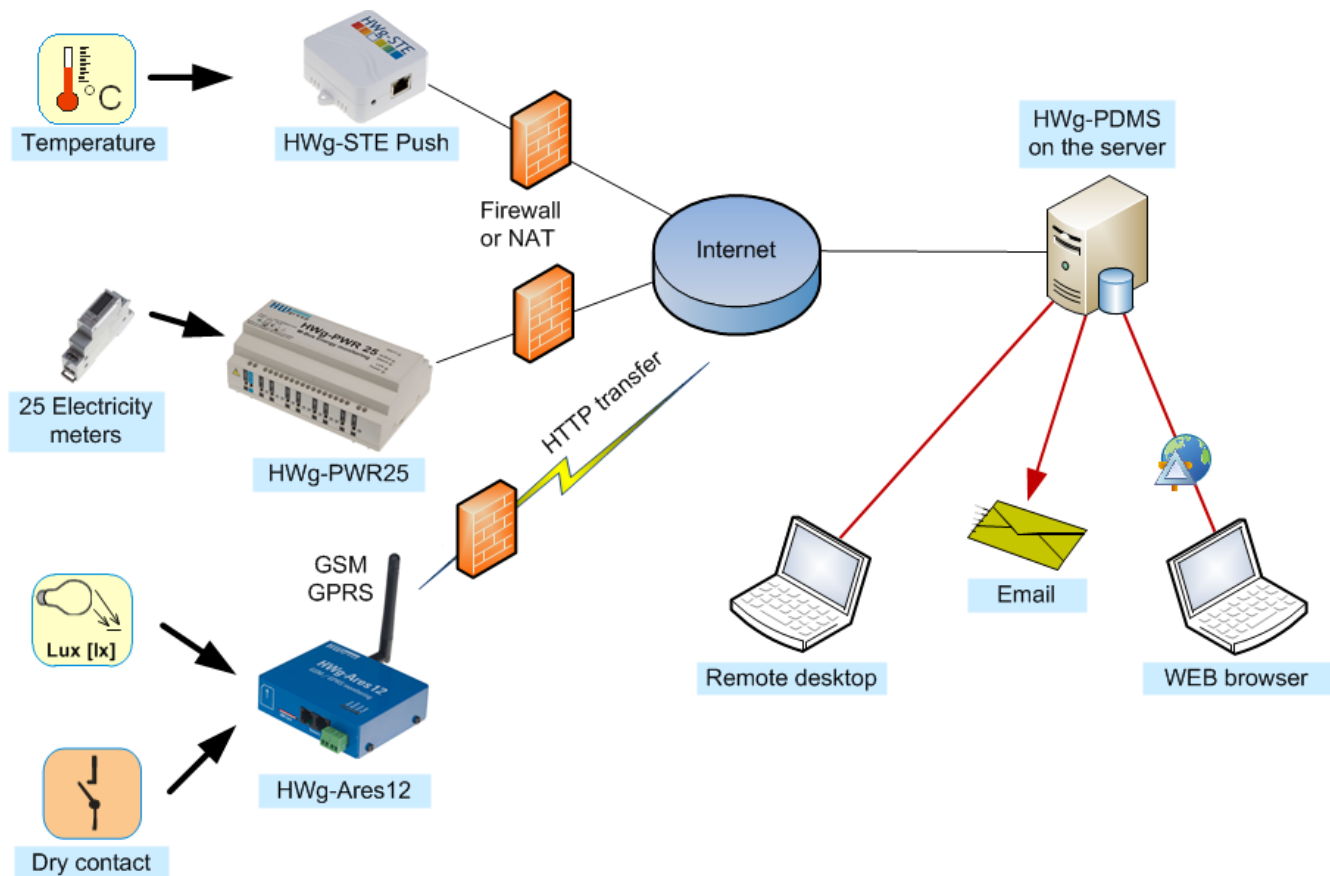
Global Settings – Portal

Activates the portal service within HWg-PDMS. The service runs in the background. The PC must have a public IP address, or at least an IP address that is accessible by all sensors. IP sensors connect directly to the web server within PDMS and upload the measured data.

In the list of devices, these devices are accessible under **PORTAL**.

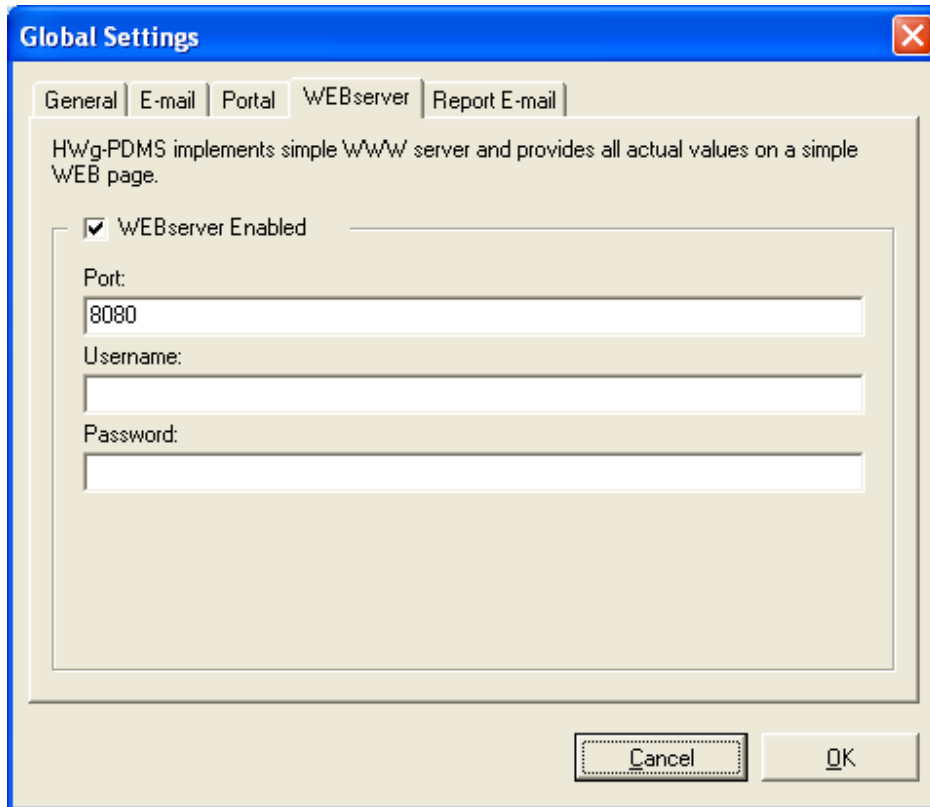


HWg-PDMS runs at a public IP address, IP sensors upload data over http.



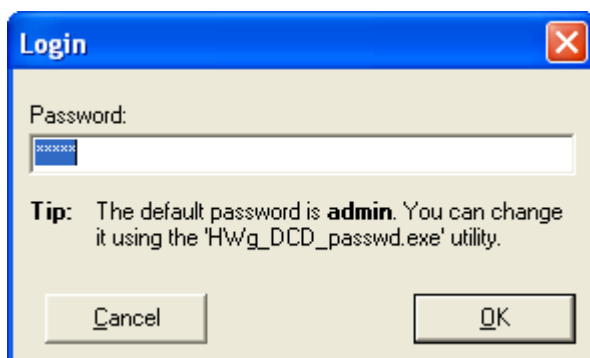
Global Settings – WEBserver

Creates a web server that displays current sensor states. The default port is 8080. If this port is already in use (e.g. for the proxy server in Windows 7), choose a free port, for instance 8282.

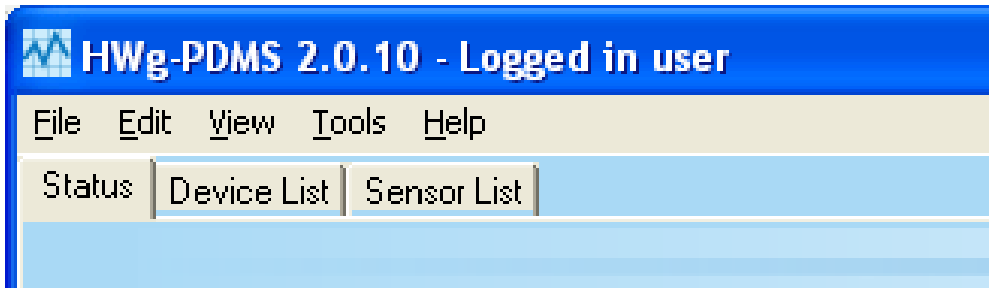


Changing the password

The “**Login**” sub menu verifies the user authorization for modifying the configuration – monitored devices/sensors, modifying reports and configuring other parameters. By default, no login is necessary because the application automatically uses the default password, “**admin**”.



To change the password, use the **HWg_DCD_passwd.exe** utility. It is located in the same directory as the **HWg-PDMS_client.exe**, by default **C:\Program Files\HW-group\HWg-PDMS**. After the password is changed, some functions require authentication. Unauthenticated users can change the displayed interval, update and export charts, view the log and generate content into existing report templates.



View menu

Log Messages displays the application log file. The log contains information about connections with the monitored devices, about the database and about services that HWg-PDMS uses. There is a size limit for the log file. If it is exceeded, a new file is automatically created.

Language changes the language of the HWg-PDMS user interface. Currently supported languages:

- English
- Czech
- German
- French
- Polish
- Romanian
- Indonesian
- Spanish
- Portuguese
- Slovene

Tools menu

Import imports the database of sensor values from older versions of the application, 1.5.x and 1.6.x.

Help menu

Check for Update checks the producer's distribution server for updated HWg-PDMS versions.

About displays the application version and build time. This information is necessary for resolving technical support questions.