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PARAMETERIZATION OF PQ MONITORS

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MEgA – Měřící Energetické Aparáty, a.s.

PQ_MEG.EXE

The program serves for parametrizing measurements, downloading measured data from instruments, on-line measurements and oscilloscopic displaying by the MEg35+, MEg37, MEg38/C, MEg39, MEg44 instruments.

Upgrade: http://www.e-mega.cz/DL

REVISION HISTORY

Version number	*Date*	*Correction description*
7.5.0	01.01.2016	Other instrument added.
7.6.0	01.06.2016	MEg39 and MEg44 output relay set.
8.0.0	01.09.2016	New functions

CONTENTS

1 Glossary of terms 4
2 Meaning of the main menu pictogram 5
3 Introduction 6
3.1 Connecting a measuring instrument to a computer 7
3.1.1 USB connection 7
3.1.2 P104–TCP/IP connection – Program parameterization 9
3.1.3 Battery economy function after the disconnection 10
3.1.4 GPRS and GPS signals 10
4 Instrument parameterization and measurement 12
4.1 Identification data 13
4.2 Measurement ranges 13
4.3 Recorder 14
4.4 Quality 14
4.5 Events 14
4.6 Measurement start 15
4.7 Memory manager – Measurement time setting 16
4.8 Measurement setting for detecting a circuit-breaker size 16
4.9 Output relay setting (MEg39, MEg44) 17
5 Instrument parameterization – TCP/IP – P104, GPRS, GPS 19
5.1 ETHERNET connection 19
5.2 GPRS connection 20
5.3 GPS time setting 20
6 Measurement 21
6.1 RMS 21
6.2 Samples 22
6.3 Oscilloscope 23
7 Measured data download 26
8 Measurement locations 28
8.1 Meas. dev 28
8.2 Meas. dev 28
8.3 Rem con. 28
9 DB sqlite 29
10 Testing mode 30
11 FAQ 31
11.1 Blurred display of letters in the program 31

1 GLOSSARY OF TERMS

dblclick	*Double click of the mouse button*
DVMEg	*(Data Viewer) Program to view the Mdat structure data*
CheckBox	*Box to check. Selected ("checked")* *– not selected (empty)* *.*
OS	*Operating system (Windows XP, Windows 7, W 8)*
GPRS	*General Packet Radio Service – data transmission using 2.5 generation mobile networks. Here in the text with the development and implementation of subsequent technologies, it can mean also another type of data transmission via mobile operator networks (EDGE, LTE, etc.).*
GPS	Global Positioning System – global satellite-based positioning system to provide position data and also accurate time data – in case of PQ monitors in particular. The time accuracy exceeds needs of the quality measurement standard.
RMS/2	Effective period values calculated by half-period intervals.
Amos	Measuring current sensor on the Rogowski coil principle.
P104	Protocol working over the TCP layer used in the power engineering. The remote control of instruments is realised via this protocol.

2 MEANING OF THE MAIN MENU PICTOGRAM

– the connected monitor supports the GPRS remote communication (external antenna required) see

– the monitor supports the GPS signal – time accuracy guaranteed in accordance with cl. A (external antenna required) see

– possibility to temporarily turn off the battery supply when the power supply is lost. see

– bar diagram of the downloading course of individual files. Green colour – downloaded file data, red colour – data to download.

3 INTRODUCTION

!! CAUTION!!

At some types of the set resolution, letters in the program can be displayed blurred. see Blurred display of letters in the program.

Administrator rights are required for the first start.

Pay attention to the setting of user rights for the user; see db sqlite.

PQ MEg is a program to work with the power quality monitors MEg35+, MEg37, MEg38/C, MEg39 and MEg44. The basic function of the program is the setting of measurement parameters and the subsequent download of measured data from memories of instruments into the computer where the data are evaluated. Besides, the program contains a meter function when the measured quantities are displayed in real time and an oscilloscope function that serves for verifying the instruments for correct wiring in the measurement location and for detailed oscillographic recording.

After the program is started, its main window will be displayed; see Fig. 1. There is a menu in the upper part of the window that serves for switching the individual program functions. The language is selected immediately after the program is started. If at least one monitor is connected, it is displayed in the pull-down list in the right part of the menu. If the program is started when no monitor is connected to the computer, buttons to operate a monitor are disabled.

Besides, the main window shows a program version and a compatible firmware version of the measuring instrument and links to the web page of the manufacturer.

Languages switching – You are expected to set the language immediately after the program start. If the software was already started and running before the language is changed, some parts remain in the original language (set at the start). The last language setting is remembered until the next start-up.

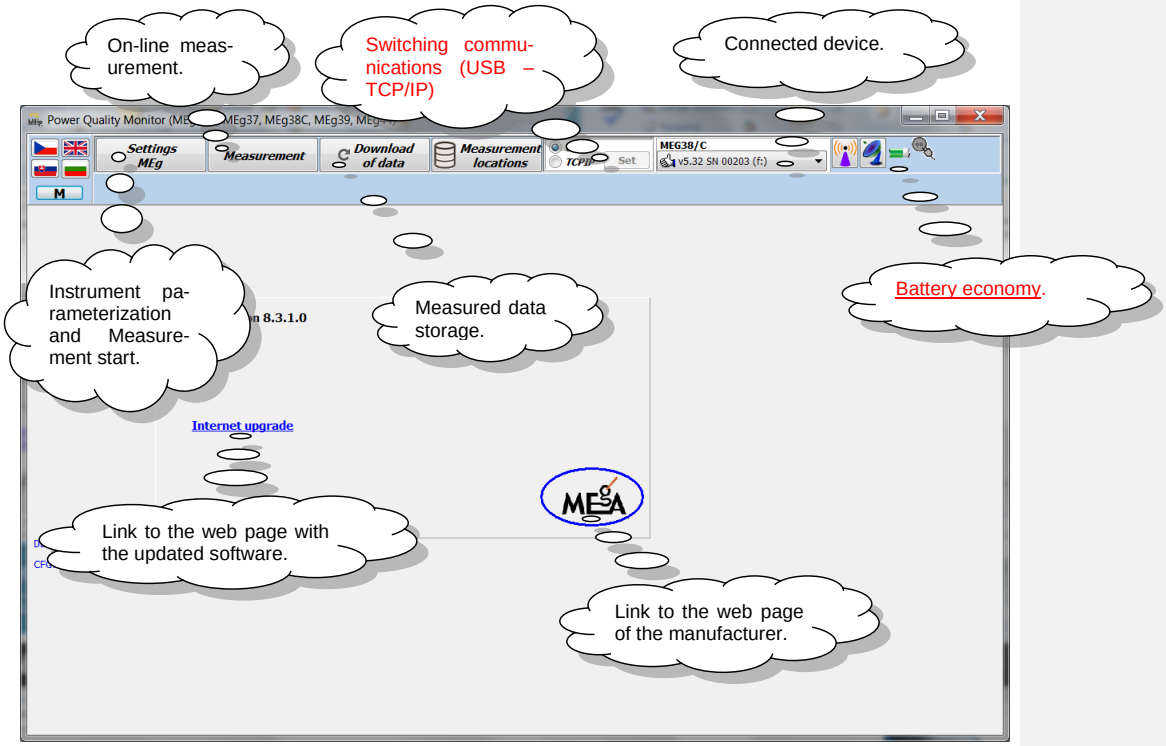


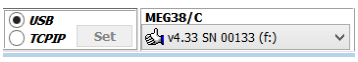
Fig. 1 – Description of control elements of the main window of the program

3.1 CONNECTING A MEASURING INSTRUMENT TO A COMPUTER

Communication with a measuring instrument runs via USB interface or via P104 – TCP/IP – LAN or GPRS protocol. Standard Windows system drivers are used for the USB connection, they are automatically installed by the system when the instrument is connected for the first time.

3.1.1 USB connection

!!! Even though the instrument appears to be a flash disc after it is connected to a computer, it is not allowed to be used for such a purpose!!!



The description of a selected instrument connected via USB includes:

Instrument type – MEg38/C in our case.
Instrument version – 4.33 in our case.¤
Instrument serial number – 133 in our case.

The pictogram means that the FW version in the instrument is not compatible with the current program version. The version in the instrument is usually lower and the program will request a FW upgrade in case of instrument parameterization (error corrections and functions supplementation).

The pictogram means that the version of the program and the version of the instrument firmware are identical.

Notes:

It is recommended that you have administrator rights allowed to connect the instrument to the computer for the first time.

The program was tested for Windows 7, Windows XP, Windows 8.1, Windows 10.

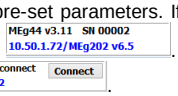
The optimisation was carried out for Windows 7 with 1920×1080 resolution.

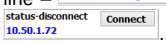
The transparency can be impaired due to a low resolution (scroll bars are required).

3.1.2 P104–TCP/IP connection – Program parameterization

For connecting via TCP/IP-P104 (supported by the MEg37, MEg39 and MEg44 instruments with LAN communication, MEg37 and MEg38 instruments with GPRS communication, MEg35+ through a communication unit MEg201.x for LAN, and MEg39, MEg44, MEg35+ through a communication unit MEg202.x for GPRS), the IP address of the instrument must be set for ***TCPIP***.

To change parameters, use the ***Set*** button.

After the ***Connect*** button is pressed, the program starts to test the connection to the instrument via P104 protocol with pre-set parameters. If the connection is successful, it will write information about the instrument in the upper line – 

. If the connection failed, the upper line informs that the connection was not established 

.

Enter the IP address of the device – this setting must be pre-set also in the instrument that is connected to the network; see Chap. TCP/IP – P104 instrument parameterization.

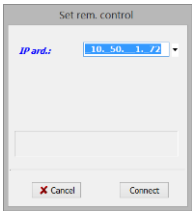


Fig. 1 – Remote communication set-

By pressing the ***IP adr*** text or the ▼ symbol, you can select an IP address according to the last location of the instrument.

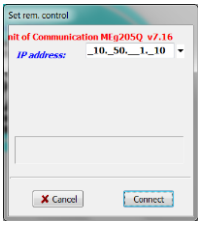


Fig. 2 – Remote communication via MEg2x

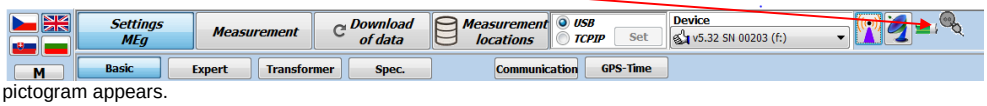
If the MEg20x.x communication unit is at the IP address, the user is informed about it by the text above the IP address and the program searches the list of the communication unit of the MEg39, MEg44 and MEg35+ instrument.

If the list contains more instruments of corresponding types, a pull-down menu will appear; if the list contains only one instrument, the instrument in the list is displayed. If there are more instruments in the list, select an instrument to be communicated from the pull-down menu.

After the selection, the program will make a communication with the newly set parameters. If the ***Cancel*** button is pressed, the program returns to the old setting.

3.1.3 Battery economy function after the disconnection

If the MEg38/C instrument is connected, the



pictogram appears.

Using it, you can change the battery on/off setting for the first disconnection of the instrument from the voltage.

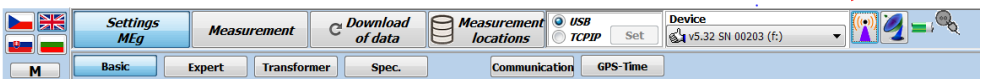
– After the first disconnection of the instrument from the voltage, the instrument **will not be supplied from the battery**.

– The instrument **will be supplied from the battery** also after the first disconnection from the power supply.

! ! ! WARNING! ! ! If you carry the instrument from the place where it was programmed to the place of measurement, after it is connected into the network, a voltage event will be generated (after the first phase is connected, the instrument will start running and the remaining phases are not connected yet). You can eliminate this "parasitic" event in the evaluating SW where you reduce the processing time interval by the length of this event.

3.1.4 GPRS and GPS signals

If the connected MEg38/C instrument supports GPRS communication and time synchronisation according to the GPS satellite-based navigation, the corresponding pictograms are displayed.



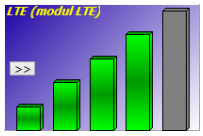
Meaning of pictograms and working with them:

– The instrument supports GPRS and GPS but the signal is insufficient.

– The instrument supports GPRS and GPS but there is no signal from GPS satellites (to adjust the time).

– The instrument supports GPRS and GPS but the signal is insufficient for GPRS communication. Or the instrument supports GPRS but it is used for ().

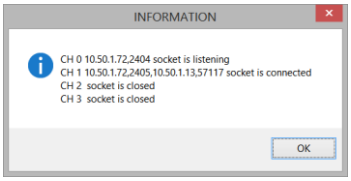
If the instrument is connected via GPRS communication, the button is unavailable.



If the signal is sufficient for GPRS, the pictogram (button) allows you to display a signal strength in the given location in the bar diagram (Fig. 4). The description contains a network type to which the module is connected and a network type in parenthesis which is supported by the module.

After the >> button is pressed, more accurate data are available for communication channels of the module.

Fig. 3 – GPRS signal



This listing means:

The pre-set IP address of the channel 0 is 10.50.1.72 and its com. port is 2404 and it is in the receiving mode – waiting for a possible connection.

The pre-set IP address of the channel 1 is 10.50.1.72 and its com. port is 2405 and a client with the IP address 10.50.1.13 is connected via the com. port 57117.

The channels 2 and 3 are not set.

Fig. 4 – Conditions of the com. module channels

If the signal from GPRS is sufficient, the pictogram (button) allows you to display a signal strength in the given location in the bar diagram (1 – 5 – at Fig. 6). The date and time under the GPS text shows the time when the time of the monitor was synchronized for the last time according to this signal.

After the >> button is pressed, more accurate data are available.

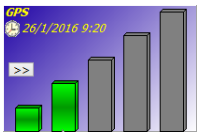


Fig. 5 – GPS signal

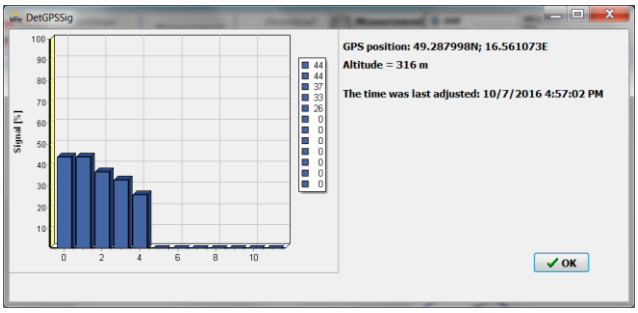


Fig. 6.1 – GPS signal details (number of satellites and percentage size of their signals)

4 INSTRUMENT PARAMETERIZATION AND MEASUREMENT

The PQ MEg monitors have wide possibilities for setting measurement ranges and parameters for recording events in the electrical network. The instruments integrate functions of the electric power quality monitor, recorder of measured values, recorder of events and other. **Before every measurement, it is necessary to set the instrument as required for the particular measurement.**

The setting of the MEg39, MEg44 and MEg35+ monitors is limited by their hardware. (U for LV or HV, 1A or 5A current inputs).

If a selected instrument does not contain the updated FW version ( ), you will be prompted to update.

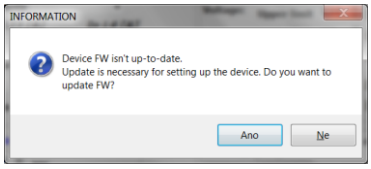
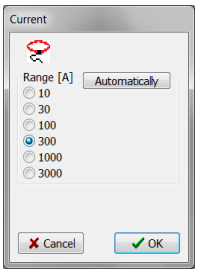


Fig. 6 – Prompt to update the instrument firmware

For easy entering, the setting is divided into two stages – Basic and Expert + and transformer station measurement parameterization.

Základní Only the most necessary data are parameterized in the basic setting and the other parameters are set by default. The default parameter setting is carried out when you press the ***Measurement start*** button in the lower right corner. **This setting type requires to connect current sensors in I1–I3**. These settings are transferred into the Expert setting window.



The current setting allows also the automatic setting of ranges with the *Automatic* button. It is carried out according to the instantaneous flowing current. The algorithm is set so that the flowing current cannot be higher than 40 % of the set range, which corresponds to the possible min. 3-fold increase of the current from the current within the set range.

Pokročilé The advanced setting window (**Chyba! Nenalezen zdroj odkazů.**) contains a panel in the upper part o enter identification data of the measurement; the measurement parameters can be set in the lower part; the pre-set measurement can be started with the ***Measurement start*** button in the lower right corner.

When the window is displayed for the first time, parameters are loaded from the connected monitor. If changes are made and no measurement is started, the changes will remain effective also after you leave the window and return. To refresh the window according to the connected monitor, you can use the ***Download*** button.

If you move onto blue texts, an action will be performed (pre-set values will be set, another setting displayed, ...).

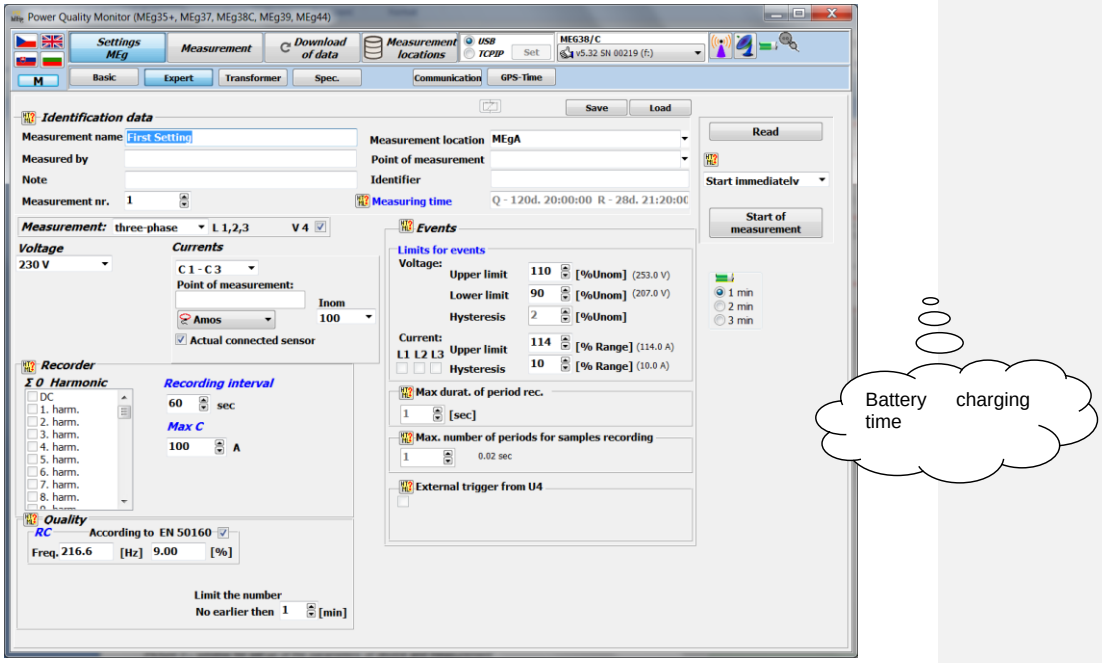


Fig. 7 – Window to set the instrument and measurement parameters

4.1 IDENTIFICATION DATA

The identification data allow unique determination of a source of measured data, they are a part of the data file.

Minimum measurement time shows the minimum guaranteed recording time of the electrical power quality monitor and the recording time of the measured quantities recorder. The memory allocation to individual functions of the instrument can be optimised; see Memory manager – to enable, press the left mouse button after moving onto the blue text of ***Measurement time***.

All blue labels indicate a possibility to facilitate the value settings.

4.2 MEASUREMENT RANGES

level in kV.

Currents – type and measuring range of the used current sensor. When MT clamp-on sensors are used beyond the rated sensor range, the primary current of the current measuring transformer is also set.

The type of the used sensor must be always identical with the programmed type.

A possible confusion is indicated in measured data. **However, it is considered as a non-standard operation** (error). The current data are inaccurate in the interval when the sensors are changed. The energy measurement accuracy is also impaired by such a change and the overcurrent setting will be inoperative.

Phase current measurement – in case of HV measurements (100 V at MTU), the monitor measures in the delta voltage measuring mode and assumes a 3-wire system. In such a case, only the total power from the output is evaluated and a current from two phases is sufficient for the evaluation. If the output is fitted with all currents, the power (and the energy) can be calculated from any phases.

4.3 RECORDER

Max. I – the maximum current value serves for later percentage evaluation. The loading display in the RMS meter is also referred to this value.

Record interval – Recorder – Interval to store average values of measured quantities in the memory of the instrument.

Recorder – Harm – It is possible to record values of U1–U4 and I1–I4 harmonics.

The 2–63 harmonics measurement is conditioned by a simultaneous measurement of the first harmonic.

4.4 QUALITY

HDO – HDO signal frequency in the measurement location.

All the other parameters are determined by the standard. Beware of the setting of limits for voltage events, which can be set by the user but they are defined for measurements in accordance with the EN 50160 standard (by clicking on the text ***Limits for events***.

Rapid voltage changes – defining parameters (Threshold and Hysteresis) to monitor rapid voltage changes. The ***RMS/2 record*** selection at rapid voltage changes allows that detailed (RMS/2 and oscilloscope) data can be recorded according to the setting in the events (***Max. time to record periods*** and ***Max. number of periods to record samples***). The number of records of detailed data can be reduced in the ***Reduce number*** – ***At the earliest after***. In such a case, other detailed data will not be recorded before the pre-set minutes after the previous Rapid change is ended. This limitation has an influence on the details recording only. Then the Rapid changes are recorded regardless of the setting as the standard requires.

4.5 EVENTS

When an event occurs, effective RMS/2 values and momentary values of the measured quantities (oscillographic course) are recorded in the memory of the instrument. The group of ***Event limits*** parameters serves for setting voltage and current thresholds whose exceeding triggers the recording of the event. For the current, it is possible to select phases that will react to the overcurrent.

Max. time to record periods – in case of a voltage event, overcurrent or if an external U4 trigger is used at ⎍ ⏔ (see below), the monitor records RMS/2 values of measured quantities for the time interval set by this parameter + values before the event (pretrigger); see the lower course in Fig. 9. If an event is longer than the pre-set time period, the maximum and minimum values are monitored and all transitions through the 5% limit are recorded for voltage events (failure limits according to EN50160). If an event record is triggered from the U4 voltage, the record runs for the set time interval.

Max. number of periods to record samples – in case of a voltage event, overcurrent or if the monitor is equipped with an external U4 trigger, the monitor records all measured voltage and current values (256 values per period, or 128 at MEg 37) + update. Set a number of periods here whose individual samples will be stored in the memory after an event occurs (Fig. 9 right at the bottom).

External trigger from U4 – The U4 input can be used as an external trigger to record periods and oscilloscopic data as in case of events. The exceeding ⎍ and drop ⏔ works similarly for events, i.e. they start at the moment of the transition over the set limit and end after the return (the hysteresis is fixed at 3 V). The leading ⎎ and trailing ⎏ edges work in such a way that the record starts at the moment of transition and lasts according to the setting in the ***Max. time to record periods***. If the condition () ⎎ or ⎏ is triggered during this course again, the recording time is measured from this new trigger.

Fig. 9 shows the meaning of individual parameters to record events. The upper diagram shows a course of average voltages of the L1 phase with the 1-sec. recording period. The lower diagram shows a course of effective voltages during events measured by periods. The maximum length of this record is given by the parameter ***Max. time to record periods***. The right lower part shows an oscillographic course recorded when an event occurs. The length of the oscillogram record is given by the parameter ***Max. number of periods to record samples***.

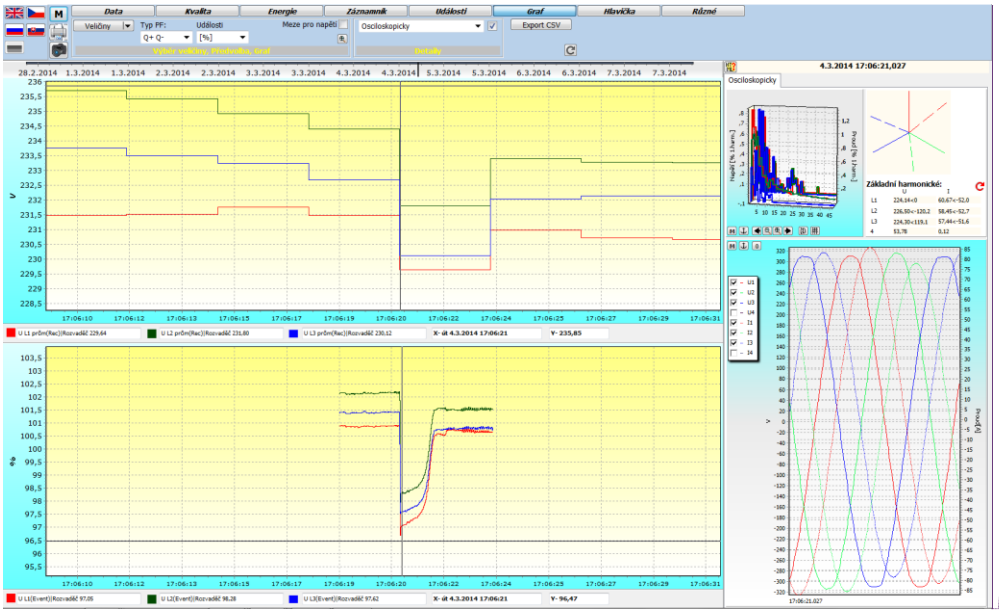


Fig. 8 – Example of an event record displayed in the DVMEg program

Okomentoval(a): [b1]: Restore Fig. 9!!!

4.6 MEASUREMENT START

There is a pull-down menu over the ***Measurement start*** button for portable instruments where you can select a measurement start type.

- ***Immediate start*** – the measurement is started immediately after the ***Measurement start*** button is pressed.
- ***Start from time*** – the measurement is started from the pre-set time. The start time can be changed by clicking on the data and time display. The time setting is possible in whole **10-minute** intervals.
- ***Delayed start*** (the measurement is not started) – the monitor starts to measure only after its power supply is restored. This function serves for parametrizing the monitor outside the measuring circuits and for starting its measurement only after its installation.

During the start of measurement, the data stored in the device memory are deleted. The user is informed about it immediately after the clicking on the button and this is the last possibility to avert a possible data loss (by pressing the **No** button).

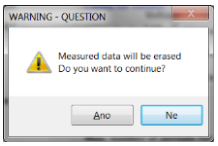


Fig. 9 – Deleting memory warning

4.7 MEMORY MANAGER – MEASUREMENT TIME SETTING

It is enabled by clicking on ***Minimum measurement time***.

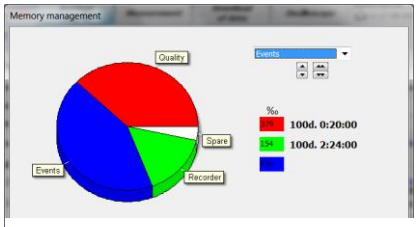


Fig. 2 – Measurement time setting window

An exclusive memory area can be allocated for the individual measurement types. For a synchronous measurement with a fixed length of the record (quality and recorder), the minimum time can be defined according to this allocation, during which the data will be recorded before the rewriting occurs.

The Reserve area is reserved for the measurement that requires the recording when the allocated memory is full. In the time interval, for which the memory was allocated, it can be most frequently used for events (if the allocated area for events is exhausted). If events do not exhaust the Reserve area after the time guaranteed for the synchronous data measurement, synchronous records (quality and recorder) will be written into the Reserve area. Then the recording interval can be also longer depending on the number of periods.

Setting control description:

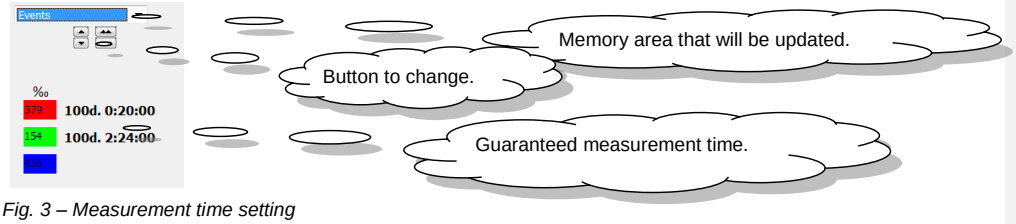


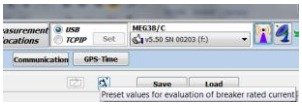
Fig. 3 – Measurement time setting

4.8 MEASUREMENT SETTING FOR DETECTING A CIRCUIT-BREAKER SIZE

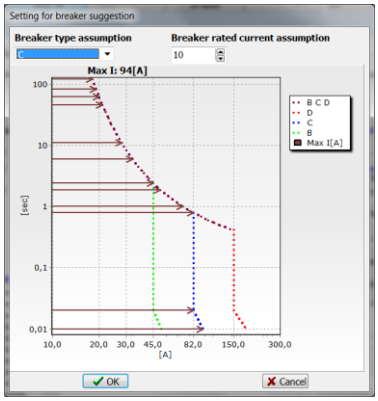
Properties of the monitor allow the measurement setting in such a way that the measured data can be used for designing a circuit breaker size considering the maximum current rating of the outlet. This measurement must be carried out when the current rating is maximum and should run for a longer time (considering possible concurrences) or more measurements should be carried out.

When evaluating, it is necessary to check the measurement time interval (for monitoring events – overcurrents) that must be the same as for the recorder measurement (the memory must be overcycled for the events measurement). If the overcycling already occurred, it is necessary to keep in mind that “lost” events (overcurrents) could be higher than the events remaining in the memory.

The ***Setting for designing a circuit-breaker*** window serves as auxiliary for the optimum setting. To enable the window, use the button.



According to the pre-set expected size and type of the circuit-breaker, the Amos range and over-current measurement value will be set. The value to measure overcurrents is 90 % of the value of the set circuit-breaker. The circuit-breaker value is limited by the monitor range depending on the circuit-breaker type.



The 3-sec. time interval will be set for the record of the recorder, 60-sec. time interval to record periods at an event and 150 periods (3 sec.) to record samples for events. The harmonics measurement setting can be cancelled. A monitor set in this way allows synchronous measurements for 3 days and 6 hours (1 week in case of version 1.70), including a week-long quality measurement.

Fig. 4 – Circuit-breaker design

4.9 OUTPUT RELAY SETTING (MEG39, MEG44)

The monitor allows you to set the output relay switching according to the power quantity or voltage and current events.

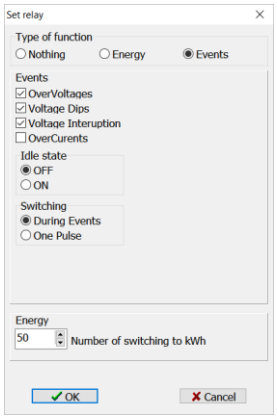


Fig. 10 – Output relay setting

5 INSTRUMENT PARAMETERIZATION – TCP/IP – P104, GPRS, GPS

The MEg39, MEg44, MEg37 instruments allow remote communication via P104 protocol. Parameters of the **instrument** are set via USB communication and **MEg setting**->**Communication** menu. The GPRS communication is parameterized at the manufacturer's (MEg38 with a module and MEg39, MEg44 MEg35+ with a com. unit).

*Fig. 11**Communication** button for parametrizing the instrument for P104 communication.*

5.1 ETHERNET CONNECTION

A fixed **IP adr.**, **Net Mask** and **GateWay** are set; the MAC address is displayed as informative – it is local and unique within instruments made by the MEgA company.

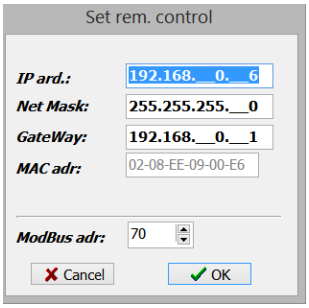


Fig. 12

If you are remotely connected, before a change is made in the instrument, the following message appears asking for your confirmation:

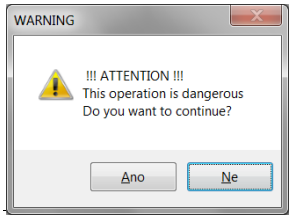


Fig. 13

If you confirm the change, configuration parameters of the network will be rewritten in the instrument. Unfortunately from the time of rewriting, the communication with the instrument is interrupted, therefore the whole process cannot

be checked retrospectively unlike the USB connection. Therefore the program considers the writing to be correct and converts also communication parameters in the program and tries to make a connection to the instrument again. If the writing is incorrect for some reason, it is necessary to set original parameters of the program for communicating with the instrument; see P104 – TCP/IP connection – program parameterization

5.2 GPRS CONNECTION

Some instruments (ordered as optional) communicate via GPRS. This program selection serves for setting the instrument for GPRS communication. It is available only when the instrument is connected via USB communication.

APN point – according to the operator

User name and password according to the SIM card.

The port to communicate with the instrument is 2404 because the instrument communicates with the software via P104 protocol.

The channel 2 setting is for service purposes and is not required for operation of the user software.

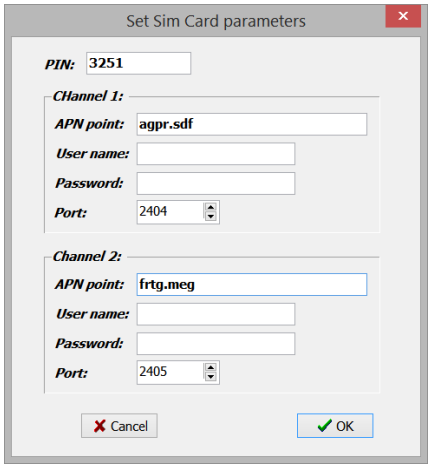
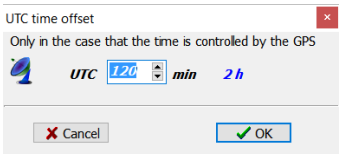


Fig. 14

5.3 GPS TIME SETTING



The time measurement offset is possible using the connected GPS. An offset from the reference meridian is to be set (independently of the summer time). +1 hour for the Czech Republic and Slovakia, i.e. 60 minutes. (+2 hours, i.e. 120 min. for Bulgaria)

6 MEASUREMENT

Three types of meters are available. **RMS** or **Samples** measurement. Both types can be used in parallel with the measurement to the device's memory – the set and started measurement won't be stopped (unlike the **Oscilloscopic** measurement; see Oscilloscope).

6.1 RMS

The RMS function allows you to display immediate measured effective values including their time behaviour.
For the rapid measurement interval, there are 30–40 measurements per second – therefore the diagram does not include all periods (depending also on the computer speed and setting) and output vectors are not displayed.

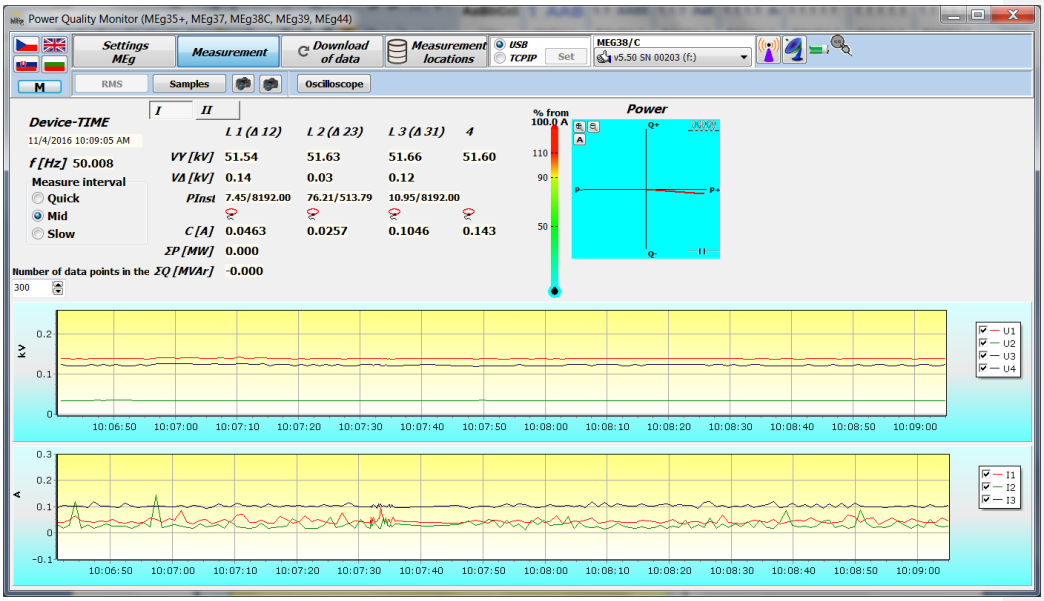
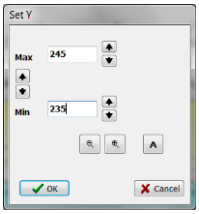


Fig. 15 – RMS meter window

By moving the mouse pointer onto the Y-axis area and by double clicking you can pre-set the Y-axis range.



6.2 SAMPLES

The ***Samples*** function reads sampled values from the monitor, shows them in a chart, computes and displays a phasor diagram and a chart of harmonics. Data from the harmonic analysis are also included in the table.

For better orientation, the phasor diagram is anchored (recalculated) so that the phase of the U1 fundamental is always 0°.

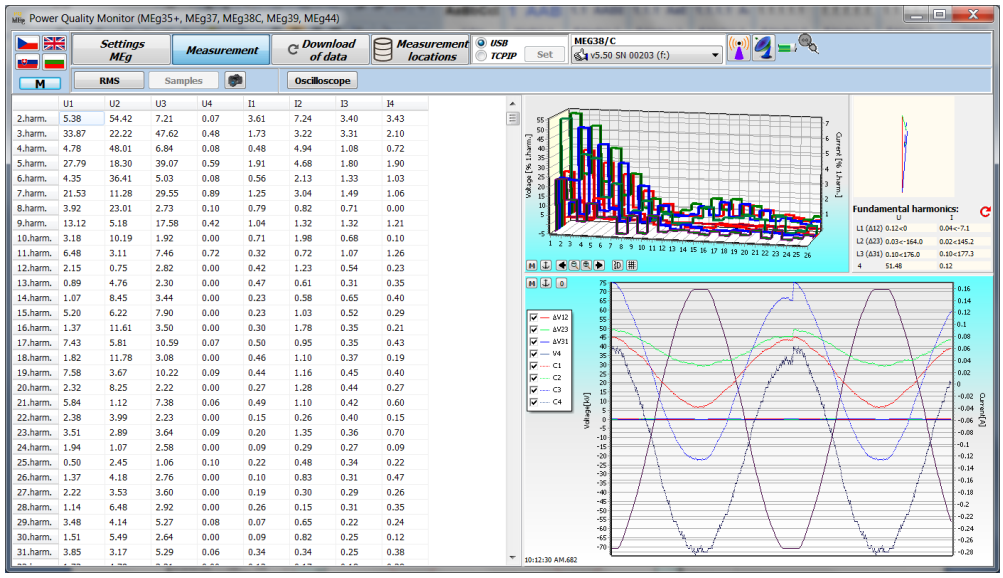


Fig. 16 – Function Samples window

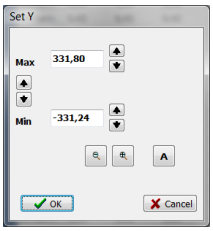
– calls the menu

– switches on/off the Y-axis auto range

– controls X-axis ranges (diagram of harmonics)

– changes-over between 2D and 3D (diagram of harmonics)

– tunes up the Y-axis zero value between U and I (diagram of samples)



By moving the mouse pointer into the phasor diagram area and by double clicking, the range is automatically adjusted to the current values.

6.3 OSCILLOSCOPE

! ! ! WARNING! ! ! Unlike the previous two meters, this type will delete the memory completely after the start is enabled using the **Start** button and confirmed.
The monitor allows an oscilloscopic recording at the frequency of about 12.8 kHz or 6.4 kHz for MEg37 (depending on the momentary network frequency). The data are read from the instrument and displayed with about a 2-sec. delay. **! WARNING!** The delay can be also longer depending on the computer speed and configuration or on possible parallel OS processes (the delay can be seen in the lower right corner of the screen [sec]).

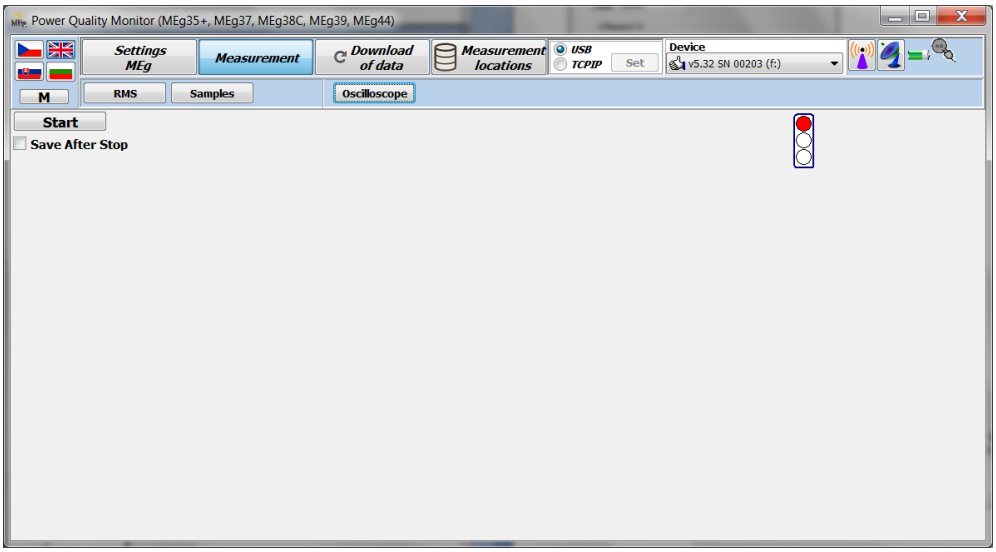
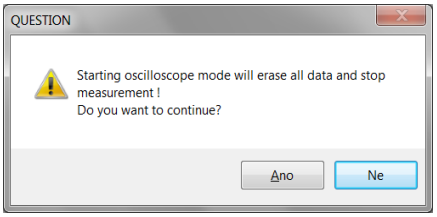


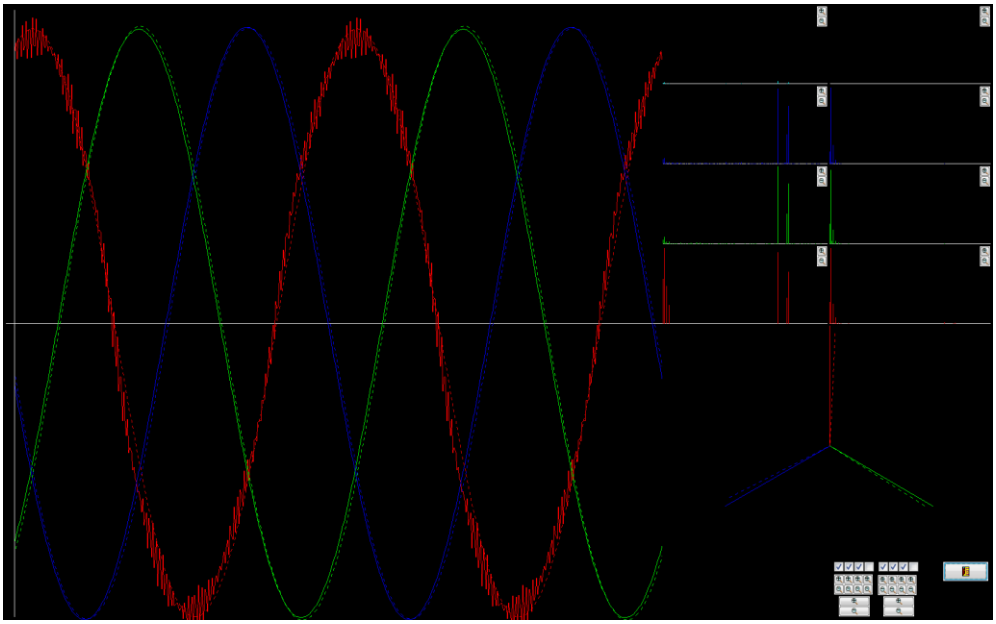
Fig. 17 Oscilloscope start window



After the ***Start*** button is pressed – before the oscilloscopic measurement is started – the monitor memory is released (deleted) after the confirmation with the ***Yes*** button. **Possible data are lost beyond recovery**. And all running measurements are stopped. Now it is the last possibility to cancel the mentioned process.

If you selected the ***Save After Stop*** checkbox, the sensed data will be saved in the selected *.Mdat file and can be displayed and analysed lately using the DVMEg program. **The data are saved even when your computer does not support OpenGL** and therefore the oscilloscope is not seen – see the following note. The saving interval after the measurement is stopped can be relatively long depending on the operation time of the oscilloscope.
After the oscilloscope mode **is ended**, the monitor will be **reprogrammed**.

Note:
The OpenGL (Open Graphic Library) is used for needs of the oscilloscope display. Some types of graphic cards do not support this technology (or it is necessary to download corresponding drivers for them). In such a case it is necessary to use a software emulator (it can decelerate the displaying significantly).



At the beginning of the displaying, all voltages and all currents have the same scale/zoom factor; the voltages range according to U1 (for U1–U4), the currents range according to I1 (for I1–I4). The initial range is not changed automatically and can be changed by the user using and buttons located in the bottom right corner of the screen (hold the button to perform repeated steps). Voltages are displayed by solid lines, currents by dashed lines; L1 red, L2 green, L3 blue and L4 cyan.
Two periods of recorded signals are displayed on the screen; it means 25 screens per second (according to the mains frequency). The FFT harmonic analysis is performed from both displayed periods of measured signals. The FFT results are displayed in spectrum diagrams in the right top corner of the screen. The scale for each spectrum graph is set independently of each channel according to the highest value of harmonics. Therefore the spectrum of individual channels is not comparable in amplitude; ratios of harmonics are comparable. The scale of spectrum diagrams is set automatically according to the highest value of harmonics. Other scale settings are available using and buttons beside each of the spectrum diagrams.
The phasor diagram computed from fundamental harmonics is displayed in the middle right part of the screen. The purpose of the diagram is to display phase shifts; the amplitude range is set automatically. Therefore amplitude variations are not visible in the diagram, only phase shift variations are visible.

– End of oscillographic displaying.

There are graphic cards that do not display the above-mentioned buttons. Then the ending is possible using the ALT-F4 key.

7 MEASURED DATA DOWNLOAD

After the **Download of data** button is used, the program window shows the **Memory structure** raster with the actual arrangement of measured data in the device memory.

The **Data download** button starts the data downloading from the device memory into the computer.

If the DVMEg data inspection and evaluation application is installed in the computer, then there is a checkbox in the upper part of the window labelled **Open downloaded file in DVMEg application**. If the checkbox is checked, the data are immediately displayed using DVMEg after the download is ended.

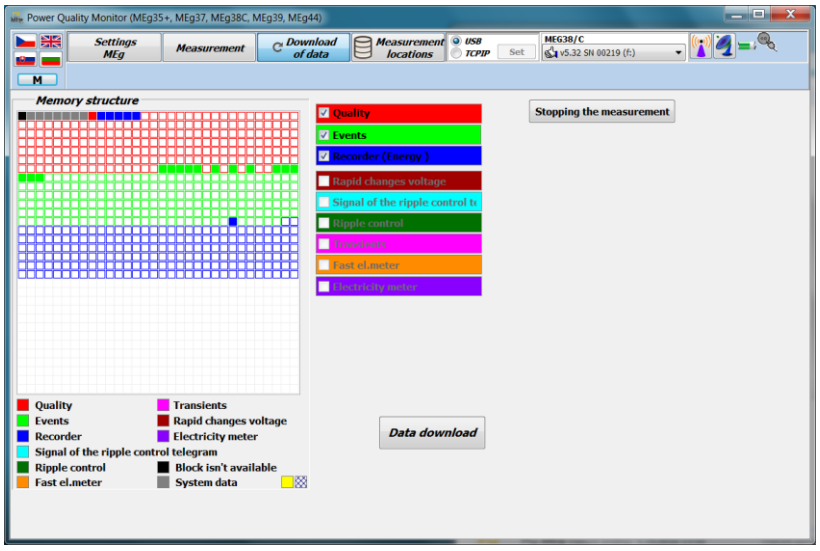
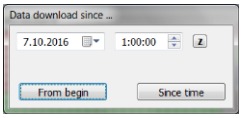


Fig. 18 – Window to save data from the device

After the ***Data download*** button is pressed, it is necessary to enter a file name, into which the data will be saved. After the file name is confirmed, it is possible to limit the downloaded data by the time from which the data will be downloaded:



If no relevant data exist, the user is informed by the following message:

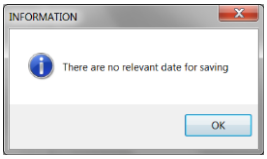
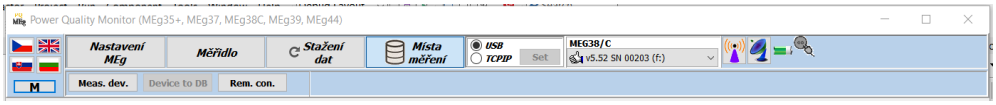


Fig. 19 – Warning – There are no relevant data

8 MEASUREMENT LOCATIONS



Working with DB sqlite.

8.1 MEAS. DEV

Meas. dev.

List of locations where the instruments measured/measure for the last time.

In the table, you can use Ctrl F to search or Ctrl C to copy in the clipboard.

8.2 MEAS. DEV

If the instrument is connected, it is loaded in DB sqlite and its location is updated depending on its setting. (The same operation runs when the measurement is started.)

8.3 REM CON.

Rem. con.

List of locations where remotely controlled instruments measure.

In the table, you can use Ctrl F to search or Ctrl C to copy in the clipboard.

After you move onto the line and double click, the program starts to make communication with the instrument.

9 DB SQLITE

The program works with the file DB sqlite that is loaded at the first start. It is placed in c:\MEGASQLITE by default. When working with the program, the user **!! MUST !!** have a read-write access to this directory, or:

The c:\MEGASQLITE directory contains the INFO.CFG text file. You can define a directory in the second line where the DB will be located. Then the read right for c:\MEGASQLITE and the read-write right for the set directory are sufficient. **!!WARNING!!** The directory must be in the same computer.

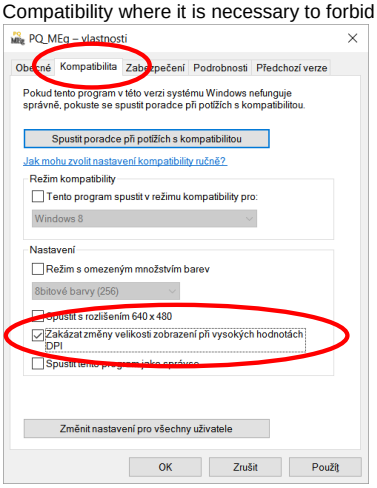
10 TESTING MODE

If the program is started with the -t parameter, it allows you to extend the setting for testing special measurement methods. For exporting such data, it is necessary to start the evaluating DVMEg with the -t parameter.

11 FAQ

11.1 BLURRED DISPLAY OF LETTERS IN THE PROGRAM

At some types of the set resolution, letters in the program can be displayed blurred. Then it is necessary to set the Compatibility where it is necessary to forbid display size changes at high DPI values.



Upgrade: http://www.e-mega.cz/DL

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