motcom loganalyser

User Manual

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Introduction

motcom loganalyser is a PC program for detailed viewing and analysing of measurement data collected by BeCOMS and SiCOMS systems during operation.

Both BeCOMS and SiCOMS systems can record engine measurement data in daily or hourly logfiles on a connected PC. Reviewing and assessing this data is vital for evaluating engine condition and for maintenance work planning.
motcom loganalyser with its advanced tools for recorded logfiles provides an extended insight into engine condition at a selected time point, and also inside some time interval.

In addition to such “offline” logfile analysis, motcom loganalyser can be used as an “online” monitoring tool. When the application is run in online mode parallel to BCom Logger software, it automatically registers new logfiles and detects changes in them. This continuous monitoring of engine status helps to forecast possible problems and thus contributes to optimization of engine operation and maintenance and to reducing of maintenance costs.

I. Getting started

1. Installation

To install motcom loganalyser on a PC with Windows operating system run the installer “motcom loganalyser_*nnn*.msi” where “nnn” is the version and build number.

System requirements

- Dual- or multi-core processor 2.4 GHz or higher
- Min. 4GB RAM
- Screen resolution 1280 x 768 dots or higher, at least 256 colors
- Supported operating systems: Microsoft Windows XP, Windows 7, Windows 8.x, Windows 10. Runs as a desktop application
- Internet connection is required for automatic e-mail notifications

After installation motcom loganalyser can be launched through a desktop shortcut or through Windows program menu **Start** / **Programs** / **motcom loganalyser**.

To start loganalyser with minimized main window, use command line argument “/mnz”: [application path]\loganalyser.exe /mnz

When first installed on a system, the loganalyser application can display a window requiring a valid registration ID. Please consult motcom GmbH representatives for information on it if necessary.

2. Functions

Main program window has a common Windows-style task bar with menus and large command buttons on the left side. These command buttons switch between the program functional sections: single file analysis, multiple file analysis and online monitoring.

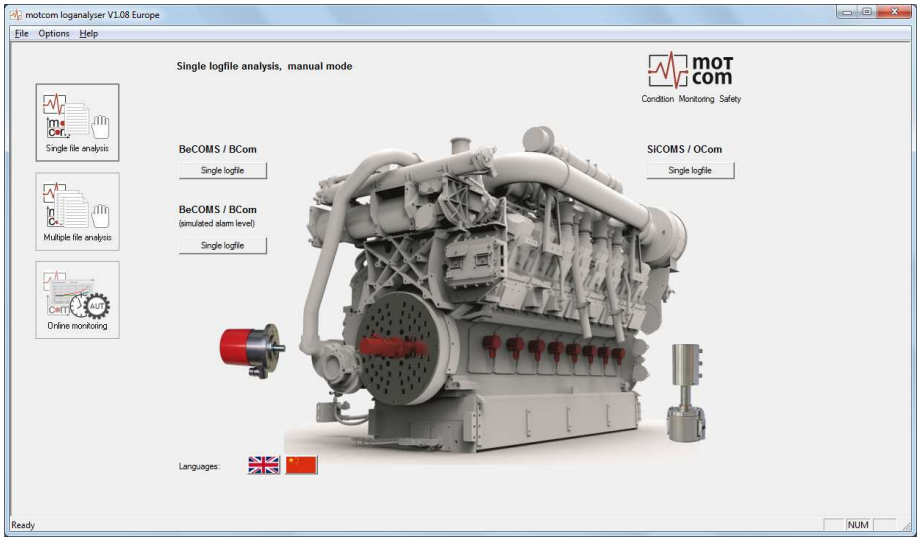


Fig.1. Main window, single logfile analysis panel

Single logfile analysis is the default panel (the corresponding command button is highlighted).

It has command buttons for opening BeCOMS logfiles (also with simulated BeCOMS alarm level), and for SiCOMS logfiles (Fig. 1).

Multiple logfile analysis panel allows to load up to 4 BeCOMS logfiles at the same time for comparing (chapter III.)

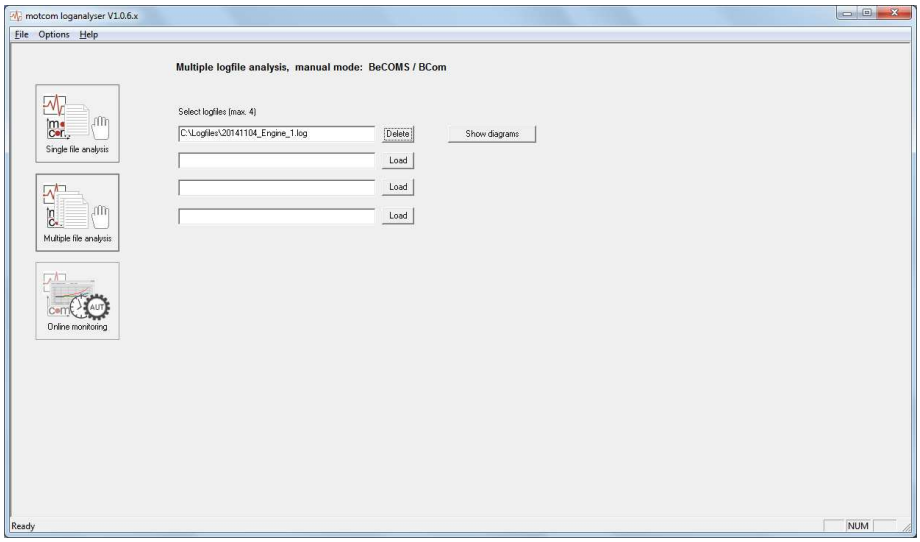


Fig.2. Multiple logfile analysis panel

Online monitoring panel has a section that displays some relevant settings, f. i. paths to directories where logfiles are being stored, control buttons to start or stop monitoring processes, and also contains a short status report in text form. See chapter IV for information.

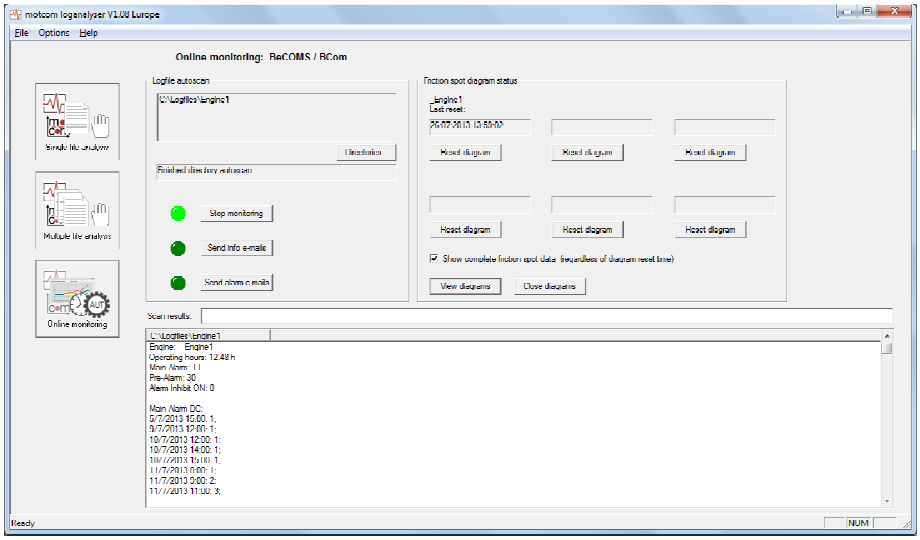


Fig.3. Online monitoring panel

II. Single file analysis

1. BeCOMS / BCom

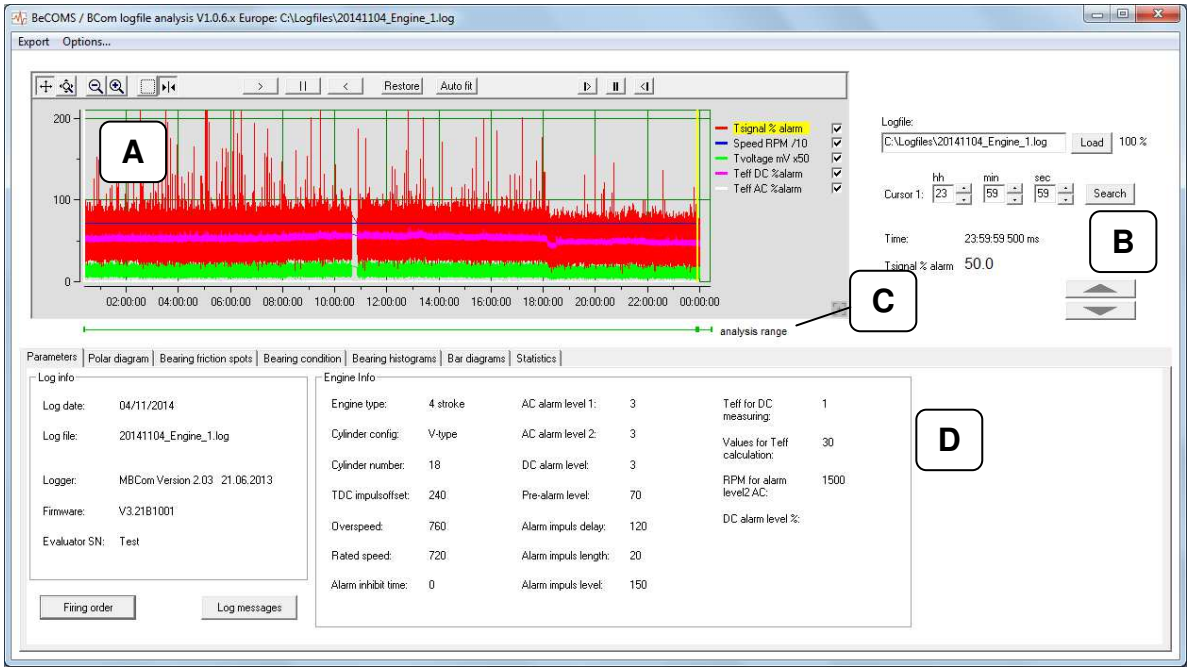


Fig.4. BeCOMS logfile analysis window

To open a BeCOMS logfile for analysis, use **Load** button. Loading progress in percent is displayed to the right of it. The button caption is also changed to “Cancel” during load to allow to interrupt reading a file. This is useful in case of somewhat lengthy loading times for large logfiles.

1.1. Linear plot

(Fig. 4, A)

The XY-graph at the upper part of the window shows linear time diagram of measured data (“data channels”):

Tsignal % alarm - measured thermo voltage in percent of alarm level
Speed RPM /10 - engine rotation speed in RPM (scaled by the factor 1/10)
Tvoltage mV x50 - thermo voltage in mV (scaled by the factor 50)

Teff DC % alarm - thermo voltage DC effective value in percent of DC alarm level. The value reflects global thermosignal trend. It can be configured by evaluator parameter “Values for Teff calculation”.

Teff AC % alarm - thermo voltage AC effective value in percent of AC alarm level. It characterizes the shape and size of thermosignal peaks and has three defining evaluator parameters: “Alarm impulse delay”, “Alarm impulse length” and “Alarm impulse level”.

The diagram can be scrolled and zoomed in and out using command buttons on its toolbar:

- scroll mode (click on x- or y-axis with the left mouse button, hold the button and move the mouse to scroll)
- zoom mode (click on x- or y-axis with the left mouse button, hold the button and move the mouse to zoom)
- Restore - return to default view (or **Autofit** button to fit the complete logfile data into the diagram window)

1.2. Time cursor controls and view mode switching

(Fig. 4, B)

By default two time cursors are available at the XY-graph in form of vertical lines: yellow (main cursor) and white (additional cursor). They can be moved along the time axis using mouse pointer while the left mouse button is pressed. Alternatively, arrow keys (left and right arrows) can be used to move main cursor exactly one data point forwards or backwards when the XY-graph has control focus. When XY-graph catches focus, symbol is displayed in its right bottom corner.

Time cursor controls to the right of the diagram (**Cursor 1** group with **hh**, **min**, **sec** fields) display and allow to change the position of the main cursor. To put the cursor to the selected time point click **Search** button.

The main cursor can also be moved automatically along the X-axis (one position forwards or backwards, usually 1% of the displayed time interval) using the following buttons at the diagram toolbar:

- start running the main cursor forwards
- start running the main cursor backwards
- stop the cursor movement

or from one data point to another with the following buttons:

- start moving the main cursor between data points forwards
- start moving the main cursor between data points backwards
- stop the cursor movement

The "**Time**" text field at the right of XY-graph displays the exact time, and the next field below - the value of selected data channel at the current main cursor position. Data channels can be selected by clicking at their labels in the legend at the right side of XY-graph.

The logfile window can be reduced from full size to half-size (upper pane or lower pane view). Toggle the views with  and  buttons:

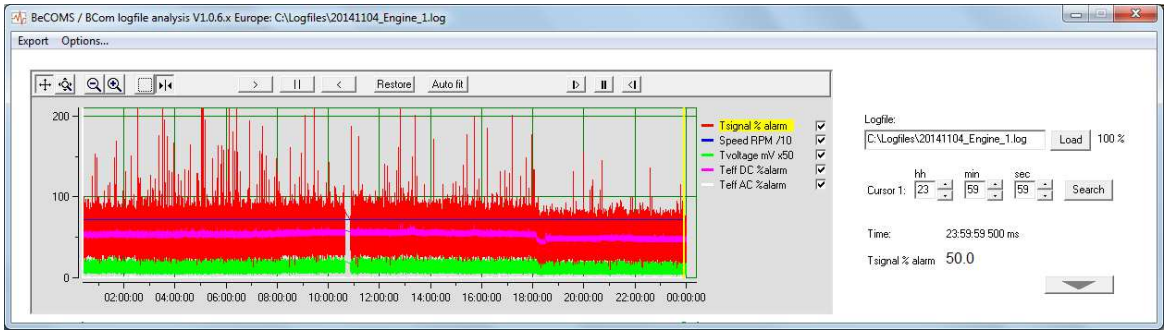


Fig.5. BeCOMS logfile analysis window, upper pane

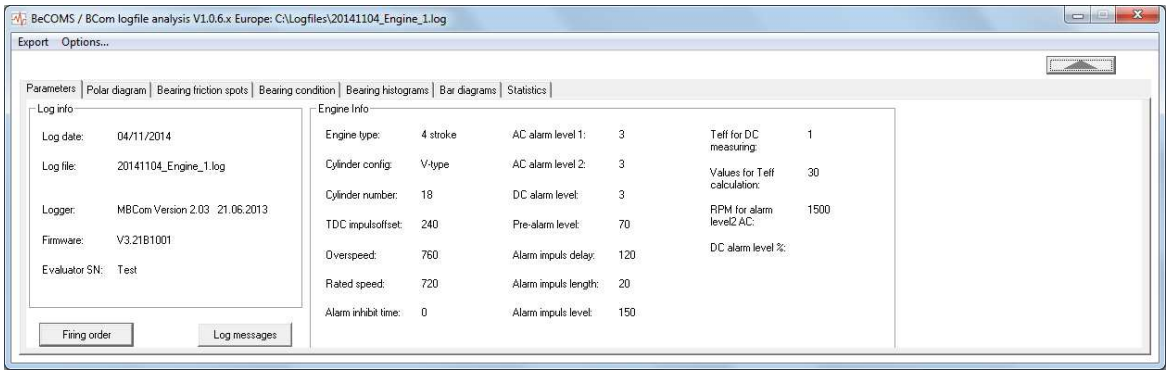


Fig.6. BeCOMS logfile analysis window, lower pane

1.3. Analysis range

(Fig. 4, C)

The horizontal bar below the linear plot is a time range indicator for additional analysis diagrams displayed below in tabs (Fig. 4, **D**).

Some graphs show data for a single time point (like polar diagram, p. 1.4.2 and bar diagrams, p. 1.4.6), therefore analysis range takes the form of a single tick and marks the position of the yellow cursor on the linear diagram:

For some other diagrams the user can select a custom time interval by setting the white and the yellow cursors as range boundaries (f. i., for bearing friction spots, p. 1.4.3, and bearing condition, p. 1.4.4). In this case, the thick bar at the analysis range indicator shows the selected range:

There are also diagrams that use the data from the whole logfile (bearing histograms, p. 1.4.5 and statistics, 1.4.7), for them the thick bar always covers the entire range:

1.4. Additional diagrams

(Fig. 4, D)

Tab control at the bottom part of the window contains the following views:

- engine and system parameters,
- polar data diagram,
- bearing friction spot graph,
- bearing condition indicators,
- histograms of friction spots maximum percentage,
- bar diagrams for cylinder thermosignal and cylinder speed difference,
- statistics diagram.

1.4.1. Parameters

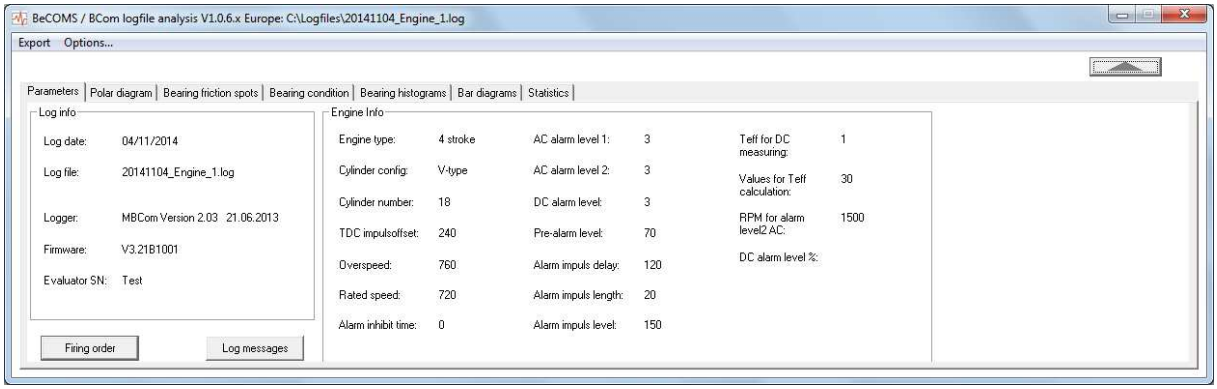


Fig.7. BCom logfile analysis window (lower pane), parameters

The default tab displays engine and system parameters from the loaded logfile.

Firing order and **Log messages** buttons open corresponding windows:

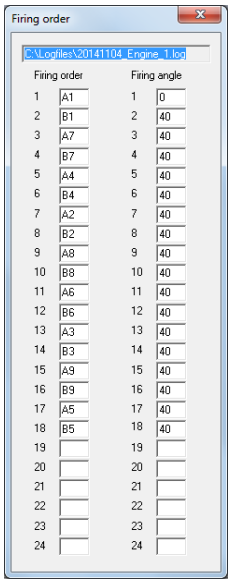


Fig.8. Engine firing order

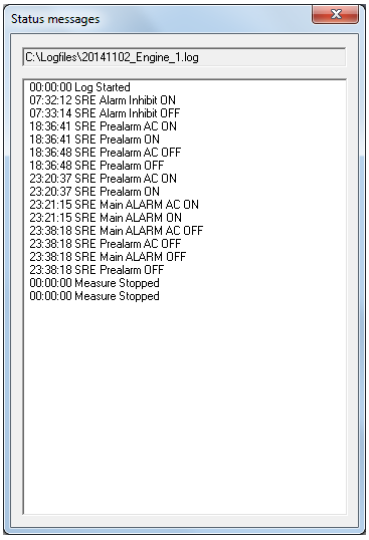


Fig.9. Status messages from the logfile

1.4.2. Polar diagram

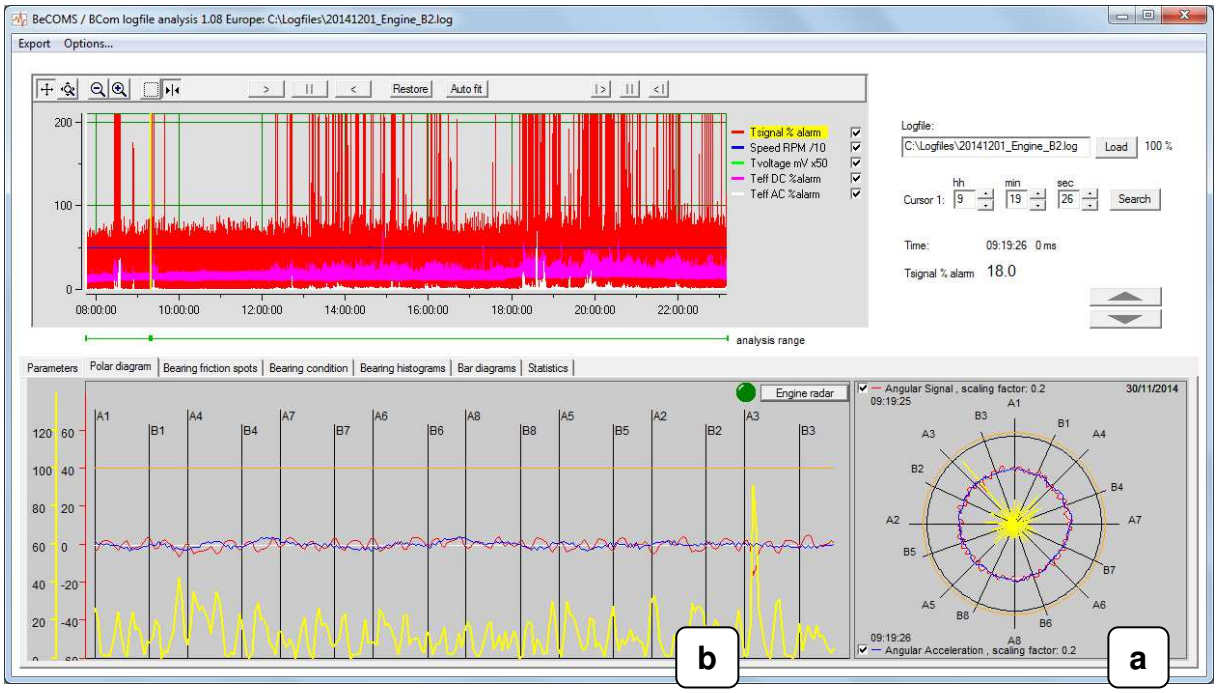


Fig.10. BeCOMS logfile analysis window, polar diagram

The diagrams at this tab display engine polar data measured during the full combustion cycle nearest to the time point selected at the linear plot. The data are:

- angular thermosignal relative to its average value during the combustion cycle
- angular thermosignal in percent to alarm level
- crankshaft angular acceleration
- 100% of thermosignal alarm level

Polar data is only recorded into logfile when the engine runs, while linear data is present even when the engine is stopped.

The diagram **a** shows engine polar data in polar coordinates, whereas diagram **b** represents the same data in flat form as a “xy-diagram”.
The black lines with labels at the polar data diagrams mark the cylinder firing positions during full combustion cycle.

The y-axis of the polar xy-diagram can be scrolled up and down, as well as scaled. Put the mouse pointer on the y-axis scale, press the left mouse button and pull the scale up or down to scroll. If the Ctrl key is pressed down at the same time, the y-axis will be scaled.

Polar diagram offers an additional tool for inspecting engine condition: a movable graphic simulating engine cylinders motion. Each position of rotating crankshaft and of cylinders in a full combustion cycle corresponds to a location at the polar graph (marked by a green “cursor” at the diagram below:

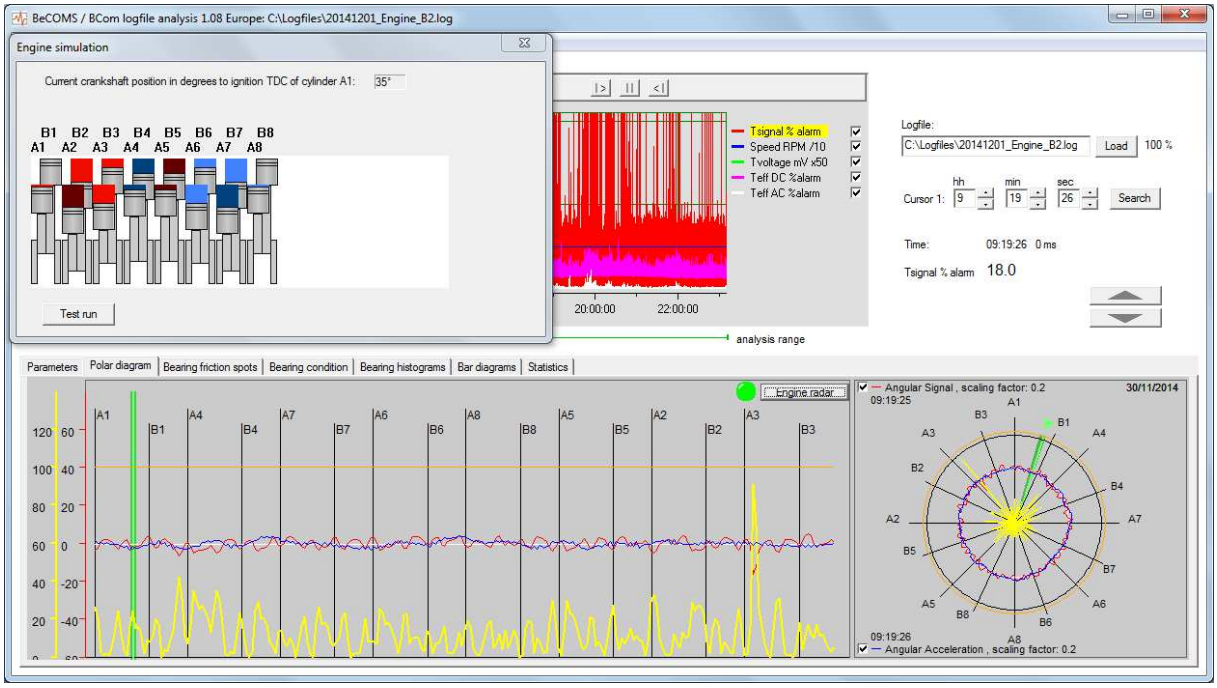


Fig.11. BeCOMS logfile analysis window, polar diagram with engine simulation window

The crankshaft position is given in degree relative to the ignition TDC of the first cylinder. For 2-stroke engines, it reflects one full rotation of the crankshaft, from 0° to 360°. For 4-stroke engines, full combustion cycle involves two full revolutions, and thus the position takes values between 0° and 720°.

Press **Engine radar** button on the polar panel to open the **Engine simulation** window. The **Test run** button in this window starts animation of crankshaft rotation. Alternatively the green cursor in the polar xy-diagram can be moved manually: move the mouse pointer onto the green line, press the left mouse button and move in desired direction, then release the mouse button.

1.4.3. Bearing friction spots

Fig.12. BeCOMS logfile analysis window, bearing friction spots

This tab displays the number of friction spots registered for each bearing at the analysis range.

a: schematic model of the crankshaft with friction spots indicator.
Blue lines show big end bearings, green lines correspond to main bearings.
If angular thermosignal value in percent of DC alarm level in polar data at some time point reaches or exceeds 100%, and if it can be assigned to a bearing, a friction spot is registered for this bearing, and the bearing is marked with a red rectangle when yellow cursor position at XY-graph corresponds this time point.

The range of polar data points assigned to a certain bearing is called cylinder range and can be set in the **Options** menu of BeCOMS logfile analysis window (see p. 1.5 in this chapter).

If the angular thermosignal exceeds 70% at some time point, the corresponding bearing is marked with a yellow rectangle for this cursor position.

b: friction spot indicators.
Each bar represents the number of friction spots observed for the corresponding bearing at the analysis range.

1.4.4. Bearing condition

Fig.13. BeCOMS logfile analysis window, bearing condition in the selected analysis range

The tab shows friction spot percentage in the selected analysis range (here in Fig. 13: friction spot percentage is calculated between the yellow and the white cursors).

a: schematic model of the crankshaft as described above in p. 1.4.3.

b: red bars represents the number of registered friction spots in percent to total polar data points in the selected analysis range for the corresponding bearing.

The sliders ( ) show maximal percentage of friction spots for each bearing on a base time interval in the complete logfile polar data set. The base time interval can be selected in the **Options** / **General options** menu of the main program window (chapter V, p. 2.1)

1.4.5. Bearing histograms

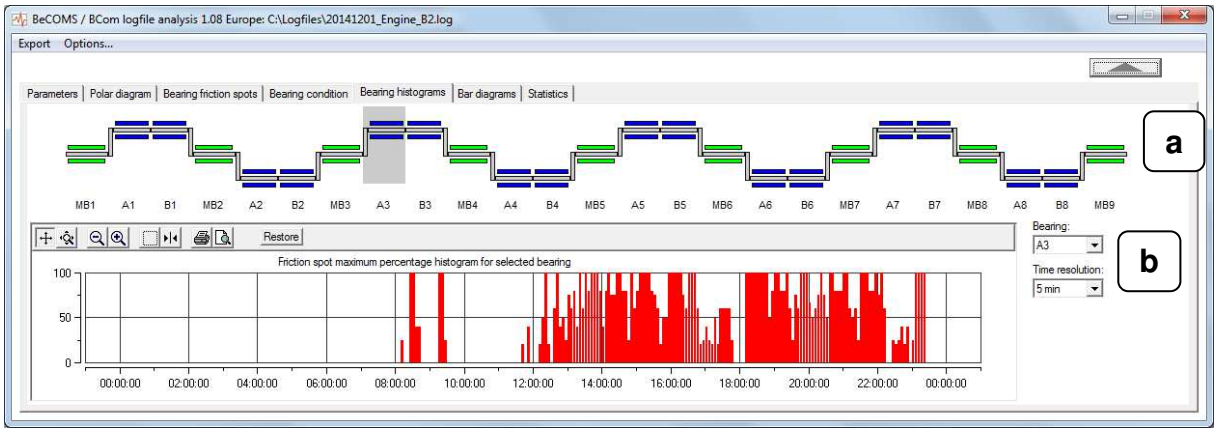


Fig.14. BeCOMS logfile analysis window (lower pane), bearing histograms, time resolution 5 minutes

The diagram at the bottom of this tab displays “distribution”, or histogram, of friction spot percentage over the whole logfile for the selected bearing.

The whole logfile monitoring time is divided in small time periods defined here in the **Time resolution** combobox. Inside these time periods, friction spot maximal percentage on a base time interval is calculated and represented by red bars. (The base time interval is the same as in p. 1.4.4 of this chapter, and can be selected in the **Options** / **General options** menu of the main program window (chapter V, p. 2.1))

This gives an overview of bearing condition development during logging time.

Use interactive clickable crankshaft model (**a**) or the **Bearing** combo-box (**b**) to select a big end bearing (listed by its name) or a main bearing (listed as string “MB*n*”, *n* being an ordinal number)

1.4.6. Bar diagrams

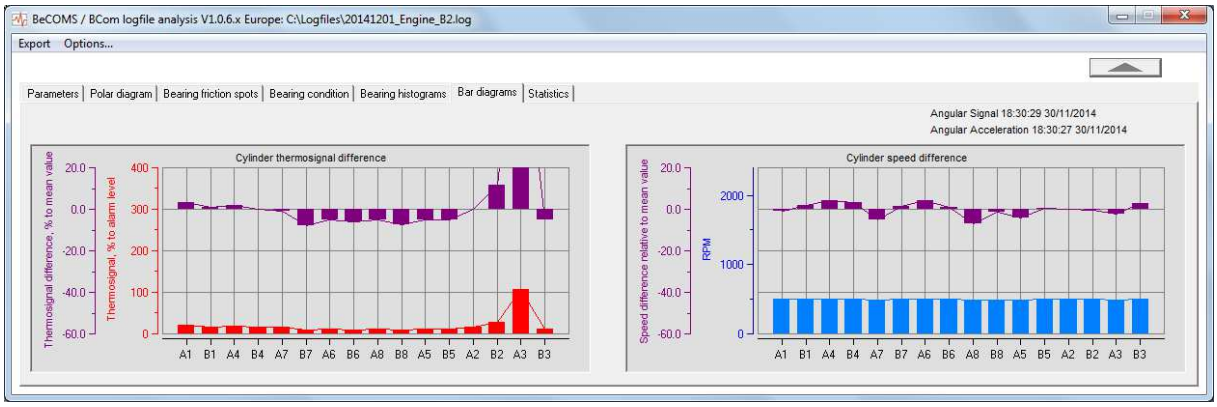


Fig.15. BeCOMS logfile analysis window (lower pane), bar diagrams

Cylinder thermosignal difference:

The red bars show angular thermosignal for cylinders in percent of alarm level during the full combustion cycle nearest to the selected linear plot time point. The purple bars represent these values relative to the average angular thermosignal for all cylinders in this combustion cycle.

Cylinder speed difference:

The diagram shows absolute cylinder angular acceleration (blue bars) and relative values (purple bars) to the average angular acceleration for all cylinders during the combustion cycle nearest to the selected linear plot time point.

1.4.7. Statistics

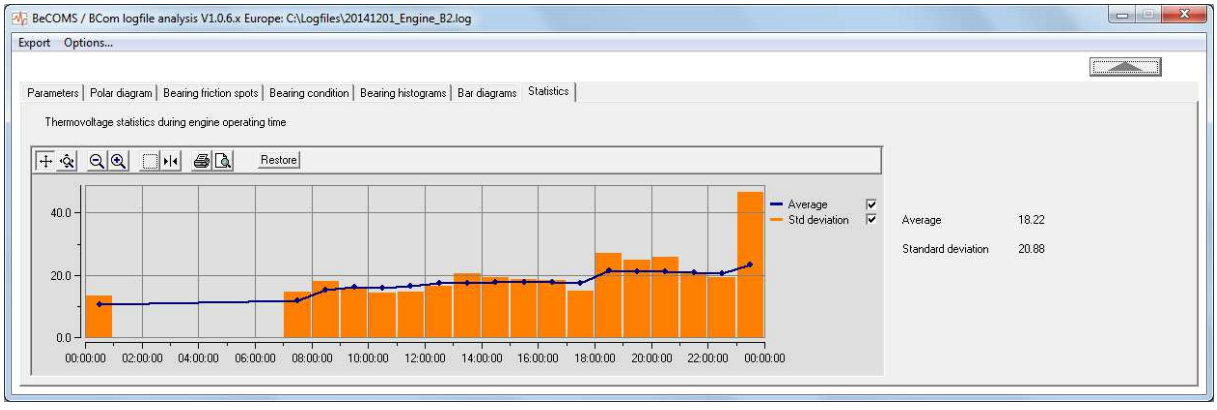


Fig.16. BeCOMS logfile analysis window (lower pane), statistics

Blue points here represent average values of linear thermosignal, and orange bars - thermosignal standard deviation values for every hour of engine operation.
The total thermosignal average and standard deviation for the whole logfile are shown at the right side of the panel. The values are only calculated during the time when the engine runs.

1.5. BeCOMS / BCom logfile analysis window menu

1.5.1. Export

BeCOMS / BCom logfiles can be exported to text files in CSV (comma separated) format.

1) Export: Format 1…

This menu opens a “Save As” window where a target file name can be selected for the converted data. On pressing “Save”, linear data are extracted from the logfile and recorded in rows, each row having the following fields in it:

- seconds elapsed from logging start with millisecond precision
- thermosignal in percent of DC alarm level
- engine crankshaft rotation in RPM,
- thermovoltage in mV multiplied by 100
- thermovoltage DC effective value in percent of DC alarm level
- thermovoltage AC effective value in percent of AC alarm level

2) Export: Format 2…

The menu also displays a “Save As” window for selecting a target file name. After “Save” button is pressed, another window is shown where the user can select which data to export: linear, polar, or evaluated polar data (all three options are selected by default).

Exported linear data have the same format as described above for “Export: Format 1…” menu with one additional field in rows, time stamp in form of “hh:mm:ss”.

Polar data are extracted into rows with following fields:

- time stamp “hh:mm:ss”
- seconds elapsed from logging start with millisecond precision
- polar record type (angular thermosignal or angular acceleration)
- all polar sampling points of the current record type for the time stamp in question.

Evaluated polar data also contains time stamp as “hh:mm:ss”, seconds elapsed from logging start and polar record type. Instead of polar sampling points, the exported data contains the maximal thermosignal value detected for each bearing during the combustion cycle nearest to the considered time point.

1.5.2. Options

The menu opens a window with “Cylinder range: encoder steps for cylinder detection” control which defines how many polar data points are related to a cylinder in the polar data of loaded logfile.

2. BeCOMS / BCom with simulated alarm level

The “Tsignal % alarm” and “Teff DC %alarm” data channels of BeCOMS system are calculated based on DC alarm level which is defined by two BeCOMS parameters: **Alarm level DC**, and **DC alarm percent** (fine control coefficient).
In some cases it can be useful to see what impact a different DC alarm level would have on the displayed values and on alarm triggering.

The **New simulated BeCOMS** / **BCom session** menu of the program main menu bar opens a window where both DC alarm level parameters can be changed. Pull the slider using mouse pointer to select different values:

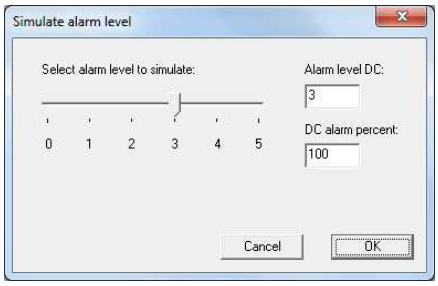


Fig.17. “Simulate alarm level” window

Pressing **OK** button opens a new BeCOMS logfile analysis window with dark red frame. For each subsequently loaded logfile the linear thermovoltage signal, the thermovoltage DC effective value and the angular thermosignal are recalculated according to the modified DC alarm level:

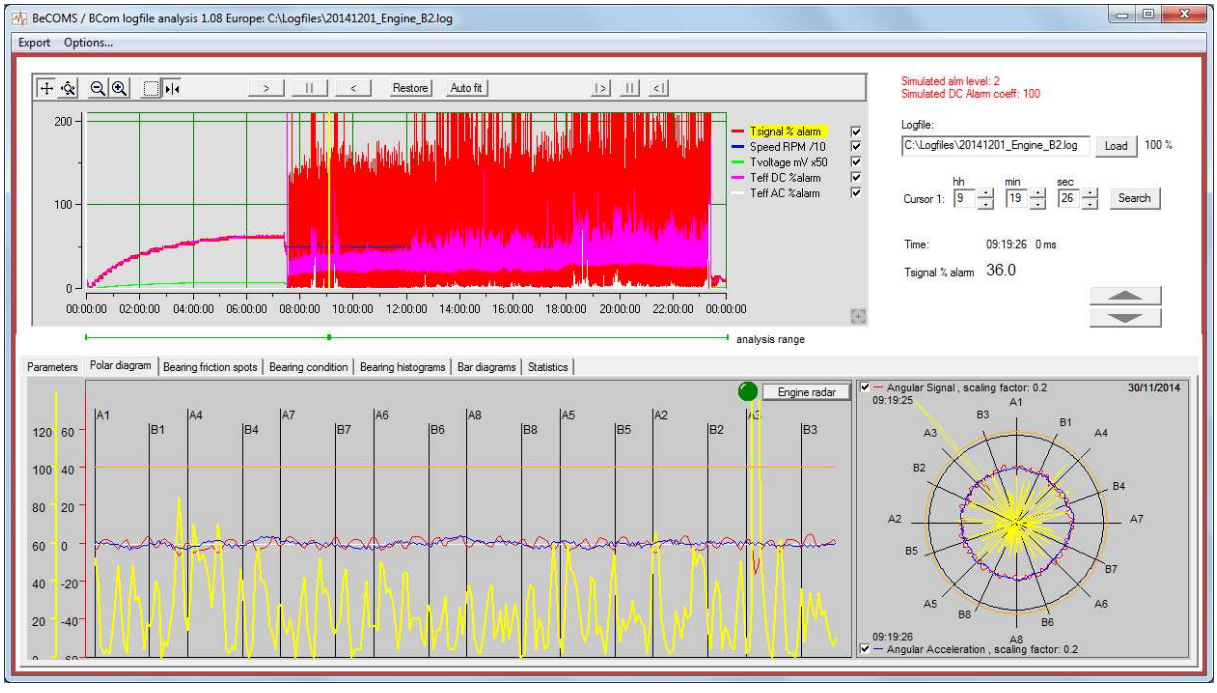


Fig.18. BeCOMS logfile analysis window, simulated alarm level 2

3. SiCOMS / OCom

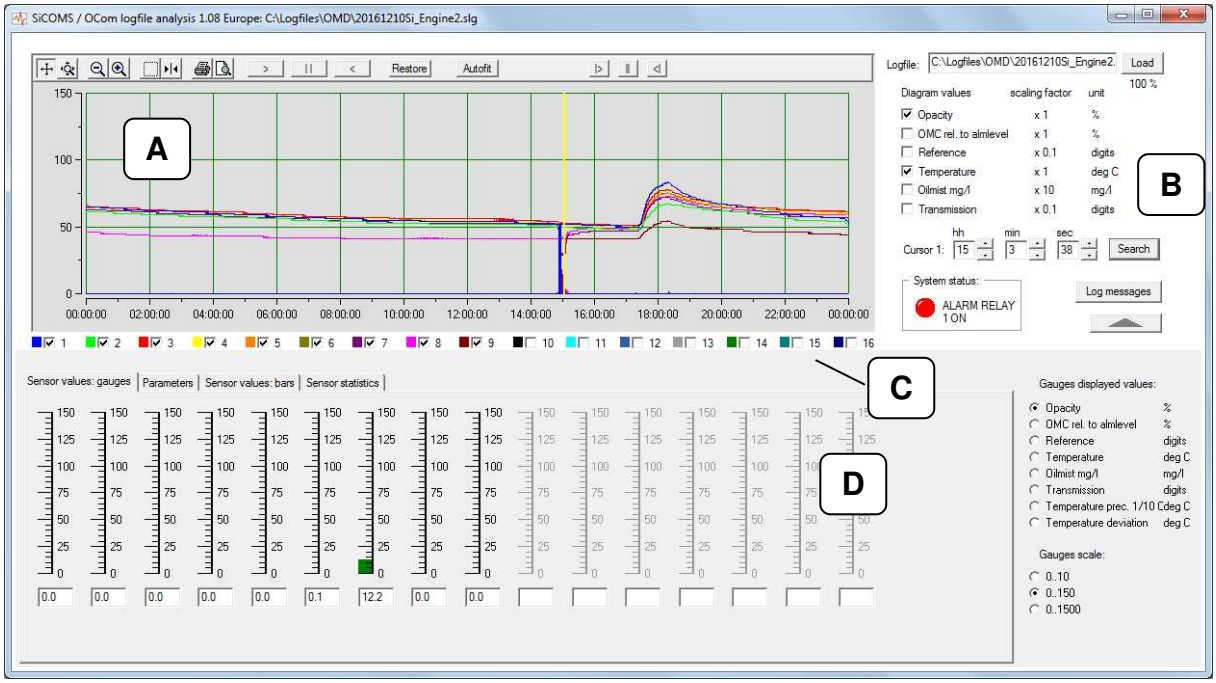


Fig.19. SiCOMS / OCom logfile analysis window

To open a SiCOMS logfile for analysis, use **Load** button. Loading progress in percent is displayed to the right of it.

3.1. XY-diagram

(Fig. 19, A)

The XY-graph at the upper part of the window shows the time diagram of the data measured by OMD sensors.

The diagram can be scrolled and zoomed in and out using command buttons on its toolbar:

- scroll mode. Click on x- or y-axis with the left mouse button, hold the button and move the mouse to scroll the graph
- zoom mode. Click on x- or y-axis with the left mouse button, hold the button and move the mouse to zoom the graph.

Restore - return to original view (fits the complete logfile data into the diagram window)

Time axis of the XY-graph has a cursor in form of a yellow vertical line. Time cursor controls to the right of the diagram (**Cursor 1** group with **hh**, **min**, **sec** fields) display and allow to change the position of the cursor. To put the cursor to the selected time point click “Search”.

See chapter II, 1.2, “Time cursor controls and view mode switching”, for more information on cursor positioning.

3.2. Diagram values checkboxes and other options
(Fig. 19, B, C)

The **Diagram displayed values** checkboxes (Fig. 19, **B**) define which OMD measured data should be displayed at the XY-diagram:

Opacity:	opacity level in percent. 0% = transparent environment, infra red light beam reaches destination without loss; 100% = opaque environment.
OMC rel. to Almlevel:	oil mist concentration in percent relative to alarm level
Reference:	basis value for calculating “Opacity” and “Opacity rel to Alarmlevel” values, given in digits
Temperature:	sensor temperature in °C with a resolution of 1°C
Oilmist mg/l:	absolute concentration of oil mist in mg/l
Transmission:	amount of light that reaches destination in the measuring unit of OMD sensor. Given in digits, a raw measurement value. Sensor initially calibrated in a transparent environment shows transmission about 1000 digits

Sensor number checkboxes (Fig. 19, **C**) allow to display or hide all measured values for a selected sensor at the XY-diagram:

System status indicator reflects Evaluator LED and relays state at the selected time point:

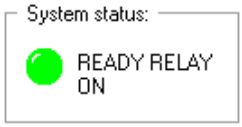


Fig.20. System status

- Double-click the **System status** indicator to open a sensor status window:

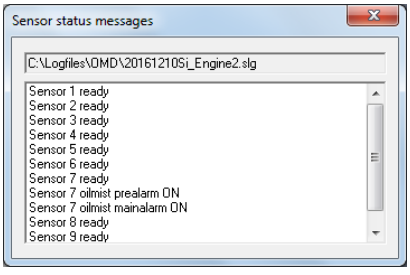


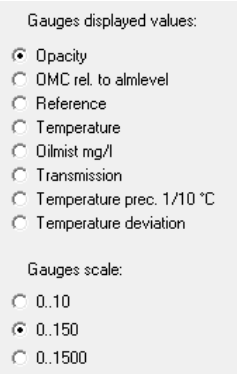
Fig.21. Sensor status

Clicking the **Log messages** button opens a window with all text status messages recorded in the logfile.

3.3. Gauges and additional diagrams

(Fig. 19, D)

The panel with tab control below the XY-diagram contains additional instruments for displaying measured OMD sensor data.



Gauges tab and sensor statistics tab display an OMD measurement value selected in the **Gauges displayed values** checkboxes at the right side of the panel.

Gauges can be scaled to adapt to different ranges of OMD values.

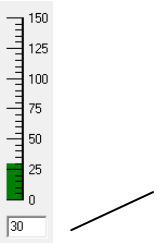
Fig.22. Gauges displayed values

The following OMD values are only shown at the gauges, not in XY graph:

Temperature 1/10 deg.: sensor temperature in °C with a resolution of 0.1°C

Temperature deviation: deviation of sensor temperature from the average value of all measured sensors.

3.3.1. Sensor values: gauges



Each gauge displays the selected measurement value of the corresponding OMD sensor at the time point marked by the cursor at the XY-diagram.

digital display of measurement value at the corresponding gauge

Fig.23. Gauge

3.3.2. Parameters

Some SiCOMS system parameters defined in Evaluator and recorded by SiCOMS Logger into the logfile are shown at the **Parameters** tab.

3.3.3. Sensor values: bars

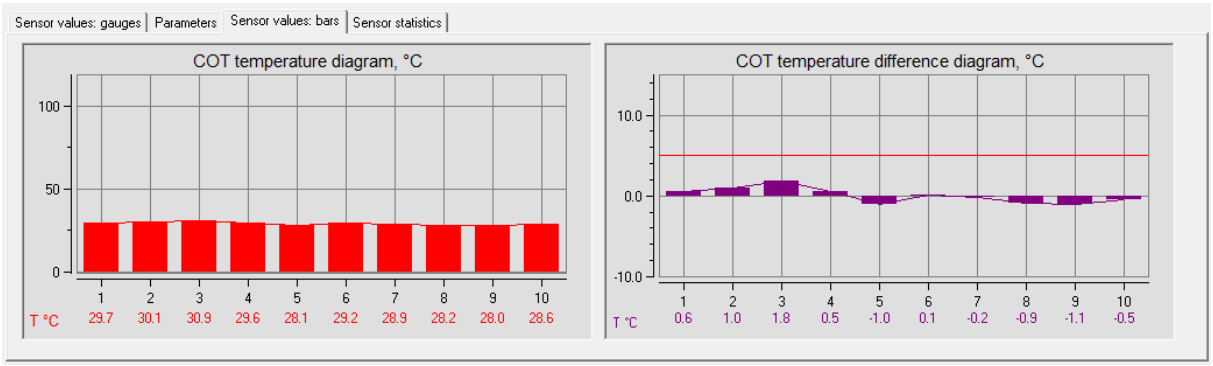


Fig.24. Sensor values: COT temperature and temperature difference diagrams.

COT temperature diagram shows sensor temperature (Crankpin Oil Temperature) in °C with a resolution of 0.1°C at the time point selected at XY-diagram.

COT temperature difference diagram displays the temperature deviation of each sensor from the average temperature of all sensors at the time point selected at XY-diagram.

3.3.4. Sensor statistics

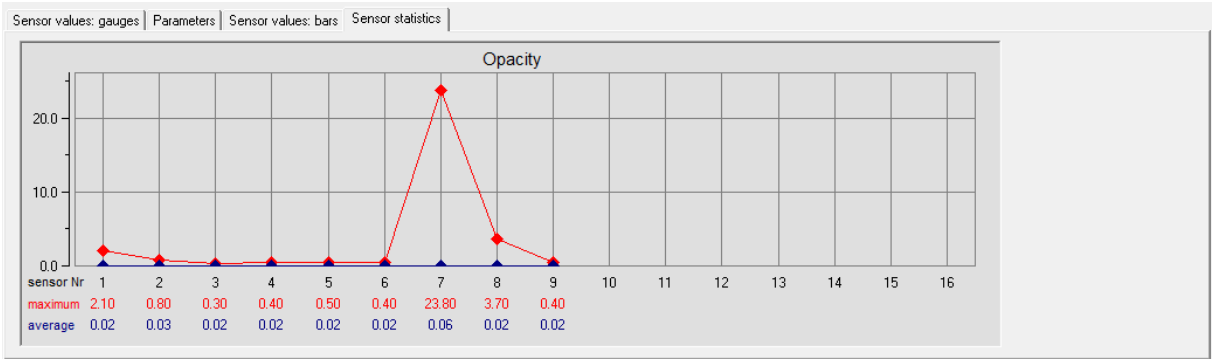


Fig.25. Sensor statistics: the opacity maximum and average for each sensor.

The diagram shows the maximum and the average over the whole measurement time of logfile for the OMD value selected in **Gauges displayed values** checkboxes for each sensor. (For **Temperature deviation** value the minimum is displayed instead of average.)

III. Multiple file analysis

This function is used to open several (in the current version, up to 4) BeCOMS logfiles at the same time for comparing.

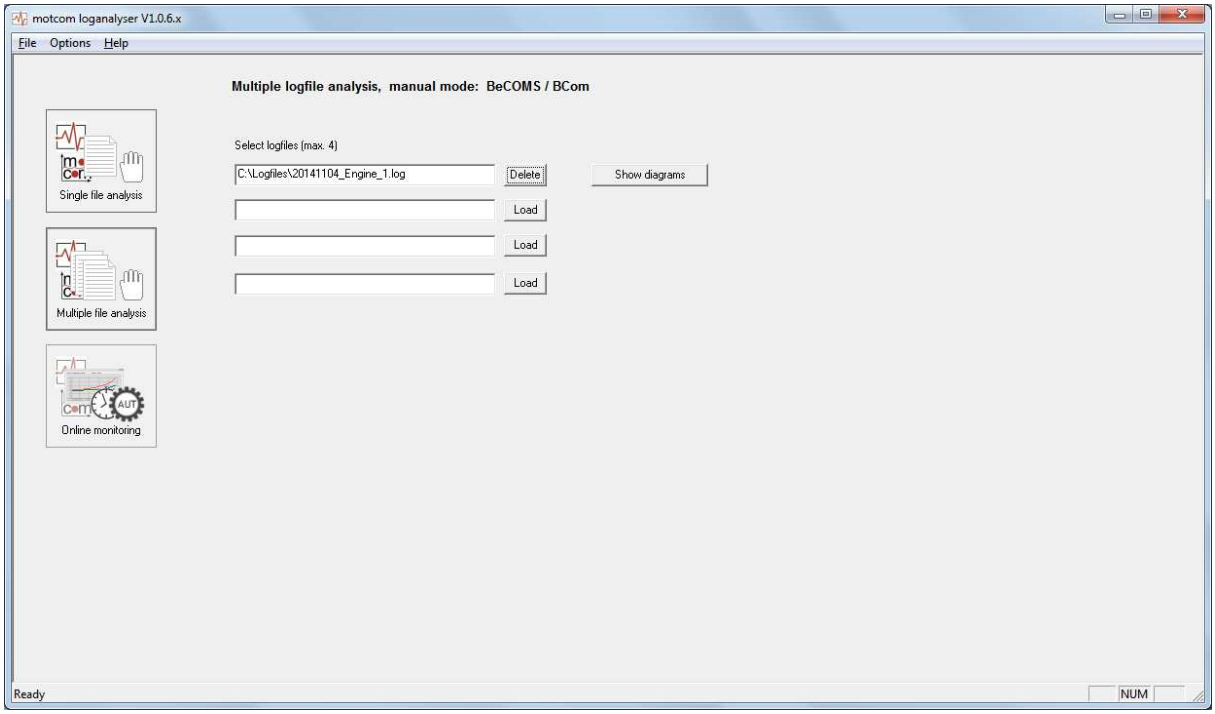


Fig.26. Multiple logfile analysis window

Load buttons are used for selecting BeCOMS logfile paths and names. When the file is selected, the button caption changes to “Delete” to allow removing or changing the selection.

Press the **Show diagrams** button to open the analysis windows with selected logfiles. Only the upper pane of analysis window is shown by default, but the windows can be restored to full size.

IV. Online monitoring

Motcom loganalyser can be used for detecting long-time trends in engine condition. This is implemented through automatic reading and analysing the pre-recorded logfiles for the engine.

The purpose of such “logfile scanning” is to detect high thermovoltage values in polar data which in most cases indicate friction in a bearing or at some other moving engine parts. Every such thermovoltage signal peak (hereinafter referred to as “friction spot”) which exceeds 100% of DC alarm level is counted even if no alarm situation is detected by the BeCOMS system. The resulting statistics help to recognise possible problems with engine moving parts at early stages.

During scanning, system status messages are also extracted from the logfiles.

It is possible to use automatic scanning as a one-time routine or as a monitoring task performed regularly at a certain time interval, for instance parallel to BCom Logger writing into a logfile. One-time scan routine extracts information from logfiles collected over a certain time period. Monitoring routine also checks regularly for newly created logfiles and for changes in a logfile currently being written by BCom Logger, and adds this new information to the existing auto-scan results.

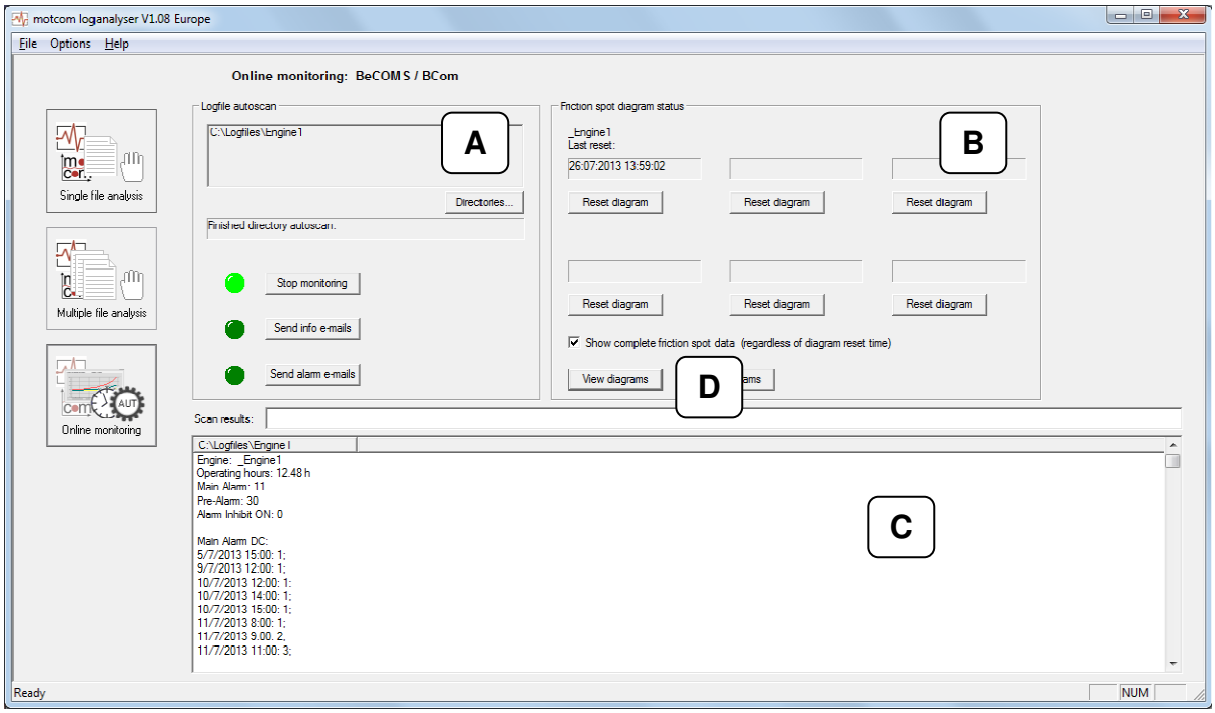


Fig.27. Online monitoring window

To set up autoscan, use **Options** / **Logfile autoscan options** menu (chapter V, p. 2.2).

Logfile autoscan

(Fig. 27, A)

This field group presents the following information:

- selected logfile directories to be scanned (press “Directory” button for setup)
- the name of a logfile currently being scanned, or autoscan status messages
- control buttons and LED indicators of monitoring tasks (- ON / - OFF):

Start monitoring button – starts logfile monitoring process. If one-time scan is set up in options (“Scan all logfiles once” mode, chapter V, p. 2.2), the button has “Scan once” as a caption. After start it changes to “Stop monitoring” (or “Stop scanning” accordingly).

Send info e-mails button – press to start the background service for regular notification e-mails. After start the button caption changes to “Stop sending”.

Send alarm e-mails button – if it is pressed, an e-mail containing short report (“alarm e-mail”) will be sent each time when new important system messages are detected. After start the button caption changes to “Stop sending”.

Friction spot diagram status

(Fig. 27, B)

- The section contains a **Reset diagram** button and a text field showing the time of the latest reset point for each scanned directory. Reset points are time markers used to delimit the displayed BeCOMS logfile scan results by showing only statistics for data recorded after a reset point.

Pressing a **Reset diagram** button opens a window for reset points controlling:

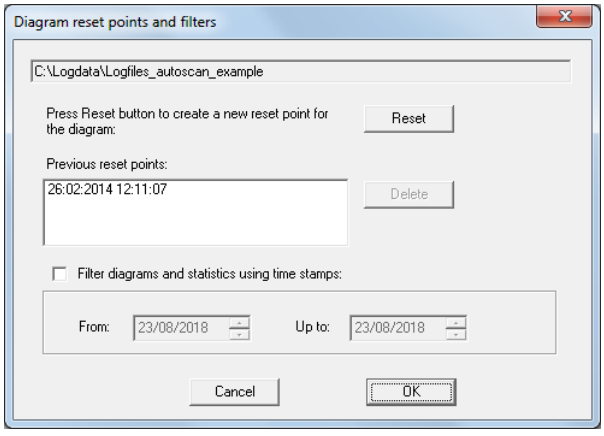


Fig.28. Diagram reset points and filters window

- press **Reset** button to add a new reset time marker. The list of previous reset points is shown below. It is possible to remove list entries by selecting them and pressing **Delete** button.

This window also offers a possibility to filter the measurement statistics by choosing a time window. Set the **Filter diagrams and statistics using time stamps** checkbox, and select **From** and **Up to** dates. To confirm the filters press **OK**.

If **Show complete friction spot data** checkbox at the online monitoring panel is unchecked, only statistics for logfiles starting from the latest reset point or for logfiles between time filter boundaries will be included in scan results. Otherwise statistics for all scanned logfiles are shown.

To update the autoscan results after changing options first stop running scan (if any), then press **Start monitoring** (or **Scan once**) button.

Scan results field

(Fig. 27, C)

- contains information extracted from logfiles during scan: engine operating hours, number of system message occurrences (Main Alarm, Pre-Alarm, etc.), and numbers of registered friction spots together with labels of affected bearings.

View diagrams button

(Fig. 27, D)

- opens the **Logfile autoscan reports** window where friction spot information is arranged in tab controls:

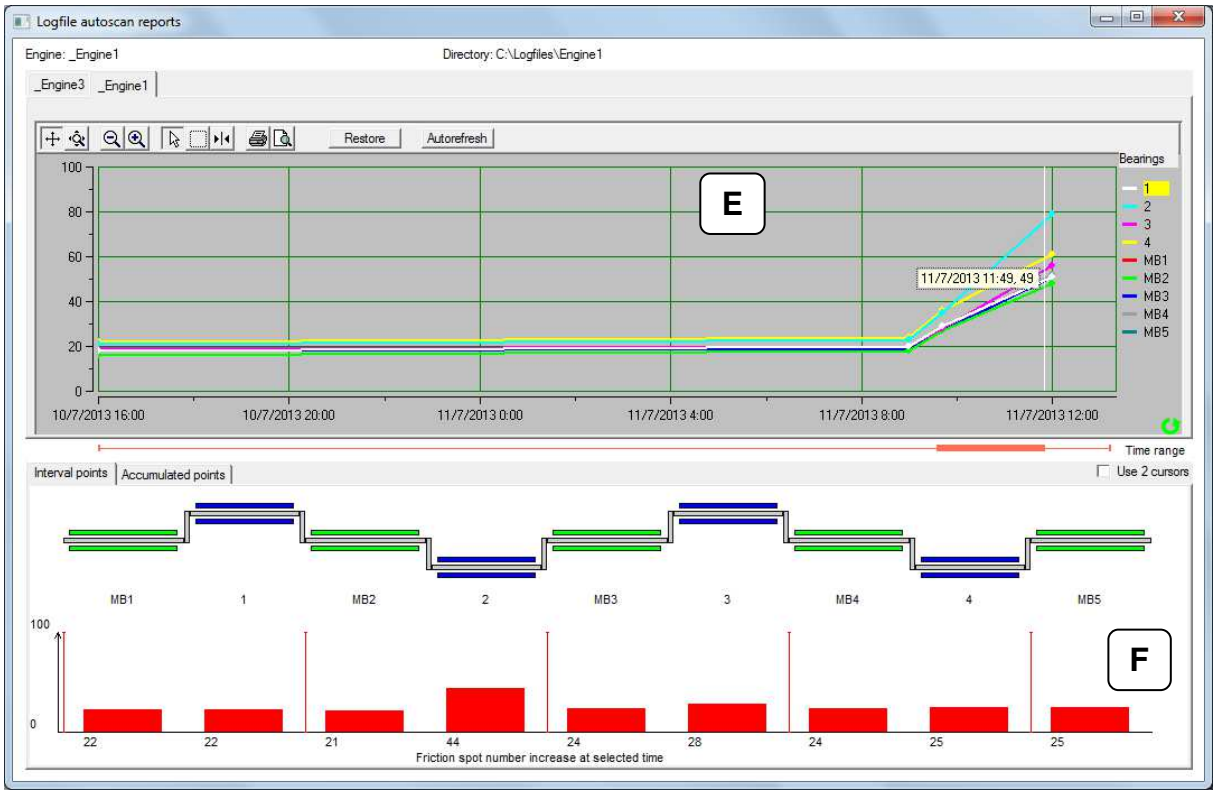


Fig.29. Logfile autoscan reports

Friction spots detected in logfiles are shown as cumulative graphs in report diagrams. The tab control at the top (Fig. 29, **E**) has one diagram for each engine. Each graph in these diagrams represents an engine bearing, the colours of graph lines with bearing names are listed in the legend at the right hand.

The x-coordinate of each graph point is the latest time stamp of the corresponding logfile. The y-coordinate is the sum of friction spots up to this x-value over a time period in consideration of reset points and filters (as described in **Friction spot diagram status**).

A click on a point extends it to a group of single friction spots with their actual time of detection, if any were recorded on that day (the diagram must have the “Select” mode activated in its menu: ).

Double-clicking on any of single points will bring the diagram back to showing one sum point per logfile.

If scanning is started as a monitoring task, the scan result window and diagrams will be updated automatically. If there’re newly detected friction spots in a current daily (or hourly) logfile, they are displayed at the diagram as the single spots with their actual time stamps.

The tab control at the window’s lower part (Fig. 29, **F**) displays accumulated friction spots in form of bars. Information here depends on selected tab and is controlled by the cursor in the diagram (**E**) as described below:

Selected tab and cursor options	**Meaning of bars**
“Interval points” tab, single cursor is used	Increase of friction points between two graph points where the cursor is positioned
“Interval points” tab, “Use 2 cursors” checkbox is ticked	Friction points are summed up for all graph points between two cursors
“Accumulated points” tab	Friction points are summed for all graph points between the earliest applicable time mark and the cursor

The **Time range** indicator bar reflects the chosen boundaries for friction spot sums, for instance for an interval between two diagram points.

V. Menu

1. File

1.1. File / New BeCOMS / BCom session

This menu item opens a new BeCOMS / BCom logfile analysis window (see chapter II, p. 1). Another way to open a BeCOMS / BCom logfile session is pressing the related **Single logfile** button at Single logfile analysis panel (chapter I, p. 2).

1.2. File / New BeCOMS / BCom simulated session

Opens a new BeCOMS / BCom logfile analysis window with simulated DC alarm level (see chapter II, p. 2). Alternatively, this can be done using the corresponding **Single logfile** button at Single logfile analysis panel.

1.3. File / New SiCOMS / OCom session

Opens a new SiCOMS / OCom logfile analysis window (see chapter II, p. 3).
The same is done with **Single logfile** button for SiCOMS / OCom at Single logfile analysis panel.

1.4. File / Exit

Closes the application if monitoring functions are not running, otherwise all application windows are minimized. To close loganalyser, stop all monitoring functions first.
Close button (X) of the application window has the same behaviour.

2. Options

All options are only available for modification if online monitoring process is NOT running. Otherwise the option controls are read-only and greyed. Stop the online monitoring to enable options for modification!

2.1. Options / General options

- Opens a window with several tab panels on it:

2.1.1. General

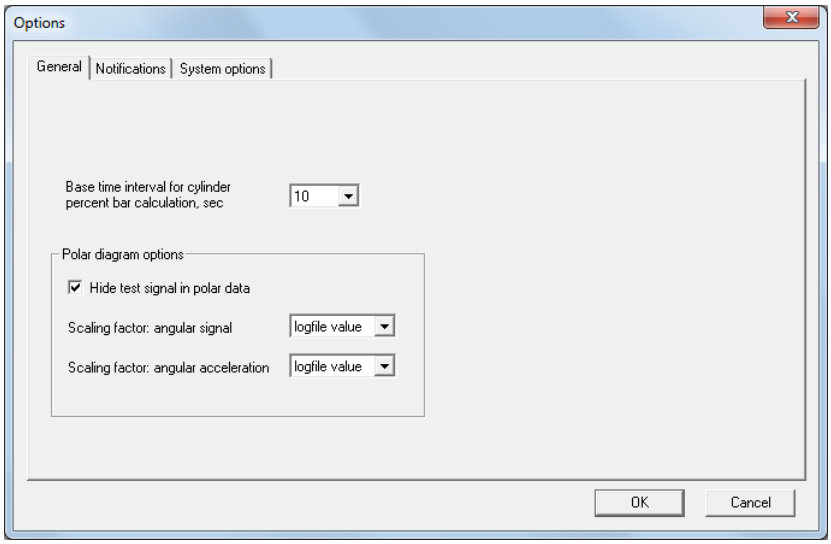


Fig.30. Options / General panel

Base time interval for cylinder percent bar calculation – this is the base sample time for friction spot bars calculation at the **Bearing condition** tab (chapter II, p. 1.4.4) and **Bearing histograms** tab (chapter II, p. 1.4.5) for BeCOMS logfiles.

Polar diagram options:

Hide test signal in polar data – the option is for test and calibration purposes.

Scaling factor: angular signal – this value defines how angular signal looks at the polar diagram. Selected value is multiplied with the polar signal values. If “logfile value” option is selected, scaling factor from the BeCOMS logfile is used (this is the default case).

Scaling factor: angular acceleration – the same for angular acceleration.

Press **OK** to confirm the values and close the window. **Cancel** button closes the window and dismisses the modified values.

2.1.2. Notifications

The following settings configure automatic notification functions. Two types of notifications are available: regular reports with status messages statistics and friction spot diagrams, and alarm reports which contain only important system status messages.

Regular reports can be sent once or at certain time intervals. Alarm reports are only sent if new important status messages are detected in logfiles during online monitoring within the autoscan time interval.

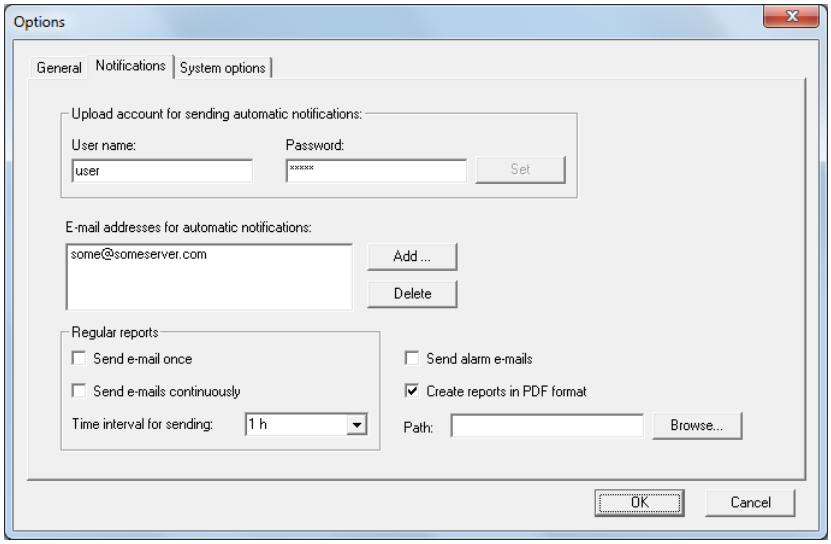


Fig.31. Options / Notifications panel

Upload account for sending automatic notifications – user name and password on the upload server of motcom GmbH. This account is necessary for using automatic notification function, and can be created at a customer request by motcom GmbH administrators.

User name is entered as clear text, while password is masked with "*" signs during input. Changing user name automatically clears password field; it is required to re-enter the password.

(Important!) To save the upload account data, press **Set** button. Without this, modified account info is ignored even at pressing **OK**.

E-mail addresses for automatic notifications – the list of e-mail addresses which will receive automatic notifications when the corresponding service is started.
To add an e-mail to the list, press **Add…** button. A new empty entry is created in the list with cursor blinking in it. Type the e-mail (format: [*recipient name*]@[*mail server*]), then press Enter key or click anywhere at the list box outside the new entry field to finish editing.
To delete an entry, click on it in the list box and press **Delete** button.

Send e-mail once – if the option is checked, a regular report will be sent immediately on pressing **Send info e-mails** button if there's any scanned logfile information in the **Scan results** field of the Online monitoring window (chapter IV).

Send e-mails continuously – if this option is checked, a background service for sending regular reports at configured time intervals will be started when **Send info e-mails** button is pressed at the Online monitoring window (chapter IV).

Time interval for sending – when this selected time interval elapses, a regular report is sent when **Send e-mails continuously** option is checked, and a new interval timer is started.

Send alarm e-mails – this option has to be checked to enable sending alarm reports each time some important status messages are detected during online monitoring.

Create reports in PDF format – checking this option allows to create regular and alarm reports in PDF-format on the hard disk parallel to sending e-mails. The directory where PDF reports should be saved can be set in **Path:** text field.

Press **OK** to confirm the values and close the window. On **Cancel** button the window is closed without saving the modified values.

2.2. Options / Logfile autoscan options

The following window contains configuration settings for auto-scan functions.

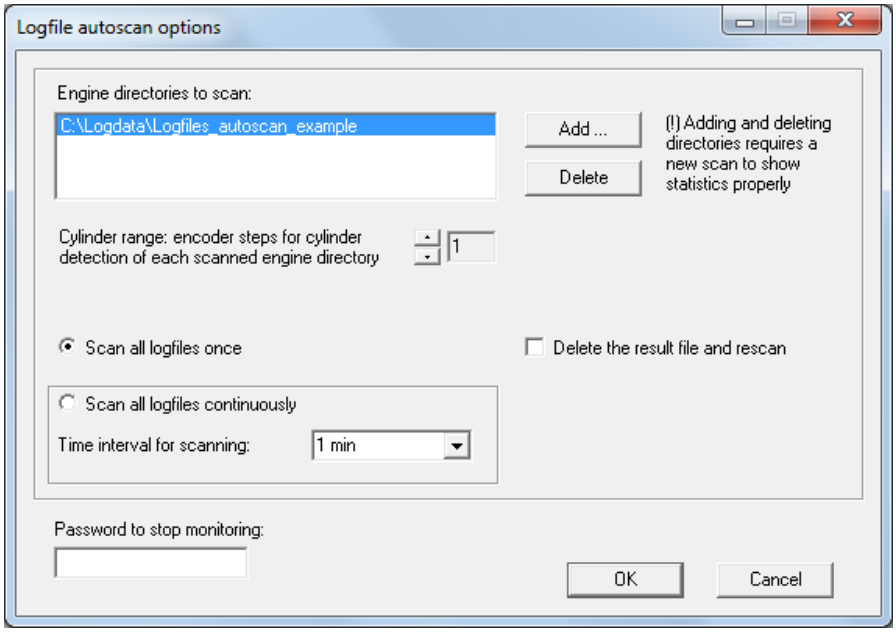


Fig.32. Logfile autoscan options window

Engine directories to scan – this is the list of directories that will be scanned and analysed (up to 6 directories can be added here).

To add a directory to the list, press **Add…** button. A window for selecting a hard disk directory is shown. Browse for a directory, click on it and press **OK**.
To delete an entry, click on it in the list box and press **Delete** button.

A log directory must contain logfiles only for one engine. Engine name is extracted from logfile names. If a different engine name is detected in a logfile in the same directory, such logfile is ignored.

Cylinder range: encoder steps for cylinder detection of each scanned engine directory – this value defines how many polar data points are related to a cylinder in the polar data of scanned logfiles for the engine selected in the engine directories list.

Scan all logfiles once – this option should be checked for a one-time scan of selected directories. Scanning can take a considerable amount of time when performed for the first time.

Scan all logfiles continuously – if the option is checked, pressing **Start monitoring** button in the monitoring window starts a background process that checks for changes in logfiles periodically at selected time intervals and includes detected changes in the monitoring statistics.

(Important!) This option, if checked, also defines the program behaviour on its next start: the online monitoring process will be started automatically.

Time interval for scanning – the value defines how often the logfile directories will be scanned for changes.

Delete the result file and rescan – if this option is checked, special system file that contains autoscan results will be deleted next time before scanning. All BeCOMS logfiles in the listed directories will be re-scanned. (Otherwise existing scan results are always read from this system file first.) This is useful when, f. i., some new loganalyser application version has different system file format, and the program displays a warning about old autoscan file format.

Password to stop monitoring – to protect the online monitoring process from accidental stop, a password can be used. The input in this text field is masked with "*" signs.

Press **OK** to confirm the values and close the window. Press **Cancel** button to close the window and dismiss the modified values.