

MIKE - Software

3.5



TÜV SÜD Schweiz AG (Production and Distribution)

Mattenstrasse 24, CH-4002 Basel, Switzerland

www.tuev-sued.ch products.bs@tuev-sued.ch

Cesana AG (Development and Software)

Baiergasse 56, CH-4126 Bettingen, Switzerland

www.cesana-ag.ch info@cesana-ag.ch

| | | |
|-----|---|----|
| 1 | Installation | 2 |
| 1.1 | System requirements | 2 |
| 1.2 | Installing the MIKE - Software | 2 |
| 2 | Configuration | 3 |
| 2.1 | Registration | 3 |
| 2.2 | User management | 3 |
| 2.3 | Rights | 4 |
| 2.4 | Choice of user | 4 |
| 2.5 | Settings | 5 |
| 3 | Operation | 6 |
| 3.1 | Status bar | 6 |
| 3.2 | Files | 6 |
| 3.3 | Authorization | 8 |
| 3.4 | Test report | 9 |
| 3.5 | Audit | 10 |
| 3.6 | Export | 11 |
| 4 | Checking the MIKE | 12 |
| 4.1 | Serial interface (Tools / Check: Interface) | 12 |
| 4.2 | Ignition sparks (Tools / Check: Ignition) | 12 |

1 Installation

1.1 System requirements

MIKE is based on the “NET framework” from Microsoft. This “framework” is an integral windows component for the execution of applications of the new software generation (Microsoft Windows Vista ... 10). The .NET Framework will automatically be loaded to your PC if not already part of it.

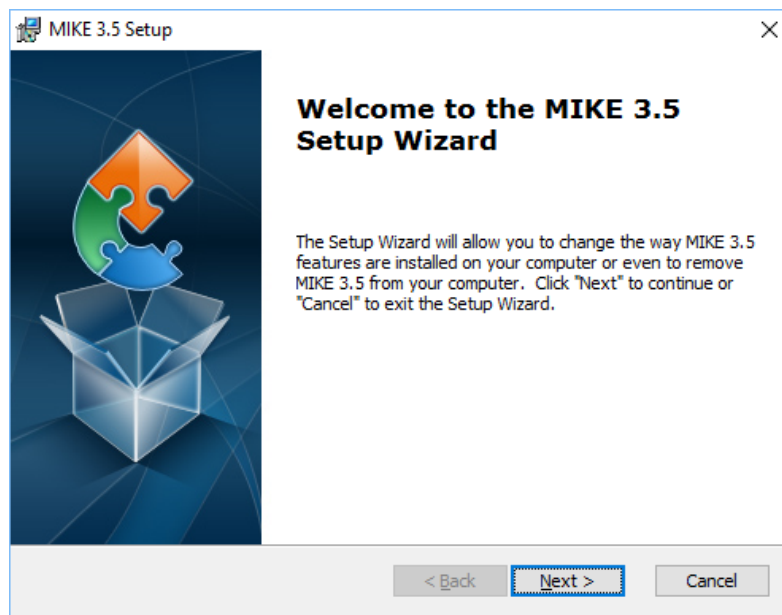
| | |
|--------------------|--|
| Operating system: | „Microsoft-Windows“ XP ... 10 (32 und 64Bit) |
| Memory: | minimum 256 MB |
| Hard drive: | only 20 MB free space, if Framework already installed (Vista ... 10) |
| Graphics, monitor: | resolution minimum 1024 x 768, colors minimum 16 bit. |
| Interface: | RS232 (COMx) |

1.2 Installing the MIKE - Software

- a) **Installing from CD-ROM:** Insert the installation-CD into the corresponding drive of your computer. The installation starts automatically. Otherwise start the file **MIK35_setup.exe** manually.
- b) **Installing from Internet:** Execute file **MIK35_setup.exe** in the unpacked ZIP-archive.



For installing the framework, you must have administrator rights.

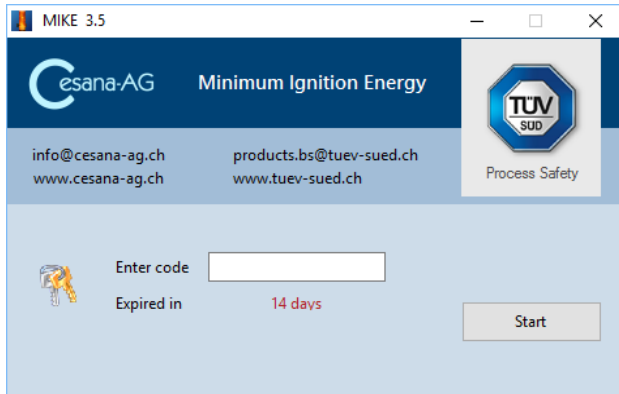


2 Configuration

2.1 Registration



Start MIKE now ...

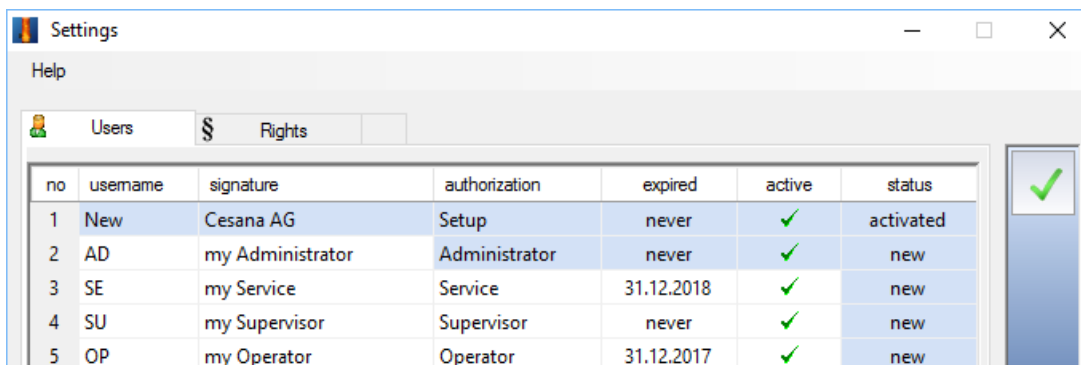


The free demo-version of MIKE can be used for 14 days without any restrictions. Afterwards it must be registered.

A purchased MIKE-CD has the code on the CD case.

2.2 User management

When first starting MIKE, the administrator has to define the users:



- username** A sensible short form.
- signature:** Full name. Will be inserted into the protocol.
- authorization:**
- "Administrator" for the administration of the users.
 - "Service" for calibration and maintenance.
 - "Supervisor" for supervision of processing.
 - "Operator" for all other users.
- see: [2.3 Rights](#)
- expired:** Expiry date of access right (authorization).
- active:** The administrator can also withdraw an access right ...
- status:** "new" or "activated"



The account of the administrator in row 2 never expires.

2.3 Rights

The administrator can freely define the rights for all accounts:

| Users | | Rights | | | |
|-------|--------------------------------|---------------|---------|------------|----------|
| no | can do ... | Administrator | Service | Supervisor | Operator |
| 1 | New tests | ✓ | ✓ | ✓ | ✓ |
| 2 | Filemanager (new, save) | ✓ | ✓ | ✓ | ✓ |
| 3 | Table modification | ✓ | ✓ | ✓ | ✓ |
| 4 | Test conditions | ✓ | ✓ | ✓ | |
| 5 | System - Settings | ✓ | ✓ | | |
| 6 | Software Update | ✓ | ✓ | | |
| 7 | User Management (see: Users) | ✓ | | | |
| 8 | Set Access Rights (this table) | ✓ | | | |



Save all entries and exit "Settings".

2.4 Choice of user

Insert user name and password. New users will be requested to confirm the password.

Note: MIKE doesn't distinguish between upper and lower case characters.



automatic start:

After a renewed start of MIKE, the last user will be displayed and with a delay of one minute the system will automatically change to the main program.

Login

For further configuration of MIKE please log in with rights for "System - Settings" i.e. as "Administrator".

Start

... of the MIKE main program

Settings

... **further settings** (i.e. selection of interface)

2.5 Settings

Settings

Help

Users Rights System

Interface

1. Apparatus is ... connected

2. Port on computer COM1

User

1. Name of company my Company

2. Name of lab / site my Site

3. Identity of filename AD

4. Language for help English

Directory

1. MIKE - files: C:\Program Files (x86)\MIKE 3.5\MIKEDAT\'

2. Report - files: C:\Program Files (x86)\MIKE 3.5\

AD Administrator never

Interface

1. The MIKE-apparatus is connected or will be simulated.
2. *RS-232 port on computer.* This setting is irrelevant if MIKE is simulated.

User

1. *Name of company:* will be used for the report
2. *Name of lab/site:* will be used for the report
3. *Identity:* automatic generated filenames starts always with the here defined identity.
Thus, enter an abbreviation specific for your laboratory.
4. *Language for help:* The MIKE program always uses English.
However, both English and German is available for the integral help texts

Directory


1. *MIKE-files:* The directory of the last MIKE-file is stored automatically.
Therefore you can leave the preset directory.
2. *Report-files:* The directory of the last report mask is stored automatically.
Therefore you can leave the preset directory.



Save all entries and exit "Settings".

3 Operation

3.1 Status bar

| | | | | | | |
|---|---------------------------------|----------|-------|-------|--|----------------|
|  | OP | Operator | 730 d | RS232 | CaRoXX | AD_090213A.MIE |
| 1 | 2 | 3 | 4 | 5 | 6 | |
| 1. | The actual user, | | | | see: 2.4 choice of user | |
| 2. | The authorization of this user, | | | | see: 2.3 rights | |
| 3. | Access is expired after ..., | | | | see: 2.2 user management | |
| 4. | Interface, | | | | see: 2.5 settings | |
| 5. | The actual product | | | | | |
| 6. | Filename | | | | | |

3.2 Files

New file



At the start of a test with new dust, a new file is opened. The file name is automatically allocated by the program **(A)** or given by you **(B)**:

A: Automatic generated filenames starts always with identity (see: [2.5 settings](#)), followed by the date when the file is opened. The subsequent letter distinguishes files which are generated on the same day.

example 1: Identity_161122A.MIE

example 2: Identity_161122B.MIE (generated on the same day as example 1)

B: example 3: my_Product.MIE (maximum length of filename = 126 characters)



In the past the filename was limited by the operating system to only 8 characters. An assignment filename - product was difficult. Therefore the MIKE-program contains its own file manager and shows beside the filename the designation of the product. This has been very useful in the past so we decided to keep this feature in the actual software release.

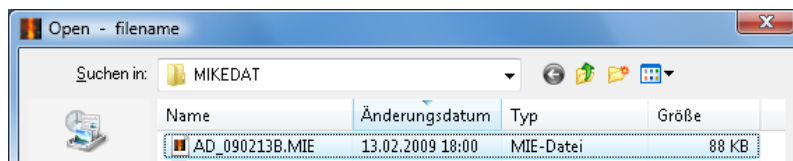
With modern operating systems this restriction becomes unnecessary. The filename can be much longer and can also contain the designation of the product. For which version (A or B) you decide is up to you.

Our recommendation: B is state of the art.

Open file - by filename



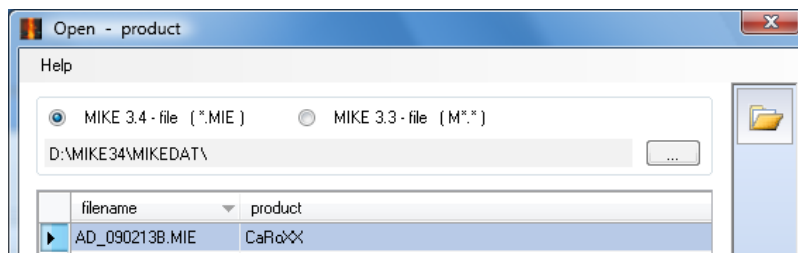
An index of MIKE-files is shown according to the Windows-Standard:



Open file - by product (MIKE 3.4 - files)



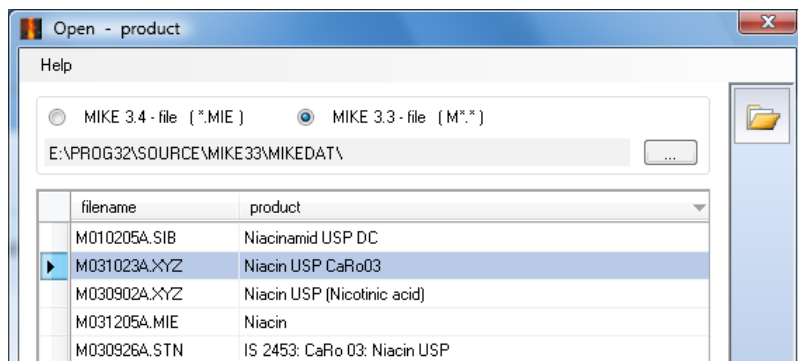
An index of MIKE-files is shown with filename and product. You can sort the fields (ascending or descending, "filename" or "product") by a click on the corresponding field.



Open file - by product (MIKE 3.3 - files)



An index of old MIKE-files is shown with filename and product. You can sort the fields (ascending or descending, "filename" or "product") by a click on the corresponding field.



MIKE 3.3 - files are always **locked**. You cannot add test series, manipulate the table or add comments, except view and printout - as it is.

The name of testing site and tester was in the past not explicitly written to the file.

You can now get rid of this drawback:

| product | |
|------------------------------|----------------------------|
| tested by | name of testing laboratory |
| filename | M031023A.XYZ |
| created | 23-Okt-2003 |
| status Mike 3.3 file, locked | |



Fill out the fields "tested by" and save the file.

3.3 Authorization



unlocked

You have full access: you can add series, manipulate data and add comments.



locked

All manipulations of data are locked, except view, export and printout.



When creating a new file, all **activated** users are transferred to the file. i.e. the supervisor can open this file on his workplace and manipulate the data and add comments. Provided that he is activated in the list of users on the MIKE-apparatus.

To activate an user enter username and password:

MIKE 3.5 login window for user SU. The window shows the Cesana-AG logo, contact information, and a login form with fields for Username (SU) and Password (*****). There is a 'Login' button and a checkbox for 'automatic start'.

MIKE 3.5 login window for user OP. The window shows the Cesana-AG logo, contact information, and a login form with fields for Username (OP) and Password (*****). There is a 'Login' button and a checkbox for 'automatic start'.

i.e. The users SU and OP are now activated (status = **activated**). For these the MIKE-file is unlocked on each PC with MIKE-Software, provided that username and password are the same.

Settings window showing the 'Users' tab. The table lists users with their status, authorization, and expiration date.

| no | username | signature | authorization | expired | active | status |
|----|----------|------------------|---------------|------------|--------|-----------|
| 1 | New | Cesana AG | Setup | never | ✓ | activated |
| 2 | AD | my Administrator | Administrator | never | ✓ | new |
| 3 | SE | my Service | Service | 31.12.2018 | ✓ | new |
| 4 | SU | my Supervisor | Supervisor | never | ✓ | new |
| 5 | OP | my Operator | Operator | 31.12.2017 | ✓ | new |

You can also see the activated users on page "Audit":

| username | signature | authorization |
|----------|------------------|---------------|
| AD | my Administrator | Administrator |
| SU | my Supervisor | Supervisor |
| OP | my Operator | Operator |

3.4 Test report




Select a mask. The test results and graphics are then inserted automatically by the program in the mask and a report is produced. This can be edited as a whole and then printed out.

Report

Copy Setup Print Help

Frontpage Tests 1 Audit 1



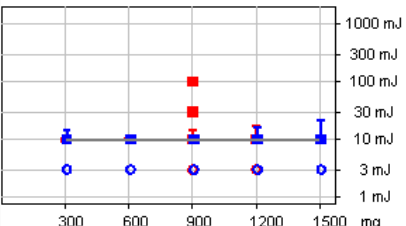
my Company - my Site

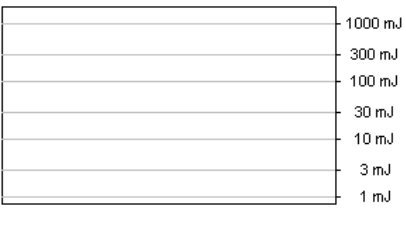
Sample: **CaRoXX**
 Customer: Kühner AG / Switzerland
 Reason: Calibration - Round - Robin
 Data to sample origin: Lonza, Niacin USP
 Preparation of sample: none
 Median value: 23 µm

Minimum Ignition Energy

Result with inductance L = 1 mH Result without inductance L = 0 mH

3 mJ < MIE < 10 mJ / Es = 4 mJ - / -





| | | |
|----------|-----|-----|
| E2 [mJ]: | 10 | 10 |
| Es [mJ]: | 7 | 4 |
| E1 [mJ]: | 3 | 3 |
| tv [ms]: | 120 | 150 |

| | |
|----------|---|
| E2 [mJ]: | - |
| Es [mJ]: | - |
| E1 [mJ]: | - |
| tv [ms]: | - |

any comment

MIKE 3.4 AD_090213B.MIE 13-Feb-2009

MIKE34_E.rtf mask - text variables errors



We recommend to enter all comments and other information's (customer, reason, sample preparation, median value etc.) in the corresponding fields in the window „info“ rather than to edit the report. Changes in the report, e.g. added comment, would be lost !

3.5 Audit

The screenshot shows the MIKE 3.4 Audit window. It has a menu bar with 'File', 'Tools', and 'Help'. Below the menu is a tabbed interface with 'Info', 'Table', 'Graph', and 'Audit' tabs. The 'Audit' tab is active, displaying a table of audit events.

| no | date | time | cause | event | value |
|----|------------|-------|--------|------------------|----------|
| 1 | 13.02.2009 | 17:31 | OP | New file created | |
| 2 | 13.02.2009 | 17:31 | System | M3 - 9250 | 21001.38 |
| 3 | 13.02.2009 | 17:34 | OP | Series added | 1 |
| 4 | 13.02.2009 | 17:35 | OP | Series added | 2 |
| 5 | 13.02.2009 | 17:35 | OP | Series added | 3 |
| 6 | 13.02.2009 | 17:36 | OP | Series added | 4 |
| 7 | 13.02.2009 | 17:37 | OP | Series added | 5 |
| 8 | 13.02.2009 | 17:38 | OP | Series added | 6 |
| 9 | 13.02.2009 | 17:39 | OP | Series added | 7 |
| 10 | 13.02.2009 | 17:39 | OP | Series added | 8 |
| 11 | 13.02.2009 | 17:40 | OP | Series added | 9 |
| 12 | 13.02.2009 | 17:48 | OP | Series added | 10 |
| 13 | 13.02.2009 | 17:49 | OP | Series added | 11 |
| 14 | 13.02.2009 | 17:49 | OP | Series added | 12 |

Below the table is a section for user information:

| username | signature | authorization |
|----------|------------------|---------------|
| AD | my Administrator | Administrator |
| SU | my Supervisor | Supervisor |
| OP | my Operator | Operator |

At the bottom, there are three energy level indicators:

- E2 = 10 mJ
- E_s = 4 mJ
- E1 = 3 mJ

Below these are three boxes showing energy levels and time intervals:

- Box 1: < 10 mJ, 7 mJ, > 3 mJ, 120 ms
- Box 2: < 10 mJ, 4 mJ, > 3 mJ, 150 ms

The status bar at the bottom shows: OP, Operator, 730 d, RS232, CaRoXX, and AD_090213A.MIE.

All activities are automatically recorded. An example:

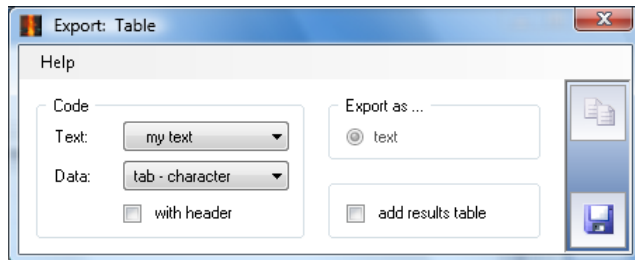
- 1 OP starts a new file and with it a new audit.
- 2 Firmware and serial number of the MIKE-apparatus are included.
- 3 ... Each added series will be recorded.



The data of the audit are stored manipulation proof in the MIKE-file.

3.6 Export

You can easily export data to other software.
 Select first a page (*Info, Table, Graph, Audit*).
 The Export-Menu is in "*File / Export*".



Text: Text with or without quotation marks.
Data: Define here the character which separates numbers.
with header: Shall a header be added to the columns ?
add results table: Shall we add the results-table (E1, Es, E2 as a function of tv) ?



The data are copied according to your instructions directly in the Windows-clipboard. From there you can paste it into any other program i.e. Excel, Word.

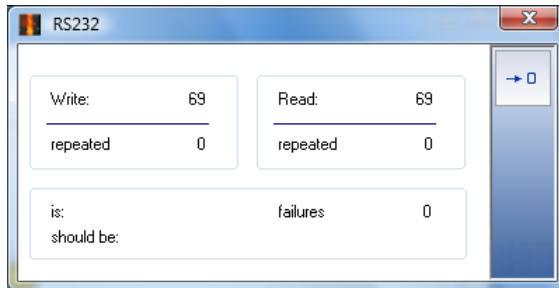


The data is written into a text file (*.txt).

4 Checking the MIKE

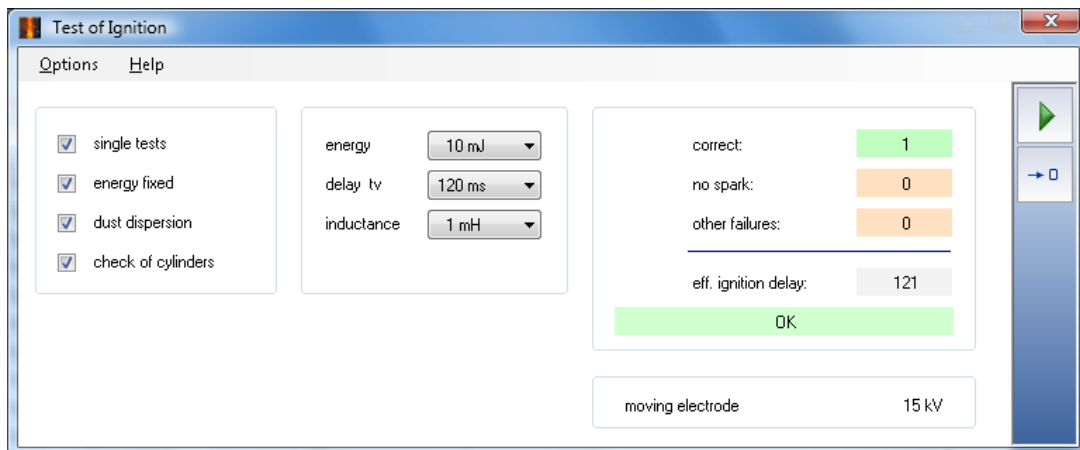
4.1 Serial interface (Tools / Check: Interface)

This program checks the serial connection between the PC and MIKE. Data is sent to the MIKE (write), read by the MIKE and compared with the transmitted data (failures). If problems are found, check the entry in "Interface", see: [2.5 Settings](#).



4.2 Ignition sparks (Tools / Check: Ignition)

In the next step, check the sparkover, without dust, at different ignition energies and with and without an inductance:



As in the performance of the actual experiment, a distinction is made between the set ignition delay time (delay tv = **tv set**) and the time measured at sparkover (eff. ignition delay = **tv eff**). The bottom field shows you the type of triggering selected and the charging voltage of the capacitors.

**Sparkover:**

With the lowest ignition energies (1 mJ, 3 mJ) and triggering by the high-voltage relay, the energy of the spark may occasionally be too low (message: charge too low ? No spark ?). Excessive charge has been lost owing to the corona current. Or, even in the absence of any disturbing influences, the spark energy was actually too low and the emitted error message has correctly reported this. In the practical application of the MIKE - with dust - this appears much less frequently as sparkover is facilitated by the dust/air mixture. With higher ignition energies, 100% sparkover may be expected.

**Error messages:**

| | |
|-----------------------|---|
| • Door open: | Door is not shut properly. |
| • Pressure too low: | Check the compressed air connection (7 bar ?) |
| • Charge too high ? | Upper limit of spark monitoring exceeded. |
| • Charge too low ? | Are the electrodes and insulators clean ? |
| • Deviation of tv | Triggering by high-voltage relay: If tv eff is too large, the delayed sparkover was probably caused by electrostatic charge on the surface of the glass tube. Clean the glass tube with water (this lowers the resistance of the surface). |
| • Deviation of tv | Triggering by moving electrode: If tv eff is too large, the cause usually lies in the movement of the ME cylinder being too slow. Clean piston rod and if need be lubricate with a little oil. |
| • Check: Cylinder ... | The position of the cylinder is monitored. The specified cylinder is not in the correct position. Check compressed air for the cylinders (5 bar). |

**Options:**

| | |
|-----------------------|--|
| • Single tests: | Select between single or continuous testing.. |
| • Energy fixed: | Energy and inductance are as specified. |
| • Dust dispersion: | Select between with or without dust dispersion. |
| • Check of cylinders: | The position of the pneumatic cylinders is monitored. |
| • Recording: | Protocol in a text-file "ignition.txt". |
| • Change Triggering: | In principle, the type of triggering can be changed at low energy values (1...10 mJ). But retention of the pre-set values is advisable |
| • Change Voltage: | |