![CS INSTRUMENTS logo]

Operating instructions

CS Leak Reporter V2 for the leak detectors LD 500/LD 510

CS INSTRUMENTS GmbH & Co. KG

1   Content

2   Foreword

Dear Customer,

If you have an **LD 500/LD 510** leak detector (abbreviated as LD 5X0 in the text below), you can export the leaks from the LD 5X0 and import and evaluate them with the **CS Leak Reporter V2** software.

Data transfer via USB stick makes it easy to generate reports. You can transfer the stored leaks into a report and easily manage and add data.

In addition, you can import your existing data from Leak Reporter V1 if you have already used this software. Otherwise, this point is irrelevant to you.

Primary functions:
- **Managing companies/buildings/projects/measurements**
- Adding company data
- Managing projects
- Managing measurements

- **Documentation/report preparation**
- Photo of the point of leakage
- Date/time
- Size of the leak in litres/min (units are adjustable)
- Costs of the leak per year in € (currency can be selected)
- Description of the position of the leak with indication of the company/department or hall/machine
- Information about leak repair (defective element, measure, spare part)
- Totals, priority, CO_2 emissions per year, etc.

3   Notes

3.1   About this document

- Read this documentation carefully.
- Keep this document close at hand so you can refer to it if necessary.
- Share this document with future users of the product.

CS INSTRUMENTS GmbH & Co. KG provides no warranty regarding its suitability for any particular purpose and assumes liability neither for errors contained in these instructions for use nor for consequential damages in connection with delivery, performance or use of this software.

4   General functional description

The CS Leak Reporter V2 software is used to manage and evaluate leakage data recorded with an LD 5X0 leak detector.

You can import data using a USB stick, which automatically transfers the images of the leaks. You can also add your own images as required. The measurements can be described in more detail in the software and initially specified for the project.

In the report, the desired measurement place can be evaluated and transferred to a report. The total values, the leakage cost information and the imputed quantities for the CO_2 emissions/year are also output there.

5   System requirements

PC hardware	from Win 7 x64/Mac
Main memory requirement	min. 4 GB RAM
Hard disk space	min. 10 GB

## 6   Installation/use of CS Leak Reporter V2

Launch "Setup.exe" to install the software and follow the installation instructions. The software is installed automatically.

7 Operation

The operation is largely self-explanatory, and during the sequences, the software shows appropriate descriptions of how to operate the software.

You can make entries or changes in all boxes with a white background.

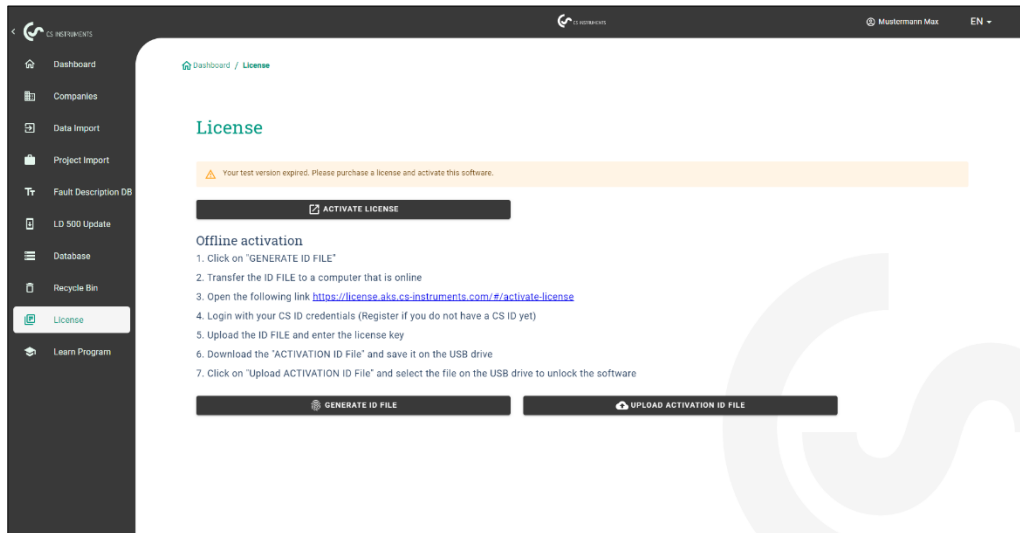You navigate with the main menu bar:
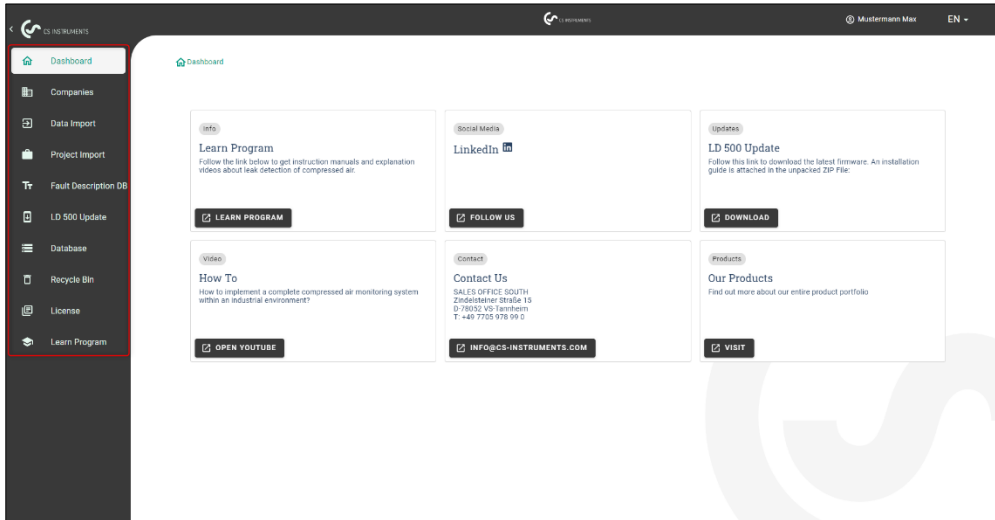
7.1 Application start

You use the installed shortcut (on the desktop) to start the application:

You can use the DE ▾ button to select the language.

7.2 Licensing

You can activate the software twice with a licence key. Alternatively, a 30-day trial version is available.

Licensing: You use "**ACTIVATE LICENCE"** to activate the software.

You will need to create an account with CS ID and then enter the licence key provided to you. After you register, a verification email will be sent to you. If you do not receive this email, check your virus scanner/firewall and spam folder.

After you have successfully activated the software, you can use it indefinitely.

<u>Offline activation:</u>

If the computer is not connected to the Internet, follow the instructions shown.

<u>Licence deactivation:</u>

If you need to use the software on another PC, it may be necessary for you to carry out a data transfer beforehand by exporting the database. Then you need to take note of the licence key. You can deactivate the licence under this menu item.
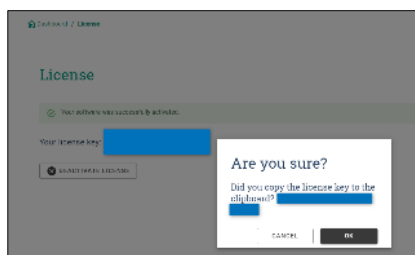
Afterwards, you need to install the software with the installation media or by downloading it from our homepage and then license it again as described above.

Tip:

You can activate Leak Reporter V2 by following this link:

www.license.cloud.cs-instruments.com

7.3   Importing the database

If you have already been using Leak Reporter V1, you can import the existing database into Leak Reporter V2.
- Make sure that you do **not** unzip the Leak Reporter V1 database – you instead need to import the ZIP file directly.
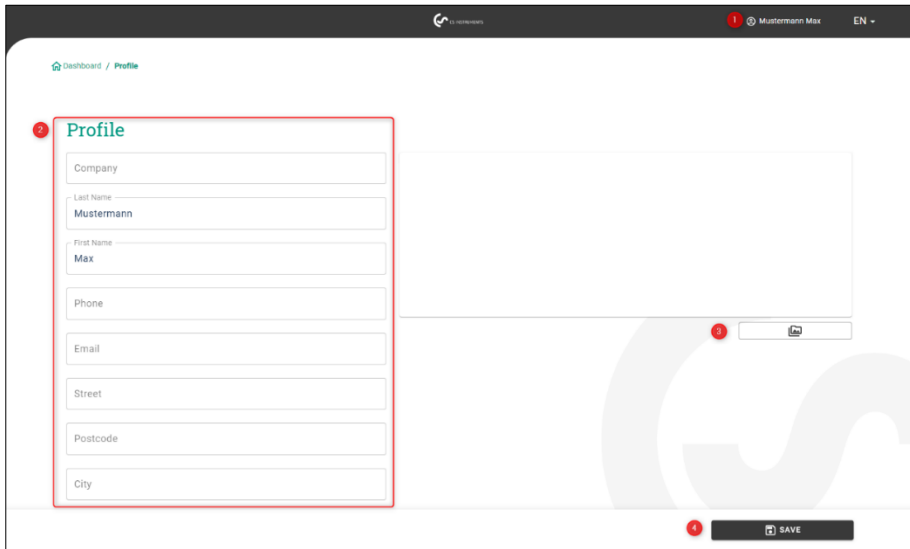- In addition, Leak Reporter V1 must be at release level 1.3.7 or higher.

(1) Export database in Leak Reporter V1
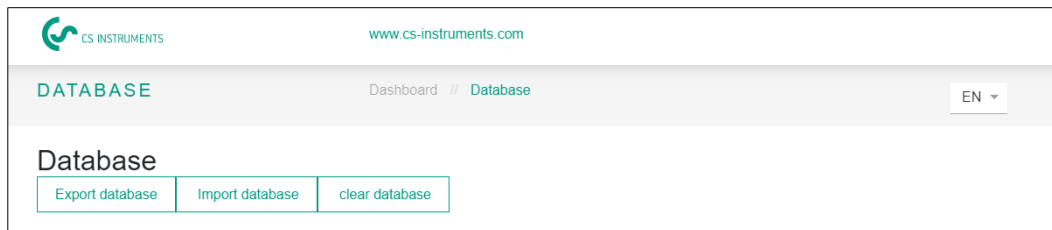
(2) Import database in Leak Reporter V2
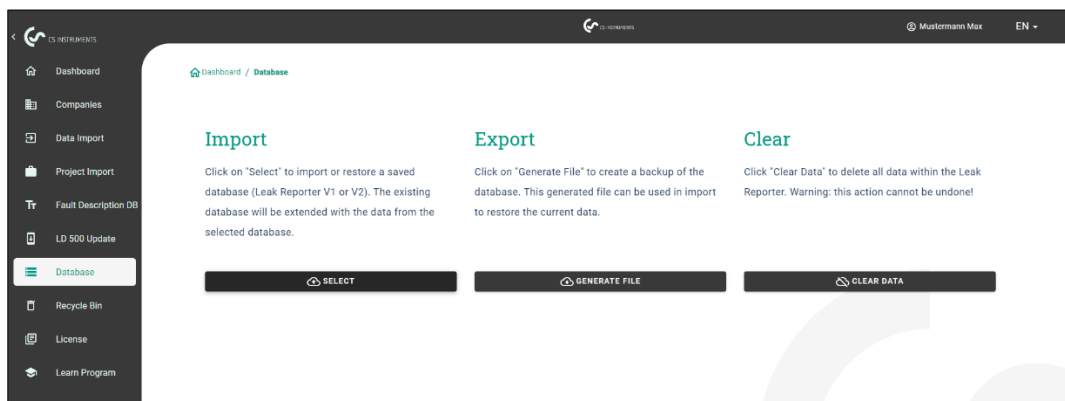
7.4 Editing the user profile

Your company's master data is to be stored in the profile.

(1) You can get to this interface by clicking the contact
(2) You can customise the company master data
(3) You can save a company logo
(4) The **Save button** saves the data.

The company name and logo are then output on the reports.

## 7.5 Leakage data import

The data import takes place as a sequence:
(1) Selection of a folder
(2) Selection of an XML file
(3) Selection of the leaks to be imported
(4) Destination of the imported leaks
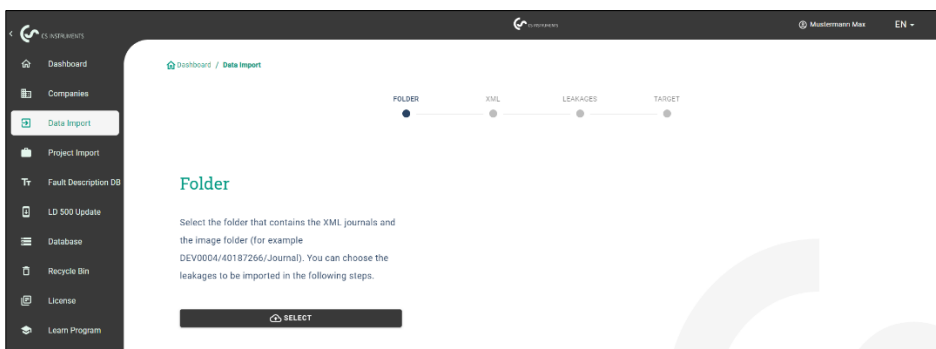
The LD 5X0 exports the leaks on the USB stick. You use then the data import menu item to transfer the exported data from the LD 5X0 of the USB stick into the leak reporter software.

You use the [⌃ SELECT] button to select the journal file.

(1) Open the "Journal" folder according to the path shown on the USB stick
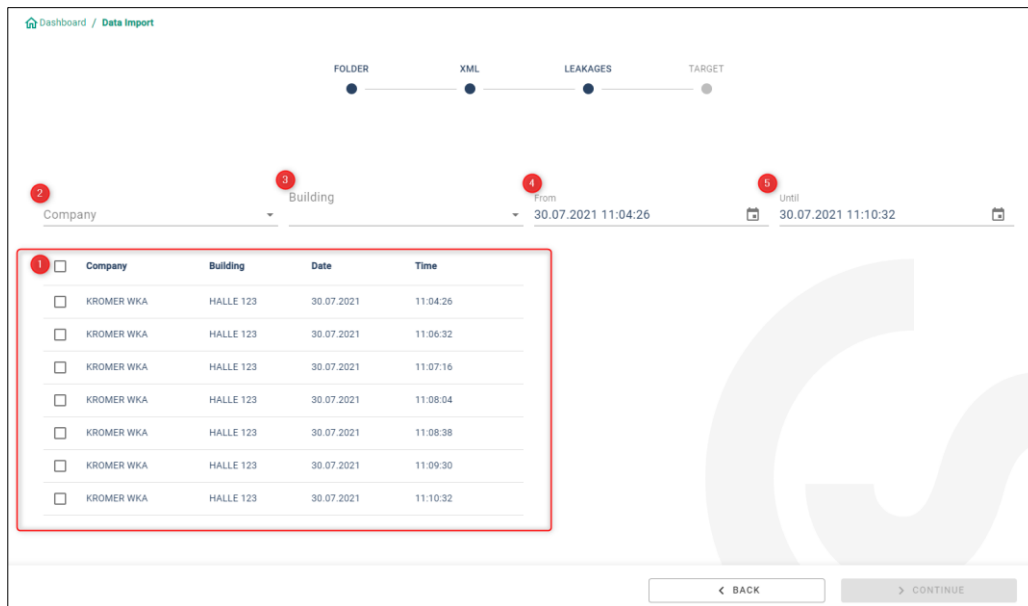(2) Select the folder
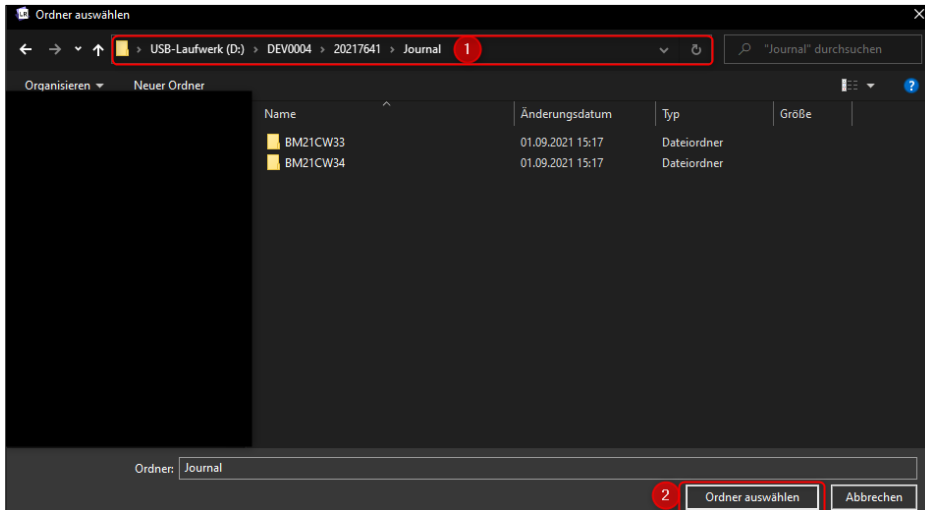
(3) Select the desired XML file that was exported by the leak detector

After selecting the XML file, you can filter the leaks according to their "company" and "building" or a freely selectable time period:

(1) Selecting individual leaks
(2) Filtering by one or more companies
(3) Filtering by one or more buildings
(4) Defining the start period (first leak)
(5) Defining the end period (last leak)

Options

(1) For the leaks of each company (Kromer WKA) to be imported, an existing company and/or project can be selected as the destination. At the same time, the buildings of the leaks are created in the selected company.

(2) If the company already exists, a new project is appended to it or an existing project can be selected. At the same time, the buildings of the leaks are created in the selected company.

(3) If the company of the data import does not exist yet, a new company with the corresponding name is created along with an initial project. At the same time, the buildings of the leaks are created in the selected company (as shown in the screenshot).

Once you have imported all leaks, you will have the following options:

    (1) Carry out a new data import in the same way
    (2) View the project within the most recently imported data

If the firmware used on the LD 5X0 is out of date at the time of export, this is indicated as follows:

The current firmware can be downloaded from the following link:
https://www.cs-instruments.com/downloads/software/firmware-leak-detectors

![CS INSTRUMENTS logo]

8 Managing companies

You can find the data of the imported companies in the main menu under the "Companies" item.

8.1 Displaying companies

    (1) Select "Companies" in the main menu bar
    (2) Search for a specific company
    (3) Edit the master data of the selected company
    (4) View the projects of the selected company
    (5) Create a new company
    (6) Delete the selected companies
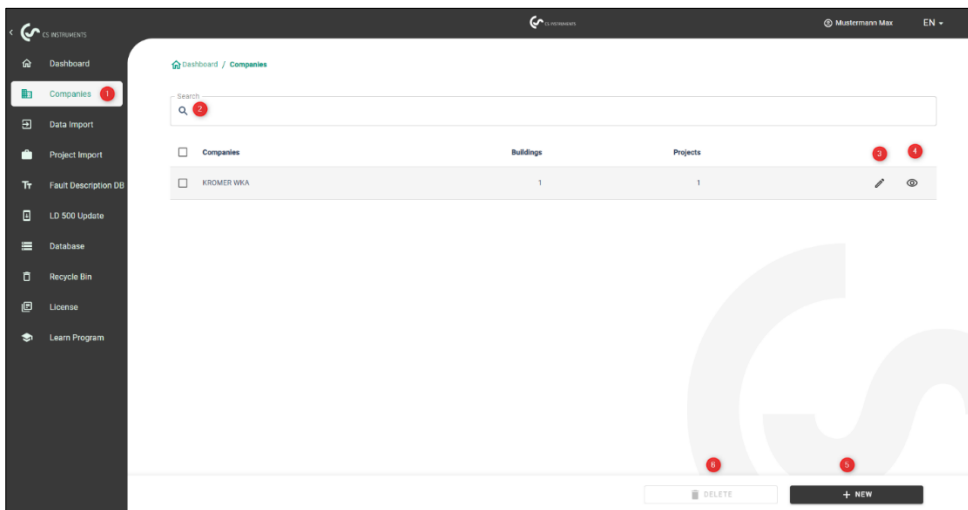
8.2 Company master data

You can store contact information and a company logo under the company master data. The information stored here is printed on the cover sheet of the report.
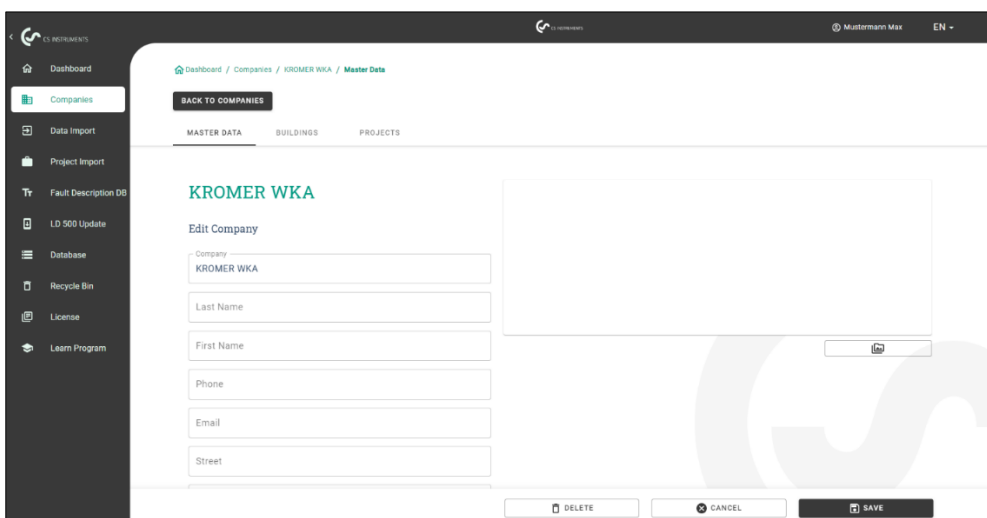
8.3 Buildings

You can add or delete buildings on the "Buildings" tab.

 (1) To delete a building, click the corresponding Recycle Bin.
 (2) To edit a building, click the corresponding pencil
 (3) To create a new building, enter the corresponding name
 (4) To add the building, click the plus sign

8.4 Companies – projects

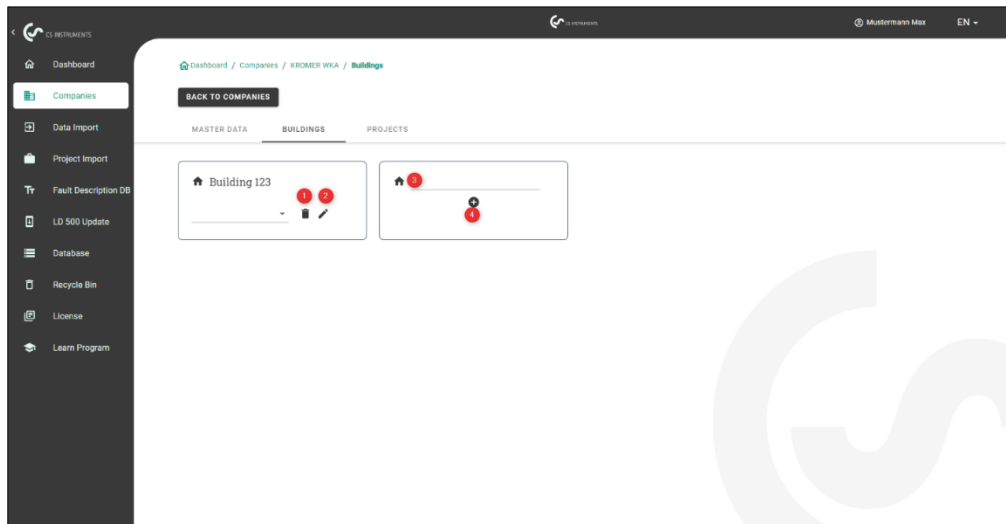The data already created/imported is displayed on the Projects tab. Each data import creates a new project here, unless an existing project was selected as the destination during a data import.

 (1) You call up the project's leaks by pressing the "eye" button. The measurements and project master data stored there are then displayed.
 (2) You can create a new project manually by pressing the "NEW" button.
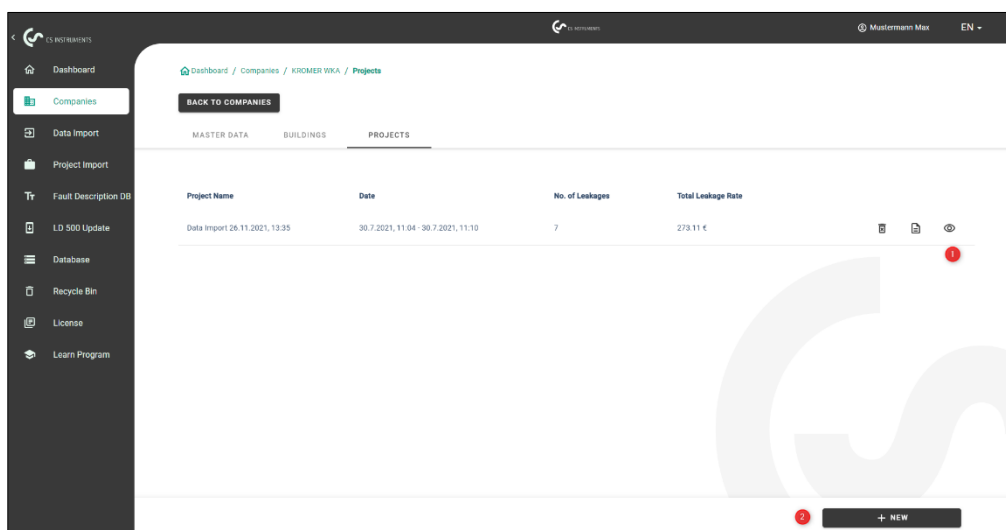
8.4.1 Editing the project master data

The parameters set in the LD 5X0 are initially used for each project. If it is necessary to change them, you can do this globally for the entire project in project master data.
The project data is defined as follows:

- Name – project name (also printed on the report)
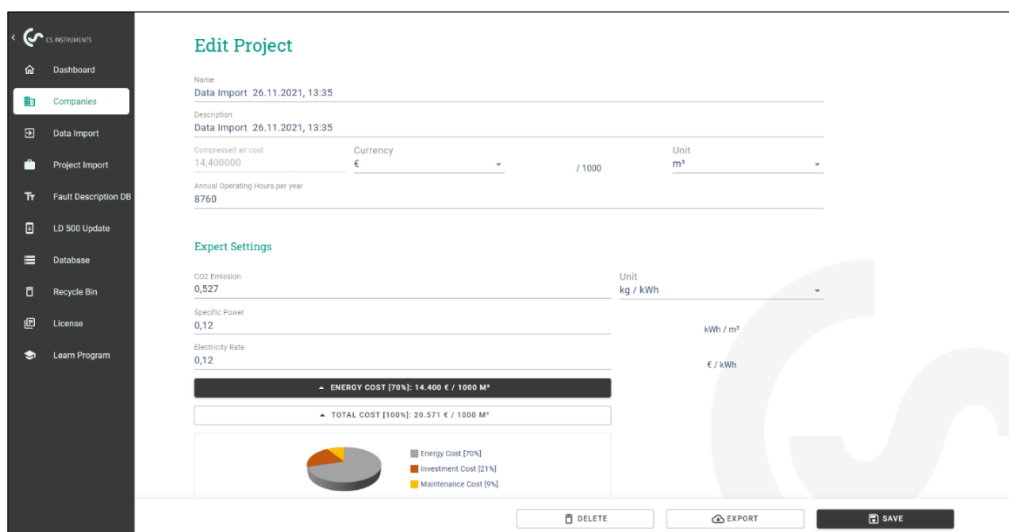- Description – project description

Currency	Local currency
Unit	Volume unit (m³ or cf)
Operating hours	Operating hours of the system per year (e.g. 8760 for 24/7 operation)
Costs	Costs for 1000 Nm³ or CF air in the currency to the right (automatically calculated if the "Electricity price" and the "Specific output" have been entered in the Expert menu).
CO_2 emissions	The default value of 0.527 kg/kWh is used here
Electricity price	Unit: Currency/kWh
Specific output	Output of compressor efficiency variable in kWh/m³ or kWh/CF
Cost basis	A distinction can be made here between pure energy costs [70%] and complete costs [100%]

Cost calculation basis:
If the Electricity price and Specific output boxes have been populated in the Expert menu, the software automatically calculates the energy costs of the compressed air system.

These costs typically correspond to 70% of the total costs, which consist of energy [70%], investment [21%] and maintenance costs [9%].

The user has the option to choose between either of these cost types. The selected cost type is then adopted globally for the entire project.
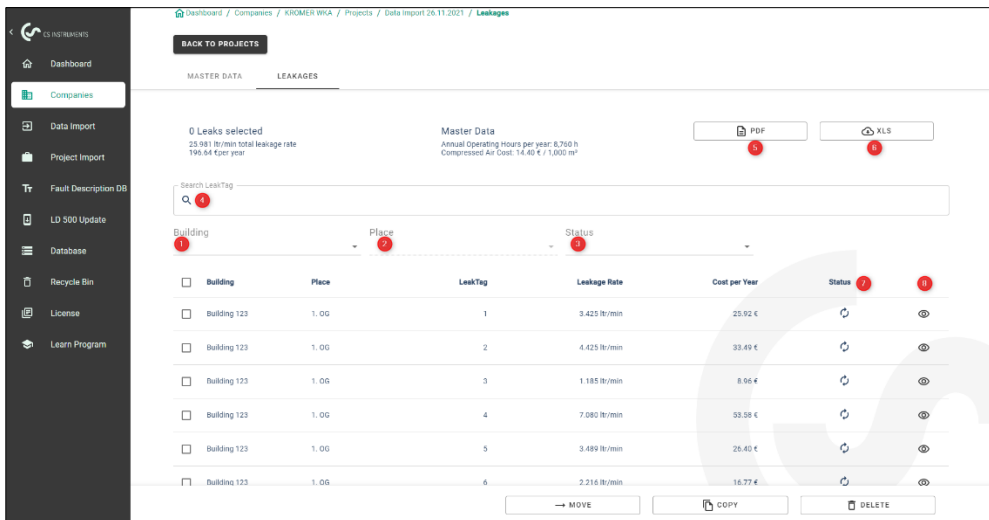
8.4.2 Leak overview

The Measurements tab shows the leaks for the selected project, including the project master data, shown in the red box.

Functions of the interface:
- (1) Filter for buildings
- (2) Filter for the location of the leak
- (3) Filter for the status of the leak (remedied/open)
- (4) Leak tag search
- (5) Generate PDF report
- (6) Generate Excel report
- (7) Status of the leak (remedied/open)
- (8) View details of the leak

From left to right, the columns contain information about each leak:

- Buildings
- Location
- Leak tag
- Flow leakage rate
- Leak costs per year
- Status of the measurement (open, remedied)

The formula for the leak costs is as follows:

Leak costs per year = loss in l/min * 60min/1000l * operating hours of the system * cost of compressed air generation for 1000m³ in euros

= 5.95 l/min * 60min * (1m³ /1000l) * 8760 (h/year) * €25/1000 m³
= €78.18 leak costs per year.

Using the [icon] button next to the respective measurement, you can display the measurement detail data for editing.

You can change the measurements on this screen. Measures as well as comments, priority, status and who eliminated the leak at what time can be stored.

  (1) Delete the image
  (2) Add a saved image
  (3) Information on the location of the leakage point
  (4) Information on the cost of leakage data
  (5) Information on leak repair
  (6) View previous leak
  (7) View next leak
  (8) Back to the leak overview
  (9) Move this leak to another company, building or project
  (10)   Copy this leak to another company, building or project
  (11)   Delete this leak
  (12)   Save changes
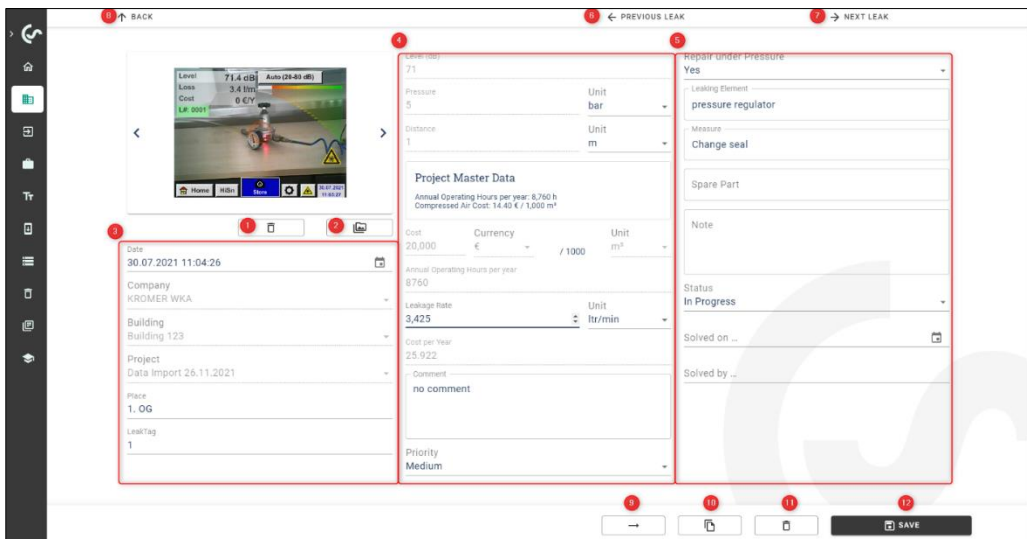
Project master data filled in:

This figure shows the parameters that the system uses to calculate.

When you set the project master data, this data is used to calculate the costs for each leak within the project.

The box highlighted in red shows the parameters used by the leak detector. If the project master data is set, these boxes have a grey background and are locked for editing.

If the unit of measurement is changed from [ltr/min] to [cfm], an automatic conversion takes place and vice versa.

Project master data is blank:

Cost	Currency		Unit	
20,000	€ ▼	/ 1000	m³ ▼	

Annual Operating Hours per year

31

Leakage Rate

3,425

Unit

ltr/min ▼

Cost per Year

25.922

If no project data is recorded, the data in the leaks can be changed. You do the calculation in the formula above using the data from the measurement.

The boxes will then be white and thus available for input.

→	⧉	⬚	💾 SAVE

The buttons can be used to move, copy, delete or save a measurement.

The following dialogue is displayed when copying leaks:

Copy to …

(1) Company
KROMER WKA ▼

(2) Building
[Keep current building] ▼

(3) Project
[Keep current project] ▼

(4) ☑ Do you want to switch to this project?

CANCEL   OK

(1) The company into which the leak(s) are to be copied
(2) [Keep current building] →Building with the name is created if it does not already exist
(3) [Keep current project] → New project is created in the company with the same name if it does not already exist
(4) Target project is displayed after the copying process

The following dialogue is displayed when moving leaks:

As with moving, you can fill in the boxes with the same steps. After being copied, the leaks selected in this manner are in both projects.
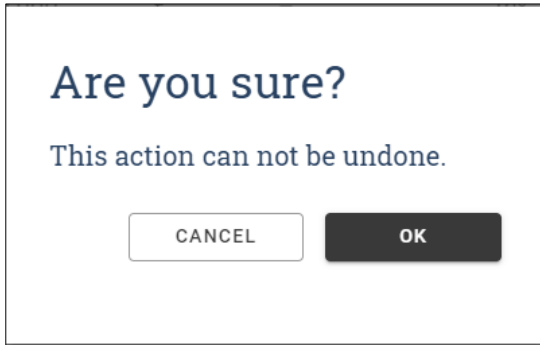
Before final deletion of a measurement, this message is displayed:

Are you sure?
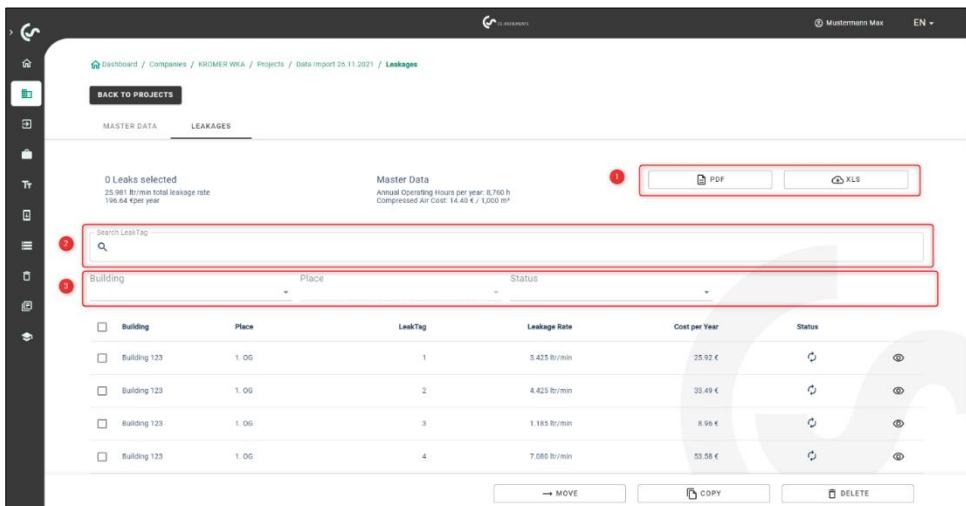
This action can not be undone.

CANCEL   OK

Note:
If a leak has been accidentally deleted, it can be restored from the Recycle Bin.

8.4.3   Creating a report

(1) A report can then be created in the leak overview for the project.

(2) The marked or filtered leaks or even all leaks are then transferred to the report.

(3) Sorting of the leaks is taken into account in the report.

Structure of the report:

1. **Cover sheet (page 1):**

The PDF report consists of a cover sheet with information about

▪ The customer, auditor
▪ Project master data
▪ Results of the measurement

2. Leak overview (following pages)

The following is displayed for each leak:
- Location
- Potential savings
- Fault description
- Status and priority

Overview page (final page):
- Results of the measurement

Excel report:

This report shows essentially the same information as the PDF report.

![CS INSTRUMENTS logo]

9 Project import

In order to save or exchange data, CS Leak Reporter V2 has a "project import" function, which can be accessed from the home menu.

This function imports a project, including all the buildings and leaks stored in it. If there is already a company with the same name, an additional project is added to it.

If a company with the same name does not already exist, the corresponding company is created with the project.
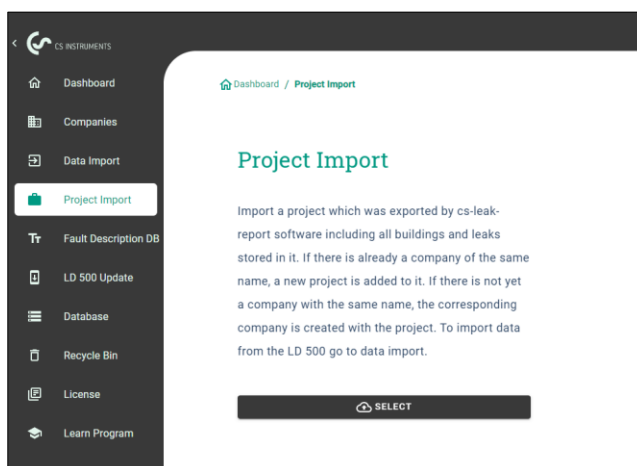
9.1 Project export
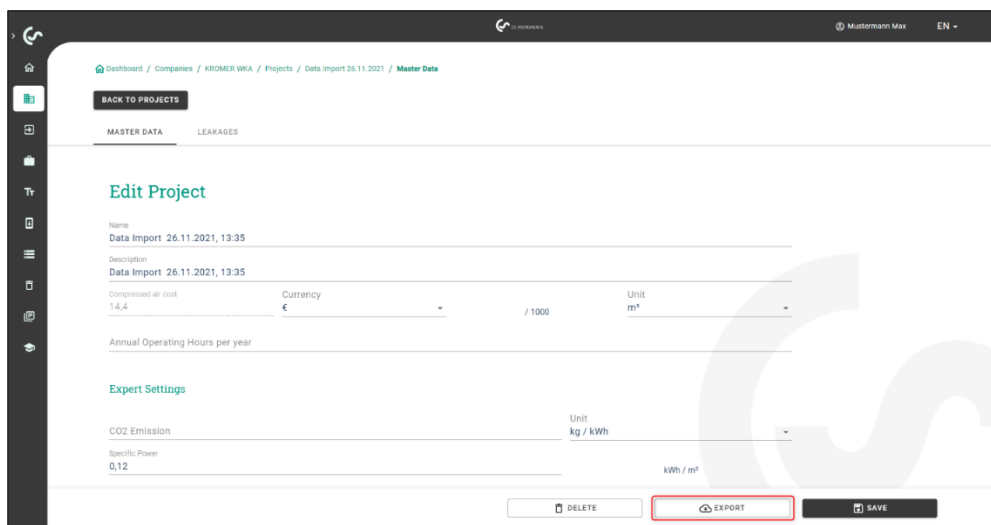
The project is saved using the "Export project" button. This allows data to be conveniently copied back and forth between different users
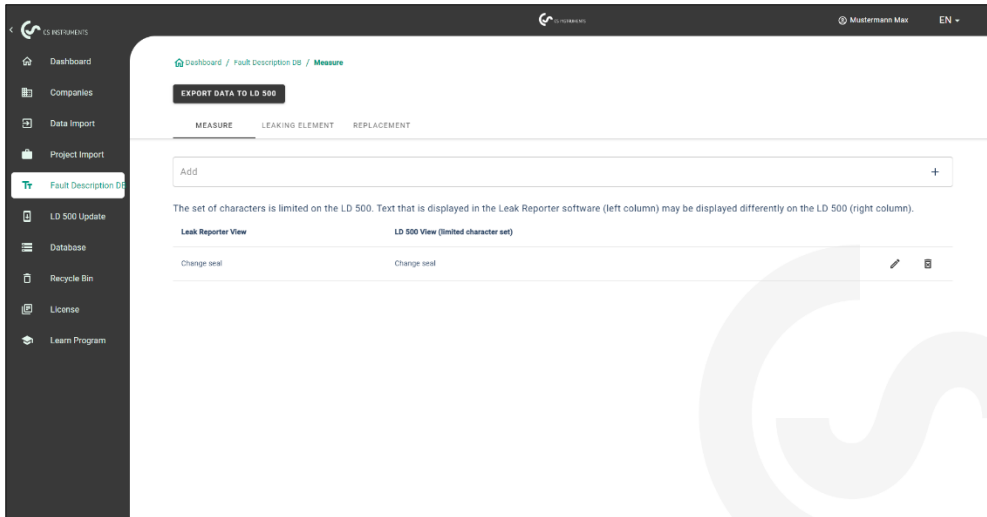
9.2 Project import

Use the following menu to import the project.

10 Fault description DB

You can generate the fault description database for the LD 5X0 with Leak Reporter V2.

With each import, Leak Reporter V2 expands the database with entries in the XML file of the leak. You can also add entries manually.

Caution:

The LD 5X0 can only display strings of a certain length and a limited character set. If the input is too long, Leak Reporter V2 cuts it off so that it can be imported into the LD 5X0.

In the export process, you can select which data the XML file to be exported should contain:
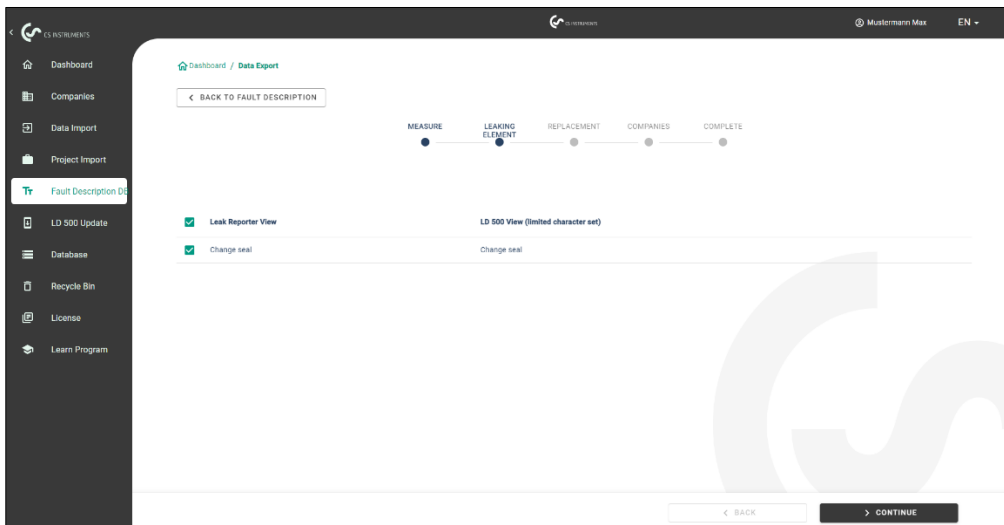
The exported database has a maximum length of 1000 elements. If this size is exceeded, there is a maximum of 1000 elements in the XML file.

To import the data into the LD 5X0, save the ZIP file to the supplied USB stick and unzip it there.

Once you have inserted the USB stick into the LD 5X0, you can update the LD 5X0 database at:
   (1) LD 5X0 Export/Import→
    (2) Import: Database
    (3) Select the XML file in the Customer folder
    (4) Define ranges

11 Recycle Bin

Deleted items are temporarily placed in the Recycle Bin. This applies to:

- Companies
- Buildings
- Projects
- Leaks

If an item has been deleted by mistake, you can restore it by clicking the "Move" button. A random number combination is appended to the original file name in the Recycle Bin so that there can be no interference with existing data during the restore operation. You can customize this name afterwards.
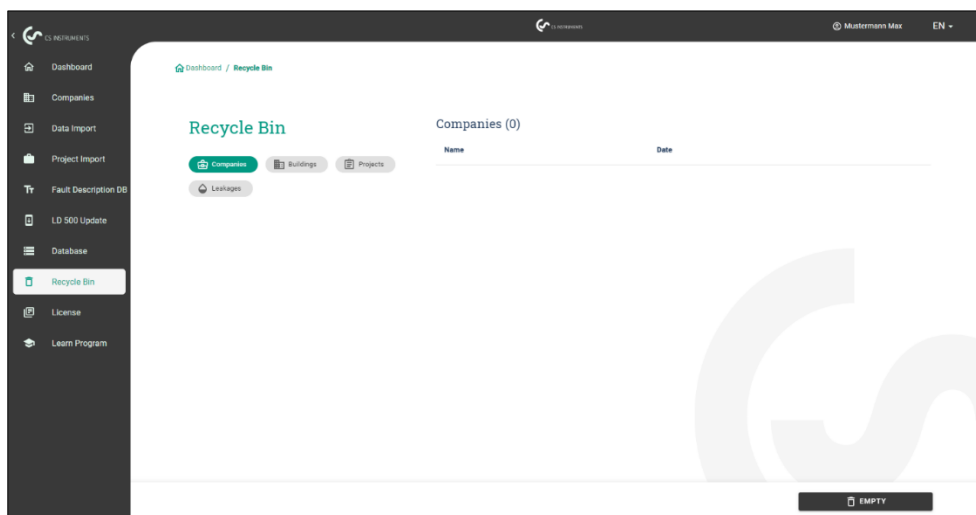
If you click "Empty Recycle Bin", the entire Recycle Bin is deleted, but it is also possible to delete individual items in the categories (companies, buildings, projects and leaks).

12 Database

We recommended performing regular backups and saving them to different storage media.
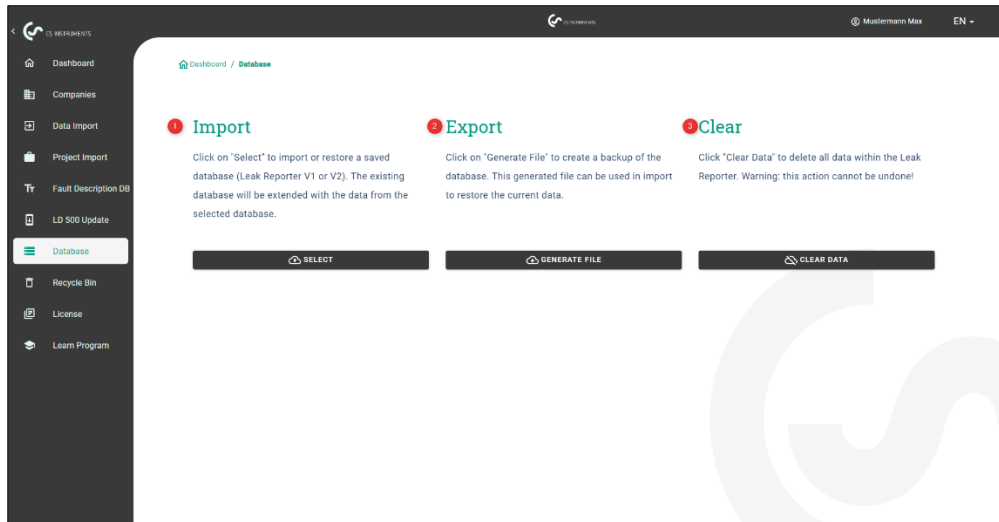
(1) You can restore the previously exported data status of CS Leak Reporter V1 and V2 with "Import database". To do this, import the database (ZIP file), which has **not yet been unzipped**.

(2) Using "**Export** database", you can create a backup file that saves the current information status of CS Leak Reporter V2.

(3) Using "**Clear** database", you can delete all data from CS Leak Reporter V2.

<u>Caution:</u>
Please make sure that you do **not** unzip the Leak Reporter V1 database; instead, import the ZIP file directly into Leak Reporter V2. In addition, Leak Reporter V1 must be release level 1.3.7 or higher.

13 Update overview

CS INSTRUMENTS is continuously working on the leak detector firmware, and new firmware versions are published regularly.

To keep the LD 5X0 current, we strongly recommend that you update it. During data import, the XML journal is checked, and the firmware in use for the corresponding unit is saved on this basis.

If the firmware in use is out of date at the time of export, this is indicated as follows:

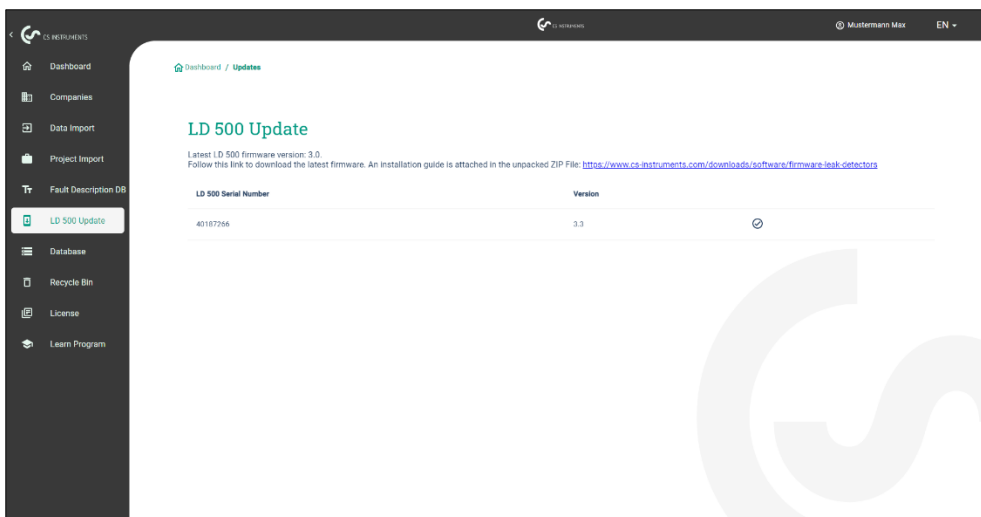The following overview shows the current firmware version (4.04) and the versions used for the corresponding serial numbers.

The current firmware can be downloaded from the following link:

https://www.cs-instruments.com/downloads/software/firmware-leak-detectors

14   Learning programme

This tile in the dashboard takes you to the homepage of CS INSTRUMENTS. There you will find all relevant information about the LD 5X0 and CS Leak Reporter V2 at a glance.

The following link is called up:

https://www.cs-instruments.com/downloads/tutorials/professional-compressed-air-leak-detection