EUCHNER

Software Manual

Electronic-Key-Manager EKM2

Application Software

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Contents

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1. General notes

1.1. Use of the manual

This manual describes the function and use of the Electronic-Key-Manager EKM2 application software in the following versions:

Version	Order no.	Version	Further information
Electronic-Key-Manager EKM2 Demo	8000211	V1.0.X	*1.6. Versions on page 4*
Electronic-Key-Manager EKM2 Basic	8000201	V1.0.X	

1.2. Scope

Important!

- Make sure to use the operating instructions valid for your product version. Please contact the EUCHNER support team if you have any questions.
- Your software may have been updated. Make sure that the software documentation corresponding to the update is available and is observed.

1.3. Requirement for the user

Proper use of the Electronic-Key-Manager EKM2 application software requires knowledge about handling the CIS Ident System and/or the EKS or EKS2 Electronic-Key-System.

1.4. System requirements

Hardware:	Standard PC
Operating system:	Windows® 10, 64-bit
	Windows® 11
Software:	CodeMeter User Runtime for Windows from version 8.40 from WIBU-SYSTEMS AG

1.5. Use of brand names

Microsoft Windows® is a registered trademark of Microsoft Corporation.

MIFARE® DESFire® is a registered trademark of NXP Semiconductors.

1.6. Versions

Functions	EKM2 Demo	EKM2 Basic
Usage period	90 days	Unlimited
System installation	Local client	Local client
Editing transponder data		
Saving templates	•	•
Importing/exporting templates	•	•
Project		
Editing existing projects	•	•
Exporting/importing existing projects	•	•
Managing transponders		
Filtering/sorting data records	•	•
Deleting data records	•	•
Miscellaneous		
Managing security settings (only EKS2)	•	•

2. General function of the application software

The Electronic-Key-Manager EKM2 application software is used for reading, writing and managing CIS data carriers or EKS or EKS2 Electronic-Keys on a standard PC. The software is used in conjunction with an EUCHNER read/write station with serial interface or USB interface.

The following transponders can be written:

System	Transponder
Identification System CIS	CIS3(A) with 16-byte read/write memory
	CIS3A-Mini with 116-byte read/write memory
	CIS3A-Mini with 5-byte read-only memory
Electronic-Key-System EKS	Electronic-Key EKS with 116-byte read/write memory
Electronic-Key-System EKS2	Electronic-Key EKS2 with MIFARE® DESFire® transponder

You will find further information about writing data to the transponders in the manuals for the related read/write stations.

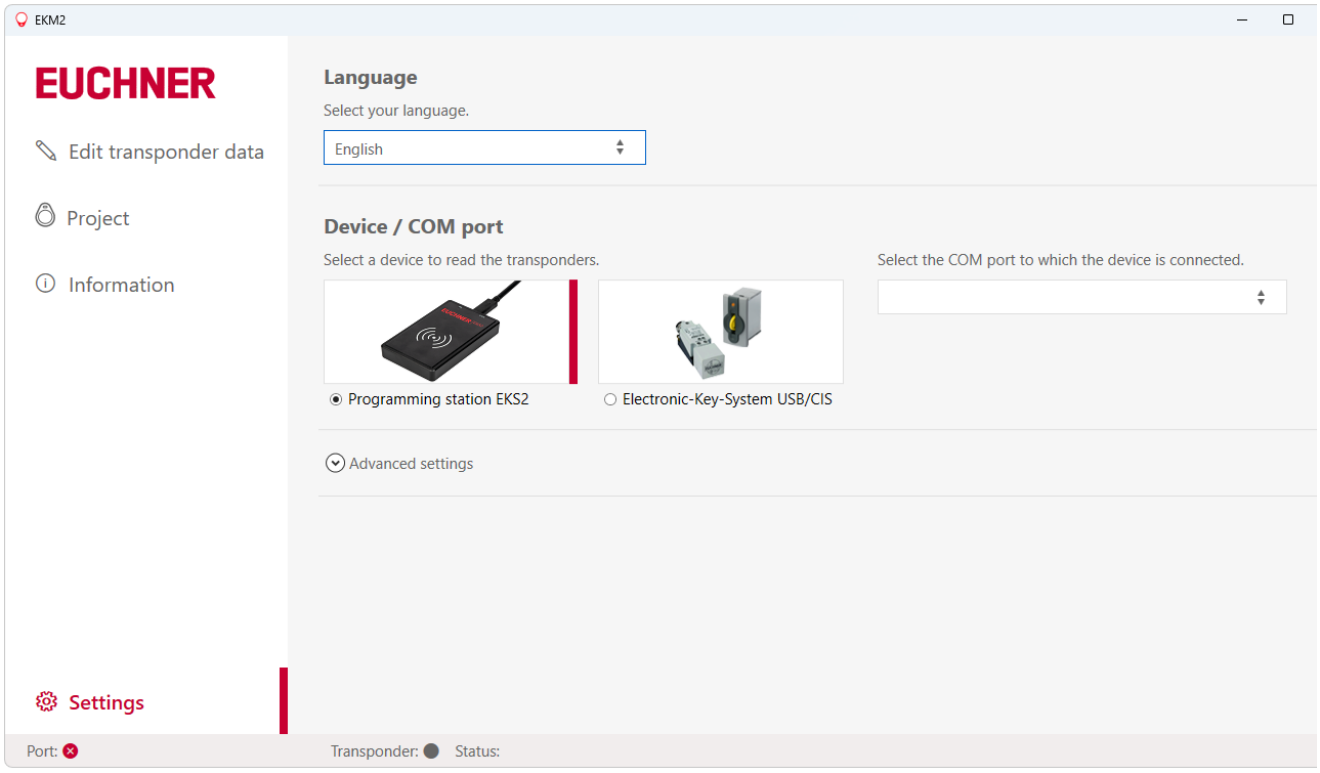
3. Installing Electronic-Key-Manager EKM2 and starting it for the first time

Important!

You will require the CodeMeter Runtime from WIBU-SYSTEMS AG to use the EKM2 application software. You will find further information in our license document.

1. Use the supplied link to download the ZIP folder of the EKM2 application software, then unzip it and save it to a local directory on the PC.
2. Run the *EKM2.exe* application.

➡ The *Settings* window appears.



3. Select your language.
4. Connect the read/write station to the PC and select the corresponding device. Select the COM port to which the read/write station is connected.

➡ The connection to the read/write station is established.

Important!

- Whenever the program is started again, the *Edit transponder data* menu item will display the most recently used window.
- If you would like to change the settings after starting the program for the first time, select the *Settings* menu item in the navigation area.

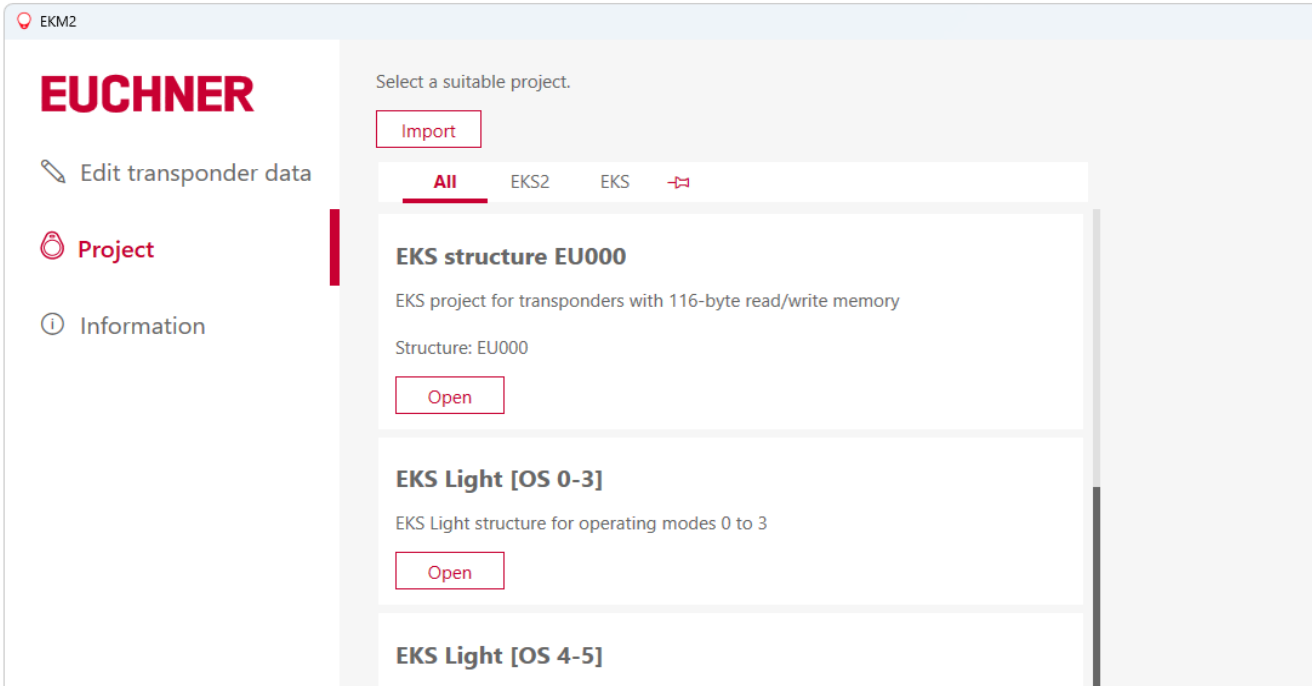
4. Project

4.1. Selecting project

Prerequisite:

- A read/write station is connected and is selected under *Settings*.

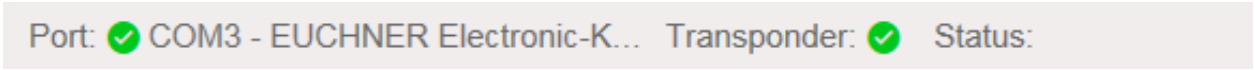
1. Click *Project* in the navigation area.
2. Select a project using the *All* tab or the tab for the corresponding system and open it.



The following selection options are available:

System	Project	Further information
Electronic-Key-System EKS2	EKS2 structure EU001	*9.1. EKS2 structure EU001 on page 16*
	EKS2 structure EU002	*9.2. EKS2 structure EU002 (only for machine manufacturers) on page 16*
Electronic-Key-System EKS	EKS structure EU000	*7.1. EKS structure EU000 on page 14*
	EKS Light [OS 0-3]	*8. EKS Light projects and data structures on page 15*
	EKS Light [OS 4-5]	
	EKS Light [OS 6-7]	
Identification System CIS	CIS3(A)	Related operating instructions
	CIS3A-Mini	
	CIS3A-Mini unique	

➡ The status bar at the bottom of the window displays the COM port used and the selected system:



If the connection to the read/write station is interrupted, this situation is indicated in the *Status* field.

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➡ Depending on the selected project, different menu items are displayed in the navigation area:

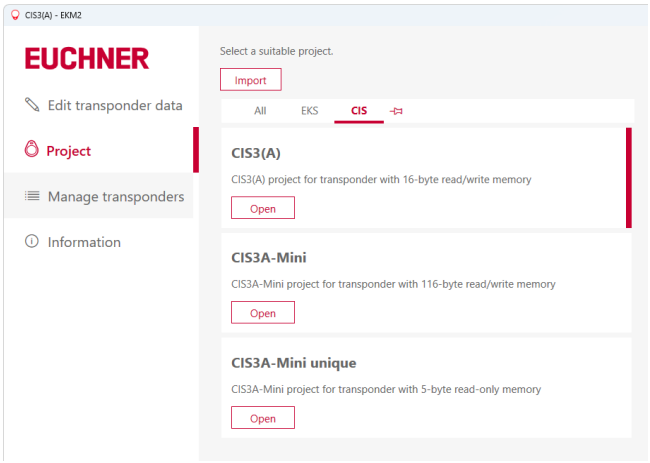


Fig. 1: Navigation area, EKS/CIS projects

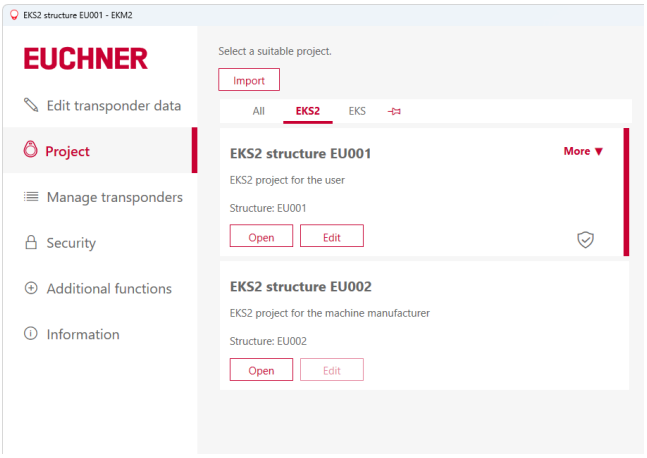


Fig. 2: Navigation area, EKS2 projects

➡ The corresponding Hex/ASCII editor or an input mask is opened in the *Edit transponder data* menu item. The transponder data can be edited.

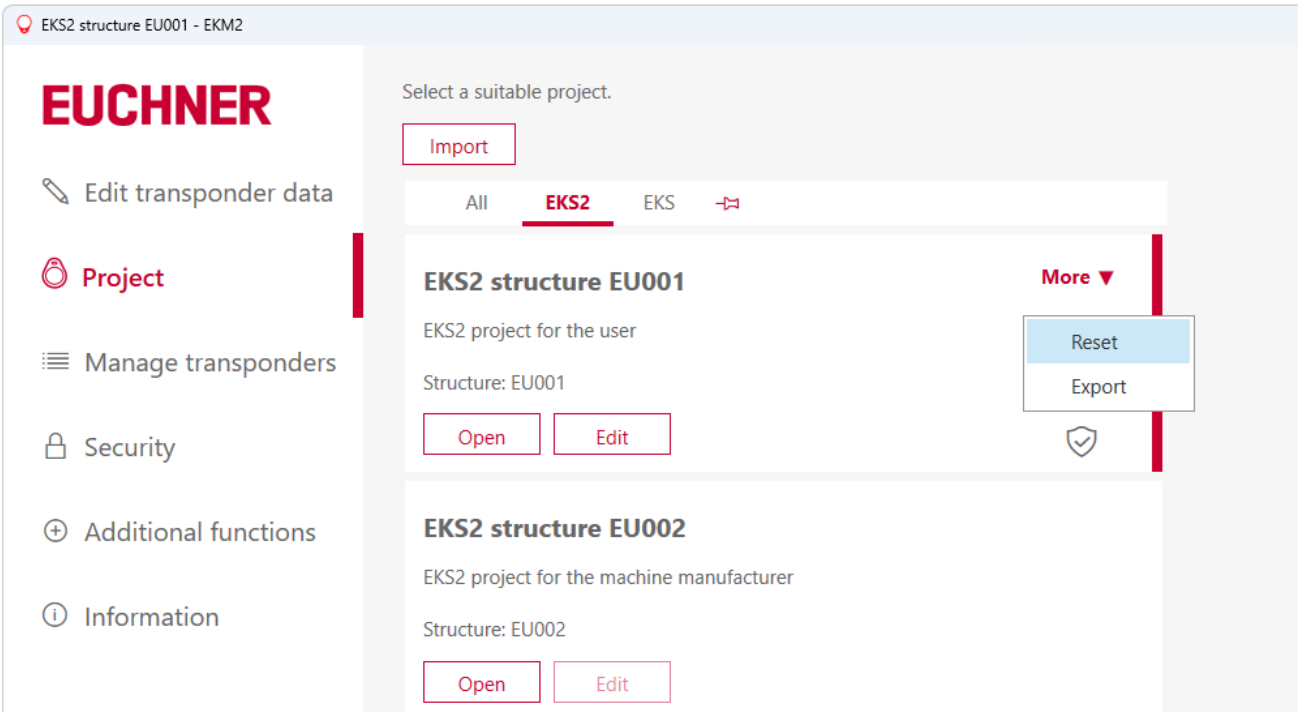
4.2. Resetting project

If transponders have already been written in a project, the project can be reset. Depending on the project, the following settings and values are reset to the factory settings or deleted.

- Already written transponders in the database in the *Manage Transponders* menu item, see *6. Managing transponders on page 13*
- Saved templates
- Changes in text editor (only EKS2)
- Security settings (only EKS2)

	**Important!** Data of reset projects cannot be restored.

1. In the *Project* menu item in the corresponding project, click the *Reset* button under *More*.



➡ The project is reset.

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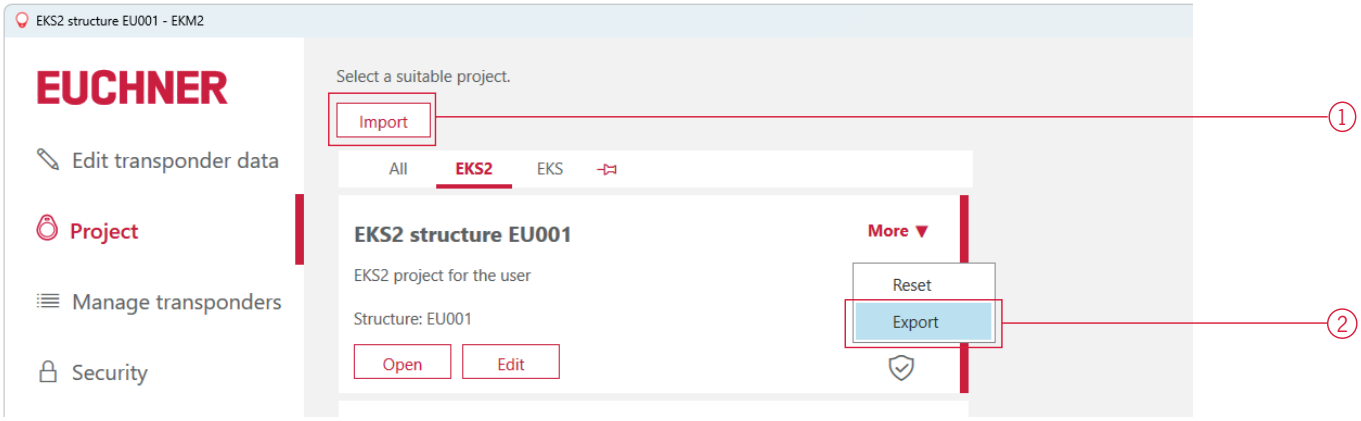
4.3. Exporting and importing project

Projects can be exported and imported for saving projects and for passing them on to another programming workstation. Prerequisite: Transponders have already been written using the corresponding project.

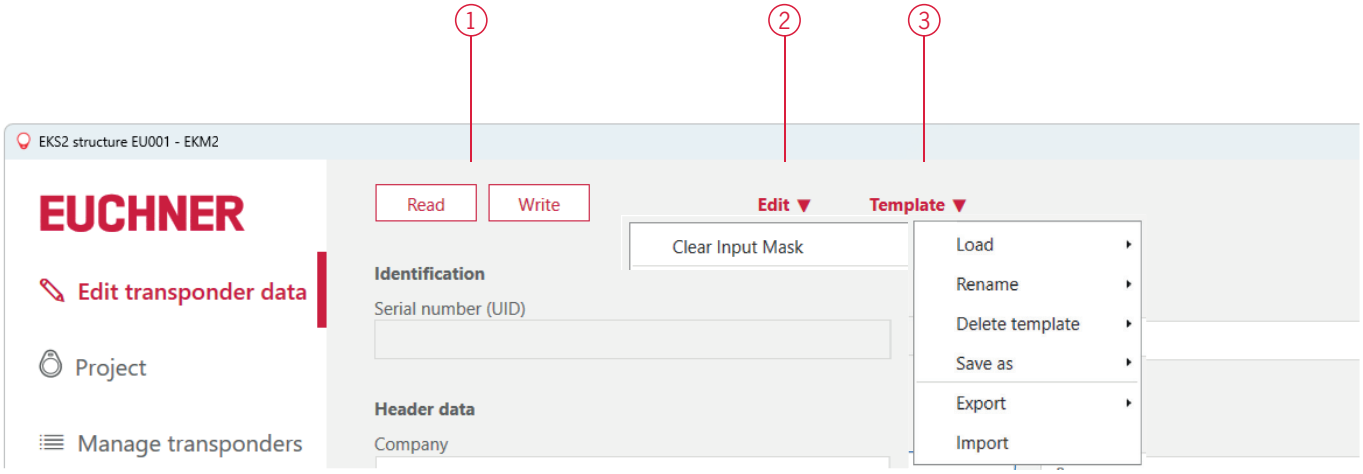
The project is encrypted by means of a password during export. This password will be required again to import the project.



1	Import of a previously exported project
2	Export of the project to a directory to be defined

5. Editing transponder data

The following functions are available for editing the transponder data:



1	**Transponder data** Prerequisite: A transponder is located in the read/write station's actuating range.	
	Read	The data of the transponder are read.
	Write	The data are written to the transponder.
2	**Edit**	
	Clear Input Mask	All fields are cleared.
3	**Template**	
	Load	A template to be selected is loaded.
	Rename	A template to be selected is renamed.
	Delete template	A template to be selected is deleted.
	Save as	The data are saved as a template. This can simplify the following tasks: › Writing additional transponders with the same characteristics. › Writing several transponders with similar characteristics. It is only ever possible to save the data currently displayed as a template.
	Export	A template to be selected is exported as an xml file.
	Import	A template from the drive is imported into the application.

The transponder's unique serial number (UID – unique identifier) is factory defined and cannot be edited.

Depending on the selected project, either a Hex/ASCII editor or an input mask with input fields is displayed.

5.1. Writing transponder

Prerequisites:

› A read/write station is connected and is selected under *Settings*.
› The data to be written have been prepared in the corresponding input mask.

1. Bring a transponder into the read/write station's actuating range.

➡ The *Write* button is active.

2. Click the *Write* button.

➡ The data are written to the transponder.

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5.2. Hex/ASCII editor

Edited data or data loaded from a template are displayed in blue in the Hex/ASCII editor. The data are displayed in black only after they have been written to the transponder.

Additionally, filling characters can be used to write transponder data uniformly from a defined byte.

The filling characters can be customized as follows:

1. Place the cursor on the corresponding hex field and then click the right mouse button.
2. Click the *Filling characters* button.
3. Enter a hexadecimal value in the dialog window as specified and confirm with *OK*.

➡ The hex fields are filled with the filling character from the cursor position to the end of the programmable character string.

Alternatively, the filling characters can also be adapted under *Advanced settings* in the *Settings* menu item.

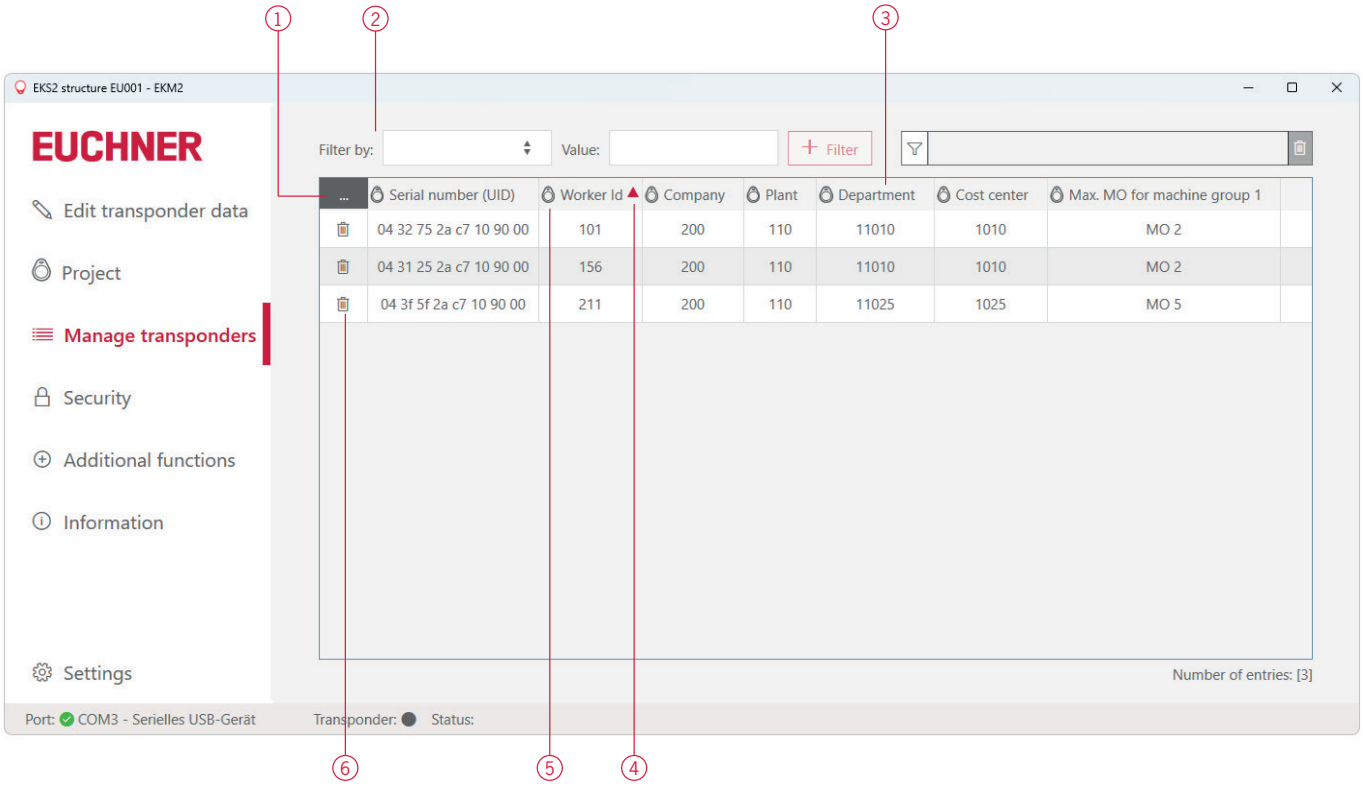
6. Managing transponders

The data of the transponders that have been written in a project are displayed in the *Manage transponders* menu item.

Prerequisites:

- A project is open.
- Transponders have already been written in this project.

The following functions are available:



1	Show or hide columns.
2	Filter. Several filters can be set.
3	Move columns using drag&drop.
4	Sort in ascending or descending order.
5	Data are saved on the transponder.
	Valid only for EKS Light projects: Data are saved in the database.
6	Delete data record: Lost or expired transponders can be deleted.

Important!

When a data record is deleted, only the corresponding entry in the database will be deleted. The data on the corresponding transponder remain unaffected by this.

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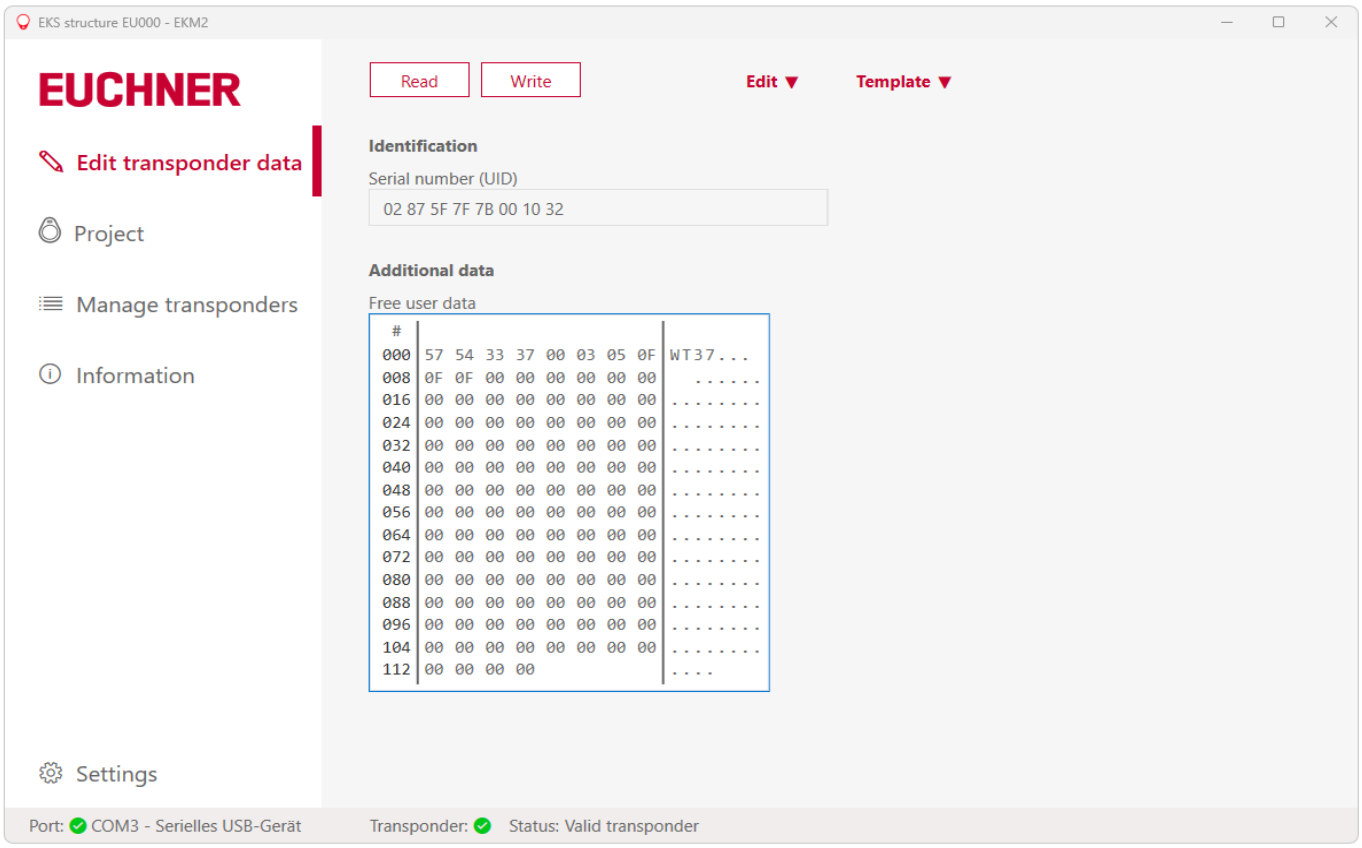
7. Electronic-Key-System EKS project and data structure

7.1. EKS structure EU000

The *EKS structure EU000* project is available for the Electronic-Key-System EKS.



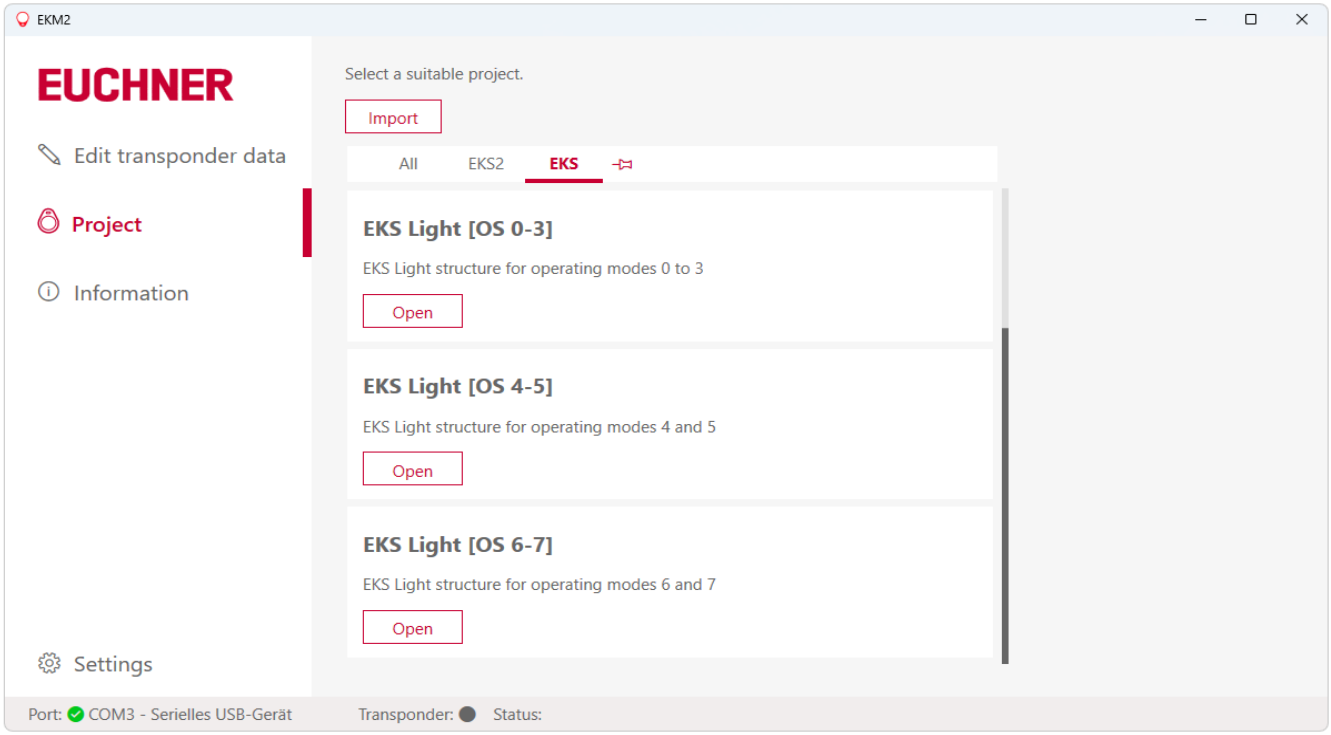
A typical example for the utilization of the freely programmable memory for an EKS with data interface could be as follows:

- Department (here: WT)
- Personnel number (here: 37)
- Reserve block
- Access rights for process 1, e.g. milling (here: 3)
- Access rights for process 2, e.g. turning (here: 5)
- Mode of safe operation MO 0 (here: 0F0F)
- Unused memory (freely available)
- Fixed serial number (here: 02...32)

Byte no.	0	1	2	3	4	5	6	7	8	...	112	113	114	115	116	...	123
Value [hex]	57	54	33	37	00	03	05	0F	0F						02	...	32
Value [ASCII]	W	T	3	7													
Function	Department		Personnel number		Res.	Rights	Rights	Selection of operation mode		Freely available					Serial number		

8. EKS Light projects and data structures

Three projects for EKS Light can be selected for the Electronic-Key-System EKS.



You will find further information about the function and application in the following manuals:

Document	Document number
Manual EKS Light and Light FSA	110845
Additional manual EKS Light and Light FSA	2513217

The documents can be downloaded from www.euchner.com. Enter the document number in the search box.

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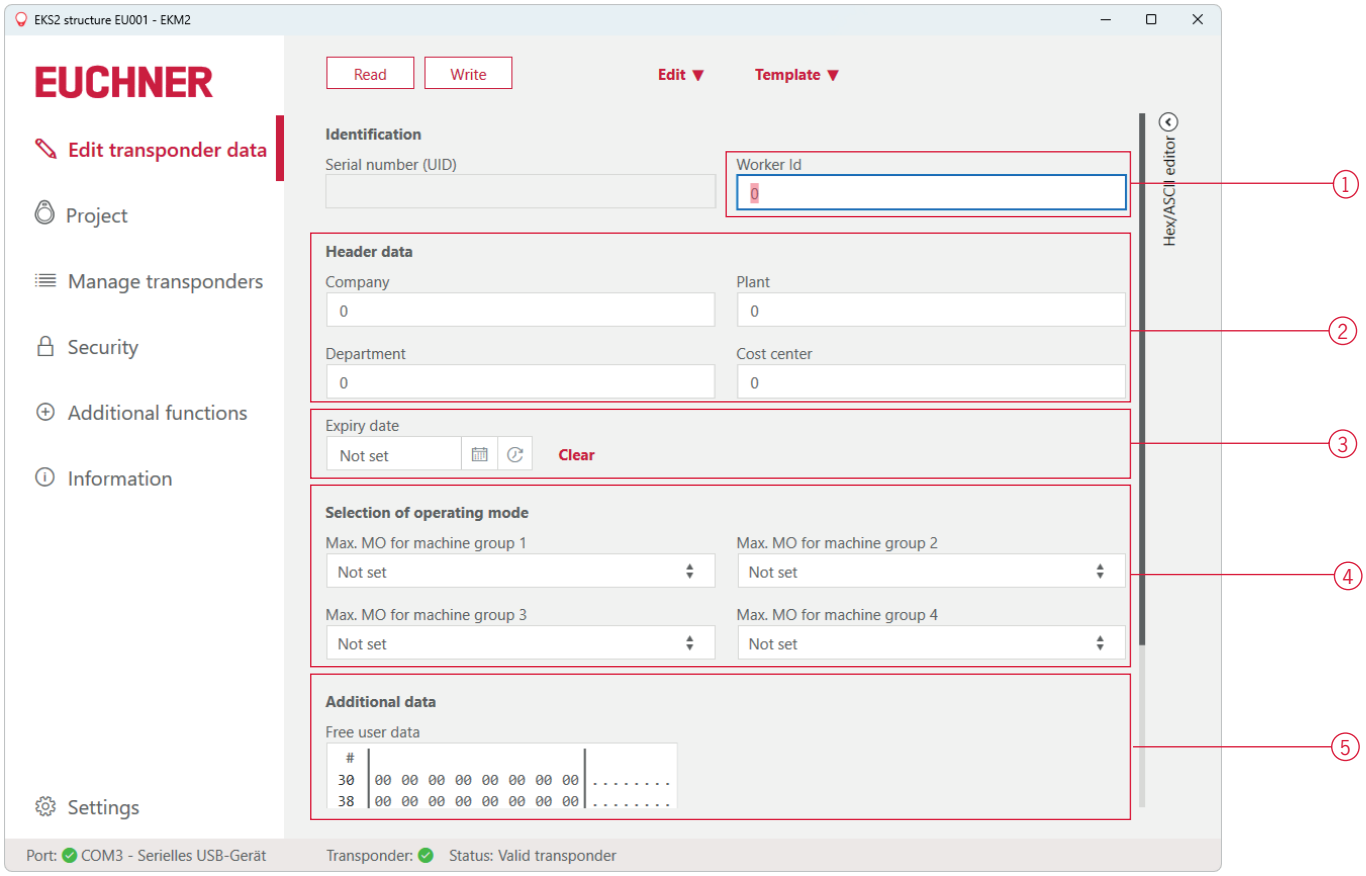
9. Electronic-Key-System EKS2 project and data structure

9.1. EKS2 structure EU001

The *EKS structure EU001* project is available to the user for the Electronic-Key-System EKS2. It contains a data structure with predefined functions and a corresponding input mask.

In the EKS2 structure EU001, the validity of the transponder can be checked in up to four hierarchical levels. The operating mode can be specified for a maximum of four machine groups.



1	Personnel number
2	Area where the transponder is to apply. A descending hierarchical order applies to the *Company, Plant, Department, Cost center* fields.
3	Expiry date The expiry date can be set with the aid of the calendar, by entering the number of days or manually.
4	Selection of operation mode Individual machines can be combined into up to four groups. An operating mode can be assigned to each group.
5	Additional data A further 86 bytes are available for use as required, e.g. for additional authorizations.

The evaluation of the values set here is specified in the Electronic-Key-System EKS2. You will find further information in the operating instructions for the Electronic-Key-System EKS2 (doc no. MAN20001715).

An invalid entry is marked with a red border.

9.2. EKS2 structure EU002 (only for machine manufacturers)

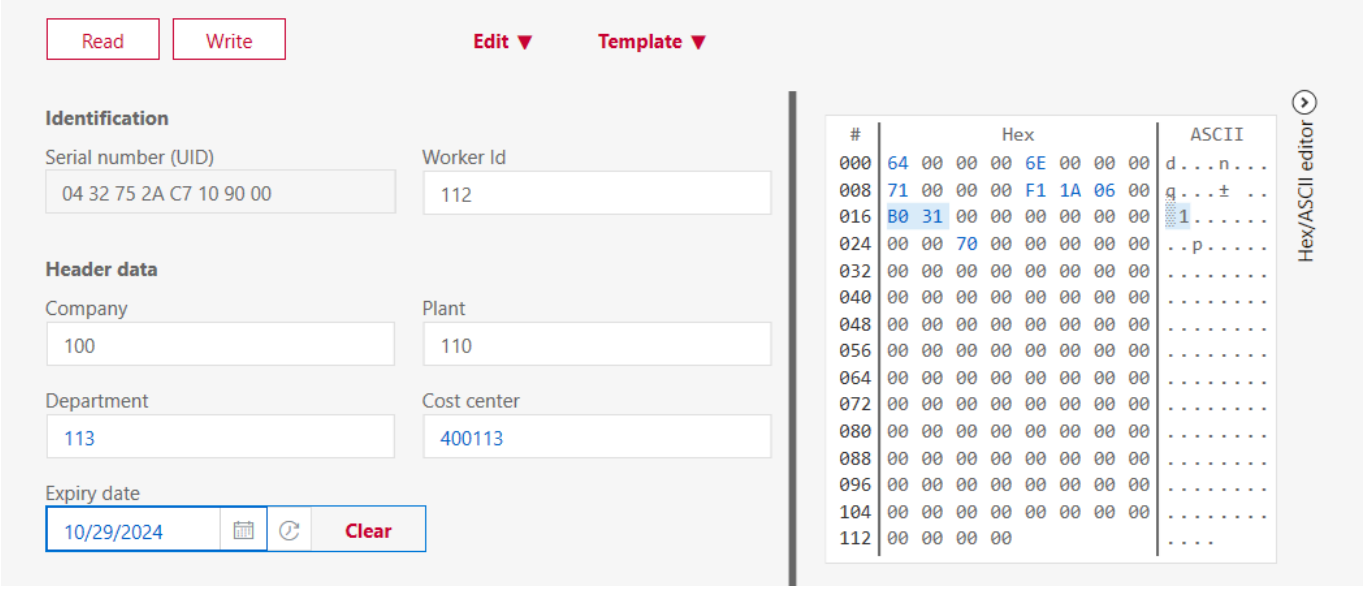
The *EKS structure EU002* project is available to the machine manufacturer for the Electronic-Key-System EKS2.

You will find further information in the corresponding application at www.euchner.com.

10. Additional editing functions for EKS2 projects

10.1. Using Hex/ASCII editor

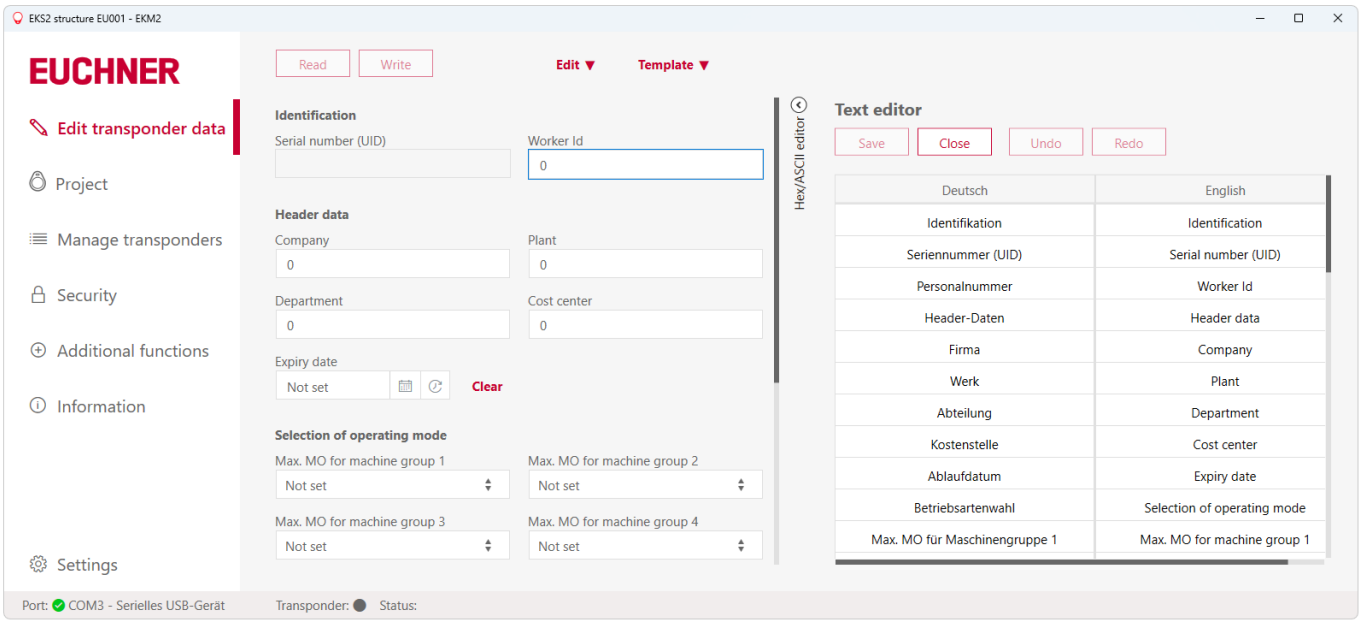
The transponder's memory area is displayed in the hex/ASCII table in the right *Hex/ASCII editor* drop-down box:



As you edit the fields, the corresponding bytes in the Hex/ASCII editor are displayed with a light-blue background.

10.2. Using text editor for projects

For the EKS2 structure EU001 and EKS2 structure EU002 projects, the input field designations of a project can be edited using a text editor.



1. Open the project to be edited in the *Project* menu item.

➡ The *Edit transponder data* window opens.

2. Click the *Project* menu item.

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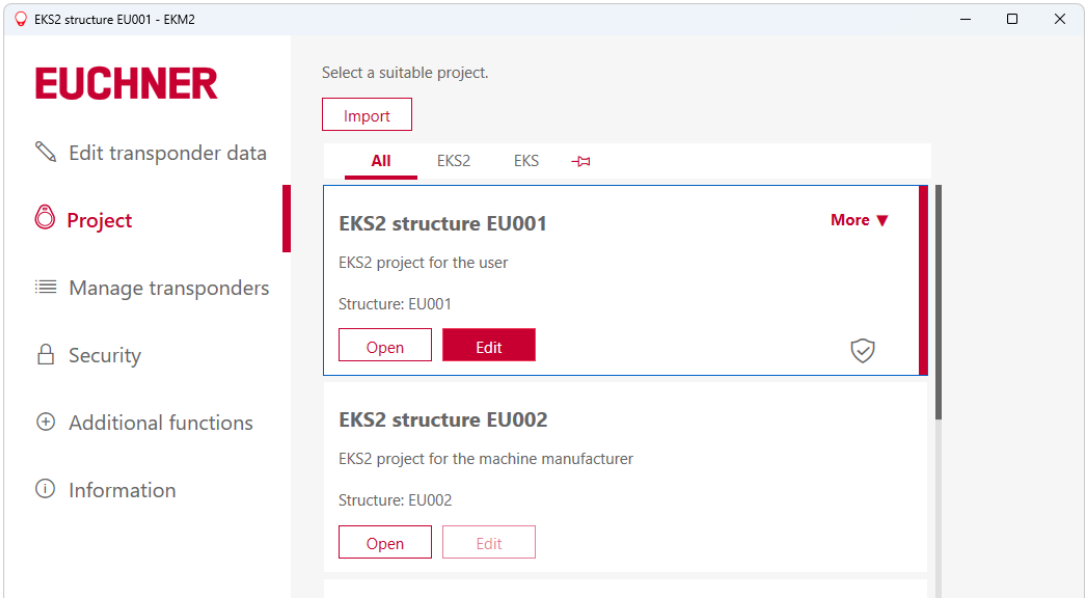
3. Click the *Edit* button for the project to be edited.



➡ The most recently saved input mask and the text editor are opened under *Edit transponder data*.

4. Edit field names and save.

➡ The changed field names are saved together with the project.

10.3. Managing security settings

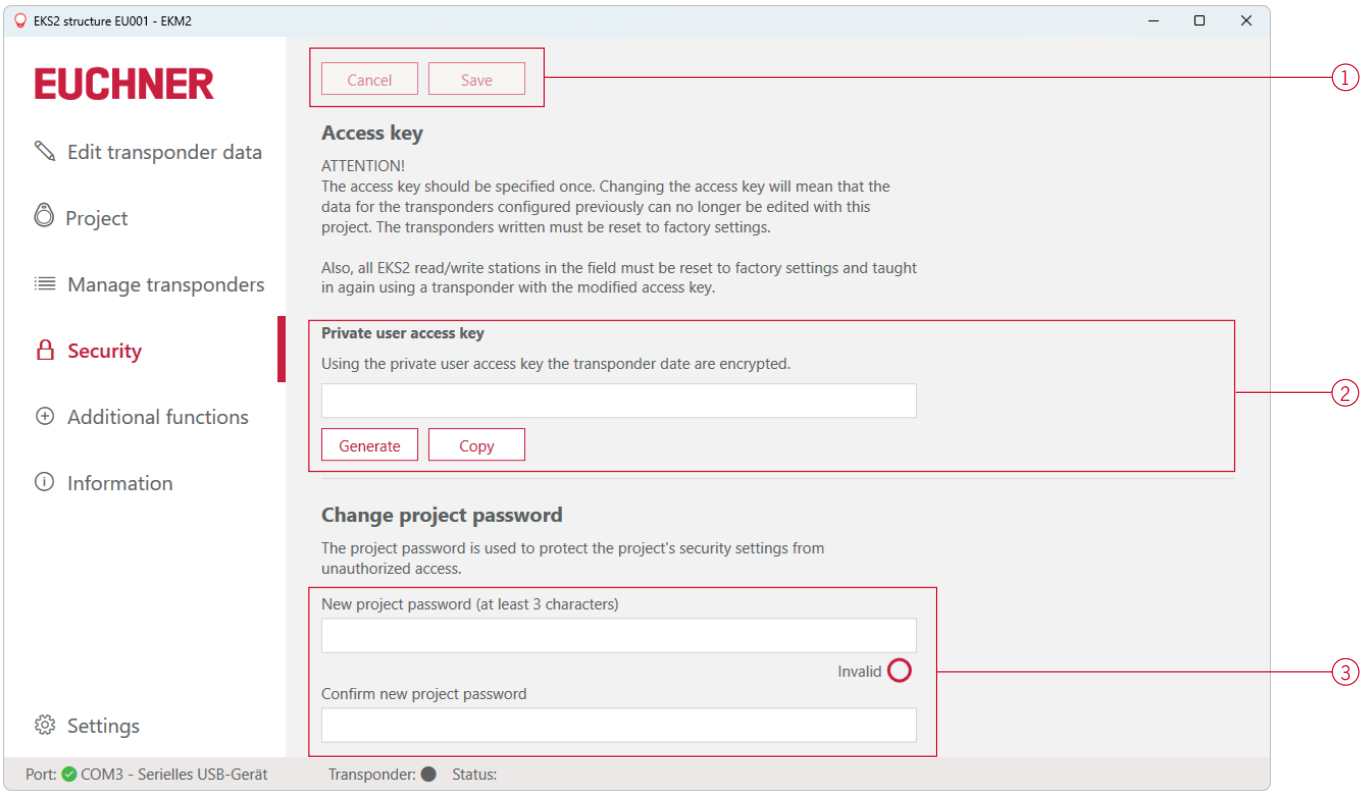
A multilayer security concept is used to protect the project and transponder data for EKS2. Each EKS2 project is protected with a project password. In addition, the data written to the transponder with the aid of the Electronic-Key-Manager EKM2 application software are encrypted using a private user access key.

The project password prevents unauthorized personnel from viewing or changing the user access key in the application software. The project password is assigned specifically by the user. If the project password is lost, it is necessary to reset the project, see chapter *4.2. Resetting project on page 9*.

The user access key is created by a password generator and can be copied for safe keeping.

Important!

If the user access key is changed by generating the key again, transponders already written can no longer be edited using the related project. For further information, see chapter *10.3.2. Using transponders after changing the user access key on page 20*.



1	**Security settings**	
	Cancel	Changed security settings are discarded.
	Save	Changed security settings are saved.
2	**User access key**	
	Generate	A user access key is created with the aid of a password generator.
	Copy	The user access key is copied to the Clipboard.
3	**Project password**	
	The project password must consist of at least 3 characters.	

A public user access key is additionally used for the data area for machine manufacturers; this key can be saved in the control system (PLC). You will find further information in the corresponding application at www.euchner.com.

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10.3.1. Using transponders after resetting the project

All security settings and templates already saved will be lost when the project is reset, see: *4.2. Resetting project on page 9*.

Proceed as follows to be able to continue to use transponders already written:

1. Re-open the related project under *Project*.
2. Enter the previously used user access key in the corresponding field under *Security* and save.
3. Assign a new project password and save.

➡ It is possible to read and edit transponders already written.

10.3.2. Using transponders after changing the user access key

If the user access key is generated again and saved, transponders already written can no longer be edited using the related project.

Proceed as follows to be able to continue to use the transponders already written:

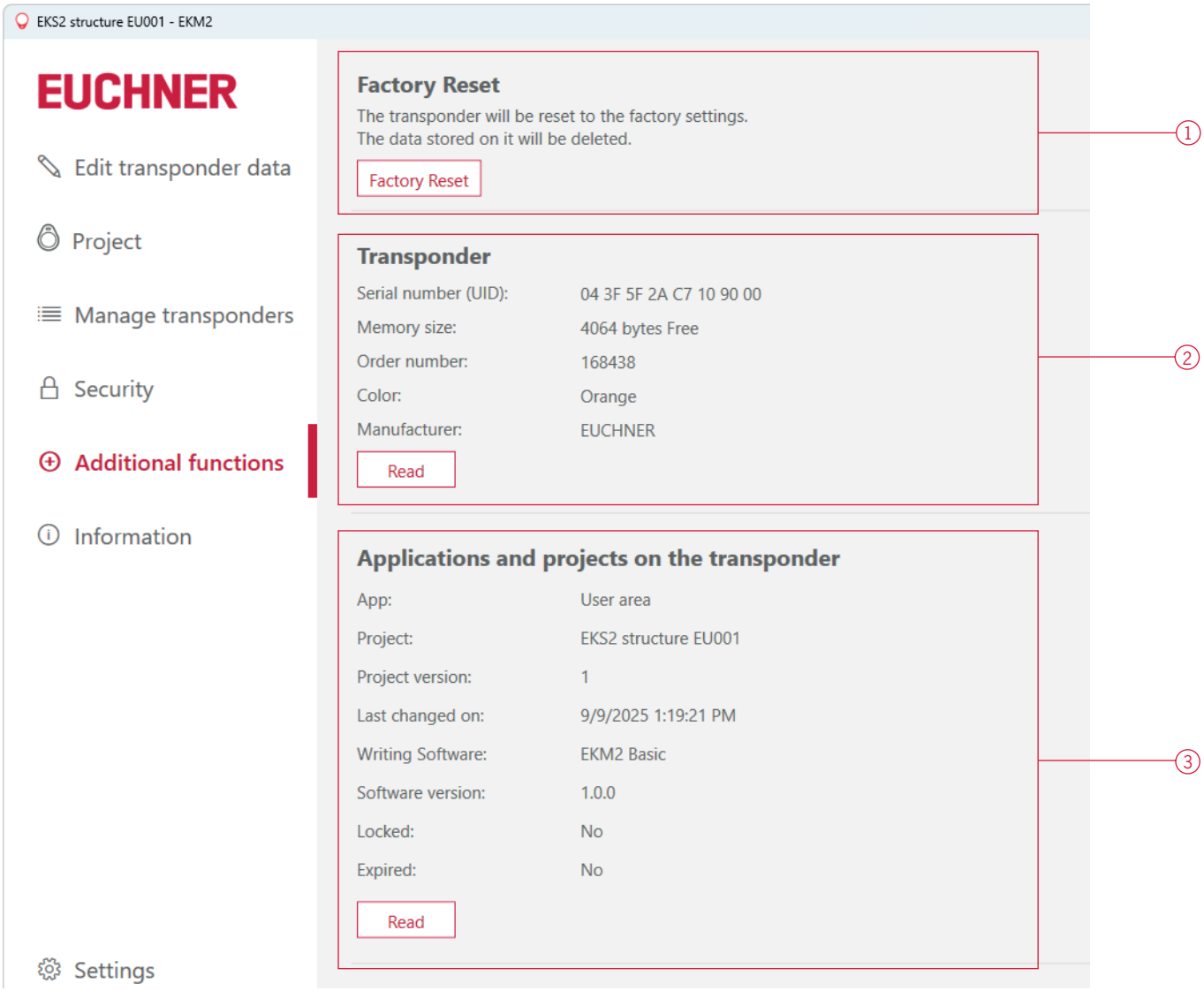
1. Reset transponder to factory settings under *Additional functions*, see chapter *10.4. Reading and resetting transponders on page 21*.
2. Reset all EKS2 systems in use to factory settings. You will find further information in the operating instructions for the Electronic-Key-System EKS2 (doc no. MAN20001715).
3. Write data to the transponder again.

➡ The newly generated user access key is written to the transponder.

4. Teach-in the new user access key in the EKS2 system, see operating instructions for the Electronic-Key-System EKS2.

10.4. Reading and resetting transponders

Under *Additional functions*, transponders can be reset to the factory settings; it is also possible to read their properties and the projects saved on them.



1	Factory reset: A written transponder is reset to the factory settings.
2	Read the transponder properties.
3	Read the application and the project with which the transponder was most recently written.

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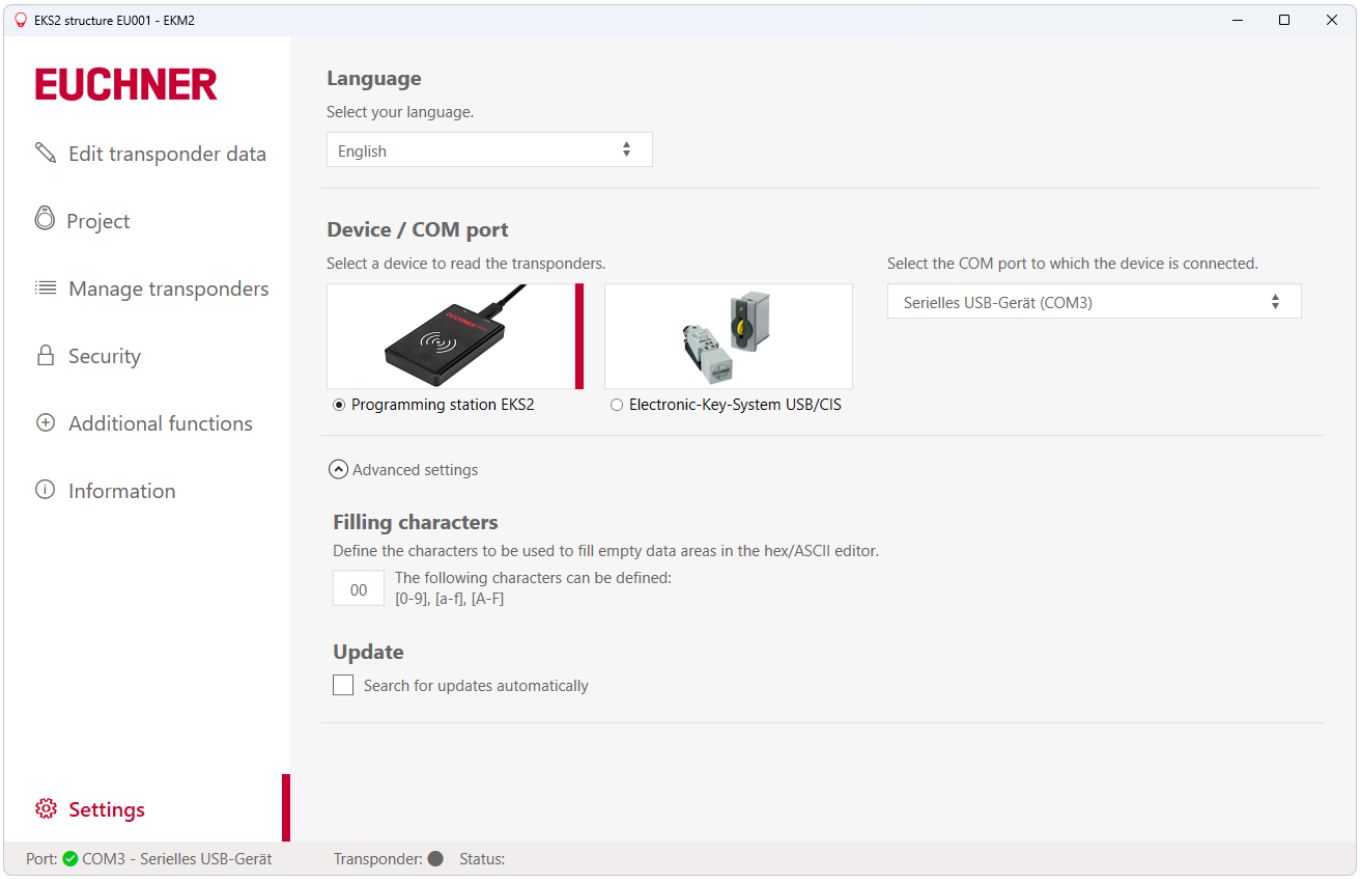
11. Changing settings

The language, device and COM port can be selected under *Settings* in the navigation area.



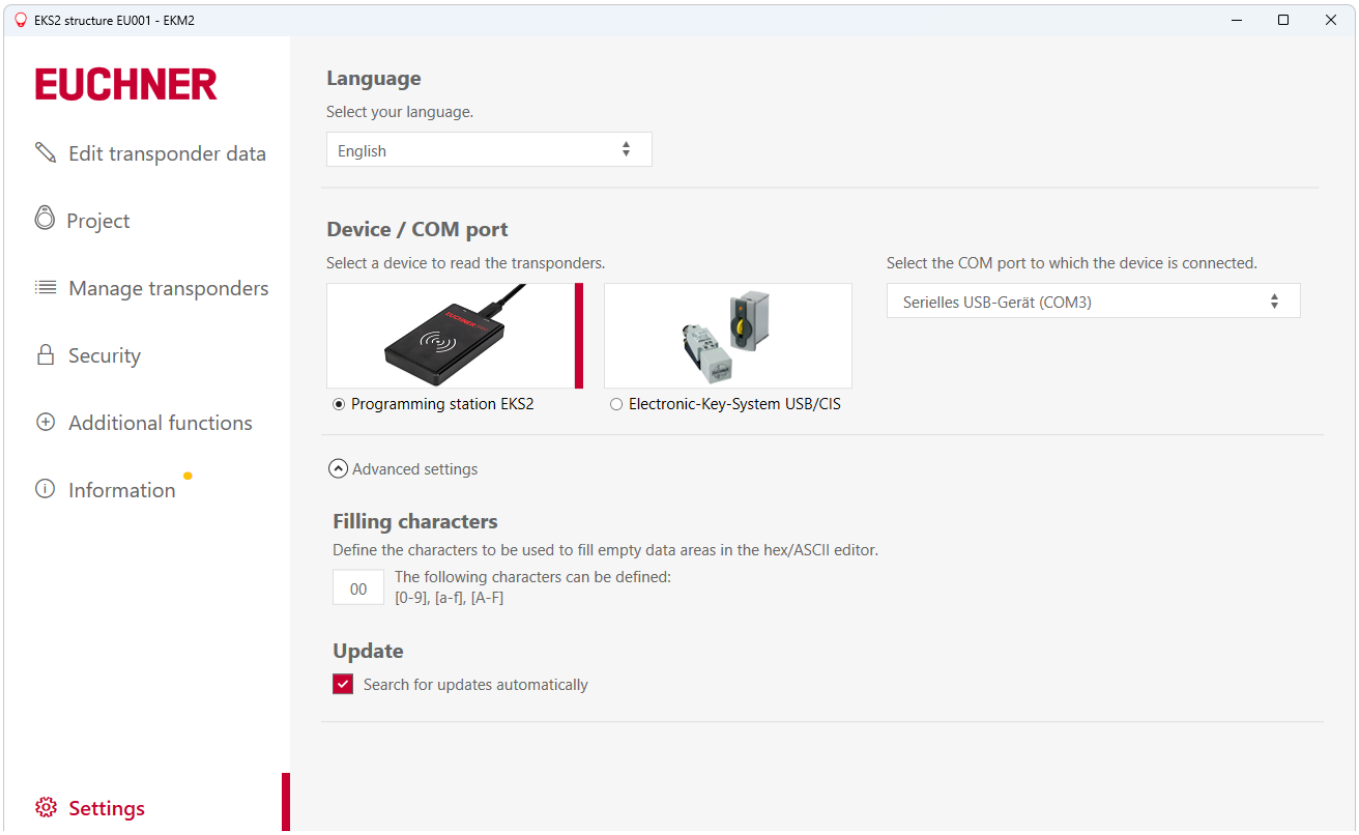
The following configurations can be carried out in the *Advanced settings* drop-down menu:

- Define filling character (see chapter *5.2. Hex/ASCII editor on page 12)*
- Search for updates automatically (see chapter *12. Updating software and firmware on page 23*)

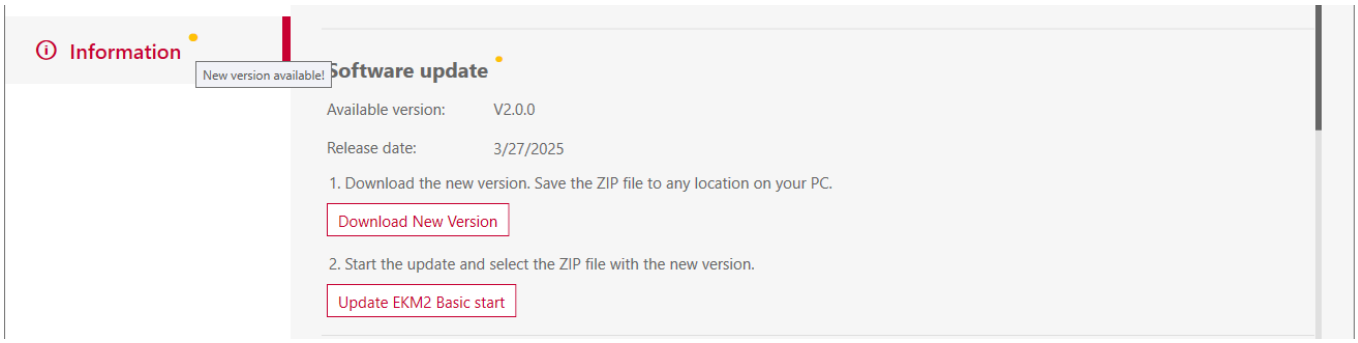
12. Updating software and firmware

12.1. Updating Electronic-Key-Manager EKM2

1. Activate “Search for updates automatically” under *Update* in the *Settings* menu item in the navigation area:



➡ A yellow dot will appear next to the *Information* menu item when a new update becomes available:



2. Click the *Download New Version* button in the *Information* menu item.

➡ A ZIP file is downloaded.

3. Click the *Start EKM2 Update* button.
4. Select the ZIP file.

➡ The application is closed.

➡ The Windows input prompt opens automatically.

➡ Once the update is complete, the application will open again automatically.

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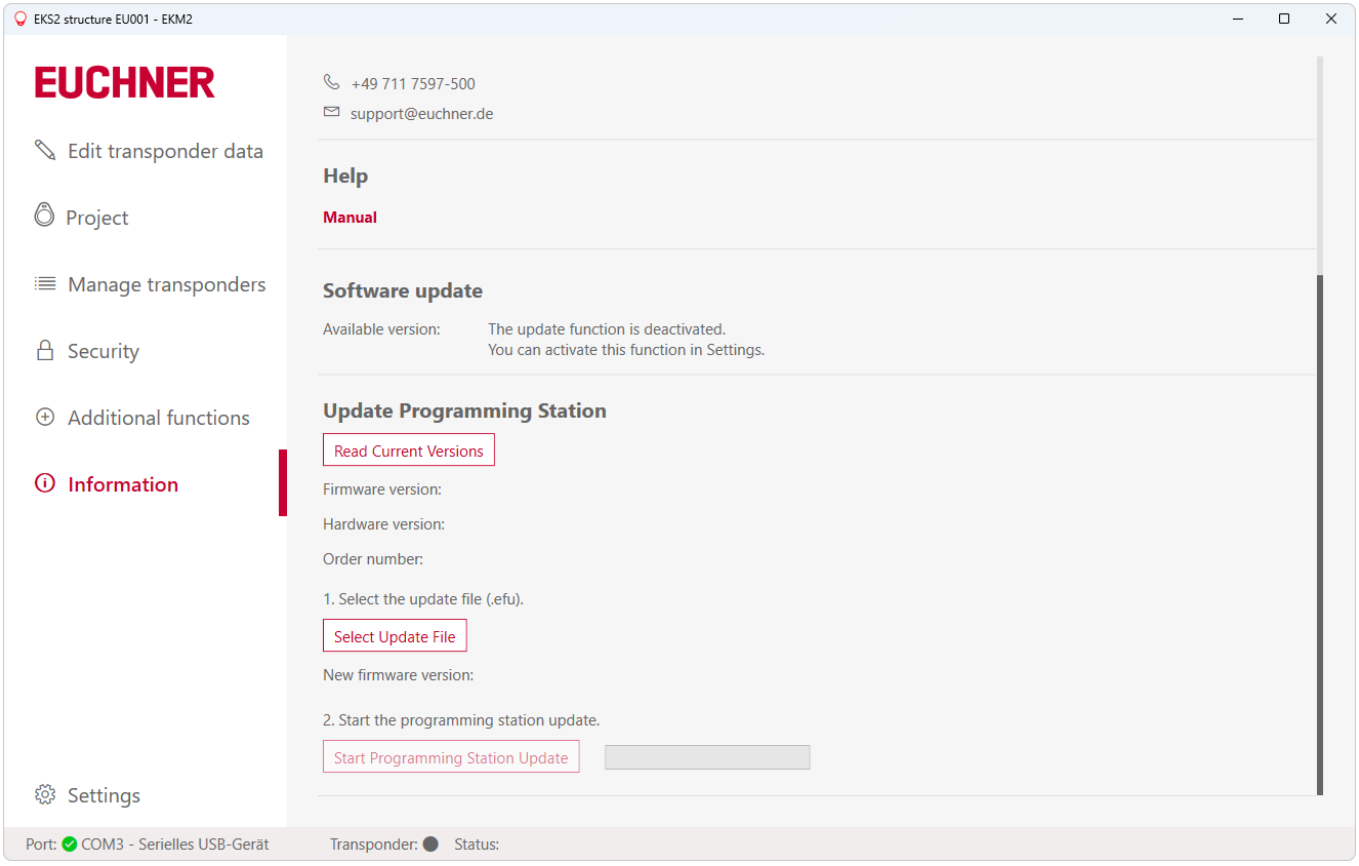
12.2. Updating EKS2 programming station firmware

With the aid of the Electronic-Key-Manager EKM2 software, it is also possible to update the firmware in the EKS2 programming station.



Important!

You will require the corresponding firmware file (.efu) to update the programming station's firmware. It can be requested from the EUCHNER support team.

1. Copy the firmware update file to a local directory on the PC, then unzip and save it.
2. Click *Select Update File* and select the new .efu file in the directory where it is saved.
3. Click *Start Programming Station Update*.

➡ The new firmware for the programming station is installed.

13. FAQ – Frequently Asked Questions

13.1. For what is the project password required?

The project password is required:

- to display the current user access key
- to generate a new user access key, see chapter *10.3. Managing security settings on page 19*

It is not required to edit the transponder data.

13.2. Can I assign a new project password without changing the user access key?

The project password is independent of the user access key. If it is changed, there is no effect on the user access key.

13.3. I have changed the user access key. Can I continue to use transponders already written in my project?

No, that is not possible. Transponders already written and the EKS2 systems in use must be reset to the factory settings.

You will find further information in chapter *10.3.2. Using transponders after changing the user access key on page 20.*

13.4. I have written transponders. Why aren't they displayed under *Manage Transponders*?

Possible causes are:

- The project with which the transponders were written is not open.
- The project with which the transponders were written has been reset.
- A user deleted the data records because the transponders have been lost or are expired.
- No new data were written to the transponders; only the existing data were read.

13.5. I would like to use the application software on another PC. How can I transfer the license?

To transfer the license, you will require the license document for your software.

1. Click the activation link to activate the license.
2. Click the *Transfer licenses* button and follow the instructions.

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