
User manual

Easy Touch Control

ETC5000



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1 Safety indication

NOTICE	None of the inputs or outputs of ETC5000 and IO20 are intrinsically safe inputs or outputs. Therefore, do not use the ETC5000 system for safety-relevant applications!
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2 System design

ETC5000 (Easy Touch Control) is a complete system for the control of format adjustment. It is suitable for controlling up to 31 bus-compatible position indicators and actuators via SIKONETZ5. The system is freely programmable; digital position indicators can be used for monitored format adjust and actuators can be employed for fully automated format adjustment. You can also easily combine both device classes or gradually expand the system to include 31 devices (see *chapter 8.1: Device manager*).

There are input and outputs for reading in additional machine states and outputting the current state of ETC5000. For this purpose, IO20 is available with 8 inputs and 8 outputs.

ETC5000 offers the opportunity to store in recipes multiple machine settings for different products or formats. Once created, recipes can be selected as required. ETC5000 monitors the positions of all axes and adjusts them automatically if drives are used (see *chapter 6: Set Positioning*).

Moreover, ETC5000 provides the opportunity to specify setpoints for individual axes and to position individual drives (see *chapter 7: Axis Positioning*).

The parameters of the connected devices can be changed via ETC5000 to enable the adjustment of the system to the individual application (see *chapter 8.1.3: Change the parameters of an axis/device*).

The system is perfected by unique user accounts and a log function, which records important system events (see *chapter 8.4: User accounts and chapter 8.7: Log file*).

3 General Information

3.1 Axis

Every SIKONETZ5 subscriber linked to ETC5000 has its unique device address and serves for monitoring or adjusting an axis. This is the reason why the connected devices with their device addresses and their device symbols in ETC5000 are called axes.

NOTICE	A unique device address must be set for all devices connected via the SIKONETZ5 bus!
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The SIKONETZ5 device address must be set directly on the connected device. For the individual procedures please refer to the User manual of the relevant device. As a special feature, the inputs and outputs of IO20 are not designed for monitoring a single axis. In fact, they are designed for monitoring and displaying the overall system. Nevertheless, IO20 is treated as an axis in ETC5000 because it has a unique SIKONETZ5 bus address.

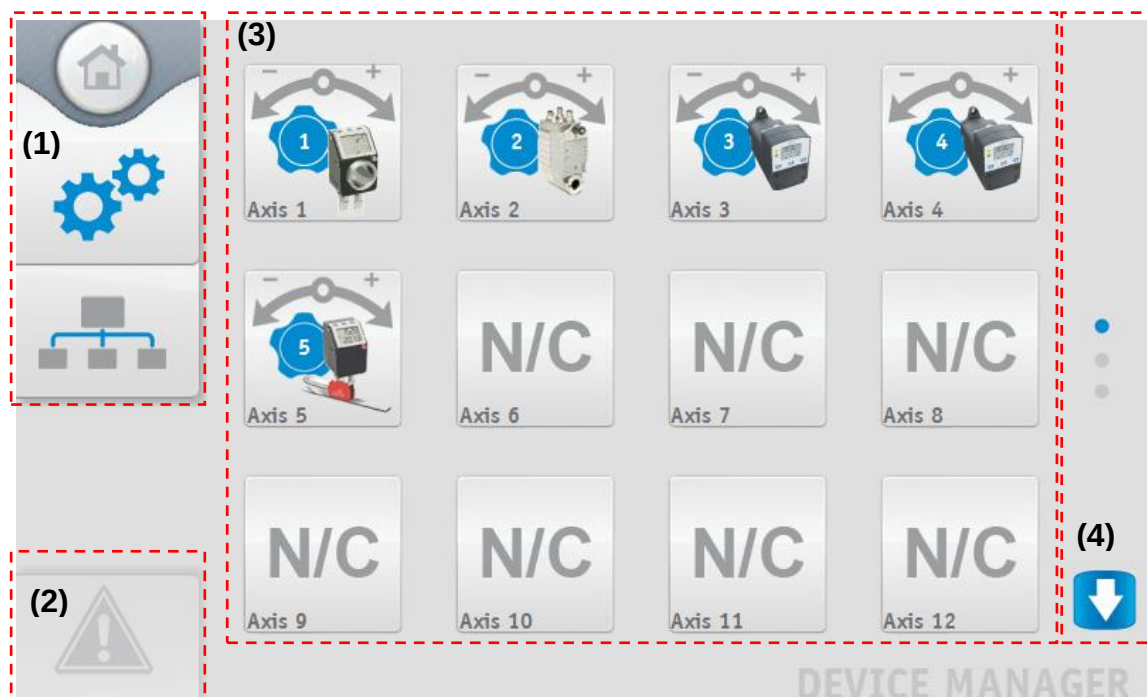
3.2 Recipe

The setpoints associated with a product or a format are united in a recipe in ETC5000, i. e., every recipe represents a product or a format. Additionally, the name of the recipe as well as a job-related instruction can be saved besides the target values. For more detailed information refer to chapter 8.2: *Recipe management – Editing recipes*.

3.3 Operation / page navigation

ETC5000 is exclusively operated via the touchscreen. Input is possible via finger or any other means (e. g. ballpoint pen, gloves, etc.). ETC5000 operating concept is divided into 4 main areas.

- (1) The history of selected menu items is located on the upper left margin of the page. The user can return to the superordinate menu items via these operating elements.
Hint regarding the manual: This area guides the user to the menu items and corresponding page where the desired function can be found.
- (2) The fault and error area is on the bottom left margin of the page. The red warning triangle appears when a fault or error occurs. The symbol is yellow with a critical battery voltage of a device. You can obtain more detailed information by clicking on the button, e. g. the defective axis and the type of error.
- (3) Main information is always displayed in the center of the page. Actions or additional menu items can be started or selected from that area.
- (4) If a menu item has multiple pages (selection of axes and device parameters), the user can toggle between the pages via the control elements on the right margin of the screen.

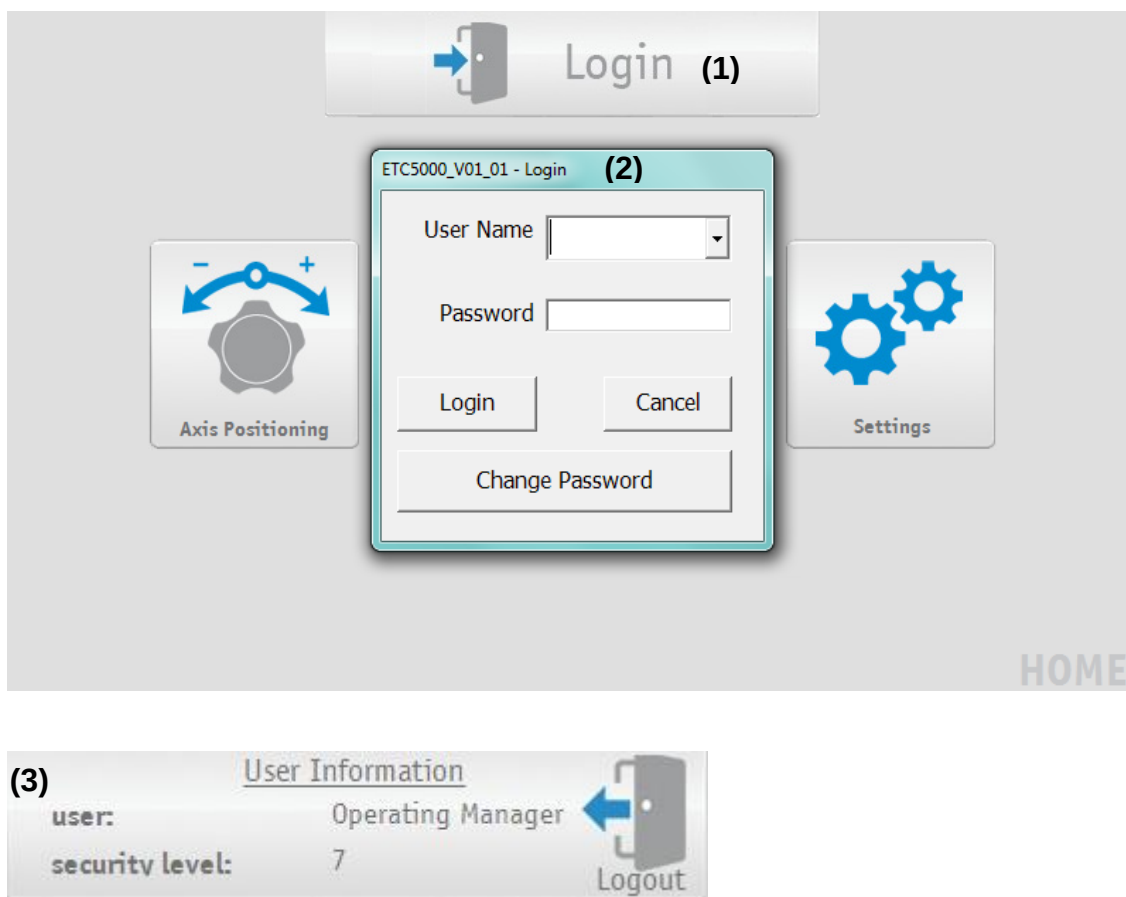


4 Login

A safety level protects nearly all functions of ETC5000. Therefore, the user should **log in (1) before starting**. The login area is situated on the start screen and in the settings menu item.

The user can log in or off via this button. A window **(2)** opens where you select the user and log in with a password. If no password has been defined yet, you can create one by repeated entering new password twice. After logging in, the current user name and safety level is displayed in place of the login button **(3)**.

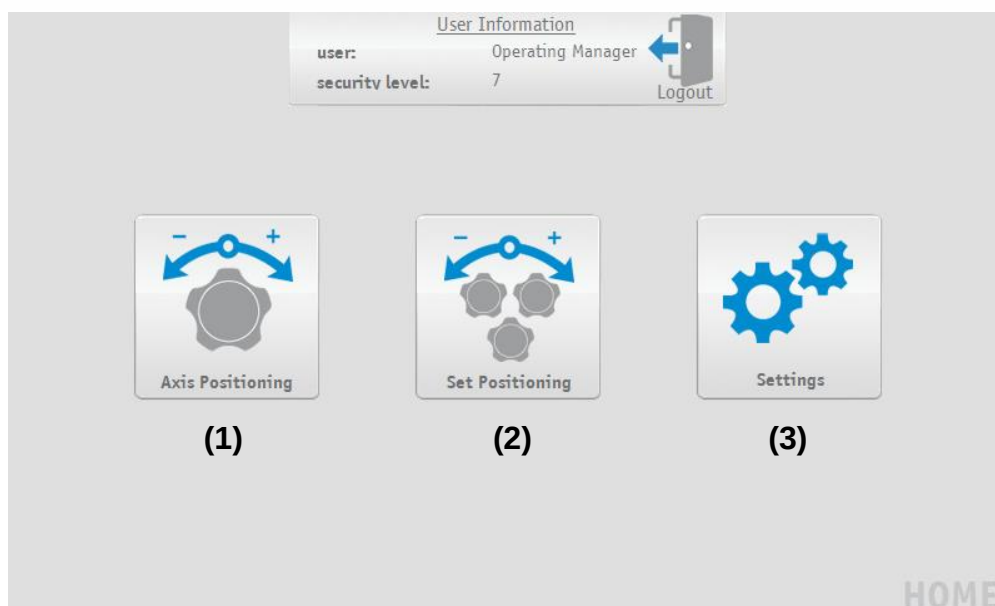
The current user is **logged out (3)** by pressing this button once more. When finishing work, users should always log out because all actions on ETC5000 and the user logged in are recorded in a log file.



5 Main functions / start screen

ETC5000 consists of the three basic functions "Axis Positioning", "Set Positioning" and "Settings". These three main functions represent the basic framework of ETC5000 and enable easy and effective monitored or automated format adjustment.

- (1) Chapter 7: Axis Positioning:** For setpoint specification and positioning of individual axes.
- (2) Chapter 6: Set Positioning:** For selecting and positioning recipes (all axes).
- (3) Chapter 8: Settings:** Managing recipes, configuring connected devices (also IO20), setting the parameters of ETC5000, user account administration, importing and exporting device configurations and recipes, log file and software update.



6 Set Positioning

This function constitutes the core function of ETC5000. The stored recipes can be selected under Set Positioning. Afterwards, positioning of all axes is monitored and started.

6.1 Recipe selection

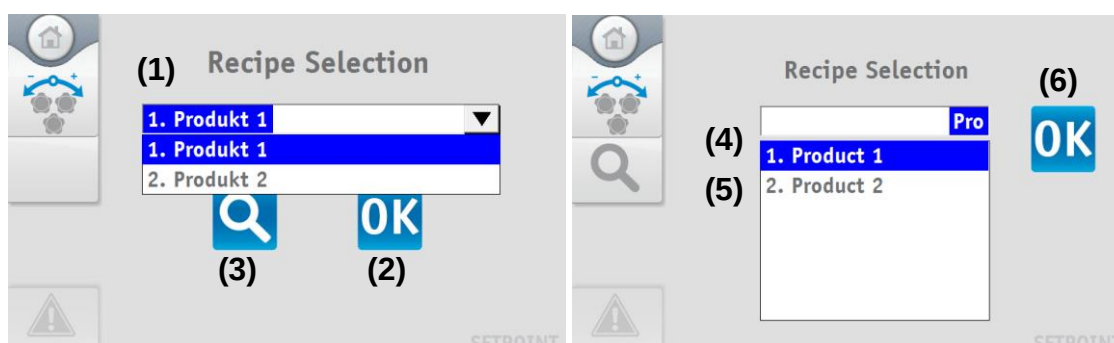
Under Set Positioning you can obtain a previously defined recipe (definition of Recipes see *chapter 8.2.1: Add recipe*). For this purpose, choose the relevant recipe in the drop-down box (1) and confirm it via the "OK" (2) button.

Recipe selection via the drop-down box (1) is no longer possible if IO20 has been set so as to enable recipe selection. Recipes can be selected exclusively via IO20 in this case (see recipe number). The recipe selected via IO20 is displayed in the drop-down box and also taken over via the "OK" button.

You can search a recipe name via the "Magnifier" (3) button. It is sufficient to enter a part of the recipe name into the search box (4). However, the text entered must start with the same characters as the recipe name while caps and small letter use is not considered.

The search result (5) is displayed in a field, here you can select the desired recipe and confirm by pressing the "OK" button (6).

Following confirmation of the selection, the setpoints of the recipe are transmitted to the individual axes and the corresponding devices check that the axis is in position.



6.2 Recipe positioning

The relevant functions and details of the set recipe are all indicated on the order page. When leaving this page (also when switching over to the Details page), all drives will stop automatically.

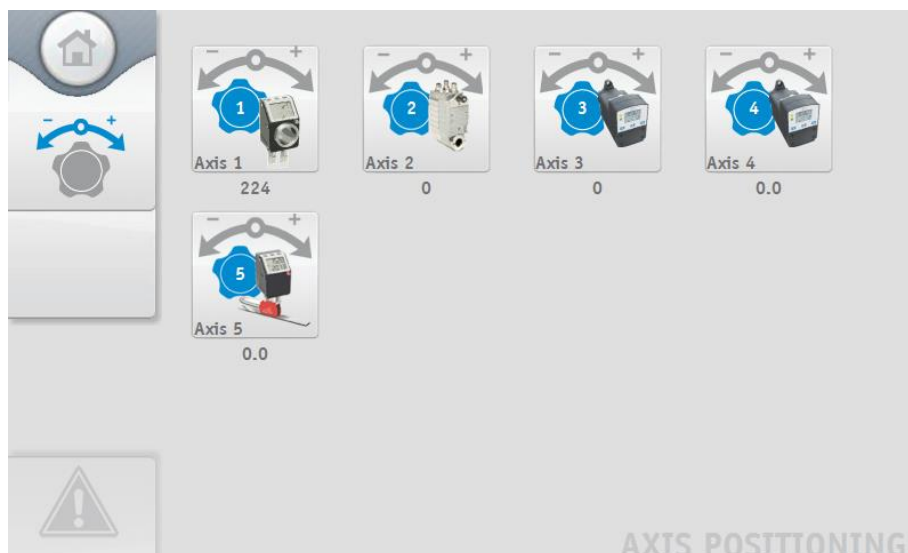
This is the only page where you can take over a selected recipe for positioning solely via IO20. The function must have been selected under the IO20 settings (see recipe number, accept recipe).

- (1) Recipe name.
- (2) System status: The message displayed is placed on a red background if one or more axes are out of position. The background color of the message displayed turns green as soon as all axes are in position. The background color of the message displayed turns yellow if moving drives are connected. The status is also always described by a short text on the display. If selected, the status of the "digital Input" input type of IO20 is displayed as well.
- (3) The start and stop buttons are only displayed if drives are connected. They are used for starting or stopping positioning of the axes controlled by drives. The start button can also be inactive if the correct status is not applied to the "drives enable" input of IO20.
- (4) By pressing the "Details" button you get to an overview of all axes. The position values of every axis are displayed here. Furthermore, a red or green point indicates whether or not the axis is in position. As a result, the machine operator can quickly detect axes that are out of position and require adjustment. A new setpoint can be written by clicking on the device symbol and the axis can be adjusted.
- (5) If the position was corrected directly on the axis, then the current position values of the axes can be taken over as setpoints for the current recipe. Reading the current actual values, their storage as setpoints for the recipe as well as transmission of the corrected setpoints occur automatically after clicking on the "Teach In" button.
- (6) If a job-related instruction was defined with the creation of the recipe, it is displayed in the button margin of the screen. This area is grayed out if no job-related instruction was defined.



7 Axis Positioning

The Axis positioning function can be used for positioning an individual axis. Via the "Axis Positioning" button on the start screen you get to an overview of all connected devices. First select an axis to be able to specify the target value of that axis. You need only tap on the device symbol of the desired axis for this purpose. A window opens that enables the transmission of a setpoint or traveling of the drives in inching mode.



7.1 Changing the setpoint of an axis and inching mode

You can specify a setpoint after selecting an axis. For this purpose, you must enter the desired value into the "Target Value" **(1)** field and confirm it via the "transmit" **(2)** button. Afterwards, the setpoint is automatically transmitted to the axis.

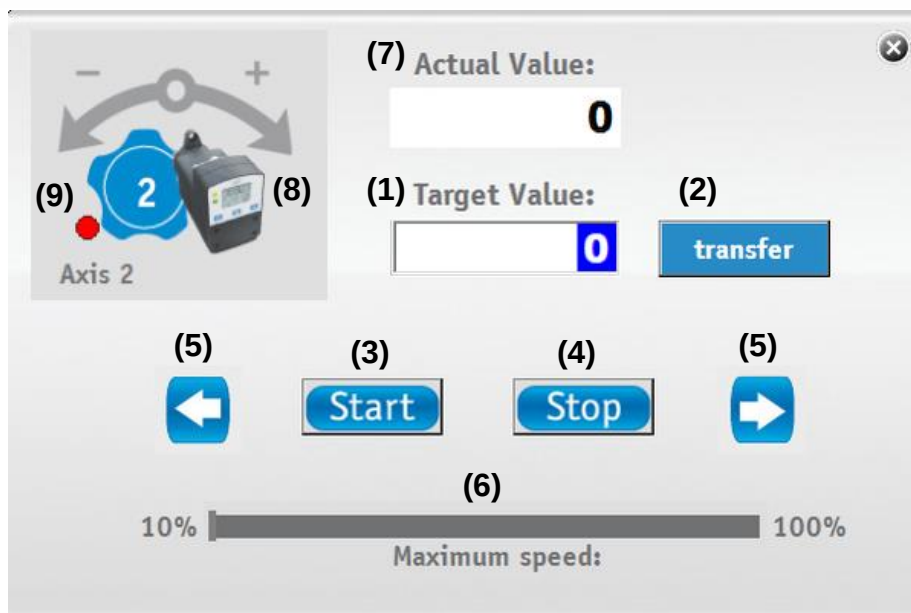
Additional control buttons are displayed for drives in the lower area of the window. You can start the drives via the "Start" button **(3)**. This induces drives to move automatically and to travel to the setpoint. The current position of the axis **(4)** is always displayed above the setpoint.

The drives can be moved in inching mode via the arrow keys **(5)**. Speed in inching mode can be controlled via the bottom slide bar **(6)**. Position indicators must be manually adjusted to the setpoint. The current position of the axis **(7)** is always displayed above the setpoint. The lower window area is not displayed with the position indicators.

NOTICE

The drives can always be started via the control buttons of inching mode even if the "drives enable" IO20 function does not enable the drives!

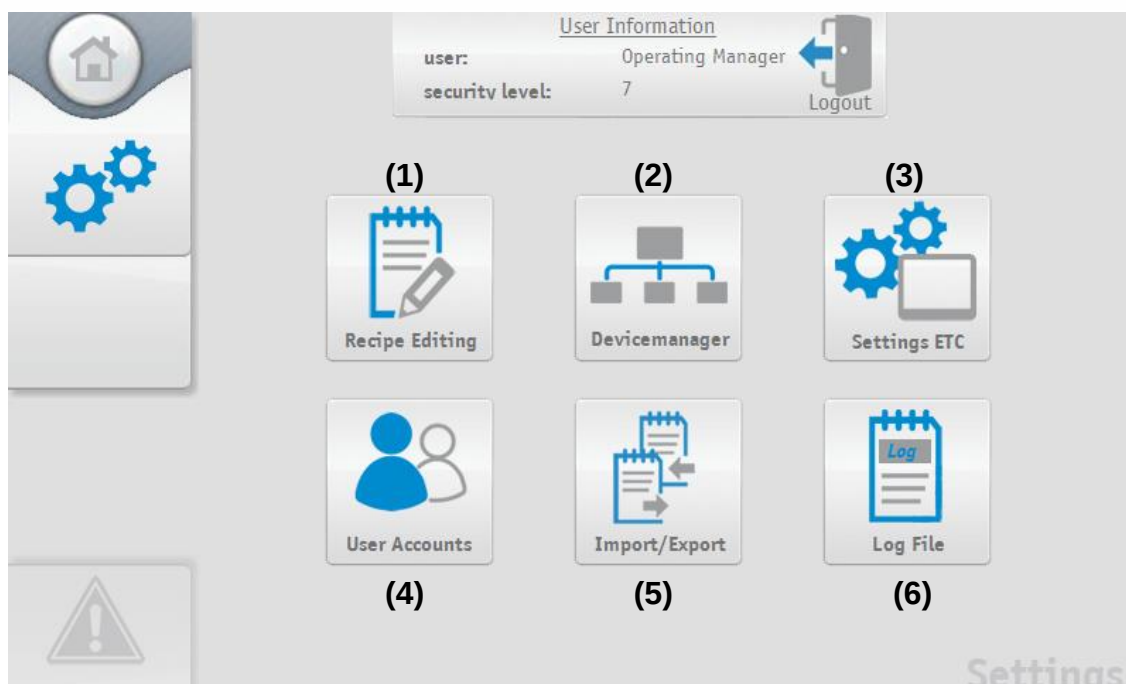
There is a status display in the upper left window corner next to the device symbol **(8)**, there is a status display **(9)**, which indicates whether the current axis has achieved the specified setpoint. The status display glows green when the axis is on the setpoint (axis in position). Otherwise it is illuminated red.



8 Settings

A few settings must be made in order to enable ETC5000 to monitor and control positioning based on specified recipes. The setting menu is subdivided into 6 sub-menus:

- (1) The individual setpoints of a products or formats axes are united in a recipe. Recipes can be created, deleted or edited under the "Recipe Editing" menu item. The IO20 functions can also be selected and changed here.
- (2) The devices connected via SIKONETZ5 are displayed in the "Devicemanager". Here you can add devices or change existing device configurations. The device parameters can be viewed or changed here as well.
- (3) The parameters of ETC5000 are pooled under "Settings ETC". Here you can change language, the system time, screen brightness, and volume of ETC5000. Software update can be performed here as well.
- (4) User accounts can be created to enable the determination of individual user authorizations. This and account administration are executed under "User Accounts".
- (5) You can export the stored recipes, device configurations and the functions of IO20 to a USB stick in order to facilitate copying and to save settings. Using the same menu item ("Import/Export"), you can import existing recipes-, device configurations- and IO20-files.
- (6) The recorded events of ETC5000 are hidden behind the "Log File" menu item. You can also export the log file to a USB stick under this menu item. Furthermore, you can determine whether or not the file will be exported to a USB stick before resetting when it has reached maximum size.

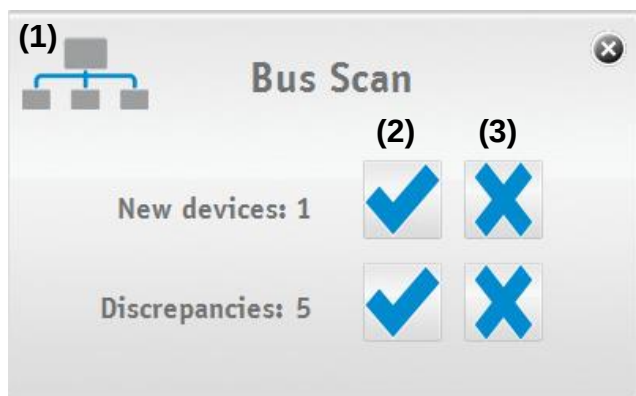


8.1 Device manager

8.1.1 Bus-Scan

The SIKONETZ5 bus is scanned before you actually get to the device manager. ETC5000 checks independently whether new devices were connected or whether all configured devices are still correctly connected. A Pop-up **(1)** message indicates any new devices found or discrepancies between the configuration file and the connected devices. No pop-up message appears if ETC5000 has found everything to be correct, and the device manager will open immediately. The number of new devices and of discrepancies is shown separately in the pop-up message.

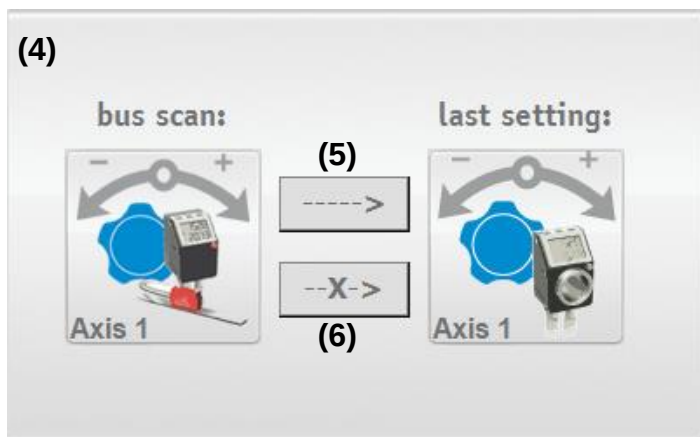
The user must decide whether to take over the results with the "tick" **(2)** or ignore them with the "X" **(3)**. After acknowledging or ignoring the results you can access the device manager.



If the user decides to take over the discrepancies, a pop-up message **(4)** will display again every single discrepancy for every individual axis (device address).

The device found during the bus scan is displayed on the left side and the one last configured on the right side. By actuating either button, the user can decide for every single device **(5)** found in the bus scanning procedure whether to take it over or maintain the old configuration **(6)**.

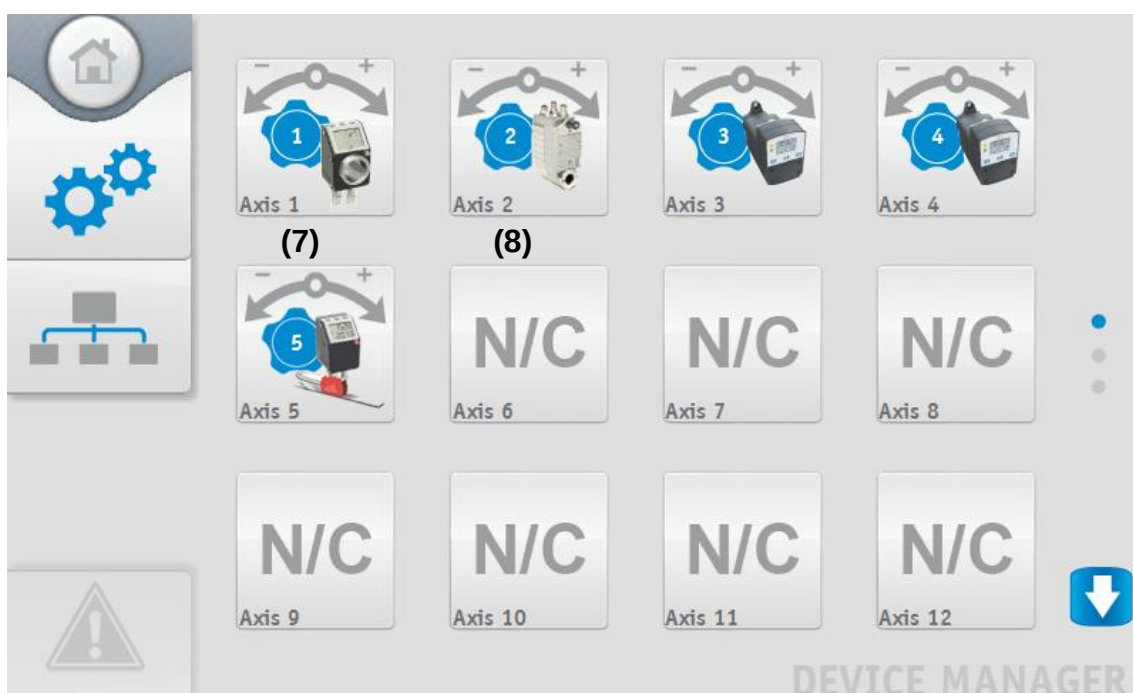
After taking over or ignoring every discrepancy in detail the pop-up **(4)** will close.



8.1.2 Device manager

The 31 device addresses are all displayed in the device manager on 3 pages. You can toggle between the pages via the arrow keys on the right margin of the picture. Tap on the button of the relevant axis to enable configuration of an axis or addition of a new axis.

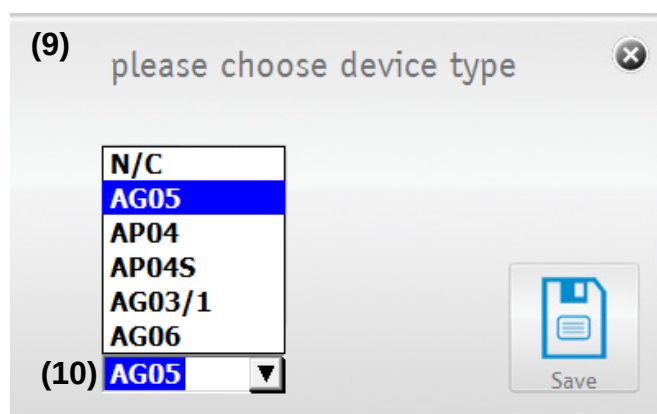
If a device with the corresponding device address is connected, then a device symbol **(7)** appears on the corresponding axis (device address). The axis is displayed with "N/C" **(8)** if no device is connected.



NOTICE

The device manager does not necessarily show the devices actually connected, but the ones set by the user!

Click on the button (device symbol) of the relevant axis for manual configuration of a new device. A pop-up (9) opens where you can select the device type via a drop-down menu (10). The device selected appears in the pop-up and is taken over via the "Save" button. Any new device to be added must be present in ETC5000 with the corresponding address! Therefore, first connect the device with the corresponding device address and take it over via the scanning procedure in the beginning.



8.1.3 Change the parameters of an axis/device

The axis previously selected in the device manager and the connected device can be configured via this page. Just tap on the device symbol (1) if you want to change the device type connected to the axis. Additionally, you can enter the name (2) by which the axis is displayed in ETC5000 (e. g.: "X axis"). When entering a name of an axis note that display errors may occur with axis names exceeding 10 characters. There is different space for the display of names within the various menu items. If a name is too long, its end will be cut off for the display.

IO20 is a peculiar axis. Its functions are described separately in 8.1.4 for this reason.

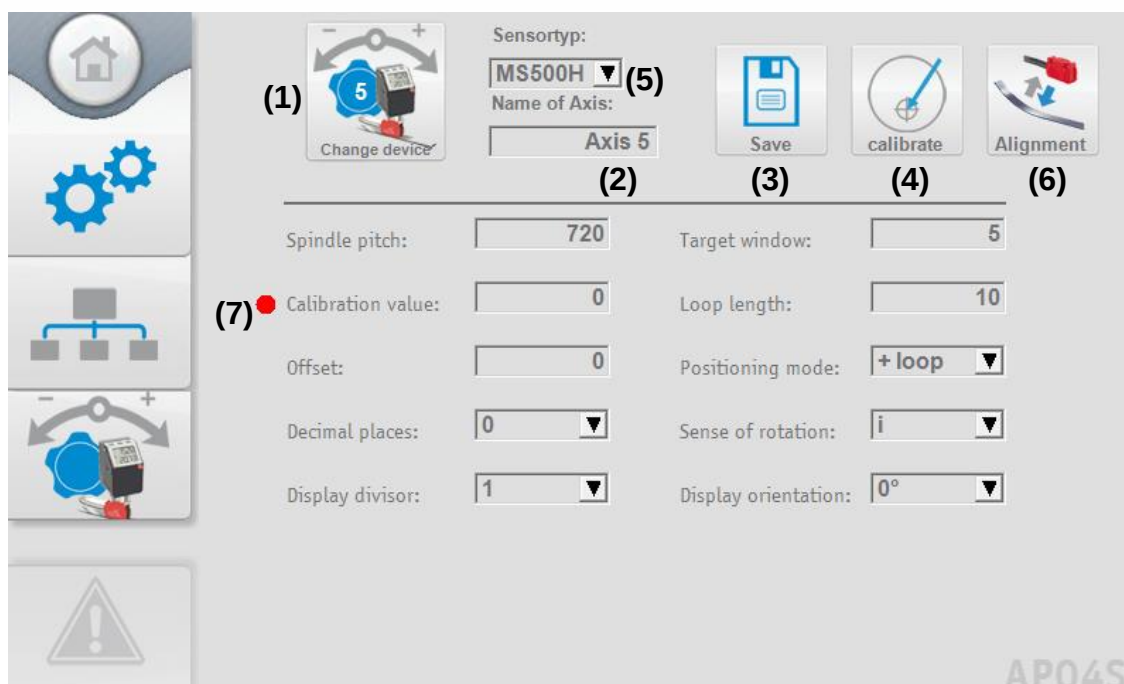
NOTICE

Only one IO20 must be configured per ETC5000 system.

Changes to the device parameters must be applied via the "Save" button (3). The device is reset to the calibration value via the "calibrate" button (4).

AP04S offers two special features because it is equipped with an external sensor. First select the sensor type via the drop-down menu (5). Additionally, align the sensor with the magnetic band. The "Alignment" button (6) on the AP04S page is intended for this purpose. For the alignment procedure refer to the manual of AP04S.

For the functions of the individual device parameters refer to the Device manual. If there is not enough room on one page for all device parameters, you get to the next side via the arrow keys on the right margin of the screen.



Before you can access the parameter page you should carry out alignment of the parameters stored in ETC5000 and in the connected devices. A pop-up opens in case of discrepancies, and the user must determine the valid value.

The user is also informed by a pop-up if an error occurs during the processes of saving the parameters and transmission to the connected device. The user must acknowledge the error message, and the other parameters will be saved. The faulty parameter is not saved and reset to the last valid value. A red dot (7) before the respective parameter indicates that the parameter has not been saved.

8.1.4 Functions of IO20

NOTICE	All functions of the IO20 are only performed outside of the device manager, the view of the log file and the inching mode. This means that the inputs are not read and the output is not updated in the three excluded areas. All outputs of IO20 will be switched to Low in the device manager and the view of the log file after 4 seconds. The outputs keep their old values in the inching mode but will not be updated.
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The functions of the inputs and outputs are selected via the drop-down boxes. With the inputs you can also choose between High or Low active inputs. To disable the function of an input or output select the >no function< function via the dropdown box. All settings of the inputs and outputs are only taken over after saving via the button in the upper right corner.

Inputs

You can select all input types at any position and as often as you like. The inputs of the same type are internally linked via conjunction; i. e., a High signal is received and the relevant function executed only if all inputs of the same type are active.

drives enable

The drives enable function is an enable input of the connected drives. The drives cannot be started unless the setpoint (High/Low) is applied to this input. For this, the Start button on the recipe-positioning page is enabled or disabled depending on the status. The drives cannot be started via this input. Only the button serving for starting the drives via the touch screen is enabled.

NOTICE

The drives are only disabled on the recipe-positioning page; e. g., the drives can still be started via axis positioning.

digital Input

With this function, the input serves for monitoring an external digital signal. Via the High/Low setting you can define the setpoint where the condition is considered fulfilled when the setpoint is reached. The evaluation of these levels is also incorporated in recipe monitoring. Any recipe is considered successfully positioned only if this input has reached the level set besides the setpoints of the axes.

recipe number

With inputs of this type you can select a recipe via a binary code. If you select this function for an input, the relevant input will be assigned a binary value automatically. By applying High- and Low levels to these inputs, the recipe number assigned by the ETC5000 will be generated by means of binary coding. If the respective recipe number is set on the inputs, the relevant recipe will be selected on the "Recipe selection" page.

accept recipe

With this input type, a recipe selected via the >Select recipe< inputs can be taken over. This means that the setpoints are loaded and transferred to the axes. However, this function is only executed on the "Recipe positioning" page. The input has no function on all other pages. Furthermore, this function only transfers the setpoints; the drives will not start positioning. The inputs can be set Low active as well as High active. The recipe is taken over with a positive signal slope. The inputs are scanned approx. every 1.3 seconds. This means that the inactive as well as the active times of the inputs must be greater than 1.4 seconds in order to achieve a positive slope and the resulting takeover of the recipe. Recipe selection cannot be taken over while a recipe is loaded (the setpoints are written).

Outputs

Basically, the outputs are always High active and Low inactive. This setting cannot be changed. All output types can be selected as often as necessary.

not InPos

With this function, the selected output becomes active when one or more axes are not in position and the drives not moved. Therefore, the status "Axes not in position" is output as a digital output (High active).

drives run

The output of IO20 becomes High when one or more drives are moving.

InPos

The output of IO20 becomes High when all actual values correspond with the setpoints and the "digital input" is High if applicable.

Error

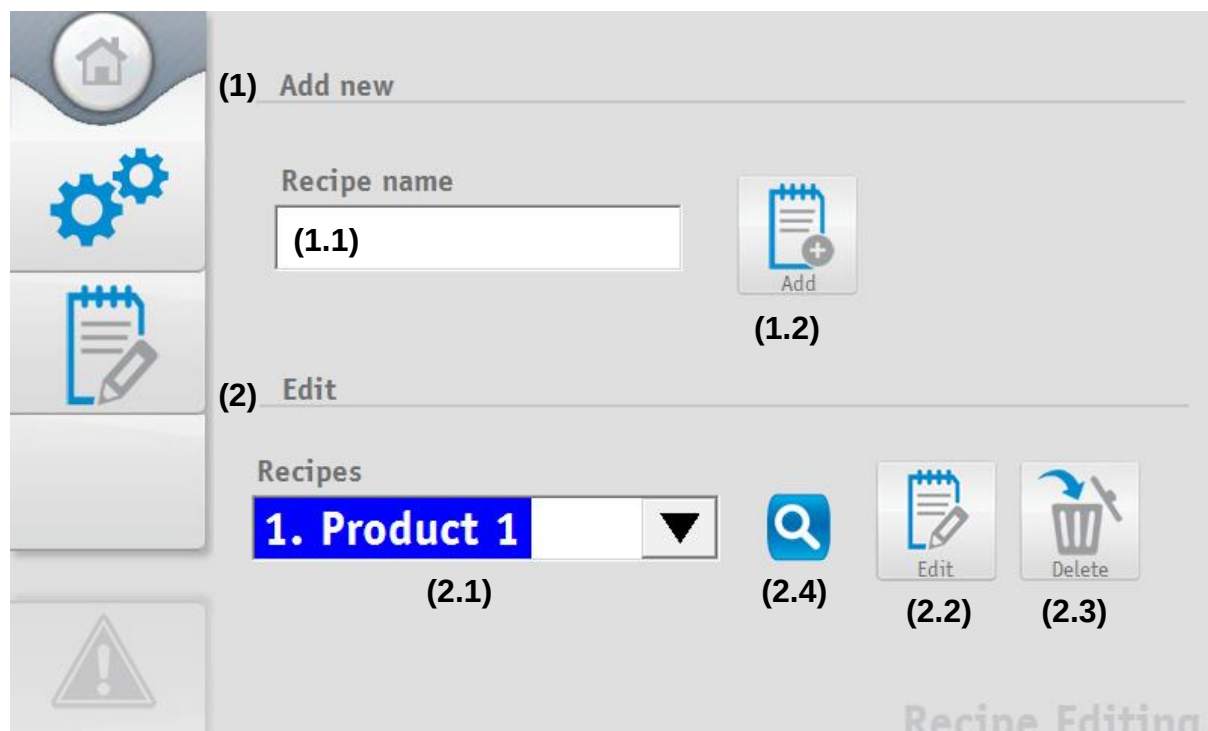
The output of IO20 becomes High when an error is detected on an axis. Errors are only detected outside the device manager and inching mode. The output does not differentiate between error (red triangle) and battery warning (orange triangle). The output becomes High in both cases.

8.2 Recipe management – Editing recipes

Management of recipes occurs in this area. Here you can create a recipe for a new format or product or edit existing recipes. A recipe contains four different pieces of information. The user selects the recipe at different places in the ETC5000 via the recipe name. For the internal management and the selection via the IO20, each recipe is automatically given a recipe number. This recipe number is permanently assigned to a recipe and can be reassigned when the recipe has been deleted. For the correct setup of the unit, a recipe also contains all setpoints for the axes to be adjusted. Furthermore, a work instruction can be defined optionally, which will be displayed to the user of the unit on the "Recipe positioning" page.

The page is divided into two areas; you can create new recipes **(1)** in the upper section and manage existing recipes **(2)** in the lower section. You can select existing recipes from a drop-down box **(2.1)** located in the lower section. You can edit the selected recipe via the "Edit" button **(2.2)** or delete it via the "Delete" button **(2.3)**.

You can also search and select recipes via the "Magnifier" button **(2.4)** as described in *chapter 6.1: Recipe selection*.



8.2.1 Add recipe

In the upper section of the page there is an entry field **(1.1)**, where the name for a new recipe shall be entered. When entering a name of a recipe note that display errors may occur with names exceeding 12 characters. There is different space for the display of names within the various menu items. If a name is too long, its end will be cut off for the display. After entering a name, a recipe is created with the name entered via the "Add" button **(1.2)**.

ETC5000 checks whether an identically named recipe exists; a corresponding error message is displayed if this is the case. If the recipe name does not exist yet, you get to the overview page of the recipe where you can edit all the parameters of the recipe. For an explanation of this page refer to *chapter 8.2.2: Edit recipe*.

8.2.2 Edit recipe

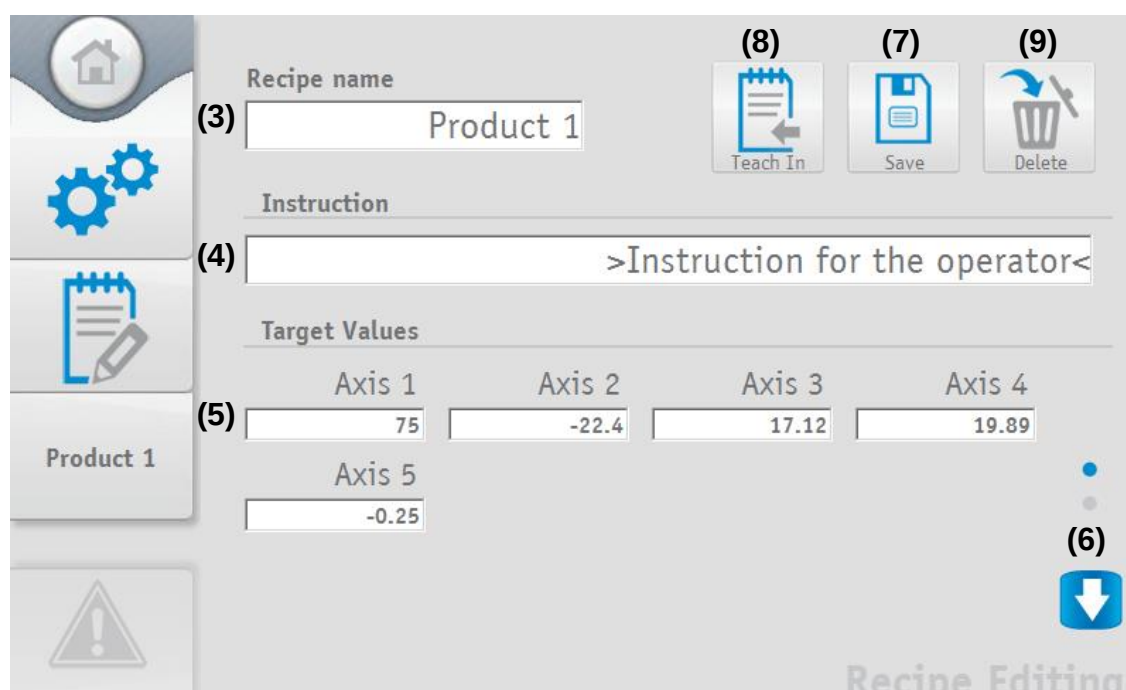
Select the desired recipe via the drop-down box **(2.1)** and access the editing interface of the individual recipes via the "Edit" button **(2.2)**.

In this menu you can adjust the recipe name **(3)** and define a job-related instruction **(4)**. When entering a work instruction note that display errors may occur with instructions exceeding 70 characters. There is different space for the display of names within the various menu items. If a name is too long, its end will be cut off for the display. If a job-related instruction is defined it will be displayed to the customer when he or she selects the recipe in Set Positioning. You can define the individual target positions of the axes **(5)** for this recipe under "Target values". Setpoint input of the axes is distributed to 3 pages. Toggle between the pages via the arrow keys **(6)** on the right side. Only axes defined via the device manager are displayed.

The changes must be saved via the "Save" button **(7)**; otherwise, the changes won't be saved when you quit the recipe.

With the "Teach In" function **(8)**, the current actual values of the connected devices can be taken over into the recipe as setpoints. Thus, easy "Teach In" of a new product or format is possible.

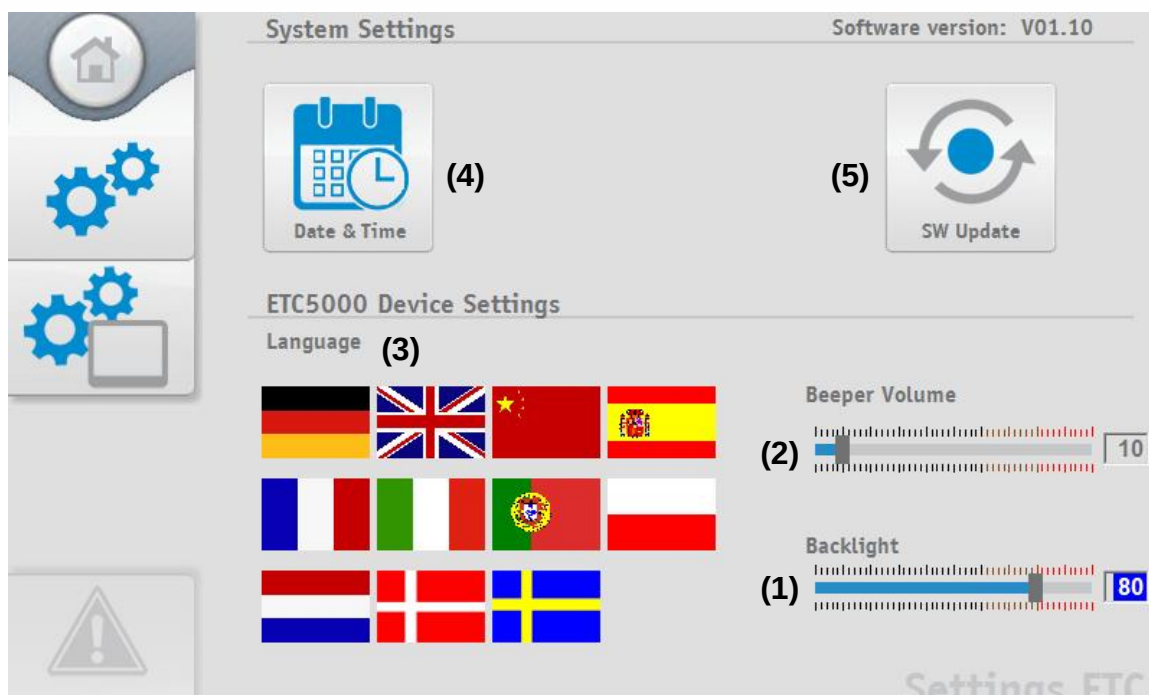
You can delete the recipe via the "Delete" button **(9)** if you do not need it any longer.



8.3 ETC5000 settings / Software Update

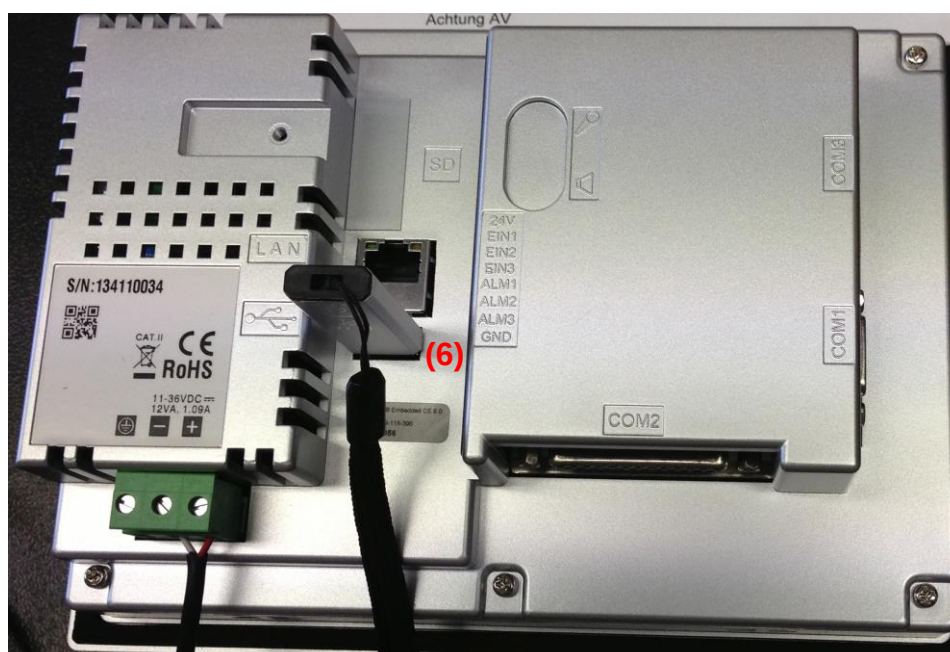
The "Settings" button leads you to the settings of ETC5000. Under this menu item you can change screen brightness **(1)**, beeper volume **(2)**, language **(3)** and system time **(4)**.

Moreover, you can execute software update **(5)** of ETC5000. The safety level of 8 is required to be authorized to execute software update.



8.3.1 Software Update

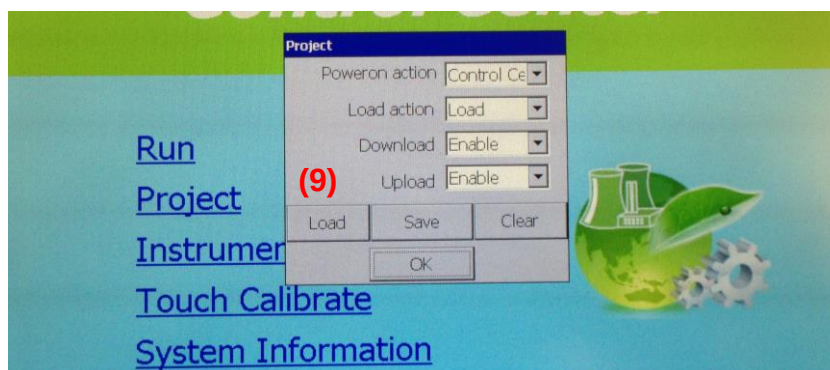
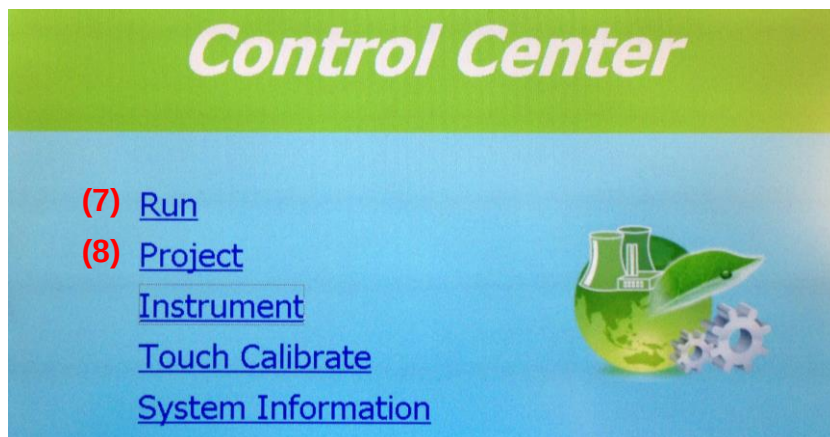
You can execute software update via the "SW Update" button (5). When you press the button, you are forwarded to the "Control Center". Connect to ETC5000 a USB mass memory with the new software (6).



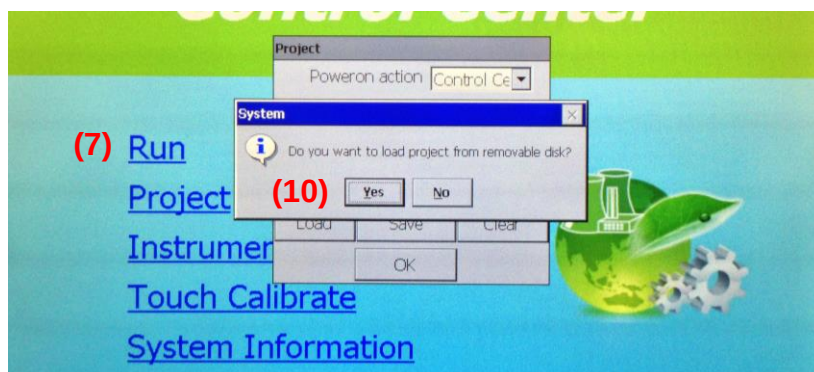
NOTICE

To return to the current software version without making any changes click on "Run" (7) and the usual interface will reappear.

Please tap on the "Project" function **(8)**. The programming window will open.



Subsequently, check again that the USB stick with the software is correctly stuck in. In order to start the programming process, tap on the "Load" button **(9)**, afterwards answer "Yes" **(10)** when you are asked "Do you want to load project from removable disk". Programming will be started automatically.



When the download process is completed without problems, you will be automatically returned to the start screen of "Control Center". Now you can remove the USB stick.

Start the new software by tapping on the "Run" button **(7)**. ETC5000 will start with the new software version.

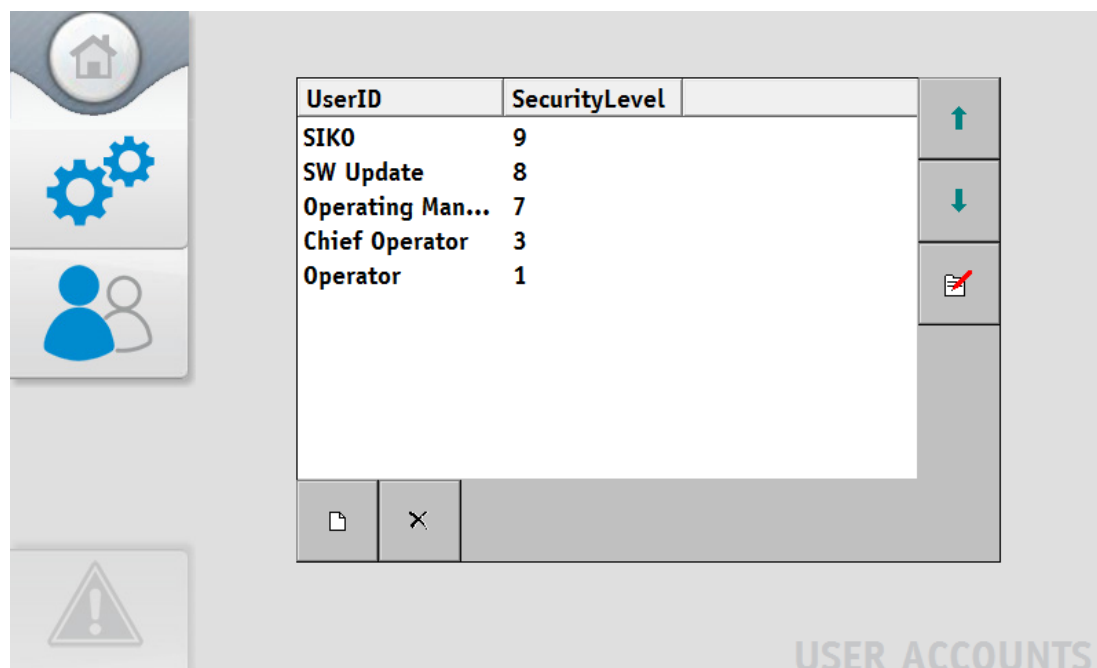
NOTICE

All users are set to Default after an update! Recipes and settings in the ETC5000 system are maintained!

8.4 User accounts

User accounts are managed, deleted or added under this menu item. A safety level (SL) higher than 7 is required to be able to edit user accounts. There are five qualitatively different safety levels for ETC5000.

Since the user name is logged with recording it makes sense to create a unique user account for every operator of ETC5000. The safety level assigned to a user should actually correspond with his or her tasks. This facilitates traceability in case of error and avoids undesirable modification of recipes and device parameters.



You can use the two arrow keys to select the user accounts. The currently selected user has a dark-blue background. However, this is also possible by simply clicking on the user name.



Name and security level of the highlighted user account can be edited.



A new user account is created. Name and security level can be chosen.



The highlighted user account is deleted.

8.5 Security level

Five user accounts are predefined on ETC5000 with the following authorizations:

SIKO (*SL9)	This account is reserved for service technicians of the SIKO company.
SW Update (*SL8)	This account is intended exclusively for software updates and should only be used for this purpose.
Operating Manager (*SL7)	The complete ETC5000 system with the connected devices can be configured and controlled via this user account.
Chief Operator (*SL3)	Recipes can be modified under this user account. No system settings can be made.
Operator (*SL1)	The operator can only select and start existing recipes.

*(SL = Security level)

With a higher safety level, you always have the lower authorizations as well. If a new user is created with a security level, which is not indicated, then this user will only have the authorizations of the next lower level (e.g., SL6 has only the rights of SL 3, SL2 has only the rights of SL1).

NOTICE	If a new user with a different security level is created, this user will only have the authorizations of the next lower level (e. g., SL6 has only the rights of SL 3, SL2 has only the rights of SL1).
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8.6 Importing and Exporting

The recipes (2) stored in ETC5000, the configurations of the connected devices (1) and the IO20 (3) can be exported or imported via the USB interface. You can use this function for saving the data of a system or for simply copying an existing system.

All recipes containing the information of recipe number, recipe name, the setpoints recorded and the instructions for the user are stored in the recipe file.

All devices set up on the axes as well as their parameters are saved in the configuration file of the device manager.

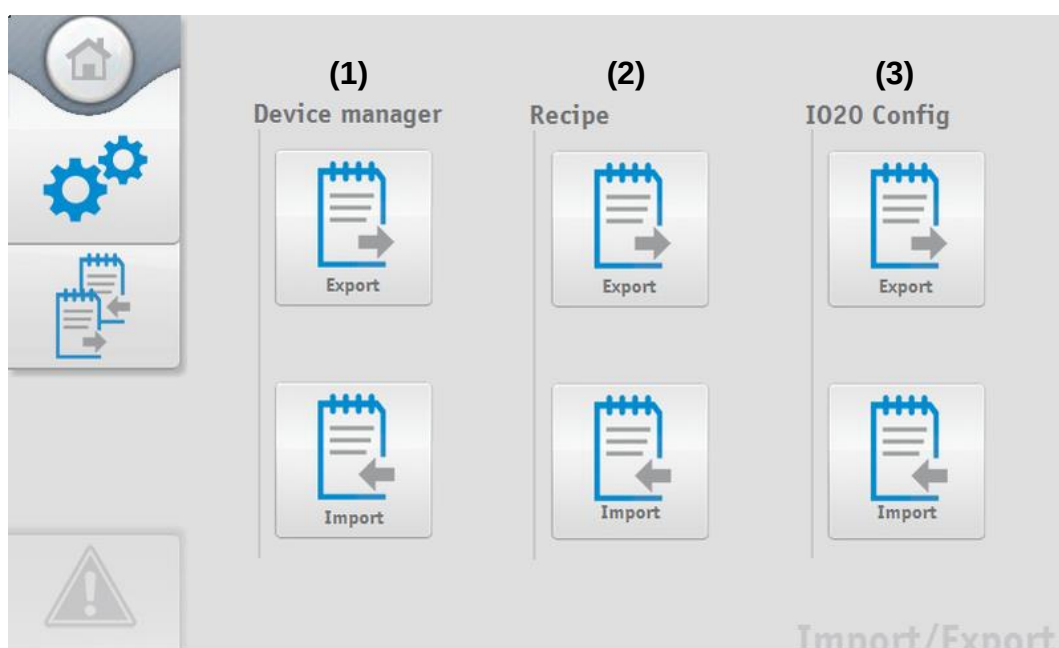
The setting of the input and output functions are saved in the configuration file of IO20.

The complete file is always exported or imported, i. e., single recipes or configurations of individual devices cannot be exported or imported!

NOTICE	All recipes or device configurations stored on ETC5000 will be overwritten when you import a recipe or configuration file!
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Every imported file is checked for correctness and version. Whenever an old version is detected, ETC will try automatically to update the file. If this is not possible, the file is reset in ETC5000 resulting in the loss of all information stored. If the discrepancies are limited to individual recipes, axes or inputs / outputs, then only the items concerned will be deleted. The parts that were correctly recognized will be maintained in the file. A pop-up message informs the user on the deleted parts or the resetting of the whole file.

NOTICE	Important hint: First import the parameter file when you import older recipe and parameter files.
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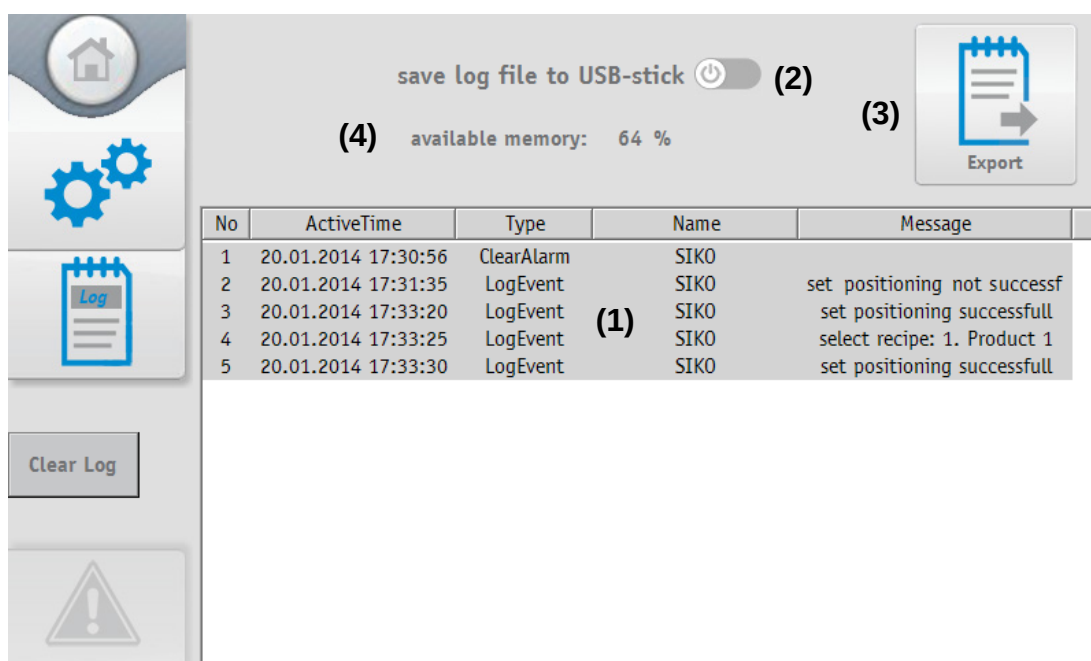
8.7 Log file

ETC5000 records all relevant events and saves them with a time stamp and the currently logged-in user information in a log file **(1)**. Under this item you can view all recorded events.

Furthermore, you can determine whether the log file shall be exported to a USB stick when ETC5000 memory is nearly full (free memory <20 %) **(2)**. If you don't choose this option, then the log file will be automatically reset upon reaching the memory limit of ETC5000 (<20 % free memory).

The log file can be exported anytime to a USB stick via the "Export" button **(3)**. However, this results in resetting the log file in ETC5000.

Here you can read the percentage of free memory **(4)** available on ETC5000.



A special program must be used for evaluating the log file exported to a USB stick. You can download the program at www.siko-global.com under the name "Historical Viewer".

9 Commissioning ETC5000

- 1) Check that all system components (ETC5000 and SIKONETZ5 devices) are correctly mounted and connected and no device address has been assigned twice.
- 2) Switch on voltage supply and check that ETC5000 and all devices start correctly.
- 3) Log in with the "Operating Manager" user authorization (see *chapter 4: Login*) and define a password.
- 4) Configure ETC5000 under "Settings" → "Settings" and choose a language (see *chapter 8.3: ETC5000 settings / Software Update*).
- 5) Via "Settings" change to "User manager" (see *chapter 8.1: Device manager*) and take over the devices found after the bus has been scanned (see *chapter 8.1.1: Bus-Scan*).
- 6) Adjust the parameters of every axis to the application (see *chapter 8.1.3: Change the parameters of an axis/device*).
- 7) Via "Settings" change to "Edit recipe" and create the recipes (products / formats) of the application (see *chapter 8.2.1: Add recipe*). Via the "Teach In" function (see *chapter 8.2.2: Edit recipe*), the current positions of the axes can be taken over directly into the recipes. For positioning individual axes, particularly for positioning the drives, the suitable function is contained in *chapter 7: Axis Positioning*.
- 8) Under "Settings" → "User accounts" create user accounts for other users of the system according to their future tasks and authorizations (see *chapter 8.5: Security level*) (see *chapter 8.4: User accounts*).
- 9) Log out (see *chapter 4: Login*) and log in with the appropriate safety level (3).

Now you can start selection and production (see *chapter 6: Set Positioning*) of the results (products / formats).

10 Data backup and system maintenance

10.1 Prevent data loss – Data backup

An important serious tip: The best insurance against data loss is and remains a regular backup of your data! Just make sure you understand what important data are dormant on your system! Data are the digital gold of the modern era and increasingly the foundation of value creation as well as a very relevant factor for the long-term success for companies of all sizes. To help you avoid this kind of data crash, we briefly describe below how you can prevent it.

To prevent possible data loss and to be quickly ready to start again if need be, it is advisable to perform a data backup of the system files (including user account settings, passwords, etc.) in addition to the standard files ("Device Manager", "Recipe" and "IO20 Config").

Necessary steps:

- Insert a FAT32 formatted and blank USB(2.0) storage device into the ETC5000.
- Log in to ETC5000 with user "SW update" or security level 8 or higher.
- In the [Settings] - > [Import/Export] menu area, select "Device Manager", "Recipe" and "IO20 Config" [export].
- In the [Settings] - > [Settings ETC] menu area, switch to the "Control Center" using [SW Update].
- Under [Project], select the [Save] project and confirm the subsequent system message with [Yes]. The user account settings are also saved unchanged. This process can take some time.

This backup of the system files should be performed at regular intervals, but always after a change in the user account settings!

10.2 System maintenance

There are several factors that can cause computer systems to slow down in speed when used for extended periods of time, regardless of operating system. Do not underestimate memory fragmentation: Data are written and deleted again. The data carrier gradually fills up. The file system attempts to store the data in entire blocks. This often does not work, so that related data blocks must be distributed across multiple areas. But even when data blocks are deleted, fragments can remain in memory.

Fragmented system memory not only affects speed, but can sometimes interfere with functioning (system warning "Almost no memory available". Alarm and data log are stopped). In the following, we briefly describe how you can deal with such data storage fragmentation.

Necessary steps:

- Perform a data backup including the system files.
- Under [Project], select the [Load] project and confirm the subsequent system message with [Yes]. This process can take some time. After the files have been successfully transferred, the ETC starts automatically.
- Log in to ETC5000 with user "SW update" or security level 8 or higher.
- In the [Settings] - > [Import/Export] menu area, select "Device Manager", "Recipe" and "IO20 Config" [import].

Then the ETC5000 is ready for use again.

NOTICE

Frequent power cuts (power off) of the ETC5000 operating voltage accelerates data memory fragmentation.