Administrator Manual (English)

ECOS SECURE BOOT STICK [SX]+[FX]

Hardware

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ECOS TECHNOLOGY GMBH
www.ecos.de

1 Functionalities of ECOS SECURE BOOT STICK [SX/FX]

Besides the boot stick software itself, ECOS SECURE BOOT STICK [SX/FX] also contains a hardware-encrypted data safe which can be used to store data securely. The stick can be accessed from any operating system and doesn't require any installation of software. Both features require a smartcard, which is also included. A range of functions, accessible through the stick's keyboard, allow to administrate data safe and smartcard. Besides securing the boot stick, the smartcard is also used to encrypt the data safe. During Easy Enrollment, the stick is tied to the smartcard and can, from then on, only be used in combination with this smartcard. The boot stick and/or the data safe can only be used after this coupling of the ECOS SECURE BOOT STICK by Easy Enrollment. (For a description of Easy Enrollment cf. ECOS SECURE BOOT STICK User or Administrator Guide.)

All functions are secured by PIN. There are three PIN in total. The smartcard PIN secures the smartcard. This is a prerequisite to start ECOS SECURE BOOT STICK and access the data safe. The SO PIN allows to reset the smartcard PIN. There is also an admin PIN which is independent from the smartcard and necessary to administrate the stick.

1.1 Connecting ECOS SECURE BOOT STICK [SX]

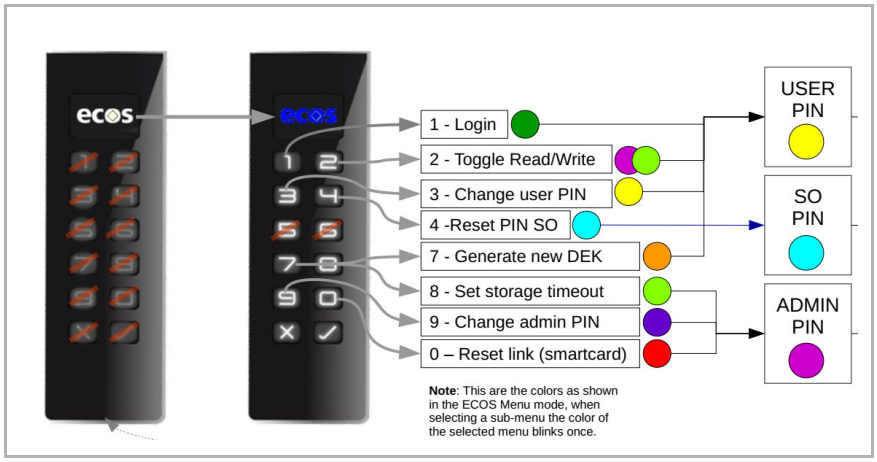
To use ECOS SECURE BOOT STICK, it is necessary to connect it to the computer by using the enclosed adapter cables for USB-A, USB-B or USB-C.

Once the stick is plugged in and connected, the ECOS key first lights white, then flashes green briefly to signalize that the stick's smartcard has been detected, finally lights white again.

If there's no smartcard in the tray, if it hasn't been inserted correctly or turns out unreadable, the ECOS key will flash red. In this case, disconnect it from the computer, insert the smartcard correctly, then reconnect the stick.

1.2 ECOS SECURE BOOT STICK [SX/FX] Keys

ECOS SECURE BOOT STICK [SX/FX] has 13 keys.



- The ECOS key calls up the menu.
- The ✓ key confirms an entry.
- The X key cancels an entry.
- The 10 numeric keys [0-9] select the function in menu mode or allow a PIN entry.

1.3 ECOS Keys — Functions and Colors

The ECOS key calls up the stick functions. It changes color according to the respective status of the stick or the function that has been selected.

1.3.1 Colors during Operation

Normally, the ECOS key lights in different colors. The color signalizes the stick's status.

- white, the boot stick is inactive and write-protected, the data safe is deactivated.
- orange, the boot stick is active, but write-protected, the data safe is deactivated.
- yellow, the boot stick is fully active, the data safe is deactivated.
- purple, the boot stick is fully active, the data safe is unlocked, but write-protected.
- green, the boot stick is fully active, the data safe is fully unlocked.
- magenta, the data safe is unlocked, but write-protected. The boot stick isn't active.
- light green, the data safe is fully unlocked. The boot stick isn't active.

1.3.2 How to Execute Functions

The ECOS key calls up different functions.

- Pressing the ECOS key activates the menu mode.
  ECOS key lights blue.
- Now a digit must be entered to select a function.
  ECOS key lights in the color of the function (see below).
- Pressing the ✓ key confirms the function.
  ECOS key lights in the color of the function (see below).
- The menu mode can be canceled by pressing the X key.
  ECOS key shortly lights orange.

After pressing the ECOS key and selecting a function with a numeric key, the ECOS

key lights in different colors according to the activated function:

- green, to unlock the data safe (key 1);
- magenta, to activate read access for the data safe (key 2);
- light green, to activate writing access for the data safe (key 2);
- yellow, to change the smartcard PIN (key 3);
- light blue, to reset the smartcard PIN (key 4);
- orange, to generate a new DEK (key 7);
- light green, to set the storage timeout (key 8);
- purple, to change the stick's admin PIN (key 9);
- red, to reset the coupling of smartcard and stick (key 0).

The different functions are described in detail hereafter.

1.3.3 Colors of PIN Entry

For security reasons, the different functions are protected by PIN. The ECOS key flashes in different colors according to the PIN entry:

- ECOS key flashes yellow when the smartcard PIN is required.
- ECOS key flashes light blue when the SO PIN is required.
- ECOS key flashes magenta when the stick's admin PIN is required.

1.3.4 Colors after PIN Entry

The ECOS key always lights briefly after PIN entry.

- green, when the PIN entry is correct.
- red, when the PIN entry is incorrect.

1.4 Activating the Stick

ECOS SECURE BOOT STICK [SX] offers two functionalities. On one hand it's a boot stick that allows to work on a distant server, on the other hand it's a data safe providing a secure, encrypted data storage.

1.4.1 Use as Boot stick

When the stick is connected and the computer turned on, the ECOS key first lights white, then flashes green briefly to signalize that the smartcard is tied to the stick, finally lights white again. ECOS SECURE BOOT STICK is now ready to be booted. When the smartcard PIN is required on startup, the ECOS key flashes yellow. After PIN entry, the ECOS key briefly lights orange to signalize that the smartcard is released, then yellow once the boot stick is operating. If the data safe is being unlocked during operation, the color will change accordingly.
→ *see „1.3.1 / Colors during Operation" on page 7*

1.4.2 Use as Date Safe

When the stick is connected, the ECOS key first lights white, then briefly flashes green to signalize that the smartcard is tied to the stick, finally lights white again. The data safe can now be unlocked.
→ *see „1.5 / Data Safe Functions" on page 10*

Just like other removable storage devices, the data safe should be removed securely after use to ensure that the operating system has written all data thoroughly.

1.5 Data Safe Functions

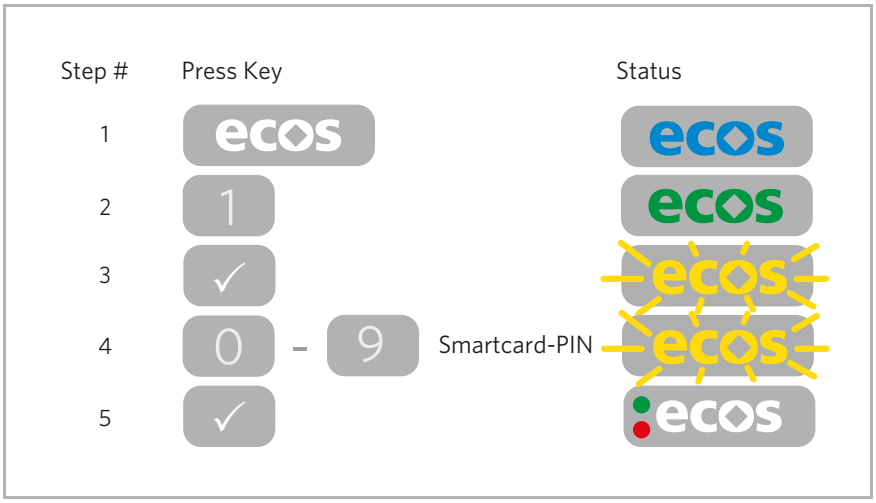
Two drives appear when the stick is connected to a computer. These drives are used for the internal organization of the stick and should not be used to store data as they are unencrypted.

The data safe must first be unlocked for a secure data storage.
→ *see „1.5.1 / Unlock Data Safe | Key 1" on page 11*

Once unlocked, another drive appears. This drive is hardware-encrypted and allows to store data in a secure way. For a better differentiation, this drive is named „DATENSAFE" in the delivery state.

When the stick is disconnected or the computer turned off, the access to the data safe is locked again. It is also possible to use the option „Storage Timeout" to set a specific lapse of time after which the data safe will be locked automatically.

1.5.1 Unlock Data Safe | Key 1

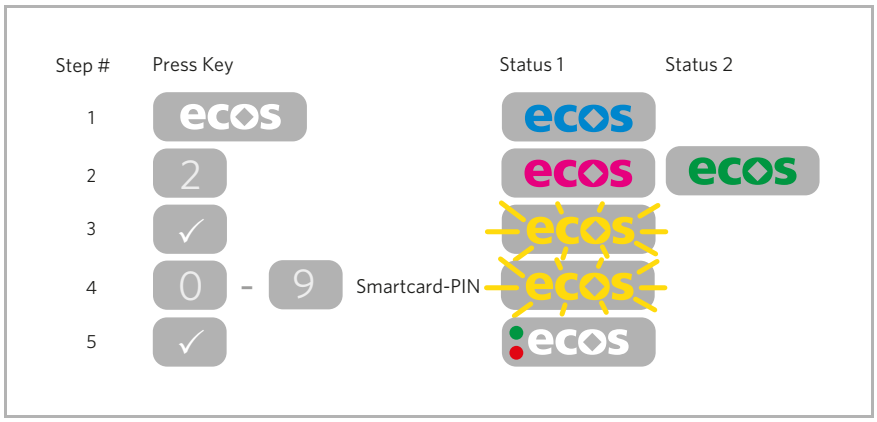


Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 1 to select the function that allows to unlock the data safe.
   ECOS key lights green.
3. Press ✓ key to confirm.
   ECOS key flashes yellow.
4. Enter smartcard PIN.
   ECOS key flashes yellow during entry of smartcard PIN.
5. Press ✓ key to confirm.
   ECOS key briefly lights green when the smartcard PIN is correct, red if the smartcard PIN is wrong.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.5.2 (De)activating Writing Access for the Data Safe | Key 2

Key 2 allows to switch the data safe from read-only access to writing access. When the writing access is deactivated, the data safe content can be read, but not modified. This is particularly recommended when the data safe is operated on unknown devices to prevent any malware from manipulating the data safe's content.



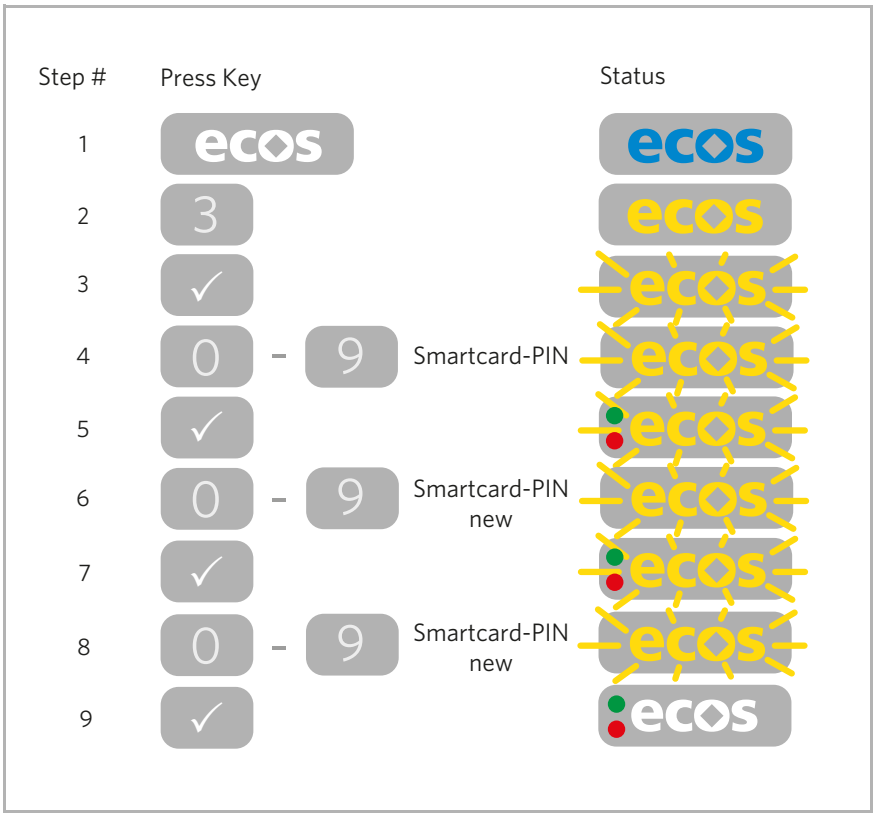
Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 2 to activate the data safe.
   ECOS key lights magenta if the data safe is only active for read-access.
   ECOS key lights green if the data safe is active for write-access.
3. Press ✓ key to confirm.
   ECOS key flashes yellow.
4. Enter smartcard PIN.
   ECOS key flashes yellow during entry of the smartcard PIN.
5. Press ✓ key to confirm. ECOS key briefly lights green when the smartcard PIN is correct, red if the smartcard PIN is wrong. The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.6 Functions for Smartcard PIN

1.6.1 Change Smartcard PIN | Key 3

The smartcard PIN can be modified with key 3. The PIN should have 4 to 15 digits.



Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 3 to select the function that allows to change the smartcard PIN.
   ECOS key lights yellow.
3. Press ✓ key to confirm.
   ECOS key flashes yellow.
4. Enter smartcard PIN.
   ECOS key flashes yellow during entry of the smartcard PIN.

5. Press ✓ key to confirm.
   ECOS key briefly lights green if the smartcard PIN is correct, then the ECOS key flashes yellow again.
   ECOS key briefly lights red if the smartcard PIN is wrong. The modification is canceled. The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

6. Enter new smartcard PIN.
   ECOS key flashes yellow during entry of the new smartcard PIN.

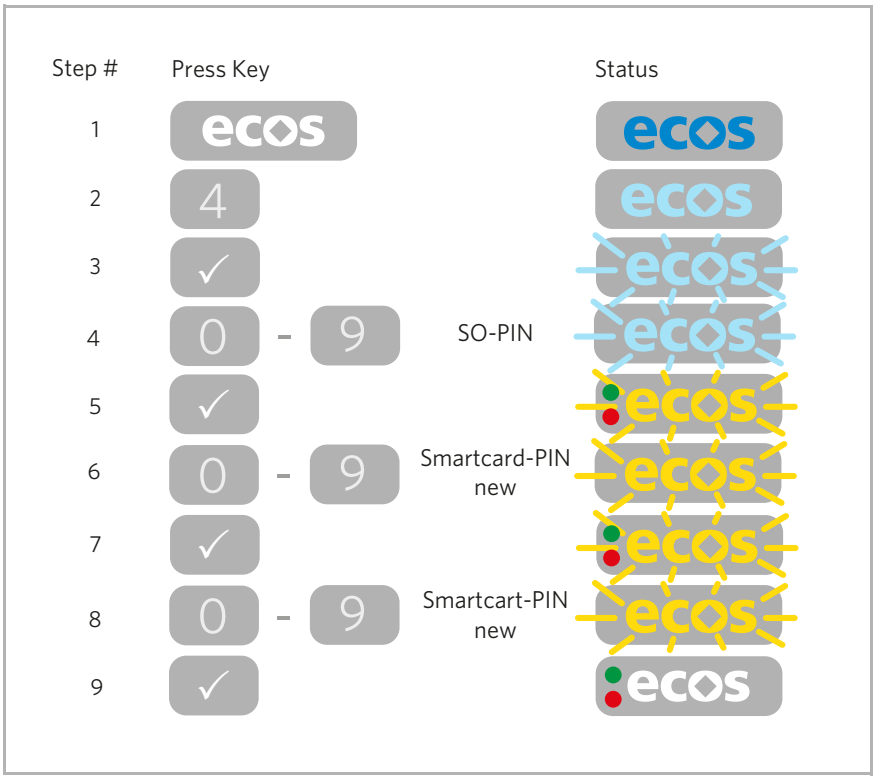
7. Press ✓ key to confirm.
   ECOS key briefly lights green if the new smartcard PIN is correct, then the ECOS key flashes yellow again.
   ECOS key briefly lights red if the new smartcard PIN is wrong. The modification is canceled. The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

8. Enter new smartcard PIN a second time.
   ECOS key flashes yellow during reentry of the new smartcard PIN.

9. Press ✓ key to confirm.
   ECOS key briefly lights green if the new smartcard PIN has been accepted, red if the modification of the smartcard PIN wasn't successful.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.6.2 Reset Smartcard PIN | Key 4

If the user has forgotten the smartcard PIN, this function allows to reset it with the SO PIN (comparable to a PUK).



Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 4 to reset the smartcard PIN.
   ECOS key glows light blue.
3. Press ✓ key to confirm.
   ECOS key flashes light blue.
4. Enter SO PIN.
   ECOS key flashes light blue during entry of the SO PIN.
5. Press ✓ key to confirm.
   ECOS key briefly lights green if the SO PIN is correct, then the ECOS key flashes yellow.

ECOS key briefly lights red if the SO PIN is wrong. The modification is canceled.
The ECOS key then lights in a color according to the stick's status.
→ *see „1.3.1 / Colors during Operation" on page 7*

6. Enter new smartcard PIN.
   ECOS key flashes yellow during entry of the new smartcard PIN.

7. Press ✓ key to confirm.
   ECOS key briefly lights green if the new smartcard PIN is correct, then the ECOS key flashes yellow again.
   ECOS key briefly lights red if the new smartcard PIN is wrong. The modification is canceled.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

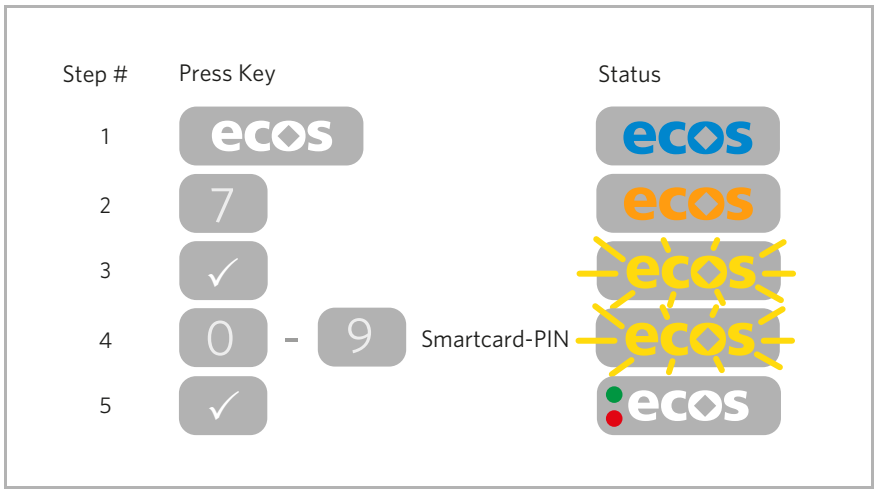
8. Enter new smartcard PIN a second time.
   ECOS key flashes yellow during reentry of the new smartcard PIN.

9. Press ✓ key to confirm.
   ECOS key briefly lights green when the smartcard PIN is correct, red if the smartcard PIN has been reentered wrongly.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.7 Administration Functions

1.7.1 Generate New DEK (Data Encryption Key) | Key 7

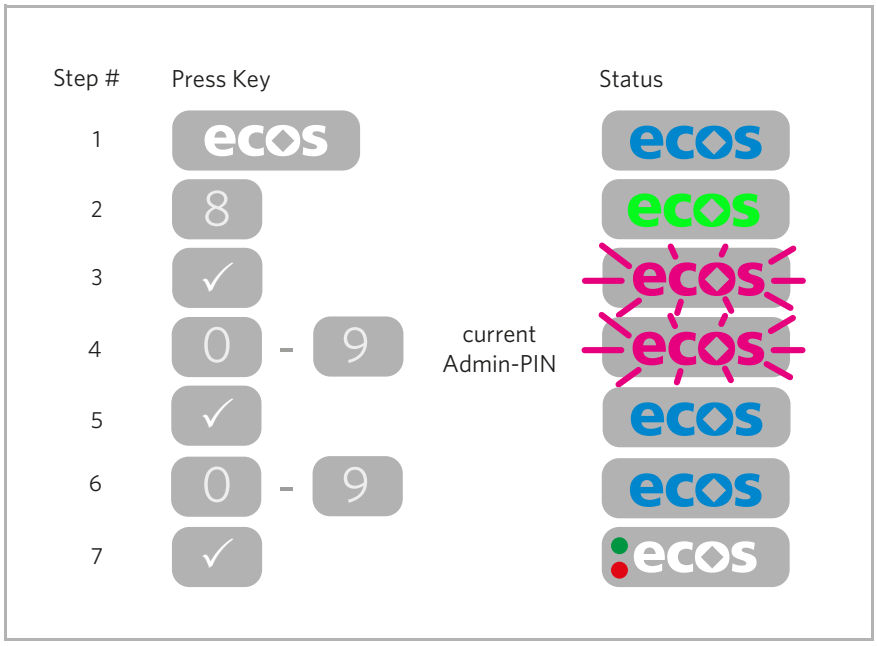
The Data Encryption Key encrypts the content of the data safe. When a new key is generated, the whole content of the data safe will be deleted and irremediably lost. The data safe's drives must be reformatted afterwards.



Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 7 to select the function that allows to generate the DEK.
   ECOS key lights orange.
3. Press ✓ key to confirm.
   ECOS key flashes yellow.
4. Enter smartcard PIN.
   ECOS key flashes yellow during entry of smartcard PIN.
5. Press ✓ key to confirm.
   ECOS key briefly lights green when the smartcard PIN is correct, red if the smartcard PIN is wrong.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.7.2 Set Storage Timeout | Key 8



Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 8 to start processing.
   ECOS key turns light green.
3. Press ✓ key to confirm.
   ECOS key flashes magenta.
4. Enter stick admin PIN for authentication.
   ECOS key flashes magenta on admin PIN entry.

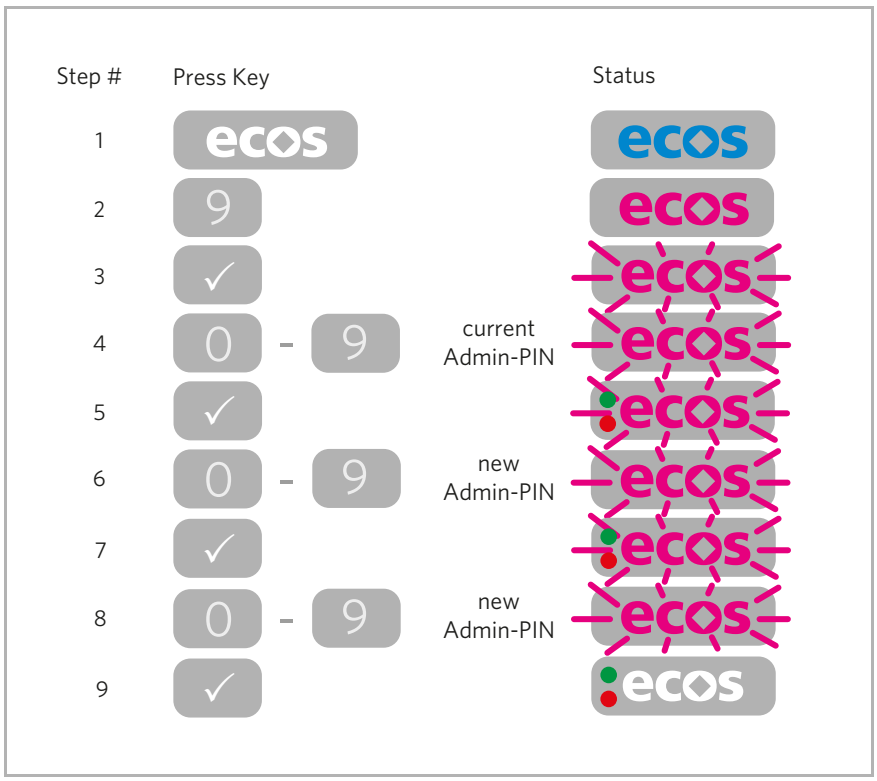
5. Press ✓ key to confirm.
   ECOS key briefly lights green if the stick's admin PIN is correct, then the ECOS key lights blue.
   ECOS key briefly lights red if the stick's admin PIN is wrong. The process is cancelled.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

6. Enter a number from 0 to 30 to set the desired storage timeout in seconds.
   ECOS key lights blue during entry.

7. Press ✓ key to confirm.
   ECOS key briefly lights green if the modification was successful.
   ECOS key briefly lights red if the modification couldn't be performed.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.7.3 Changing Stick's Admin PIN | Key 9

The admin PIN secures the storage timeout, a new DEK and the coupling. Every stick has an individual admin PIN that can be modified by this function. The admin PIN must have 4 to 12 digits.



Following steps must be performed:

1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 9 to select the function that allows to change the stick's admin PIN.
   ECOS key lights magenta.
3. Press ✓ key to confirm.
   ECOS key flashes magenta.
4. Enter present admin PIN.
   ECOS key flashes magenta on admin PIN entry.
5. Press ✓ key to confirm.

ECOS key briefly lights green if the stick's admin PIN is correct, then the ECOS key flashes magenta.
ECOS key briefly lights red if the stick's admin PIN is wrong. The process is cancelled.
The ECOS key then lights in a color according to the stick's status.
→ *see „1.3.1 / Colors during Operation" on page 7*

6. Enter new stick admin PIN.
   ECOS key flashes magenta during entry.

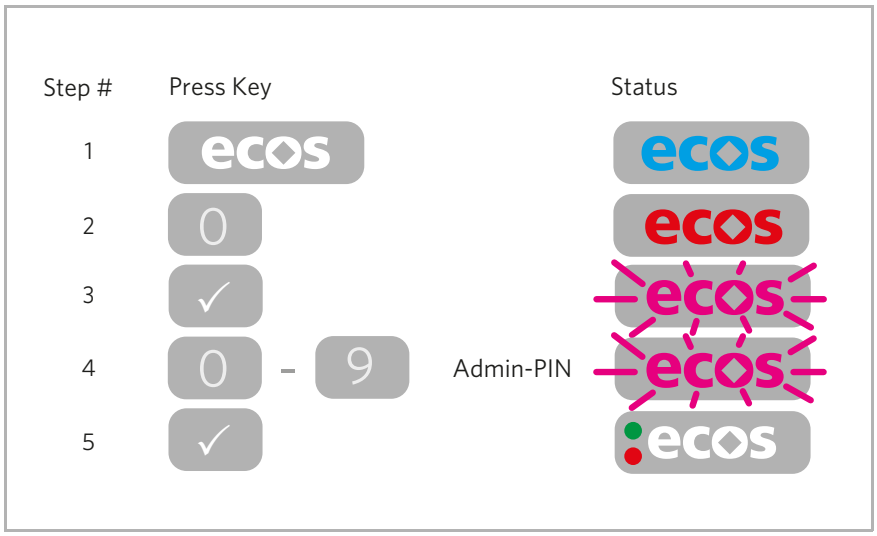
7. Press ✓ key to confirm.
   ECOS key briefly lights green if the new admin PIN is correct, then the ECOS key flashes magenta.
   ECOS key briefly lights red if the new admin PIN is wrong. The process is cancelled.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

8. Enter new admin PIN a second time to confirm.
   ECOS key flashes magenta during entry.

9. Press ✓ key to confirm.
   ECOS key briefly lights green when the new admin PIN is correct, red if the new admin PIN has been reentered wrongly.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

1.7.4 Resetting Smartcard Coupling | Key 0

This function unsets the coupling of stick and smartcard. The boot stick is subsequently rendered unusable and must be reinitialized. Also, all data stored in the data safe will be lost. This function must be executed before using the stick with another smartcard.



1. Press ECOS key to access the menu mode.
   ECOS key lights blue.
2. Press key 0 to reset the smartcard coupling
   ECOS key lights red.
3. Press ✓ key to confirm.
   ECOS key flashes magenta.
4. Enter the stick's admin PIN.
   ECOS key flashes magenta on admin PIN entry.
5. Press ✓ key to confirm.
   ECOS key briefly lights green when the admin PIN is correct, red if the admin PIN is wrong.
   The ECOS key then lights in a color according to the stick's status.
   → *see „1.3.1 / Colors during Operation" on page 7*

ECOS TECHNOLOGY GMBH

Sant-Ambrogio-Ring 13a
D-55276 Oppenheim

www.ecos.de