Programming key
EKA 183A

Introduction and application

EKA 183A is used to copy settings to an EKC controller.

It can also be used to copy settings from one EKC controller to another EKC controller of the same type, i.e. the same order number and software version.

• OEM tool for setting a controller
• Service tool for setting controllers quickly

Can be used for:
EKC 102, EKC 202, EKC 204 and AK-CC 210.
EKC 3xx (but not EKC 301), EKC 4xx, EKC 5xx, AK-CC 450 and AK-CC 550.

Function

Principle
EKA 183A is put into the controller. The controller is connected to the mains.
Data can be copied from the programming key to the controller or vice versa by operating the push button.

Pre-programming
EKA 183A is put into the PC's USB port. The actual file is then set. The settings are done using the "Microsoft Excel" program. See next page.

Rapid data transfer
For OEM use, the programming key can be set so that the data transfer starts at the same time as the programming key is pushed into the controller.
For EKC 102, EKC 202, EKC 204 and AK-CC 210, a connection of 230 V is not required for the controller — the power supply to the copying key and the necessary part of the controller can be provided via a USB cable.
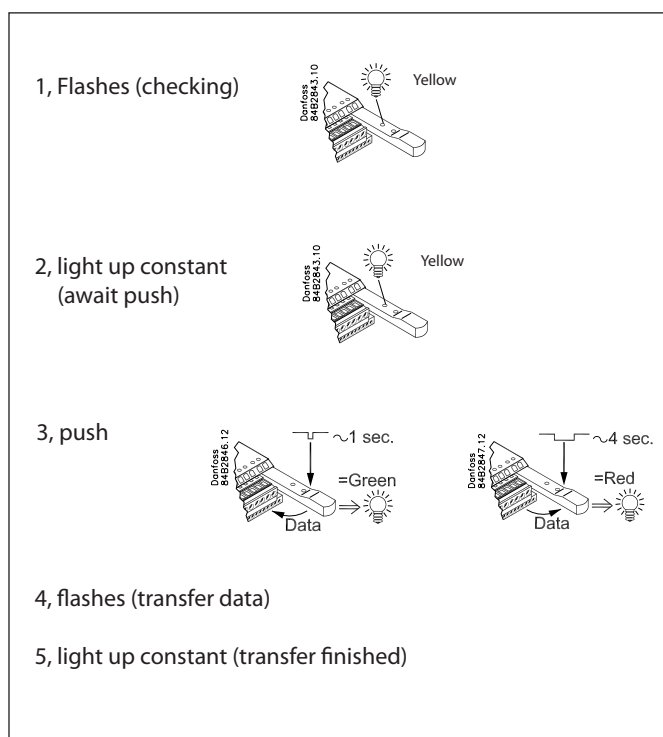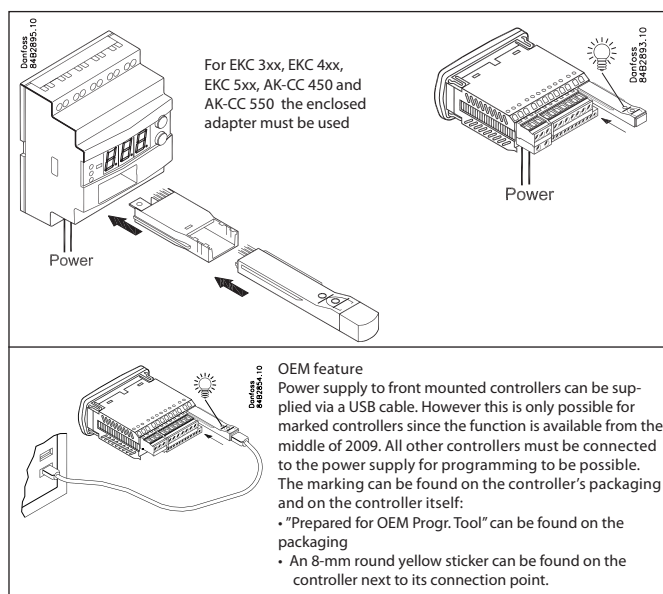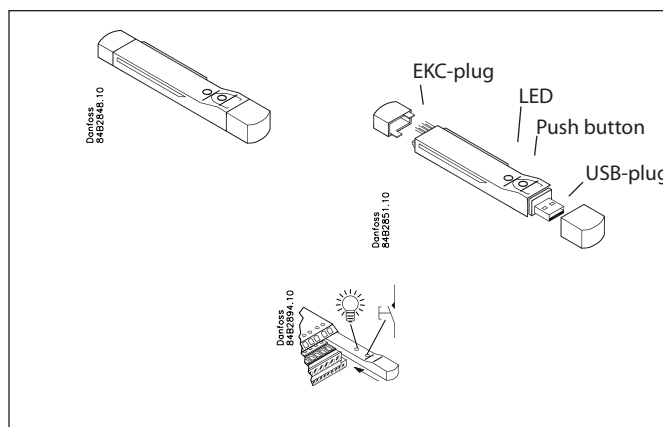
LED

1. The LED will flash yellow when the programming key is put into the controller. Here it is checked whether the data can be transferred.

2. Shortly afterwards, the LED constant light up yellow and the data transfer can start.

3. and 4. The transfer of data
   • Pushing the button briefly (1 sec.) will transfer data to the controller (green LED flashes).
   • A long push (at least 4 sec.) will transfer data from the controller to the programming key (red LED flashes).

   • (The transfer of data to the controller will start immediately (i.e. without push the button), if this function has been activated. See page 4.)

5. The transfer has finished when the LED light up constant

If the LED flashes alternately red and green (and remains), an error has occurred in the transfer. Put the programming key into the PC and read the error code.
The two usual errors will be:
• The controller's order number and software version do not match the file that you are trying to copy to the controller.
• The programming key already contains a write-protected file of the type you are trying to extract from the controller.

EKC-plug
LED
Push button
USB-plug

For EKC 3xx, EKC 4xx, EKC 5xx, AK-CC 450 and AK-CC 550 the enclosed adapter must be used

Power

Power

OEM feature
Power supply to front mounted controllers can be supplied via a USB cable. However this is only possible for marked controllers since the function is available from the middle of 2009. All other controllers must be connected to the power supply for programming to be possible. The marking can be found on the controller's packaging and on the controller itself:
• "Prepared for OEM Progr. Tool" can be found on the packaging
• An 8-mm round yellow sticker can be found on the controller next to its connection point.

1, Flashes (checking) — Yellow

2, light up constant (await push) — Yellow

3, push — ~1 sec. =Green / Data ~4 sec. =Red / Data

4, flashes (transfer data)

5, light up constant (transfer finished)
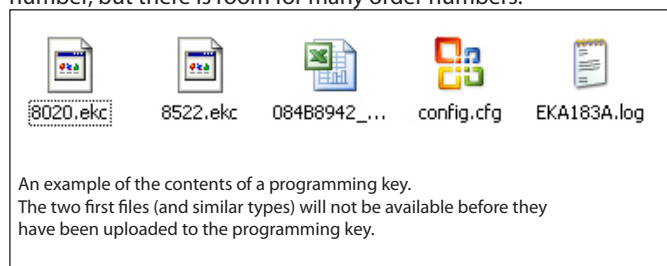
All parameters are transferred
All the set parameters are transferred. This also applies to the Main Switch, refrigerant type, application number, address, etc. There are no exceptions.

Ordering

Type	Description	Code no.
EKA 183A	Programming key	**084B8582**

Principles and settings via PC

The programming key can only contain one file for each order number, but there is room for many order numbers.

An example of the contents of a programming key.
The two first files (and similar types) will not be available before they have been uploaded to the programming key.

By limiting it to one file, you control what is copied. Numerous files with different settings, e.g. settings for cooling, frost, etc., will not be mixed up.
When the file is transferred to a controller, the programming key will check both the order number and the software version. Both the order number and the software version on the controller must match the file on the programming key, otherwise the transfer will not work. The LED will flash to indicate an incomplete transfer.
In order to progress with an incomplete transfer, you must have a file that corresponds to the one in the controller. But before this, you must take into account the file that is already on the programming key.
- If the file is write-protected, you cannot copy another one to the programming key. The LED will indicate this by flashing.
- If it is not write-protected, it will be overwritten.
You can move the file to a PC, making it accessible later.
And then we go back to the incomplete transfer. If you have a file with the correct software version, it must be copied over onto the programming key and then to the controller.
- If you do not have the file, and want to save it for later, you can copy the file from the controller to the programming key.

If you have several files for the same controller, we recommend that you save them in different folders, so that they are kept apart from each other. The programming key can only accept files if the name is: **XXXX.EKC**, where XXXX is the last four digits in the order number, e.g. 084B**8522**.

Settings
If you want to create settings in an EKC file, you can use the Excel file supplied. The file is on the programming key.
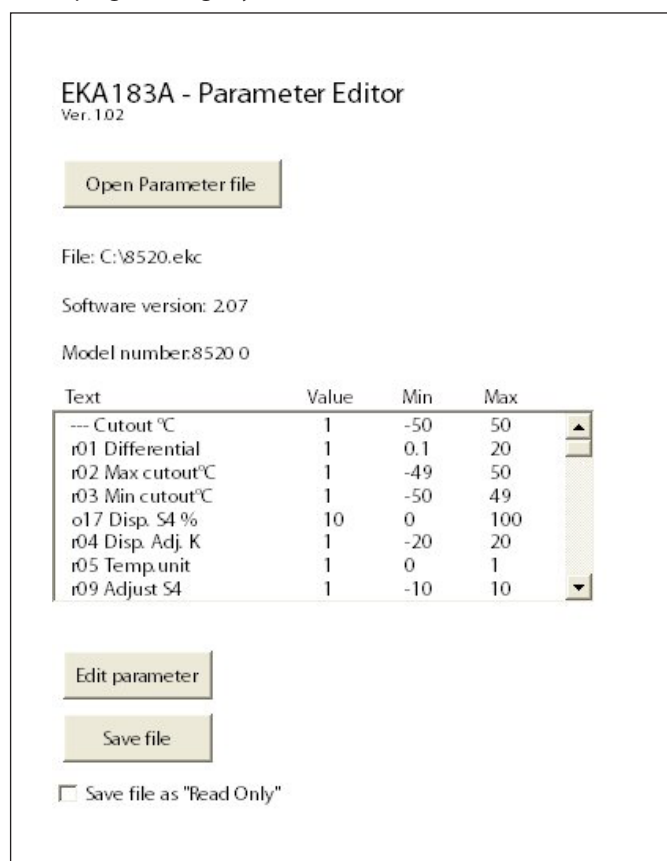

084B8942_xxx.xls   (xxx = software version)

Open the file and enable Macros.
The control screen is shown below.

At the bottom, you can save the file as a "Read-Only" file.
If you forget to do this, the file will be overwritten if you do a "long push" on the programming key, thus transferring data from an EKC to the programming key.

Data transfer

Two methods can be selected for transferring data:

A: Data transfer from the programming key to the controller occurs at the same time as the programming key is pushed into the controller.

B: The unit is checked and the transfer takes place when the button is pushed. (B= factory setting)

P: Reserved function

Connect the programming key to a PC and find the file "Config.cfg". The file can be opened using the "WordPad" program.

Set the MODE line to either A or B.

```
                ## Sw. version. 1.xx
                # Advanced users only
                # EKA183A configuration file
                #
                # EKA183A configuration file
                #
                # MODE=A: EKA183A will automatically start uploading of
                parameters to EKC.
                # MODE=B: EKA183A function is controlled by the push button.
                # MODE=P: EKA183A is controlled by "EKA183A PC Toolkit".
                #

                MODE=B

                # End of configuration file
```

If the transferred data has to be used as "New factory setting", add the following text: FAC = Y

```
                # MODE=P: EKA183A is controlled by "EKA183A
                PC Toolkit".
                #

                MODE=B
                FAC=Y
                # End of configuration file
```

Error and status messages

If the LED flashes after a data transfer, the transfer is unsatisfactory. Look at the error code in the log.

```
Description of errors and messages found in log:

001 Connection initialized to EKC, mode = button action
002 Connection initialized to EKC, mode = auto
003 Connection initialized to EKC, mode = PC/HID
004 Starting to copy from EKC to Programming Key
005 Done copying from EKC to Programming Key
006 Starting copy from Programming Key to EKC
007 DONE copy from Programming Key to EKC
008 A new configuration has been created.

100 Unspecified E1 error
101 E2 error. Mode set to PC action, but no PC is connected
103 E2 error. Mode not set to BUTTON, AUTO or PC
103 E2 error. Trying to upload to a illegal PNU number. Filename
        and line number specified in log.
104 E2 error. Illegal value to upload, eg. out of range. Filename
        and line number specified in log.
105 E2 error. Trying to write "read only value". Filename and line
        number specified in log.
106 E2 error. [PNU] section not found in parameter. Filename
        specified in log.
107 E2 error. Syntax error in PNU line. Filename and line number
        specified in log.
108 E2 error. No parameter file found to upload.
109 E2 error. No configuration file found.
110 E2 error. Syntax error in configuration file.
111 E2 error. A parameter file for the current EKC is already
        present and it is write protected.
112 E2 error. A parameter file for the connected EKC exists, but
        the software version in the file is different from the con-
        nected EKC.
113 Not enough free space left on device
```

Read the log

Connect the programming key to a PC and find the file "EKA183A. log". The file can be opened using the "WordPad" program.

It displays the following information:
No. of last event (here, line 23).
The last event will always be the last line. If there are more than 50 events, the first ones will be overwritten, so that the last 50 can always be seen.

```
Latest line:23
001;00:00 01-01-00;8520;2.0.5;0;;
004;00:00 01-01-00;8520;2.0.5;0;;
005;00:00 01-01-00;8520;2.0.5;0;8520-000.ekc;
001;00:52 01-01-00;8020;1.1.6;0;;
001;01:03 01-01-00;8020;1.1.6;0;;
004;01:03 01-01-00;8020;1.1.6;0;;
005;01:03 01-01-00;8020;1.1.6;0;8020-000.ekc;
001;02:04 01-01-00;8020;1.1.6;0;;
006;02:04 01-01-00;8020;1.1.6;0;;
107;02:04 01-01-00;8020;1.1.6;0;8020-000.ekc;182
001;02:07 01-01-00;8020;1.1.6;0;;
006;02:07 01-01-00;8020;1.1.6;0;;
107;02:07 01-01-00;8020;1.1.6;0;8020-000.ekc;182
001;02:09 01-01-00;8020;1.1.6;0;;
004;02:09 01-01-00;8020;1.1.6;0;;
005;02:09 01-01-00;8020;1.1.6;0;8020-000.ekc;
001;03:22 01-01-00;8020;1.1.6;0;;
004;03:22 01-01-00;8020;1.1.6;0;;
005;03:22 01-01-00;8020;1.1.6;0;8020-000.ekc;
001;00:01 01-01-00;8520;2.0.5;0;;
004;00:01 01-01-00;8520;2.0.5;0;;
005;00:01 01-01-00;8520;2.0.5;0;8520-000.ekc;
```

• The first number is a code.
  Numbers below 100 are event codes. Numbers above 100 are error codes.
• The next number is the date and time of the event (It is the time set in the EKC that is used).
• Again, the next number is the last 4 digits of the controller's order number.
• Then comes the software version — e.g. 2.05
• And the address set in o03.
• Then the recipient's data. — Order number, address and "EKC".
• If the event is an error, the last number in the line (e.g. 182) will be information for Danfoss about where the error has occurred.

FC-SPMC