

# How to update firmware on EKE 1P (080G0325) with counter reset problem

## Description

We have identified an unfortunate design parameter in the EKE 1P software version 2.14 and older that under certain circumstances, can cause the product to reset its configuration to factory defaults after 32,000 hours of operation, followed by a power off. Upon such reset, the most likely outcome is that an alarm is triggered calling for action, and the controlled valve will not work.

After being factory reset, the controller can be reconfigured and will be fully functional again.

To rectify the issue, we recommend updating controller software to 2.15 or newer.

**Note:** By default, EKE 1P from the box is ready to be used as an extension module for AK-PC 572 with standard Danfoss valves. With this application EKE 1P requires only wiring on AI4 to select controller mode (high pressure or receiver valve) and selection one of Danfoss standard valve from AK-PC 572 menu. All other settings in the EKE 1P remain default.

In this case no further actions needed. After 32000 hours of operation and power off, settings will be reset. But after power on and initialization procedure, EKE 1P will be assigned with mode from AI4 and AK-PC 572 will write Danfoss valve type set in the controller before. So EKE 1P settings will resume its work and continue to operate as before.

If EKE 1P is used for other purpose e.g. as driver for AK-CC55 Single Coil or with user defined valves, please follow procedure below.

## Step 1: Backup of settings using the MMIGRS2 display

### Important: Make a backup of all relevant settings before updating controller!

Disconnect phone cable (code number 080G0075) for the RJ11 CAN port on EKE 1P if any is connected. Connect the MMIGRS2 display (code number 080G0294) to the RJ11 CAN port on EKE 1P (it takes can take about 2 minutes).

Connect termination loop between H and R on both Display and EKE driver (it takes about 3 minutes).

When the display is connected the display should read "Data" while the "wheel" is spinning.

When data is uploaded the settings can be accessed by pushing the enter button and hold it down for a few seconds. The display will probably ask for the Password which is 300 (Supervisor) by default.

If the display is not connecting, try this approach:

1. Hold the Enter button (↵) and X button (X) down on the MMIGRS2 display for 5 seconds allowing the BIOS main-menu to emerge (the software version of the display is shown briefly) (press X to see the software version again if needed).
2. Choose the menu "MCX selection"
  - a. choose the line "Clear UI" and push Enter
  - b. choose the line "AutoDetect" and push Enter
3. Choose the menu "COM selection"
  - c. choose the line "CAN" and push Enter
4. Choose the menu "Start-up mode"
  - d. choose the line "Remote application" and push Enter
5. Choose the menu "CAN"
  - e. choose the line "Baudrate" and choose the setting "Autobaud" and push Enter
  - f. choose the line "Node ID" and set the value to "126" and push Enter
  - g. choose the line "Active Nodes" where active nodes can be seen on the screen – the screen is updated every 2 seconds ("1" is the controller and "L" is the display address)
6. Go back to the main menu via Escape button (push twice).
7. Choose the menu "Application" and push Enter.
8. Now the display will start a new upload from the controller. This process will take approximately 5 minutes.

(It takes about 3 minutes to check the settings and 5 minutes to upload).

In the EKE 1P menu press the "Enter" button for approximately 3 seconds to access the setting menu. An access via a supervisor password might be required. The default password is "300".

**Make a note of settings in the menu consisting of:**

**Start/Stop**

- Main switch

**Device config**

- Mode
- AI valve input scale (only available if Mode=AI Valve)
- AI 0% OD (only available if AI valve input scale=User def.)
- AK 100% OD (only available if AI valve input scale=User def.)

**I/O**

- Output
  - Relay control (only available if Mode=AI Valve)
- Configure
  - DI1 Active at
  - DI2 Active at

**Alarm config.**

- Battery alarm

**Valve config.**

- Valve configuration
- Valve fallback OD
- Valve motor type (only available when Valve configuration=UserDef)
- Valve drive current (only available when Valve configuration=UserDef)
- Valve step positioning (only available when Valve configuration=UserDef)
- Valve total steps (only available when Valve configuration=UserDef)
- Valve speed (only available when Valve configuration=UserDef)
- Valve start speed (only available when Valve configuration=UserDef)
- Valve emergency speed (only available when Valve configuration=UserDef)
- Valve acceleration current (only available when Valve configuration=UserDef)
- Valve acceleration time (only available when Valve configuration=UserDef)
- Valve holding current (only available when Valve configuration=UserDef)
- Valve step mode (only available when Valve configuration=UserDef)
- Valve duty cycle (only available when Valve configuration=UserDef)
- Valve OD during stop
- Start backlash (only available when Valve configuration=UserDef)
- Compensation backlash (only available when Valve configuration=UserDef)
- Overdrive
- Overdrive enable OD
- Overdrive block time
- Valve excitation time after stop (only available when Valve configuration=UserDef)
- Valve neutral zone

**Communication**

- Controller adr.
- Can baudrate

Below there is an example of settings from the EKE 1P used as valve driver for an AK-CC55 Single Coil. We have made notes of the settings in the menu:

**Start/Stop**

- Main switch ON

**Device config**

- Mode AI valve
- AI valve input scale 0 -10 V

**System**

- Password 100, 200, 300

**I/O**

- **Output**
  - Relay control Auto
- **Configure**
  - DI1 Active at On
  - DI2 Active at On

**Alarm config.**

- Battery alarm EKE2U

**Valve config.**

- Valve configuration CCMT-3L
- Valve fallback OD 0 %
- Valve OD during stop 0 %
- Overdrive 5,0 %
- Overdrive enable OD 0 %
- Overdrive block time 0 min
- Valve neutral zone 0,5 %

**Communication**

- Controller adr. 1
- Can baudrate 50 k

(This registration takes about 6 minutes.)

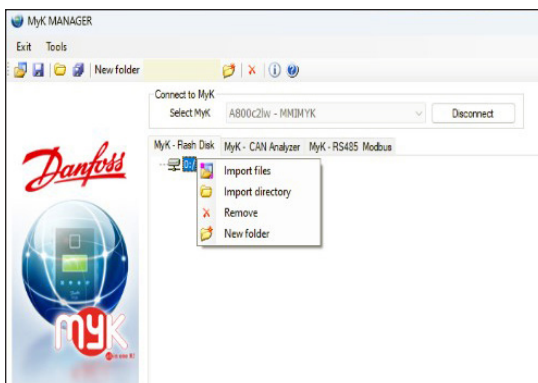
**Step 2: Update Firmware of EKE 1P with new version**

1. Get your MYK programmer ready, if you don't have one please contact your normal sales channel. Search for a Programming key, MMIMYK, 080G0073. For more information please refer to this site: [Danfoss Global Product Store](http://Danfoss Global Product Store).

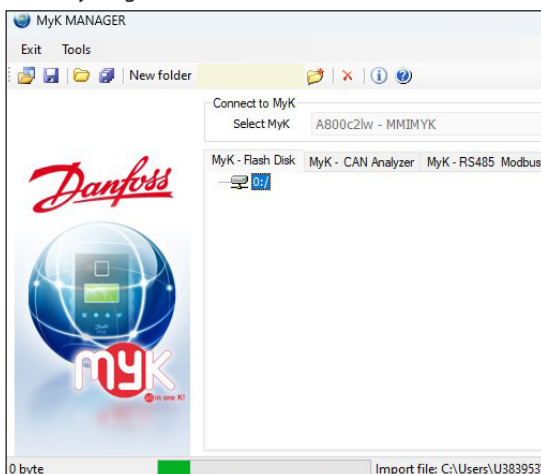
2. Install MYK Manager software.
3. Connect the MYK to your PC's USB-A port with a USB-A → MINI USB cable, and use a telephone cable to connect the MYK to the EKE 1P, you will need a RJ11 → RJ11 cable.

If there is CAN connection with AK-PC 572 and another EKE 1P controller, disconnect controller you are trying to update from that network and make sure it's connected only to MYK (one to one) with RJ11 cable.

4. Start the MYK software, press "Connect" and right click on your drive name and choose "import directory".



5. Choose the folder with the update from your PC (there should be 2 files in that folder app.pk and mmimyk.cfg).

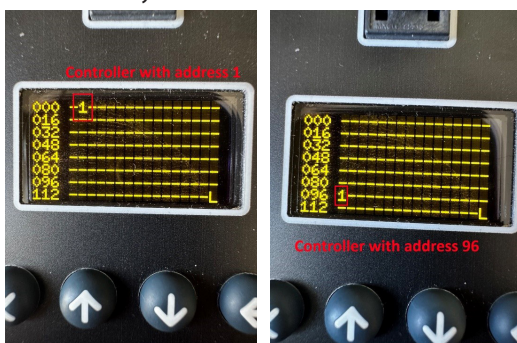


6. The green bar at the bottom of the windows shows the process of the files moving from the PC to the MYK.  
Make sure files were uploaded to MYK.
7. You are ready to update the EKE 1P.  
Make sure that you connected everything the right way, hold the MYK, log into the CAN SETTINGS.

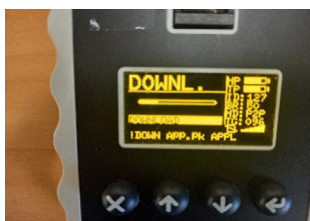


8. From the CAN SETTINGS choose ACTIVE NODES.
9. Here you will see a map of the connected devices, The L represent the MYK and 1 is the EKE, if you see only one of them then something is wrong (check cable, CAN addresses and CAN speed on both).

On two photos below you can see how controller with CAN address 1 and with CAN address 96 can be identify:



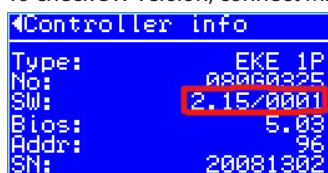
10. To start the programming process, go back to the main menu of the MYK (click 2 times on the X bottom) and choose PROGRAM.
11. Go down to TARGET SEL. And choose PEER2PEER.
12. After choosing the protocol you will be set back to the program menu, from here choose DOWNLOAD X:/ "folder name of the update" push Enter.
13. And in the next menu choose ALL and push Enter, now the program process will start (the bar in the middle shows the programming process).



14. When the bar is full, you will get a FINISHED message, now you are done.



15. To check SW version, connect MMIGRS2 display to the controller and go to controller info screen.



```
Controller info
Type:      EKE 1P
No:       080G0325
SW:       2.15/0001
Bios:     5.03
Addr:     36
SN:       20081302
```

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**Step 3: Restore backup of settings using the MMIGRS2 display**

Use the noted data from the backup to program the EKE 1P again using MMIGRS2 display.

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**Step 4: Start EKE 1P**

The Main switch will have to be set "ON". Please check this!

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**Step 5: Important**

When the Firmware has been updated it is very important that the EKE 1P module is registered and marked with new software version 2.15 e.g. "SW2.15". In this way we can all see that the module has been updated and considered to be OK!

**Danfoss A/S**

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