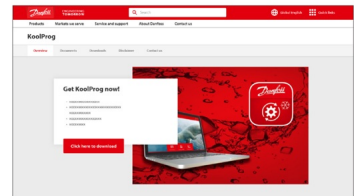


  
**KoolProg PC  
Software**



## Danfoss KoolProg PC Software User Guide

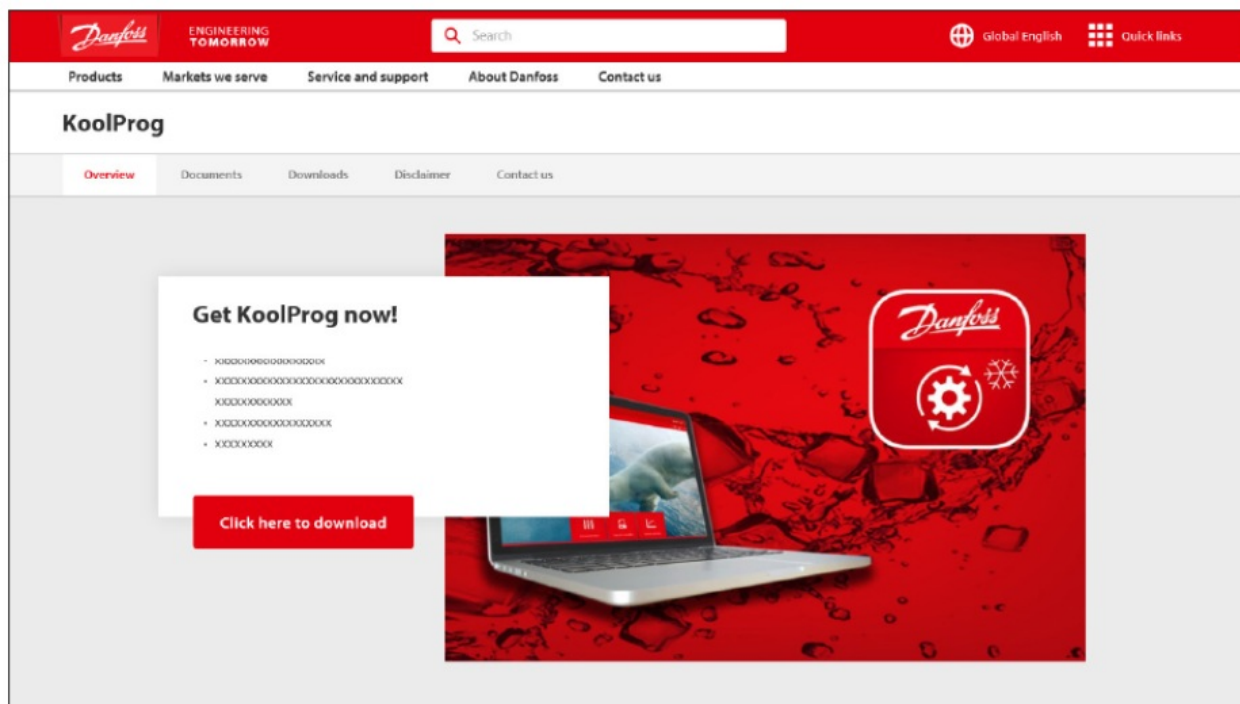
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**Danfoss KoolProg PC Software**



## Specifications

- Supported Danfoss products: ETC 1H, EETc/EETa, ERC 111/112/113, ERC 211/213/214, EKE 1A/B/C, AK-CC55, EKF 1A/2A, EIM 365, EKE 100, EKC 22x
- Operating System: Windows 10 or Windows 11, 64 bit
- RAM: 8 GB RAM
- Hard Drive Space: 200 GB
- Required software: MS Office 2010 and above
- Interface: USB 3.0

## Introduction

Configuring and testing the Danfoss electronic controllers has never been as easy as with the new KoolProg PC software.

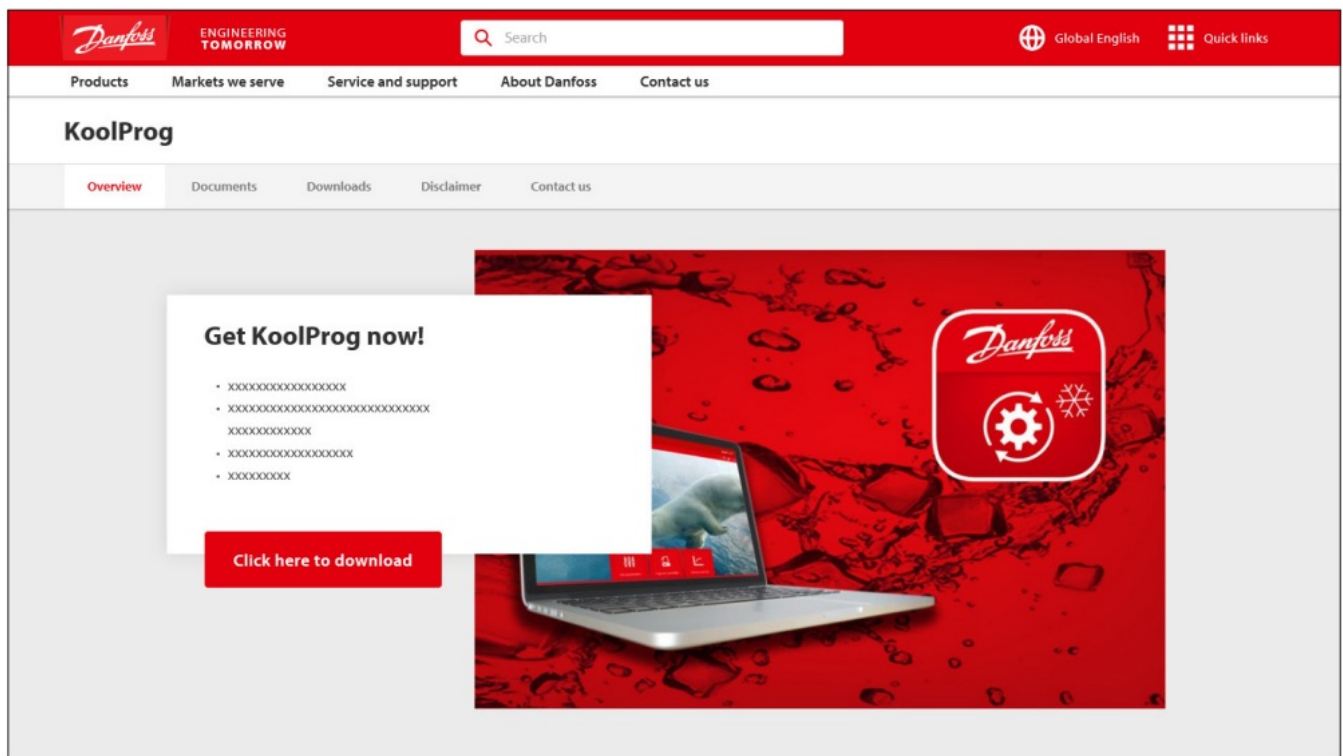
With one KoolProg software, you can now take advantage of new intuitive features such as the selection of favorite parameter lists, writing on-line as well as off-line program files, and monitoring or simulating alarm status activities. These are only some of the new features that will minimize the time R&D and production will spend on development, programming, and testing the Danfoss range of commercial refrigeration controllers.

Supported Danfoss products: ETC 1H, EETc/EETa, ERC 111/112/113, ERC 211/213/214, EKE 1A/B/C, AK-CC55, EKF 1A/2A, EIM 365, EKE 100, EKC 22x.

The following instructions will guide you through the installation and first time usage of KoolProg®.

### Downloading .exe file

Download KoolProgSetup.exe file from the location: <http://koolprog.danfoss.com>



## System requirements

This software is intended for a single user and recommended system requirements as below.

<b>OS</b>	Windows 10 or Windows 11, 64 bit
<b>RAM</b>	8 GB RAM
<b>HD Space</b>	200 GB and 250 GB
<b>Required software</b>	MS Office 2010 and above
<b>Interface</b>	USB 3.0

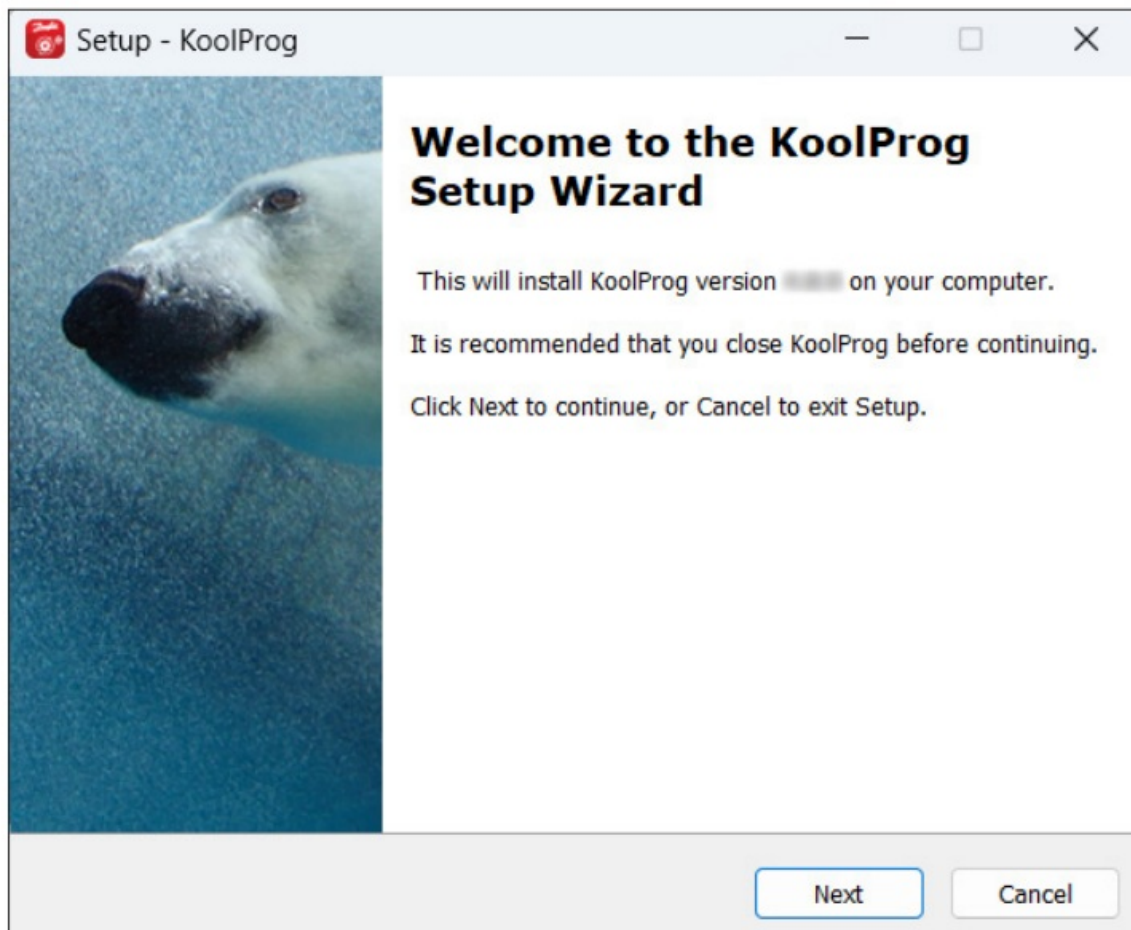
Macintosh operating system is not supported.

Running the set-up directly from a Windows server or network file server is not recommended.

## Installing software

Double click on the KoolProg® set-up icon.

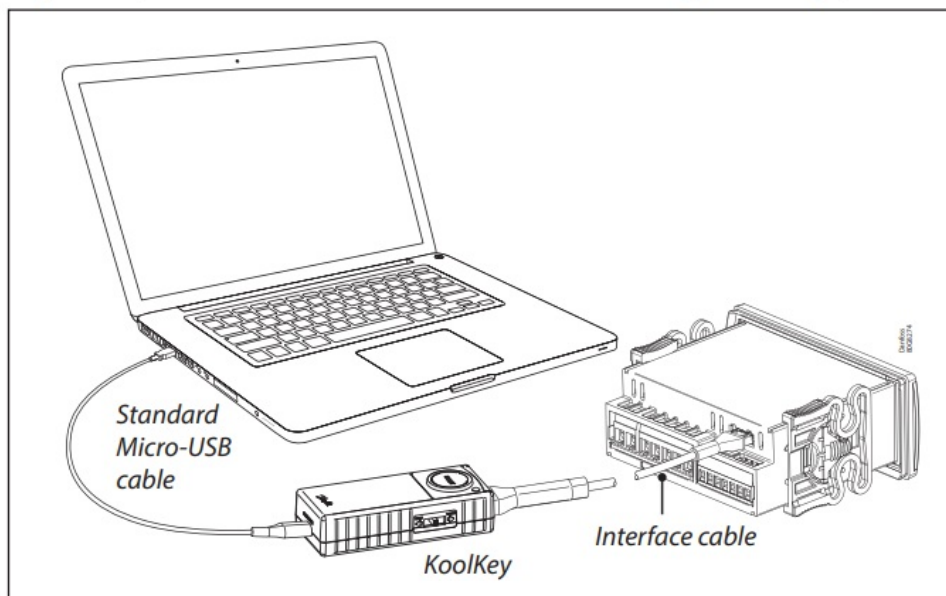
Run the installation wizard and follow the on-screen instructions to complete the KoolProg® installation.



**Note:** If you encounter a “Security warning” during installation, please click on “Install this driver software anyway”.

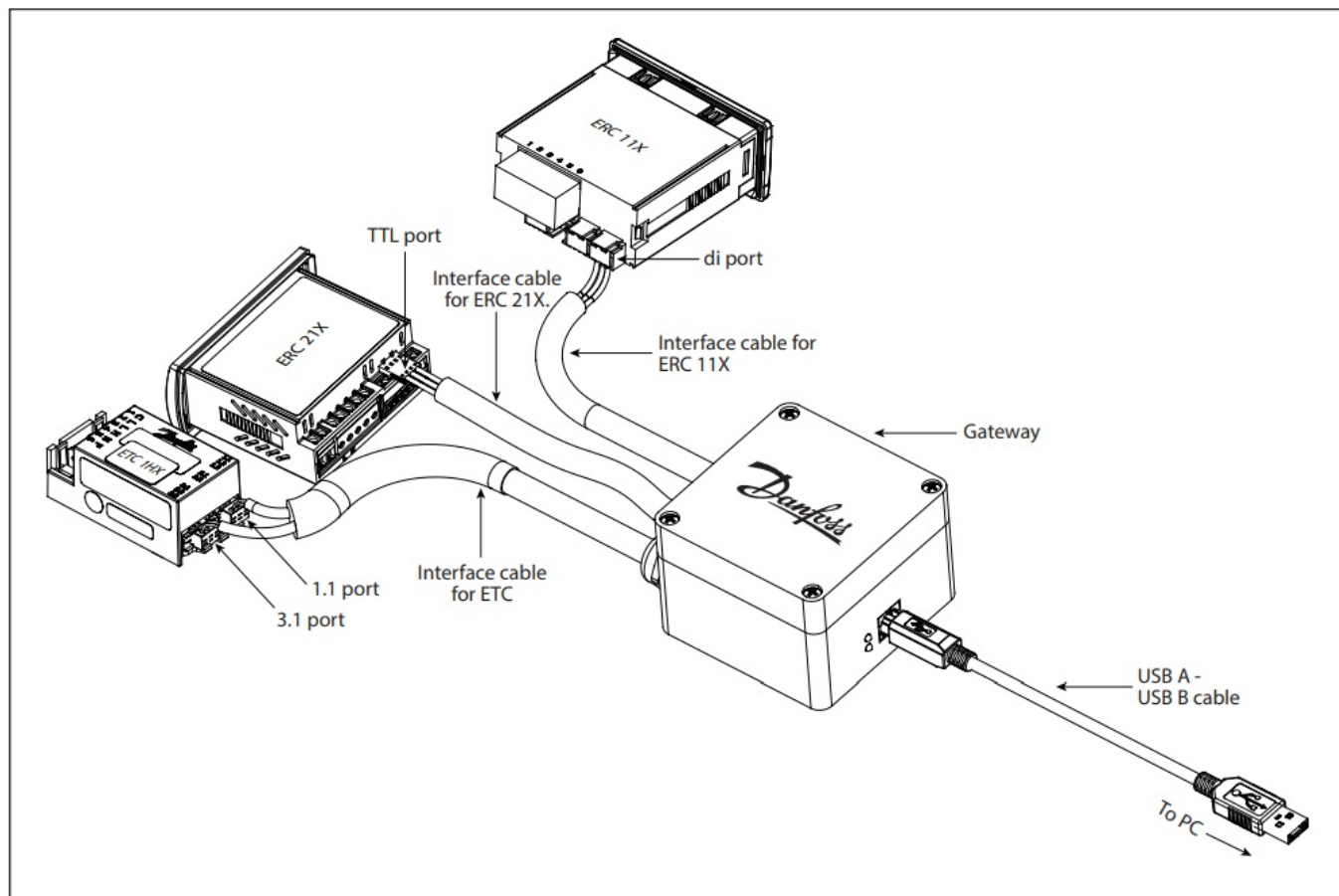
### Connection with controllers

**Fig 1: EET, ERC21x and ERC11x controllers using KoolKey (code no. 080N0020) as a Gateway**



1. Connect the KoolKey to the PC's USB port using standard micro USB cable.
2. Connect the controller to KoolKey using an interface cable of respective controller.

**Fig 2: ERC11x, ERC21x and ETC1Hx using Danfoss Gateway (code no. 080G9711)**

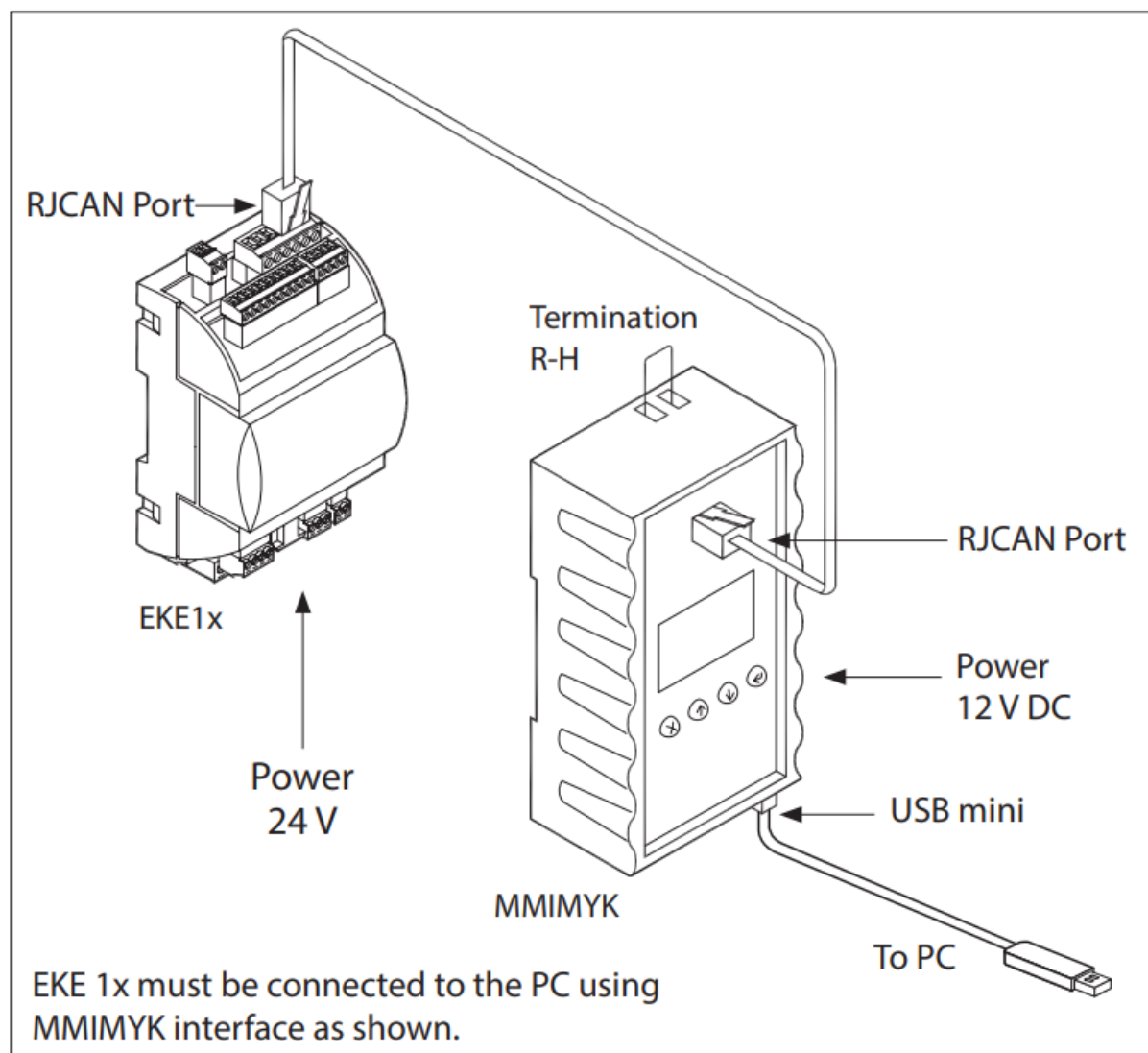


1. Connect the USB cable to the PC's USB port.
2. Connect the controller using respective cable.

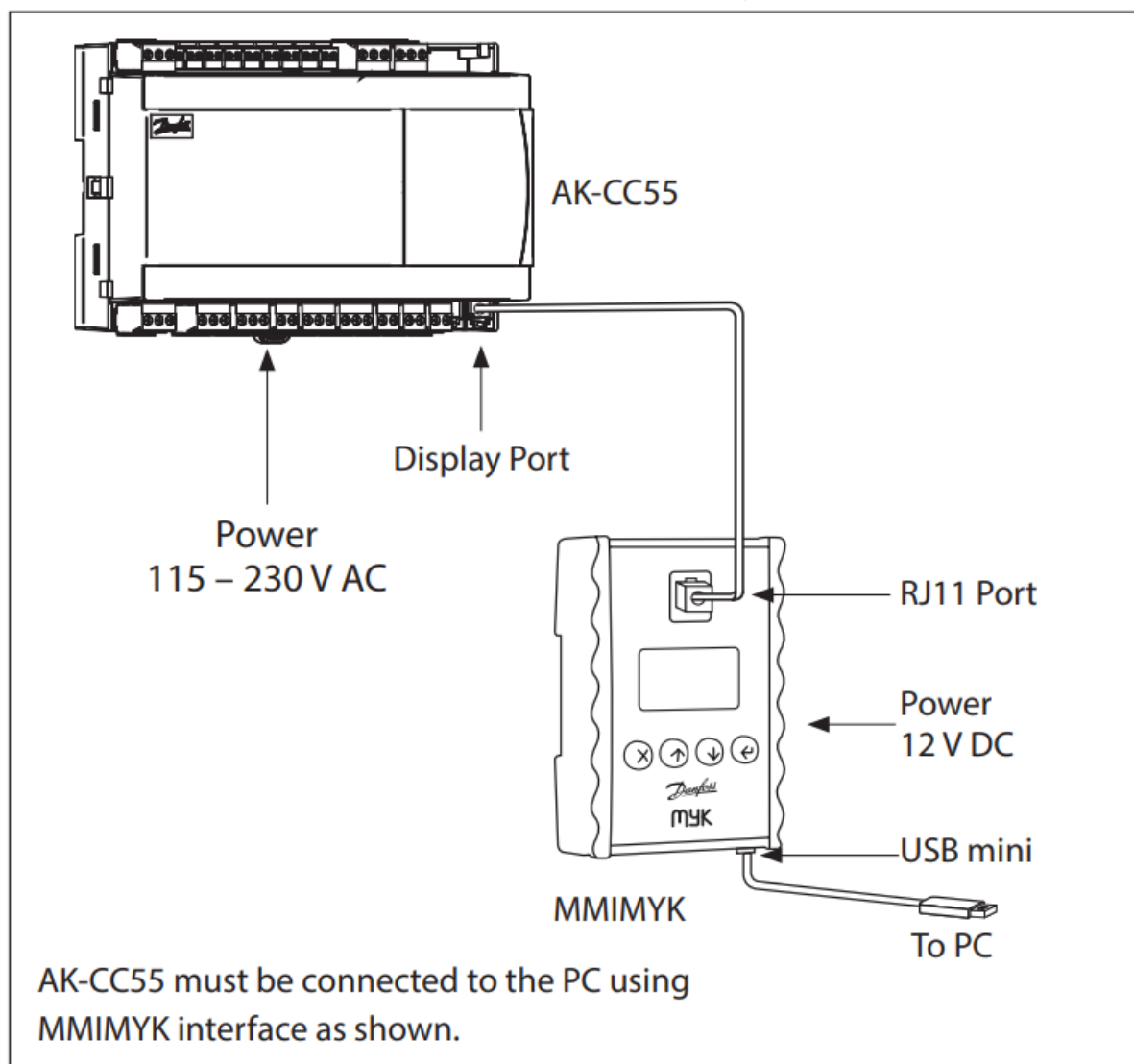
**CAUTION:** Please ensure that only one controller is connected at any time.

For more details on programming setting file to controller using KoolKey and Mass Programming Key please refer following links: KoolKey (EKA200) and Mass Programming Key (EKA201).

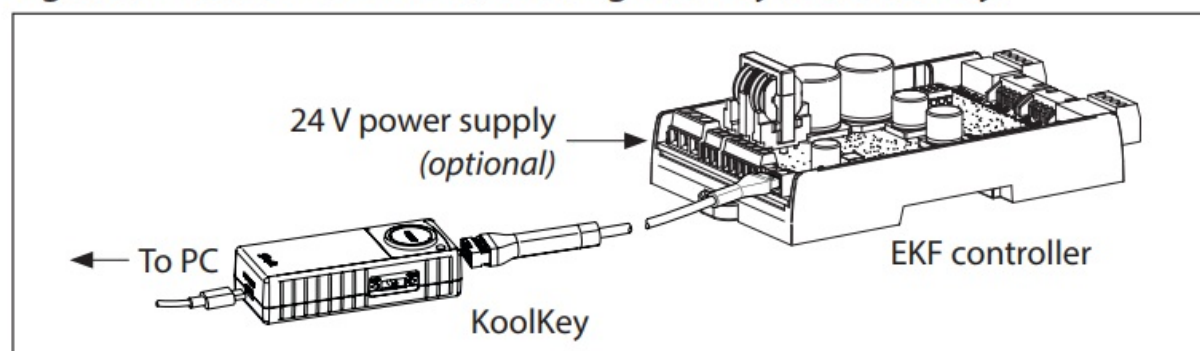
**Fig 3: Connection for EKE using interface type MMIMYK (code no. 080G0073)**



**Fig 4: Connection for AK-CC55 using interface type MMIMYK (Code No. 080G0073)**

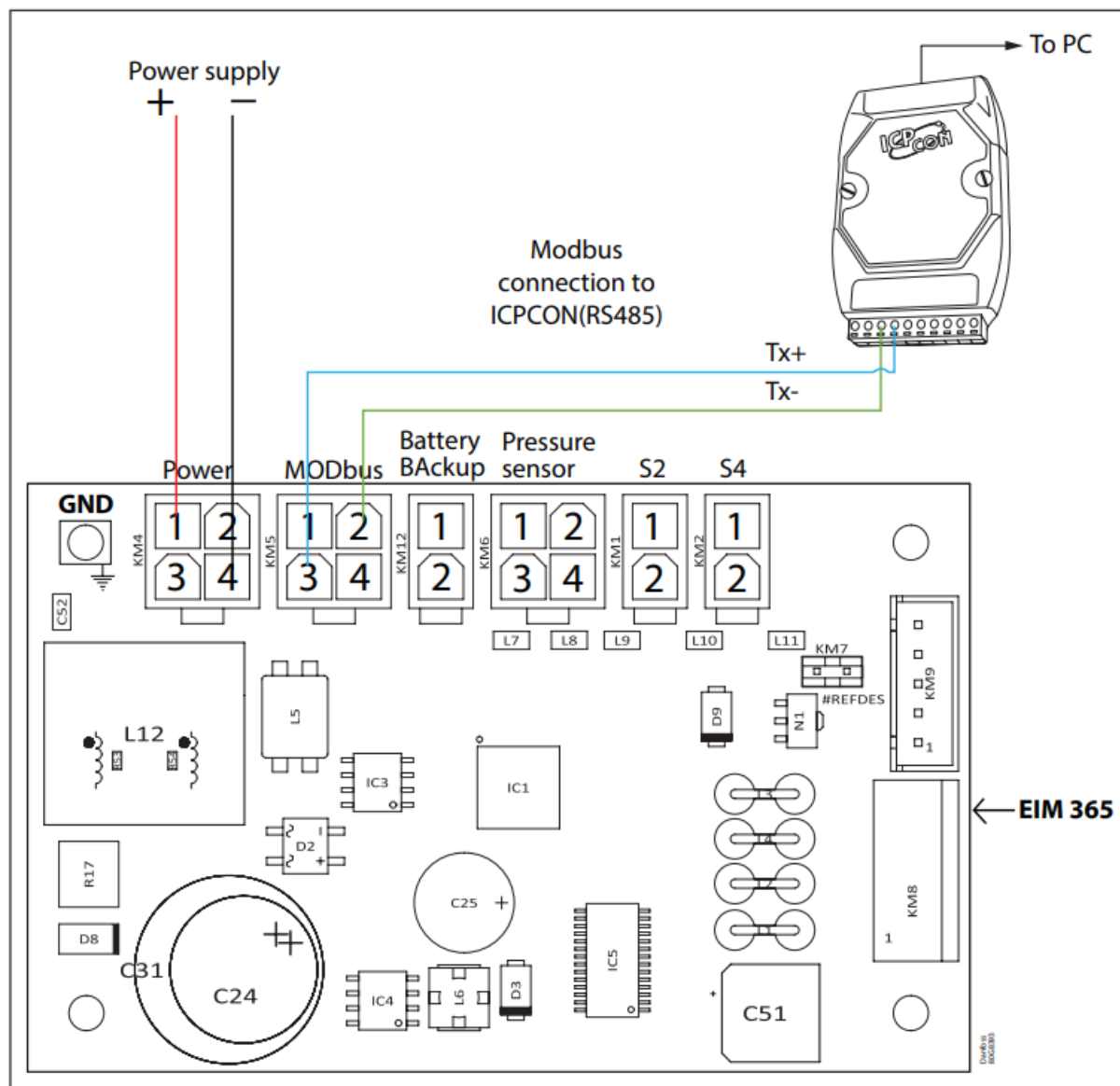


**Fig 5: Connection for EKF1A/2A using KoolKey as a Gateway.**

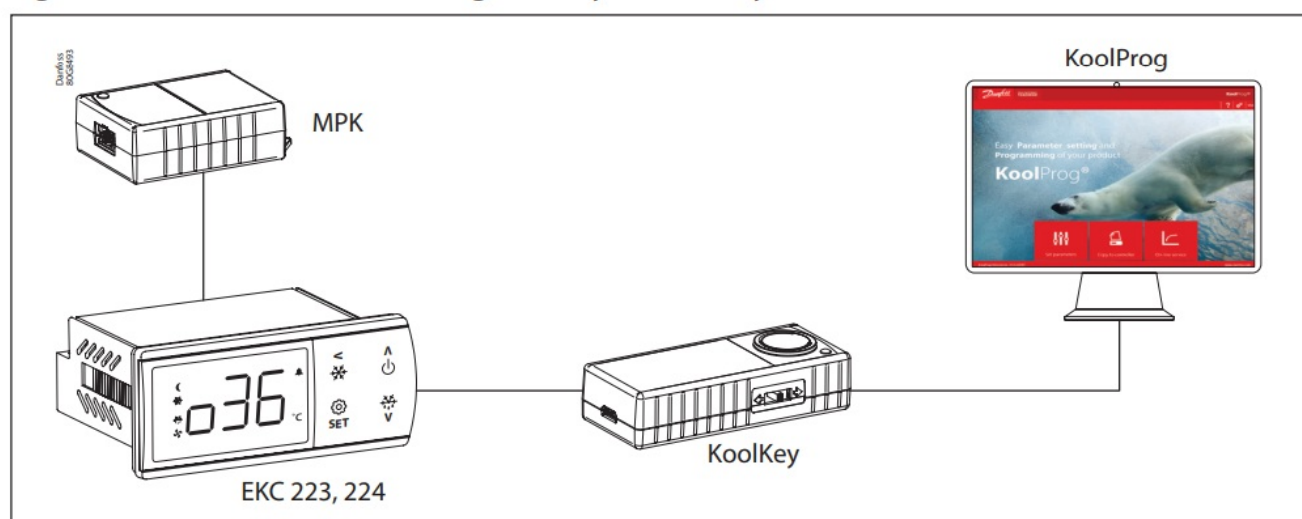




**Fig 6: Connection for EIM365 using ICPCON**



**Fig 7: Connection for EKC 22x using KoolKey as Gateway**



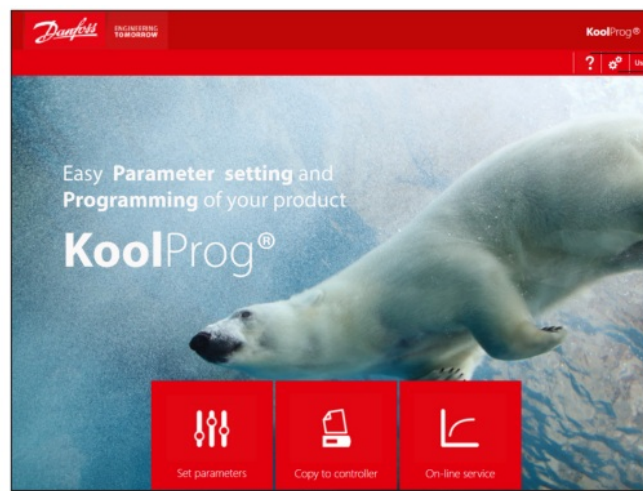
**Starting the program**



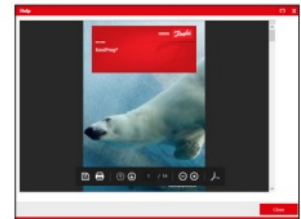
## 6. Starting the program



Double click on the desktop icon to launch the KoolProg application.



Help



Preferences

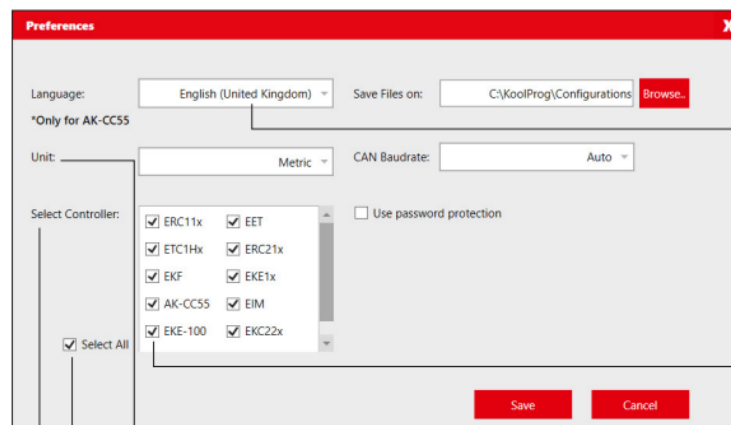


### The program's features

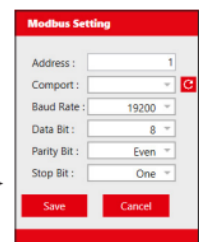
To create new parameter setting files either by importing them from the controller or off-line.

To program the parameter setting file and upgrade firmware in the connected controller.

To edit settings/trend graphs of the controller parameters in real-time.



Choose the preferred language



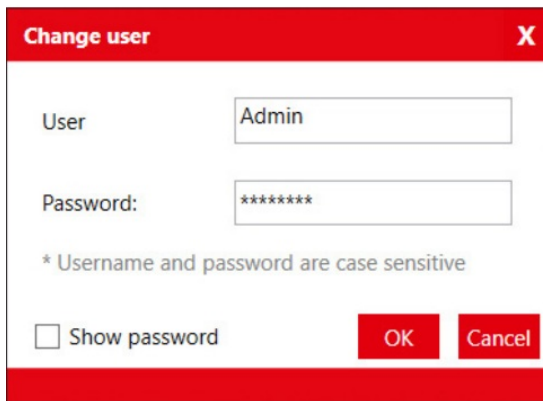
Select the units you prefer to work with: Metric (°C and bar), Imperial (°F and PSI)

When 'Select All' checkbox is enabled, it will select all the controllers in the controller group.

Select the controller type you are using. By default all controller types are selected, however by selecting only the controller type you are connecting will reduce the connection time.

## Accessibility

- Users with a password have access to all features.
- Users without a password have limited access and may only be able to use the 'Copy to controller' feature.



**Change user** [X]

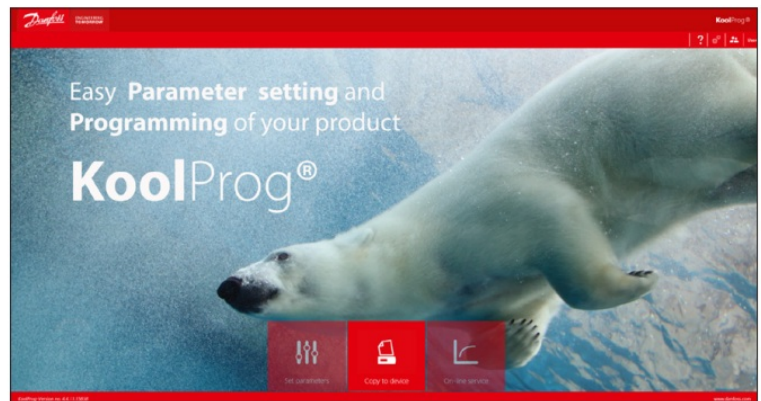
User:

Password:

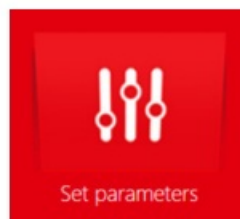
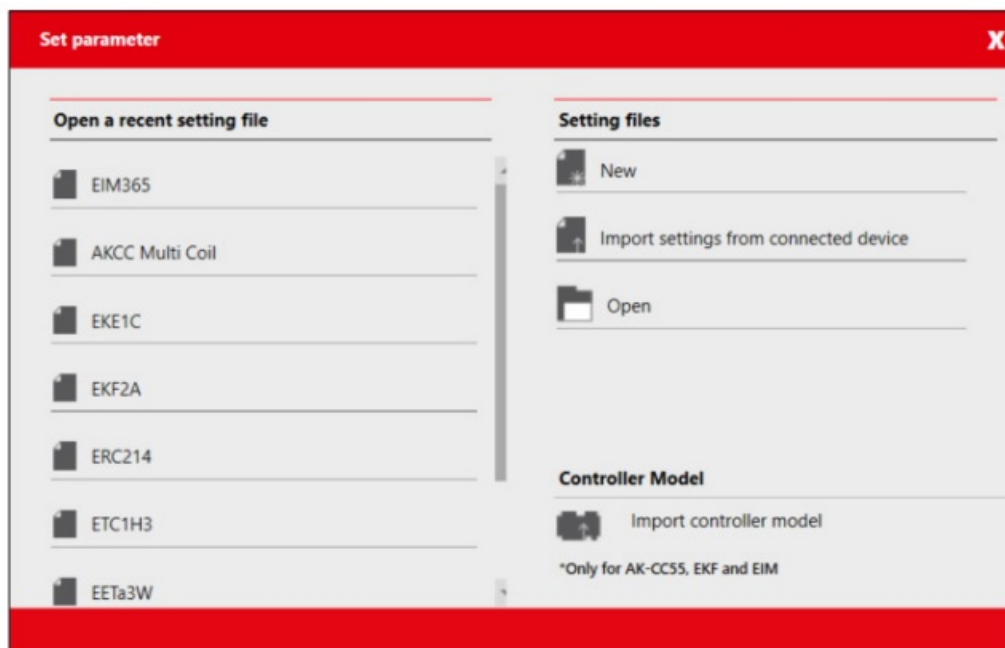
\* Username and password are case sensitive

☐ Show password

**OK** **Cancel**



## Set parameters

**Set parameter** [X]

**Open a recent setting file**

- EIM365
- AKCC Multi Coil
- EKE1C
- EKF2A
- ERC214
- ETC1H3
- EETa3W

**Setting files**

- New
- Import settings from connected device
- Open

**Controller Model**

- Import controller model

\*Only for AK-CC55, EKF and EIM

This feature allows you to configure parameter settings for your application.

Click one of the icons in the right column to either create a fresh configuration off-line, to import settings from a connected controller or to open an already saved project.

You can see projects you have already created under "Open a recent setting file".

### New

Create a new project by selecting:

- Controller type
- Part number (code number)
- PV (product version) number
- SW (software) version

Once you have selected a file, you need to name the project. Click 'Finish' to proceed to view and set parameters.

**New project**

Select controller model

▶ ERC11x

▶ EET

▶ ETC1Hx

▶ ERC21x

▶ EKF

▶ EKE1x

▶ AK-CC55

▶ EIM

▶ EKE-100

▶ EKC22x

**New project**

Give your project a good description and part number to identify it later


Code Number: 080G3239-GDM(RED LE)

Product Version: PV01

**Give your project filename and description**

Project Name (Max 20 Characters) \*

Project Description (Max 250 Characters)

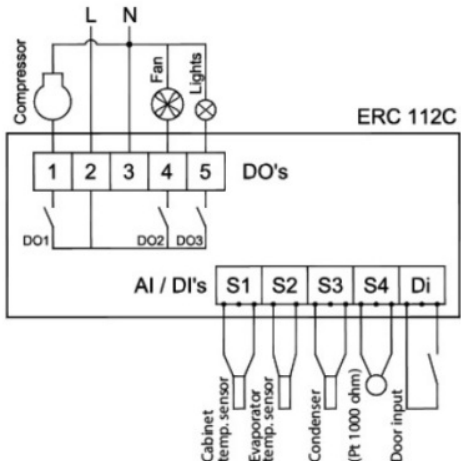


The ERC 112C is a multipurpose refrigeration controller that includes temperature and defrost management. Cutting overall total cost level, it meets the requirements of today's advanced commercial applications. The ERC is perfect for refrigerated and heating restaurant equipment, bottle coolers, stainless steel refrigerators & freezers, beer coolers, light supermarket applications and many other uses.

Input/ Output highlights:

- 5 inputs, 4 configurable and 1 digital

**ERC112C**  
100 - 240 Va.c. SMPS



ERC 112C

Compressor, Fan, Lights, DO's, AI / DI's

1 2 3 4 5

DO1 DO2 DO3

S1 S2 S3 S4 Di

Cabinet temp. sensor, Evaporator temp. sensor, Condenser (Pt 1000 ohm), Door input

< BACK

FINISH

CANCEL

**Note:** Only standard code numbers are available to choose from in the "Code Number" field. To work off-line with a non-standard code number (customer specific code number), use one of the following two methods:

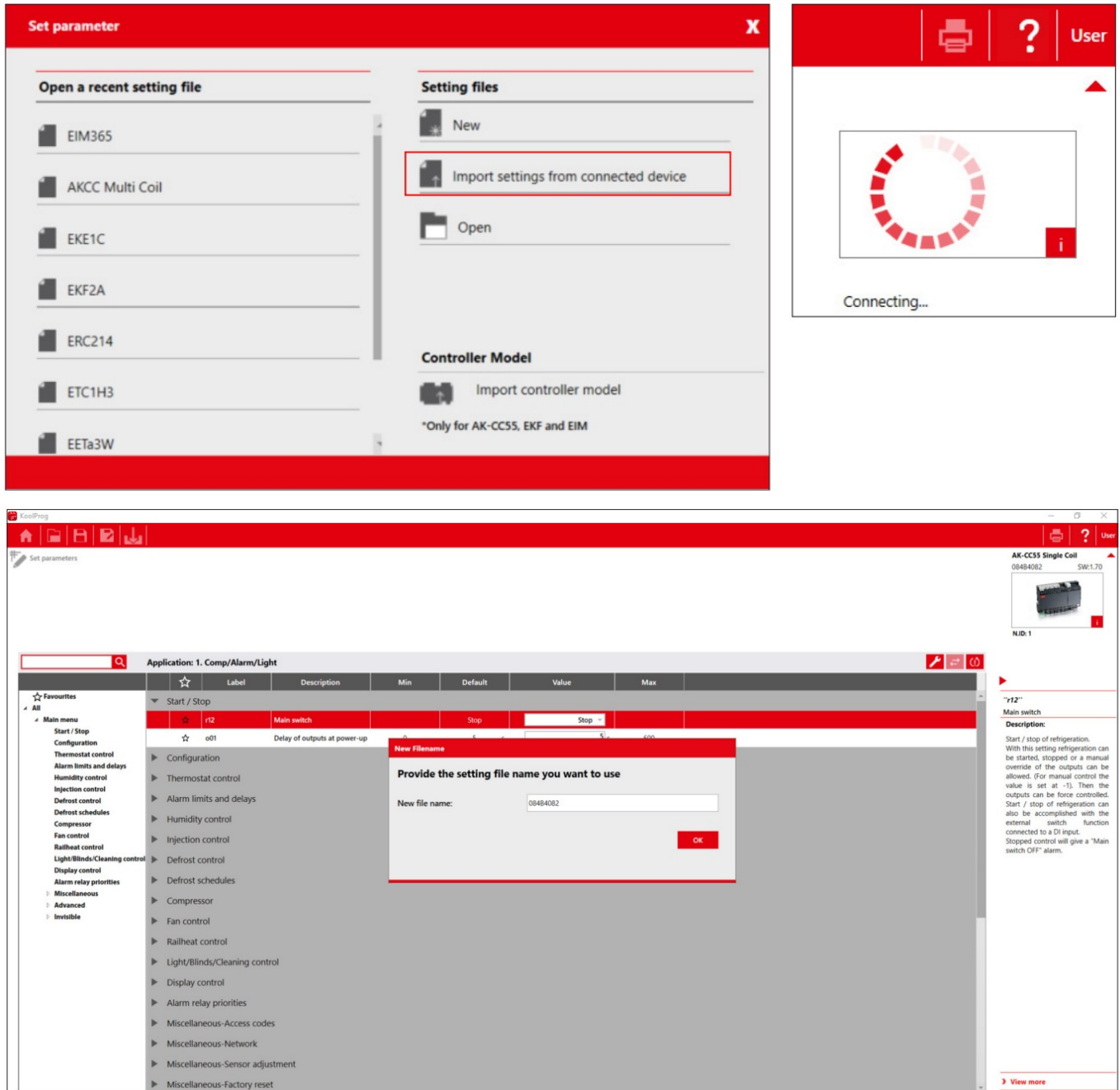
1. Connect the controller of same code number with KoolProg using Gateway, and use "Import settings from Controller" to create a configuration file from it.

2. Use “Open” feature to open an existing locally saved file on your PC of same code number and create a new file from it.

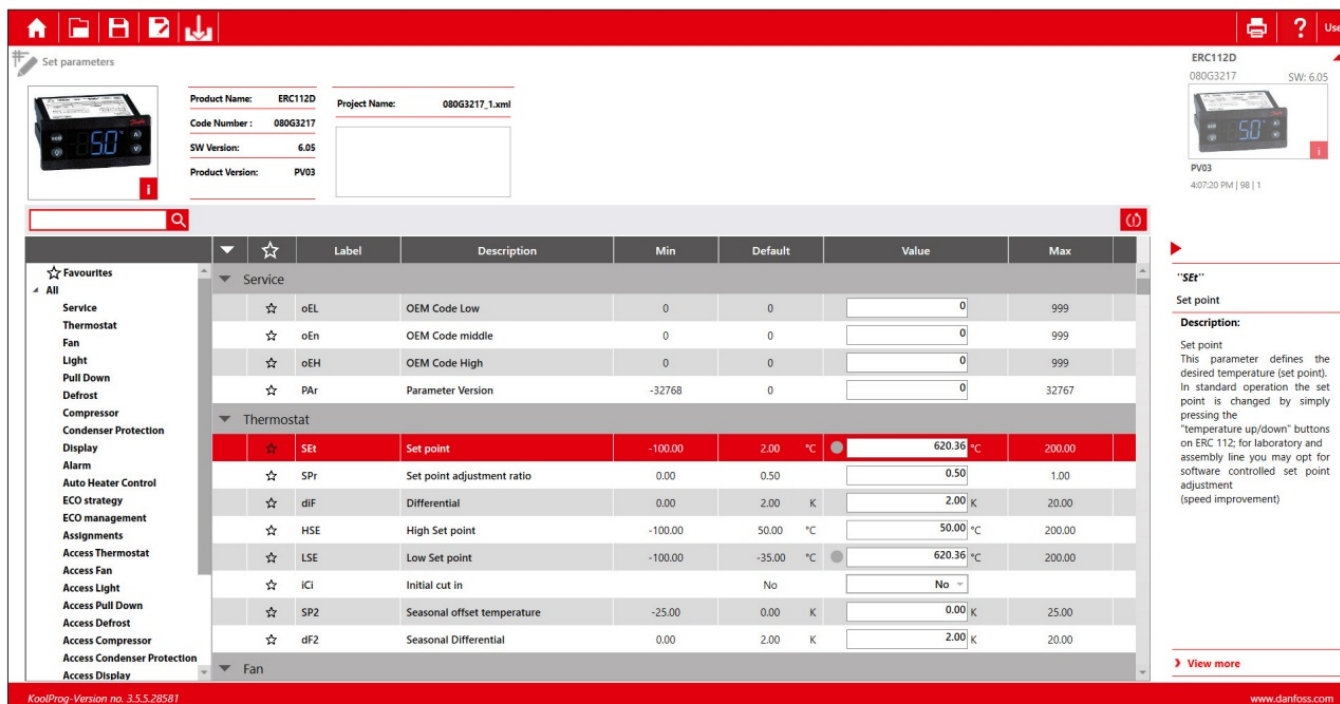
The new file, saved on your PC locally, can be accessed offline in future without having to connect the controller.

### Import settings from controller

Allows you to import a configuration from a connected controller to KoolProg and to modify the parameters offline. Select “Import settings from controller” to import all parameters and the details from the connected controller to the PC.



After “Import completed”, save the imported setting file by providing the file name in the pop-up message box.



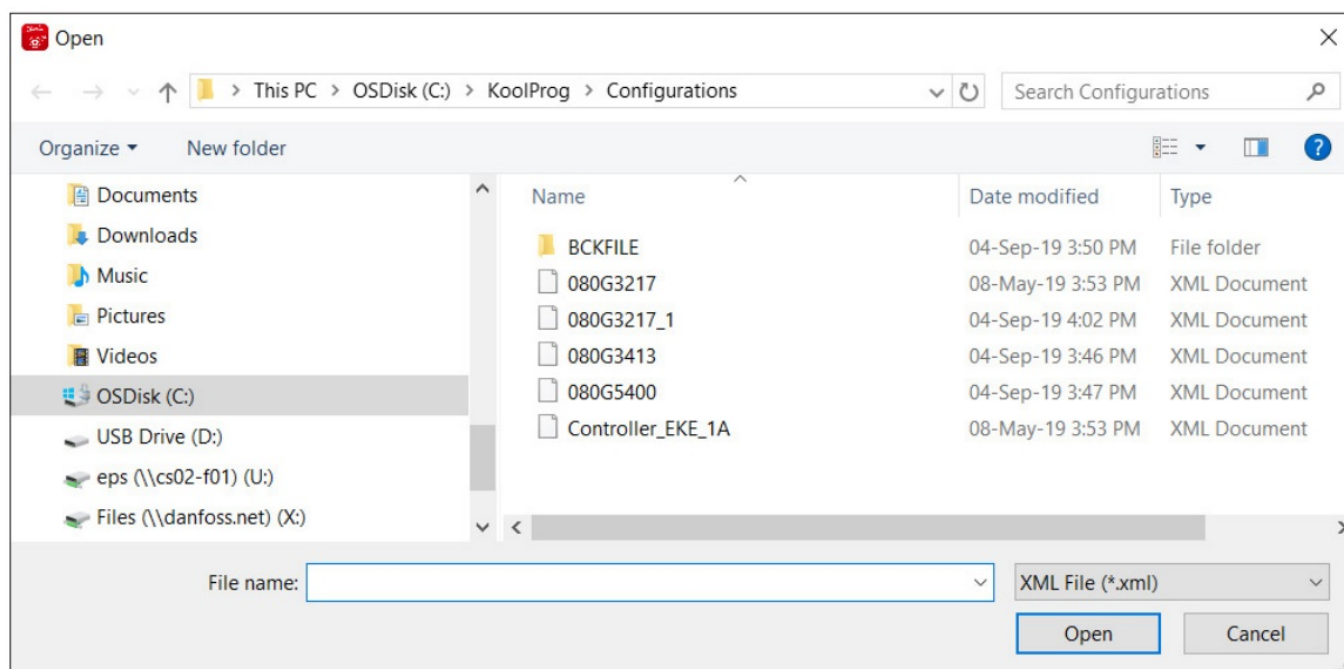
Now the parameter settings can be worked upon offline and can be written back to the controller by pressing



“Export”. While working offline, the connected controller is shown grayed out and changed parameter values are not written to the controller until the export button is pressed.



Open



The “Open” command lets you open setting files already saved to the computer. Once the command is clicked, a window will appear with a list of saved setting files.

All projects are stored here in the folder: “KoolProg/Configurations” by default. You can change the default file





saving location in “Preferences” .

You can also open the setting files you have received from another source and saved in any folder using the browse option. Please note that KoolProg supports multiple file formats (xml, cbk) for different controllers. select the appropriate setting file format of the controller you are using.

**Note:** the .erc /.dpf format files of the ERC/ETC controller are not visible here. An .erc or .dpf file saved on your PC can be opened in one of the following ways:

1. Select “New Project” and go all the way to the Parameter list view of the same controller model. Select the



Open button to browse and open the .erc/.dpf file on your PC.

2. Select “Upload from controller” if you are connected to the same controller on-line and go to the parameter list

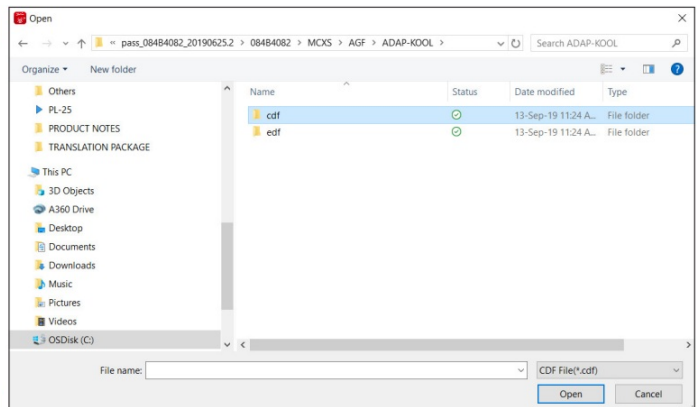
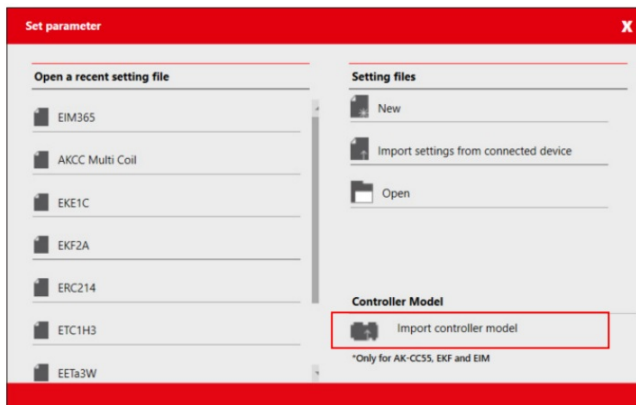


view. Select Open button to browse the desired .erc/.dpf file and view it in KoolProg.

3. Select “Open” to open any other .xml file of the same controller, reach the parameter list view screen, and there select the Open button to browse and select the .erc/.dpf file to view and edit these files.






### Import controller model (only for AK-CC55, EKF and EIM):

This allows you to import the controller model (.cdf) offline and generate a database in KoolProg. This will allow you to create a setting file offline without having the controller connected to KoolProg. KoolProg can import the controller model (.cdf) saved to the PC or any storage device.



continued

#### Headline

-  Home: The "Home" command will take you back to the Start Menu.
-  Open: The "Open" command lets you open an existing project.
-  Save: The "Save" command lets you save all the changes in the active project.
-  Save as: The "Save as" command allows you to save your controller settings as a new project.
-  Export: This command copies the parameter settings to the connected controller.

#### Informational Photos

The project's data is shown on the left.  
The controller the program is connected to is shown on the right.

i = Controller information.

If the data are identical, these can then be transmitted to the controller.  
If they are **not** identical, then these cannot be transmitted. A warning message pops up.

By clicking the 'Print' icon, you can take print of the parameters in the active project.

#### Arrow Up/Down

By clicking the arrow, you can hide the two photos and display more parameters in the window.  
Clicking it again causes the photos to re-appear.

#### Factory reset

This command will reset the project/controller values to default factory settings.

#### Arrow Left/Right

By clicking the arrow, you can hide the description of the selected parameters.  
Clicking it again causes the description to re-appear.

#### View more

This command gives the complete technical description of the controller.

#### Convert setting files

(only for AK-CC55 and ERC 11x):

To convert setting files from one SW version to another SW version of same controller type.

#### Quick set-up wizard (only for AK-CC55):

Helps to set up the controller quickly by configuring a few critical parameters and starting the system.

#### Parameter settings field

#### Dot Symbol

A dot symbol will appear in front of a value if it has been modified and is no longer identical to its factory default setting.

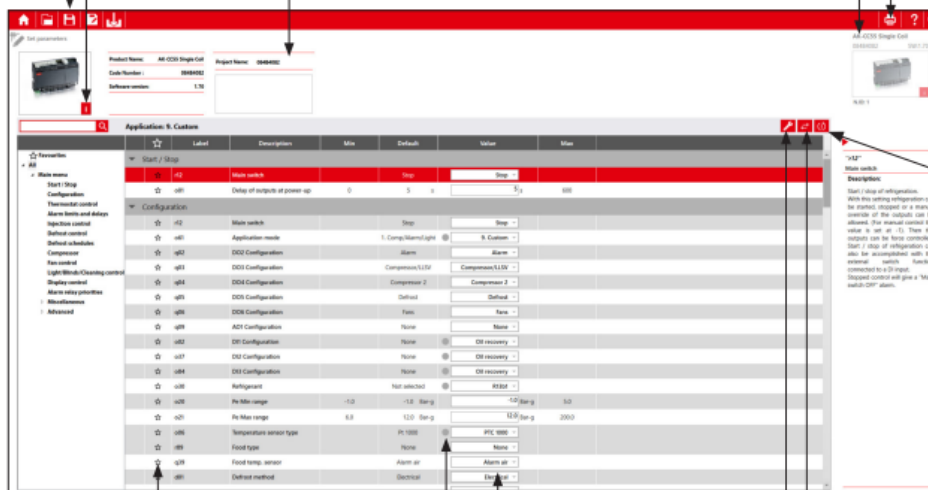
#### Hint - Search Function

You can search for and display a specific parameter with the search function.  
Type in the first few letters of the name of the parameter and click "Search".

#### Favourites

You can select a number of parameters by ticking the ones you want in the "stars" column.

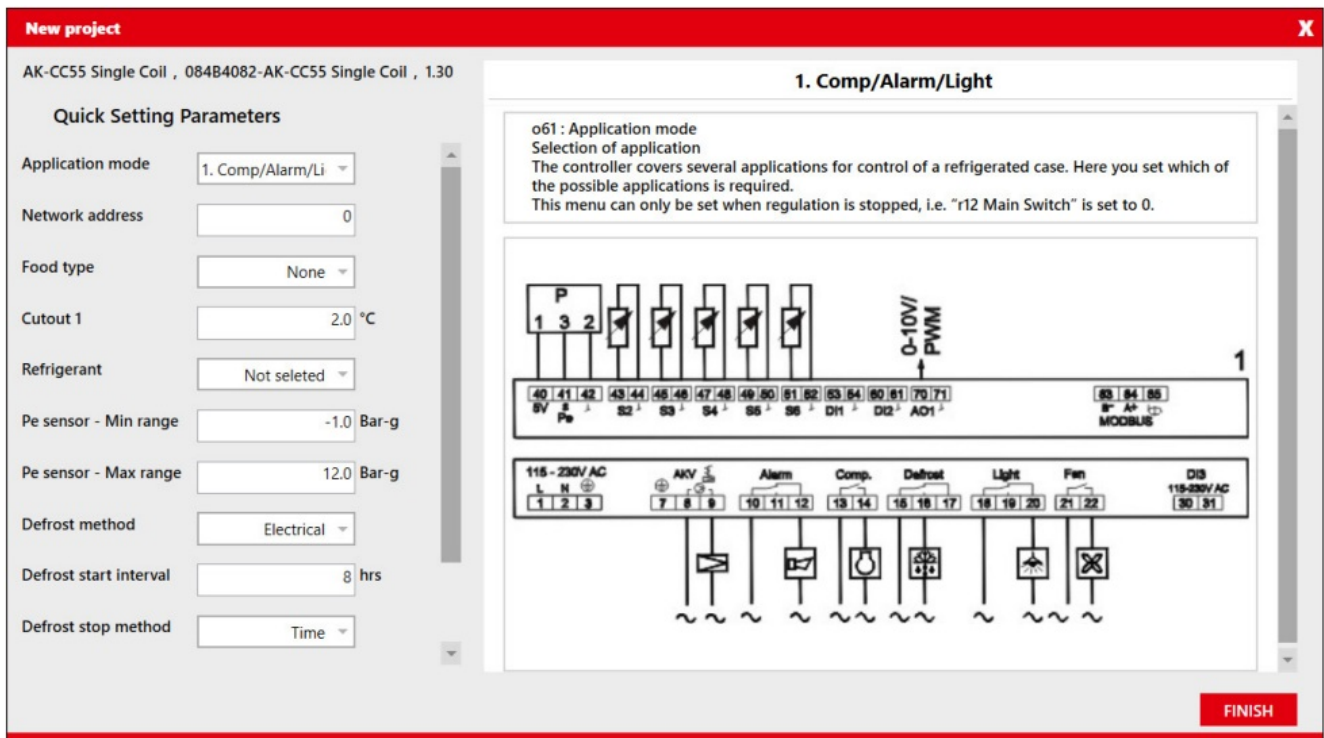
Afterwards they will be visible in the "Favourites" folder (first column at the top).



## Quick set-up wizard (only for AK-CC55 and EKC 22x):


The user can run the quick set-up both off-line and on-line to set up the controller for the required application before moving on to the detailed parameter settings.

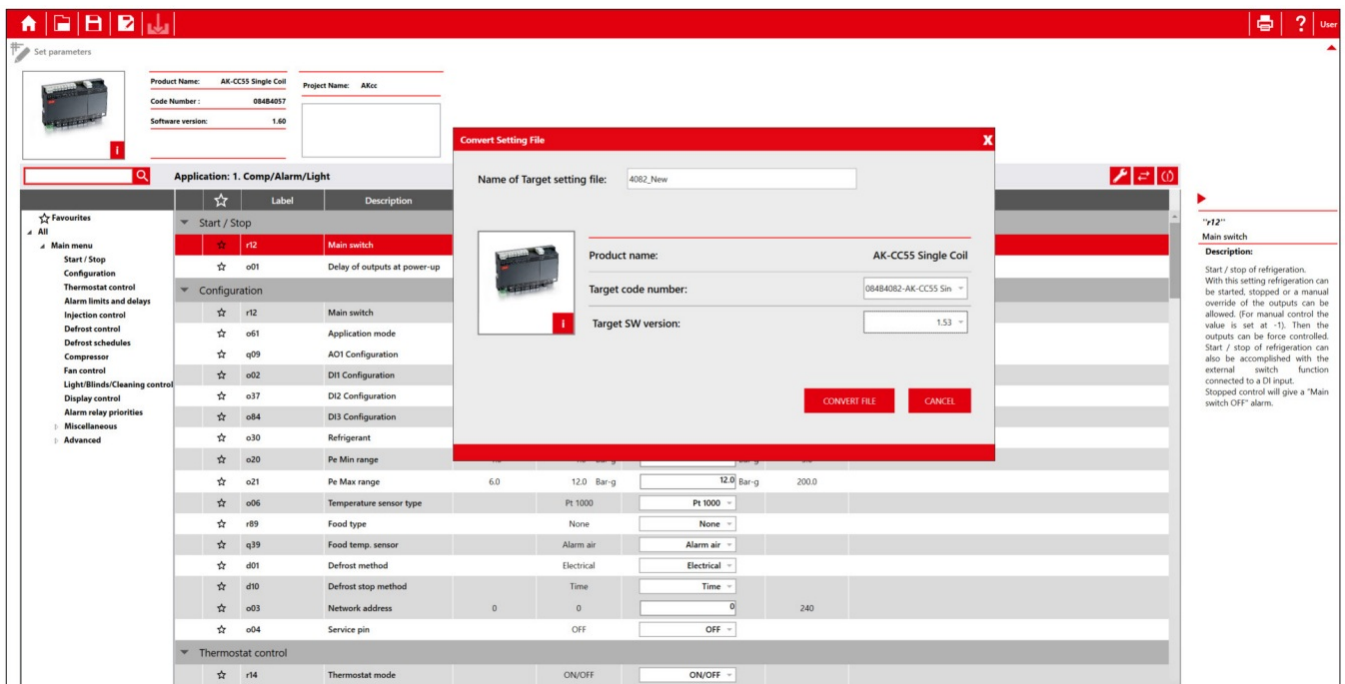




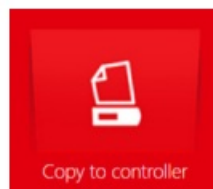
### Convert setting files (only for AK-CC55 and ERC 11x):

The user can convert the setting files from one software version to another software version of same controller type and can convert settings from both ways (lower to higher SW version and higher to lower SW version).

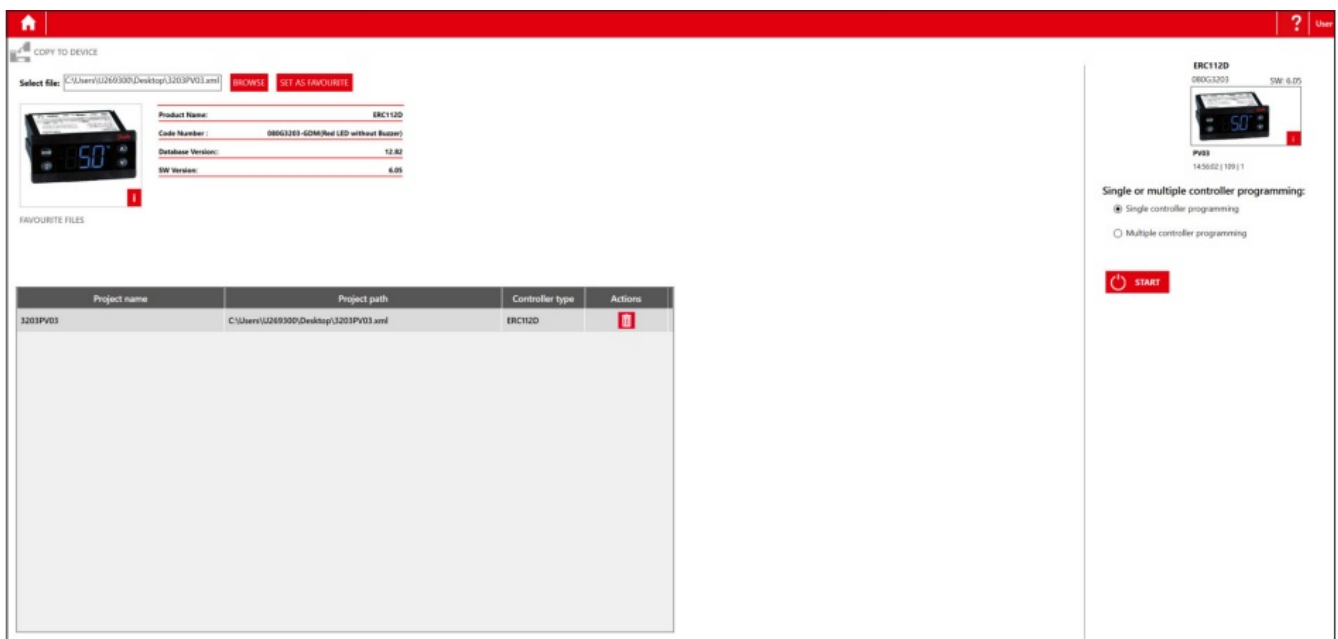
1. Open the setting file which needs to be converted in KoolProg under "Set parameter".
2. Click on convert setting .
3. Select the project name, code number and SW version / Product version of the setting file that needs to be generated and click OK.
4. A pop-up message with summary of conversion will be displayed at the end of conversion.
5. Converted file is displayed on the screen. Any parameters with orange dot indicates that the value of that parameter is not copied from the source file. It is suggested to review those parameters and make the necessary changes before closing the file, if required.



## Copy to device



Here you can copy the setting files to the connected controller as well as upgrade the controller Firmware. The firmware upgrade feature is only available for the selected controller model.



Copy the setting files: Select the setting file you want to program with the “BROWSE” command. You can save a setting file in “Favorite Files” by clicking on the “Set as Favourite” button. The project will be added to the list and can be easily accessed later. (Click on the trash icon to remove a project from the list). Once you have selected a setting file, the key details of the selected file are displayed.

The key details of the selected setting file are shown here.

The key details of the connected controller are shown here.

Please ensure that the connected controller's details match with the selected setting file.

The screenshot shows the KoolProg software interface. On the left, under 'COPY TO DEVICE', there is a 'Select file:' field with the path 'C:\KoolProg\Configurations\EKE 1B backup'. Below this is a 'FAVOURITE FILES' table with columns: Project name, Project path, Controller type, and Actions. The table contains one entry: 'EKE 1B backup file', 'C:\KoolProg\Configurations\EKE 1B backup file.xml', 'EKE 1B', and a trash icon. On the right, under 'EKE 1B', there is a controller icon and details: '080G5350', 'NID: 11', and 'PV: PV03'. Below this, there is a 'Single or multiple controller programming:' section with two radio buttons: 'Single controller programming' (selected) and 'Multiple controller programming'. At the bottom right, there is a red 'START' button.

If the project file and the connected controller match, data from the project file will be transmitted to the controller when you click the "START" button.

The program checks whether data can be transmitted.  
If not, a warning message pops up.

### Multiple Controller Programming

If you want to program multiple controllers with the same settings, use "Multiple Controller Programming."

Set the number of controllers to be programmed, connect the controller and click "START" to program the file - wait for the data to be transferred.

Connect the next controller and click "START" again.

Single or multiple controller programming:

- ☐ Single controller programming  
☒ Multiple controller programming

Set Counter:

- ☒ CountUp Timer(0-...)   
☐ Countdown Timer(∞-0)

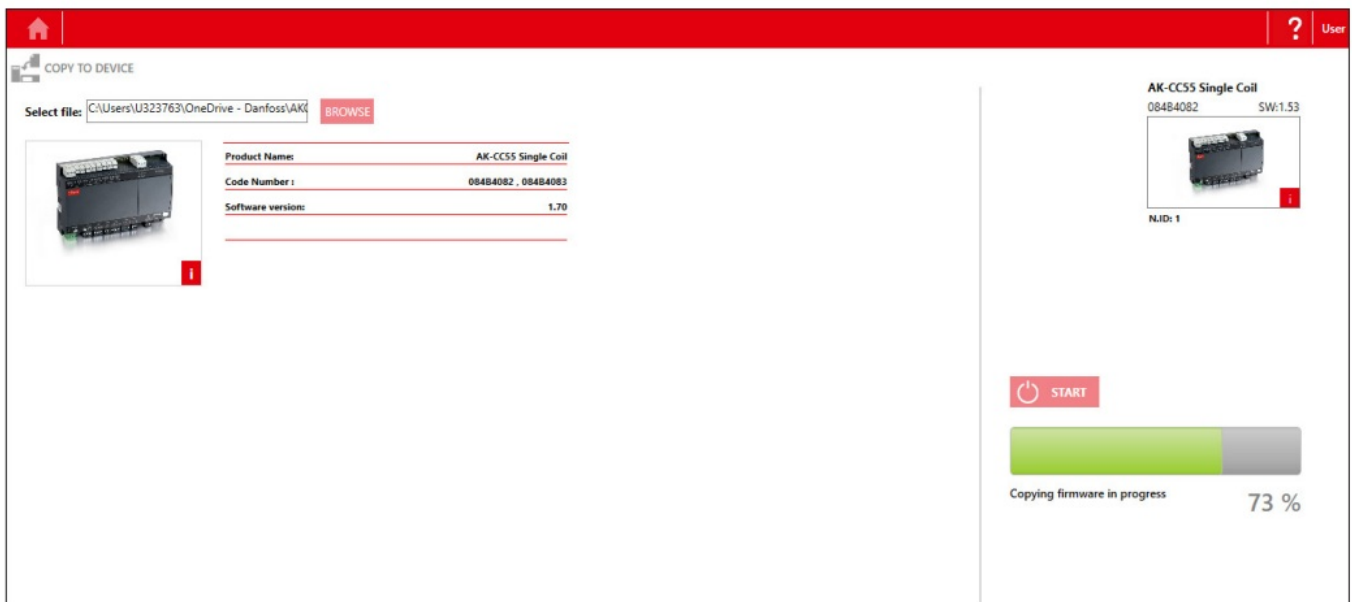


Counter: 0

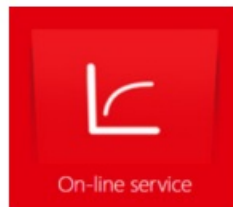
Counter reset to start position ("0" or "Set counter" value).

### Firmware upgrade (only for AK-CC55 and EETa):

1. Browse the firmware file (Bin file) you want to program – selected firmware file details are displayed on the left hand side.
2. If the selected firmware file is compatible with the connected controller, KoolProg enables the start button and will update the firmware. If it is not compatible, the start button remains disabled.
3. After a successful firmware update, the controller restarts and displays the updated details of the controller.
4. This feature can be fully protected by a password. If KoolProg is password protected, then when you browse the firmware file, KoolProg prompts for the password and you can only load the firmware file after entering the correct password.



## On-line service



This allows you to monitor the real-time operation of the controller while it is running.

- You can monitor inputs and outputs.
- You can display a line chart based on parameters you have selected.
- You can configure settings directly in the controller.
- You can store line charts and settings and then analyze them.

**Open**  
Allows you to view prior line charts you have made from collected data.

**Save as**  
Allows you to save a project file containing all the controller's settings.

**Arrow Up/Down**  
Clicking the arrow allows you to hide the photo and the top block of information, so that more space is available on screen for parameter views. Clicking the arrow again makes it re-appear.

The screenshot shows the AK-CC55 Single Cell control interface. The top navigation bar includes 'Parameters', 'Alarms', and 'Input/Output' tabs. The left sidebar contains a tree view of control functions. The main central area displays a 'Start/Stop' section with a 'Main switch' button and a 'Configuration' table. The right sidebar shows a 'Main switch' description and a photo of the device. Annotations with arrows point to specific UI elements: 'Open' points to a document icon in the top bar; 'Save as' points to a floppy disk icon; 'Arrow Up/Down' points to a vertical double-headed arrow on the right side of the main area; 'The Trend Feature' points to a checkbox in the configuration table; and 'Line Chart' points to a button in the right sidebar.

#### The Trend Feature

If you want to chart the trend for a measurement, you can select what you want to view from this table. Tick the box of any parameter you would like to include in the chart. You can select a maximum of 10 parameters.

#### Line Chart

Click the "Line Chart" button to switch over to the trend view. You can begin charting any measurements you want in the trend view.

### Alarms (only for AK-CC55):

Under the "Alarms" tab, the user can view the active and historical alarms present in the controller with a time stamp.

On-line service

Parameters Alarms Input/Output

Application: 7. Dual with 2 evap.

Label	Alarm	Active at	Cancelled at	Priority
<b>Active alarms</b>				
A71	Low temperature alarm B	9/26/2022 12:55:57 PM	---	High
A02	Low temperature alarm A	9/26/2022 12:55:57 PM	---	High
E34	S3 Air ON evap. B - Sensor error	9/26/2022 12:25:59 PM	---	High
E26	S4 Air OFF evap. A - Sensor error	9/26/2022 12:25:59 PM	---	High
E25	S3 Air ON evap. A - Sensor error	9/26/2022 12:25:59 PM	---	High
E24	S2 Gas outlet A - Sensor error	9/26/2022 12:25:59 PM	---	High
<b>Cleared alarms</b>				
A45	Main switch set OFF	9/26/2022 12:25:55 PM	9/26/2022 12:25:58 PM	Low
E26	S4 Air OFF evap. A - Sensor error	9/26/2022 12:25:46 PM	9/26/2022 12:25:56 PM	High
E25	S3 Air ON evap. A - Sensor error	9/26/2022 12:25:46 PM	9/26/2022 12:25:56 PM	High
E24	S2 Gas outlet A - Sensor error	9/26/2022 12:25:46 PM	9/26/2022 12:25:56 PM	High
E26	S4 Air OFF evap. A - Sensor error	9/26/2022 9:23:25 AM	9/26/2022 12:25:38 PM	High
E25	S3 Air ON evap. A - Sensor error	9/26/2022 9:23:25 AM	9/26/2022 12:25:38 PM	High
E24	S2 Gas outlet A - Sensor error	9/26/2022 9:23:25 AM	9/26/2022 12:25:38 PM	High
A02	Low temperature alarm A	9/26/2022 9:53:24 AM	9/26/2022 12:25:37 PM	High
E26	S4 Air OFF evap. A - Sensor error	9/23/2022 12:36:32 PM	9/26/2022 9:16:48 AM	High
E25	S3 Air ON evap. A - Sensor error	9/23/2022 12:36:32 PM	9/26/2022 9:16:48 AM	High
E24	S2 Gas outlet A - Sensor error	9/23/2022 12:36:32 PM	9/26/2022 9:16:48 AM	High
E26	S4 Air OFF evap. A - Sensor error	9/23/2022 11:44:50 AM	9/23/2022 12:07:20 PM	High
E25	S3 Air ON evap. A - Sensor error	9/23/2022 11:44:50 AM	9/23/2022 12:07:20 PM	High
E24	S2 Gas outlet A - Sensor error	9/23/2022 11:44:50 AM	9/23/2022 12:07:20 PM	High
E26	S4 Air OFF evap. A - Sensor error	9/23/2022 11:43:28 AM	9/23/2022 11:44:22 AM	High
E24	S2 Gas outlet A - Sensor error	9/23/2022 11:43:28 AM	9/23/2022 11:44:22 AM	High

AK-CC55 Single Coil  
08484082 SW:1.70

NID: 1  
22000 PM | 6 | 18 | 24

"A71"  
Low temperature alarm B  
Control state A : Emergency contro  
Thermostat air temp. A : 180.0 °C  
S3 Air ON evap. B : -80.0 °C  
Thermostat cut-out temp. : 2.0 °C  
Low alarm limit : -30.0 °C

Descriptions:  
The alarm temperature has been below the min alarm limit for a longer time period than the set alarm delay.

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## IO Status and Manual Override:

The user can get an instant overview of configured inputs and outputs and their status under this group. The user can test the output function and electrical wiring by putting the controller into manual override mode and controlling the output manually by switching them ON and OFF .

On-line service

Parameters Alarms Input/Output

Main switch: ☐ Manual ☐ Stop ☒ Start

Application: 2. Comp/Rail/Light

I/O Point	I/O Function	Status
<b>AI Analog Input</b>		
AI1	Pc Evap. pressure	12.0 Bar-g
AI2	S2 Gas outlet A	-80.0 °C
AI3	S3 Air ON evap. A	-80.0 °C
AI4	S4 Air OFF evap. A	-80.0 °C
<b>DI Digital Input</b>		
DI1	Digital input status	OFF
DI2	Defrost start	OFF
DI3	Night setback	OFF
<b>AO Analog Output</b>		
AO1	Rail heat PWM	100 %
<b>DO Digital Output</b>		
DO1	EEV opening A	10 %
DO2	Rail heat	ON
DO3	Compressor 1	ON
DO4	Defrost A	OFF
DO5	Light	ON
DO6	Fan	ON

AK-CC55 Single Coil  
08484082 SW:1.70

NID: 1  
22155 PM | 1340 | 140 | 36 | 74

"AI1"  
Pc Evap. pressure  
Description:  
Actual sensor signal

## Trend Charts

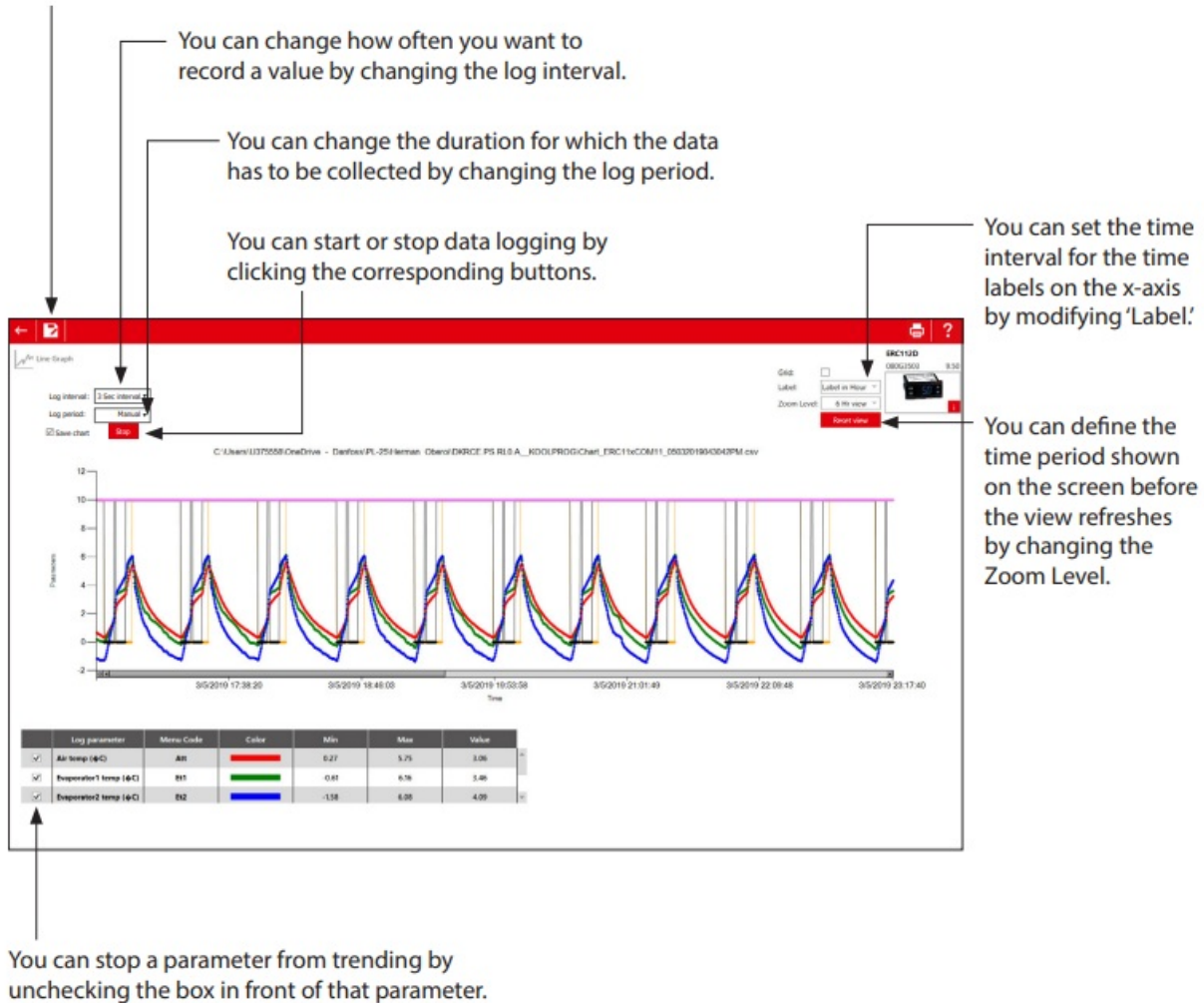
The program only saves data if the "Save chart" box is checked.

If you want to save the collected data in another file format, use the "Save As" command. This enables you to save data in a .csv/.png file format.

After saving an image, the chart can be viewed later in selected file format.



The program only saves data if the “Save chart” box is checked.  
 If you want to save the collected data in another file format, use the “Save As” command. This enables you to save data in a .csv/.png file format.  
 After saving an image, the chart can be viewed later in selected file format.



## Unknown controller support

(Only for ERC 112 & ERC 113 controllers)

If a new controller is connected, the database of this is not already available in the KoolProg, but you can still connect to the controller in on-line mode. Select “Import settings from connected device” or “On-line service” to view the parameter list of the connected controller. All new parameters of the connected controller will be displayed under the separate menu group “New Parameters”. The user can edit the parameter settings of the connected controller and save the setting file on the PC to mass program using “Programming EKA 183A (Code no. 080G9740)”.

**Note:** a saved setting file created in this way cannot be re-opened in KoolProg.



The image shows a close-up of a printer's control panel. At the top, there is a small LCD screen displaying the text "Unknown Connected Controller feature not supported in this window. Please use On-line Service Window" in red. To the left of the screen is a "Set parameters" button with a gear icon. To the right is a "Print" button with a printer icon. Below the screen, there is a "PG: P1--" label and a small image of a printer. The printer is a black and white model with a paper tray on top. The background of the control panel is white.

## New Parameters

[illegible]

**Danfoss A/S Climate Solutions**

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.

## Frequently Asked Questions

- **Q: Can I run this software on a Macintosh operating system?**

A: No, this software is only compatible with Windows 10 or Windows 11.

- **Q: What should I do if I encounter a Security warning during installation?**

A: Click on “Install this driver software anyway” to proceed with the installation.

## Documents / Resources



[Danfoss KoolProg PC Software](#) [pdf] User Guide  
KoolProg PC Software, PC Software, Software

## References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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