January 2022 | Danfoss Climate Solutions for cooling

TECH
INSIDER

Introduction

Danfoss Tech Insider keeps you updated with the latest news on the cooling and industrial products portfolios from Danfoss Climate Solutions. The content is intended to give a quick overview of core technical news and updates in our product portfolio, including links to relevant documentation and more information. Danfoss Tech Insider is sent out, on a monthly basis, to ensure you are always up to date with the latest innovations and changes made to Danfoss products and solutions.
We hope you will enjoy reading Danfoss Tech Insider!

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AK-PC 782A – New Software Release - Version 3.30

To support the continuous development of transcritical CO_2 packs and to correct some minor bugs, **software version 3.30** for the pack controller AK-PC 782A is now available

The new features added with the software version 3.30 are as follow:

- New receiver control which run both IT-compressor and receiver valve
- User Interface (UI) updated to reflect actuator concept
- Introducing Setpoint Manager (SPM)
- AC support (Release/Request signal)
- Options for Dual Sgc sensors
- IT Emergency solution
- IT Smart Switch
- Added new inputs for GenVCR & GenPI
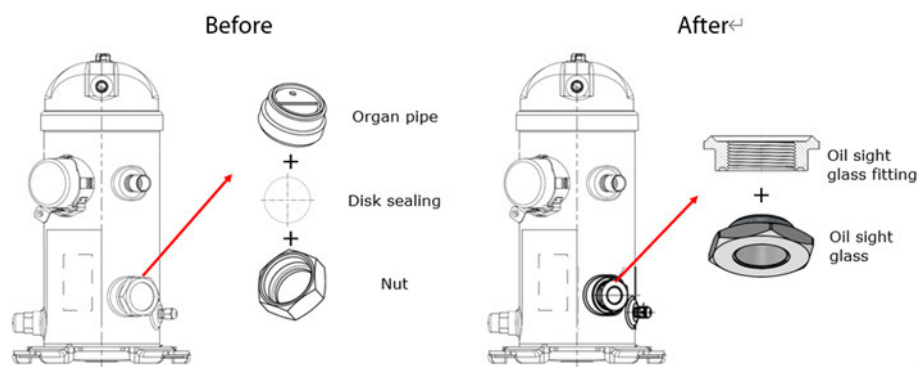- MT/LT coordination with threshold
- Added units for GenPI

The current AK-PC 782A with software version 2.71 can be optionally upgraded to **version 3.30** by using the AK-ST 500 Service Tool.

The new software version 3.30 was released in December 2021.

VZH028/035/044 Compressor Change: Fitting Change on OLS Version

The VZH028/035/044 compressor models currently have 2 different versions: OSG and OLS.

To standardize the OLS version, we have provided same fittings all over the VZH range. The OLS version will be equipped with 1 fitting available for oil level sensor, and 1 sight glass to be able to check oil level in compressor sump.

Therefore, as illustrated above the organ pipe fitting will be replaced by oil sight glass.

The change was implemented December 2021.

KoolProg Ver 4.5: Maintenance Release Update

We are pleased to release an update of **KoolProg Software** (Ver. 4.5).

We have completed several improvements, enhancements, and bug fixes to give you better and smoother experience working with KoolProg tool and our Danfoss range of electronic controllers.

Below are some highlights of the updates made in version 4.5:

Key highlights of version 4.5:
- Support new codes in the ERC112 family
- "Convert Settings" feature UI update and extension of this feature to ERC11x family
- Support AK-CC55 Water loop application
- EETa and EKF codes new SW version support
- General improvements and bug fixes

Detailed information:

1. **Support New Codes in the ERC112 family**
   - Following list of new code numbers added under ERC112 family

Code No.	PV	Description
080G3489	PV01	ERC 112C Red LED, GDM. STM32
080G3490	PV01	ERC 112D RED LED, GDM. STM32
080G3491	PV01	ERC 112C BLUE LED, GDM. STM32
080G3492	PV01	ERC 112D BLUE LED, GDM. STM32
080G3493	PV01	ERC 112C RED LED, CFF, BUZ. STM32
080G3498	PV01	ERC 112D RED LED, CFF, BUZ. STM32
080G3494	PV01	ERC 112C BLUE LED, CFF, BUZ. STM32
080G3499	PV01	ERC 112D BLUE LED, CFF, BUZ. STM32
080G3495	PV01	ERC 112C BLUE LED, GDM, Pepsico. STM32
080G3496	PV01	ERC 112C BLUE LED, CFF, BUZ. STM32
080G3497	PV01	ERC 112D RED LED, CFF. STM32

2. **"Convert Settings" feature UI update and extension of this feature to ERC11x family**
   - Convert settings UI texts updated for better clarity
   - Convert Settings feature now available for ERC11x family (Can convert setting files from one code number to another code number within the same variant)

3. **EETa new SW version support (PV02)**
   - EETa codes with new SW version supported
     - 080N0014 - EETa2W - PV02 - SW ver 1.49
     - 080N0015 - EETa 3W - PV02 - SW ver 1.49

4. **Support AK-CC55 Water Loop application**
   - AK-CC55 Water Loop version is now bundled in KoolProg
     - 084B4058 – AK-CC55 Water Loop – SW ver 1.10

5. **EKF new SW version support**
   - EKF 1A and 2A codes new SW version support added to KoolProg
     - 080G5030 - EKF1A – SW ver 1.24
     - 080G5035 - EKF 2A – SW ver 1.24
6. **Bug Fixes**
   - Opening ERC11x parameter files generated from older version of KoolProg issue is fixed
   - EKF online support – In menu group "All" to be clicked to display parameters which has visibility rules
   - dFA parameter display issue in ERC11x family fixed
7. **Improvements:**
   - Preference folder path dynamic update issue fixed- Preference folder path does not change now based on the folder path selected during "save as" operation
8. **User Manual update**
   - For full details on the operations and added features, please read the User Manual embedded under Help in KoolProg.

Known issues/ Specific limitations to this release:
- Under certain conditions, some operations might take longer than expected because of software compatibilities issues.
- MYK version below 5.01 may not support all KoolProg features for AK-CC55 controllers
- ERC21x- Parameter files generated with KoolProg version 4.3 and below cannot be opened in this version

Please find the new version of KoolProg **here**.

We hope that you will like the experience of working with this new version of KoolProg. For any queries, please reach out to your Danfoss Technical Support Contact.

Improvement of VZH117 Power Connection

Before

After
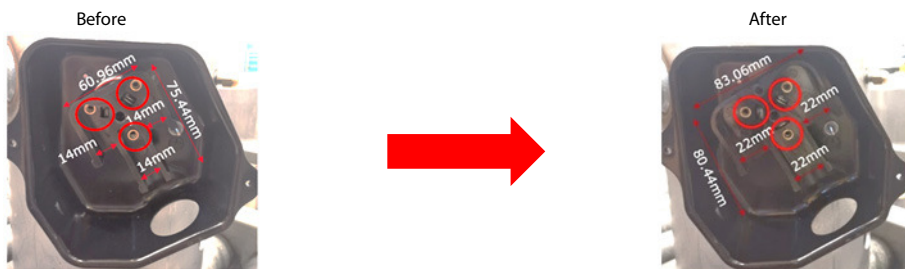
To improve the VZH117 voltage code J power connection, Danfoss has recently changed the "T-Block" to a larger size, allowing more space to fit power cables and terminals.

The "T-block" is used in compressor electrical boxes for connecting the power supply.

The bigger size now implemented is providing more space for cable connectors and will ease assembly of "2 AWG" cables size on VZH117 voltage code J, as we recommend in the application guideline.

The VZH117 code J new T-block is fully interchangeable and was implemented in October 2021.

If you need additional information regarding the VZH117 code J new T-block, please contact Danfoss technical support.

New Accessory ICAD -UPS (Uninterruptible Power Supply) – Replacing Current Code Number

Current code 027H0182
(being phased out)

New code 027H0388
(replacement)
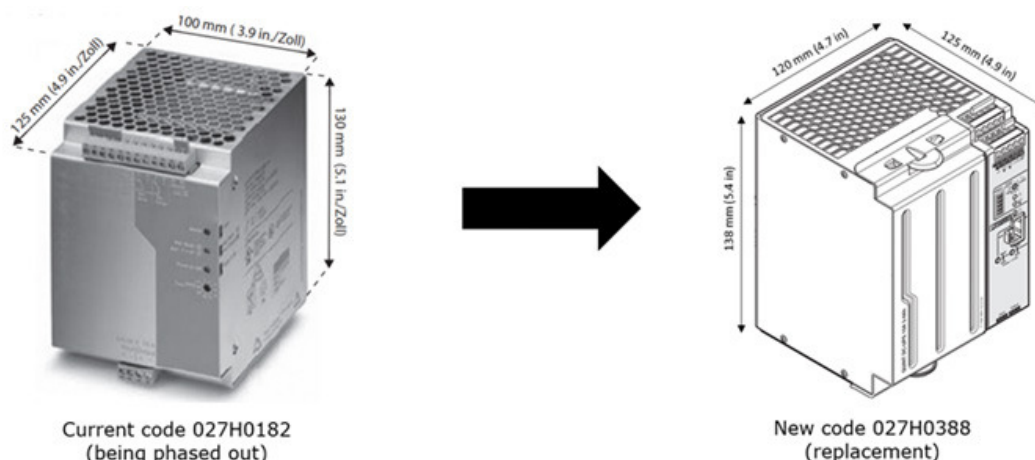
We are pleased to announce the introduction of a new code number for the UPS for ICAD that will be replacing the current accessory code number 027H0182.

ICAD-UPS is an accessory code dedicated for use along with **Actuator ICAD 600A, ICAD 600TS and ICAD 1200A actuators.** It is an uninterruptible power supply, and its function is to make sure that in the event of power failure the actuator can move the valve (ICM/ICMTS/CVE) to the selected safe position.

The new ICAD-UPS (code 027H0388) delivers all functionality and capacity of current code; and it can replace current code in new installation as well as a retrofit. The new code has been fully validated and it is available for ordering.

Moving forward previous code 027H0182 will be discontinued, so new orders for the accessory must be transferred to the new code 027H0388.

The change represents an improvement on this accessory, having a more modern technology.

One consideration to be aware of is the small difference is some of the external dimensions of new UPS compared to the old one.
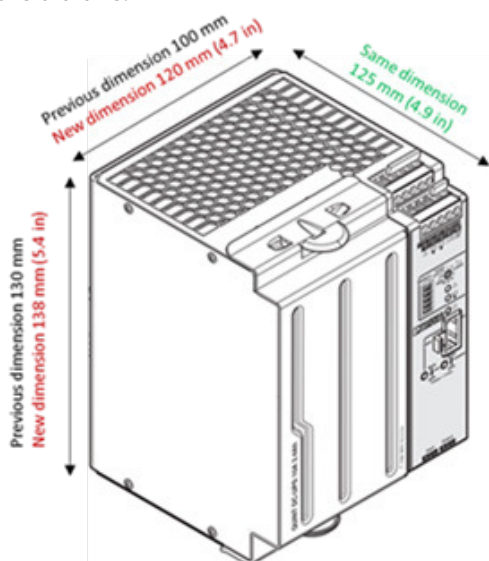
All details regarding dimensions and installation of new ICAD-UPS can be found in the **installation guide**

M12 Straight Cable, 12 m (40 ft) Use for Stepper Valves

12-meter M12 Straight cables code 034G7078 are now available as accessories for global sales.

The cable is intended for use with a standard M12 male connection, available on stepper motor valves i.e ETS Colibri / KVS Colibri / ETS / KVS / CCM / CCMT / CTR.

Features:
- M12 Standard: DS/EN 61076-2-101
- Waterproof rate: IP67
- PVC insulation
- Colors of insulation of individual wires: green-red, black-white
- Insulated conductors twisted into pairs
- Cable Approvals: CE, RoHS, UL, EAC and LLC CDC EURO TYSK

M12 Cable Code 034G7078 is already available for ordering.

EKF 1A/2A Stepper Motor Driver: Maintenance Release Update

We are pleased to release an updated version of the EKF 1A and EKF 2A Stepper Motor driver. In the new version it is now possible to select the newly released ETS 175L and ETS 250L from the pre-selection list. The latest EKF 1A/2A will show a Product Version (PV02) and a Software version (SW) 1.24. Below are some highlights of the updates:

Detailed information:

1.

In the new version PV02 SW1.24 it is now possible to pre-select the ETS 175L & 250L versions by using the dip switch pre-selection option. Note **group S added** in table below. Same update is present in product documentation.

Valve selection
Configure Valve type by selecting DIP switch as shown in table below (green denotes ON).

Group	Valve	DIP Switch 1	2	3	4	5	6	7	8
A	No Valve (Default)								
B	ETS 12C, ETS 24C, ETS 25C, ETS 50C, ETS 100C, KVS 2C, KVS 3C, KVS 5C	ON							
C	ETS 5M		ON						
D	ETS 6, UKV, UKV-J	ON	ON						
E	ETS12.5, ETS 25, ETS 50, KVS15			ON					
F	ETS 100	ON		ON					
G	ETS 250, ETS 400, KVS 42		ON	ON					
H	Manifold Valves (ETS 500P, ETS 800P)	ON	ON	ON					
I	JKV				ON				
J	CCMT 2, CCMT4, CCMT8	ON			ON				
K	CCMT 16		ON		ON				
L	CCMT 24	ON	ON		ON				
M	CCMT30			ON	ON				
N	CCMT 42	ON		ON	ON				
O	CCM 10, CCM 20, CCM 30		ON	ON	ON				
P	CCM 40	ON	ON	ON	ON				
Q	CTR 20					ON			
R	CCMT 3L, CCMT 5L, CCMT 8L, CCMT 10L	ON				ON			
S	ETS 175L, ETS 250L		ON			ON			

2.
EKF PV02 SW1.24 has now been UKCA approved, and the marking is visible in the installation guide.
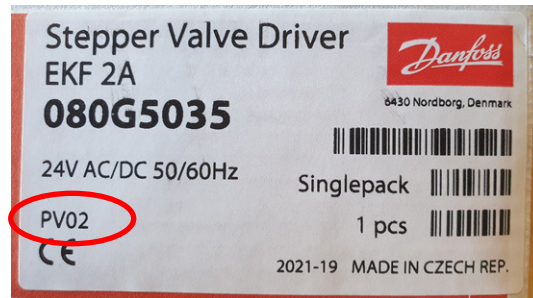
3.
Bug fix: EKF will not anymore show a wrong analog input error during start-up while using current analog input signal.

Identification of new product version
The new EKF 1A/2A will show a Product Version (PV02) and a Software version (SW 1.24) See image below of latest product label.

New product label

New package label

Programming with KoolProg:
When setting up the latest EKF (PV02, SW 1.24) using Koolprog. Please download the latest Koolprog version (Ver. 4.5) by clicking **here** and create new setting file for PV02.

Please note that setting file of PV01 cannot work with PV02 and vice

List of affected products:
- 080G5030 – EKF 1A
- 080G5035 – EKF 2A

We hope that you will like the experience of working with this new version of EKF.
For any queries, please reach out to Danfoss Technical Support.

Videos in YouTube

- Head2Head livestream: Scrolls vs. Pistons - **LINK**
- Introduction to refrigeration pressure and safety | Ask an Expert - **LINK**
- What components are critical in heat pump systems? – **LINK**
- What are the 'do not do's' on oil-free compressors? **- LINK**
- Connected cold room - case story - **LINK**

HVAC&R Distillery:
- Troubleshooting a solenoid valve with external leakage - **LINK**
- Troubleshooting a solenoid valve with internal leakage - **LINK**
- Troubleshooting solenoid valve coil failures - **LINK**
- Troubleshooting solenoid valve noise and vibration - **LINK**
- How to troubleshoot a solenoid valve that is only partially closed – **LINK**

Details for Additional Information

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