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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!
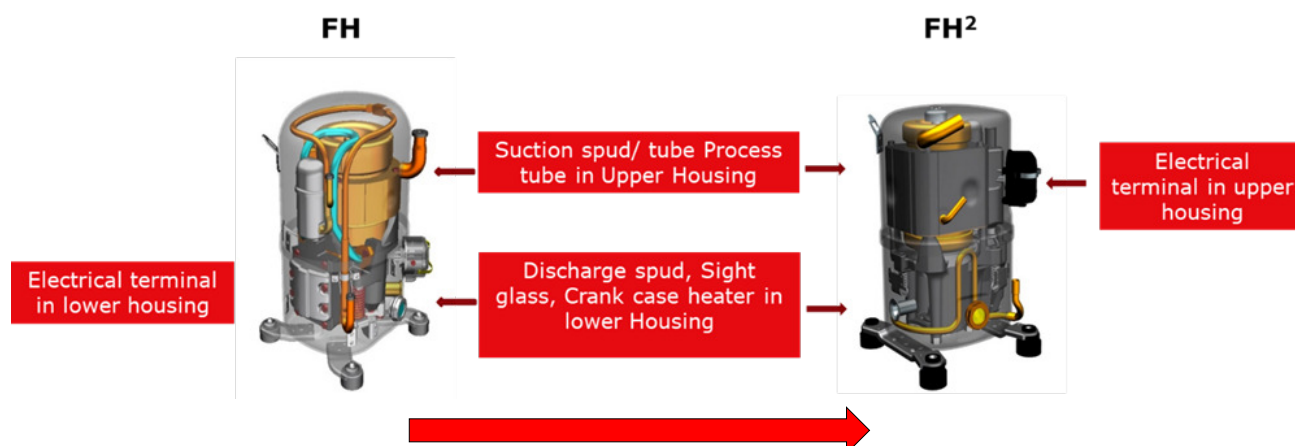
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Packaged Optyma™ Condensing Unit FH ➜ FH² Compressor Change

Danfoss has started mounting the new FH² compressor inside all light commercial packaged Optyma Slim Pack and Optyma Plus 3-phases condensing units. Please see the new compressor designation below.

Compressor technology	Old designation	New designation
Single phase commercial reciprocating compressor	FH2511Z FZ	FH2511Z-XC
Three phase commercial reciprocating compressor	TFH2511Z TZ	FH2511Z-XG

Technical description

Cooling capacity and product designation are changed but available refrigerant and model number remain identical. Please find below the designation changes:

Current designation	New designation	Code number and YTD status
OP-LSQM074FHW05G	OP-LSQM068FHW05G	114X7095 Phased out
OP-LSQM074FHW09G	OP-LSQM068FHW09G	114X7185 Phased out
OP-LSQM074FHW05E	OP-LSQM068FHW05E	114X7096 Phase-out, stock sell-off
OP-LSQM074FHW09E	OP-LSQM068FHW09E	114X7186 Phase-out, stock sell-off
OP-LPQM074FHP00G	Remain identical	114X3252 Phased out
OP-LPQM074FHP00E	OP-LPQM068FHP00E	114X3253 Phase-out, stock sell-off

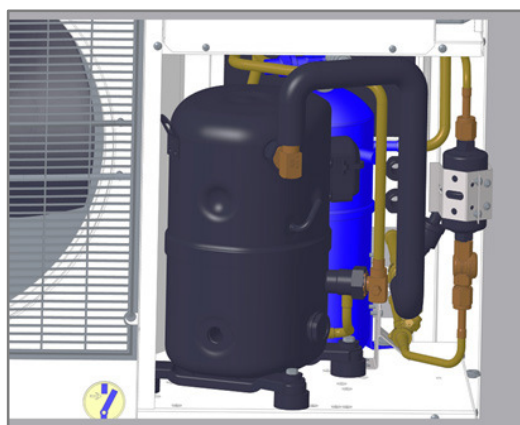Please find below capacity deviation with other similar models (R452A refrigerant):

Current/New Optyma Plus Designation	Remaining Optyma Plus Code	New Optyma Slim Pack Designation W05	Remaining Optyma Slim Pack Code W05	New Optyma Slim Pack Designation W09	Remaining Optyma Slim Pack Code W09	Current Model Cooling Capacity kW*
LPQM048NTP00E	114X3225	LSQM048NTW05E	114X7087	LSQM048NTW09E	114X7181	0,92
LPQM048NTP00G	114X3233	LSQM048NTW05G	114X7088	LSQM048NTW09G	114X7182	0,94
LPQM074FHP00G	114X3253	LSQM068FHW05G	114X7095	LSQM068FHW09G	114X7185	1,31 Old
						1.47 New
LPQM068FHP00E	114X3252	LSQM068FHW05E	114X7096	LSQM068FHW09E	114X7186	1,31 Old
						1.47 New
LPQM068NTP00E	114X3249	LSQM068NTW05E	114X7090	LSQM068NTW09E	114X7184	1,46
LPQM068NTP00E	114X3241	LSQM068NTW05G	114X7089	LSQM068NTW09G	114X7183	1,45

* -35 °C midpoint 32 °C ambient

Changed technical features, tubing, and wiring of the condensing unit:

- Better cooling capacity +12 %
- Better COP +1 %
- Similar noise level
- Changed internal wiring diagram due to internal compressor capacitor change

Optyma Plus new lay out

Slim Pack new lay out

Spare parts

To replace FH compressor with FH² in existing units we can provide tube adaptation spare part for previous FH based design.

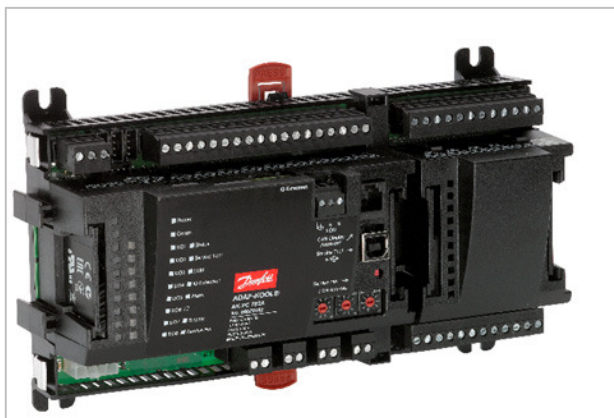| Code	Description	Compressor Designation	EAN Number
118U5501	Spare part, comp tube FH 2511 FH SP	FH2511Z-XC & FH2511Z-XG	5702424634100
118U5502	Spare part, comp tube FH2511 FH2 PLUS		5702424634117

Available documentation

- CoolSelector2 will be updated end April 2022
- Instruction guidelines are updated inside the unit and available at the following links
  - **Optyma Slim Pack guideline**
  - **Optyma Plus guideline**
- **Catalogue** is updated and commercial brochure will be updated by Q2 2022

Please contact your local Danfoss contact for more information about the impact for each product and other solutions Danfoss can offer.

AK-PC 782A – Release New Software Version 3.50

A new software version 3.50 for the pack controller AK-PC 782A is now available, with the intention to support the continuous development of transcritical CO_2 packs and to correct some minor bugs.

The new features added with the software version 3.50 are as follow:

- Capacity control of up to 10 compressors on MT and 8 on IT
- Possibility to control a new combination of compressors in the suction line:
  1x Variable + 1x Comp. w. unloaders + single step
- Update IT- optimize for ejector operation
- Alarm transmission to the frontend can be disabled to avoid "Alarm Router Full" message
- Correction of minor bugs

The current AK-PC 782A with software version 3.30 can be optionally upgraded to version 3.50 by using the **AK-ST 500 Service Tool.**

The new software version 3.50 was released as a software Web release end of March 2022. Production of AK-PC 782A controllers will be enhanced with this software version accordingly during the month of May 2022.

Laser Marking Change on Coils

To improve the quality and durability of markings on coils, Danfoss is gradually changing from tempo printing to laser marking starting in March 2022.

There are no changes to product specifications. Below is a picture of the layout comparison, including:

- Ink markings changed to laser markings
- Added QR code

Tampo marking   **Laser marking**

There will be a transition period from March 2022, that customers might receive products with both tempo and laser printing.

Solenoid Valve Range for Water Leak Detection

The increased focus on water leaks on the part of both authorities and insurance companies has led to digital solutions that help prevent water leak damages.

The solution consists of sensors that detect moisture that are connected to a control system which raises alarm if a water leak occurs. The system also sends a signal to a shut-off valve, which shuts off the water supply and ensures that no more water leaks out. The shut-off valve can be mounted either on the building's main water supply or other installations connected to the water supply.

Danfoss, in collaboration with leading providers of water leakage solutions, has developed a valve program that, when building in the leak detection system, is activated once daily to ensure that it always works.

The valves have all required drinking water approvals: RISE, SINTEF, ACS, PZH, WRAS, Wetted materials in accordance with 4MSI (4 member states Germany, Holland, France, UK and Denmark), DVGW, KTW, and W270.

Key features and advantages:

- ECO brass housing (CW724R)
    - ECO brass contains no toxic additives, such as lead and nickel. It also has superior corrosion resistance compared to conventional free-cutting brass.
- EPDM sealing material
    - Our sealing material is fully compliant with new strict European regulations and protects the consumer against bacterial and other hazardous contamination.
- Flow range for water in Kv: 0,7 – 40 m³/h
- Differential pressure: 0,3 – 16 bar
- Media temperature: 0 – 90 ℃
- Coil enclosure: IP67
- Thread connections: G 3/8 – G 2
- DN 6 – 50
- Water hammer damped
- Build-in, self-cleaning filter
- Insensitive to dirt - square armature design prevents dirt buildup
- RoHS certified
- Single-piece, weldless construction
- Compact design making it easy to fit in all systems

Type	NC/NO	Material
EV221BW 10-22	NC	ECO brass (CW724R)
EV221BW 10-22	NO	ECO brass (CW724R)
EV220BW 15-25	NC	ECO brass (CW724R)
EV220BW 15-25	NO	ECO brass (CW724R)
EV228BW 15-25	UN (latching)	ECO brass (CW724R)

See how the new solenoid valves for leak detection work: **Leak detection video**

Read more about leak detection and our dedicated solenoid valve program here: **Solenoid valves for leak detection | Danfoss**

AK-CC55 SC (UI) SW Update 1.70

We would like to inform you that the AK-CC55 Single Coil (UI) case controllers are receiving software update (ver. 1.70). This brings a set of new and improved features (see below), while keeping the core application functionality of the controller unchanged. The update will come preinstalled on the controllers coming out of production during week 12 and the update file is available to download for updating the existing installations from our product support site.

Please reach out to your local Technical Support for the installation file.

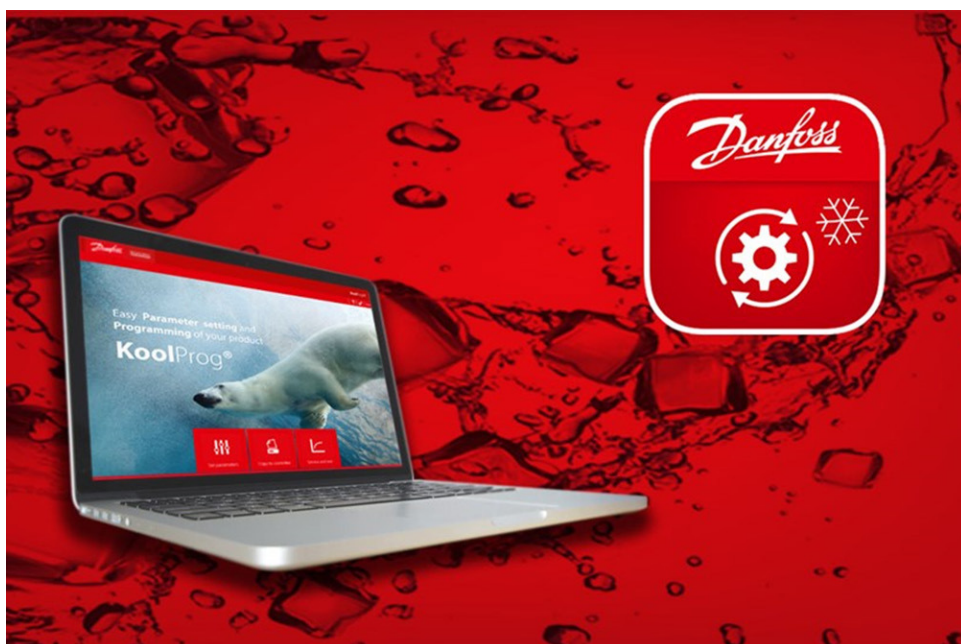Product codes in scope are 084B4082, 084B4182, 084B4083, 084B4183.

New features and functions:

- Extension of thermostat range from -50 °C down to -60 °C
- Function to remote lock display keypad (type AK-UI55 Set)
- Possibility to stop fan only when door opens (refrigeration still active)
- Improved SH-close control when running modulating thermostat (MTR)
- Separate defrost/thermostat parameters for thermostat band 2
- Option for user defined temperature sensors type for S3, S4 and S5
- Improved melt function when running modulating thermostat (MTR)
- Oil flush function to force oil back to the compressor/oil receiver
- Option for offset adjustment for sensors S2 and S5 with long cable runs
- Minimum defrost time added to be used in CO_2 hot gas defrost applications

Product version identifier which is shown on the packaging label and product label on the front cover below the code number will be stepped up from PV03 to PV04.

For technical support regarding this update, please contact your local Technical Support Engineer.

KoolProg Ver 4.6.0.x: Maintenance Release Update

We are pleased to release an update of **KoolProg Software** (Ver. 4.6.0.x). 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 4.6.0.x:

Key highlights of version 4.6.0.x:

- Support ERC 21X maintenance release code numbers
- EETa PV02 SW version updated from 1.49 to 1.50
- Support for new SW and PV version for 080G3413 ERC112D Controller
- General improvements and bug fixes

Detailed description

1. **ERC21x maintenance release code numbers support**

Below list of new code numbers added under ERC 21X family

Code No.	PV	Description
080G3452	PV01	ERC 211 Controller,115V (New)
080G3454	PV01	ERC 211 Controller, 230V (New)
080G3458	PV01	ERC 213 Controller, 230V (New)
080G3461	PV01	ERC 214 Controller, 115V (New)
080G3462	PV01	ERC 214 Controller, 230V (New)
080G3468	PV01	ERC 213 Controller, 115V NAM (New)
080G3470	PV01	ERC 213 Controller, 230V NAM (New)
080G3267	PV05	ERC 213G Controller, 230V

2. **EETa PV02 software version update**

- EETa, PV02 Software version updated from 1.49 to 1.50

3. **Support new PV version for 080G3413 ERC112D Controller**

- Added new product version (PV02) under 080G3413 code
- SW version: 9.33

4. General improvements and bug fixes

- Code number drop down sequence updated for ERC11x, ERC21x and EET
- Fixed parameter display issue when selected through menu group in ERC11x family
- 080G3229 – Enum mismatch issue fixed for parameter "Temp Sensor to Display (trS)"
- EKF controller setting file update to support copy key mode
- Code Signing Certificate (CSC) validity extended in this version to address the installation issue observed in 4.5.0 and lower versions

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

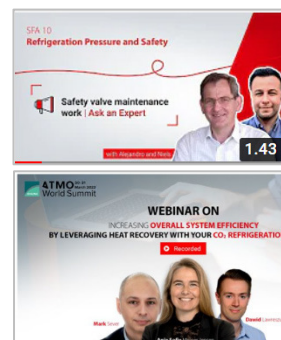The new version of KoolProg is now available for download at:

http://refrigerationandairconditioning.danfoss.com/support-center/apps-and-software/koolprog/#/

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 office.

Videos in YouTube

- Refrigerant Safety | Ask an Expert:
  - What to consider with safety valves? - **LINK**
  - How to select a safety valve? - **LINK**
  - Maintenance work on safety valves - **LINK**
- From ATMO Summit 2022
  - Increase CO_2 refrigeration system efficiency with heat recovery | ATMO World Summit 2022 - **LINK**

Details for Additional Information

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