

ENGINEERING
TOMORROW



May 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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Packaged Optyma™ Condensing Units with PED Certification

As part of Danfoss' continuous improvement to make installer life simpler, the Optyma Plus and Optyma Slim Pack packaged condensing unit product ranges are now certified for the Pressure Equipment Directive PED in accordance to PED 2014/68/EU for CE marking of condensing unit assemblies falling under categories I and II according to Module A2.

The certificate is issued by a third-party certification body for pressure equipment (TUV NORD Systems GmbH & Co. KG (Essen) Notified Body, Reg.-No.0045) based on the satisfactory review of applicable clauses according to the Pressure Equipment Directive.



Codes and references remain unchanged for all packaged Optyma condensing unit versions: W05, W09, W10, P00, P01, P02, P05, and P07 which potentially reach the PED categories I and II.

Optyma Plus condensing units (P00/P01/P02/P05) which reach PED categories II, get upgraded and has factory fitted pressure relief valve (PRV) as a damage-limiting device according to EN13136 standard.

A revised declaration of incorporation (DOI), declaration of conformity (DOC), manufacturer declaration, instruction will be available in CoolSelector2 April 2022.

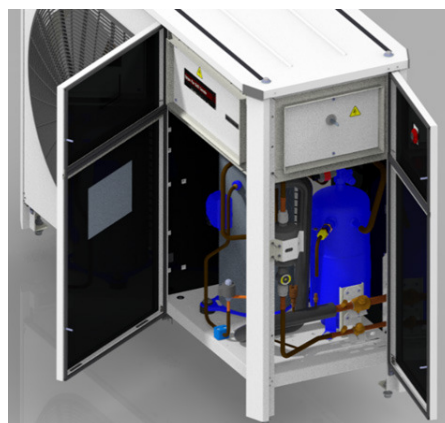
See the list of affected products: [Danfoss condensing units PED certification](#)

This Danfoss condensing unit PED certification simplifies the way to complete the condensing units risk assessment and PED certification processes. Instead of checking components one-by-one installers and certification bodies can take the condensing unit sub-assembly declaration of incorporation/conformity, which includes certifications of all brazed parts, tubing, receivers, and compressors in one time and one declaration.

Optyma Plus (P00/P01/P02/P05) category II pressure relief valve (PRV) factory fitted units with prequalified A2L refrigerants simplify the tremendous work needed at installation (discharge capacity calculation for PRV, assembly, leak validation, preparation of technical dossier for individual components, etc.). Besides simplified compliance to regulations, this also gives piece of mind to installers in the transition from A1 to A2L.

Slim Pack W05, W09, W10, (PED categories I and II) P00, P01, P02 (PED category I) and P05, P07 (PED category II) qualified for A1 or qualified for A1(A2L): pressure relief valve mounting area has been checked and can be fitted as following manner.

Pictures of the valve and example of installation on the receiver



Pressure Relief Valve Technical Specifications:

Temperature range:	−40 to 149 °C
Pressure Relief Setpoint:	34.5 bar
Approvals:	CE, PED, UKCA
Inlet connection size:	PRV 3/8-inch NPT (male)
Outlet connection size:	PRV OD: 9.525 mm ID: 8.125 mm (Cu pipe)
Blow-off capacity (kV):	510 kg/hour
Available spare part code number:	118U5304

Condensing unit labelling

OP-MSXM108MLW05E
114X7072

Serial No. 064119CG1517

EAN No. 570242859226659

Fluid Group 1 & 2

PED Category II

Application MBP IP54

PS_{HP} -1/32 bar Voltage 400V~3N~50Hz

PS_{LP} -1/21.5 bar LRA 60 A

PT 32 bar MCC 14 A

TS -30/ 63°C RLA 50 A

HP Switch Pressure 31 bar

Year of Mfg. 2021

PRV Setting 34.5 bar

AZL Refrigerant

118U3415

Address - Danfoss Ltd., 22 Wycombe End, HP9 1NB, GB
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Danfoss A/S, 6430 Nordborg, Denmark

Condensing unit name plate included with PED Category (maximum), fluid group approved.

PRV setting pressure (opening pressure)

CE & UKCA with notified body approval number

Pressure equipment technical data such as maximum pressure (HP & LP relative / Gauge pressure), test pressure etc.

Condensing unit packaging labelling



Approved refrigerants specifications (labels physically available different locations within condensing units for identification)

Implementation dates and serial numbers

- A2L (A1) units PED certified and PRV fitted starting from the end of December 2021, serial number: 150451CG512
 - PED certified for all
 - PRV fitted only for Optyma Plus
- A1 units PED certified no PRV from April 2022, serial number: 150451G1422

Available documentation

[Declaration of Incorporation](#)
[Declaration of conformity](#)

[Declaration of Incorporation](#)
[Manufacturer's declaration](#)

Instructions

- Optyma Plus A1-A2L: [LINK](#)
- Optyma Slim Pack A1-A2L: [LINK](#)
- Optyma Plus A1: [LINK](#)
- Optyma Slim Pack A1: [LINK](#)
- Optyma Plus Inverter: [LINK](#)

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

KoolProg Version 4.7 Maintenance Release Update

We are pleased to release an update of [KoolProg Software Ver. 4.7](#) that contains a fix for PV version issue in EETa controllers (EETa2W and EETa3W).

Key highlights of version 4.7

- Product version (PV) correction for EETa2W and EETa3W controllers

Detailed description

- KoolProg release 4.6 had incorrect PV version mapping for EETa controllers. This has now been corrected and the PV version shows properly as PV01. It is strongly recommended to use this version of KoolProg to prevent any future issues.
- Please notice that files created with version 4.6 for the EETa will show wrong PV version and they will need to be re-created in 4.7 version to reflect the right PV version. Creating a new file in KoolProg version 4.7 and saving will fix this situation.



R448A Approved for All Medium Back Pressure Packaged Optyma™ Condensing Units

R448A can now be used on all Optyma™ Slim Pack and Optyma Plus models and positive applications.

We have conducted reliability and performance tests on our full medium back pressure range with R448A. This azeotropic, non-ozone depleting, non-flammable refrigerant with low global warming potential (GWP = 1387) is a drop-in replacement for R404A in medium-temperature commercial refrigeration applications with limited glide.



Condensing unit performance data is similar to R449A (max. 3 % deviation), though more information will be available later this year inside our catalogue. Please refer to [Coolselector](#) for further information.

The products remain unchanged in terms of code numbers, equipment, and features.

Product designation will change following the below table.

Current designation	New designation	Code numbers remain identical
OP-MPYM008DYP00G	OP-MPOM008DYP00G	114X4119
OP-MPYM009DYP00G	OP-MPOM009DYP00G	114X4120
OP-MPYM012DPP00G	OP-MPOM012DPP00G	114X4121
OP-MPYM014DPP00G	OP-MPOM014DPP00G	114X4122
OP-MSYM009DYW05G	OP-MSOM009DYW05G	114X7108
OP-MSYM009DYW09G	OP-MSOM009DYW09G	114X7133
OP-MSYM012DPW05G	OP-MSOM012DPW05G	114X7109
OP-MSYM012DPW09G	OP-MSOM012DPW09G	114X7134
OP-MSYM014DPW05G	OP-MSOM014DPW05G	114X7110
OP-MSYM014DPW09G	OP-MSOM014DPW09G	114X7135

For Optyma Plus Controller

- An R448A setting has been uploaded onto updated electronic controller version (3.40).
- For products on the field, use the R449A setting point, which is close to the R448A setting point.
- For Slim Pack condensing unit, pressure switch setting point remain identical: R449A

Implementation date

- Optyma Plus P00 version and Optyma Slim Pack W05 and W09: week 25, SN 116954CG2522.
Instruction, labeling, will follow the product implementation. Product will be on Danfoss stocks on week 32.
- For software and documentation
 - Updated catalog will be available during Q3 2022
 - All changes in [Coolselector](#) are now visible

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

CTM 6 Multi Ejector and CCMT 16 - 42 Electric Regulating Valve – Pressure Transmitter Change

Due to discontinuation of pressure sensor family type MBS 8200 and MBS 8250 announced at end of 2020, we are introducing alternative pressure sensor DST P310 in CTM 6 Multi Ejector and CCMT 16 - 42 electric regulating valve. The new pressure transmitter DST P310 is direct replacement with the same parameters, specification, and performance.

The new pressure transmitter is 11mm wider and 5mm longer than the MBS 8250. The slightly larger dimensions of the pressure transmitter do not affect compatibility with CCMT 16-42 and CTM 6 during the assembly process. In terms of parameters and specifications the DST P310 is the same as MBS 8250 - both products can be used interchangeably.

When interfacing the CCMT and CTM valve fitted with DST P310 pressure sensor to a Danfoss controller please select sensor type MBS 8200 in the pressure sensor selection menu, this is an interim solution until the controller firmware is update.

Affected products

Product family	Code number	Product type
CTM Multi Ejector	032F5673	CO2 Multi Ejector HP 1875
	032F5674	CO2 Multi Ejector HP 3875
	032F5675	CO2 Multi Ejector HP 1875 LE 400
	032F5676	CO2 Multi Ejector HP 2875 LE 200
	032F5677	CO2 Multi Ejector HP 2875 LE 400
	032F5678	CO2 Multi Ejector LP 935
	032F5679	CO2 Multi Ejector LP 1935
	032F5680	CO2 Multi Ejector LP 935 LE 200
	032F5681	CO2 Multi Ejector LP 1435 LE 200
	032F5682	CO2 Multi Ejector LP 1435 LE 400
	032F5693	CO2 Multi Ejector LP 1435
	032F5698	CO2 Multi Ejector HP 2875
CCMT 16 - 42	027H7231	Electric regulating valve, CCMT 16
	027H7232	Electric regulating valve, CCMT 24
	027H7233	Electric regulating valve, CCMT 30
	027H7234	Electric regulating valve, CCMT 42

For more information, please visit our Danfoss Store or contact your local sales representative

AK-PC 551 – Release New Software Version 1.70



A new software version 1.70 for the pack controllers AK-PC 551 code number 080G0281, 080G0282, 080G0283, 080G0288 is now available, with the intention to support the continuous development of mid end HFC packs and to correct some minor bugs.

The new features added with the software version 1.70 are as follow:

- **3rd AO** - AO1 to AO4 are now available to be used. The functions are only 3 (Speed comps MT and LT + Fans)
- **PO optimization for both suction groups**
- **VSD max speed parameter** – the parameter to set the max speed of the drive has been added. This is overridden in case of high cond. pressure

All the current AK-PC 551 controllers with software version 1.63 can be optionally upgraded to version 1.70 by using the AK-PT 50 Service Tool.

Production of AK-PC 551 controllers will be enhanced with this software version accordingly during the month of May 2022.

Shift from AK-CC 460x to AK-CC55 Water Loop

Danfoss is introducing a new AK-CC55 Water Loop case controller to the global market in May 2022. This variant is aimed at semi plug-in applications with R290 refrigerant, as well as other advanced plug-in applications, while it offers a variety of user defined applications. The AK-CC55 Water Loop builds upon the advantages of the AK-CC55 family, where a lot of effort has been put into improving the user experience e.g., with the **AK-CC55 Connect app**, bigger connectors, data communication, and displays.



Code number	Product name
084B4058	AK-CC55 Water Loop, S/M-pack
084B4158	AK-CC55 Water Loop, I-pack

It replaces the existing AK-CC 460(X) controllers. The AK-CC 460(X) production will cease at end of May 2022. There is a limited stock available for service needs.

The AK-CC55 can replace AK-CC 460(X) in a service situation. Please be aware that the display also needs to be updated to an AK-UI55 model incl. cables.

AK-UI55 Info



AK-UI55 Set



AK-UI55 Bluetooth



AK-UI55 cable



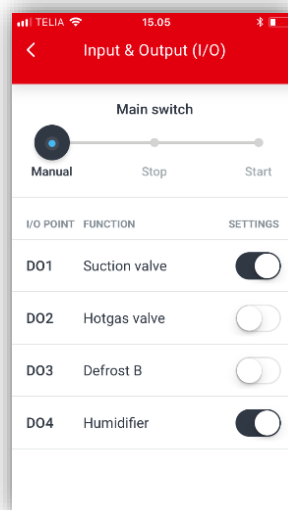
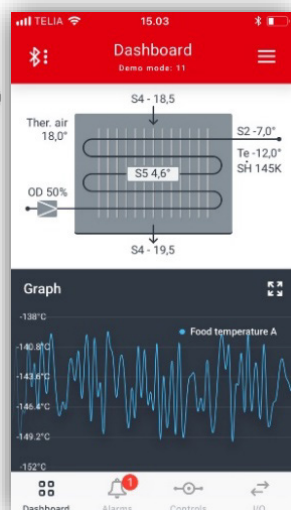
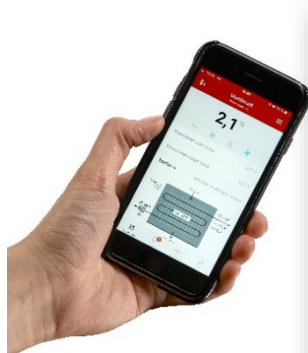
Find more information about the AK-UI55 accessories here:

[Compare Products | Danfoss Global Product Store](#)

Further information about the AK-CC55 platform [here](#)

AK-CC55 Connect app

Specially developed for the AK-CC55 platform, is a new display with Bluetooth connection that makes it possible to use the new **AK-CC55 Connect app** with wireless communication to a smartphone or tablet. The intuitive AK-CC55 Connect app enables and make service and commission very easy, with full control at your fingertips.



Google Play store



Apple App store

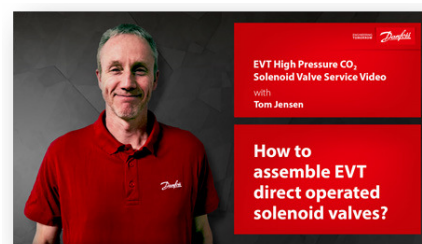


Download the free app today in either Apple App Store for iOS or Google Play Store for Android. Under app setting you can start a demo of the app.

If you need additional information, please contact your local Danfoss sales representative.

Videos in YouTube

- Refrigerant Safety | Ask an Expert:
 - Maintenance work on safety valves - [LINK](#)
- Danfoss Product Finder on Ref Tools - [LINK](#)
- EVT solenoid valves service videos:
 - How to service EVT high pressure CO₂ solenoid valves? - [LINK](#)
 - How does the temperature control differ on flow/return? - [LINK](#)
 - How to assemble EVT direct operated solenoid valves? - [LINK](#)
 - How does a pressure independent thermostatic radiator valve work? - [LINK](#)
 - How to assemble EVT servo operated solenoid valves? - [LINK](#)
 - How to disassemble EVT servo operated solenoid valves? - [LINK](#)



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