

ENGINEERING
TOMORROW



July/August 2023 | 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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New Models (21 and 38 cc) for Optyma™ Package Condensing Unit Range

Danfoss is pleased to confirm the release of 2 additional product sizes, 4 models, for Optyma Plus and Optyma Slim Pack ranges.

Considering the impact of glide with A2L refrigerants and the changing kW requirements A2L-A1, we have the pleasure to introduce 2 extra sizes to the offering: 21cm³ and 38 cm³.

Our full A2L-A1 offering is now available from stock.



Technical features

- Two new compressors have been incorporated inside our package condensing unit range:
 - DST38NA
 - DX21Tba

Code number	Model number	Electrical Code	Unit dimensions				Weight	
			Housing	Height	Width	Length	Gross	Net
				mm	mm	mm	Kg	Kg
114X4217	OP-MPTM021DXP00G	G	H2	813	1090	480	78	67
114X4218	OP-MPTM038DSP00G	G	H2	813	1090	480	80	70
W09								
114X7327	OP-MSTM021DX	G	B2	690	1079	464	77	62
114X7328	OP-MSTM038DS	G	B2	690	1079	464	76	61

Value Proposal:

- Allowing multi-refrigerant use, including low-GWP A2L refrigerants.
- Providing a range validated for the use of A2L refrigerants without additional risks of ignition.
- Optimized selection for better performance depending on the refrigerant used.

VLZ065 with R404A/R448A/R449A Release

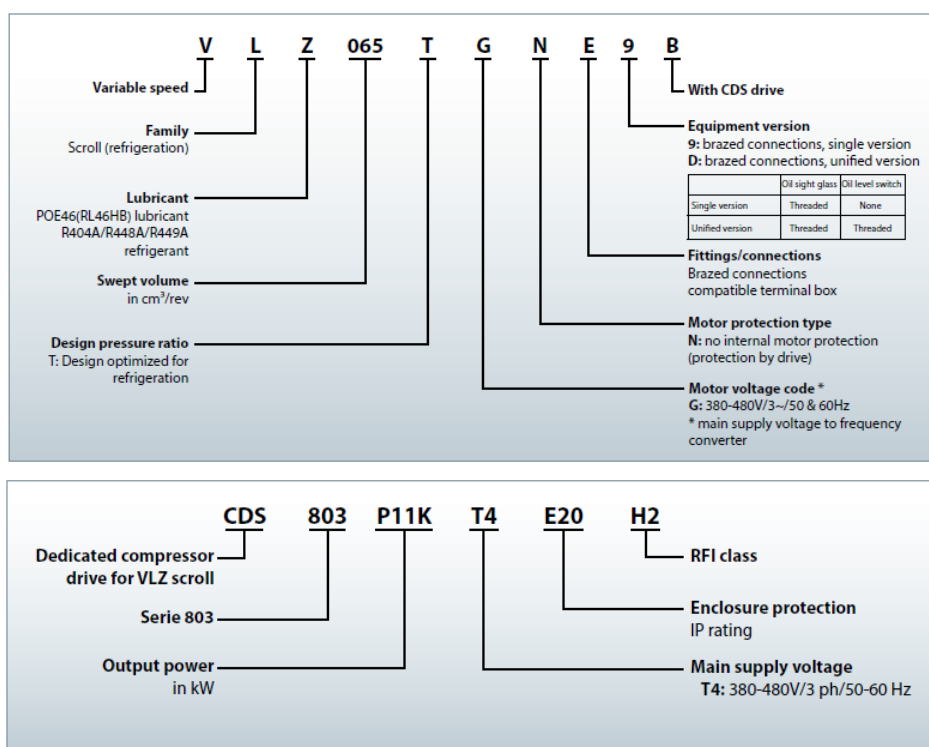
Danfoss has released new variable-speed compressors VLZ065 code G with CDS803 11 kW T4 for refrigeration application, which can be used with R404A, R448A and R449A. Meanwhile, hybrid manifold solution VLZ095H (VLZ065+MLZ030) has also been released.

These new models with R404A/R448A/R449A are for motor code G (380~480V/3 phases/ 50 & 60 Hz). At the same time, a new CDS803 11 kW T4 drive for this new compressor has also been released.

New models and sales codes have been released.



Nomenclature:

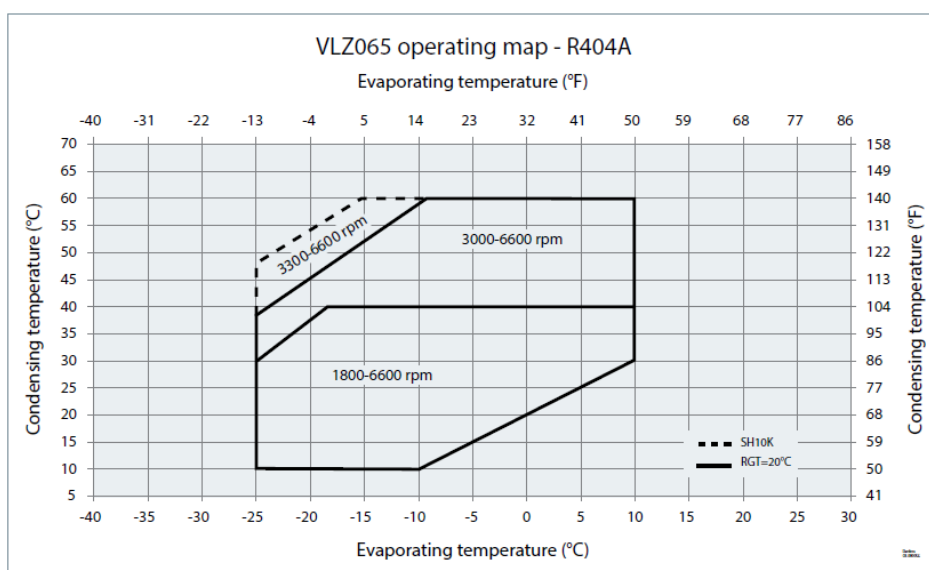


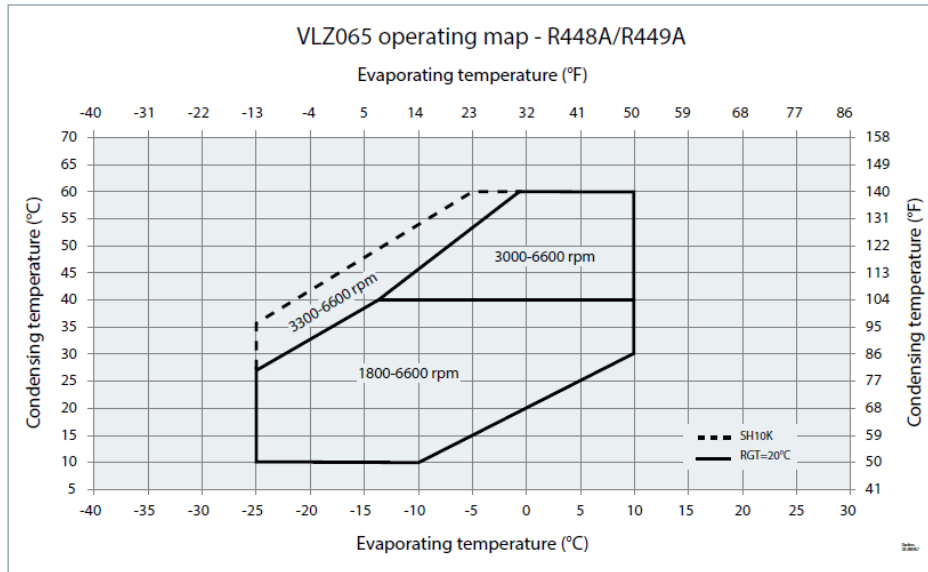
New sales codes:

New model		Description
Tech code	Sales code	
VLZ065TGNE9B	120G0398	Industrial pack, single (OSG) version
VLZ065TGNE9B	120G0397	Single pack, single (OSG) version
VLZ065TGNEDB	120G0396	Industrial pack, unified (OLS+OSG) version
VLZ065TGNEDB	120G0395	Single pack, unified (OLS+OSG) version

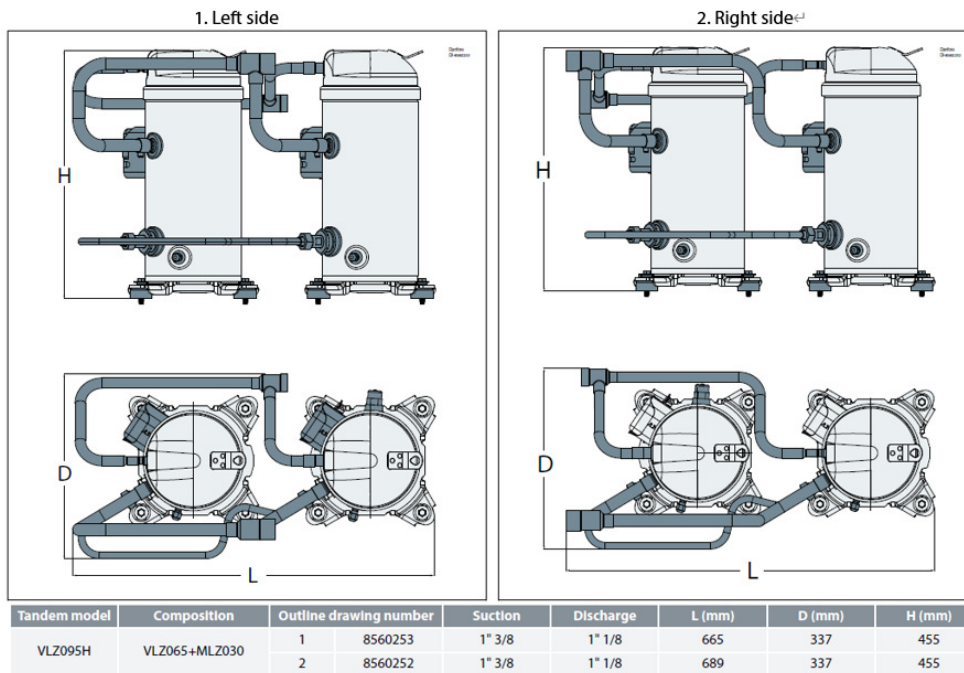
Designation	Sales code	Description
CDS803P11KT4	132X3783	11 kW, 400 V Drive

Operating envelope:

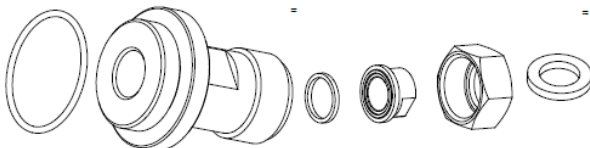




Meanwhile, new hybrid manifolding solution VLZ095H (VLZ065+MLZ030) has also been released.



Tandem accessory kit:



Code no.	Description	Application	Packaging	Pack size
120Z0896	O-Ring, Teflon seal, sleeves, nut, restrictor, Adaptor	VLZ095H	Single pack	1

For detailed capacities, please refer to Coolselector2. Polynomial coefficients are also available directly in [Coolselector2](#). For further information, please refer to the application guideline.

The VLZ065 code G new models with R404A/R448A/R449A have been released in May 2023.

If you need additional information regarding the VZH M&L code J/H new models with R410A/R452B/R454B release, please contact Danfoss technical support.

Danfoss IPS 8, Air Purger

We would like to inform about several improvements that we will introduce for our IPS 8, Air Purger.

Since the release of IPS 8 in July 2019 the built-in controller was of type MCX15B. Controller type MCX15B have faced a planned phase out and therefore we have upgraded the controller to the new type MCX15B2.

The change of controller from MCX15B to MCX15B2 as such will not represent any changes to the basic functional operation of the IPS 8 Air Purger. It will continue to carry out the adaptive smart purging process on demand.

However along with change to the MCX15B2 controller we have updated the application SW with some new features and improvements.



Improvements along with the change to the new MCX15B2 controller

- 1) General HW improvements moving from MCX15B to MCX15B2 controller.
 - a. Increased memory capacity and execution speed
 - b. USB for easy software upload and datalogging
- 2) New User Guide
 - a. All standard language versions available.
 - b. Several improvements like more explainable drawings, HMI pictures, updated parameters list etc.
- 3) LLS 4000/4000 support possible
 - a. Option to install LLS 4000 to protect IPS for high level of ammonia liquid. Via Digital Input. (DI4)
See Fig. 10a in User Guide
- 4) Load scheme to identify which purge point is removing most NCC. See Fig. 21 in User Guide
- 5) Prepared to manage/control Bubbler including cleaning program. See Fig. 22 in User Guide
- 6) General alarm via Digital Input. Force IPS to shut down. Digital Input (DI3)
- 7) Override function. Switch to next Purge point available from HMI or Digital Input (DI5)
- 8) Override function. Force water valve for Bubble to open via Digital Input (DI6)

The new IPS User Guide literature released:

- BC306932151284-000601, for: 084H5001, IPS 8, CE, 230 V AC, 1 ph, 50 Hz - [LINK](#)
- BC344024774466-000601, for: 084H5002, IPS 8, 230V AC, 1 ph, 60 Hz

A new support document/Start-up guide; BC437120335698en-000101 have been made for: - [LINK](#)

- 084H5001, IPS 8, CE, 230 V AC, 1 ph, 50 Hz
- 084H5002, IPS 8, 230 V AC, 1 ph, 60 Hz

Sales code numbers and prices are unchanged.

Sales code number	Description
084H5001	IPS 8, CE, 230 V AC, 1 ph, 50 Hz
084H5002	IPS 8, 230 V AC, 1 ph, 60 Hz
084H5003	IPS 8, UL 230 V AC, 1 ph, 60 Hz

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

Serviceable Industrial Motorized Valve for Large CO₂ Systems

We are pleased to announce the release of new ICMTS 50 & 80 for large capacity CO₂ transcritical systems. The new ICMTS 50 & 80 has been designed specifically for high pressure CO₂ systems and can be used in heavy commercial and industrial applications.

The new ICMTS 50 & 80 can operate up to 140 bar MWP and 90 bar MOPD, making it the perfect choice for high pressure expansion valve, gas bypass valve and low temperature expansion valve, when the MWP is high.

	Specification
Refrigerants	R 744 (CO ₂)
Max. Working Pressure	140 bar
Max. OPD	90 bar
Valve function	Motor operated valve
K _v values/ Capacities	9 / 18 / 27 m ³ /h
Valve color/protection	(Housing) → RAL 6037 Pure Green (Top) → TLP threatment
Temp range (Media)	-40/+50 °C (-40/+122 °F)
Temp range (Ambient)	-30/+50 °C (-22/+122 °F)
Temp range (PED)	-60/+150 °C (-76/+302 °F)



ICMTS 50



ICMTS 80

The new valves are delivered in sizes DN 50 (ICMTS 50) and DN 80 (ICMTS 80), with options of butt weld or brazing connections, straight or angle housing and a replaceable function module. Both ICMTS 50 and 80 operate with standard ICAD 600A TS actuator.

Sizing and selection of ICMTS 50 & 80 can be made via Danfoss selection and cooling calculation software [Coolselector®2](#).

The new ICMTS large features a balanced piston design that ensures smooth regulation of low opening degrees and high differential pressures; and a magnetic coupling to the actuator that guarantees a real hermetic design.

By matching the right capacity required by larger CO₂ transcritical systems, the new valves can help simplify the design and installation, while delivering operation reliability.

For further details on the new products please refer to the [ICMTS large data sheet](#) and the [ICMTS large brochure](#) where you can find the complete product range, the detailed specifications and the most relevant applications. For further information in regards to installation and serviceability of ICMTS large , please go to the [installation guide](#).

AK-PC 782A and AK-PC 782B: Web Release of New Software Version 3.80

A new software version 3.80 for both the Pack Controllers AK-PC 782A and AK-PC 782B is now available as Web release, with the intention to support the continuous development of transcritical CO₂ packs and to correct some minor bugs.

With this software release new features have been added to both the AK-PC 782A and AK-PC 782B.

Main features added:

- Added new sensors and calculations for General PI.
- Support of BOCK Compressors.
- Allowed to disable min DeltaP between Preceiver and PoMT.

Minor features & bug fixes:

- Extend max filter time constant limit.
- Added Synchronous speed parameter with PWM compressors.
- Decoupling HR disable from Prec min band.
- Improve pressure to temp. conversion for Pc max limit.
- Improve Low/High level switch receiver Alarm timer.
- Improve COP algorithm with Sd sensors.
- Improve Calculation of the pressure threshold for IT.
- Improve visibility rules for auxiliary sensors in General PI.
- Fix code number for both A&B versions with CAN interface.
- Support "VSD safety monitor" and "Comp. Running DO" with Frontend.
- Added Chinese translation to Alarm text in Service tool.



The current AK-PC 782A with software ver. 3.50 and AK-PC 782B with software ver. 3.60 can be both upgraded to the software ver. 3.80 if desired, by using the Service Tool. The upgrade is optional.

The software ver. 3.80 is only available as Web release from week 28, 2023.

Please refer to your local Danfoss sales representative to have access to this new software release or download it directly from the dedicated Web page with this link [ADAP-KOOL® software for food retail | Danfoss](#)

AK-SM 800A Series: Software Release 3.3 Including Security Updates

Danfoss announces a new software release of the ADAP-KOOL™ System Manager 800A series. Software Package 3.3 is now available for download from [ADAP-KOOL support site](#). The software is highly recommended for all customers and includes security updates, new functionality, and bug fixes.

Special note: Software Package 3.3 requires that Danux 4.14.13.194 and above is installed.



Software Release 3.3 (package ID 3.3.0) details

Security updates

- User/PW Authorization on each XML Request
- Danux update for new SOM module
- Vulnerability updates

Defect fixes / update highlights

- Schneider Power Meter not working on Modbus#2
- Retest Issue with energy meter CG WM30-AV5 from remote UI
- AK-SM8xxA history logs are not working for AK-RC 204,205 and 305 controllers
- EDF verification: Status not shown correct for FC103

Software Installation

Perform a unit backup and check for any open alarms before proceeding with update.

Step 1 - install Danux 4.1.4.013.194.lpk

- Using StoreView Browser 5 / StoreView Web select OS update and proceed with Danux upgrade.
- Allow a few minutes to pass with the new OS installed.
- Important notes: This file size package is large and depending on your network speed may take 10+ minutes to complete.

Do not interrupt power during the OS update.

Step 2 – update System Manager firmware (package 3.3.spk)

- Using StoreView Browser 5 / StoreView Web or local USB Flash drive, select OS update and proceed software upgrade.

Do not interrupt power during the software update.

- After installation is complete, review for correct system operation.

Important: Review important details before enabling this feature.

Note: By default, 'Use Header Authentication' is disabled to avoid the breakage of existing XML connections. If enabled, current XML commands must be updated - all inbound XML communications must include user/password in header - Failure to do so will break existing XML communications.

Affected products

The below tables show the list of affected products within the System Manager portfolio

Variants <u>with</u> LON Modules	
AK-SM 820A	080Z4024
AK-SM 820A - no WiFi	080Z4025
AK-SM 850A	080Z4021
AK-SM 850A - no WiFi	080Z4022
AK-SM 880A	080Z4028
AK-SM 880A - TP78	080Z4029

Variants <u>without</u> LON Modules	
AK-SM 820A	080Z4044
AK-SM 820A - no WiFi	080Z4045
AK-SM 850A	080Z4041
AK-SM 850A - no WiFi	080Z4042
AK-SM 880A	080Z4048

Timing and Stock

Release 3.3 and associated Danux is immediately available via the Danfoss [ADAP-KOOL support site](#). All newly manufactured units will have Package 3.3 installed starting August.

Security

To help keeping your Danfoss products secured and protected, we emphasize implementing cyber security best practices to maximize your protection against malicious attacks.

Infograms

- Optyma Control: Connected cold rooms for higher efficiency and food safety - [LINK](#)
- How to plan piping like a master - [LINK](#)
- Plug-n-play energy efficiency solutions for convenience stores - [LINK](#)
- Move on from R404A to R448A - [LINK](#)



Details for Additional Information

UK/IE

[Cooling United Support Hub](#)

[Support Made Easy](#)

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