

ENGINEERING
TOMORROW



July/August 2024 | 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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AKV 10P/10PS in Applications Requiring High MOPD

This is an update of the previous communication from November 10, 2023 regarding the MOPD performance of the AKV 10P/10PS expansion valves.

The MOPD values for AKV 10P/10PS with the 018F6905 coil have been updated and can be found in the latest AKVP data sheet. After a slight design change, the AKV 10P4 is now able to achieve higher MOPD value as shown in the table below. The other technical specifications of the AKV 10P4 will remain the same.

Coil for high MOPD performance

Multi-pack code no.	Identical Industrial pack code no.		Identical spare part coil with DIN spade	Supply voltage/ power/ frequency	Connection type/ enclosure rating	MOPD of individual coil (bar)						
						AKV 10P						AKV 10PS
	Orifice size						Orifice size					
	Code no.	Pcs. per pack				0 to 2	3	4	5	6	7 to 8	PS4 to PS8
018F6905	-	-	-	230 V AC 19W, 50 Hz	With terminal box, IP67	70	55	55	55	42	20	55

In terms of coil solution for the regions using different power supply (60 Hz), we are working on the solution and will keep you informed in later communication.

The new upgraded AKV 10P4 will be available for order starting **September 2, 2024**.

For more information, please contact your local Danfoss sales representative.

AKV 10P/10PS: Change of Spare Parts Offering

We are pleased to announce the release of new spare parts for AKV 10P and AKV 10PS valves.

In response to customer feedback and following the ESG strategy, Danfoss has decided to change the AKV 10P/10PS spare parts offering to enable our customers to order a specific part for AKV 10P/10PS service. The new orifice kits will include only one orifice size (e.g., the AKV 10P3 orifice kit will only include orifice size 3). Additionally, the new armature kit and orifice kit have been split into separate code numbers to give customers more options for spare parts ordering.

The existing orifice kits and armature kits will be phased out.

New spare parts offering for AKV 10P valves

AKV 10P0 - AKV 10P8 Orifice kit (single size only)		AKV 10P0 - AKV 10P8 Armature kit	AKV 10P0 - AKV 10P8 Filter kit	AKV 10P Gasket kit
Code no.	Orifice size	Code no.	Code no.	Code no.
068F5164	0	068F5192	068F5154	068F5199
068F5169	1			
068F5177	2			
068F5178	3			
068F5179	4			
068F5188	5			
068F5189	6			
068F5190	7			
068F5191	8			

New spare parts offering for AKV 10PS valves

AKV 10PS4 - AKV 10PS8 Orifice kit (single size only)		AKV 10PS4 - AKV 10PS8 Filter Kit	AKV 10PS4 - AKV 10PS8 Armature kit	AKV 10PS Gasket kit
Code no.	Orifice size	Code no.	Code no.	Code no.
068F5193	4	068F5156	068F5198	068F5199
068F5194	5			
068F5195	6			
068F5196	7			
068F5197	8			

Note! All components will remain exactly the same. This change will only affect the packaging and distribution of the parts.

The new AKV 10P and AKV 10PS spare parts are listed in the table below:

Product Name	Code No.
AKV 10P0 Orifice kit	068F5164
AKV 10P1 Orifice kit	068F5169
AKV 10P2 Orifice kit	068F5177
AKV 10P3 Orifice kit	068F5178
AKV 10P4 Orifice kit	068F5179
AKV 10P5 Orifice kit	068F5188
AKV 10P6 Orifice kit	068F5189
AKV 10P7 Orifice kit	068F5190
AKV 10P8 Orifice kit	068F5191
AKV 10P0 - AKV 10P8 Armature kit	068F5192
AKV 10P0 - AKV 10P8 Filter kit*	068F5154
AKV 10PS4 Orifice kit	068F5193
AKV 10PS5 Orifice kit	068F5194
AKV 10PS6 Orifice kit	068F5195
AKV 10PS7 Orifice kit	068F5196
AKV 10PS8 Orifice kit	068F5197
AKV 10PS4 - AKV 10PS8 Filter kit*	068F5156
AKV 10PS4 - AKV 10PS8 Armature kit	068F5198
AKV 10P/10PS Gasket kit	068F5199

* No changes, the filter kit will remain the same

The phase out will only include the existing orifice kits and armature kits mentioned in the table below:

Product Name	Code No.
AKV 10P0 - AKV 10P3 Orifice kit 1	068F5151
AKV 10P4 - AKV 10P8 Orifice kit 2	068F5152
AKV 10P0 - AKV 10P8 Armature kit 3	068F5153
AKV 10PS4 - AKV 10PS8 Orifice kit 5	068F5155
AKV 10PS4 - AKV 10PS8 Armature kit 7	068F5161

The new AKV 10P/10PS spare parts will be available for order starting **September 2, 2024**.

It will be possible to order the existing orifice and armature kits until the current stock is consumed.

For more information, please contact your local Danfoss sales representative.

ICAD B New Software Release and New CoolConfig App's Release

We have important updates regarding our ICAD B and CoolConfig App's.

ICAD B, a new software version 15.21 has been released. The update includes improved information on display and changes of a couple of factory settings to ensure better support for most common setups.

CoolConfig Mobile App has been updated to run on a new technology to be supported by new versions of operating systems on the phone. This change improves stability and response times but will not change anything related to functionality or look.

CoolConfig PC App has been updated, some functionalities have been added and the App has been optimized along in this process.

ICAD software version 15.21 (release)

A new software version has been released for the online software download service.

This software version will also be installed into new produced ICAD B's going forward.

The update includes improved information on display and changes of a couple of factory settings to ensure better support for most common setups.

We recommend updating all your ICAD B's with the newest software version but if you do not update the ICAD B, it can still run. If your ICAD B's does not have any issues using the old Software version, the update can wait until it fits into your schedule to update, or you can decide not to do the update.

Updating your ICAD B is not a requirement, it is a recommendation.

How to update

ICAD B's which have an older version of Software (ver. 14.00) can be updated through your CoolConfig Mobile App on your phone or through CoolConfig PC App and receive the newest software version.

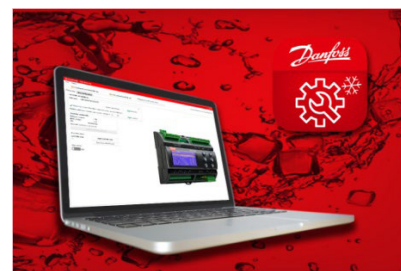
If you connect your phone or PC to the ICAD B it will automatically check if there is a newer Software version available. If a newer version is available, you will be notified.

CoolConfig Mobile App: Updating ICAD B with software using Mobile App you will need to go to the "Meny" in the App and select "Update firmware" and follow the instructions. If you do not know how to do this, please use our "CoolConfig ICAD Operating manual" to see how it is done, click the link below.

[CoolConfig ICAD Operating manual](#)



CoolConfig PC App: Updating ICAD B with software using PC App you will need to go to the “Connection” pane and locate the “Update device software” button, located in the bottom of the page. Pressing this will open a new window where the update starts when clicking at the “Open device Software” button. Please follow the instructions.



CoolConfig mobile: Please update your App on your phone according to your phone supplier’s instructions on how to update your App’s. If your phone has the old version of the App it can still operate the ICAD B no matter which software version it has. If your phone has the old version of the App it can still update the ICAD B with the version 15.21 Software.

CoolConfig App: Please download the latest version of the CoolConfig App for PC using the link below. If your PC has the old version of the App it can still operate the ICAD B no matter which software version it has. If your PC has the old version of the App it cannot update the ICAD B with the new Software version.

[CoolConfig | Danfoss](#)

Danfoss Energy Meters by Carlo Gavazzi

In order to provide a cost-effective energy metering solution easy to install and fully integrated into the Danfoss System Manager AK-SM 800A (starting from SW version R4.0), Danfoss has introduced in its portfolio 2 new energy meters by Gavazzi.



The 1-phase energy meter EM 511 can be installed in any low-voltage switchboard with rated current up to 45A to monitor the energy consumption, the main electrical variables and the harmonic distortion.



The 3-phase energy meter EM 530 can be installed in any low-voltage switchboard, to monitor the energy consumption, the main electrical variables and the harmonic distortion. Compatible with any current transformer with 5 A secondary current, it can be installed in systems with rated current up to 10 kA, even in retrofit applications if used with openable transformers.

Note: only the Danfoss version of the EM 530 and 511 is compatible with AK-SM 800A.

In Danfoss portfolio as accessory of the energy meters are now available 2 sizes of bus-bar current transformer, 100 A and 200 A, and 1 split core current transformer 400 A.

Ordering products

Product Code	Description
080Z2130	3PH Energy meter CT 5A RS485
080Z2131	1PH Energy meter 45A direct conn. RS485
080Z2132	CTD-2X Bus-bar current transformer 100A
080Z2133	CTD-3X Bus-bar current transformer 200A
080Z2134	CTA-6X Split core current transformer 400A

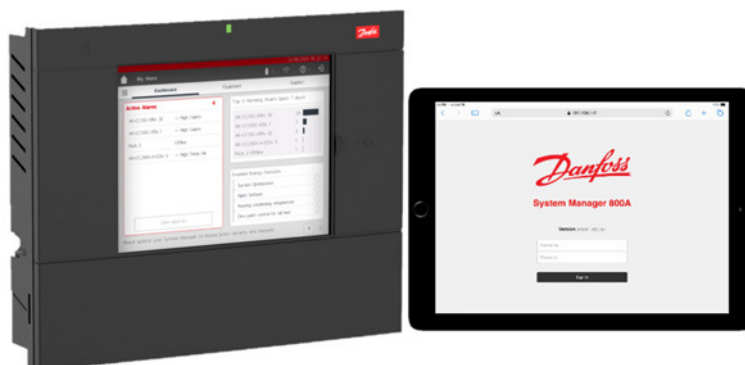


AK-SM 800A Series, Software Release 4.0 Including Security Updates

Danfoss announces a new software release of the ADAP-KOOL™ System Manager 800A series. Software Package 4.0 is now available for download from [ADAP-KOOL support site](#).

This software release includes new security updates, functionality, and bug fixes.

Software package 4.0 requires Danux 4.14.013.194.



Important note on updating System Manager

With AK-SM 800A software package 4.0 and above, an updated security posture is introduced. In compliance with IT best practice and mandatory¹⁾ standards, Danfoss will default to a strong security²⁾ 'posture' on the System Manager AK-SM 800A. Danfoss is promoting a stronger security 'posture' with the inclusion of session control and the default setting of Strict. Session control in the AK-SM 800A is an authentication rules engine/module and is intended to improve the overall security of your system. Session control offers different configuration settings (Backward compatibility, Permissive and Strict). Depending on how these settings are configured, the remote interface will need to comply accordingly.

¹⁾ Examples include but not limited to, Nis2 (Network Information Security), CRA (Cyber Resilience Act), IEC 62443-4-1

²⁾ Strong security posture = HTTPS + Session control Strict

- Session control pertains to Northbound connection security (remote UI and XML)
- AK-SM 800A Session control consists of 3 levels [Backward Compatibility, Permissive, Strict]
- **Upon installation of Release 4.0 session control is immediately defaulted to Strict (can be manually changed to backward compatibility mode)**
- Strict setting requires session tokens for XML1.0 and HTTPS for Storeview Browser 5 (SvB5) and Storeview Web (SvW).
- After upgrade of software package 4.0, user is informed via local screen and remote UI (SvB5/SvW) and has opportunity to select backward compatible mode (requires manual selection).

If Strict mode remains configured, and 3rd Party XML messaging is being used, ensure the XML messaging is updated for Strict mode (below).

Strict (highest security level)

- XML requests cannot contain usernames and passwords but must provide the session token in the AKSM-auth header. If an issue is discovered in the request, it gets rejected.
- Required changes from 3rd party perspective.
 - username and password must be removed from the XML request payload
 - session token must be placed in a CORS header called AKSM-auth

If your AK-SM 800A is currently set up to use an older, less secure web connection (HTTP), you might experience some disruptions in remote access after installing the update. If you are unsure about how your AK-SM 800A is currently set up, we strongly recommend performing the update on-site or having someone present to assist with the update.

You can change the security settings at any time through the Configuration → Security menu, but please note that supervisor-level access is required.

Software Release 4.0 (package ID 4.0.14) main highlights (full change log available on [ADAP-KOOL® support site](#))

Work Type	Title
Backlog Item	Support to SvW/SvB5 on Session Control for default Strict Mode Popup
Backlog Item	Implement comm loss detection and auto recovery (Comm loss)
Feature	New remote UI splash screen promoting SvW (SvB5 remains available)
Feature	Increase # of evap nodes under suction group
Feature	Support for Carlo Gavazzi EM530 and EM511 Power Meters
Feature	Update security - SM800A 'Session Control'
Bug	General 15min sample rate history not working
Bug	DGS Offline/Online Local Discrepancy -not working on local screen
Bug	Addressed reported issue with DNS operation
Bug	AK-SM 800A with EKC 202D2 sensor offset value not applying
Bug	Schedules for night setback for pack controller fixed
Bug	Local UI, History config not available for WattNode MB device
Bug	Square D Powerlink G3 Light Panel not detected by scan
Bug	AK XM208C module not fully implemented
Bug	SM800A gets wrong IP of 28.8.0.0

Software Installation

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

Step1 (if required) install Danux 4.14.013.194.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:

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. For systems utilizing DHCP it is advised that this update is performed locally, as IP address change is possible after re-booting.

Step 2 – update System Manager firmware (package 4.0.14.spk)

- Due to new default security setting included in this software package, it is recommended where possible to update your System Manager(s) via the local screen / USB flash drive. This will avoid any remote connection interruptions due to the default security of HTTPS and Strict Session control immediately after system reboot.
- If updating via remote, using StoreView Browser 5 / StoreView Web, select OS update and proceed software upgrade. Do not interrupt power during the software update.
- After installation is complete, the System Manager will be in HTTPS / Strict mode but can be changed via the immediate pop-up screen or via Configuration>Security screen (required Supervisor level access)
- A new 'splash screen' will be presented, inviting for the use of SvW (SvB5 remains available)
- Review for correct system operation and remote connectivity.

Important:

If your AK-SM 800A application is configured for HTTP, be aware that after installing R4.0.x and rebooting, you may lose your remote browser session/XML connection. To resolve this, you will need to manually type "https" in front of your system manager's IP/DNS name. If you are unsure, we recommend performing the update on-site.

Known Issues with Permissive/Strict Modes (to be fixed in the next release):

- **Alsense Customers:** Configure AK-SM 800A in Backward Compatibility Mode to ensure full-service continuation. The next release will support full Permissive and Strict modes for all services.
- **Primary/Secondary Host Network:** DNS configuration is not supported when running in Permissive/Strict mode.
- **Remote User Interface and XML Performance:** May be degraded when the System Manager is in Permissive/Strict modes (slower screen responses/data loading). Improvements are scheduled for the next software update.

General Known Issues (to be fixed in future releases):

- **Danfoss AK-RC 205C:** Currently not supported on Modbus#2.

Approved products:

The below table shows approved AK-SM 800A portfolio versions suitable for software 4.0.

AK-SM 800A variants

Type	Description	Code No.
AK-SM 820A	C-Store (Refrigeration / HVAC / Lighting)	080Z4024
AK-SM 850A	Refrigeration (including Lighting)	080Z4021
AK-SM 850A – no WiFi	No Wi-Fi, Refrigeration (including Lighting)	080Z4022
AK-SM 880A	Full (Refrigeration / HVAC / Lighting)	080Z4028
AK-SM 880A – TP78	Retro-fit Full (Refrigeration / HVAC / Lighting)	080Z4029

AK-SM 800A variants without LonWorks®

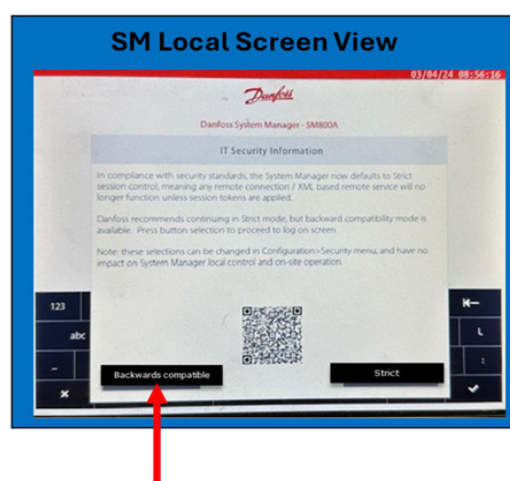
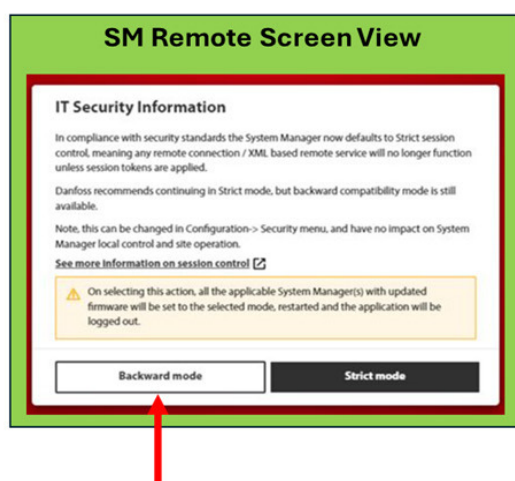
Type	Description	Code No.
AK-SM 820A	C-Store (Refrigeration / HVAC / Lighting)	080Z4044
AK-SM 850A	Refrigeration (including Lighting)	080Z4041
AK-SM 880A	Full (Refrigeration / HVAC / Lighting)	080Z4048

Important Update for Danfoss Digital Services and Alsense Customers

If you are planning to update to the AK-SM 800A software package version 4.0, please be aware that it is essential to disable the default activation of Strict Mode. During the update process, you will have the option to revert to backwards compatibility (see picture). This step is crucial to ensure an uninterrupted connection to Alsense or other web-based applications.

We are working on enabling Strict Mode compatibility with Alsense and will include this support in our upcoming release, version 4.1.

For customers currently using Alsense, we recommend postponing the update to version 4.0 and waiting for the release of version 4.1.



Timing and Stock

Package 4.0 is released for general update and is available via [ADAP-KOOL® support site](#). Stock units will not be recalled or updated. Release 4.0 is a Web only release.

New Models for Optyma™ Plus Inverter Package Condensing Unit



Danfoss is pleased to confirm the release of 1 additional product size, for Optyma Plus Inverter range and A1 multi-refrigerant R404A, R448A, R449A.

Considering increasing energy cost and the multi cold room demand we are pleased to have now a range of best-in-class variable capacity units from 5.9 to 12.8 kW which will fit perfectly for multi display cabinet, multi cold room or specific cooling systems that require precise cooling capacity. Economic affordable decarbonization solution that is less impacted on performance by high ambient temperatures, opposite to CO₂ solutions.

Features:

- From 4.3 kW to 12.8 kW at -10°C, 32°C ambient temperature (R404A)
- Best in class variable capacity and energy efficient brushless compressor from 30 to 100 %
- Dedicated oil separator for reliable operation
- Best in class Micro channel heat exchanger
- Electronic controller
- Variable speed fans
- All standard equipment (Filter dryer, sight glass, receiver with valves, stop valves)
- Nice looking housing
- 2 hinged doors for easy maintenance

Benefits:

- Best in class food preservation +/- 0.3°C temperature control
- Best in class energy cost reduction -20/30 % from fix speed competition
- Lower refrigerant charge -2.9 kg versus altern. competition
- Best in class analysis and connectivity with electronic controller and system manager

Code Number	Model Number	EAN Code	Height	Width	Length	Country of Origin
			mm	mm	mm	
114X4317	OP-MPPM044	5715162788783	1134	620	1518	India

Condensing unit performance data is available in [CoolSelector2](#).

Software Update – AK-ST 500 Service Tool Version 4.3.1

Service Tool AK-ST 500 version 4.3.1 has been released and is available for download at

<https://www.danfoss.com/en/service-and-support/downloads/dcs/adap-kool-software/ak-st-500/>

The new software version is an update, where the focus has been on updating the Java runtime, support of Windows 11 and solving some bugs.

Oracle Java has changed the license policy for use of their Java runtime, which means that all users of Oracle Java runtime must acquire a license for any runtime environment installed on their equipment. In this software version 4.3.1 a new free Java runtime has been added.

If you are using the Oracle Java runtime distributed along with the AK-ST 500 software, it must be updated to this new software version of the AK-ST 500, if you haven't already acquired a license to use Oracle Java Runtime.

The new software version 4.3.1 uses a free runtime environment which doesn't require any license.

Furthermore, to use the AK-ST 500 with the latest controllers it is advised to update to the latest version.

If you have any questions regarding this information, please contact your local Danfoss representative.



Videos and Infographics

Videos:

- ICAD B actuator videos:
 - ICAD B actuator: a step-by-step introduction - [LINK](#)
 - ICAD B actuator: setup and configuration overview - [LINK](#)
 - ICAD B actuator: how to easily navigate it - [LINK](#)
 - ICAD B actuator: configuration of operation modes - [LINK](#)
 - ICAD B actuator: UPS connection and operation - [LINK](#)
- How to program ERC's and EET's using Koolkey and MPK (Mass Programming Key) - [LINK](#)
- Danfoss BOCK® FK40 and FK50 | How to replace the shaft seal - [LINK](#)



Infographics:

- Decarbonization in food & beverage - [LINK](#)
- Hydrocarbons: A long-term solution - [LINK](#)
- Solenoid valve checkup tips - [LINK](#)
- Troubleshooting thermostatic expansion valves - [LINK](#)
- A 360° view of Danfoss solenoid valves - [LINK](#)

Details for Additional Information

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[Cooling United Support Hub](#)

[Support Made Easy](#)

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