

ENGINEERING  
TOMORROW

*Danfoss*

January 2024 | Danfoss Climate Solutions for cooling

# TECH INSIDER

A large, abstract graphic in the bottom half of the page. It consists of a grid of red lines that form a series of concentric, slightly curved rectangular shapes, creating a sense of depth and movement. The lines are thicker in some areas and thinner in others, giving it a dynamic, almost organic feel.

## 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 ICAD B Actuator for Motorized Valve Control

We are pleased to announce the release of the new ICAD B series, the new generation actuator for motorized valves ICM /ICMTS and pressure regulating pilot CVE-L.

As the industrial refrigeration industry embarks toward digital transformation, Danfoss introduces the new ICAD B – taking motorized valves control and connectivity to a new level. Engineered for a wide range of applications, our well-known actuator ICAD takes a big step toward digital integration, enhanced user experience, and higher reliability. All to prepare industrial refrigeration for a cooler future.

Dedicated to easy set-up, trouble-free operations, and real-time monitoring, the new actuator ease workflows – all while the wireless interface offers remote control and adjustment, eliminating the need to climb the valve.

Plus, because it is 100 % backward compatible, the ICAD B seamlessly replaces the current ICAD A.

To meet all needs, the ICAD B is available in a series of four variants: RS485 with display, Ethernet with display, RS485 w/o display, and Ethernet w/o display.

### Overall features and benefits of the ICAD B include:

- **Saving time** thanks to the quick set-up function.
- **Smartphone app control** via Bluetooth.
- **Easy operation** with the larger display and intuitive, descriptive menu.
- **Self-diagnostics and remote monitoring**, ensuring no downtime.
- **Multiple interfaces** for easier set-up and adjustment of parameters.
- **Enhanced operating logic** designed for outstanding reliability on the most challenging conditions.
- **Real-time monitoring and control** via data communication.
- **New mounting design** for easier mounting.
- **Forward compatibility** with software-based updates providing the latest features and functionalities.



**New generation ICAD B**

### Enhanced User Interface

Multiple interfaces(options) for easier set up and adjustment:

- Text descriptive Menu on display
- Status light.
- Smartphone app – Bluetooth connectivity
- Interface via Data Comm

### Data communication

For easier integration to control systems (Monitor and Control via data):

- RS485 with Modbus RTU
- Ethernet with Modbus TCP/IP

### New mounting design

Easier/faster mounting & dedicated for low temp applications:

- Only 2 screw adjustment needed for mounting.
- Fully hermetic design (no moisture penetration)

### Smart software features

- Quick set up
- Self-diagnostics
- Maintenance intervals
- Operational logic enhancements
- Better control resolution(micro-steps)
- Easy SW update on the field
- New functionalities (2-step control)

◀◀ **100% Backwards compatible**  
Functional and dimensional compatibility

See all details of ICAD B new series here: [ICADB.danfoss.com](https://icadb.danfoss.com)



### Learn more – and get in touch!

To learn more about how new ICAD B enables next level connectivity, superior reliability, and user-friendly operations, please contact your local Danfoss sales representative.

## AK-PS Power Supply New Family

Due to the general problem in finding components in the market to produce electrical and electronic products, we are forced to replace the current AK-PS Power Supply range with the new AK-PS STEP3 Power Supply family.

### Affected products

Product Code	Description	Replacement Product Code	Description
080Z0053	AK-PS 075	080Z0057	AK-PS 063 STEP3
080Z0054	AK-PS 150	080Z0058	AK-PS 130 STEP3
080Z0055	AK-PS 250	080Z0059	AK-PS 250 STEP3

The new family will be different in some of the specification as output current, inrush current, width (reduced in the new models compared with the old ones) as shown in the following table:

	OLD 080Z0053 AK-PS 075	NEW 080Z0057 AK-PS 063 STEP3	OLD 080Z0054 AK-PS 150	NEW 080Z0058 AK-PS 130 STEP3	OLD 080Z0055 AK-PS 250	NEW 080Z0059 AK-PS 250 STEP3
Output Current	0.75 A	0.63 A	1.5 A	1.3 A	2.5 A	2.5 A
Inrush current	<15 A (typical)	typ. 30 A (25 °C)	<15 A (typical)	typ. 22 A	< 15 A (typical)	typ. 28 A
Width	36 mm (2 TE)	18 mm (2 TE)	54 mm (3 TE)	36 mm (3 TE)	72 mm (4 TE)	54 mm (3 TE)
Connectors	Screw	Push-in	Screw	Push-in	Screw	Push-in

The new version will be released in mid-2024 and availability will start when the stock of the old version will be depleted. Please, contact your local Customer Service for further details.

During the transitional period it will be possible that orders for the old codes, if no longer available, will be fulfilled with the new ones.

## AKA 211 Cable Filter: End-of-Life & Alternative Solution

We would like to inform you that AKA 211 Cable Filter has reached end-of-life due to EoL of underlying components. Production has already ended, and no new quantities can be produced since the key components are not available from our supplier anymore.

Affected code numbers:

- 084B2238
- 084B2239

Most of the stock has already been depleted which means that outstanding orders will not be able to be fulfilled. Danfoss already offers an alternative solution for applications where AKA 211 Cable Filters were used in combination with AK-XM 208B (080Z0022). These should utilise the AK-XM 208C (080Z0023) instead, in this case the AKA 211 is not required. Please see the installation guide for AK-XM 208C for details here: [Installation Guide](#)



### Alternative solutions

Danfoss recognizes the issue for customers who still rely on these products. Since we are unable to provide alternative in-house, we have identified, tested and validated two alternative 3<sup>rd</sup> party products to be used in place. Note: It is strongly recommended that a field testing is performed with these 3<sup>rd</sup> party filters to validate in real application conditions. Furthermore, the arrange tested into the lab may not cover all the possible scenarios in a live installation.

#### Alternative 1:

**Vendor:** On Filter ([www.onfilter.com](http://www.onfilter.com))

Contact: Mr. Vladimir Kraz (vkraz@onfilter.com) Tel +1-831-824-4052 - Location: CA, US

**Proposed model:** DH231

#### Compatibility with AKA211

- Connections: Similar as AKA 211 (4 wires)
- Electrical Data: Support up to 3A (AKA 211 is 300 mA)
- Installation: Small (68 x 66 x 20 mm), panel mount (AKA 211 DIN rail)

**Availability:** Ready to produce on orders.



#### Alternative 2:

**Vendor:** Buy EMS (<https://buyems.net>)

Contact: Email: cs@buyems.net or Phone +1 (410) 399-9859

**Proposed model:** ETC-2238 ETS

#### Compatibility with AKA211

- Connections, Electrical Data and Installation method: Same as AKA 211

**Availability:** Standard product



### Concluding remarks

For new installations, Danfoss strongly recommends the use of AK-XM 208C stepper driver module in combination with the System Manager AK-SM 800A (such solution does not require any extra accessory as the filter is already embedded in the driver module) - available end of Q1 2024.

For existing installations which still demand the use of an external filter, customers can choose between these two options as alternatives:

- DH231 from On Filter
- ETS-2238 from Buy EMS

Both filters were tested with an AK-IO expansion module for stepper valves (AK-XM 208B) in conjunction with a KVS 42 valve by Danfoss. Lab testing suggests that the "On Filter" and "Buy EMS" filter would be a suitable 3<sup>rd</sup> party solution for retrofits and replacements, under the following condition:

It is strongly recommended that a field testing is performed with these 3<sup>rd</sup> party filters to validate the performance in real application conditions. The test setup in the lab may not have covered all the possible scenarios of a live installation.

## Last Time Buy Option of Programming Keys EKA 183A and EKA 183B

Legacy programming keys EKA 183A, EKA 183B along with docking station which are used to program CRO controllers ERC 11X and ERC 21X will be completely phased out.

**Please Note:** Docking station (**code no: 080G9701**) is no longer available for sales, only programming keys are up for last time buy option.

### Ordering codes for last time buy option

Part Code	Model Number	Description
080G9740	EKA 183A	Programming Key for ERC 11X
080G9741	EKA 183B	Programming Key for ERC 21X

### Recommendations

As part of the transition process already started, any customer currently using docking station along with programming keys should consider moving to KoolKey and Mass Programming Key (MPK) which supports entire CRO product portfolio, which is EET's, ERC 11X and ERC 21X versions.

### KoolKey and MPK general information

KoolKey EKA 200 is a gateway which enables communication with KoolProg and it also acts as a programming key for CRO controllers. Mass Programming Key (MPK) EKA 201 is a simple programming key used for a mass programming of controllers in a production line.

### Cross reference table

Part Code	Description	Supports	Replacement Code	Description	Supports
080G9701	Docking station	ERC 11X	080N0021	EKA 201 - Mass Programming Key	ERC 11X, ERC 21X, EETa
080G9740	EKA 183A Programming Key for ERC 11X	ERC 11X	080N0020	EKA 200 - KoolKey	ERC 11X, ERC 21X, EETa, EETc
080G9741	EKA 183B Programming Key for ERC 21X	ERC 21X	080N0020	EKA 200 - KoolKey	ERC 11X, ERC 21X, EETa, EETc

### Ordering

Part Code	Description	Quantity
080N0020	EKA 200 - KoolKey programming key	Single pack
080N0021	EKA 201 - MPK Mass Programming Key	Single pack
<b>Interface cables</b>		
080N0324	KoolKey/BLE Cable - EET, 1M	Single pack
080N0325	KoolKey/BLE Cable - EET, 0.5M	Single pack
080N0326	KoolKey/BLE Cable - ERC 21x, 1M	Single pack
080N0327	KoolKey/BLE Cable - ERC 21x, 0.5M	Single pack
080N0328	KoolKey/BLE Cable - ERC 11x, 1M	Single pack
080N0329	KoolKey/BLE Cable - ERC 11x, 0.5M	Single pack

### Affected Products

All members of the ERC 11X and ERC 21X family.

### Transition Support

Please find below technical literatures of KoolKey and Mass Programming Key:

KoolKey: [AN404130514212en-000301](#) and MPK: [AN404128761210en-000201](#)

## Industrial Solenoid Valves – Support Tools

Danfoss offers a wide range of high-performance solenoid valves, available in direct-operated, servo-operated and assisted lift versions.

An easy, economical way to control and regulate fluids and non-flammable gases.

Danfoss solenoid valve bodies and electrical coils are normally supplied separately and then combined.



### Frequently Asked Questions



When troubleshooting solenoid valves numerous questions may arise. We have gathered the most frequently asked questions & answers on our website.

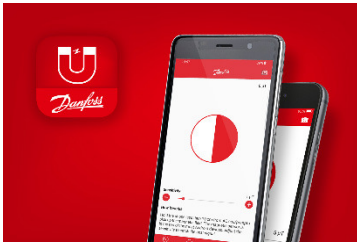
The FAQ section includes answers for both NC normally closed and NO normally open valves.



Link to the FAQ section on the website: [FAQ solenoid valves](#)

The QR code aside directs you to the FAQ section on the website:

### Magnetic Tool App



With a handy app, Magnetic Tool, you can test if a solenoid valve coil is working properly. Just open the app, hold your smartphone up to the solenoid coil you want to test, and watch for the wheel in the app to start spinning. If it rotates, your solenoid valve is good to go. The tool is included in the Ref Tools app and can be downloaded here:

[Download Ref Tools](#)

### Quick Selector



Find the most suitable solenoid valve and coil for your project from the Danfoss product portfolio. Select application, media, function, connection size and type and find the best suited solenoid valve for your project.

[Visit the Quick Selector](#)

### Product Overview Brochure

Solenoid valves control and regulate fluids. Our solenoid valve program includes valves for air, steam, oil, and gas, suiting a number of industrial applications that require high performance.

The overview brochure of Danfoss approved solenoid valves makes it easy to select the right solenoid valve for you project: [Product overview](#)



## CTM 6 Multi Ejector – Removal of the DST Pressure Transmitter

DST P310 pressure transmitters will be removed from CTM 6 Multi Ejectors design.

Danfoss Multi Ejector has been on the market for years. Since its introduction it has become a huge success proving Danfoss technological advancements in CO<sub>2</sub> technology. Since its introduction CTM has been used by most innovative customers in CO<sub>2</sub> forefront and got great feedback from its users.

Danfoss is continuously looking to improve the performance of our products. Recent feedback from our customers show that the pre-installed pressure sensors are almost never used. Therefore, to improve quality and lower our costs, we are removing the pressure sensors from the design.

Pressure transmitter will no longer be part of CTM 6 Multi Ejector design.

An important advantage is less environmental impact – removing difficult to recycle electronic devices and decreasing the weight of the whole product (12 steel screws and sensor mounting plate removed).

**Below pictures illustrate the change:**



**Before the change**



**After the change**

To the best of our knowledge the change will have no impact on final customers and the usage of the product.

Despite searching heavily for a customer who uses the sensors built into the CTM 6 Multi Ejector we did not manage to find any. Our application experts and colleagues working “in the field” were consulted in the process – no single case has been identified.

Explanation is simple: Over last couple of years a best practice has been established to place measuring elements on easily accessible block valves. Sensors placed inside the unit, surrounded by isolating foam and difficult to access have proven to be a difficult solution that is hard to accept from a maintenance point of view, even if the sensors do require service or replacement occasionally.

### Affected products

The following list includes all the affected product codes impacted by the change

Code number	Product type
032F5673	CO <sub>2</sub> Multi Ejector HP 1875
032F5674	CO <sub>2</sub> Multi Ejector HP 3875
032F5675	CO <sub>2</sub> Multi Ejector HP 1875 LE 400
032F5676	CO <sub>2</sub> Multi Ejector HP 2875 LE 200
032F5677	CO <sub>2</sub> Multi Ejector HP 2875 LE 400
032F5678	CO <sub>2</sub> Multi Ejector LP 935
032F5679	CO <sub>2</sub> Multi Ejector LP 1935
032F5680	CO <sub>2</sub> Multi Ejector LP 935 LE 200
032F5681	CO <sub>2</sub> Multi Ejector LP 1435 LE 200
032F5682	CO <sub>2</sub> Multi Ejector LP 1435 LE 400
032F5693	CO <sub>2</sub> Multi Ejector LP 1435
032F5698	CO <sub>2</sub> Multi Ejector HP 2875

## Timing

Expected implementation date is February 2024

## Summary

Removal of pressure sensors from CTM 6 Multi Ejectors is being introduced based on our customers' request.

This change has following advantages:

- Reduced environmental impact of product – less materials, less electronic parts.
- Increased product reliability – reduced number of points where leaks can occur, less elements that can brake/be damaged.
- Reduced installation space.
- Easier insulation – more regular geometry and less elements "sticking out".

## Videos on YouTube

- Watch our Q&A series to get the answers to common refrigerant questions:
  - How is the oil compatibility with new refrigerants? - [LINK](#)
  - How to adjust the TXV to the new refrigerant during retrofit? - [LINK](#)
  - What is glide in refrigeration systems? - [LINK](#)
  - Do I need to change LP and HP switch settings? - [LINK](#)
  - Do I need to flush the system – and if yes, how- (retrofit)? - [LINK](#)
  - Should I change the compressor oil during a retrofit? - [LINK](#)
  - Do I need to change pressure relief valve settings after a retrofit? - [LINK](#)
- Bi-flow filter driers (DMB/DCB): short presentation - [LINK](#)



## Details for Additional Information

### UK/IE

[Cooling United Support Hub](#)

[Support Made Easy](#)

[customerservice.uk@danfoss.com](mailto:customerservice.uk@danfoss.com)

[customerservice.ie@danfoss.com](mailto:customerservice.ie@danfoss.com)

Customer Service UK & IE tel: 0330 808 6888

### Denmark

[Cooling United Support Hub](#)

[Support Made Easy](#)

[kundeservice.dk@danfoss.com](mailto:kundeservice.dk@danfoss.com)

Kundeservice tel: 69 91 80 80

### Norway

[Cooling United Support Hub](#)

[Support Made Easy](#)

[kundeservice.no@danfoss.com](mailto:kundeservice.no@danfoss.com)

Kundeservice tel: 23 96 71 00

### Sweden

[Cooling United Support Hub](#)

[Support Made Easy](#)

[kundservice.se@danfoss.com](mailto:kundservice.se@danfoss.com)

Kundservice tel: 010 888 7400

### Finland

[Cooling United Support Hub](#)

[Support Made Easy](#)

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