

ENGINEERING  
TOMORROW



November 2021 | 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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## DSH Medium Scroll Compressors, R452B/R454B Envelope Extension



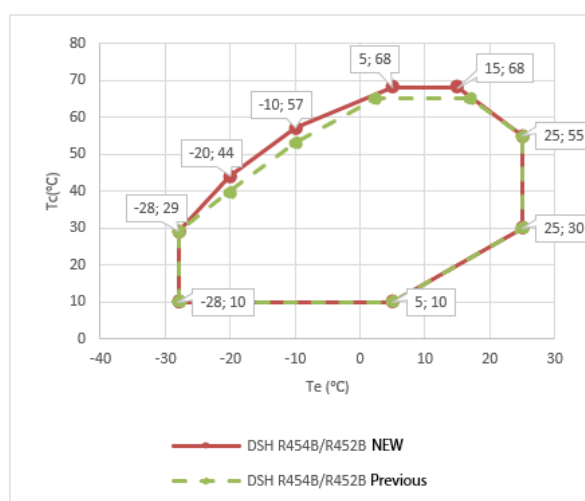
To accelerate the low GWP refrigerant transition, we are pleased to announce that Danfoss has qualified a larger application envelope for its range of DSH medium Scroll Compressors using R452B /R454B.

The newly optimized compressors are 100 % back-compatible therefore the ordering codes will remain the same.

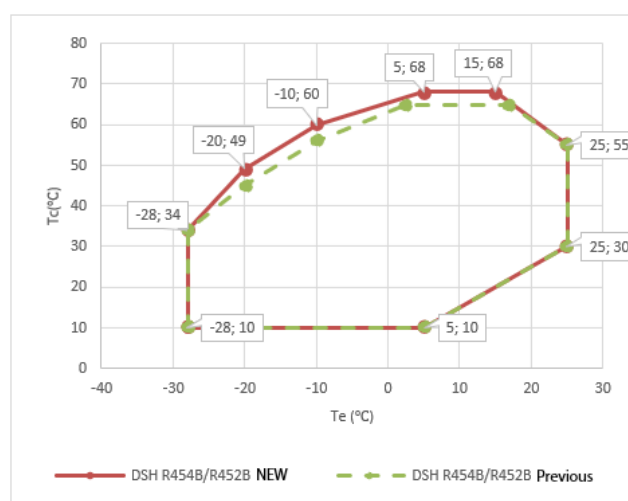
### Application envelope

Below graphs are showing the new enlarged envelope now available with the DSH multi refrigerant Medium range.

DSH090/105



DSH120/140/161/184



### Technical specification

The main application consequence of this larger envelope operations is:

1. The maximum condensing temperature has been extended from 65°C to 68°C. So, high side working range is now 41.7 bar(g) and maximum high pressure safety switch setting is adjusted accordingly from 40.6 to 43.1 bar(g).
2. Due to increased compressor discharge gas temperature, for the R452B/R454B application a new acoustic hood has been developed.

### Compressor sound radiation (New R452B/R454B application with extended envelope)

Compressor model	50 Hz		60 Hz		Acoustic hood code number	
	Sound power dB (A)	Attenuation dB (A) <sup>(1)</sup>	Sound power dB (A)	Attenuation dB (A) <sup>(1)</sup>	Body	Top
DSH090	73	4	76	4	120Z0490	120Z0493
DSH105	75	4	78	5	120Z0491	120Z0493
DSH120	75	4	78	5	120Z0491	120Z0493
DSH140	76	4	79	5	120Z0491	120Z0493
DSH161	76	4	79	5	120Z0491	120Z0493
DSH184	78	5	81	6	120Z0492	120Z0493

<sup>(1)</sup> Attenuation given with acoustic hood

### Affected products

DSH090 -184 code 4 in case of R452B/R454B application

### Implementation date

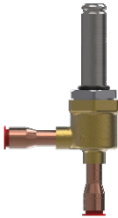

Oct. 2021

For further information, please refer to the application guideline.

## EVT - New Solenoid Valve for CO<sub>2</sub>

Danfoss is pleased to introduce the new [EVT solenoid valve range for CO<sub>2</sub> systems up to 140 bar](#). The EVT range consists of three types with either stainless steel or copper solder connections:

- EVT 1.2 - Direct-operated for oil return, pressure equalization/relief control, high high-pressure hot gas bypass/dump and hot gas defrost
- EVT 2.0 and 3.0 - Servo-operated for high-pressure hot gas bypass/dump and hot gas defrost application

Features	EVT	EVT
		
Solder connection	Copper	Stainless steel
DN [mm]	1.2–3.0	1.2–3.0
Connection	ODF 3/8"	ODM 6 mm
Max. working pressure [bar]	140	140
Function	NC	NC

### Features:

- Simple and fast mounting of Danfoss clip-on coil
- Designed for media temperature up to 150 °C
- Working pressure up to 140bar with standard coils
- MOPD up to 110bar with standard coil
- Body material in ECO brass (lead free < 0.1%)
- Coil enclosure up to IP67 for extreme conditions
- Robust design ensures long lifetime
- In accordance with RoHS II, REACH, LVD and PED



UI approval will be available in December 2021

### Code numbers:

ETV range consist of 12 code numbers, with different connections and packing.

Type	Connection size		K <sub>v</sub> value [m <sup>3</sup> /h]	Code no.	Packing
	ODF [in]	ODM [mm]			
	Copper	Stainless steel			
EVT 1.2	3/8	-	0.05	068F0600	Multi-pack
	-	6		068F0625	I-pack
	-	6		068F0622	Multi-pack
	-	6		068F0626	I-pack
EVT 2.0	3/8	-	0.1	068F0601	Multi-pack
	-	6		068F0627	I-pack
	-	6		068F0621	Multi-pack
	-	6		068F0628	I-pack
EVT 3.0	3/8	-	0.23	068F0611	Multi-pack
	-	6		068F0629	I-pack
	-	6		068F0620	Multi-pack
	-	6		068F0630	I-pack

Please find more information on our Product Store here in the category: [Solenoid Valves, CO<sub>2</sub>](#).

## Coolselector:

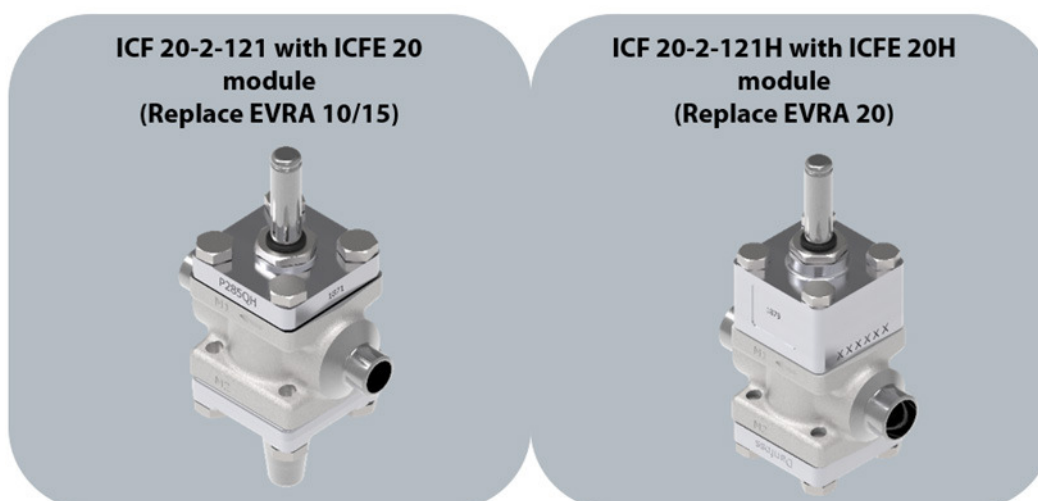
Download the newest version of [Coolselector®2](#), and you will have access to select the right EVT for your application.

Selected	Type	NS	Kv [m³/h]	DP <sub>100</sub> [bar]	DP <sub>min</sub> [bar]	Kv <sub>calc</sub> [m³/h]	DP [bar]	Opening degree [%]	Load [%]	Possible parts
<input type="radio"/>	EVT 1.2	6	0.05	0	0	0.05	54.73	-	-	-
<input type="radio"/>	EVT 2	6	0.1	6,400	0.199	0.1	54.73	100	1553	-
<input checked="" type="radio"/>	EVT 3	6	0.23	6,400	0.198	0.23	25.41	100	675	-

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

## Introducing the New ICF 20-2 which will Replace EVRA(T) 10, 15 and 20

New solenoid valve for refrigeration applications



We are pleased to announce the release of the Danfoss ICF 20-2 solenoid valve. The new ICF 20-2 is specifically designed to replace EVRA 15, 20 and even size 10.

This will not only move the benefits from EVRA to ICF 20-2 but also introduce better performance specification. It will be a 1:1 replacement of EVRA 15 and 20 (10 will come later) but it will also open to the well-known flexibility of the ICF platform.

### Changes

Some of the highlights with this new design are:

- Direct weld replacing flanges and gaskets increase safety and saves time
- Flat top cover gasket supports the use in systems down to -60°C and CO<sub>2</sub> up to 65 bar
- Serviceability and full flexibility with the ICF platform
- Manual opener becomes standard for both variants
- Many more refrigerants available since it is now based on the ICF platform (please, see Product Store)

Main features	Existing range			New range	
	EVRA(T) 10	EVRA(T) 15	EVRA(T) 20	ICF 20-2-121	ICF 20-2-121H
				Replaces EVRA(T) 10/15	Replaces EVRA(T) 20
MWP	42 bar / 609 psi			65 bar / 943 psi	
Temp range	-40 to +105 °C			-60 to +120 °C	
Kv [m³/hr]	1,5	2,7	4,5	3,2	4,9
Min. OPD	0,05 bar (EVRA) 0 bar (EVRAT)			0 bar	0,2 bar
Max. OPD (coil type dep.)	25 bar/363 psi			21 bar/305 psi @ 12W	40 bar/580 psi @ 20W
Manual Stem	Optionable			Standard (ICFE 20)	Standard (ICFE 20H)
Design	Servo Diaphragm			Servo Diaphragm	Servo Piston

## Release of ICF 20-2

We will release these products in North Europe January 2022

## Product sales code numbers

7 codes of each variant will be released with different connections type and size.

### ICF 20-2-121

Code number	Description	Conn. type	Conn std.
027L3802	Valve station ICF 20-2-121	DIN 15	EN 10220
027L3803	Valve station ICF 20-2-121	DIN 20	EN 10220
027L3801	Valve station ICF 20-2-121	ANSI 15	ANSI B 36.10
027L3805	Valve station ICF 20-2-121	ANSI 20	ANSI B 36.10
027L3809	Valve station ICF 20-2-121	SOC 20	ASME B 16.11
027L3811	Valve station ICF 20-2-121	22 SD	EN 1254-5
027L3813	Valve station ICF 20-2-121	7/8 SA	ASME B 16.50

### ICF 20-2-121H

Code number	Description	Conn. type	Conn std.
027L3804	Valve station ICF 20-2-121H	DIN 20	EN 10220
027L3807	Valve station ICF 20-2-121H	DIN 25	EN 10220
027L3806	Valve station ICF 20-2-121H	ANSI 20	ANSI B 36.10
027L3808	Valve station ICF 20-2-121H	ANSI 25	ANSI B 36.10
027L3810	Valve station ICF 20-2-121H	SOC 20	ASME B 16.11
027L3812	Valve station ICF 20-2-121H	22 SD	EN 1254-5
027L3814	Valve station ICF 20-2-121H	7/8 SA	ASME B 16.50

## Coolselector2

ICF 20-2-121 and ICF 20-2-121H will replace EVRA(T) 15 and 20 going forward. Therefore, it has been decided to remove EVRA 15 and 20 from [Coolselector®2](#). ICF 20-2 belongs to the ICF family where it can be found but will also be visible in Coolselector2 under category "Solenoid valves".

## Phase out of EVRA

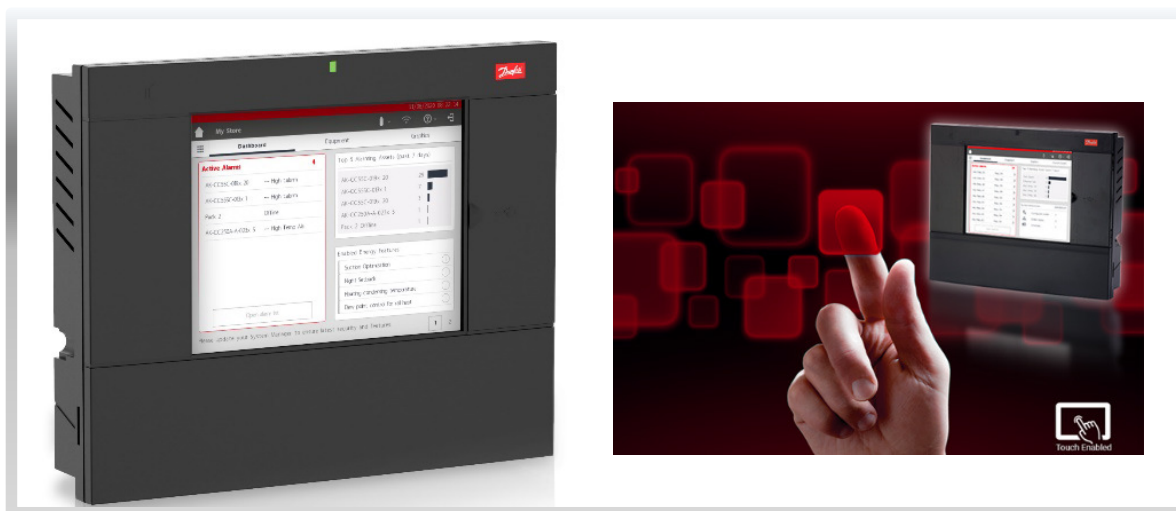
ICF 20-2 will replace EVRA 15 and 20 but not overnight. We will have a transition period where EVRA is still available. EVRA 15/20 will be available globally in 2022, but in 2023 phaseout of EVRA 15/20 will start up and they will be fully phased out by December 31<sup>st</sup> – 2023. For a more detailed plan please contact your local sales representative.

## Learn more – and get in touch

To learn more about how the ICF 20-2 can save time and money during installation and how this standardized solution can improve operational safety and efficiency please contact your local Danfoss representative.



## AK-SM 800A Series – Software Update



A new AK-SM 800A software is now available, package version 187, containing multiple updates for AK-SM 800A application software.

This software update includes an updated SM 800A and SvB5 application versions 141, that have multiple updates.

### Software Package versions

System Manager\_ SMG09.000.141 (updated)

StoreView Browser 5\_ SVB501.000.141 (updated)

Visit [ADAP-KOOL® Link](#) to download the latest software package and documentation.

To learn more about our System Managers go to our [website](#).

### Wi-Fi disabled variants starting November

To support regions with no Wi-Fi approvals, we will soon have two variants with the Wi-Fi module permanently disabled:

Description	Code number
AK-SM 820A Controller SM Ref no Wi-Fi	080Z4025
AK-SM 850A Controller SM Conv. no Wi-Fi	080Z4022

An existing Wi-Fi enabled variant cannot be updated software wise to disable the Wi-Fi. It also won't be possible to activate Wi-Fi on these variants.

### Important:

This update includes a fix that addresses a limited number of instances where some sites can suffer from corrupt history database, resulting in erratic history collection and subsequent view. Consult with your **local support** for more information if relevant.

## New Packaging Labeling for Optyma™ Condensing Units for the United Kingdom



As part of Danfoss' continuous improvement and following the January 2023 United Kingdom importer requirements changes, the international logistic labeling provided on our bare and packaged condensing unit packaging will change.

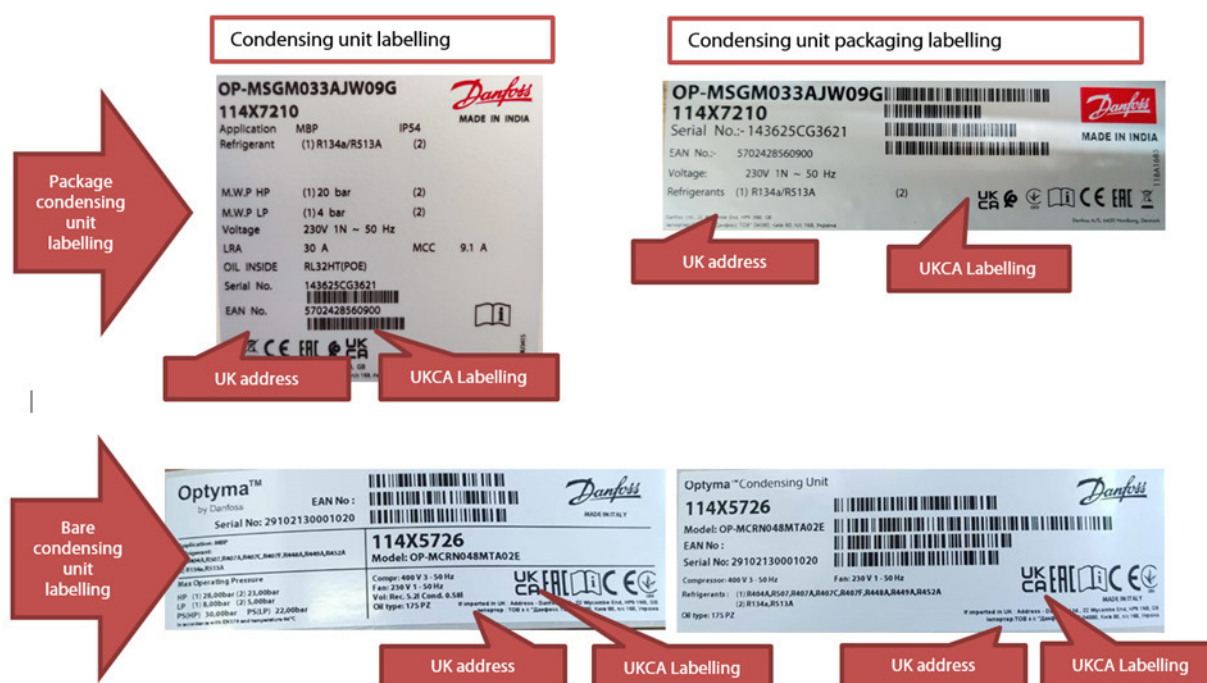
The United Kingdom has left the European Union and the transition period after Brexit comes to an end this year.

Danfoss will become an importer bringing goods from outside the UK and placing them on the market. Packaging labels will include Danfoss company's details, including a contact address in the United Kingdom and UKCA Logo.

**Codes and references remain unchanged.**

**New declaration of incorporation is available:**

<https://assets.danfoss.com/approvals/188889/ID389041434370-0102.pdf>



### Implementation dates:

Packaged and bare condensing units week 49, 2021

Spare parts will come early 2022

The bare and packaged Optyma condensing unit concerned with this change are identified on the product and on package labeling.



## Videos in YouTube

- The primary heat recovery heat sources for the heat pump systems | Ask an Expert - [LINK](#)
- What components are critical in heat pump systems? | Ask an Expert - [LINK](#)
- Can oil-free technology be utilized in individual buildings? | Ask an Expert - [LINK](#)
- Troubleshooting a solenoid valve:
  - which does not close - [LINK](#)
  - which is only partial closed - [LINK](#)
  - with external leakage - [LINK](#)
  - with internal leakage - [LINK](#)



## Details for Additional Information

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