

ENGINEERING
TOMORROW



June 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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Optyma™ Plus Electronic Controller New Spare Part

As part of Danfoss' continuous product improvement, our Optyma Plus package condensing unit range will get a new spare part for the electronic controller.

Affected products

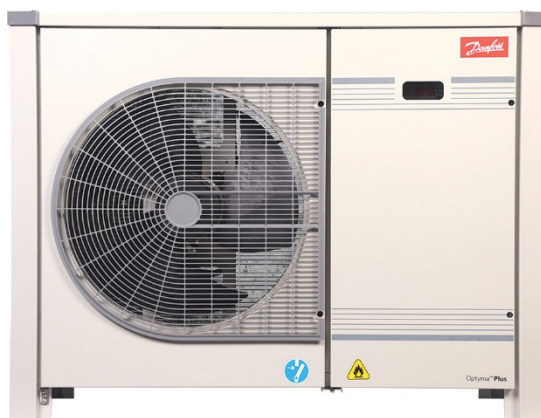
All Optyma Plus spare part codes are affected.

Description

Old code: 118U3465

New code: 084B8080

Logistic information



Old spare part code	Old spare part description	New spare part code	New spare part description
118U3465	Optyma Plus Controller	084B8080	Optyma Plus Controller

New spare part code logistic information 084B8080

EAN code	Gross weight	Net weight	Length	Width	Height
5702428988841	0.65 kg	0.56 kg	189 mm	136 mm	73 mm

Implementation date

New code is already open for order.

The requested change of code is also visible in Danfoss Product Store.

Please contact your local Danfoss sales representative for more information about the impact of this update.

Phase Out and Call to Last Buy of AK-CC 750(A)

We would like to inform you about the end-of-life of AK-CC 750 & 750A controllers. We will now begin the phase out process and we invite you to place your last buy orders.



Please identify your needs and **place last buy orders by the end of June 2023**, with requested dates until end of 2023. We will then secure the quantities and work to fulfil the orders during H2 2023. After this, any small remaining stock will still be available for service needs through special orders, while sales will be closed generally.

Affected codes

Code no	Product description
080Z0130	AK-CC 750, Case Controller, LON TP78
080Z0139	AK-CC 750, Case Controller, US, RS485
080Z0140	AK-CC 750A, Case Controller

You are advised and kindly asked to transition to AK-CC55 family. We acknowledge this is not a direct replacement and we will support you in the transition to the new product family. We will also work to implement some missing SW-based functionality on the AK-CC55 in order to make this transition as easy as possible.

Please contact Global Product Support with questions about migration to AK-CC55 platform and/or regarding missing functionality.

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

Global Launch of EKC 223/224 Controllers & EKA 206 Adapter

Danfoss is introducing a new family of entry-level case/refrigeration controllers for Food Retail applications. The new EKC 22x family brings modern, yet familiar design, convenient setting menu navigation, support for different sensor types, 16A compressor relay, and system integration to Danfoss front ends via EKA 206 RS-485 (Modbus) adapter.

The new controllers and adapter will be available for ordering starting Wednesday 7th of June 2023, and shipping will begin in the same week. We have secured good availability to serve your needs, while pricing can be discussed with your local sales representative.



The new controllers and adapter will initially launch with CE and UL approvals, starting sales in regions where these apply. Other approvals required for sales in other regions will follow up in the next weeks and months, and they will be communicated in a follow-up.

The controllers can be programmed via KoolKey (EKA 200), which allows the connection of the EKC controllers to the PC application named "KoolProg". Via KoolProg it is possible to perform on-line and off-line programming of the EKC controllers. It can also perform production line programming of multiple controllers and show on-line trend curves on selected parameters. KoolProg can also load controller setup files into the MPK - Mass Programming Key (EKA 201) which can be used for simple production line programming.

NOTE: Both KoolKey (EKA 200) and Mass Programming Key (EKA 201) are receiving SW update to support the new EKC controllers. They will be identified by PV02 version identification. EKA 200 (PV02) is available immediately while EKA 201 (PV02) will be available from week 25, 2023.

NOTE: KoolProg version 4.9 is required to support the new EKC controllers.

Highlights:

- Several applications in same unit
- Quick setup for fast commissioning
- Digital inputs for various functions
- Control of compressor or liquid line solenoid valve
- High effect 16A relay enables direct connection of heavy loads without use of intermediate relay
- Compressors depending on its power factor and motor efficiency
- Alarm monitoring of condenser temperature with compressor stop protection
- Easy to integrate into Danfoss ADAP-KOOL® network

The product ordering codes are listed below

Code number	Name
084B4053	EKC 223, 115 V, S/M-Pack
084B4054	EKC 223, 230 V, S/M-Pack
084B4055	EKC 224, 115 V, S/M-Pack
084B4056	EKC 224, 230 V, S/M-Pack
084B4153	EKC 223, 115 V, I-Pack
084B4154	EKC 223, 230 V, I-Pack
084B4155	EKC 224, 115 V, I-Pack
084B4156	EKC 224, 230 V, I-Pack
084B4088	EKA 206 RS485 Adapter, S/M-Pack
084B4188	EKA 206 RS485 Adapter, I-Pack
080N0327	Interface cable for RS-485 adapter, S/M-pack

Connection to front-ends

The RS-485 adapter (EKA 206) allows to integrate the controller on a Modbus fieldbus. EDF/ED3 files are available on the Food Retail Support Center on the internet.

<http://food-retail.danfoss.com/support-center/apps-and-software/adap-kool-software/#/>

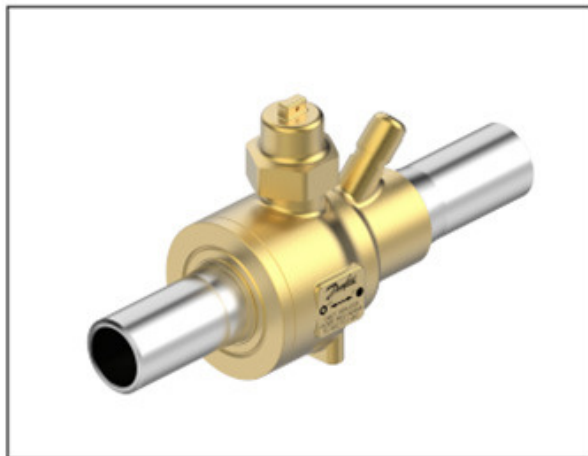
Applicable front ends	X
AK-SC 255	
AK-SC 355	
AK-SM 8xx (A)	X
AKA 24x (GW)	
AK-SM 720	X
AK-SM 350	

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

GBCT 140 bar Ball Valve Extend to Stainless Steel Connections

Danfoss is extending the GBCT 140 bar ball valve to stainless steel connections with sizes ranging from 10 mm to 48 mm.

Product information such as ordering, type, and connections are shared in the below table.



Type	Size in mm	Code no. with access port	Initial quantity available in CDC, June 2023	Release status
GBCT 10 D	10.2	009L6701	20	Released
GBCT 13 D	13.5	009L6702	20	Released
GBCT 17 D	17.2	009L6703	20	Released
GBCT 21 D	21.3	009L6704	20	Released
GBCT 27 D	26.9	009L6705	20	Released
GBCT 34 D	33.7	009L6706	20	Released
GBCT 42 D	42.4	009L6707	10	Released
GBCT 48 D	48.3	009L6708	10	Released
GBCT 60 D	60.3	009L6709	N/A	Will be released in Q4

Please, find more information on Danfoss Product Store – in the category: [Shut-off Ball Valve for R744 \(CO2\)](#)

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

Twin Compressor - Bare Light Commercial Condensing Unit - Standardized Range (0.5 to 2 kW)

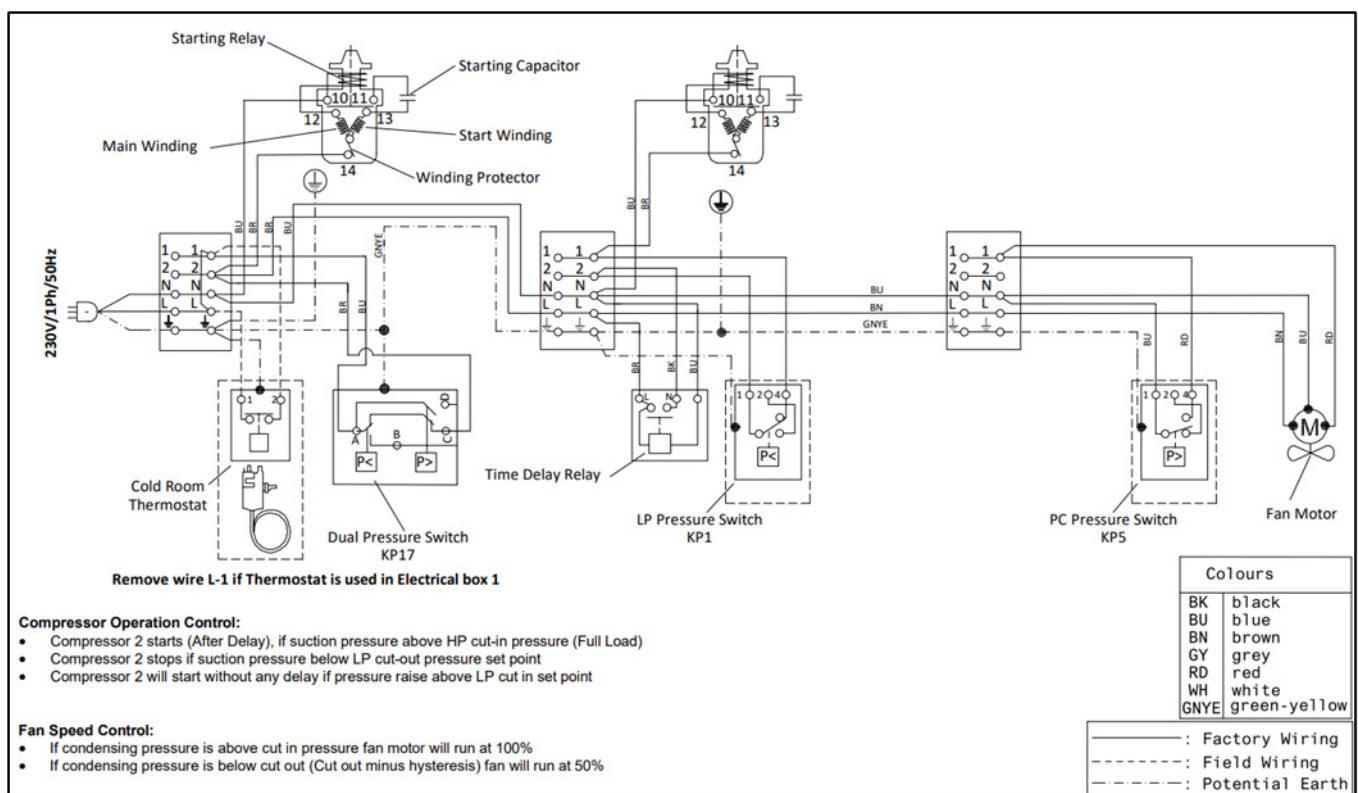


The bare light commercial twin compressor condensing unit range has been upgraded. Initially designed for integrators, this range will offer moving forward a greater multi-refrigerant compliance and enables economical variable load capability to general market.

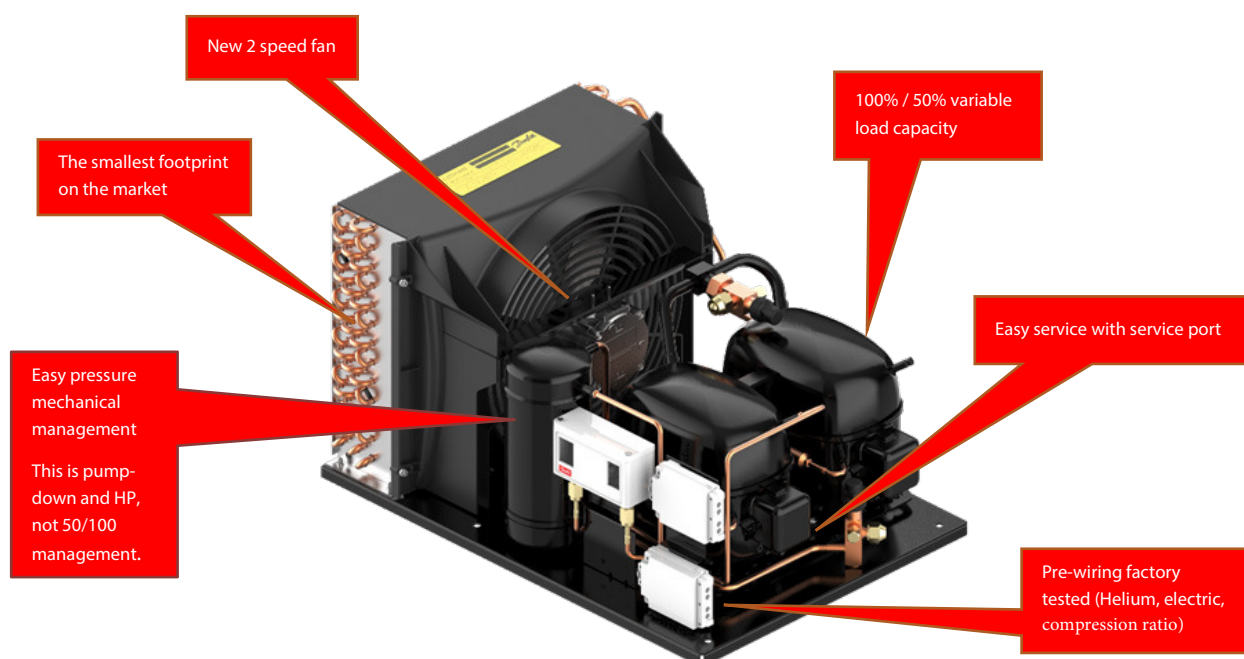
This upgrade goes together with a standardization to version T2, Extended with mounted pressure switches and wired electrical box and changeover to 2 speed EC fan.

Technical features

- Two interconnected hermetic multi-refrigerant compressors
- KP17WB dual pressure switch LP/HP
- Well-dimensioned receiver
- Suction Rota-lock valve
- Base plate discharge valve
- All necessary service ports
- Wired electrical box
 - For single capacity mode
 - Ready for change to capacity mode 50/100 (fan and compressor)
- New EC fan with 2 speed modulation (with new spare part :118U4148)



Features and benefits



Old version orders without pressure switches and R404A MBP models will be transferred to the new standard version when current stocks are exhausted; the standard range with the above-mentioned features is available now. No last call will be offered for possible transfers of existing codes with pressure switches.

Application Refrigerants	New version with Pressure switch	Code number	EAN Codes	Cooling capacity (kW)	New Cp spare part code
MBP R134a R513A	SC12/12GXT2	114G6380	5702428569705	1.199 (R513A)	118U5421
	SC15/15MFXT2	114E2627	5702428570367	1.406 (R513A)	118U5394
	SC18/18GXT2	114G7382	5702428569682	1.606 (R513A)	118U5387
	SC21/21GXT2	114G7383	5702428569675	1.947 (R513A)	118U5388
LBP R404A R452A	SC12/12CPXT2	114E2642	5702428570268	0.588 (R452A)	118U5411
	SC18/18CPXT2	114H7338	5702428569415	0.813 (R452A)	118U5426
	SC21/21CPXT2	114H7339	5702428569408	0.912 (R452A)	118U5427

Cooling capacity EN13215: Evap, MBP: -10°C, LBP: -35, 10K SH, 0K SC, 32 °C ambient temp.

All data is available in Coolselector.

Available documents

Cooling capacities, spare part numbers, drawings are available in [CoolSelector2](#).

Cooling cap, technical data, spare part list in excel sheet inside bare unit catalog will be updated by Q4 2022

Installation guideline [AN23088644237302-000302.pdf \(danfoss.com\)](#)

The phase in/out will start in Q4 2023. Article codes that will be phased out.

Application	Old description	Pressure switch	Old code numbers
R404A - MBP	SC10/10DLXT2	yes	114H7347
	SC12/12DLXT2	No	114H7348
	SC15/15DLXT2	Yes	114H7349
	SC10/10DLXT2	No	114H7747
	SC12/12DLXT2	No	114H7748
	SC15/15DLXT2	No	114H7749
R404A & R452A - LBP	SC10/10CLXT2	No	114H6735
	SC15/15CLXT2	Yes	114H7337
	SC12/12CLXT2	No	114E2641
	SC12/12CLXT2	No	114H7736
		No	114F5052
		No	114F5062
	SC15/15CLXT2	No	114H7737
		No	114F5053
	SC18/18CLXT2	No	114H7738
R134a & R513A - MBP	SC21/21CLXT2	No	114H7739
	SC12/12GXT2	No	114G6780
	SC15/15MFXT2	No	114E2628
	SC18/18GXT0	No	114E2128
	SC18/18GXT2	No	114G7782
	SC21/21GXT0	No	114E2149
	SC21/21GXT2	No	114G7783

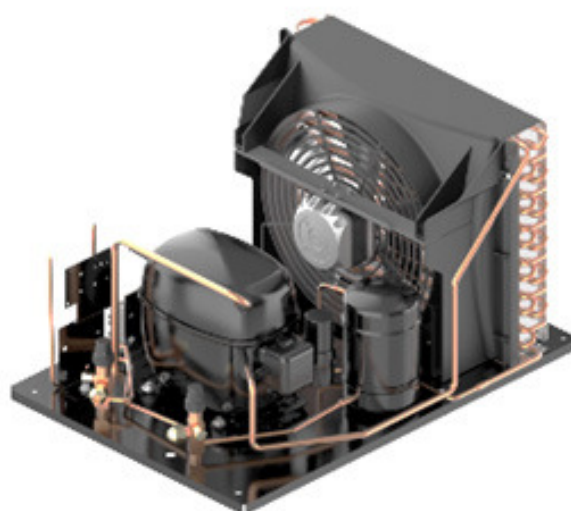
Overall performances can be found in [Coolselector2](#)

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

Fan Production Change for Optyma™ Light Commercial Condensing Unit

Due to some production stop by fan motor manufacturer, we take the opportunity to change below Optyma black light commercial condensing unit range equipped with AC fan to EC fan motors.

These condensing units' replacement with equivalent EC fan motor will give less power consumption, those are one to one replacement, with exception of fan speed regulation.



Affected Products

Optyma light commercial CU codes

Category	CU code	CU model description	Old fan spare part code (AC)	New fan spare part code (EC)
OPTYMA Light commercial	114E2529	C.U. SC15DLXT2	118U0035	118U1010
	114E2540	C.U. SC15DLXT0 220-240V/50HZ		
	114H6745	C.U. SC15DLXT2		
	114X2649	C.U. OP-MCQC015SCA01G 220V		
	114X2651	C.U. OP-MCQC015SCA04G 220V		
	114E2587	C.U. SC18MLXT2 220V/50HZ		
	114X2757	C.U. OP-MCHC018SCA01G 220V		
	114X0773	C.U. OP-MCGC026GSA01G 220V R134A	118U0058	
	114X0781	C.U. OP-MCGC034GSA01G 220V R134A		
	114X1673	C.U. OP-LCHC026GSA01G 220V R404A		
	114X1781	C.U. OP-LCHC034GSA01G 220V R404A		
	114X1783	C.U. OP-LCHC034GSA04G 220V R404A		
	114X2765	C.U. OP-MCHC021GSA01G 220V R404A		
	114X2767	C.U. OP-MCHC021GSA04G 220V R404A		

Fan Motor technical comparison

Description	Old Fan Motors		Replacement Code
	118U0035	118U0058	118U1007C
Type	AC axial Fan motor 18W/230V	AC axial Fan motor 23W/220V	EC axial fan (Single Speed)
Power supply	230 V 1~ 50-60 Hz	230 V 1~ 50-60 Hz	230 V 1~ 50-60 Hz
Speed	1300 rpm	1300 rpm	1300 rpm
Power	70 W	86 W	24 W
Current	0.48 A	0.62 A	0.20 A
Air flow	923 m ³ /h	790 m ³ /h	935 m ³ /h
Standard/Approval	CE, VDE, CCC, EAC	CE, VDE, EAC	CE, VDE, UKCA, ATEX
Sound power	64 dB(A)	67.1 dB(A)	64.5 dB(A)
IP protection	IP42	IP42	IP65
REACH/RoHS	Yes	Yes	Yes

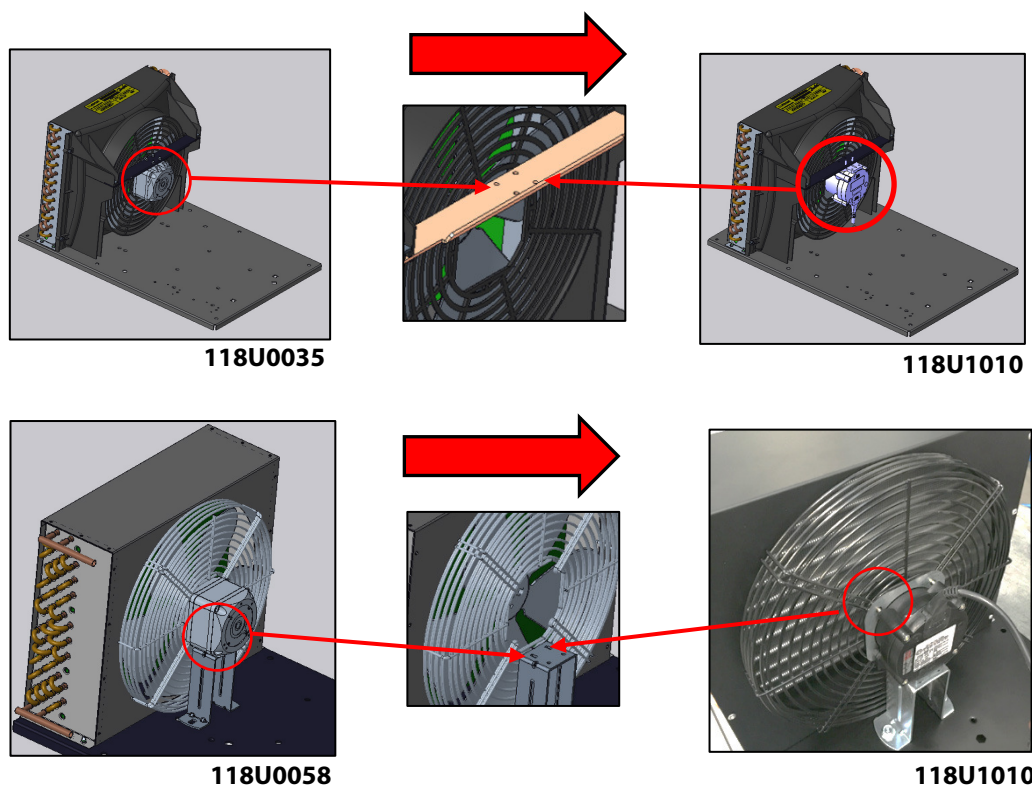
Impact on performance due to fan motor change

Code number	CU description	COP at rated condition		COP improvement
		Old 118U0035	New	
114E2529	C.U. SC15DLXT2	1.66	1.77	7%
114E2540	C.U. SC15DLXT0 220-240V/50HZ	1.66	1.77	7%
114E2587	C.U. SC18MLXT2 220V/50HZ	-	-	-
114H6745	C.U. SC15DLXT2	1.65	1.76	7%
114X2649	C.U. OP-MCQC015SCA01G 220V	1.61	1.7	6%
114X2651	C.U. OP-MCQC015SCA04G 220V	1.6	1.7	6%
114X2757	C.U. OP-MCHC018SCA01G 220V	1.49	1.57	5%

Code number	CU description	COP at rated condition		COP improvement
		Old 118U0058	New	
114X0773	C.U. OP-MCGC026GSA01G 220V R134A	1.77	1.92	8%
114X0781	C.U. OP-MCGC034GSA01G 220V R134A	1.73	1.85	7%
114X1673	C.U. OP-LCHC026GSA01G 220V R404A	0.95	1.04	9%
114X1781	C.U. OP-LCHC034GSA01G 220V R404A	1.00	1.07	7%
114X1783	C.U. OP-LCHC034GSA04G 220V R404A	1.00	1.07	7%
114X2765	C.U. OP-MCHC021GSA01G 220V R404A	1.75	1.86	6%
114X2767	C.U. OP-MCHC021GSA04G 220V R404A	1.75	1.86	6%

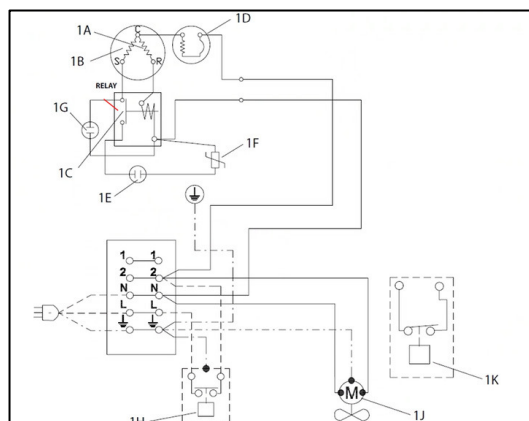
Fitment

Both fans have same design and mounting provisions, this is a one-to-one replacement.



Electrical diagram

No change in electrical wiring diagram of fan motor.



Impact/change in spare part codes

Old spare part code	Fan motor description	Old EAN number	New spare part code	Fan motor description	New EAN number
118U0058	Fan motor 23 W/220 V	5702428580502	118U1010	Spare part, Fan motor EC 25-25	5702428580083
118U0076	Fan assemblies BG6	5702428580342	118U5528	Spare part, assembly motor & grill (BG6)	5715162512494
118U0077	Fan assemblies BG7	5702428580335	118U5529	Spart part, assembly motor & grill (BG7)	5715162595923
118U0035	Fan motor 18 WATT	5702428580694	118U1010	Spare part, Fan motor EC 25-25	5702428580083

New Models (21 and 38 cc) for Optyma™ Packaged Condensing Unit Range

Danfoss is pleased to confirm the release of 2 additional product sizes, 6 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 38cm³.

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



Technical features

Two new compressors have been incorporated inside our packaged 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
W05	W09								
114X7325	114X7327	OP-MSTM021DX	G	B2	690	1079	464	77	62
114X7326	114X7328	OP-MSTM038DS	G	B2	690	1079	464	76	61

Benefits

- 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.

Available documents

- [Excel sheet full technical data including cooling capacity](#)
- Instruction manuals are available:
 - [Optyma Plus](#)
 - [Optyma Plus controller \(to be updated\)](#)
 - [Optyma Slim Pack](#)
- [Commercial catalog](#)
- [Commercial Brochure \(to be updated\)](#)
- [EU Declaration of conformity](#)
- Declaration of incorporation
 - [A1/A2L condensing units](#)
 - [A1/A2L condensing units](#) (UK only)
 - Component's declaration (upon request)
- [Manufacturer declaration](#)
- Condensing unit performance data with A2L refrigerants will be available (end June) in [CoolSelector2](#).
- For easy start-up, use the [Kool Code app](#).

Logistic information

Code number	Model number	EAN code	Height	Width	Length	Country of origin
			mm	mm	mm	
114X4217	MPTM021DXP00G	5702424687229	985	1155	561	India
114X4218	MPTM038DSP00G	5702424687243	985	1155	561	India
114X7325	MSTM021DXW05G	5702424687182	844	1190	535	India
114X7327	MSTM021DXW09G	5702424687199	844	1190	535	India
114X7326	MSTM038DSW05G	5702424687205	844	1190	535	India
114X7328	MSTM038DSW09G	5702424687212	844	1190	535	India

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

Videos on YouTube and Infograms

- Series of podcasts – Chilling with Jens: Le Tour de Cooling - [LINK](#)
- Infogram: Advantages of an inverter compressors - [LINK](#)
- Livestream: Using CO₂ as a refrigerant, there is a lot to know - [LINK](#)
- Video: How to increase energy efficiency of a supermarket by usage of Heat Recovery - [LINK](#)



Details for Additional Information

UK/IE

[Cooling United Support Hub](#)

[Support Made Easy](#)

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