

Data sheet

ELIMINATOR® Hermetic receiver filter drier

Types DMC and DCC



DMC and DCC are combined receivers and filter driers for use in small hermetic refrigeration systems.

Under operating conditions where the condenser cannot contain the total quantity of refrigerant, a receiver might be necessary.

This extra receiver capacity can be provided by using a DCC or a DMC combined receiver and filter drier.

There are two types of ELIMINATOR® cores. Type DMC driers have a core composition of 100% Molecular Sieve, while type DCC contain 80% Molecular Sieve with 20% activated alumina.

ELIMINATOR® type DMC driers are designed for applications requiring the highest moisture capacity.

ELIMINATOR® type DCC driers are designed for applications requiring high moisture capacity and acid adsorption capacity.

Available with solder (cu-plated steel) connections.

Features

The Core Type DMC

- 100% Molecular Sieve core
- High drying capacity minimizing the risk of acid formation (hydrolysis)
- Recommended for use with HFO, HC, HFC and HCFC refrigerants
- Will not deplete oil additives

The Core Type DCC

- 80% Molecular Sieve with 20% activated alumina
- Recommended for use with HFO, HC, HFC and HCFC refrigerants
- Perfect core blend for A/C systems that operate at high condensing temperatures and require high drying capacity

The Shell

- PED/UL approved for PS 42 bar
- Available with solder (cu-plated steel connectors)
- Corrosion resistant powder-painted finish

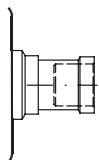
The Filter

- Combination of filter drier and receiver
- Available in sizes 4 – 40 cubic inches
- High drying capacity at high and low liquid temperatures
- Space-saving
- Fast installation
- 25 µm (0.001 in.) filter provides high retention with minimal pressure drop
- Thermally stable up to 120 °C

Approvals

UL US, file no. SA 6398
 PED 97/23/EC - a3p3
 Compliant with ATEX hazard zone 2

▲ Note: Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants now.

Technical data


Solder connection
(cu-plated steel connectors)

Surface and volume

Filter	Solid core surface	Solid core volume	Filter drier volume (shell volume)	Filter drier volume (net volume)
	[cm ²]	[cm ³]	[l]	[l]
DMC / DCC 04	83	53	0.14	0.09
DMC / DCC 07	83	53	0.19	0.14
DMC / DCC 20	83	53	0.35	0.30
DMC 40	220	234	0.77	0.54

Filter	Acid capacity
	[g] ¹⁾
DCC 04	0.71
DCC 07	0.71
DCC 20	0.71

¹⁾ Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number).

Temperature range:
-40 – 70 °C

Technical data and capacities
Drying and liquid capacity, type DMC

Type	Drying capacity [kg] refrigerant ¹⁾												Liquid capacity [kW] ²⁾						Max. Working Pressure PS [bar]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°C]																		
	24	52	24	52	24	52	24	52	24	52	24	52							
DMC 0432s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DMC 0732s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DMC 2032s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DMC 2033s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	15.69	11.17	10.84	17.14	16.14	16.61	42
DMC 2034s	5.0	4.7	5.3	5.1	5.4	5.0	5.0	4.7	5.0	4.6	4.5	4.2	32.65	25.73	25.05	37.42	35.85	38.68	42
DMC 40163s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	15.69	11.17	10.84	17.14	16.14	16.61	42
DMC 40164s	27.7	26.2	29.8	28.3	30.4	28.0	28.1	26.0	27.8	25.7	25.3	23.3	32.65	25.73	25.05	37.42	35.85	38.68	42

¹⁾ Drying capacity is based on following moisture content test standards before and after drying:

- R134a: 1050 – 50 ppm W
- R404A, R507: 1020 – 50 ppm W
- R407C: 1020 – 50 ppm W
- R410A: 1050 – 50 ppm W
- R22: 1050 – 60 ppm W

In accordance with ARI 710-2004

²⁾ Given in accordance with ARI 710-2004 for

- t_c = -15 °C
- t_c = 30 °C
- Δp = 0.07 bar

For technical data on other refrigerants, please contact your Danfoss Sales Representative

Drying and liquid capacity, type DCC

Type	Drying capacity [kg] refrigerant ¹⁾												Liquid capacity [kW] ²⁾						Max. Working Pressure PS [bar]
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A	
	[°C]																		
	24	52	24	52	24	52	24	52	24	52	24	52							
DCC 0432s	3.9	3.6	4.2	3.9	4.2	3.9	3.9	3.6	3.9	3.6	3.5	3.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DCC 0732s	3.9	3.6	4.2	3.9	4.2	3.9	3.9	3.6	3.9	3.6	3.5	3.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DCC 2032s	3.9	3.6	4.2	3.9	4.2	3.9	3.9	3.6	3.9	3.6	3.5	3.2	7.71	5.52	5.36	8.44	7.96	8.21	42
DCC 2033s	3.9	3.6	4.2	3.9	4.2	3.9	3.9	3.6	3.9	3.6	3.5	3.2	15.69	11.17	10.84	17.14	16.14	16.61	42

¹⁾ Drying capacity is based on following moisture content test standards before and after drying:

- R134a: 1050 – 50 ppm W
- R404A, R507: 1020 – 50 ppm W
- R407C: 1020 – 50 ppm W
- R410A: 1050 – 50 ppm W
- R22: 1050 – 60 ppm W

In accordance with ARI 710-2004

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- t_c = 30 °C
- Δp = 0.07 bar

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Ordering



Type DMC

Type	Connection	Industrial pack for OEM only		Multi pack	
		Qty.	Code no.	Qty.	Code no.
DMC 0432s	6 mm	16	023Z7012	24	023Z7019
DMC 0732s	6 mm	16	023Z7013	24	023Z7020
DMC 0732s	1/4 in.	16	023Z7045	-	-
DMC 2032s	6 mm	10	023Z7007	18	023Z7021
DMC 2032s	1/4 in.	10	023Z7008	18	023Z7022
DMC 2032.5s	5/16 in.	10	023Z7044	-	-
DMC 2033s	10 mm	10	023Z7014	18	023Z7023
DMC 2033s	3/8 in.	10	023Z7009	18	023Z7024
DMC 2034s	12 mm	10	023Z7015	-	-
DMC 2034s	1/2 in.	10	023Z7010	18	023Z7026
DMC 40163s	10 mm	6	023Z7016	8	023Z7027
DMC 40163s	3/8 in.	6	023Z7017	8	023Z7028
DMC 40164s	12 mm	6	023Z7018	8	023Z7029
DMC 40164s	1/2 in.	6	023Z7011	8	023Z7030

Type DCC

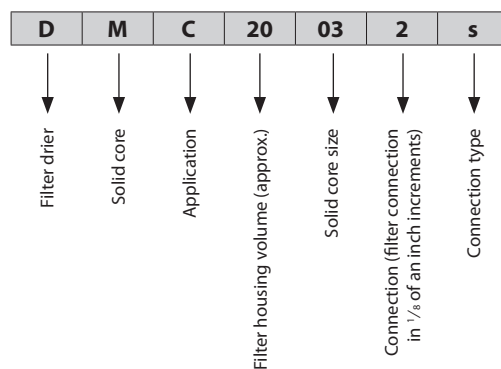
Type	Connection	Industrial pack for OEM only	
		Qty.	Code no.
DCC 0432s	6 mm	16	023Z7000
DCC 0732s	6 mm	16	023Z7001
DCC 2032s	6 mm	10	023Z7002
DCC 2032s	1/4 in.	10	023Z7003
DCC 2033s	10 mm	10	023Z7004

Technical data and capacities

Type codes

Type	Codes	Description
Filter drier	D	Drier
Solid core	M	100% Molecular Sieve core
	C	80% Molecular Sieve / 20% activated alumina
Application	C	Combined filter drier/receiver
Filter housing volume (approx.)	04	4 in. ³
	07	7 in. ³
	20	20 in. ³
	40	40 in. ³
Solid core size	03	3 in. ³
	16	16 in. ³
Connection (filter connection in 1/8 of an inch increments)	2	1/4 in. / 6 mm
	3	3/8 in. / 10 mm
	4	1/2 in. / 12 mm
Connection type	s	Solder connection (cu-plated steel connectors)

Example for type codes



Selection

Type selection is made considering the application

Refrigerant and oil types		DCC	DMC
Refrigerant	HFO	Recommended	Recommended
	HC ¹⁾	Recommended	Recommended
	HFC	Recommended	Recommended
	HCFC	Recommended	Recommended
Oil	Mineral or AB	Recommended	Recommended
	POE or PAG, pure	Recommended	Recommended
	POE or PAG, with additives	Not recommended ²⁾	Recommended

¹⁾ Only solder versions (cu-plated / pure copper) and connection sizes below 25 mm are approved for flammable refrigerants now

²⁾ DCC Hermetic filter driers contain activated alumina, which is a polar material used for acid adsorption. Many oil additives are also polar substances and can be adsorbed by the activated alumina, rendering them useless, and reducing the drier's acid capacity, though this is not harmful to the system

Selection example

Select the appropriate type (DMC or DCC) based on refrigerant and oil type. Then select the drier size based on the adsorption and liquid capacity required.

- a. Amount of charge: 4 kg R134a at tL = 24 °C
To dry 4 kg R134a at 24 °C from 1050 to 60 ppm moisture, a DMC 20 is necessary
- b. Cooling capacity: Qe = 15 kW
To obtain a mass flow corresponding to 15 kW cooling capacity with a DMC 0 filter drier, a 3/8 inch connection must be chosen. Larger connections can be chosen in accordance with the liquid line dimension

- c. Result
DMC 2033s or DMC 2034s can be used

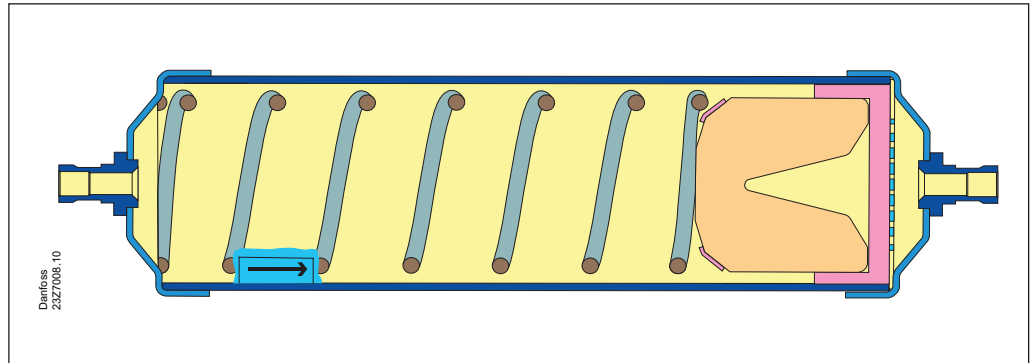
If the initial moisture content is very small or a planned change of the filter drier is considered, a smaller filter drier size can be chosen. During selection consider amount of the refrigerant intended to keep in a receiver part of the filter.

Type	Drying capacity [kg] refrigerant ¹⁾												Liquid capacity [kW] ²⁾						Max. Working Pressure PS [bar]	
	R134a		R404A		R507		R22		R407C		R410A		R134a	R404A	R507	R22	R407C	R410A		
	[°C]																			
	24	52	24	52	24	52	24	52	24	52	24	52								
DMC 0133													7.71	5.52	5.26				42	
DMC 2032s	4.9	4.6	5.2	5.0	5.3	4.9	4.9	4.6	4.9	4.5	4.4	4.1	15.69	11.17	10.84	17.14	16.14	16.61	42	
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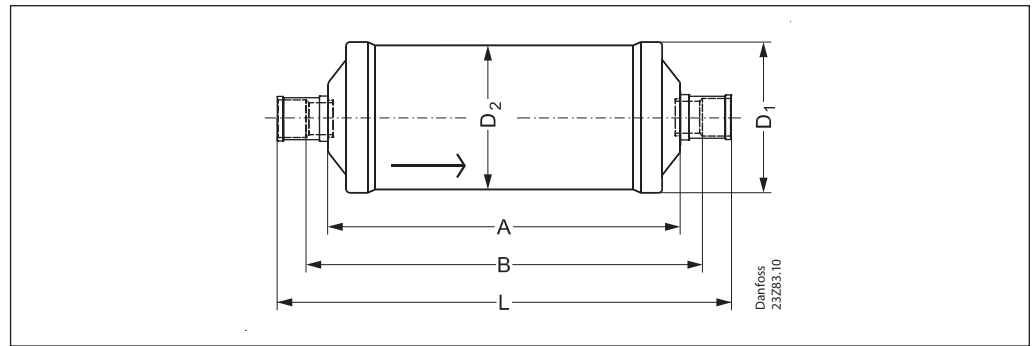
Design / function

1. Inlet
2. Spring
3. Solid core
4. Polyester mat
5. Perforated plate



Dimensions and weights

Solder connection (cu-plated steel connectors)



Type	L	A	B	D ₁	D ₂	Net weight
	[mm]	[mm]	[mm]	[mm]	[mm]	
DMC / DCC 0432s	114	82	99	58	54	0.40
DMC / DCC 0732s	140	108	125	58	54	0.48
DMC / DCC 2032s	222	190	206	58	54	0.72
DMC / DCC 2033s	228	190	208	58	54	0.73
DMC / DCC 2034s	232	190	210	58	54	0.74
DMC 40163s	237	199	219	80	76	1.18
DMC 40164s	241	199	221	80	76	1.19

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