

## Data Sheet

# Hermetic filter drier Type **DMSC** and **DMT**

Designed for CO<sub>2</sub> with applications requiring the highest moisture capacity.



The filter drier is a vital element of the system's reliability as well as its lifespan. When you choose Danfoss filter driers, you are guaranteed a product that has been developed specifically for the challenges encountered in Air Conditioning and Refrigeration Systems.

All ELIMINATOR® driers have a solid core with binding material held to an absolute minimum. For CO<sub>2</sub> applications Danfoss offer one type of ELIMINATOR® core.

Type DMSC and DMT driers have a core composition of 100% Molecular Sieve.

ELIMINATOR® type DMSC and DMT driers are designed for applications requiring the highest moisture capacity.

**Applications:**

- Food retail
- Transport refrigeration
- Cold rooms

## Features

### The Core

- 100% 3Å Molecular Sieve core
- High drying capacity minimizing the risk of acid formation (hydrolysis)
- Recommended for use with R744 (CO<sub>2</sub>) refrigerants
- Will not deplete oil additives

### The Shell

- DMSC for Sub-critical application; supports PS/MWP up to 52 bar/754 psig
- DMT for Trans-critical application; supports PS/MWP up to 140 bar/2030 psig
- DMSC, available with solder (copper)
- DMT, available with solder (copper plated) and flare connections (standard, flare O-ring and NPT)
- Lowest leak rate
- Corrosion resistant powder-painted finish. Special coating for marine applications available upon request
- Allows installation with any orientation provided the arrow is in the flow direction
- DMSC, available in sizes from 03 to 08 cubic inches
- DMT, available in sizes from 08 to 13 cubic inches

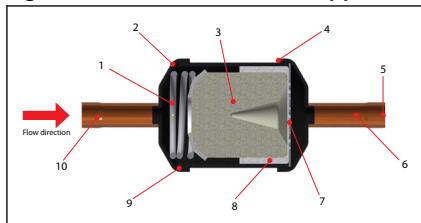
### The Filter

- 25 µm (0.001 in) filter provides high retention with minimal pressure drop
- Black paint gives a better look after brazing installation
- No residual moisture when delivered
- Thermally stable up to 120 °C (250 °F)
- Manufactured according to IATF 16949:2016

## Functions

### **DMSC filter**

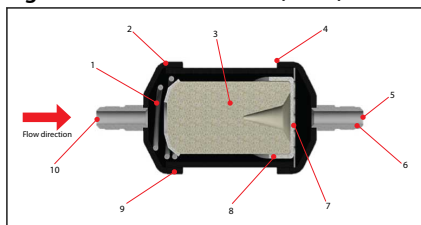
**Figure 1: Solder connection (Copper)**



- |    |   |
|----|---|
| 1  | Spring to keep core in fixed position   |
| 2  | Powder painted surface supports corrosion classification C5, 1440 hrs                 |
| 3  | ELIMINATOR® core for highest possible drying capacity                                 |
| 4  | Steel housing supports more pressure, high steel thickness on the shell, MWP = 52 bar |
| 5  | Easy to remove pull-off cap for sweat   |
| 6  | Solder connector sizes available for inches and millimetric versions                  |
| 7  | Perforated plate to keep internal parts in position                                   |
| 8  | High dirt retention, down to 25 µm particles, with minimal pressure drop              |
| 9  | Black, high quality and durable coating offers a cleaner appearance after brazing     |
| 10 | Pure copper connector with high thickness and extended length                         |

### **DMT filter**

**Figure 2: Flare connection (Steel)**



- |    |   |
|----|---|
| 1  | Spring to keep core in fixed position   |
| 2  | Corrosion resistant powder-painted finish. Special coating for marine applications available upon request |
| 3  | ELIMINATOR® core for highest possible drying capacity   |
| 4  | Steel housing supports more pressure, high steel thickness on the shell, MWP=140 bar                      |
| 5  | Easy to remove pull-off cap for sweat or twist-off cap for flare, NPT, FO connectors                      |
| 6  | Solder connector sizes available for inches and millimetric versions                                      |
| 7  | Perforated plate to keep internal parts in position   |
| 8  | High dirt retention, down to 25 µm particles, with minimal pressure drop                                  |
| 9  | Black, high quality and durable coating offers a cleaner appearance after brazing                         |
| 10 | Available designs for Steel version (Flare, FO, NPT) and Solder Cu-plated connector                       |

**Product specification**

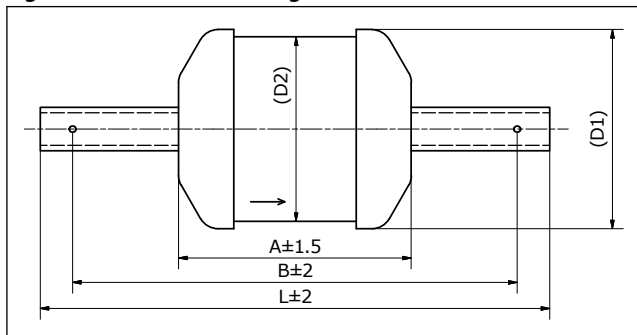
**Technical data**

**Table 1: DMSC and DMT**

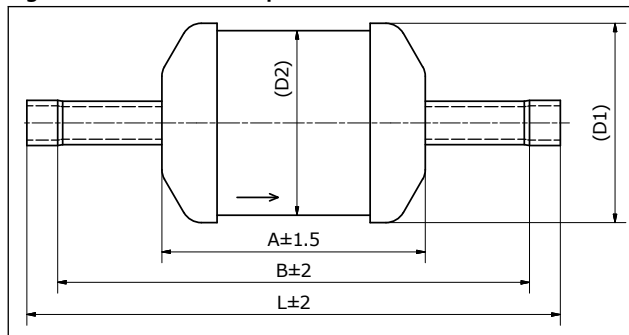
Characteristic	DMSC	DMT
Compatible refrigerant	CO <sub>2</sub> (R744)	
Refrigerant oil	POE, PVE, All mineral oils, ester oils and supports oil free	
Application	Sub-critical	Trans-critical
Complies with PED	Fluid Group II, Category Art 4, par. 3	
Max. working pressure PS/MWP	52 bar/754 psig	140 bar/2030 psig
Temperature range	-30 – 17 °C/-22 - 63 °F	-40 – 100 °C/-40 – 212 °F
Environmental transport/storage temperature and humidity	Max. 70 °C/160 °F, Humidity: <100% RH	
Material of construction	Body: steel Connector: copper	Body: steel Connector: steel
Core type	DM (100% molecular sieve)	
Drier Capacities	03, 05 and 08 cu.in.	08 and 13 cu.in.
Connection size	1/4, 3/8, 1/2 6 mm, 10 mm, 12 mm	1/4, 3/8, 1/2
Connection type	ODF Extended, extra wall thickness	ODF, Flare, Flare O-ring, NPT
Connectors material	Copper	Steel, Cu-plated
Country of Origin	Mexico	

**Dimensions and weight**

**Figure 3: DMSC Solder Straight Connector**



**Figure 4: DMSC Solder Expanded Connector**



**Table 2: DMSC Solder Expanded Connector**

Code no.	Description	Size	L	B	A	D <sub>1</sub>	D <sub>2</sub>	Connector	DWG	Net weight [kg]
023Z8500	DMSC 033s	03 cu.in.	149	87	68	58	54	inch	1	0.4
023Z8501	DMSC 032s / 6mm	03 cu.in.	145	84	68	58	54	mm	1	0.4
023Z8512	DMSC 032s	03 cu.in.	147	84	68	58	54	inch	1	0.4
023Z8502	DMSC 053s / 10mm	05 cu.in.	156	96	77	58	54	mm	2	0.5
023Z8503	DMSC 053s	05 cu.in.	158	96	77	58	54	inch	1	0.5
023Z8504	DMSC 052s / 6mm	05 cu.in.	154	93	77	58	54	mm	1	0.5
023Z8505	DMSC 083s / 10mm	08 cu.in.	182	122	103	58	54	mm	2	0.6
023Z8506	DMSC 084s / 12mm	08 cu.in.	182	124	103	58	54	mm	1	0.6
023Z8513	DMSC 084s	08 cu.in.	182	124	103	58	54	inch	1	0.6

## Hermetic filter drier, Type DMSC and DMT

Figure 5: Flare connections

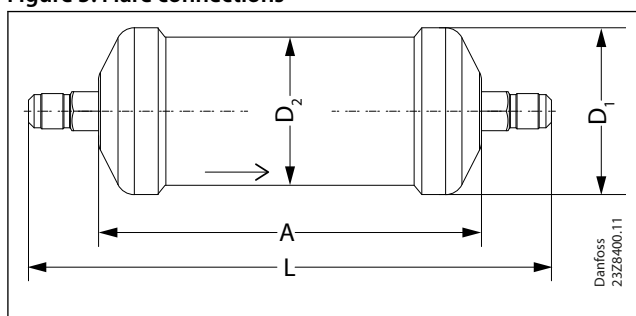


Table 3: Flare connections

Type	A	L	D <sub>1</sub>	D <sub>2</sub>	Net weight [kg]
DMT 082	106.0	150.0	68.0	60.0	0.8
DMT 083	106.0	163.0	68.0	60.0	0.9
DMT 132 NPT	156.0	212.0	68.0	60.0	1.2
DMT 133	156.0	213.0	68.0	60.0	1.3

Figure 6: Solder connection (cu-plated steel)

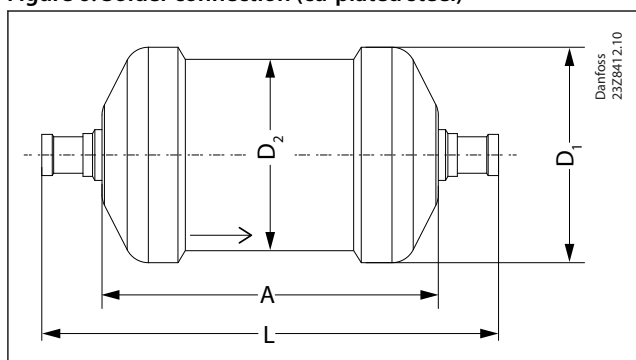
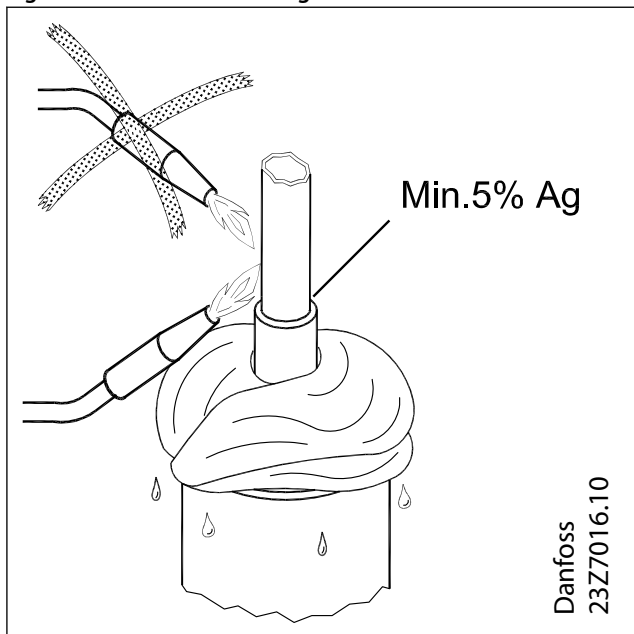


Table 4: Solder connection (cu-plated steel)

Type	A	L	D <sub>1</sub>	D <sub>2</sub>	Net weight [kg]
DMT 082s	106.0	138.0	68.0	60.0	0.8
DMT 083s	106.0	144.0	68.0	60.0	0.8
DMT 084s	106.0	148.0	68.0	60.0	0.9
DMT 133s	156.0	194.0	68.0	60.0	1.2
DMT 134s	156.0	198.0	68.0	60.0	1.3

## Filter Driers –Installation Warning

Figure 7: Installation Warning



**i NOTE:**

Keep flames away from body

- When soldering, only apply heat to the connection with the flame pointed away from the filter drier
- Excess heating of the paint may damage it
- When soldering is important to use a wet rag
- Use wet wrap when installing
- Braze the joints
- Let them cool down
- Clean the welding area after the installation (remove remaining flux with a brush)
- This is an important operation and needs to be done with great care to remove all remaining flux
- Paint\Anti-corrosive needs to cover all open steel parts, areas where the black original paint has been burnt due to brazing and at least 3 cm approx of the copper tube
- Paint the joints twice

**Ordering**

**Type DMSC and DMT**

Figure 8: Type DMSC

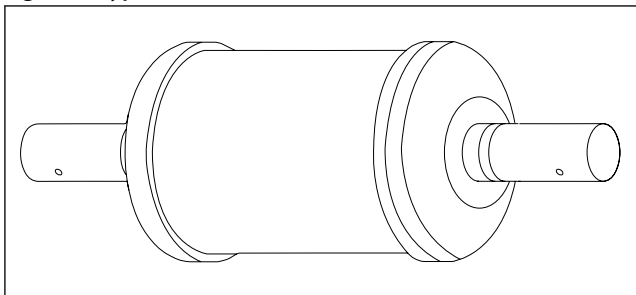


Table 5: Type DMSC, Solder

Type	Size	Connection		Multi-pack	
		[in]	[mm]	Qty.	Code no.
DMSC 032s / 6mm	03 cu.in.	-	6	24	023Z8501
DMSC 032s	03 cu.in.	1/4	-	24	023Z8512
DMSC 033s	03 cu.in.	3/8	-	24	023Z8500
DMSC 052s / 6mm	05 cu.in.	-	6	24	023Z8504
DMSC 053s / 10mm	05 cu.in.	-	10	24	023Z8502
DMSC 053s	05 cu.in.	3/8	-	24	023Z8503
DMSC 083s / 10mm	08 cu.in.	-	10	12	023Z8505
DMSC 084s / 12mm	08 cu.in.	-	12	12	023Z8506
DMSC 084s	08 cu.in.	1/2	-	12	023Z8513

Figure 9: Type DMT

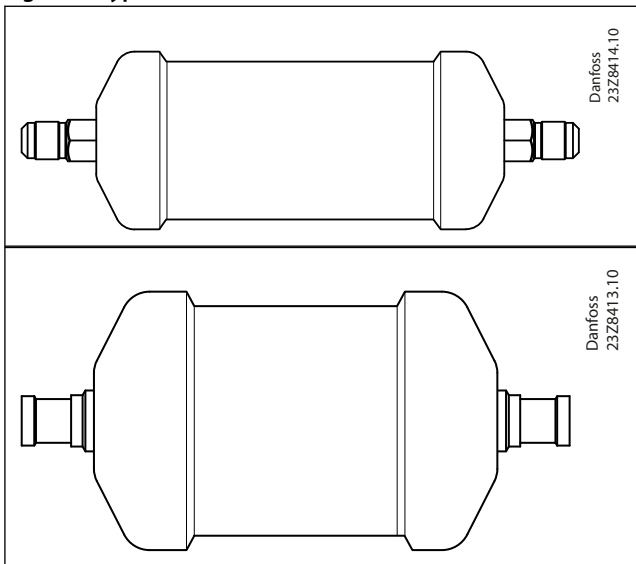


Table 6: Type DMT, flare

Type	Connection	Industrial pack	
	[in]	Qty.	Code no.
DMT 082	1/4	12	023Z8407
DMT 083	3/8	12	023Z8406
DMT 132 NPT	1/4	8	023Z8410
DMT 133	3/8	8	023Z8405

## Hermetic filter drier, Type DMSC and DMT

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**Table 7: Type DMT, solder**

Type	Connection	Industrial pack		Multi-pack
	[in]	Qty.	Code no.	Code no.
DMT 082s	1/4	12	023Z8408	023Z8415
DMT 083s	3/8	12	023Z8409	023Z8416
DMT 084s	1/2	12	023Z8412	023Z8417
DMT 133s	3/8	8	023Z8402	023Z8418
DMT 134s	1/2	8	023Z8411	023Z8419



## Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at [danfoss.com](http://danfoss.com) or contact your local Danfoss representative if you have any questions.

**Table 8: Certificates, declarations and approvals**

Document name	Document type	Document topic	Approval authority
SA 6398	UL Certificate	Mechanical Safety Certificate	UL
023Z9601.AF	Manufacturers Declaration	ATEX/PED/RoHS	Danfoss
023Z9610.AA	Manufacturers Declaration	China RoHS	Danfoss
RU Д-DK.БЛ08.В.00828_19	EAC Declaration	Machinery & Equipment	EAC

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