ENGINEERING TOMORROW

Data sheet

ELIMINATOR® Hermetic filter drier for CO_2

DMSC for Sub-critical and DMT for Trans-critical application

DMSC Filters

DMT Filter

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_2 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/Benefits

The Core
- 100% 3Å Molecular Sieve core
- High drying capacity minimizing the risk of acid formation (hydrolysis)
- Recommended for use with R744 (CO_2) 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

For more information visit coolselector.danfoss.com

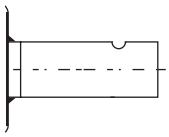
Approvals DMSC/DMT

- Directive 2014/68/EU of the European Parliament and of the council, Category a4p3
- RoHS Directive 2011/65/EU (RoHS 2.0) applying the exception 6(a)
- EN 14276-1:2006+A1:2011 Pressure equipment for refrigerating systems and heat pumps – Part 1: Vessels

Technical data

Characteristic	DMSC	DMT
Compatible refrigerant	CO_2 (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	¼, ⅜, ½ 6 mm, 10 mm, 12 mm	¼, ⅜, ½
Connection type	ODF Extended, extra wall thickness	ODF, Flare, Flare O-ring, NPT
Connectors material	Copper	Steel, Cu-plated
Country of Origin	Mexico	

Technical data and capacities



Pure copper extended connectors

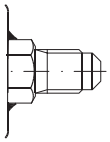
DMSC

Drying and liquid capacity

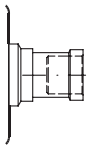
Description	Drying capacity[1]				Liquid capacity[2]		Max. Working Pressure PS/MWP [bar/ [psig	Volume		
	Kg Ref. 1 °C	Kg Ref. 5 °C	Drop of Water 1 °C	Drop of Water 5 °C	kWatts	Ton		Shell	Core	Net
Filter drier DMSC 032s / 6mm	4.0	3.9	79	78	4.5	1.3	52 / 754	0.12	0.030	0.084
Filter drier DMSC 033s / 10mm	4.0	3.9	79	78	8.6	2.5	52 / 754	0.12	0.030	0.084
Filter drier DMSC 052s / 6mm	6.5	6.4	129	128	4.6	1.3	52 / 754	0.14	0.037	0.096
Filter Drier DMSC 053s / 10mm	6.5	6.4	129	128	8.9	2.5	52 / 754	0.14	0.037	0.096
Filter drier DMSC 083s / 10mm	10.5	10.4	209	207	9.2	2.6	52 / 754	0.19	0.059	0.125
Filter drier DMSC 084s / 12mm	10.5	10.4	209	207	13.7	3.9	52 / 754	0.19	0.059	0.125

[1]) Drying Capacity:
Drying capacity is based on following moisture content test standards before and after drying:
EPD: From 1110 ppm W to 50 ppm W at 5 °C / 41 °F
EPD: From 445 ppm W to 50 ppm W at 1 °C / 33.8 °F

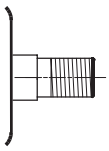
[2]) Liquid Capacity:
Given in accordance with ARI 710-2004 for:
t_e= -15 °C / 5 °F,
t_c= 30 °C / 85 °F and
Δp = 0.07 bar / 1 psig



Flare connection



Solder connection (cu-plated steel)



NPT connection

DMT

Drying and liquid capacity

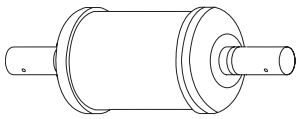
Type	Drying capacity[1]				Liquid capacity[2]		Max. Working Pressure PS/MWP [bar]/[psig]	Volume [lt]		
	R 744 - CO_2 -6.6 °C		R 744 - CO_2 24 °C		R 744 - CO_2 Flare / Cu-plated					
	[Kg] Ref	Drop Water	[Kg] Ref	Drop Water	[kW]	[TR]		Shell	Core	Net
DMT 082 / DMT 082s	7.2	143	5.8	114	3.56	1.0	140 / 2030	0.22	0.058	0.162
DMT 083 / DMT 083s	7.2	143	5.8	114	10.61	3.0	140 / 2030	0.22	0.058	0.162
DMT 084s	7.2	143	9.3	114	13.49	3.8	140 / 2030	0.22	0.058	0.162
DMT 132 NPT	11.7	232	9.3	184	10.99	3.1	140 / 2030	0.32	0.095	0.225
DMT 133 / DMT 133s	11.7	232	9.3	184	10.99	3.1	140 / 2030	0.32	0.095	0.225
DMT 134s	11.7	232	9.3	184	13.49	3.8	140 / 2030	0.32	0.095	0.225

Note: The moisture test was performed according with ASHRAE standard on liquid phase.

[1]) Drying Capacity:
Drying capacity is based on following moisture content test standards before and after drying:
EPD: From 1110 ppm W to 50 ppm W at 24 °C
EPD: From 445 ppm W to 50 ppm W at -6.6 °C

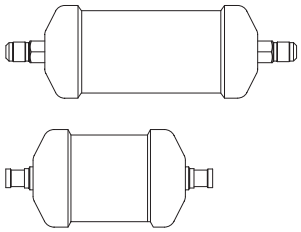
[2]) Liquid Capacity:
Given in accordance with ARI 710-2004 for
t_e= -15 °C (5 °F),
t_c= 30 °C (85 °F) and
Δp = 0.07 bar (1 psig)

Ordering



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.	¼	–	24	023Z8512
DMSC 033s	03 cu.in.	⅜	–	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.	⅜	–	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.	½	–	12	023Z8513



Type DMT, flare

Type	Connection	Industrial pack	
	[in]	Qty.	Code no.
DMT 082	¼	12	023Z8407
DMT 083	⅜	12	023Z8406
DMT 132 NPT	¼	8	023Z8410
DMT 133	⅜	8	023Z8405

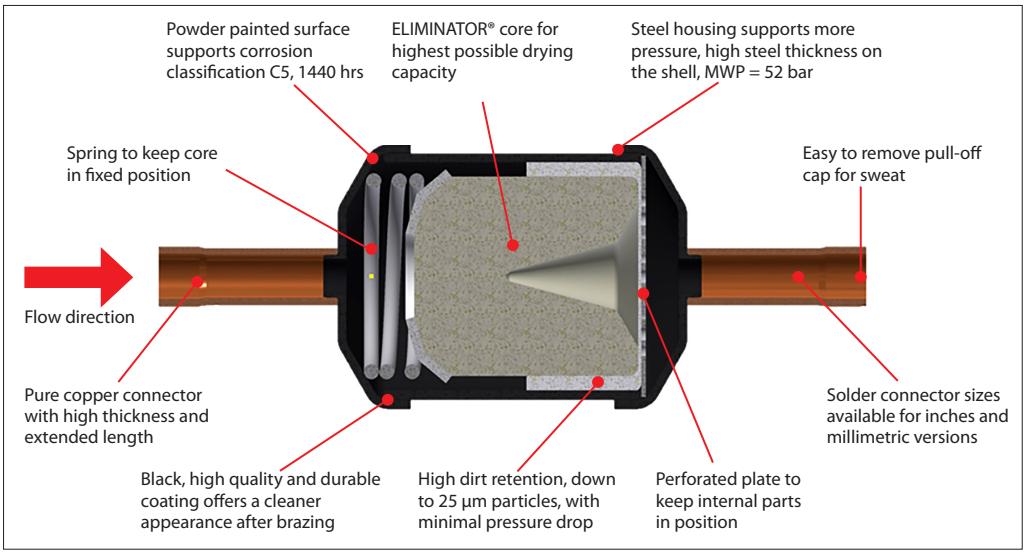
Type DMT, solder

Type	Connection	Industrial pack		Multi-pack
	[in]	Qty.	Code no.	Code no.
DMT 082s	¼	12	023Z8408	023Z8415
DMT 083s	⅜	12	023Z8409	023Z8416
DMT 084s	½	12	023Z8412	023Z8417
DMT 133s	⅜	8	023Z8402	023Z8418
DMT 134s	½	8	023Z8411	023Z8419

Design / function

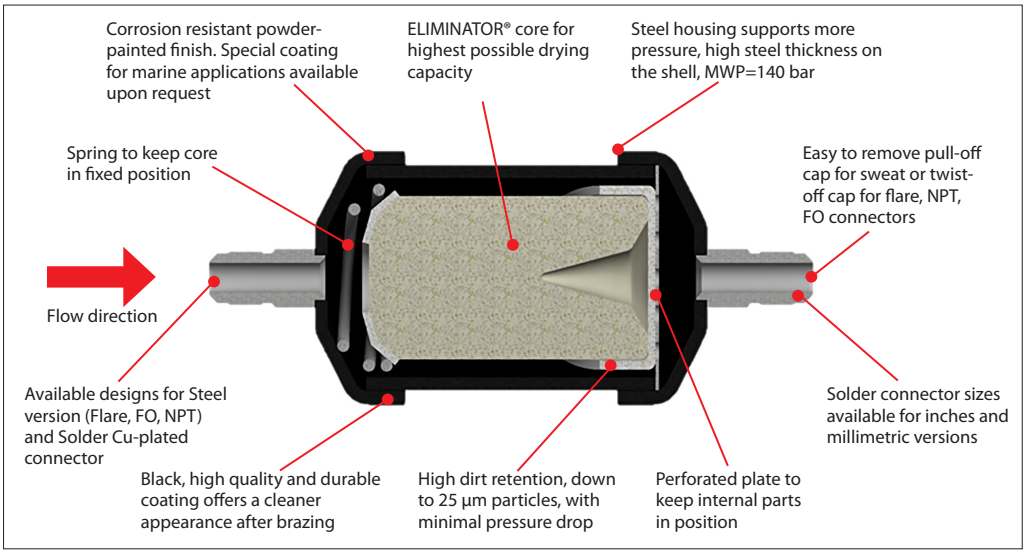
DMSC filter

Solder connection (Copper)



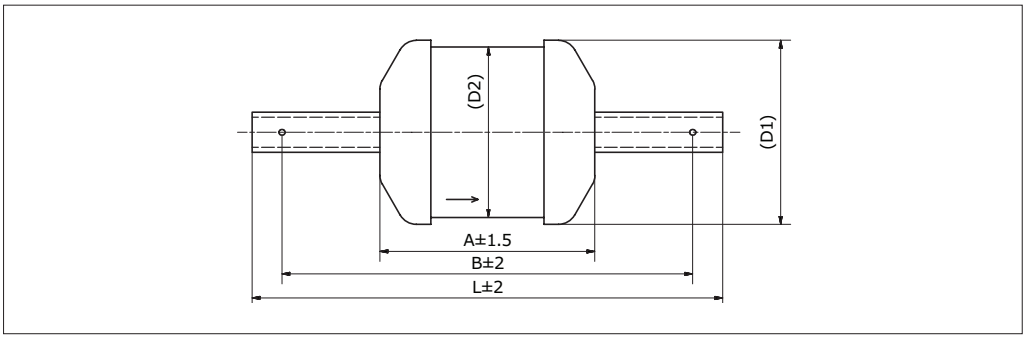
DMT filter

Flare connection (Steel)

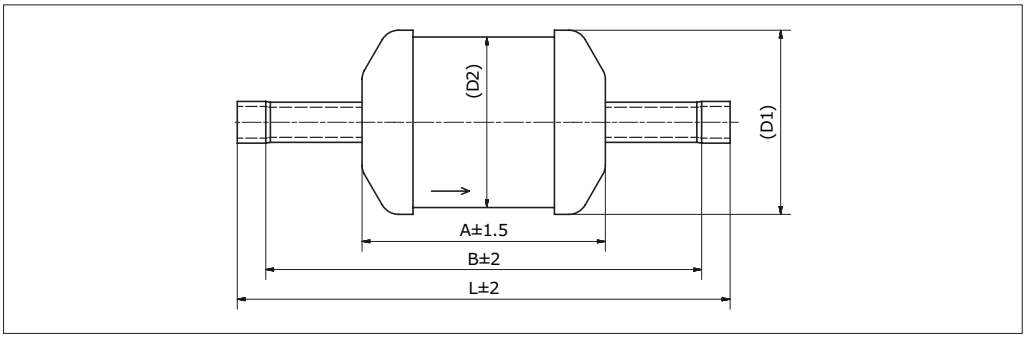


Dimensions [mm] and weights [kg]

DMSC Solder Straight Connector

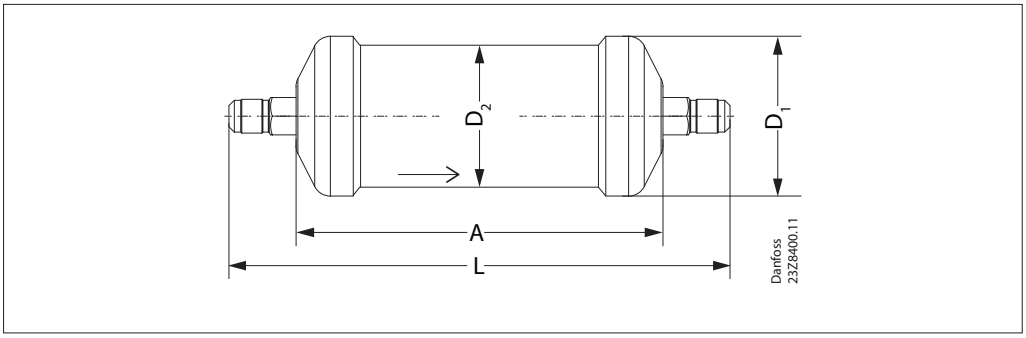


DMSC Solder Expanded Connector



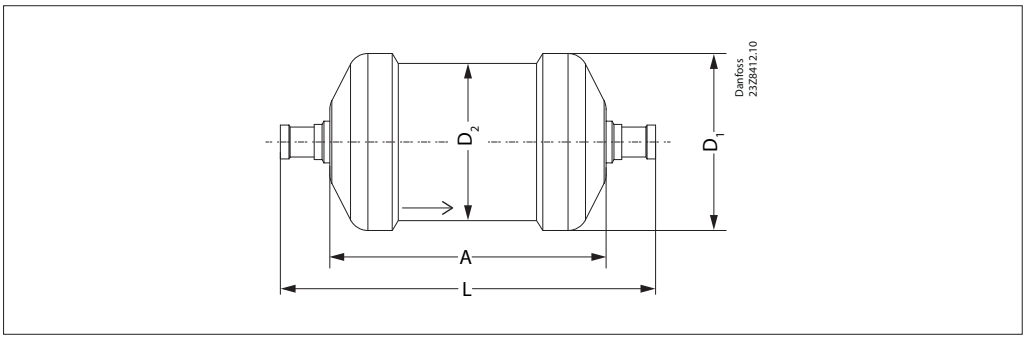
Code no.	Description	Size	L	B	A	D_1	D_2	Connector	DWG	Net weight [kg]
023Z8500	**DMSC 033s**	03 cu.in.	149	87	68	58	54	inch	1	0.4
023Z8501	**DMSC 032s / 6mm**	03 cu.in.	145	84	68	58	54	mm	1	0.4
023Z8512	**DMSC 032s**	03 cu.in.	147	84	68	58	54	inch	1	0.4
023Z8502	**DMSC 053s / 10mm**	05 cu.in.	156	96	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

Flare connections



Type	A	L	D_1	D_2	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

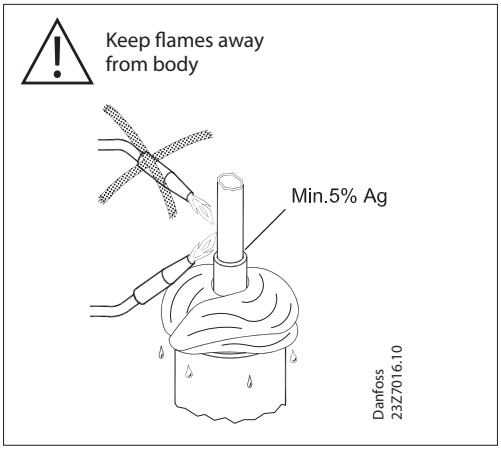
Solder connection (cu-plated steel)



Type	A	L	D_1	D_2	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

- 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