

Data sheet

ELIMINATOR® Hermetic filter drier for CO₂

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



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 CO₂ 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% 3 Å Molecular Sieve core
- High drying capacity minimizing the risk of acid formation (hydrolysis)
- Recommended for use with R744 (CO₂) 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



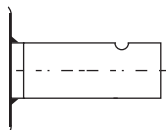
For more information visit
coolselector.danfoss.com

**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 DMSC
Drying and liquid capacity

Pure copper extended connectors

| 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 |

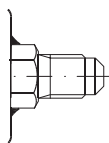
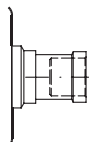
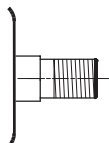
¹⁾ Drying Capacity:

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:

 $t_e = -15\text{ °C} / 5\text{ °F}$,
 $t_c = 30\text{ °C} / 85\text{ °F}$ and
 $\Delta p = 0.07\text{ bar} / 1\text{ psig}$
DMT
Drying and liquid capacity

Flare connection

Solder connection (cu-plated steel)

NPT connection

| 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 | | | Shell | Core | Net |
| | [Kg] Ref | Drop Water | [Kg] Ref | Drop Water | [kW] | [TR] | | | | |
| 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:

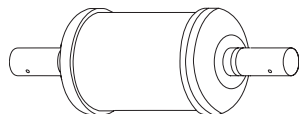
 EPD: From 1110 ppm W to 50 ppm W at 24 °C
 EPD: From 445 ppm W to 50 ppm W at -6.6 °C

²⁾ Liquid Capacity:

Given in accordance with ARI 710-2004 for

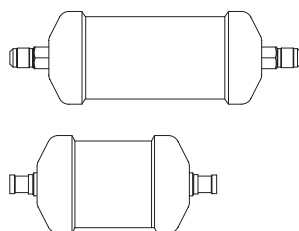
 $t_e = -15\text{ °C} (5\text{ °F})$,
 $t_c = 30\text{ °C} (85\text{ °F})$ and
 $\Delta p = 0.07\text{ bar} (1\text{ psig})$

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 |

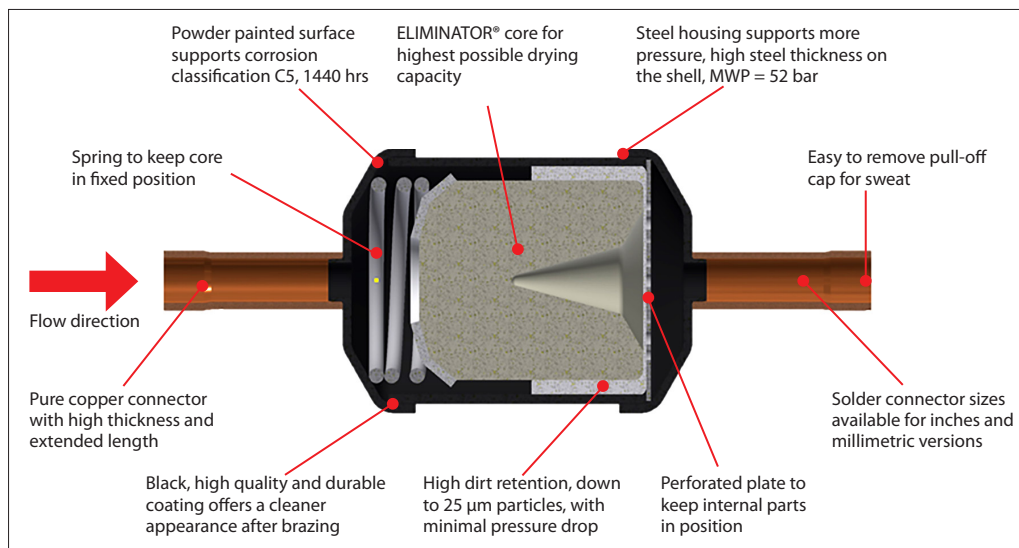
Type DMT, solder

| 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

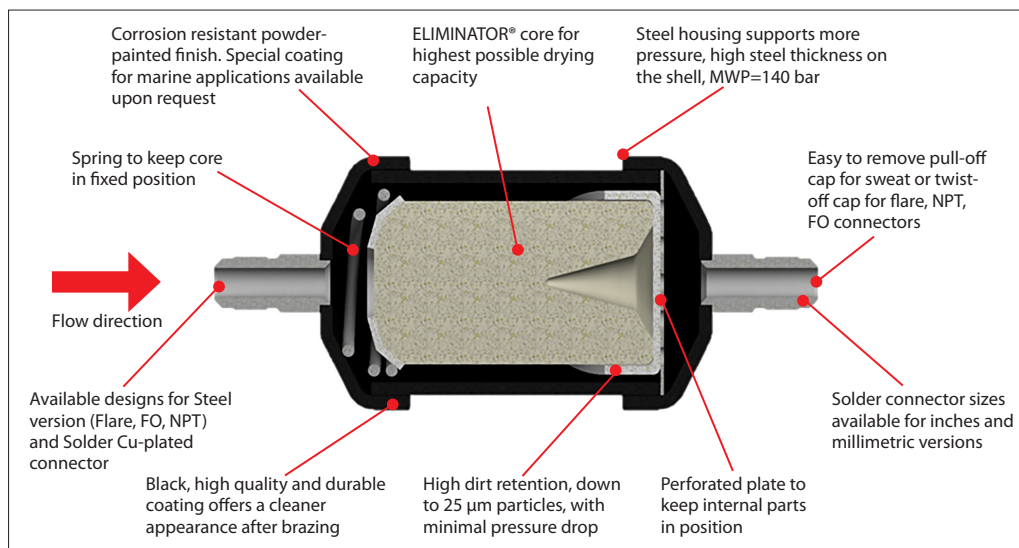
DMSC filter

Solder connection (Copper)



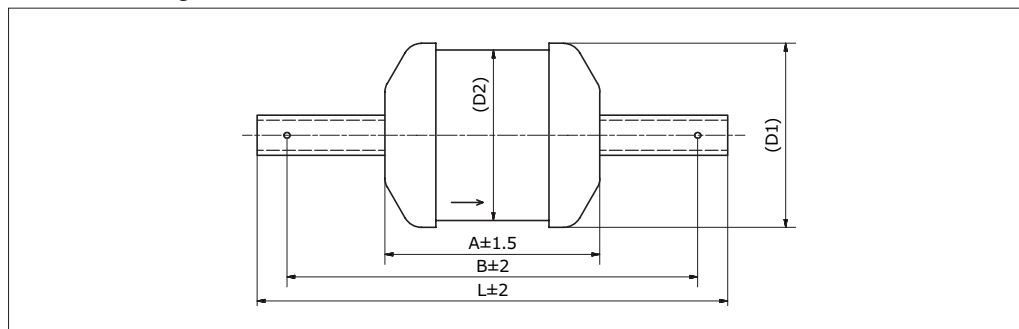
DMT filter

Flare connection (Steel)

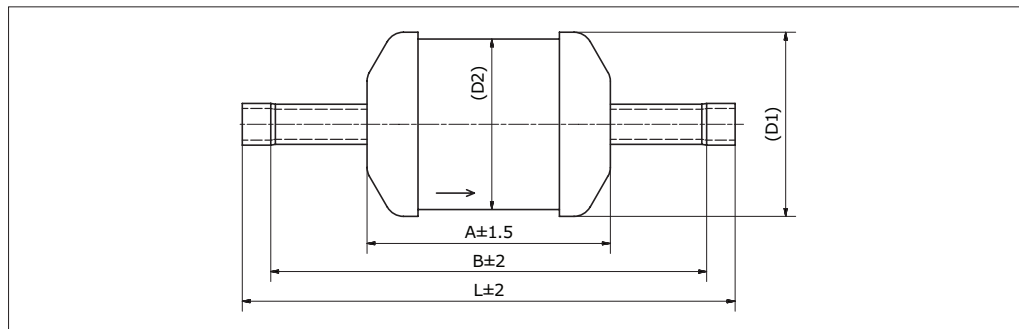


Dimensions [mm] and weights [kg]

DMSC Solder Straight Connector

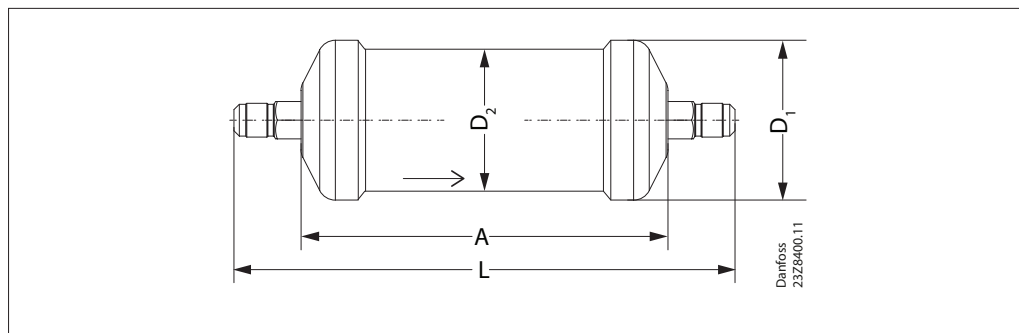


DMSC Solder Expanded Connector



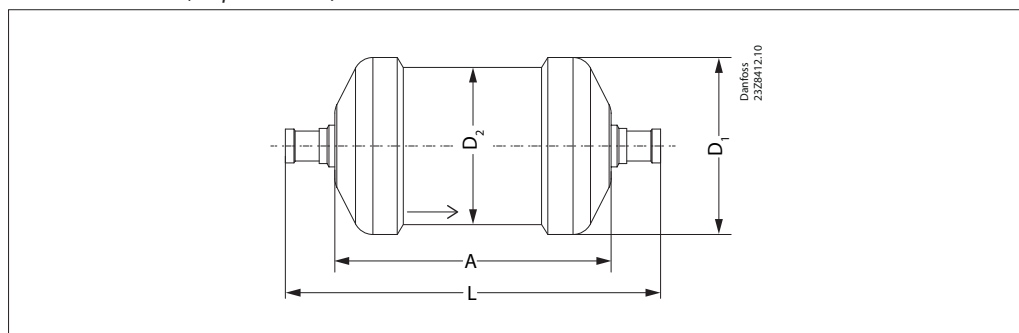
| Code no. | Description | Size | L | B | A | D ₁ | D ₂ | Connector | DWG | Net weight [kg] |
|----------|------------------|-----------|-----|-----|-----|----------------|----------------|-----------|-----|-----------------|
| 023Z8500 | DMSC 033s | 03 cu.in. | 149 | 87 | 68 | 58 | 54 | inch | 1 | 0.4 |
| 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 |

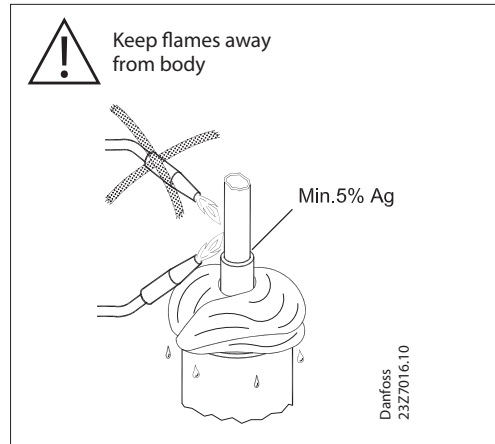
Solder connection (cu-plated steel)



| 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