

## 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

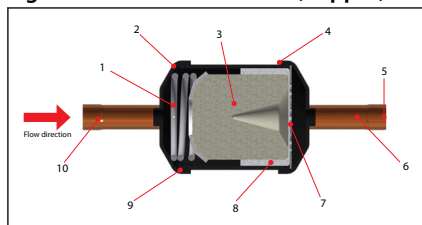
### The Filter

- 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

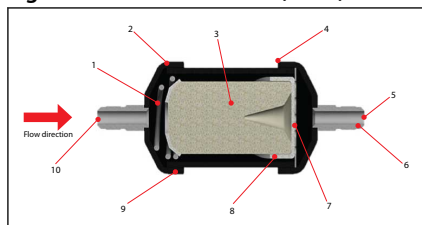
Figure 1: Solder connection (Copper)



- |    |                                                                                       |
|----|---------------------------------------------------------------------------------------|
| 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<br>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

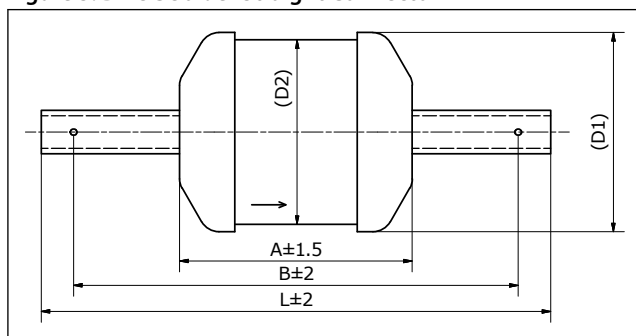


Figure 4: DMSC Solder Expanded Connector

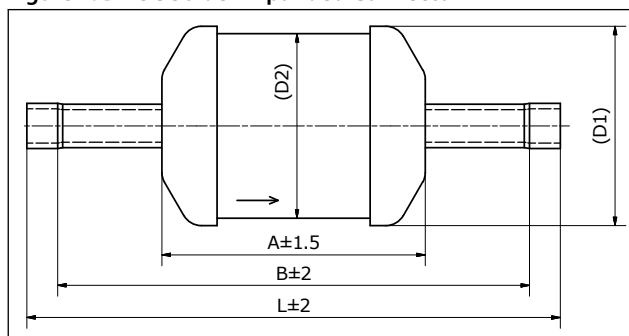
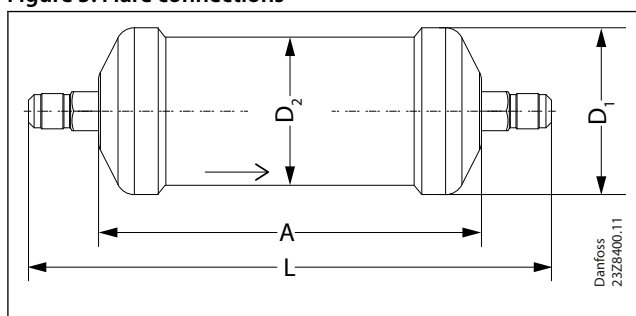


Table 2: DMSC Solder Expanded Connector

| 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             |

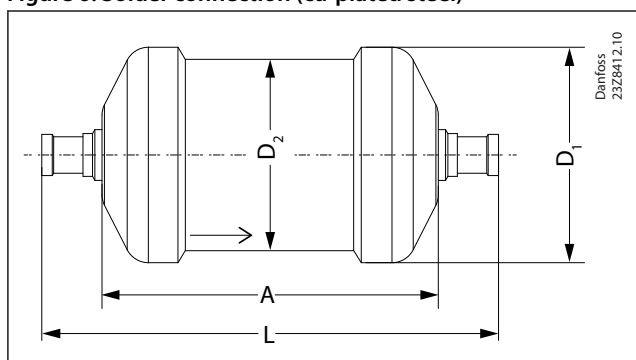
**Figure 5: Flare connections**



**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)**

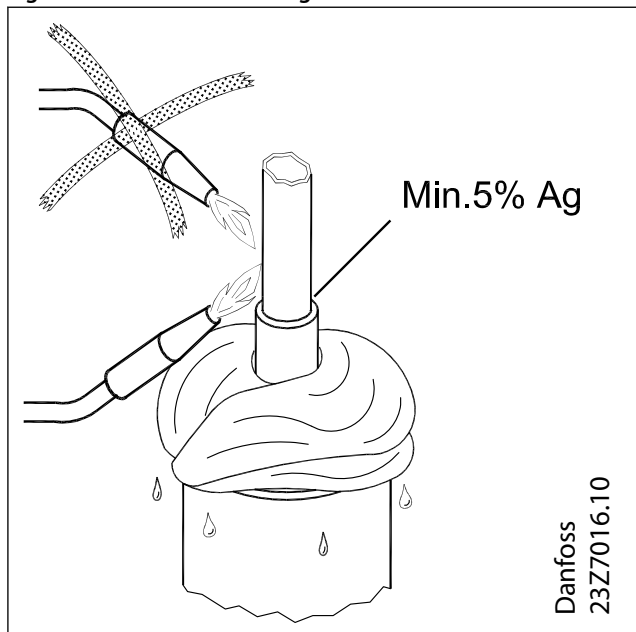


**Table 4: Solder connection (cu-plated steel)**

| 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



**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

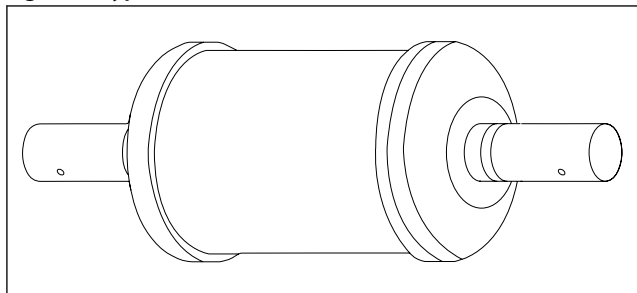


Table 5: Type DMSC, Solder

| 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

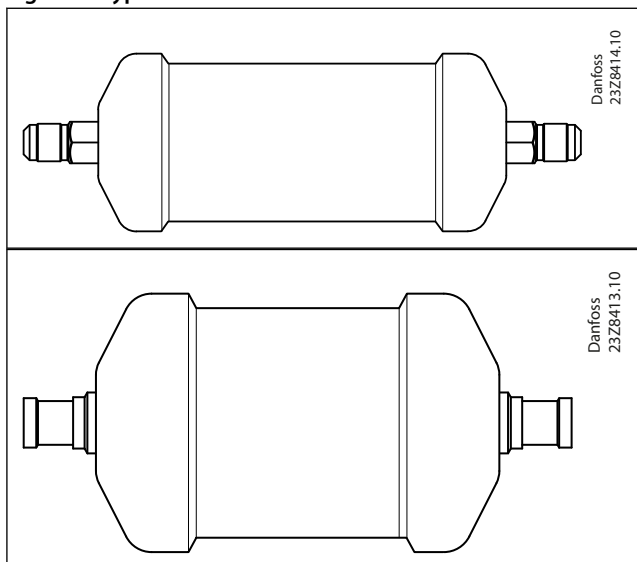


Table 6: Type DMT, flare

| 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

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](https://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-ДК.БЛ08.В.00828_19 | EAC Declaration           | Machinery & Equipment         | EAC                |

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