



Cooling Info

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Refrigeration and Air Conditioning Controls

DML filter driers: PED conformity at a glance

Danfoss has developed the DML filter driers for use with the new types of refrigerant which have much higher working pressures. Depending on the type of filter drier, they are suitable for a maximum working pressure of 35 to 42 bar. Please note that in relation to the PED the "drier volume statement" on the filter driers has recently been changed.

During the manufacturing process, each filter drier is fitted with a label which indicates the type, code number and drier volume. In the past this was the gross volume but now the "net internal volume" is given. This is the volume of the housing minus the volume of the solid core.

In this way Danfoss hereby guarantees quick and uncomplicated verification by PED inspection services, as the "internal free volume" is an essential part of PED legislation.

Example: DML053

| Gross volume (previous indication) | Net internal volume (new indication) |
|---------------------------------------|---|
| Volume in litre: 0.12 | Volume in litre: 0.05 |

Other advantages

- Capacity tables are clearly displayed on the outside packaging of the DML filter driers to assist quick and correct selection.



tion. These capacity tables indicate the drying capacity [kg refrigerant] and the liquid capacity [kW] in accordance with standard ARI 710-86. Even on site, all the necessary information is to hand.

- A comparative study of the drying capacity of filter driers has clearly demonstrated that Danfoss DML driers have a very high drying capacity. In nearly every case we are able to show the DML drying capacity is 2 to 4 times greater than other equivalent brands.
- The new range of DML filter driers offers a more comprehensive choice of size, with new driers added up to DML 759. We would like to draw your attention to

the new type DML032. This compact filter drier type, with its solid core and R404A drying capacity of 4.5kg / 7.5kg (liquid temperature 52°C / 24°C), is the ideal solution for installation in air conditioning and refrigeration systems with a small refrigerant charge (<5kW).

If you would like to obtain more information about Danfoss DML filter driers, please return the enclosed reply form and we will ensure that you receive the correct documentation.



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DAS burn-out filter driers

To complement the DML range used for installation in the liquid line, Danfoss also offers a wide range of burn-out filter driers type DAS. These filter driers are designed for installation in the suction line.

Characteristic features of the Danfoss DAS filter driers are:

- compact design: Overall length is kept to a minimum by utilizing the large diameter design.
- low pressure drop: Rated capacities are based on a pressure drop 0.21 bar, at 4C evaporating.

| | | |
|--------|-------|-------|
| DAS083 | 4.5kW | R404A |
| DAS084 | 10kW | R22 |

- competitive price: DAS083 to DAS 165VV* (flare/solder) . £22.12 List
*VV: schraeder at input and output.



In addition:

- Can be installed in horizontal or vertical pipe runs providing the direction of flow arrow is respected
- These burn-out filter driers are suitable for use with all commonly used HFC & HCFC refrigerants, including R410A.
- The acid and fluid adsorbent components are bonded in the solid core. This makes it impossible for the components to rub together & form any potentially hazardous debris in the system.

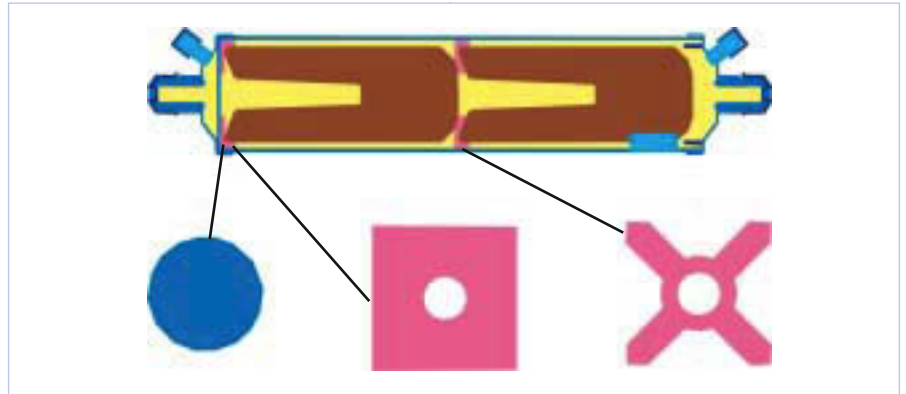
Important information:

- The DAS burn out drier is composed of 70% Activated Alumina in order to adsorb all the acid products produced during a burn-out. The remaining 30% of the drier is made up of Molecular Sieves to adsorb any moisture. The Activated Alumina will also adsorb any additives present in the oil, in particular with some POE oils containing polar additives, which are the same as the acids produced during a burn out.

- Therefore the DAS burn-out filter driers should only be installed temporarily. They have to be left for at least 8 hours in a working refrigeration installation to be most effective.

A table in the instructions leaflet shows when a DAS-filter drier should be removed depending on the refrigerant type and the pressure drop.

- When the oil has passed the required test for acid, the DAS burn out drier should be removed, and a complete system oil change should be undertaken.



If you would like to receive a brochure with a full description of this DAS product range, please return the enclosed reply form.

Refrigeration and Air Conditioning Controls

Sight glasses type SGN

Sight glasses change colour when specific values of relative moisture are exceeded. They are installed in the liquid line between the filter drier and the expansion valve. The Danfoss sight glasses type SGN are least dependent on temperature compared to other brand equivalents currently on the market. This article provides further information on this important characteristic.

Sight glasses are used to indicate:

- the condition of the refrigerant in the liquid line of an installation;
- the refrigerant moisture content.

Dependence on temperature

To obtain adequate compressor protection (sufficiently low moisture content) it is essential that the PPM value*, which makes the moisture indicator change colour (with the Danfoss SGN sight glasses turns "yellow"), changes minimally according to the liquid temperature. Danfoss sight glasses can be distinguished from other brands because Danfoss sight glasses fulfil this condition as no other does.

The table shows that a sight glass type SGN with the same moisture content in the installation will not change colour

| | PPM with liquid temperature = 25°C | | | PPM with liquid temperature = 43°C | | |
|-------|------------------------------------|--------------|--------|------------------------------------|--------------|--------|
| | Green | Green/Yellow | Yellow | Green | Green/Yellow | Yellow |
| R134a | <30 | 30-100 | >100 | <45 | 45-170 | >170 |
| R404A | <20 | 20-70 | >70 | <25 | 25 - 100 | >100 |
| R507 | <15 | 15-60 | >60 | <30 | 30-110 | >110 |
| R407C | <30 | 30-140 | >140 | <60 | 60-225 | >225 |

*PPM = parts per million (~absolute moisture), green=dry, yellow=moist





as quickly when the liquid temperature increases. When the discharge pressure and temperature are high (cfr. during the summer), the sight glass change in colour will not occur as quickly as in winter with a colder liquid line. The quantity of accepted moisture is often between 30 and 75ppm (depending on the compressor manufacturer). Thanks to minimal dependence on temperature, the Danfoss SGN-sight glasses guarantee the best visual indication of moisture throughout the whole year.

A wide range

Danfoss sight glasses type SGN can be delivered with both flare and solder connections. The sight glasses with flare connections are 6-sided for quick installation purposes. The sight glasses with solder

connections are provided with extended connections and are available with MxF (ODMxODF) connections, so that the filter drier can be soldered directly onto the sight glass. This not only reduces the assembly costs considerably but also the possibility of refrigerant leaks. This is another unique characteristic of SGN sight glasses !

Improved design

After some marketing research, the design of the sight glasses type SGN has, once again, been improved. The glass diameter of types 16-22 has been reduced from 30mm to 25mm. This adjustment allows the maximum permitted working pressure to increase for these types from 28 to 35 bar. All Danfoss sight glasses are now suitable for a maximum working pressure of 35 bar.

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In addition details of all our products, news and information can be found on our web site <http://www.danfoss.co.uk>

By returning the enclosed reply form, you will receive a description of the sight glasses type SGN.

TAKE YOUR CHANCE AND WIN!