

Data sheet

Filter drier with access port

Product type DCL 01.5s, DCL 03s and DCL 05s



All ELIMINATOR® driers have a solid core with binding material held to an absolute minimum.

The ELIMINATOR® core type DCL contain 80% Molecular Sieve with 20% activated alumina.

The ELIMINATOR® type DCL driers are designed for applications requiring high moisture capacity and acid adsorption capacity.

The integrated access port provides an additional point to diagnose issues or charge the system.

Available with solder (pure copper) connections. For other connections please contact your Danfoss Sales Representative.

Features

The Core type DCL

- 80% 3Å Molecular Sieve with 20% activated alumina
- Perfect core blend for systems that operate at high condensing temperatures and require high drying capacity
- Recommended for use with R22, R32, R134a, R404A, R410A, R407C, R23, R600, R600a, R1234yf, R1234ze, R407F, R290, R452A, R444B, R449A, R448A, R450A, R507.
For other refrigerants, please contact Danfoss.
- Compatible with the oil types Mineral or AB, POE or PAG without additives.

The Shell

- UL approved for MWP 667 psig.
- Available with solder (pure copper) connections.
- Outlet connector: 2.8 mm for capillary tube, or can be trimmed for ¼ inch.
- 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.
- Available in sizes 1.5 - 5 cubic inches.

The Filter

- 25 µm (0.001 in.) filter provides high retention, with minimal pressure drop.
- Thermally stable up to 250 °F.

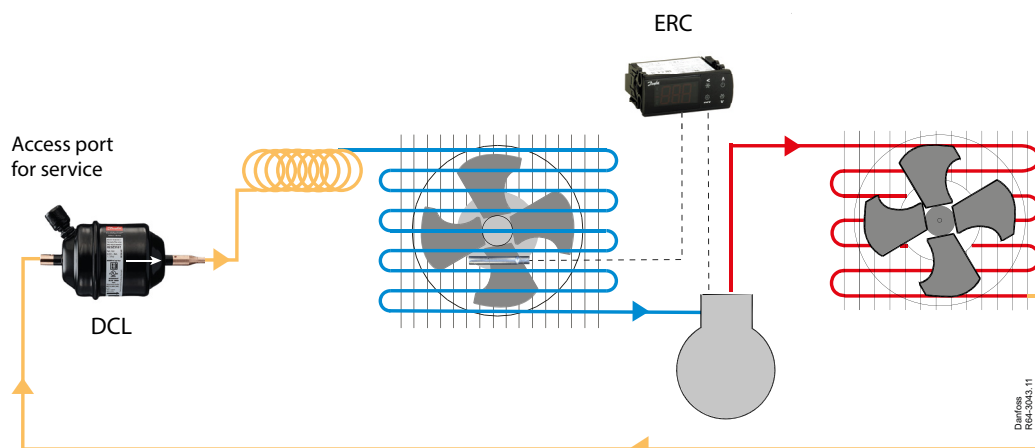
Approvals

UL US, file no. SA 6398
 PED 97/23/EC - a3p3
 Compliant with ATEX hazard zone 2

Application

ELIMINATOR® hermetic filter driers protect refrigeration and air-conditioning systems from moisture, acids, and solid particles.

With these contaminants eliminated, systems are safer from harmful chemical reactions and from abrasive impurities.



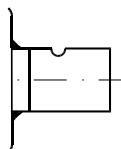
Technical data

Refrigerants: R22, R32, R134a, R404A, R410A, R407C, R23, R600, R600a, R1234yf, R1234ze, R407F, R290, R452A, R444B, R449A, R448A, R450A, R507.
 For other refrigerants, please contact Danfoss.

This product is approved for R32 by ignition source assessment in accordance to standard EN13463-1.

Surface and volume

| Filter | Solid core surface | Solid core volume | Filter drier volume (shell volume) | Filter drier volume (net. volume) |
|----------------|--------------------|--------------------|------------------------------------|-----------------------------------|
| | [in ²] | [in ³] | [fl. oz.] | [fl. oz.] |
| DCL 1.52/CAPsV | 7.2 | 1.5 | 1.7 | 1.21 |
| DCL 032/CAPsV | 13.0 | 3.0 | 2.7 | 1.28 |
| DCL 052/CAPsV | 15.0 | 4.0 | 4.0 | 1.72 |



Solder connection (pure copper)

Acid capacity

| Filter | Acid capacity ¹⁾ |
|----------------|-----------------------------|
| | [oz.] |
| DCL 1.52/CAPsV | 0.01 |
| DCL 032/CAPsV | 0.02 |
| DCL 052/CAPsV | 0.03 |

¹⁾ Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

Maximum working pressure and allowable temperature

| Filter size | Connection type | Connection | | Max. working pressure MWP | Temperature range |
|----------------------------|--------------------|------------|-------------------------|---------------------------|-------------------|
| | | Inlet | Outlet | | |
| [in ³] | | | | [psig] | [°F] |
| DCL1.5 DCL 03 DCL 05 | Solder pure copper | ¼ inch ODF | 2.8 mm ODM / ¼ inch ODF | 667 | -40 – 160 |

Technical data and capacities

Drying and liquid capacity

| Type | Drying capacity [lb] refrigerant ¹⁾ | | | | | | | | | | | | | | Liquid capacity [TR] ²⁾ | | | | | | |
|----------------|--|------|-------|------|------|------|------|------|-------|------|-------|------|------|------|------------------------------------|-------|------|-----|-------|-------|-----|
| | R134a | | R404A | | R507 | | R22 | | R407C | | R410A | | R32 | | R134a | R404A | R507 | R22 | R407C | R410A | R32 |
| | [°F] | | | | | | | | | | | | | | | | | | | | |
| | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | | | | | | | |
| DCL 1.52/CAPsV | 5.2 | 4.8 | 5.5 | 5.2 | 5.7 | 5.1 | 5.3 | 4.9 | 5.1 | 4.7 | 4.7 | 4.2 | 4.8 | 4.2 | 1.0 | 0.7 | 0.7 | 1.1 | 1.0 | 1.0 | 1.5 |
| DCL 1.52sV | 5.2 | 4.8 | 5.5 | 5.2 | 5.7 | 5.1 | 5.3 | 4.9 | 5.1 | 4.7 | 4.7 | 4.2 | 4.8 | 4.2 | 1.4 | 1.0 | 1.0 | 1.6 | 1.5 | 1.5 | 2.2 |
| DCL 032/CAPsV | 8.4 | 7.7 | 8.8 | 8.3 | 9.2 | 8.3 | 8.5 | 7.8 | 8.2 | 7.6 | 7.6 | 6.8 | 7.7 | 6.8 | 1.2 | 0.8 | 0.8 | 1.3 | 1.2 | 1.2 | 1.8 |
| DCL 032sV | 8.4 | 7.7 | 8.8 | 8.3 | 9.2 | 8.3 | 8.5 | 7.8 | 8.2 | 7.6 | 7.6 | 6.8 | 7.7 | 6.8 | 1.6 | 1.2 | 1.1 | 1.8 | 1.7 | 1.7 | 2.5 |
| DCL 052/CAPsV | 13.5 | 12.4 | 14.1 | 13.4 | 14.8 | 13.3 | 13.6 | 12.5 | 13.1 | 12.1 | 12.3 | 10.9 | 12.3 | 10.9 | 1.2 | 0.8 | 0.8 | 1.3 | 1.2 | 1.2 | 1.8 |
| DCL 052sV | 13.5 | 12.4 | 14.1 | 13.4 | 14.8 | 13.3 | 13.6 | 12.5 | 13.1 | 12.1 | 12.3 | 10.9 | 12.3 | 10.9 | 1.7 | 1.2 | 1.2 | 1.9 | 1.8 | 1.8 | 2.6 |

¹⁾ Drying capacity is based on following moisture content test standards before and after drying:

- R32: 990 ppm W - 50 ppm W
- R134a: 1050 ppm W - 50 ppm W
- R404A, R507: 1020 ppm W - 50 ppm W
- R407C: 1020 ppm W - 50 ppm W
- R410A: 1050 ppm W - 50 ppm W
- R22: 1050 ppm W - 60 ppm W

in accordance with ARI 710-2004

²⁾ Given in accordance with ARI 710-2004 for

- t_e = 5 °F
- t_c = 85 °F
- Δp = 1 psi

For technical data on other refrigerants, please contact your Danfoss Sales Representative

Conversions

$$\text{Drops of water} = \frac{(\text{lbs of refrigerant} \times (\text{Initial PPM of water} - \text{Final PPM of water}))}{110}$$

See ARI standard 710-2004 for recommended initial and final PPM values for different refrigerants

Ordering

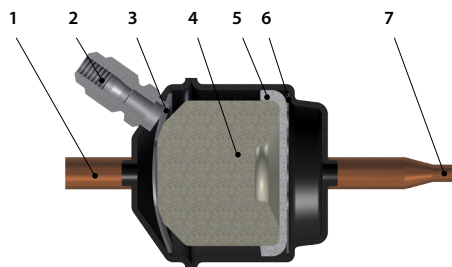


Type DCL Solder (copper)

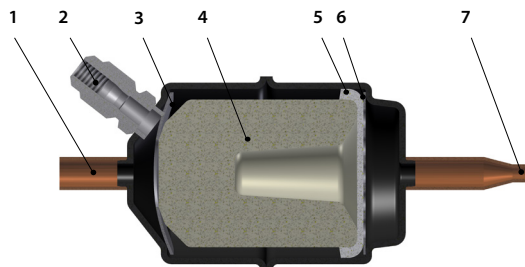
| Type | Inlet connection | | Outlet connection | | Multi pack | |
|----------------|------------------|--------|-------------------|------|------------|------|
| | [inch] | [inch] | [inch] | [mm] | Code no. | Qty. |
| DCL 1.52/CAPsV | ¼ | ¼ | ¼ | 2.8 | 023Z8261 | 32 |
| DCL 032/CAPsV | ¼ | ¼ | ¼ | 2.8 | 023Z5174 | 32 |
| DCL 052/CAPsV | ¼ | ¼ | ¼ | 2.8 | 023Z5181 | 24 |

Design / Function

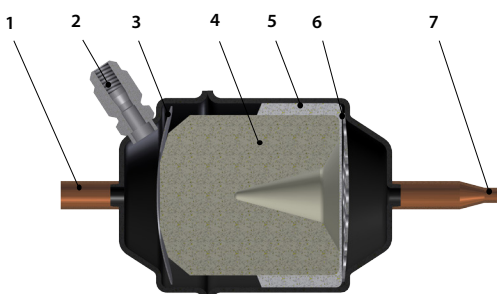
DCL 1.5s



DCL 03s



DCL 05s



- 1. Inlet
- 2. Access port (Schrader valve)
- 3. Spring
- 4. Solid core
- 5. Polyester mat
- 6. Perforated plate
- 7. Outlet

The relatively large diameter of the hermetic filter drier means that the liquid flow velocity is suitably low and the pressure drop minimal.

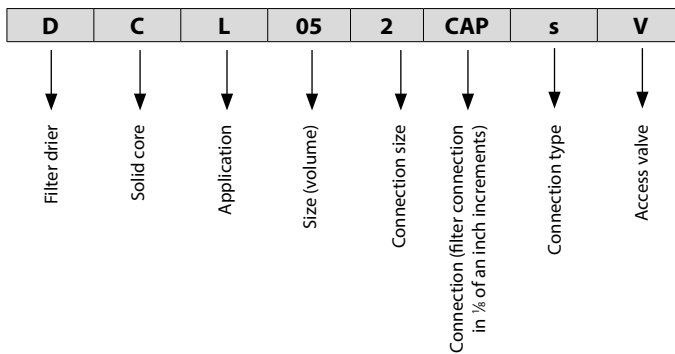
Powder formation is eliminated because the solid core grains are bonded and cannot move against each other.

Identification

Type codes

| Type | Codes | Description |
|--|-------|---|
| Filter drier | D | Drier |
| Solid core | C | 80% Molecular Sieve / 20% activated alumina |
| Application | L | Liquid line |
| Size (volume) | 1.5 | 1.5 in ³ |
| | 03 | 3 in ³ |
| | 05 | 5 in ³ |
| Connection (filter connection in 1/8 of an inch increments) | CAP | 2.8 mm |
| | 2 | 1/4 in. |
| | 2.5 | 5/16 in. |
| | 3 | 3/8 in. |
| Connection type | 4 | 1/2 in. |
| | s | Solder connection (pure copper) |
| Access valve | V | Schrader valve |

Example for type codes



Selection example

Select the appropriate type (DCL) based on refrigerant and oil type. Then select the drier size based on the liquid and adsorption capacity required.

- a. Cooling capacity: $Q_e = 0.25 \text{ TR}$
To obtain a mass flow corresponding to 0.25 TR cooling capacity with a DCL 1.52/CAPsV filter drier.
- b. Amount of charge: 1 lbs R134a at $t_L = 75 \text{ }^\circ\text{F}$
To dry 1 lbs R134a at $75 \text{ }^\circ\text{F}$ from 1050 to 50 ppm moisture, a DCL 1.52/CAPsV is necessary.
- c. Result
DCL 1.52/CAPsV can be used
If a bigger filter is used, the increase of drying capacity protects the system in better way.

Drying and liquid capacity

| Type | Drying capacity [lb] refrigerant ¹⁾ | | | | | | | | | | | | Liquid capacity [TR] ²⁾ | | | | | | | | |
|----------------|--|------|-------|------|------|------|------|------|-------|------|-------|------|------------------------------------|------|-------|-------|------|-----|-------|-------|-----|
| | R134a | | R404A | | R507 | | R22 | | R407C | | R410A | | R32 | | R134a | R404A | R507 | R22 | R407C | R410A | R32 |
| | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | 75 | 125 | | | | | | | |
| DCL 1.52/CAPsV | 5.2 | 4.8 | 5.5 | 5.2 | 5.7 | 5.1 | 5.3 | 4.9 | 5.1 | 4.7 | 4.7 | 4.2 | 4.8 | 4.2 | 1.0 | 0.7 | 0.7 | 1.1 | 1.0 | 1.0 | 1.5 |
| DCL 1.52sV | 5.2 | 4.8 | 5.5 | 5.2 | 5.7 | 5.1 | 5.3 | 4.9 | 5.1 | 4.7 | 4.7 | 4.2 | 4.8 | 4.2 | 1.4 | 1.0 | 1.0 | 1.6 | 1.5 | 1.5 | 2.2 |
| DCL 032/CAPsV | 8.4 | 7.7 | 8.8 | 8.3 | 9.2 | 8.3 | 8.5 | 7.8 | 8.2 | 7.6 | 7.6 | 6.8 | 7.7 | 6.8 | 1.2 | 0.8 | 0.8 | 1.3 | 1.2 | 1.2 | 1.8 |
| DCL 032sV | 8.4 | 7.7 | 8.8 | 8.3 | 9.2 | 8.3 | 8.5 | 7.8 | 8.2 | 7.6 | 7.6 | 6.8 | 7.7 | 6.8 | 1.6 | 1.2 | 1.1 | 1.8 | 1.7 | 1.7 | 2.5 |
| DCL 052/CAPsV | 13.5 | 12.4 | 14.1 | 13.4 | 14.8 | 13.3 | 13.6 | 12.5 | 13.1 | 12.1 | 12.3 | 10.9 | 12.3 | 10.9 | 1.2 | 0.8 | 0.8 | 1.3 | 1.2 | 1.2 | 1.8 |
| DCL 052sV | 13.5 | 12.4 | 14.1 | 13.4 | 14.8 | 13.3 | 13.6 | 12.5 | 13.1 | 12.1 | 12.3 | 10.9 | 12.3 | 10.9 | 1.7 | 1.2 | 1.2 | 1.9 | 1.8 | 1.8 | 2.6 |

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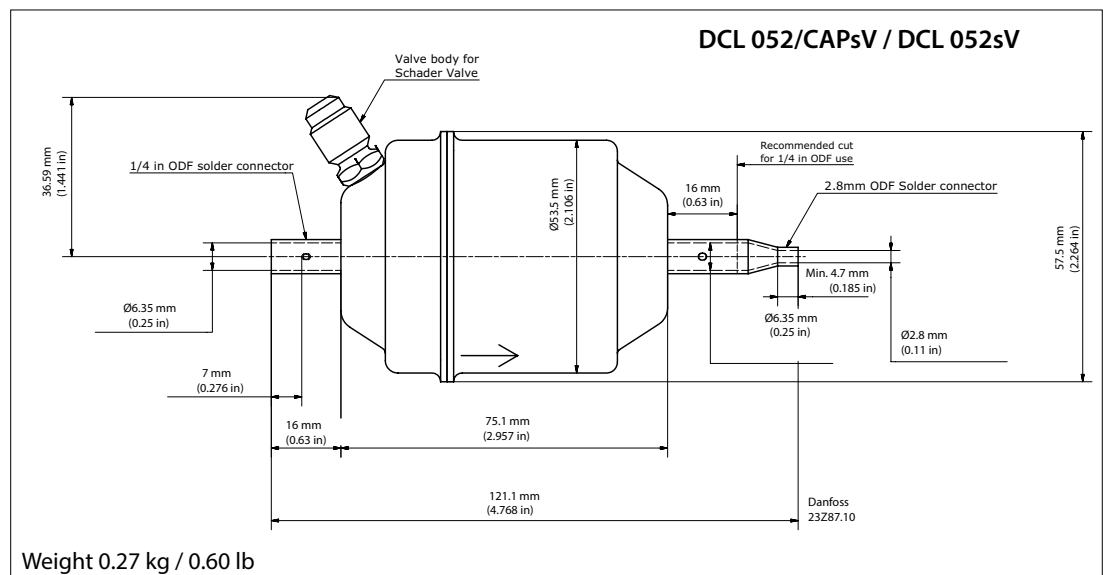
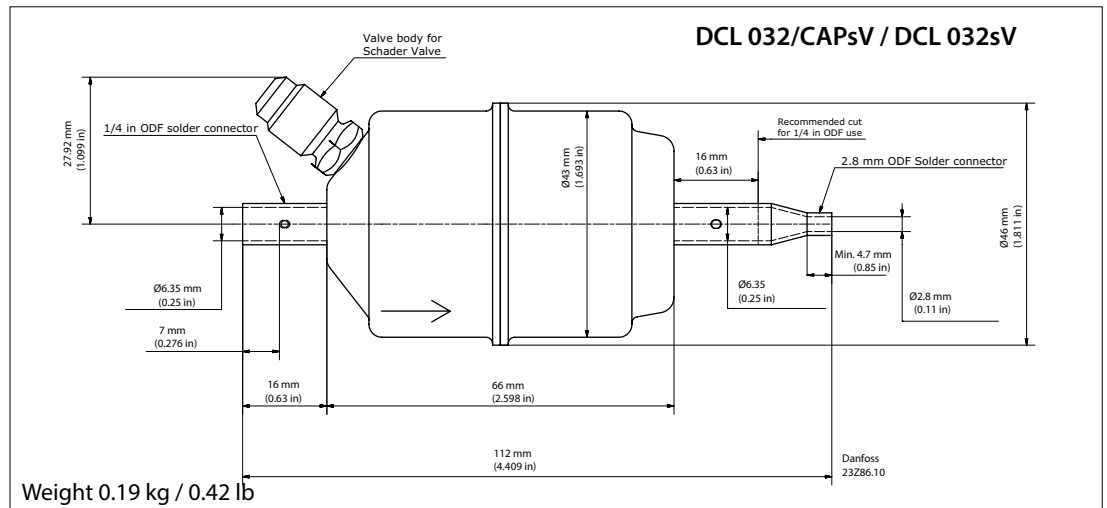
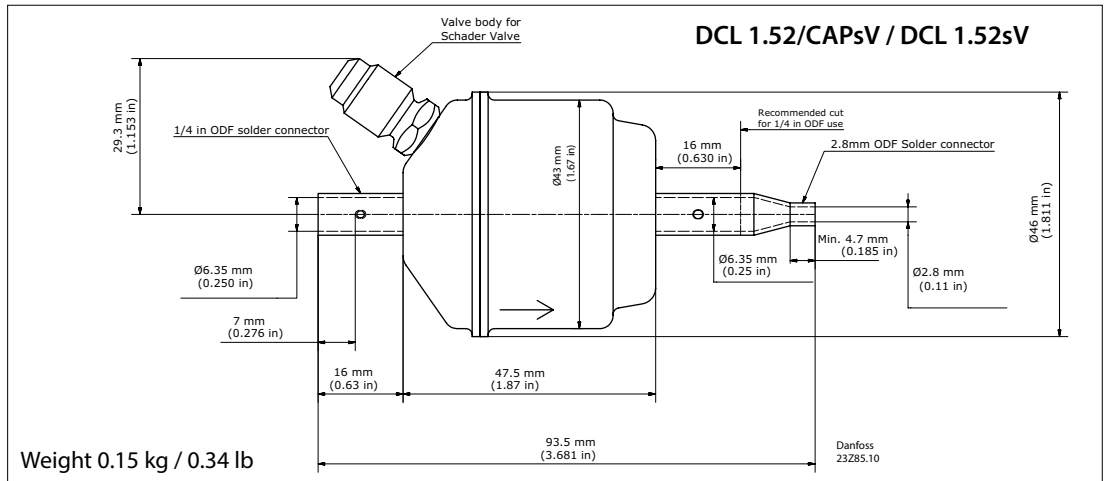
in accordance with ARI 710-2004

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- $t_e = 5 \text{ }^\circ\text{F}$
- $t_c = 85 \text{ }^\circ\text{F}$
- $\Delta p = 1 \text{ psi}$

For technical data on other refrigerants, please contact your Danfoss Sales Representative

Dimensions and weights



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