



## Description

Hermetic burn-out filter driers type DAS are used in the suction line to clean up refrigeration and air conditioning systems after a compressor motor burn-out.

The solid core, which is composed of 70% activated alumina and 30% Molecular Sieve, adsorbs harmful acids as well as moisture.

Available with flare and solder (pure copper) connections.

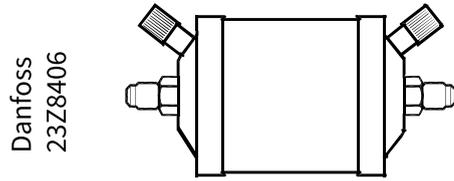
## Features & benefits

- The Core type DAS is recommended for use with HFO, HC, HFC and HCFC refrigerants
  - Solid core with 70% activated alumina and 30% Molecular Sieve for adsorption of acid and moisture
- The Shell is available in sizes 8 – 60 cubic inches
  - PED approved for PS 35 bar
  - Available with flare and solder (pure copper) connections
  - Corrosion resistant powder-painted finish
  - Allows installation with any orientation provided the flow is in the arrow direction
  - 2 Schrader access valves to measure pressure drop across the drier
- The Filter has 120 mesh wire mesh provides solid particle retention with minimal pressure drop

## Ordering

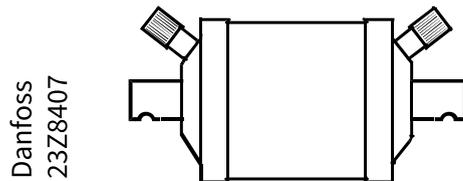
### Product code numbers

Figure: Flare connection



| Type      | Connection    | Multi-pack |          |
|-----------|---------------|------------|----------|
|           | [in]          | Qty.       | Code no. |
| DAS 083VV | $\frac{3}{8}$ | 24         | 023Z1001 |
| DAS 084VV | $\frac{1}{2}$ | 24         | 023Z1002 |
| DAS 164VV | $\frac{1}{2}$ | 12         | 023Z1007 |
| DAS 165VV | $\frac{5}{8}$ | 12         | 023Z1008 |

Figure: Solder connection

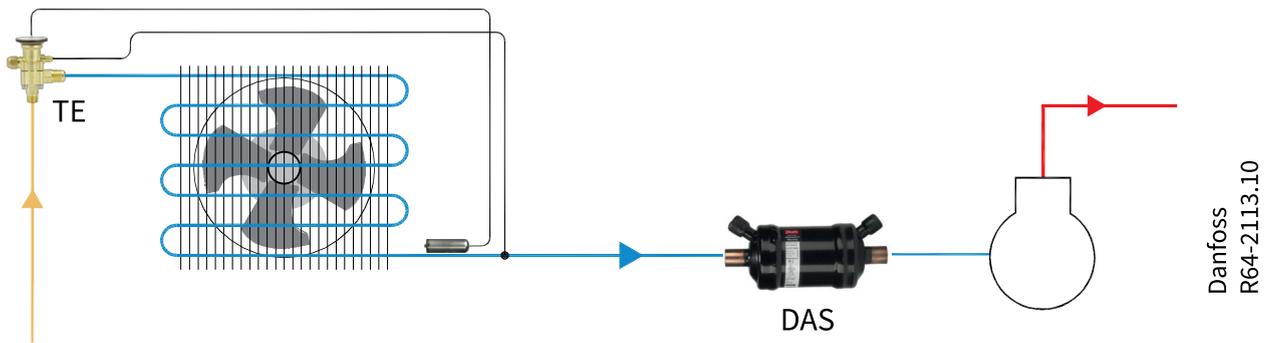


| Type       | Connection     | Multi-pack |          |
|------------|----------------|------------|----------|
|            | [in]           | Qty.       | Code no. |
| DAS 083sVV | $\frac{3}{8}$  | 24         | 023Z1003 |
| DAS 084sVV | $\frac{1}{2}$  | 24         | 023Z1004 |
| DAS 085sVV | $\frac{5}{8}$  | 24         | 023Z1005 |
| DAS 086sVV | $\frac{3}{4}$  | 24         | 023Z1006 |
| DAS 164sVV | $\frac{1}{2}$  | 12         | 023Z1009 |
| DAS 165sVV | $\frac{5}{8}$  | 12         | 023Z1010 |
| DAS 166sVV | $\frac{3}{4}$  | 12         | 023Z1011 |
| DAS 167sVV | $\frac{7}{8}$  | 12         | 023Z1012 |
| DAS 305sVV | $\frac{5}{8}$  | 8          | 023Z1013 |
| DAS 306sVV | $\frac{3}{4}$  | 8          | 023Z1014 |
| DAS 307sVV | $\frac{7}{8}$  | 8          | 023Z1015 |
| DAS 309sVV | $1\frac{1}{8}$ | 8          | 023Z1016 |
| DAS 417sVV | $\frac{7}{8}$  | 8          | 023Z1017 |
| DAS 419sVV | $1\frac{1}{8}$ | 8          | 023Z1018 |
| DAS 607sVV | $\frac{7}{8}$  | 12         | 023Z1019 |
| DAS 609sVV | $1\frac{1}{8}$ | 12         | 023Z1020 |

## Functions

Hermetic filter driers protect refrigeration and air-conditioning systems from moisture, acids, and solid particles. By adsorbing harmful acids after a compressor motor damage, the DAS hermetic burn-out filter drier protects the new compressor against premature failure.

Figure: Functional diagram



## Product details

### General data

#### Identification

Table: Type codes

| Type  | Codes | Description  |
|---|-------|--|
| Filter drier  | D     | Drier  |
| Solid core  | A     | Burn-out, 70% activated alumina / 30% Molecular Sieves |
| Application   | S     | Suction line   |
| Size (volume)   | 8     | 8 in <sup>3</sup>                                      |
|   | 16    | 16 in <sup>3</sup>                                     |
|   | 30    | 30 in <sup>3</sup>                                     |
|   | 41    | 41 in <sup>3</sup>                                     |
|   | 60    | 60 in <sup>3</sup>                                     |
| Connection (filter connection in 1/8 of an inch increments) | 3     | 3/8 in / 10 mm   |
|   | 4     | 1/2 in / 12 mm   |
|   | 5     | 5/8 in / 16 mm   |
|   | 6     | 3/4 in / 18 (19) mm                                    |
|   | 7     | 7/8 in / 22 mm   |
|   | 9     | 1 1/8 in / 28 mm                                       |
| Connection type   | -     | Flare connection                                       |
|   | s     | Solder connection (pure copper)                        |

| Type          | Codes | Description      |                  |
|---------------|-------|------------------|------------------|
| Access valves | -     | Inlet:           | Outlet:          |
|               | -     | No access valves | No access valves |
|               | V     | Schrader valve   | No access valves |
|               | VV    | Schrader valve   | Schrader valve   |

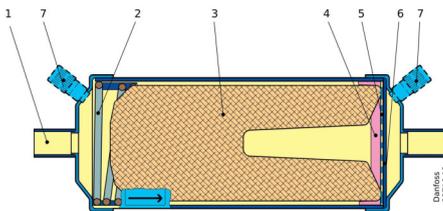
### Example for type codes

|           |   |
|-----------|---|
| <b>D</b>  | Filter drier  |
| <b>A</b>  | Solid core  |
| <b>S</b>  | Application   |
| <b>08</b> | Size (volume)   |
| <b>3</b>  | Connection (filter connection in 1/8 of an inch increments) |

|           |                 |
|-----------|-----------------|
| <b>s</b>  | Connection type |
| <b>vv</b> | Access valves   |

## Design

Figure: Type DAS



|          |                  |
|----------|------------------|
| <b>1</b> | Inlet            |
| <b>2</b> | Spring           |
| <b>3</b> | Solid core       |
| <b>4</b> | Polyester ma     |
| <b>5</b> | Metal mesh       |
| <b>6</b> | Perforated plate |
| <b>7</b> | Schrader valve   |

The large diameter of the hermetic burn-out filter drier means that 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.

## Capacity

Figure: Flare connection

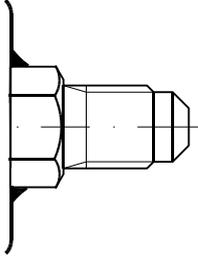


Figure: Solder connection (pure copper)

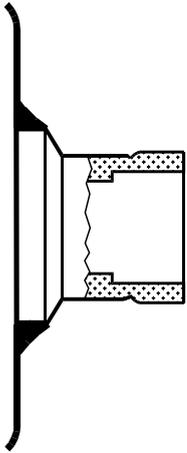


Table: Type DAS

| Type    | Rated capacity, $Q_n$ <sup>(1)</sup> |       |            | Acid capacity <sup>(2)</sup> | Max. Working Pressure PS |
|---------|--------------------------------------|-------|------------|------------------------------|--------------------------|
|         | R22/R407C/R410A                      | R134a | R404A/R507 |                              |                          |
|         | [kW]                                 | [kW]  | [kW]       | [g]                          | [bar]                    |
| DAS 083 | 6                                    | 3.5   | 4.5        | 3.8                          | 35                       |
| DAS 084 | 10                                   | 5.5   | 8          | 3.8                          | 35                       |
| DAS 085 | 14.5                                 | 9     | 12.5       | 3.8                          | 35                       |
| DAS 086 | 19                                   | 11.5  | 16.5       | 3.8                          | 35                       |
| DAS 164 | 10.5                                 | 6     | 8.5        | 8.6                          | 35                       |
| DAS 165 | 15                                   | 9.5   | 13         | 8.6                          | 35                       |
| DAS 166 | 20                                   | 12    | 17         | 8.6                          | 35                       |
| DAS 167 | 22                                   | 13.5  | 19         | 8.6                          | 35                       |
| DAS 305 | 18                                   | 11    | 15         | 18.2                         | 35                       |
| DAS 306 | 22                                   | 14    | 19         | 18.2                         | 35                       |
| DAS 307 | 26                                   | 16    | 22         | 18.2                         | 35                       |
| DAS 309 | 31                                   | 20    | 27         | 18.2                         | 35                       |
| DAS 417 | 30                                   | 18    | 25         | 24.3                         | 35                       |
| DAS 419 | 35                                   | 22    | 30         | 24.3                         | 35                       |
| DAS 607 | 20                                   | 12    | 17         | 36.5                         | 35                       |

<sup>(1)</sup> Rated capacity is stated at: evaporating temperature  $t_e = 4^\circ\text{C}$  pressure drop  $\Delta p = 0.21$  bar

<sup>(2)</sup> Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

## Temperature range: -40 – 70 °C

### Selection

Capacities for other temperatures than 4 °C are calculated by use of correction factors. Divide your actual evaporator capacity with the correction factor given for your actual evaporating temperature.

Look up the capacity table for the necessary rated capacity:

|           |                            |
|-----------|----------------------------|
| $Q_e/F_e$ | $Q_n$                      |
| $Q_e$     | Actual evaporator capacity |
| $Q_n$     | Nominal capacity           |
| $F_e$     | Correction factor          |

**Table: Correction factors  $F_e$  for evaporating temperatures [°C]**

| [°C]  | 4 | 0   | -5   | -10 | -15 | -20 | -25  | -30  | -35 | -40  |
|-------|---|-----|------|-----|-----|-----|------|------|-----|------|
| $F_e$ | 1 | 0.9 | 0.75 | 0.6 | 0.5 | 0.4 | 0.35 | 0.25 | 0.2 | 0.15 |

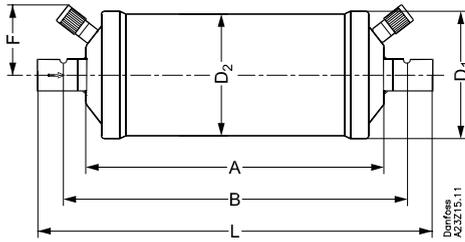
### Example:

To select a hermetic burn-out filter drier for a R22 plant with an evaporator capacity at 8.5 kW at -20 °C you may use a burn-out filter drier with a rated capacity of  $8.5 / 0.4 = 21.25$  kW or bigger.

For example, DAS 306.

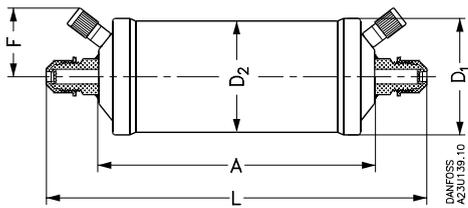
## Dimensions

Figure: Solder connections



| Type       | A    | B    | L    | D1   | D2   | F    | Net weight |
|------------|------|------|------|------|------|------|------------|
|            | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg]       |
| DAS 083sVV | 101  | 120  | 139  | 58   | 54   | 40   | 0.47       |
| DAS 084sVV | 101  | 122  | 143  | 58   | 54   | 40   | 0.5        |
| DAS 085sVV | 101  | 125  | 149  | 58   | 54   | 40   | 0.5        |
| DAS 086sVV | 101  | 131  | 161  | 58   | 54   | 40   | 0.5        |
| DAS 164sVV | 110  | 131  | 152  | 80   | 76   | 50   | 0.83       |
| DAS 165sVV | 110  | 134  | 158  | 80   | 76   | 50   | 0.84       |
| DAS 166sVV | 110  | 140  | 170  | 80   | 76   | 50   | 0.84       |
| DAS 167sVV | 110  | 141  | 172  | 80   | 76   | 50   | 0.84       |
| DAS 169sVV | 110  | 142  | 173  | 80   | 76   | 50   | 1.9        |
| DAS 305sVV | 186  | 210  | 234  | 80   | 76   | 50   | 1.31       |
| DAS 306sVV | 186  | 216  | 246  | 80   | 76   | 50   | 1.31       |
| DAS 307sVV | 186  | 217  | 248  | 80   | 76   | 50   | 1.33       |
| DAS 309sVV | 186  | 218  | 249  | 80   | 76   | 50   | 1.35       |
| DAS 417sVV | 187  | 218  | 249  | 93   | 89   | 55   | 2.08       |
| DAS 419sVV | 187  | 219  | 250  | 93   | 89   | 55   | 2.08       |
| DAS 607sVV | 337  | 363  | 399  | 80   | 76   | 50   | 2.39       |
| DAS 609sVV | 337  | 358  | 400  | 80   | 76   | 50   | 2.4        |

Figure: Flare connections



| Type      | A    | L    | D1   | D2   | F    | Net weight |
|-----------|------|------|------|------|------|------------|
|           | [mm] | [mm] | [mm] | [mm] | [mm] | [kg]       |
| DAS 083VV | 101  | 158  | 58   | 54   | 40   | 0.51       |
| DAS 084VV | 101  | 166  | 58   | 54   | 40   | 0.62       |
| DAS 164VV | 110  | 175  | 80   | 76   | 40   | 0.91       |
| DAS 165VV | 110  | 184  | 80   | 76   | 40   | 0.95       |

## 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.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

| Approval type                 | Title  | Certification body                  | Approval topic                          |
|-------------------------------|--|-------------------------------------|---|
| UA Declaration                | <a href="#">Danfoss UA 2023-01-10 Filters PL01</a>     | Danfoss                             | PED, Pressure                           |
| Manufacturer's Declaration    | <a href="#">Danfoss MD 023U9601.AI</a>                 | Danfoss                             | Explosive, EU RoHS, PED, Pressure, ATEX |
| Mechanical Safety Certificate | <a href="#">UL SA6398 19980330 US-CA</a>               | UL - Underwriters Laboratories inc. |   |
| Manufacturer's Declaration    | <a href="#">Danfoss MD 023Z9610.AA</a>                 | Danfoss                             | China RoHS                              |
| Pressure Safety Certificate   | <a href="#">LLC CDC EURO-TYSK UA.TR.089.1015.07-22</a> | LLC CDC EURO TYSK - Ukraine         | Pressure                                |
| Export Control Declaration    | <a href="#">Filter Driers 023U and 023Z</a>            | Danfoss                             |   |

## Contact details

### Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



#### The Danfoss Design center

Discover the Design Center, our advanced digital platform that streamlines product selection. With integrated tools and enhanced type pages, it's simpler than ever to access product information and documentation, and to select the right products. Check the availability of Danfoss products at partner locations and enjoy seamless transitions from selection to purchase with our basket-to-basket functionality. Whether you're buying from our distributors or directly from the Product Store, the Design Center simplifies your experience. Learn more at: [designcenter.danfoss.com](https://designcenter.danfoss.com).



#### The Danfoss product store

The Danfoss Product Store is a one-stop shop available 24/7 for our customers, no matter where you are in the world or what area of industry you work in. Browse our catalog, check product details and documentation, view your prices and product availability, and quickly finalize your purchase. Start browsing at: [store.danfoss.com](https://store.danfoss.com).



#### Danfoss Partner Portal/Product Data tool

Designed to support you with easy access to product data extracts, essential resources, tools, and information. The Partner Portal provides a centralized hub for product documentation, training materials, marketing assets, and technical support, ensuring you have everything you need to succeed and grow your business with Danfoss. The Partner Portal is available 24/7 at: [partner.danfoss.com](https://partner.danfoss.com) and is ready to support your business.



#### Find technical documentation

Find technical documentation you need to get your project up running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more. Start searching now at: [documentation.danfoss.com](https://documentation.danfoss.com).



#### Danfoss Learning

Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications industry topics, and trends that will help you do your job better. Find your local Danfoss website here: [learning.danfoss.com](https://learning.danfoss.com).



#### Get local information and support

Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert - all in your own language. Find your local Danfoss website here: [danfoss.com](https://danfoss.com).

#### Danfoss A/S

Climate Solutions . danfoss.com . +45 7488 2222

---

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues description, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the products. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.

---