

Suction Line Filters and Filter Driers

Series ASF and ASD

Hermetic design

Features

- Filtration down to 10 micron
- Two Schrader valves to measure pressure drop
- Compact size
- Temperature range -45°C to +65°C
- Max. operating pressure: 34,5 bar



| Suction Line Filters Type | Order-No. | Connection | | | | Nominal Capacity Q _n kW | | | | |
|---------------------------|-----------|------------|-------|-----------|------|------------------------------------|------|--------|--------|------|
| | | Solder/ODF | | Flare/SAE | | R 134a | R 22 | R 404A | R 407C | R507 |
| | | mm | inch | mm | inch | | | | | |
| ASF 28 S3 | 056 574 | | 3/8 | | | 6,0 | 8,4 | 7,7 | 7,8 | 7,7 |
| ASF 28 S4 | 056 575 | | 1/2 | | | 9,9 | 14,4 | 13,4 | 13,4 | 13,4 |
| ASF 35 F5 | 056 577 | | | 16 | 5/8 | 11,1 | 16,5 | 15,5 | 15,3 | 15,5 |
| ASF 35 S5 | 056 578 | | 5/8 | | | 15,9 | 23,2 | 21,4 | 21,6 | 21,4 |
| ASF 45 S6 | 056 582 | | 3/4 | | | 23,3 | 34,5 | 32,0 | 32,1 | 32,0 |
| ASF 45 S7 | 056 580 | 22 | 7/8 | | | 32,5 | 42,5 | 34,5 | 39,5 | 34,5 |
| ASF 50 S9 | 056 579 | | 1-1/8 | | | 46,0 | 67,1 | 55,5 | 62,4 | 55,5 |
| ASF 75 S11 | 056 581 | 35 | 1-3/8 | | | 60,2 | 85,4 | 70,7 | 79,4 | 70,7 |
| ASF 75 S13 | 056 576 | | 1-5/8 | | | 65,4 | 87,5 | 73,1 | 81,4 | 73,1 |

| Suction Line Filter Driers Type | Order-No. | Connection | | | | Nominal Capacity Q _n kW | | | | |
|---------------------------------|-----------|------------|-------|-----------|------|------------------------------------|------|--------|--------|------|
| | | Solder/ODF | | Flare/SAE | | R 134a | R 22 | R 404A | R 407C | R507 |
| | | mm | inch | mm | inch | | | | | |
| ASD 28 S3 | 056564 | | 3/8 | | | 5,5 | 8,1 | 7,4 | 7,5 | 7,4 |
| ASD 28 S4 | 056565 | | 1/2 | | | 9,1 | 13,4 | 12,7 | 12,5 | 12,7 |
| ASD 35 F5 | 056567 | | | 16 | 5/8 | 10,7 | 15,5 | 14,4 | 14,4 | 14,4 |
| ASD 35 S5 | 056569 | | 5/8 | | | 14,3 | 20,4 | 19,0 | 19,0 | 19,0 |
| ASD 45 S6 | 056570 | | 3/4 | | | 19,1 | 24,6 | 22,5 | 22,9 | 22,5 |
| ASD 45 S7 | 056571 | 22 | 7/8 | | | 25,0 | 32,3 | 26,4 | 30,0 | 26,4 |
| ASD 50 S9 | 056572 | | 1-1/8 | | | 35,3 | 46,4 | 38,3 | 43,2 | 38,3 |
| ASD 75 S11 | 056573 | 35 | 1-3/8 | | | 42,9 | 56,9 | 47,8 | 52,9 | 47,8 |
| ASD 75 S13 | 056566 | | 1-5/8 | | | 45,2 | 60,8 | 51,0 | 56,5 | 51,0 |

Nominal capacity at +4°C evaporating temperature (saturated condition/dew point) and a pressure drop of 0.21 bar between inlet and outlet of ASF/ASD. Correction factor for other evaporating temperatures than +4°C:

$$Q_n = Q_o \times K_s$$

Q_n: Nominal capacity

K_s: Correction factor for a pressure drop corresponding 1 K saturation temperature

Q_o: Required cooling capacity

| Correction Factor K _s | | | | | | | | | | | |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|----------------|
| Evaporating Temperature (°C) | | | | | | | | | | | |
| | +4 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 | -40 | |
| K _s | 1,00 | 1,12 | 1,35 | 1,75 | 2,00 | 2,50 | 3,00 | 3,75 | 5,00 | 6,60 | K _s |

Filter Driers

Basic terminology and technical information

Function

The purpose of filter driers is to keep the refrigeration circuit clean of water, acid and solid contaminants. In case of contamination, corrosion and ice building can occur as well as malfunction of the compressor.

Property of desiccants

Molecular sieves

This kind of desiccant has a very good drying effect independent of the oil content of the refrigerant. Molecular sieve is a fast acting desiccant and will remove moisture even when the water content of the refrigerant is low and when the temperature of the liquid refrigerant is high.

Activated alumina

Activated alumina incorporate an excellent acid capacity. By selecting a specific mixture of both desiccants an optimum effect can be achieved to cover the requirements of all kinds of applications. Liquid filter driers are especially designed for a high water capacity whereas suction line filter driers feature a high acid and filtration capacity.

Flow capacity

Flow capacity refers to ARI-Standard 710-86 and DIN 8949 and is based on a pressure drop of 0.07 bar, +30°C liquid temperature and -15°C evaporating temperature.

The flow capacities are given at two levels of pressure drop: 0.07 and 0.14 bar.

Filter drier selection for operating conditions other than +30°C / -15°C, use the correction factors.

Water capacity

The water capacity for R 22 refers to ARI 710-86 and DIN8948 is based on a liquid temperature of 24/52°C and an equilibrium point dryness (EPD) of 60 PPM water in refrigerant. The EPD for other refrigerants according to DIN 8949 is as follows:

| Refrigerant | EPD (PPM) |
|-------------|-----------|
| R 134a | 50 |
| R 407C | 50 |
| R 404A | 50 |
| R 507 | 50 |
| R 410A | 50 |

Selection guide for filter and filter driers

| Selection criteria | Series | | | | | | | | | |
|--------------------------|----------|-------|--------------------------------|------------------|------|---------------------------|----------|----------|----------------|--------|
| | ADK-Plus | BFK | ADKS - Plus with core H/S/W 48 | FDS-24 with core | | FDS-48 with core H/S/W 48 | ASF-Plus | ASD-Plus | BTAS with core | |
| | | | | F24 | S 24 | | | | AF | AF - D |
| Hermetic design | + | + | | | | | + | + | | |
| For exchangeable cores | | | + | + | + | + | | | + | + |
| Filter | | | | + | | | + | | + | |
| Filterdrier | + | + | + | | + | + | | + | | + |
| For liquid service | + | + | + | | + | + | | | | |
| For suction service | | | | + | + | | + | + | + | + |
| For Heat Pumps (Bi-Flow) | | + | | | | | | | | |
| Shell material | Steel | Steel | Steel | Steel | | Steel | Steel | Steel | Brass | |
| Catalogue page | 95 | * | 97 | 98 | | 99 | 100 | 100 | 101 | |

* Ask your ALCO wholesaler for datasheet