

ADK-...FLR filter driers are used for protection of systems against contaminant.

Features

- Solid block
- Hermetic design
- Rugged steel shells
- Corrosion resistant epoxy paint
- Cushioned flow for non-turbulent performance
- High water adsorption capacity
- High acid adsorption capacity
- High filtration capacity / efficiency
- No CE marking according art. 3.3 PED 97/23 EC
- Max. working pressure PS: 35 bar



ADK-...FLR

Selection Table

| Type | Part. no | Connection ODF | Flow capacity [kW] Pressure drop | |
|-----------------|----------|----------------|-------------------------------------|----------|
| | | | 0.07 bar | 0.14 bar |
| ADK-032S FLR | 803650 | 1/4" | 9.6 | 14.1 |
| ADK-036MMS FLR | 803651 | 6 mm | 8.8 | 13.1 |
| ADK-052S FLR | 803652 | 1/4" | 11.8 | 18.7 |
| ADK-056MMS FLR | 803653 | 6 mm | 10.9 | 16.4 |
| ADK-053S FLR | 803654 | 3/8" | 17.9 | 26.4 |
| ADK-0510MMS FLR | 804066 | 10 mm | 17.9 | 26.4 |
| ADK-082S FLR | 804067 | 1/4" | 13.1 | 19.0 |
| ADK-086MMS FLR | 804068 | 6 mm | 11.7 | 17.5 |
| ADK-083S FLR | 804069 | 3/8" | 18.0 | 26.4 |
| ADK-0810MMS FLR | 804070 | 10 mm | 18.0 | 26.4 |
| ADK-084S FLR | 804071 | 1/2" | 29.3 | 44.2 |
| ADK-0812MMS FLR | 804072 | 12 mm | 28.8 | 43.2 |
| ADK-163S FLR | 804073 | 3/8" | 20.5 | 29.3 |
| ADK-1610MMS | 804074 | 10 mm | 20.5 | 29.3 |
| ADK-164S FLR | 804075 | 1/2" | 39.4 | 54.7 |
| ADK-1612MMS FLR | 804076 | 12 mm | 35.4 | 53.1 |
| ADK-165S FLR | 804077 | 5/8" / 16 mm | 54.4 | 79.3 |
| ADK-304S FLR | 804078 | 1/2" | 39.5 | 56.5 |
| ADK-305S FLR | 804079 | 5/8" / 16 mm | 57.8 | 79.9 |
| ADK-307S FLR | 804080 | 7/8" / 22 mm | 72.6 | 114.5 |
| ADK-417S FLR | 804081 | 5/8" / 16 mm | 85.3 | 128.0 |
| ADK-757S FLR | 804082 | 7/8" / 22 mm | 115.5 | 173.3 |

Correction Factors ADK

Use following simplified formula for operating conditions other than -15°C / +30°C

$$Q_n = Q_o \times K_t$$

Q_n : Nominal flow capacity

Q_o : Required cooling capacity

K_t : Correction factor for evaporating and liquid temperature

| Liquid temperature °C | Correction factor K_t Evaporating temperature °C | | | | | | | | | | | |
|-----------------------|---|------|------|------|------|------|------|------|------|------|------|------|
| | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 |
| 70 | 1.58 | 1.62 | 1.66 | 1.71 | 1.77 | 1.83 | 1.89 | 1.96 | 2.03 | 2.11 | 2.20 | 2.29 |
| 65 | 1.43 | 1.46 | 1.50 | 1.54 | 1.58 | 1.63 | 1.68 | 1.73 | 1.79 | 1.86 | 1.92 | 2.00 |
| 60 | 1.30 | 1.33 | 1.37 | 1.40 | 1.44 | 1.48 | 1.52 | 1.56 | 1.61 | 1.66 | 1.72 | 1.78 |
| 55 | 1.20 | 1.23 | 1.26 | 1.29 | 1.32 | 1.35 | 1.39 | 1.42 | 1.46 | 1.51 | 1.55 | 1.60 |
| 50 | 1.12 | 1.14 | 1.17 | 1.19 | 1.22 | 1.25 | 1.28 | 1.31 | 1.34 | 1.38 | 1.42 | 1.46 |
| 45 | 1.05 | 1.07 | 1.09 | 1.11 | 1.13 | 1.16 | 1.19 | 1.21 | 1.24 | 1.28 | 1.31 | 1.34 |
| 40 | 0.98 | 1.00 | 1.02 | 1.04 | 1.06 | 1.08 | 1.11 | 1.13 | 1.16 | 1.19 | 1.22 | 1.25 |
| 35 | 0.93 | 0.95 | 0.96 | 0.98 | 1.00 | 1.02 | 1.04 | 1.06 | 1.08 | 1.11 | 1.14 | 1.16 |
| 30 | 0.88 | 0.90 | 0.91 | 0.93 | 0.94 | 0.96 | 0.98 | 1.00 | 1.02 | 1.04 | 1.07 | 1.09 |
| 25 | 0.84 | 0.85 | 0.86 | 0.88 | 0.89 | 0.91 | 0.93 | 0.95 | 0.96 | 0.98 | 1.00 | 1.03 |
| 20 | - | 0.81 | 0.82 | 0.84 | 0.85 | 0.87 | 0.88 | 0.90 | 0.91 | 0.93 | 0.95 | 0.97 |

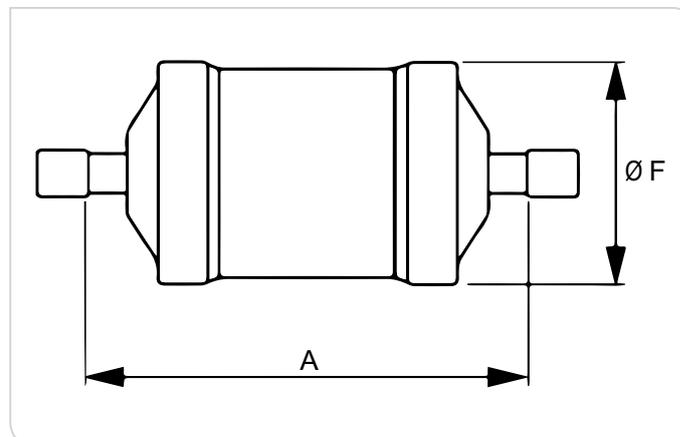
Technical Data

| | |
|--------------------------|-------------|
| Max. working pressure PS | 35 bar |
| Test pressure PT | 38.5 bar |
| Medium temperature TS | -45...+65°C |
| Ambient temperature | -45...+65°C |
| Fluid group | II |
| Solder connections | Copper, ODF |

| | |
|------------|----------------------------|
| Shell | Steel |
| Paint | Epoxy powder paint |
| Protection | 500+ Hours salt spray test |
| Package | Individual packaged |
| Standards | EN 14276-1 |
| Marking | HP |

Dimensions [mm]

| Type | Connection ODF | [mm] | |
|-----------------|-------------------|-------|------|
| | | A | Ø F |
| ADK-032S-FLR | 1/4" | 70.1 | 44.0 |
| ADK-036MMS-FLR | 6 mm | 70.1 | 44.0 |
| ADK-052S-FLR | 1/4" | 85.3 | 63.5 |
| ADK-056MMS-FLR | 6 mm | 85.3 | 63.5 |
| ADK-053S-FLR | 3/8" | 84.8 | 63.5 |
| ADK-0510MMS-FLR | 10 mm | 84.8 | 63.5 |
| ADK-082S-FLR | 1/4" | 102.7 | 63.5 |
| ADK-086MMS-FLR | 6 mm | 102.6 | 63.5 |
| ADK-083S-FLR | 3/8" | 102.1 | 63.5 |
| ADK-0810MMS-FLR | 10 mm | 102.1 | 63.5 |
| ADK-084S-FLR | 1/2" | 102.5 | 63.5 |
| ADK-0812MMS-FLR | 12 mm | 102.6 | 63.5 |
| ADK-163S-FLR | 3/8" | 126.6 | 63.5 |
| ADK-1610MMS-FLR | 10 mm | 126.6 | 63.5 |
| ADK-164S-FLR | 1/2" | 127.0 | 63.5 |
| ADK-1612MMS-FLR | 12 mm | 127.0 | 63.5 |
| ADK-165S-FLR | 5/8" / 16 mm | 127.6 | 63.5 |
| ADK-304S-FLR | 1/2" | 193.6 | 76.2 |
| ADK-305S-FLR | 5/8" / 16 mm | 194.2 | 76.2 |
| ADK-307S-FLR | 7/8" / 22 mm | 193.6 | 76.2 |
| ADK-417S-FLR | 5/8" / 16 mm | 199.9 | 88.9 |
| ADK-757S-FLR | 7/8" / 22 mm | 337.4 | 88.9 |



General Information

ADK...FLR filter driers are used for protection of systems against contaminant.

The listed products are not in scope of ATEX product directive 94/9/EC as they do not incorporate an own source of ignition.

ADK...FLR must be installed in an appropriate housing to protect them from mechanical damage or shock.

Safety Instructions

- Read operating instructions thoroughly. Non-observance can result in device failure, system damage or personal injury.
- According to EN 13313 it is intended for use by persons having the appropriate knowledge and skill.
- R290 requires special handling and care due to its flammability. Sufficient ventilation is required during service of the system. Contact with rapidly expanding gases can cause frostbite and eye damage. Proper protective equipment (gloves, eye protection, etc.) has to be used.
- In a severely contaminated system, avoid breathing acid vapors and avoid contact with the skin from contaminated refrigerant/lubricants. Failure to do so could result in injury.
- Ensure that the system is correctly labeled with applied refrigerant type and a warning for explosion risk.
- Do not release any refrigerant into the atmosphere.
- Do not exceed the specified maximum ratings for pressure and temperature.
- Before opening any system make sure pressure in system is brought to and remains at atmospheric pressure.
- Do not use on any other fluid media without prior approval of Emerson. Use of fluids not listed could result in chemical deterioration of the desiccant in filter drier.
- Ensure that design, installation and operation are according to European and national standards/regulations.

Mounting Location

- Filter driers may be installed in any position within the liquid line. Direction of refrigerant flow must be observed.

- For best results locate the filter drier as close as possible to the inlet of expansion device. If using a liquid line solenoid valve and/or moisture indicator. Locating filter drier upstream will provide protection for the solenoid valve and the moisture indicator will measure the effectiveness of the drier.
- Protect the filter drier against sunrays and vibration.

Installation

- Do not remove seal caps until ready for installation in order to minimize entering of moisture and dirt.

Avoid damaging the connections!

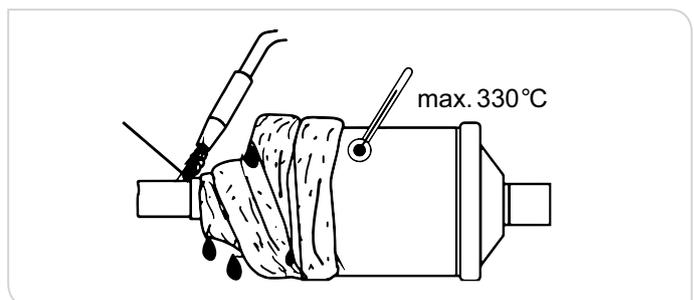
- Direction of refrigerant flow must match with arrow on the label. Reverse flow reduces the filtering ability and increases the pressure drop through the filter drier.

Recommended external pipe connection:

| Nominal pipe connection | Outside diameter | |
|-------------------------|------------------|-----------|
| | Min. (mm) | Max. (mm) |
| 1/4" | 6.30 | 6.38 |
| 3/8" | 9.47 | 9.55 |
| 1/2" | 12.62 | 12.73 |
| 5/8" | 15.80 | 15.90 |
| 7/8" | 22.15 | 22.25 |
| 1-1/8" | 28.50 | 28.63 |
| 6 mm | 5.95 | 6.05 |
| 10 mm | 9.95 | 10.05 |
| 12 mm | 11.96 | 12.05 |
| 16 mm | 15.95 | 16.05 |
| 22 mm | 21.95 | 22.06 |
| 28 mm | 27.95 | 28.05 |

Brazing (Fig. 1)

- Perform and consider the brazing joint as per EN 14324.
- Before and after brazing clean tubing and brazing joints.
- Minimize vibrations in the piping lines by appropriate solutions.



Pressure Test

- After completion of installation, a pressure test must be carried out according to EN 378 for systems which must comply with European pressure equipment directive 97/23/EC.
- Max. system test pressure: 38.5 bar.

Warning

- **Failure to do so could result in loss of refrigerant and personal injury.**
- **The pressure test must be conducted by skilled persons with due respect regarding the danger related to pressure.**

Tightness Test

Conduct a tightness test according to EN 378-2 with appropriate equipment and method to identify tightness of external joints. The allowable leakage rate must be according system manufacturer's specification.

Operation

- After leakage test start system and after sufficient running time check color of moisture indicator for moisture level. We recommend the use of Emerson moisture indicators.
- In systems with excessive moisture it may be necessary to replace the filter drier for several times in order to bring moisture in the system to a safe level.

Service / Maintenance

- **Before any debrazing ensure that the flammable refrigerant is pumped out of the system and the room around the system is well vented so no refrigerant left.**
- **Disconnect electrical power before service.**
- **Always install a new filter drier when existing ones become saturated with moisture and foreign materials.**
- **Do not attempt to dry out a used filter drier.**

Technical Data of ADK -...FLR

- Max. allowable working pressure PS: 35 bar
- Test pressure PT: 38.5 bar
- Temperature Range TS: -45°C...+65°C
- Released / compatible for: R290, mineral- and alkyl bezene, ester lubricants
- Standards: EN 14276-1

ADK types not listed in the following table are not released for use with flammable refrigerants!

| Type | Part no. |
|-----------------|----------|
| ADK-032S-FLR | 803 650 |
| ADK-036MMS-FLR | 803 651 |
| ADK-052S-FLR | 803 652 |
| ADK-056MMS-FLR | 803 653 |
| ADK-053S-FLR | 803 654 |
| ADK-0510MMS-FLR | 804 066 |
| ADK-082S-FLR | 804 067 |
| ADK-086MMS-FLR | 804 068 |
| ADK-083S-FLR | 804 069 |
| ADK-0810MMS-FLR | 804 070 |
| ADK-084S-FLR | 804 071 |
| ADK-0812MMS-FLR | 804 072 |
| ADK-0163S-FLR | 804 073 |
| ADK-0160MMS-FLR | 804 074 |
| ADK-164S-FLR | 804 075 |
| ADK-0162MMS-FLR | 804 076 |
| ADK-165S-FLR | 804 077 |
| ADK-304S-FLR | 804 078 |
| ADK-305S-FLR | 804 079 |
| ADK-307S-FLR | 804 080 |
| ADK-417S-FLR | 804 081 |
| ADK-757S-FLR | 804 082 |