

EK Filter Drier

The straight facts about EK



The EK Filter Drier is a best-in-class Emerson Climate Technologies™ product. This document is designed to accurately address questions and misconceptions about EK Filter Drier performance.

1. Sporlan implies that the fiberglass pads on the EK Filter Drier are burnt during the manufacturing process and that this “condition” affects its performance.

When heated, the fiberglass pads turn amber to dark brown in color. This discoloration is due to additional curing of the phenolic resin used to bind the fiberglass filters together. The curing process does not harm or shrink the fibers, but in fact, increases their strength. In no way does it adversely affect the performance of the EK.

2. It’s a common industry misconception that all bead-style filter driers are more susceptible to desiccant breakdown than molded-core or block-style filter driers.

The EK *compacted* bead-style filter drier uses a compression spring on the inlet side that works with refrigerant flow to maintain desiccant compaction. The spring force acts in the same manner as the binding agent in molded cores. With this proven design, the attrition of desiccant is essentially reduced to zero.

3. Sporlan claims its Catch-All has “unexcelled” acid removal ability compared to the EK.

Actually, this statement is true but somewhat vague. The Catch-All desiccant blend is rich in activated alumina, which does an effective job of acid removal but also acts to strip additives from POE lubricants. The EK design has a maximum activated alumina content of 25 percent, which meets Copeland recommendations and is designed to provide best overall system protection performance. In fact, our in-house testing shows that Sporlan has recently changed their desiccant blend to more closely match the EK and Copeland’s recommendation.

4. Many contractors have been led to believe that since the EK contains more fiberglass than a molded-core type filter, it has less moisture-removal capability.

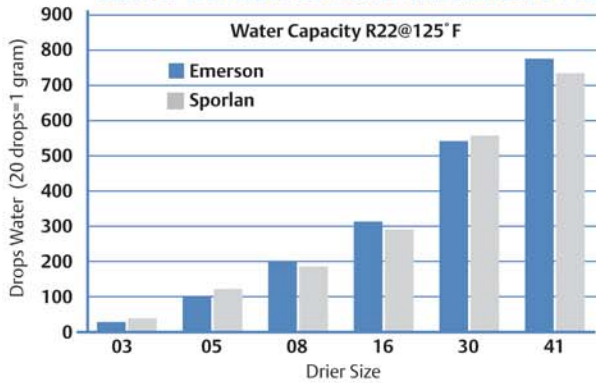
Moisture removal is based on a number of design considerations, the most important of which is the total surface area of the desiccant. Comparing the molded-core “size” or “weight” to that of the EK is meaningless. In fact, the molded-core filter drier uses a binding agent that reduces the effective surface area of the desiccant. The only true comparison is the published data per ARI Standard 710, which shows the moisture removal capacity of each product. See Table 1.



The EK is the only Copeland-recommended filter drier for use with HFC refrigerants.

Source: Copeland Bulletin AE-1297-R3

Table 1. Moisture Removal ARI Standard 710

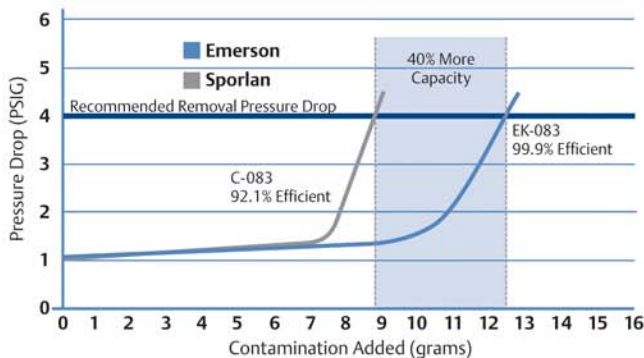


Source: Flow Controls Catalog FC 2003-91
Sporlan Bulletin 40-10 Oct. 01

Summary

The overall design of an effective filter drier balances the moisture and acid removal with the ability to catch and hold contaminants. The patented EK delivers on both. It offers unsurpassed filtration performance with the ability to capture even the finest particles. The real advantage of the EK is its ability to hold

Table 2. Filtration Performance



This chart illustrates the filtration capability of liquid line filter driers per the ASHRAE 63.2 Method of Testing. Capacity – Emerson’s EK removes 40% more solid particles than Sporlan’s C before needing to be replaced. Efficiency – Emerson’s EK catches and holds the solid particles far better than Sporlan’s C.

contaminants during system start up and cycling – when pulses in the system tend to dislodge particles from molded-core filter driers causing them to become system contaminators instead of protectors.

See for yourself. Visit your local Emerson Climate Technologies wholesaler for a demonstration of how the EK Filter Drier offers superior system protection. Or go to EmersonClimateContractor.com to get a free copy of the EK white paper and product brochure. The EK Filter Drier delivers – and it’s been recommended by Copeland for the last 12 years.

Table 3. Competitive Comparison (Based on 8 cu. in. size)

	Emerson EK	Sporlan C
Desiccant Type	Compacted Bead	Molded Core/Block
Absolute Filtration	20 microns	Not Published
Moisture Removal	200 drops H ₂ O	196 drops H ₂ O
MWP	680 psig	650 psig
Acid Capacity	500 mg	750 mg
Desiccant Blend	75% Molecular Sieve, 25% Activated Alumina	Not published
Meets Copeland Recommendations	Yes	No

Emerson Climate Technologies is a business of Emerson and a global leader in providing customers with innovative technologies and solutions. St. Louis-based Emerson has over 30,000 employees in the United States and was named one of the “World’s Most Admired Companies” in 2003 by *Fortune* magazine.

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