

# FAUDI

we keep work flowing



## Fully automatic Backflush Filter Systems Modular Filter Systems Type RSFA 27/28/29



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For the continuous, maintenance-free filtration of various liquids in chemical, petrochemical and refinery applications

**FAUDI**

### FAUDI solves your purification challenges in any size and matter

With systems becoming more complicated and having higher technical requirements, they may react to even the smallest disturbances, which can lead to system failure. Such issues can be prevented with correctly applied filtration and separation technology. FAUDI can help you avoid these critical failures and optimize the performance and life-time of your high-priced equipment and components.

FAUDI modular filter systems are fully automatic operating systems for the filtration of solid contaminants from incoming process fluids (hydrocarbons, amine, glycol, water, ...), system fluids and waste streams in production and treatment plants of the Oil, Gas and Chemical Industry.



### Key Benefits

- Processing cycles of the filter system type RSFA are fully automatic, supporting and simplifying system operation
- The modular design offers flexibility to meet current and future system capacity demands
- The use of high quality components in designing our systems is the main reason why FAUDI filter systems are reliable and durable
- Our filter elements are designed with maximum active surface area to reduce flux rates - our experience guarantees the development of optimum flux rate for your application
- FAUDI offers a large variety of filter media, element sizes and filter grade. Choosing the best filter element for your application – new high performance filter cartridge offers filtration degree down to 1 micron
- Complete automatic filter element regeneration is the key to reducing TCO (Total cost of ownership)  
FAUDI Modular Filter Systems offer **various backflushing methods** – for optimum cost and performance selection
  - Internal backflushing (with filtered medium)
  - External backflushing (with foreign medium)
  - External backflushing with purge system (foreign medium without product liquid loss)
  - Gas supported backflushing

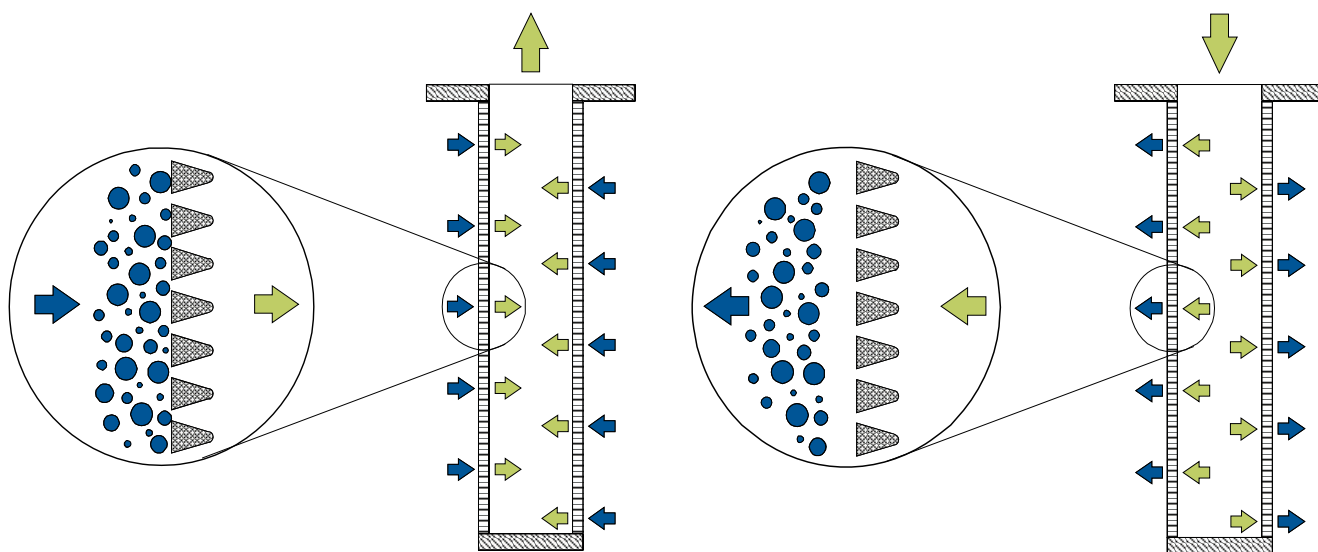
## How the system works

### Filtration Process

The medium to be filtered enters through the inline header and distributes evenly to each filter module. Inside the filter module, the unfiltered medium passes from the outside to the inside of the multiple tubular filter elements and flows upward through the filter. Contaminants deposit on the outside of the filter element as a filter cake. The clean medium exits the filter system on its way to the pipeline.

### Cleaning

During filtration the pressure drop raises due to the build up of contaminants (filter cake) on the outside of the filter element. When the pre-determined pressure drop is reached, related valves close and the filter module, which must be regenerated, is momentarily isolated from the filtration operation. The contaminants are dislodged by initiating a reverse flow (backflush). The remaining filter modules operate without interruption ensuring a continuous filtration.



### Backflush methods

Depending on your application, FAUDI offers a variety of backflush methods – providing maximum efficiency and cost effectiveness.

#### Reverse flow backflush with filtered medium

**(Internal backflushing):** The FAUDI RSFA type 29 uses a precise volume of filtrate for initiating the backflush process. The liquid completely removes the filter cake from the filter elements and exits the filter module through a separate backflush header.

#### Reverse flow backflush with foreign medium

**(External backflushing):** When loss of expensive or critical filtrate is unacceptable, or when the filtration pressure is too low for an effective backflush, or when flow rates are too low the FAUDI RSFA type 28 with external backflushing is the solution.

- Function at operation pressure as low as 1,5 bar and at suction side
- Required flow rate for backflushing is higher than filtration rate
- Backflush cleaning is independent from flow rate and operation pressure

#### Reverse flow backflushing with gas support (Gas-supported backflushing)

The FAUDI RSFA type 27 utilizes inert gas (e. g. nitrogen gas) to support the backflushing process. Each filter element is regenerated by directing a high-pressure pulse of gas via a separate gas header into the throat of the elements. The shock wave set up by the medium, enhanced by the gas buffer, effectively removes the accumulated filter cake. Gas supported backflushing is the method of choice for today's industry.

- Minimal backflush effluent
- Backflush cleaning is independent from flow rate and operation pressure
- Filtration degree down to 1 micron

## Technical Information

### Connection:

In accordance to ASME B16.5 and EN 1092-1 regulations

### Filter Media:

A wide range of filter media, element sizes and filter grades are available. Please ask our representatives for more information.

### Module Material/Piping:

Standard: Carbon steel and 316 stainless steel in accordance to ASME and DIN regulations; On customer demand we gladly apply other materials.

### Frame Material:

Standard: Painted carbon steel in accordance to ASME and DIN regulations; On customer demand we gladly apply other materials.

### Automation:

Monitoring of contamination by PDT and PLC (Control)

### Utility:

AC or DC power supply and instrument air

### Options:

Equipment for backflush system handling

| Technical Specification      | from                 | to                    |
|------------------------------|----------------------|-----------------------|
| Flow rate                    | 15 m <sup>3</sup> /h | 800 m <sup>3</sup> /h |
| Filter area                  | 3 m <sup>2</sup>     | 200 m <sup>2</sup>    |
| Degree of Filtration         | 100 µm               | 1 µm                  |
| Operation pressure (pmin)    | 1,5 bar              |                       |
| Operating temperature (Tmax) | 300 °C               |                       |

## Sample applications

|                       |                               |
|-----------------------|-------------------------------|
| Filter type:          | RSFA type 28                  |
| Medium:               | Diesel Oil                    |
| Flow rate:            | 94,4 m³/h                     |
| Design pressure:      | 21 bar                        |
| Design temperature:   | 184 °C                        |
| Degree of filtration: | 25 µm                         |
| Filter area:          | 1,95 m²                       |
| Filter banks:         | 1                             |
| Filter modules:       | 6 (6 per bank)                |
| Backflush medium:     | External hydro treated diesel |

|                       |                  |
|-----------------------|------------------|
| Filter type:          | RSFA type 28     |
| Medium:               | Short Residue    |
| Flow rate:            | 186 m³/h         |
| Design pressure:      | 28/14,5 bar      |
| Design temperature:   | 270/355 °C       |
| Degree of filtration: | 25 µm            |
| Filter area:          | 36 m²            |
| Filter banks:         | 4                |
| Filter modules:       | 40 (10 per bank) |
| Backflush medium:     | External Gas Oil |

|                       |                    |
|-----------------------|--------------------|
| Filter type:          | RSFA type 29       |
| Medium:               | Vacuum Gas Oil     |
| Flow rate:            | 318 m³/h           |
| Design pressure:      | 24,6/21,0/35,9 bar |
| Design temperature:   | 343/390/65 °C      |
| Degree of filtration: | 20 µm              |
| Filter area:          | 69 m²              |
| Filter banks:         | 5                  |
| Filter modules:       | 60 (12 per bank)   |
| Backflush medium:     | Filtrate           |

|                       |                           |
|-----------------------|---------------------------|
| Filter type:          | RSFA type 27              |
| Medium:               | Coker Naphtha Feed        |
| Flow rate:            | 41,8 m³/h                 |
| Design pressure:      | 16,9 bar                  |
| Design temperature:   | 120 °C                    |
| Degree of filtration: | 3 µm                      |
| Filter area:          | 5,25 m²                   |
| Filter banks:         | 1                         |
| Filter modules:       | 6                         |
| Backflush medium:     | Nitrogen gas and filtrate |



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*Detail of a Modular Filter Unit Type RSFA 27*

*For more information on FAUDI RSFA filter systems or any other FAUDI filtration product, please contact our representatives or visit our website at [www.faudi.com](http://www.faudi.com).*