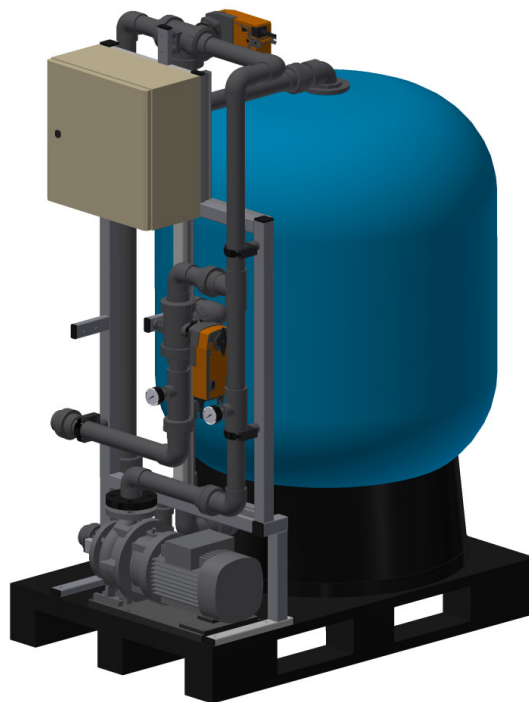# TSF
Side-stream filters for cooling circuits

The side-stream filter TSF with single-valve logic and LOGO controller is designed for use in cooling circuits and is removes dirt particles from open cooling systems. It is an automatic single filter unit with time-controlled backwashing using raw water. The unit is mounted on a plastic Euro pallet together with the feed pump, ready for connection. The use of AFM glass granulate as filter medium enables a particularly effective filter performance with a germ-reducing effect. The option backwashing with a different water source is already included in the scope of supply.

BENEFITS

- Independent of the operation of the cooling water circuit due to integrated feed pump
- Particularly effective filter performance with germ-reducing effect due to AFM glass granulate
- Easy installation due to ready-to-connect design on plastic Euro pallet

APPLICATIONS

- Side-stream filter for open cooling circuits
- Ideal for applications with increased hygiene requirements due to filling with AFM glass granulate
- Can be used in the main flow of the cooling circuit if the maximum permissible flow pressure is not exceeded

Side-stream filter TSF with AFM filling

TSF
Side-stream filters for cooling circuits

DESCRIPTION

Side-stream filter

- Ready-to-connect compact unit on plastic Euro pallet incl. feed pump and PVC piping
- GRP pressure tank with internals for uniform flow
- Manometer and 3-way motor valves made from PVC in inflow and outflow, ball valve for draining
- Programmable logic controller (PLC) Siemens Logo with text display
- AFM glass granulate is supplied separately (on-site filling)

PLC Siemens Logo

- Display of operating status and time until next backwash as well as differential pressure (if option selected)
- Start time and duration of backwash as well as time interval between backwashes are adjustable
- External release and manual triggering of backwash or blocking of backwash possible
- Display lights up red in case of fault (e.g. motor protection pump)

Inputs (potential-free)

- External On/Off
- External triggering of backwash
- External blocking of backwash
- Dry-run protection pump

Outputs (potential-free)

- Operation
- Fault

Optionally available

- Differential pressure switch DIFF-P (00315139 for TSF 11000, 00315150 for TSF 17000-24000)
- Initial filtration step with discharge of wastewater after backwashing (00315140 for TSF 11000, 00315151 for TSF 17000-24000)

CONDITIONS OF USE

The filters are designed for a pressureless filtrate discharge. If filtration is performed in a closed circuit, a backflow preventer must be provided on site in the filtrate line.
To activate the option backwash with a different water source, a wire jumper must be set in the switchboard by the customer.

TECHNICAL DATA OF SERIES

Operating pressure	0.1 – 6.0 bar
Pressure fluctuation	± 0.5 bar
Operating temperature	5 – 35 °C

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Filter velocity	30 m/h
Backwash velocity	50 m/h
Backwash time	10 min

Product name	Flow rate max m^3/h	Hydraulic connection RW / Filtrate / WW	Dimensions in mm W X D X H	Item number
TSF 11000	8	DN 40 / DN 40 / DN 40	1,200 X 880 X 1,790	315 136
TSF 17000	12	DN 50 / DN 50 / DN 50	1,200 X 910 X 1,790	315 137
TSF 24000	18	DN 50 / DN 50 / DN 50	1,270 X 930 X 1,790	315 138