

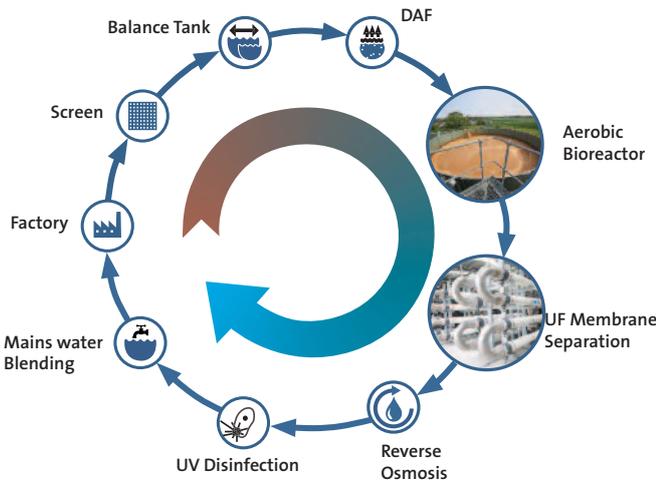


TECHNOLOGY

AMBR LE™ - AEROBIC MEMBRANE BIOREACTOR Next generation low energy MBR technology

AEROBIC MEMBRANE BIOREACTORS

Aquabio's aerobic membrane bioreactors are the most compact and cost-effective MBR systems available. The process combines aerobic biological treatment using jet/slot aeration technology with tubular crossflow ultrafiltration (UF) membranes for biomass separation to deliver superior quality treated water which can be applied directly to RO/UV technology to allow water re-use. The aeration and membrane systems are mounted outside of the tank to provide hygienic operation with a focus on the safety and ease of maintenance.

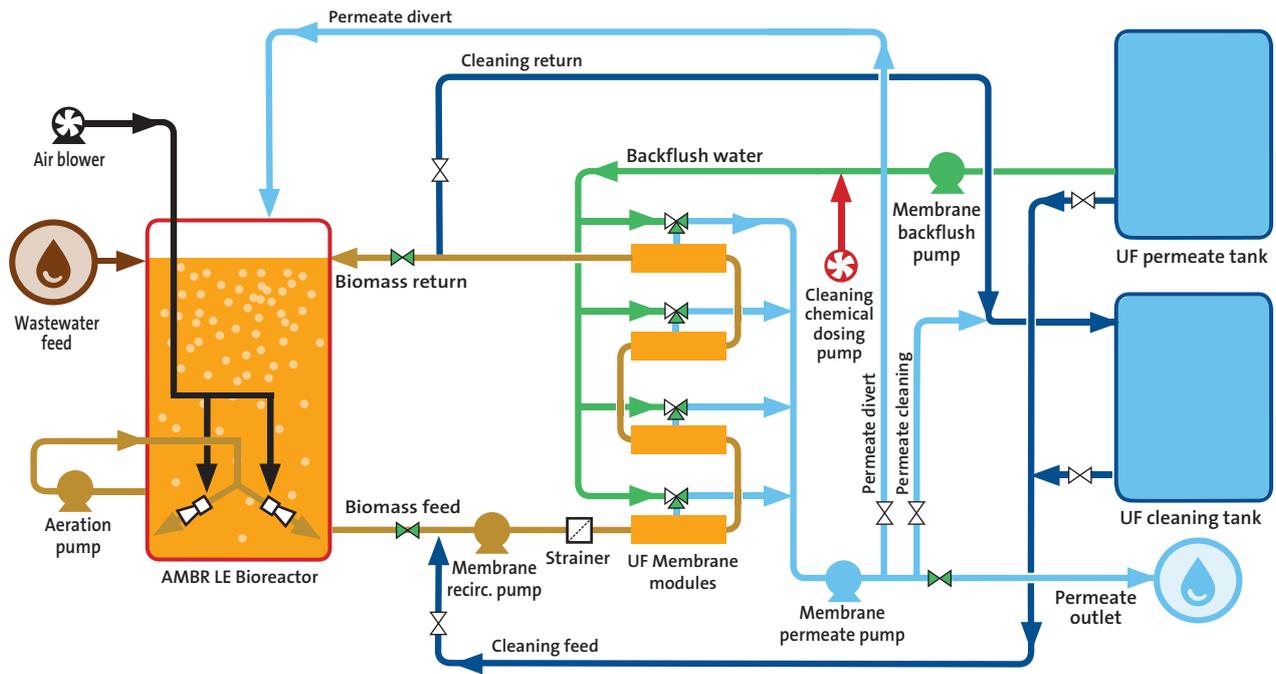


AMBR™ AEROBIC MEMBRANE BIOREACTOR

Aquabio's AMBR LE™ system is optimised to provide low energy use, compared with conventional crossflow or submerged membrane separation systems. By employing intermittent back flushing of membranes, fouling is controlled, enabling a reduction in crossflow velocity and a significant saving in energy. Variable speed recirculation pumps provide a variable flux rate that is used to optimise energy use relative to the plant throughput. Plants remain very compact, with low membrane area and optimal membrane replacement costs. The cross flow ultrafiltration (UF) membranes provide a complete barrier to suspended solids resulting in a high quality, solids free permeate which can either be sent as a low cost discharge to sewer or water course or ideally applied directly to Aquabio's RO/UV technology to provide potable water re-use.

APPLICATIONS

- Low/medium flow and low/medium strength industrial wastewaters
- Variable wastewater flows, high peak or seasonal loads, or when electricity costs are moderate to high
- Secondary wastewater treatment to sewer or surface water
- Nutrient removal, nitrification and denitrification
- Combined with Aquabio's RO/UV water re-use technology for potable/demineralised applications



KEY FEATURES/BENEFITS

High biomass concentration enables a smaller plant footprint compared with other systems	Automatic Backflush - controls fouling without high scouring velocities
Deep bioreactor tank provides higher aeration efficiency and lower energy usage for UF membranes	Low energy use comparable with submerged membrane systems
Low loading rate providing robust process and low sludge production	System can ramp-up for higher demand without additional membrane area or ramp-down to save energy at lower demand
Robust treatment for removing > 99 % COD and BOD	Optimised installed membrane area
'Out-of-tank' and low level installation of equipment provides ease and safety of maintenance	Ideal pre-treatment for direct application to Aquabio's RO/UV water re-use technology
Modular design allows for ease of expansion	Advanced pretested, standardised software and control system
Can be easily retrofitted to existing systems	Remote access functionality

AQUABIO AND FREUDENBERG FILTRATION TECHNOLOGIES

Aquabio is part of Freudenberg Filtration Technologies. As a global technology leader in air and liquid filtration, Freudenberg Filtration Technologies works closely together with its customers to develop high-performance, energy-efficient filtration solutions. The company offers a comprehensive package of wastewater solutions, including consulting, development, construction and operation of complete filtration systems using cutting-edge Aquabio technology. Freudenberg's customized solutions make industrial processes more economic, conserve resources, protect people and the environment and thus contribute to improving quality of life.

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