

# AERSMART

## TAKING AERATION TANK EFFICIENCY TO THE NEXT LEVEL

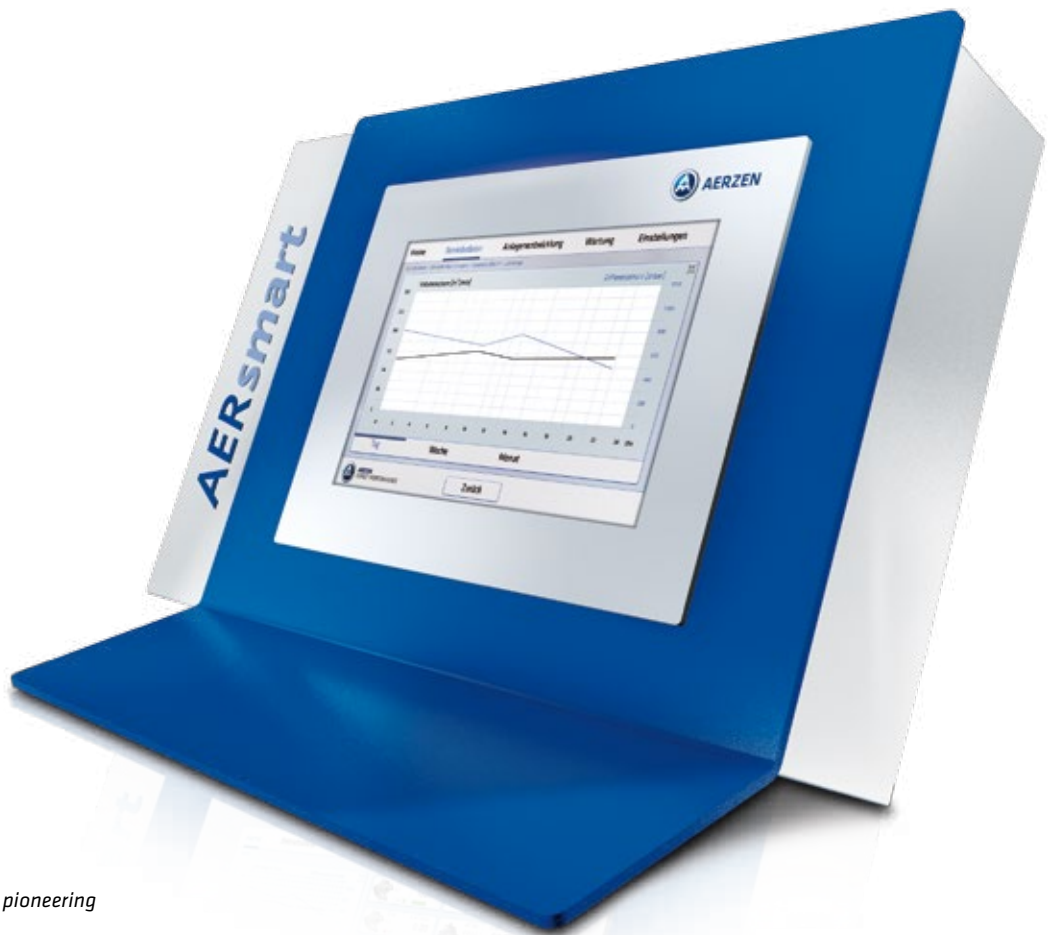
Blower control for up to 12 machines



**AERZEN**

# INTELLIGENTLY MANAGE ARRAYED BLOWERS. FOR SIGNIFICANT EFFICIENCY GAINS.

AERZEN has the best machine technologies for the job, with Blower, Hybrid and Turbo. AERsmart, the new intelligent machine control, raises their performance even further. AERsmart distributes air flows optimally between the various technologies and their individual efficiency levels. End result: standalone efficiency levels close to the theoretical maximum. Additional savings of up to 15%. Integration of third-party manufacturers'.



*AERsmart - intelligent, efficient, pioneering*

## Handling needs-oriented load changes.

Strong fluctuations in load operations are typical for biological waste water treatment plants. The innovative machine control AERsmart provides the intelligent building block for distributing the required oxygen to the machine pool, such that the low, medium and heavy loads are executed as efficiently as the current configuration permits. Machine characteristics and efficiency levels are built into the control algorithm. In this way, the installed machine pool operates as close as possible to the theoretical maximum efficiency. But that is not all ...

## Autopilot for up to 12 machines.

AERsmart takes over the complete control and rules management of a group of compressors, thereby leveraging the enormous potential to save energy that Performance<sup>3</sup> can yield by operating various types of machine in combination. Even third-party machines and installations using a single machine technology can be adjusted via this higher level of control. AERsmart can control up to 12 machines in this way to deliver the highest possible efficiency - close to the theoretical maximum. For a new level of efficiency in aeration tanks.

**Even more performance for the water treatment “dream team”.**

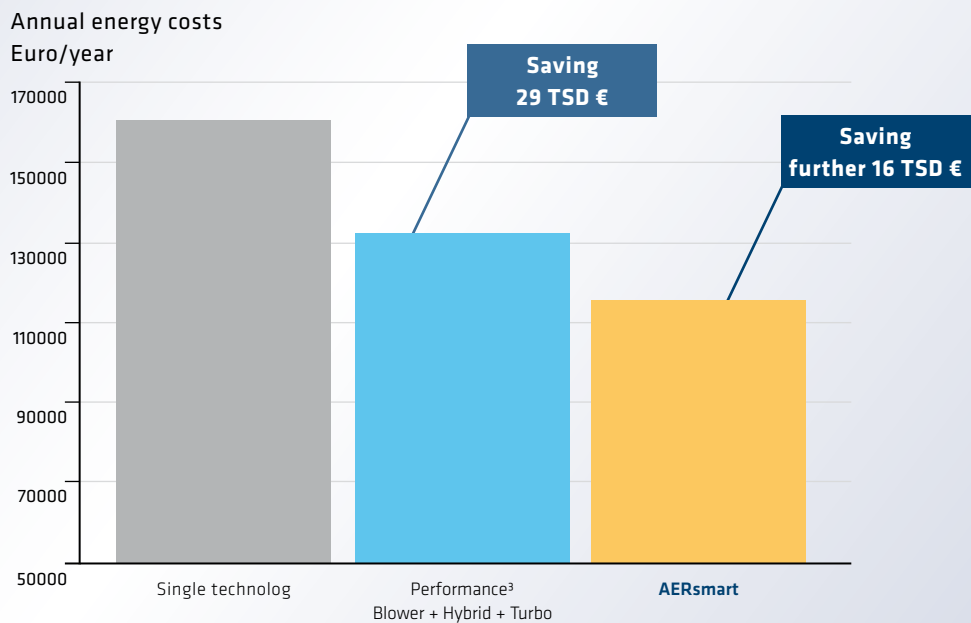
AERsmart differentiates itself from traditional so-called “group controls”, which only regulate identical compressors. AERsmart also controls compressors using different technologies, notably Performance<sup>3</sup> configurations from AERZEN. Each type of machine technology and each machine size is characterized by various efficiency levels. AERsmart distributes the required air flow to ensure that the highest level is used for the individual machine (or machine configuration). In this way the machine pool operates at close to the highest theoretical level of efficiency.



*AERZEN's powerful trio – Blower, Hybrid and Turbo*

**Savings potential in numbers. Shortest time to ROI.**

The savings potential presented by AERsmart's innovative machine control is enormous. Investments pay for themselves in just a few years. Realized example of a waste water treatment plant with 100,000 population equivalents (PE).



# FINE-TUNE THE AIR SUPPLY. MANAGE LOAD CYCLES MORE EFFICIENTLY.

AERsmart comprises innovative software and hardware components. The required amount of oxygen is communicated to the AERZEN blower control as a set value, for example via a 4-20 mA signal or a bus connection. AERsmart chooses the optimal machine combination and the most efficient load distribution, and visualizes the results in real time.

## Configuration and features

### Universal interface

- For networking with the machine pool and the process control system
- Linkage via analog signal and various bus protocols such as Modbus, Profibus, Profinet
- Internal data storage as well as USB and SD card slot
- Optional: embedded web server for data transfer via internet, remote diagnostics

### Flexible implementation

- Wall mounting or desk console
- Simple installation



### Efficient control

- AERZEN algorithm and precise integration of machine performance wraps
- Highest levels of efficiency, close to the optimum. Efficiency increases up to 15%
- Manage load cycles efficiently and with pinpoint accuracy
- Multiple technologies combined, both displacement and turbo machines
- Integration of third-party equipment
- Central control of up to 12 machines





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### Comprehensive visualization and analysis

- Display and recording of the required air volumes, machine pressures, temperatures, power consumption, machine data
- Display in real time, trend analysis, comparison of yearly values, reporting functionalities
- Service and maintenance intervals of the integrated machines, predictive maintenance
- Comprehensive energy analyses and checks according to German Water Association worksheet A-216
- Landmark building block for Water 4.0

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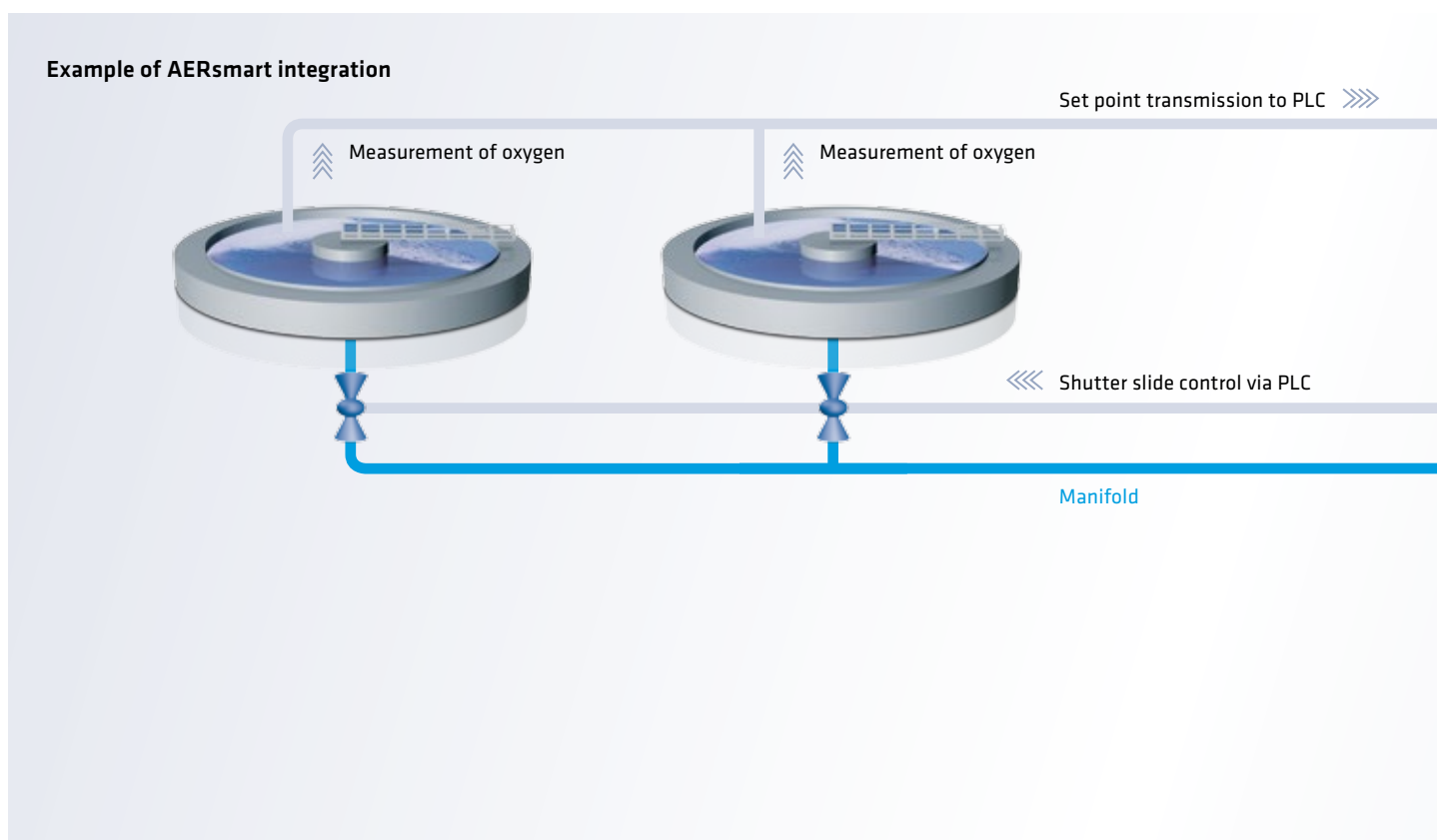
### User-friendly interface

- High resolution 12" touch-screen
- Intuitive menu navigation
- Everything at a glance: overview data and data for individual machines
- Extensive choice of languages



# SEE WHAT'S GOING ON. CONTROL MACHINES IN REAL TIME.

User-friendly, transparent, real-time control of the connected machines: AERsmart fulfils demanding requirements for information and visualization. As an intelligent module it can be universally networked into the process control system. Precise details regarding air flows and power consumption for the aeration system are often inadequate or incomplete. In this case, AERsmart provides transparency over the entire life cycle.

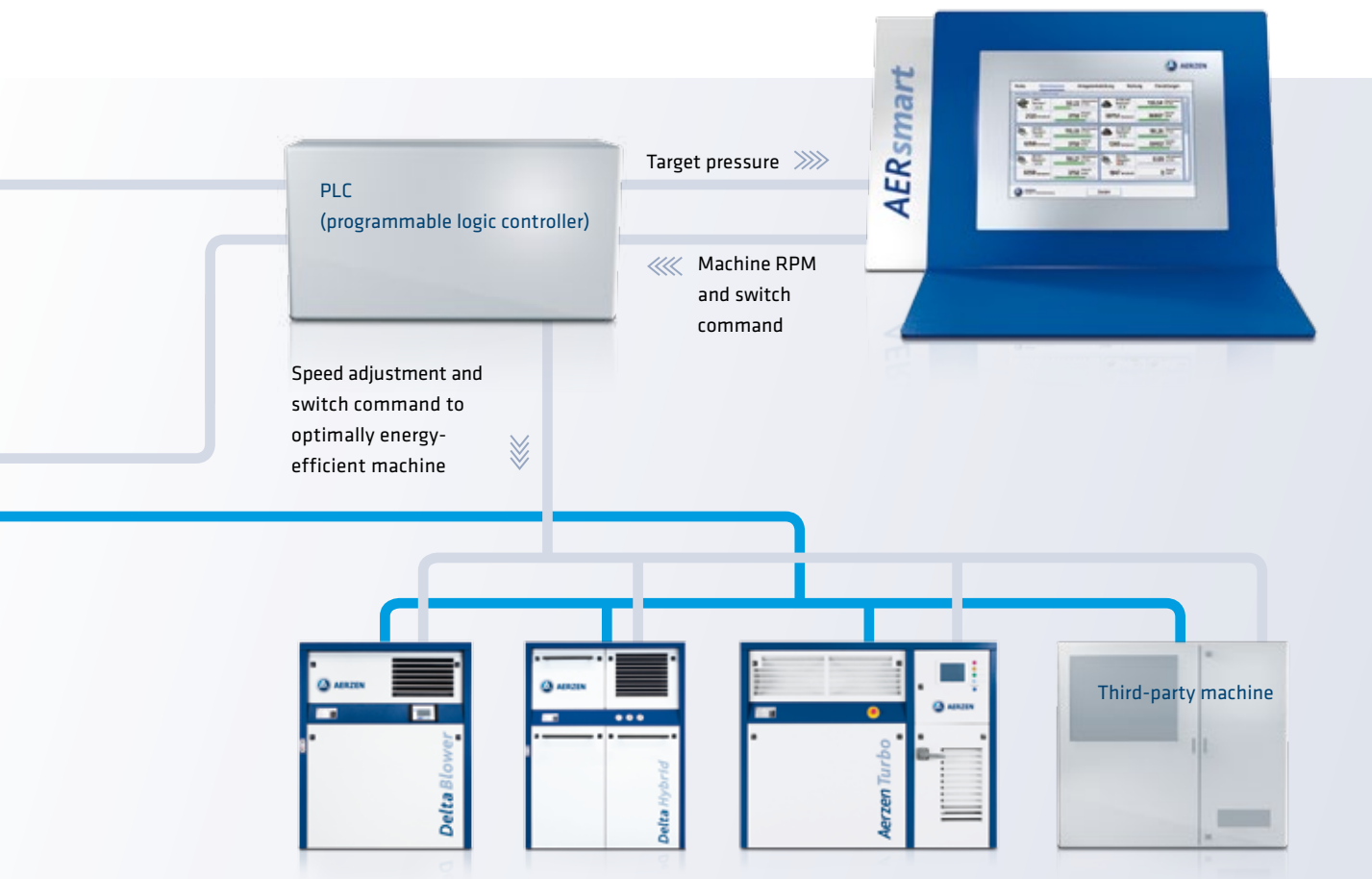


## **Superior knowledge as a software solution.**

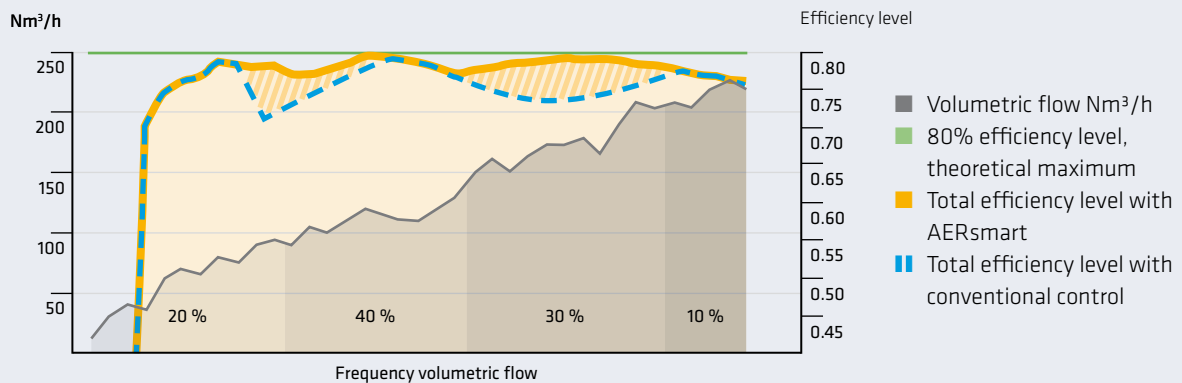
The control of compressors in a grouped operation, especially when a variety of machine types are deployed, requires fundamental knowledge of the machines and special rule sets. AERsmart software includes detailed information about the machines that are connected and on this basis calculates the optimum load distribution across the combination.

## **Intelligent activation and deactivation.**

Operational performance and the variety of unique characteristics of turbo and positive displacement machines influence the control range and efficiency curve, depending on the air volume and compression pressure of each type of equipment. AERsmart software leverages the advantages of each technology and avoids their weaknesses in the respective load range. End result: intelligent activation and deactivation, smart load distribution to the machines operating in combination.



### AERsmart - for a new level of efficiency





**AERZEN. Compression as success principle.**

AERZEN began life in 1864 as Aerzener Maschinenfabrik. In 1868 we built Europe's first rotary lobe blower. The first Turbo compressors followed in 1911, the first screw compressor in 1943, and in 2010 the world's first rotary lobe compressor unit. Innovations "made by AERZEN" keep driving the development of compressor technology forward. Today, AERZEN is among the world's oldest and most significant manufacturers of rotary lobe blowers, rotary lobe compressors, rotary lobe meters, screw compressors, and Turbo blowers. And among the undisputed market leaders in many areas of application.

More than 2,000 experienced employees in over 43 affiliates the world over are working at full speed to advance compressor technology. Their technological expertise, our international network of experts, and constant feedback from our clients form the basis for our success. Products and services from AERZEN are setting standards when it comes to reliability, lasting value, and efficiency. Go ahead: challenge us!

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EXPECT PERFORMANCE