

# AERZEN CONTROL SYSTEM

for compressor- and positive displacement blower units



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# Introduction of the new control unit for blowers and compressors AS 300 AERtronic



User interface of the new controller AS 300 AERtronic

The new digital controller for VM / VML compressors and the blowers will be applied as successor of AS 200 resp. ASG 300 starting from end of July. AS 200 is then not available anymore. All known functions as fault indicator, operating hour meter, display of current operating data, as well as drive control by pressure or temperature - also during vacuum operation - are integrated. Furthermore, a remote maintenance is possible via GSM module as option. The basic parameters are described in the following.

## Structure

Purpose of the development was to create an intuitive operation and an identical design for blower and compressor machines. A modular structure was the solution. The AS 300 consists of operator panel with touch screen as well as function modules. Depending on the complexity of the machine, additional function modules are coupled to the base module. The base module is used for blowers and compressors as well. Operator panel, base module and expansion module communicate via bus system.

- Modular design with TFT colour Touch Screen Display
- Operating unit and data visualisation
- Control of switch cabinet (Star/delta or DOL) or frequency converter
- Interface to other control units, PLC, process master or Internet
- Combined control for multiple blowers or compressor stations

## Features

The following main features are implemented:

- Control of starter unit
- Monitoring of thresholds
- Sampling of data and visualisation, storing of data
- Operating time, service indicator
- Visualisation and data analysis via Profibus-DP or Modbus
- Visualisation and data analysis via GSM - Modem at the Internet
- Visualisation and data analysis via communication module via Internet (in preparation)
- Different languages GE / GB / F / I / NL / E (other languages on request)
- Trend display of measured values

## Hardware description

### Panel / HMI:

The operator panel is designed to be installed as separate device at the operator side of the machine. The 4.3" touch screen in the panel offers various menus for displaying all of the operator data. Using the touch screen all parameters or threshold data can be changed. All parameters are password protected with different user levels. The panel is connected with one pre-assembled cable to the system (base module). The external Mod-Bus port (RS-485) is located at the panel back side

### Base Module:

The base module includes 2 analogue inputs (4...20 mA) additional to the processor unit for pressure measuring (e. g. final pressure, intake pressure) and an analogue input (0...5 V) for oil-level measuring, 5 digital inputs and a relay output. It includes in addition a bus interface for the communication with the operator panel and an additional bus interface for the communication with the expansion modules. Among the 5 digital inputs one is designed for the motor temperature monitoring (PTC) and one is a quick counting input (200 c/s max.), e. g. for evaluating the speed. The base module offers all necessary basic functionalities for the blower series.

## Expansion Module EM 0:

The expansion module „EM 0“ includes three digital inputs and 3 relay outputs, two PT 1000 inputs for temperature measuring (e. g. oil temperature and final temperature) as well as an additional analogue input (4...20 mA) for pressure measuring (e. g. oil pressure). The base module and the expansion module offer all necessary basic functionalities for single-stage oil-free compressor series.

## Expansion Modules EM 1..3:

Further digital inputs, relay outputs, PT 1000 and analogue (4...20 mA) inputs are available by means of expansion modules. This allows to integrate for example a heating for the acoustic hood for low ambient temperatures or the 2nd stage for multi-stage compressors.

## Expansion Modules EM 4:

This expansion module includes two analogue outputs. They are applied for drive control via frequency converter (FU/VSD) and pressure regulation resp. (system) temperature regulation.

## Special Modules SM:

Bus interfaces are available for the communication with DCS (decentralised controls) and for remote maintenance by means of special modules.

## Operation/user interface:

The intuitive operability was the most important criteria considered when designing the menu display. The user can recognise and carry out the allowed operating

possibilities in every status of the system without any difficulties. The effects of all operating procedures can easily be realized. Basic knowledge of the machine is sufficient for operation.

The control includes menus for performance data such as temperature and pressure and in addition operating data such as speed and maintenance data. The individual menus are set up identically to a large extent. The display of the operating data can be selected as digital display with additional bar chart or as trend. When programmable threshold values are reached, an optical warning appears (flashing, colour contrasted background). When the switch-off value is reached, the colour changes to red. The „I“ button flashes and opens the menu „messages“ after having been pressed. The causal message (warning or switch-off) is shown including date and time. An additional menu contains general information about operating hours and service notes and furthermore a password-protected domain for internal data.

Please find a survey of the menu structure and the operation in the operating manual.

## System Control

A system control for optimized control and monitoring of a compressor station possible with visualization and remote operation. Up to 6 compressors can be supervised via bus and control module. System pressure, start, stop and operating time will be controlled by the master according to air supply of the compressor and distributes the loads resp. operating time equally.

*E-Cabinet with BASIC (A32), EM 0 (A35) and Profibus module (A37), power supply T30), pressure transmitter (at the right)*



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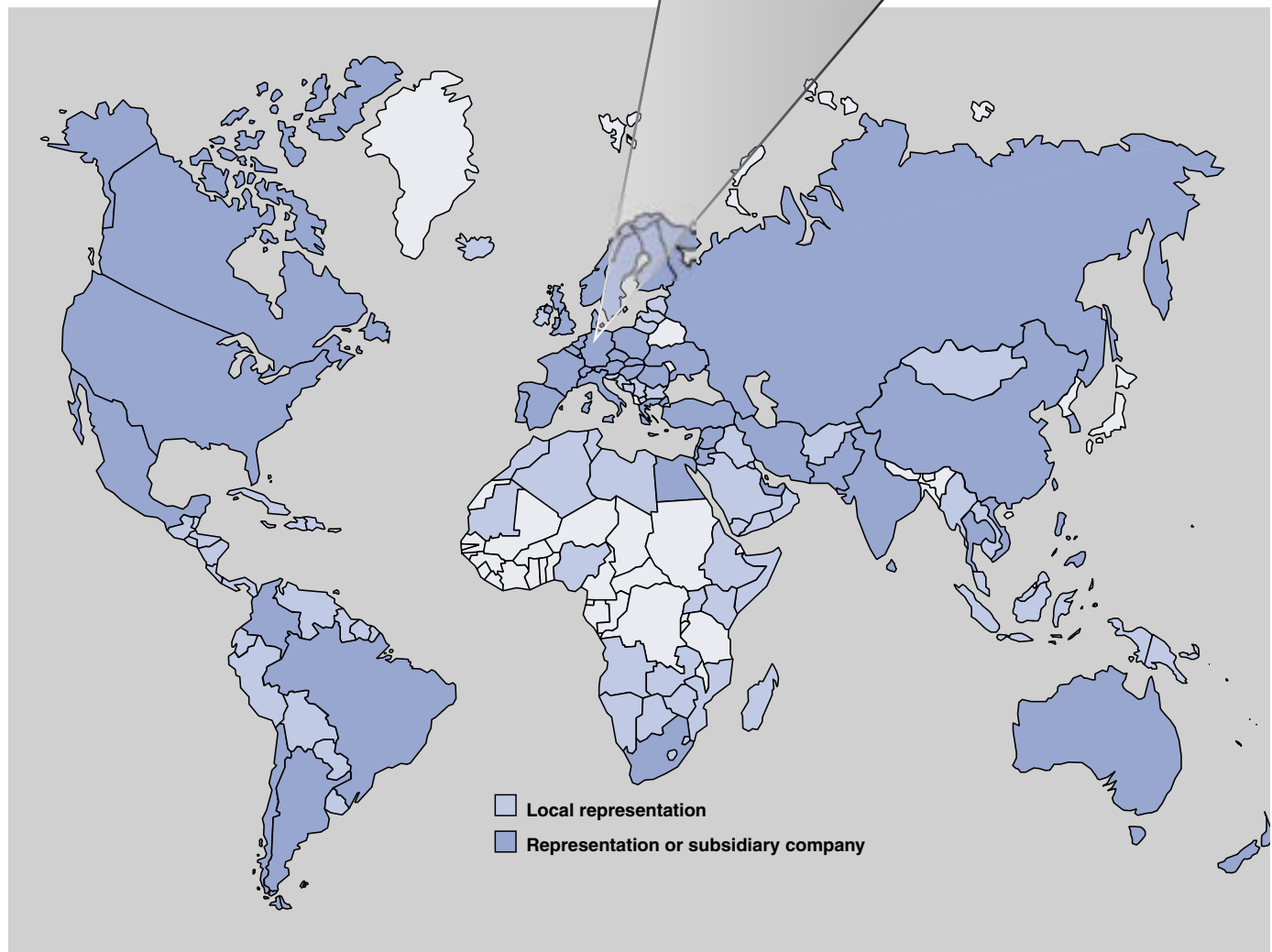
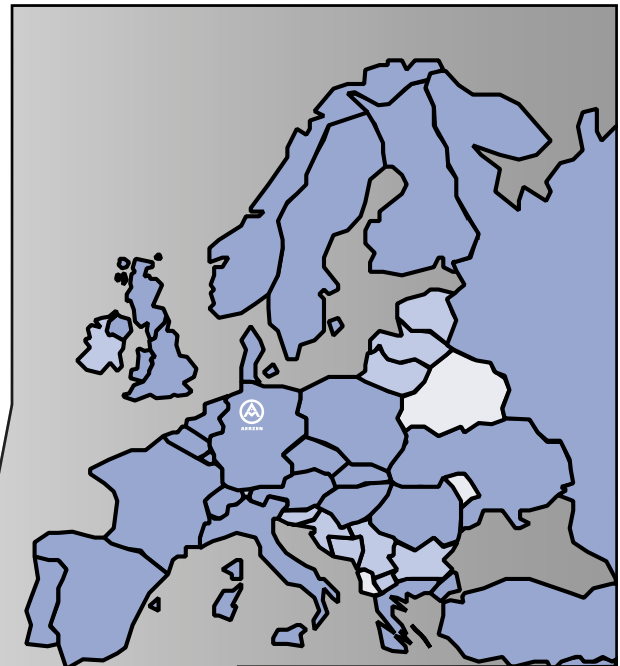
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