BERG Kompressoren GmbH
Compressed Air Technology | Air Separation
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# Compressor and Energy Management System - Air Master Controller

## BERG AMC EASY

**The Standard energy-saving reference for compressors.**
From beginning, BERG has controlled compressors based on demand. Only the compressors that are currently needed are running, unnecessary idling is avoided, and the station operates with maximum possible efficiency and minimal maintenance costs. Depending on the network volume and compressor dynamics, a pressure range of just +/- 0.15 bar can be achieved with minimal switching frequency, ensuring the highest energy efficiency while using the compressors gently. It is used as an affordable option in smaller compressor stations where the desire for increased efficiency is present, but the "large" air management systems do not pay off quickly enough.


***Technical Data:***

| | |
|---|---|
| Number of Compressors, up to: | 4 units |
| Frequency Controlled Compressors, up to: | 2 units ( 4 units Optional) |
| Pressure Range: | 0 – 16 bar |
| Digital Inputs for Messages (Operation/Fault), up to: | 6 units |
| Analog Inputs for Sensors (Pressure, Dew Point, Flow, Temp., etc.), up to: | 6 units |
| Long-term Data Storage (Operational Data, Sensor Messages): | >10 years |
| Number of Precision Pressure Transducers 0-16 bar: | 1 unit |
| Power Supply: | 90-250 VAC |
| Weight of Steel Sheet Control Cabinet with 3 Key Switches: | 7.5 kg |
| Dimensions (W x H x D): | 300 x 300 x 120 mm |
| Wi-Fi Module (Hotspot) for Easy Configuration: | included |
| **Compressed Air** Visualization with Remote Programming (Webserver): | included |

***Metal Control Cabinet with:***

- Compressor management for 1 - 4 compressors
- Connection of compressors via RS485 modules for all manufacturers
- 32-bit processor technology
- 2 USB ports
- Programming via WiFi using smartphone, tablet, or notebook
- RJ45 network connection
- 2 RS-485 bus interfaces
- 2 analog inputs 4-20 mA
- 8 GB memory for > 10 years of operational data recording
- 3 key switches for:
  Compressors ON / OFF
  Compressors MANUAL / AUTOMATIC
  Timer ON / OFF
- Capability to connect 2 additional RS485 modules for a total of:
  6 analog sensors
  6 digital inputs for fault or operational messages from external devices
- Power supply: 90-250 VAC
- Dimensions (W x H x D): 300x300x120mm

***3 1/2" Color Display***

- Compressor status display with symbolic indicators
- LAST, IDLE, FAULT, OPERATION, and other indicators on the display
- Pressure, compressed air consumption, dew point, and room temperature with connected sensors

***Complete Compressed Air Visualization via Network Connection (Web Server):***

- Monthly energy data and compressed air metrics at a glance (EXCEL format)
- Energy management (EMS) according to ISO 50.001
- Remote programming and configuration of compressor settings, including:
  Pressure profiles
  Ranking levels and sequences
  Switching points of the real-time timer
  Switching between programmed pressure profiles
  Switching between programmed ranking sequences

***Standard Delivery Includes:***

− Precision pressure transmitter 0-16 bar

− 1 Web server CD with visualization software

**Special Advantages of BERG AMC-EASY:**

• The **BERG visualization** provides a clear overview of the compressed air system's performance whether good or bad. Defects and energy wastage are exposed, allowing for targeted actions to address efficiency issues among the compressors!

• Real **energy balancing** (ISO 50.001) through ampere/kW measurement and therefore eligible for BAFA funding according to BAFA's information sheet: "Master Air control" for multiple compressors:
When multiple individual compressors are feeding into the same consumption network in parallel, a master control must manage the operation of the individual compressors to optimally meet the compressed air demand (e.g., operation within a common pressure band)."

• Data on an in-house web server (**20 years of long-term data storage** via IT) and redundant in BERG server (not subject to monthly fees on external servers)

• **Monitoring of auxiliary units** such as dryers, filters, BEKOMAT, etc. In addition to many unique features such as bearing vibration monitoring, true power/kW measurement (ISO 50.001), and temperature monitoring of each compressor, regardless of age or manufacturer, the BERG also serves as a unique **decision-making aid for the procurement of new compressors!**
With BERG's operational data and our **manufacturer-neutral simulation tool**, the right compressor combinations can be identified. Naturally, this is done with consideration of efficiency and redundancy, preventing investments in the wrong compressor sizes! Energy consumption and reserves for different concepts can be precisely calculated and clearly illustrated.
BERG is **manufacturer-independent** and operates via signal exchange according to industry standards. All internal **data**, **measurements, and energy-related** evaluations are available for further use by customers in various formats (e.g., EXCEL, OPC, XML).

**OPTIONS for BERG AMC-EASY**

• With the **Alarm and Service Management** (Item No.: 9010), the AMC-EASY automatically reports irregularities (e.g., dew point or temperature increases) and faults (compressors, dryers, condensate drainers, etc.) upon request via email, fax, or SMS.

Operating and load hours are monitored and recorded separately for each compressor. When the service interval is reached, the BERG automatically notifies via email or SMS.

• With the **kW** (Item No.: 5220 ff) or **ampere measurements** (Item No.: 5200), the compressor performance is automatically calculated and made available for the energy report. Additionally, the visualization software performs continuous monitoring for belt breakage and intake regulator defects.

A defect in the intake regulator can have various causes: a broken return spring, a stiff actuating cylinder, a faulty relief valve, a clogged relief throttle, a kinked pneumatic line, and more. The result is an intake flap that is not fully or partially opened under load. For instance, if the delivery rate is 40%, but the compressor still draws 85% power, this leads to pure energy wastage.

• **Differential pressure monitoring** (Item No.: DP-106) in compressed air systems saves energy and filter costs. Filters are costly resistance elements from an energy perspective and should be avoided as much as possible. Essential central filters need to be monitored online, as, for example, a 2" filter that is changed too late, with a 0.25 bar increase in differential pressure, can result in additional energy costs of approximately €1,000 per year! Larger filters cost exponentially more.

With the BERG differential pressure transmitter, ΔP can be minimized through timely warnings, such as via email, and element changes.

• The **OPC Server** (Item No.: 4810) provides BERG's process data with second-by-second accuracy as OPC objects. The OPC client accesses the data provided by the OPC server and displays it graphically in the control station (building management system, BMS). Today, OPC is the standard for manufacturer-independent communication in automation technology. Without OPC, two devices would need detailed knowledge of each other's communication capabilities for data exchange. With OPC, it is sufficient to write an OPC-compliant driver for each device just once. The BERG OPC driver can be integrated into any size control and monitoring systems with minimal adjustment effort, such as in large-scale automation systems.

**Sauter NovaPro, WinCC, Kieback&Peter, Wonderware, Web Factory, ACRON (BDA von Videc)**, etc., or also energy management system software such as **MESSDAS, FRAKO, ECON Solutions** can be integrated.

- **Bearing vibration monitoring, oil temperature monitoring, WRG meters**, and much more.
- **Control cabinet variants, GSM modules** for remote access, etc.
- **Decentralized stations via Ethernet network (TCP/IP)** to avoid long BUS cables.