

Stationary High Pressure Compressor Unit for Compressing Air and Breathing Air

Types:

PE250-MVE | PE300-MVE

Production status: F01



PE300-MVE with Purification System P41/350, switch over device and SECURUS filter cartridge monitoring (optional equipment)

| General | |
|---------------------------------------|--|
| Medium | Air |
| Intake pressure | Atmospheric |
| Filling pressure | PN200 / PN300 |
| Nominal pressure | 225 bar / 330 bar / 350 bar |
| Working pressure | 220 bar / 320 bar / 340 bar |
| Permissible ambient temperature range | +5...+45°C |
| Permissible altitude | 0...1500 m AMSL |
| Max. permissible tilt | 5° |
| System design | Silent |
| Operating voltage, standard | 400 V; 50 Hz |
| Other operating voltage | On request |
| Compressor oil, standard | Synthetic |
| Oil change interval | Synthetic: every 2 years/ 2,000 h Mineral: 1x per year/ 1,000 h |
| Finish | RAL 1028 (front) / RAL 9006 (frame) |

| Compressor system | PE250-MVE | PE300-MVE |
|---------------------------------|-------------------------|-------------------------|
| Charging rate ¹ | 250 l/min | 300 l/min |
| Purification system | P31/350 | P31/350 |
| Cooling air flow, min. | 1,980 m ³ /h | 2,700 m ³ /h |
| Weight ² | approx. 250 kg | approx. 260 kg |
| Dimensions (LxWxH) ² | 1050 x 755 x 1315 mm | 1050 x 755 x 1315 mm |

¹ Measured during cylinder filling from 0-200 bar tolerance +/- 5% at + 20°C ambient temperature.

² Standard model. Weight and dimensions may vary depending on accessories.

| Drive system (three-phase motor) | PE250-MVE | PE300-MVE |
|-------------------------------------|---|-----------|
| Power | 5,5 kW | 7,5 kW |
| Model | A 112M | A 132S |
| Type of construction | B3 | B3 |
| Type | Three-phase Squirrel-Cage-Motor, 400 V, 50/60 Hz ¹ | |
| Speed approx. | 2,890 rpm | 2,890 rpm |
| Protection class | IP55 | IP55 |

¹ Different voltage / different frequency available at extra charge on request.

STANDARD SCOPE OF SUPPLY:

› Compressor block with following features:

- Oil pump for forced-feed lubrication
- Micronic intake filter: 10 µm
- Intermediate coolers, air cooled
- Aftercooler, air cooled, outlet temperature approx. 10-15 °C above cooling air temperature
- Intermediate separators after each stage (except 1st stage)
- Sealed safety valves after each stage
- TÜV approved final pressure safety valve
- Pressure maintaining and check valve after the final stage

| Compressor block | IK120 |
|--|--|
| Charging rate ¹ | 250 or 300 l/min |
| Speed approx. | 1,450 1/min (PE 250-MVE) 1,800 1/min (PE-300-MVE) |
| Number of stages | 3 |
| Number of cylinder | 3 |
| Cylinder bore 1st stage | 88 mm |
| Cylinder bore 2nd stage | 36 mm |
| Cylinder bore 3rd stage | 14 mm |
| Stroke | 40 mm |
| Direction of rotation (from flywheel side) | Left |
| Drive type | V-belt |
| Intermediate pressure 1st stage | 8 bar |
| Intermediate pressure 2nd stage | 50 bar |
| Amount of oil | 2.8 l |
| Oil pressure | 4.5 bar ± 1.5 bar |
| Intake pressure | 1.0 bar _a |

¹ Measured during cylinder filling from 0-200 bar tolerance +/- 5% at + 20°C ambient temperature.

➤ **Purification System P31/350 - Filter with integrated oil and water separator**

SCOPE OF SUPPLY:

- Filter housing with long-life filter cartridge
- final mechanical separator for the removal of oil-/ water condensate
- Final safety valve, fitted to filter housing
- Pressure maintaining / non return valve, fitted to filter housing



Purification System P31/350

Air quality as per EN 12021:2014:

| Contamination | Maximum content as per DIN EN 12021:2014 | Air quality of BAUER |
|------------------|--|--|
| H ₂ O | 25 mg/m ³ | ≤ 10 mg/m ³ |
| CO | 5 ppm(v) | Depending on filter cartridge ¹ |
| CO ₂ | 500 ppm(v) | Depending on intake air ² |
| Oil | 0.5 mg/m ³ | ≤ 0.1 mg/m ³ |

1 Only with BAUER special filter cartridge with hopcalite and up to a maximum concentration of 25 ppm CO in intake air. The compressed clean breathing air then contains a maximum of 5 ppm CO.

2 The level of CO₂ in the intake air must not exceed the maximum level of CO₂ as per DIN EN 12021:2014!

| Purification System | P31/350 |
|--|---|
| Operating pressure (Standard) | max. 330 bar |
| Operating pressure max (PS) | min. 90 bar |
| Pressure dew point | < -20 °C, equivalent 3 mg/m ³ at 300 bar |
| Pipe connection | G 3/8" (condensate drain G 1/4") |
| Filter housing volume | 1.3 l |
| DGRL 2014/68/EU | Vessel category II |
| Air purification capacity (at ambient temperature 20°C and 300 bar) ¹ | 615 m ³ |

1 When using a BAUER P31/350 filter cartridge without Hopcalite. When using a cartridge with CO-, the air purification capacity is reduced by ca. 26 %.

➤ **Super Silent Housing**

The PE-MVE Super Silent compressor housing is fully noise-insulated with optimised cooling air intake. The Super Silent soundproofed housing is recommended for applications where reduced noise is a priority, e.g. work environments.

- Closed design features targeted cooling air intake.
- Housing parts are easy to remove, ensuring fast access for maintenance.
- An exhaust air duct is easy to fit.
- Finish: Basic frame RAL 7024, housing RAL 9006 and RAL 1028
- Sound pressure level: PE250-MVE: 74 dB(A) ± 2 %; PE300-MVE: 77 dB(A) ± 2 %

➤ **Compressor control**

Compressor control including automatic condensate drain system and automatic switch off at final pressure.



Compressor control

SCOPE OF SUPPLY:

- ON/OFF Switch with protective motor switch and signal-lamp for phase monitoring
- Optional: Fully automatic operation
- Star-Delta contactor
- Transformer
- Pressure switch stops the compressor unit at final pressure
- Condensate collecting tank 10 litre, with silencer; about 5 litre capacity, for the environmentally friendly disposal of the condensate

➤ **Automatic condensate drain system B-DRAIN**

The automatic condensate drain automatically removes the condensate that forms during compression (water/oil mixture) from the intermediate separators and the final separator and collects it in a condensate vessel, which is integrated in the compressor.

The newly developed and patented B-DRAIN automatic condensate drain uses individually controlled solenoid valves to ensure reliable, automatic condensate removal from the compressor separators. Including condensate collecting tank 10 litre, with silencer; about 5 litre capacity, for the environmentally friendly disposal of the condensate



B-DRAIN

| Automatic condensate drain system | |
|-----------------------------------|--------------------|
| Control voltage | 24 V DC |
| Solenoid valve | normally open (NO) |
| Condensate collecting system | Approx. 10 l |

➤ **Filling hoses 2 x PN200 or 2 x PN300**

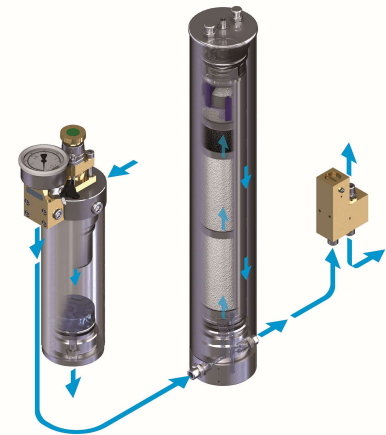
| Filling devices | |
|----------------------------------|---|
| Nominal pressure (NP) | 2 x 200 bar or 2 x 300 bar |
| Valve version | 2 filling valves with integrated ventilation, with German cylinder connector G 5/8" according to DIN EN 144-2 and DIN 477 |
| Manometer | 2 manometer |
| Filling hose | 2 Unimam high pressure filling hose, 1 m length |
| International cylinder connector | At 200 bar: 2 international cylinder connectors (not permitted in Germany!) |

OPTIONS:

➤ **Purification System P41/350 - Filter with separate final oil and water separator**

SCOPE OF DELIVERY:

- 1x filter housing with long-life filter cartridge
- Separator unit with final pressure safety valve
- Check valve between separator and micro filter
- Micro filter
- Air bleeder valve with manometer
- Pressurizer / check valve
- Filter key for cartridge renewal



P41 purification system (picture similar)

Air quality as per DIN/EN 12021:2014

(see purification system in standard scope of delivery)

| Purification System | P41/350 |
|--|--|
| Operating pressure (Standard) | PN200/PN300 |
| Operating pressure max (PS) | 350 bar |
| Pressure dew point | < -20 °C, equivalent to 3 mg/m ³ at 300 bar |
| Pipe connection | G 3/8" (condensate drain G 1/4") |
| Filter housing volume | 2.1 l |
| DGRL 2014/68/EU | Vessel category II |
| Air purification capacity (at ambient temperature 20°C and 300 bar) ¹ | 1,595 m ³ |

¹ When using a BAUER P41 filter cartridge without Hopcalite. When using a cartridge with CO-removal the air purification capacity is reduced. Different values for SECURUS cartridges.

B-TIMER

Cartridge change and maintenance becomes safe and comfortable like never before with the B-TIMER!

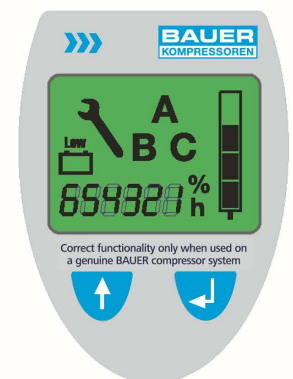
The mini-computer counts the operating hours and measures accurately the cartridge saturation.

On the four-part segment display the status of saturation of the cartridge can be followed up. If a cartridge change is required, the B-TIMER is flashing conspicuously and the order number of the cartridge is indicated.

The key symbol indicates that maintenance is due. The letters A to C inform about the necessary maintenance kit.

The robust housing resists sand, salt, sea water, high humidity and strong UV-radiation. Start/stop automatic and power save mode make operation comfortable and save the lithium cell.

Available only for P31/350 and not in combination with SECURUS cartridge monitoring system!



B-TIMER Display

➤ **SECURUS filter cartridge monitoring system**

The SECURUS System continuously monitors filter cartridge saturation levels by measuring the moisture in the molecular filter and showing a warning when it is time to change the cartridge. When the dryer cartridge is 100% saturated the SECURUS automatically shuts down the system. Only in combination with P41/350!



SECURUS Filter Cartridge Monitoring System (similar to figure)

- Green segment: Filter cartridge OK
- Yellow segment: Cartridge nearing saturation
- Red segment: Cartridge saturated or contact fault. Compressor is shut down

➤ **Filling hoses 1 x PN200 and 1 x PN300 with switch over device**

The switch-over device enables breathing air cylinders to be filled with both 200 bar and 300 bar. For optimum limiting of the maximum operating pressure, each of the two pressure ranges is protected with a type-tested final pressure safety valve.

High-quality high-pressure filling hoses made from food-safe and long-life hose material make for flexible and safe handling. Swivel hose connections enable the filling valve to be connected to the breathing air cylinder quickly, easily and safely.



Switch-over device

| Fülleinrichtungen | |
|----------------------------------|---|
| Nominal pressure (NP) | 1 x 200 bar and 1 x 300 bar |
| Valve version | 2 filling valves with integrated ventilation, with German cylinder connector G 5/8" according to DIN EN 144-2 and DIN 477 |
| Manometer | 2 manometer |
| Filling hose | 2 Unimam high pressure filling hose, 1 m length |
| International cylinder connector | 1 international cylinder connector for 200 bar (not permitted in Germany!) |

➤ **High-pressure storage systems**

Modular high-pressure storage system for storage of air / gases, extendable. The storage units can be set up separately or on an extended basic frame (to be ordered separately).

The extended basic frame enables the compressor and up to 2 storage cylinders with a geometric volume of 50 / 80 litres each to be combined in a turnkey system.



B100 / 365 bar

SCOPE OF SUPPLY

- **B80-S / B160-S – Standard module**
Storage cylinder vertical, mounted on console; with bottom thread; with safety valve & pressure gauge, shut-off valve and condensate drain valve / venting valve
- **B80-A / B160-A – Extension module**
For the extension according to your requirements of the a.m. standard modules for larger volumes. Scope of supply acc. to standard module, however without safety valve & pressure gauge; When connecting multiple storage cylinders a connecting tube for each additional storage cylinder is required.
- **B80-B, without console**
Storage cylinder, with top thread; with shut-off valve, however, without condensate drain valve
Optional equipment: clamp for wall mounting, safety valve (loose supply)
When connecting multiple storage cylinders a connecting conduit for each additional storage cylinder is required.
- **B50-S / B100-S – Standard module**
Storage cylinder(s) vertical, mounted on console, with bottom thread connection; with safety valve & pressure gauge, shut-off valve and condensate drain valve / venting valve.
- **B50-A / B100-A – Extension module**
For the extension acc. to your requirements of the a.m. standard modules for larger volumes. Scope of supply acc. to standard module, however without safety valve & pressure gauge. When connecting multiple storage cylinders a connecting conduit for each additional storage cylinder is required.

COLOUR:

Console RAL 7024 (grey) Storage container RAL9010 (white for B80/160) or RAL 7024 (grey for B50/100).

TECHNICAL SPECIFICATION

| | Up to 330 bar | | Up to 420 bar | |
|-----------------------------|---|-----------|---------------|-----------|
| | B 80 | B 160 | B 50 | B 100 |
| Numbers of storage bottles: | 1 | 2 | 1 | 2 |
| Storage medium: | Air, Nitrogen, Rare gases | | | |
| Geometric volume cylinder: | 80 Litre | | 50 Litre | |
| Geometric volume storage: | 80 Litre | 160 Litre | 50 Litre | 100 Litre |
| Safety valve max.: | 330 bar | | 420 bar | |
| Storage pressure max.: | 320 bar | | 400 bar | |
| Weight: | 145 kg | | 125 kg | 250 kg |
| Design as per: | DGLR 2014/68/EU und AD2000 ¹ | | | |

¹ Other certificates / approvals on request.

› Automatic selector unit

The automatic selector unit enables pressurised air cylinders (bottles) to be filled rapidly and in parallel from a buffer (intermediate storage system and by the compressor.



Automatic selector unit

SCOPE OF SUPPLY

- Painted steel base plate for wall mounting
- Pressuriser valve
- Check valve
- Pressure switch or pressure sensor, depending on the connected compressor control unit
- Manometer for filling pressure
- Manometer for storage pressure

| Automatic selector unit | |
|-------------------------|---|
| Medium | Compressed air |
| Ambient temperature | +5 °C to +45°C |
| Working pressure | Max. 350 or 420 bar (depending on models) |
| Air inlet / outlet | 10 mm (Pipe outside diameter) |

➤ **AERO-GUARD CO₂ Absorber**

Efficient removal of CO₂ from breathing air: A sophisticated bypass system feeds the compressor intake air through the AERO-GUARD. Only around two-thirds of the air passes through the filter cartridge that absorbs the CO₂ from the air. This process reduces the CO₂ content to one-third of that of the intake air.



AERO-GUARD

SCOPE OF SUPPLY:

- Intake pipe (order connections separately)
- Water barrel, 60 l (for AERO-GUARD DUO – 2 × water barrels each 60 l)
- Filter cartridge; filling: 9 kg special carbon dioxide absorber

MODELS:

| Designation / Size | Suitable for charging rates ¹ | Dimensions (W x D x H) | Weight ² |
|----------------------------|--|------------------------|---------------------|
| | l/min | cm | |
| Aero-Guard-S | 100 – 150 | 50 x 46 x 72 | 26 kg |
| Aero-Guard-M | 160 – 230 | | |
| Aero-Guard-L | 240 – 320 | | |
| Aero-Guard-XL | 330 – 450 | | |
| Aero-Guard-XXL | 460 – 700 | | |
| Aero-Guard Duo 1000 | 650 – 1000 | 85 x 62,5 x 87 | 54 kg |

¹ Charging rate of the connected compressor measured with cylinder filling from 0 – 200 bar ± 5%.

² Includes filter cartridge and 10-litre water ballast.

TECHNICAL OPERATING DATA:

| Model | AERO-GUARD S-XXL | AERO-GUARD DUO 1000 |
|--|--|--|
| Medium | Pressurised air | |
| Ambient temperature | +5 to +45°C | |
| Intake air temperature | +5 to +45 °C | |
| Rel. humidity of intake air | 10 to 100 % | |
| CO ₂ intake air concentration | max. 1000 ppm _v CO ₂ | |
| CO ₂ output air concentration | 1/3 of intake concentration = max. 330 ppm _v CO ₂ at 1,000 ppm _v intake concentration CO ₂ | |
| Designed for compressor charging rate | 100 – 700 l/min | 650 – 1,000 l/min |
| Service life | Min. 43 operating hours (at 700 l/min output and intake concentration of 1000 ppm CO ₂). Cartridge must be changed after max. one year even if the maximum service life is not reached. | Min. 60 operating hours (at 1,000 l/min output and intake concentration of 1000 ppm CO ₂). Cartridge must be changed after max. one year even if the maximum service life is not reached. |
| Maximum daily operating time: | 5 h | |
| Cartridge filling: | Approx. 9 kg special carbon dioxide absorber per cartridge | |
| Pressure loss | Approx. 20 mbar | |
| Max. permissible tilt | 15° | |
| Permissible altitude | 0 - 2000 m AMSL | |
| Finish | Container blue, cover black/silver, PVC pipes grey RAL7011 | |

Relevant EC Directives (where applicable)

- EC Machinery Directive (2006/42/EC)
- EC Pressure Equipment Directive (2014/68/EU)
- EC Low Voltage Directive 2006/95/EC
- EC Electromagnetic Compatibility (EMC) 2004/108/EC

Applied national standards and technical specifications, in particular

- Betriebssicherheitsverordnung (German Industrial Safety Regulation) of 27 September 2002
- AD 2000
- Unfallverhütungsvorschrift (BGR; German Accident Prevention Regulations) BGR 500
- All BAUER filter housings are designed, manufactured and tested in line with Accident Prevention Regulations and regulations under AD-2000 provisions and DGRL2014/68/EU.

Documentation: 1x operating manual and parts list with exploded view drawing on DVD

Design: In line with the state of the art according to DIN, VDE, TÜV and Accident Prevention regulations

Testing: In line with Bauer Standard as per DIN EN 10204 - 3.1

Otherwise the **General Terms and Conditions of BAUER KOMPRESSOREN (AGB)** in the version valid at the time of contract conclusion apply. These Terms & Conditions can be viewed and downloaded at the website www.bauer-kompressoren.com, or sent by BAUER on request.

All information is given without assumption of liability and subject to technical changes.