

## Stationary High Pressure Compressor Unit for Compressing Air and Breathing Air

Types:

**PE250-MVE | PE300-MVE**

Production status: F01



PE250-MVE with Purification System P42/350 und 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 <sup>1</sup>	250 l/min	300 l/min
Purification system	P31/350	P31/350
Cooling air flow, min.	1,980 m <sup>3</sup> /h	2,700 m <sup>3</sup> /h
Weight <sup>2</sup>	approx. 250 kg	approx. 260 kg
Dimensions (LxWxH) <sup>2</sup>	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 <sup>1</sup>	
Speed	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 <sup>1</sup>	250 or 300 l/min
Speed	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 <sub>a</sub>

<sup>1</sup> 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 <sub>2</sub> O	25 mg/m <sup>3</sup>	≤ 10 mg/m <sup>3</sup>
CO	5 ppm(v)	Depending on filter cartridge <sup>1</sup>
CO <sub>2</sub>	500 ppm(v)	Depending on intake air <sup>2</sup>
Oil	0.5 mg/m <sup>3</sup>	≤ 0.5 mg/m <sup>3</sup>

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 CO<sub>2</sub> in the intake air must not exceed the maximum level of CO<sub>2</sub> 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 <sup>3</sup> at 300 bar
Pipe connection	G 3/8" (condensate drain G 1/4")
Filter housing volume	1.3 l
DGRL 97/23/EG	Vessel category II
Air purification capacity (at ambient temperature 20°C and 300 bar) <sup>1</sup>	615 m <sup>3</sup>

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

➤ **Compressor control incl. automatic condensate drain system**



Compressor control



Automatic condensate drain system

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

**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
- Drainage of all separators between the individual stages and also the final separator during compressor operation (standard draining interval every 15 minutes for a 6 second period)
- Timer for automatic condensate drain device
- Unloaded start integrated (automatically draining at every shut-down of the unit)
- Condensate collecting tank 10 litre, with silencer; about 5 litre capacity, for the environmentally friendly disposal of the condensate

**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:**

**P42/350 Purification System - Filter with integrated final oil and water separator**

**SCOPE OF SUPPLY:**

- 1x filter housing with long-life filter cartridge
- Integrated separator in filter bottom
- Check valve between separator and micro filter
- Air bleeder valve with manometer
- Pressurizer / check valve



Purification System P42/350

**Air quality as per DIN/EN 12021:2014**

(see purification system in standard scope of delivery)

Purification System	P42/350
Operating pressure (Standard)	PN200 / PN300
Operating pressure max (PS)	350 bar
Pressure dew point	< -20 °C, equivalent 3 mg/m <sup>3</sup> at 300 bar
Pipe connection	G 3/8" (condensate drain G 1/4")
Filter housing volume	2.25 l
DGRL 97/23/EG	Vessel category II
Air purification capacity (at ambient temperature 20°C and 300 bar) <sup>1</sup>	1,595 m <sup>3</sup>

<sup>1</sup> When using a BAUER P42/350 filter cartridge without Hopcalite. When using a cartridge with CO-removal the air purification capacity is reduced by ca. 8 %.

**› B-TIMER**

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

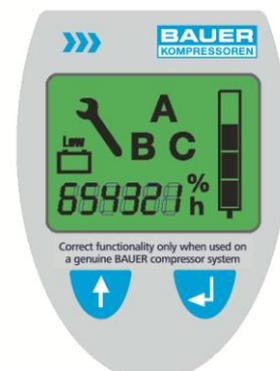
The mini-computer counts the operating hours and measures accurately the cartridge saturation.

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 P42/350!

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



SECURUS Filter Cartridge Monitoring System (similar to figure)

➤ **Interstage manometer set**

The interstage pressure manometers display the operating pressure for the individual compression stages. This pressure information enables the sealing tightness of the valves (intake and outlet) of each stage to be checked and potential fault sources to be rapidly identified. The interstage pressure manometers are mounted in the compressor housing.



Interstage manometer

➤ **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.

**FARBE:**

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 97/23-EG und AD2000 <sup>1</sup>			

<sup>1</sup> 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 CO<sub>2</sub> Absorber**

**Efficient removal of CO<sub>2</sub> 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 CO<sub>2</sub> from the air. This process reduces the CO<sub>2</sub> 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 x water barrels each 60 l)
- Filter cartridge; filling: 9 kg special carbon dioxide absorber

**MODELS:**

Designation / Size	Suitable for charging rates <sup>1</sup>	Dimensions (W x D x H)	Weight <sup>2</sup>
	l/min	cm	
<b>Aero-Guard-S</b>	100 – 150	50 x 46 x 72	26 kg
<b>Aero-Guard-M</b>	160 – 230		
<b>Aero-Guard-L</b>	240 – 320		
<b>Aero-Guard-XL</b>	330 – 450		
<b>Aero-Guard-XXL</b>	460 – 700		
<b>Aero-Guard Duo 1000</b>	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 <sub>2</sub> intake air concentration	max. 1000 ppm <sub>v</sub> CO <sub>2</sub>	
CO <sub>2</sub> output air concentration	1/3 of intake concentration = max. 330 ppm <sub>v</sub> CO <sub>2</sub> at 1,000 ppm <sub>v</sub> intake concentration CO <sub>2</sub>	
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 <sub>2</sub> ). 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 <sub>2</sub> ). 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 (97/23/EC)
- 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
- Technische Regeln Druckgase (TRG; **Technical Regulations for Compressed Gases**): TRG 400, 401, 402 (w/o permanent premises) and TRG 790
- 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 DGRL97/23EG.

**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](http://www.bauer-kompressoren.com), or sent by BAUER on request.

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