

Stationary High Pressure Compressor Unit for Compressing Air and Breathing Air

Types:

PE250-MVE | PE300-MVE

Production status: F01



PE250-MVE with Purification System P 42 und B-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	P 31	P 31
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	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	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 P 31 - 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 P 31

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	≤ 0.5 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!

Purification System	P 31
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 97/23/EG	Vessel category II
Air purification capacity (at ambient temperature 20°C and 300 bar) ¹	615 m ³

1 When using a BAUER P 31 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

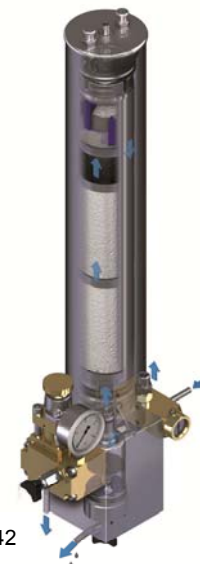
Filling devices	
Nominal pressure (NP)	2 x 200 bar or 2 x 300 bar
Valve version	2 filling valves with integrated ventilation, with German cylinder connector G 5/8" according to DIN 477
Manometer	2 manometer
Filling hose	2 Unimam high pressure filling hose, 1 m length
International cylinder connector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

OPTIONS:

P 42 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 P 42

Air quality as per DIN/EN 12021:2014:

(see purification system in standard scope of delivery)

Purification System	P 42
Operating pressure (Standard)	PN200 / PN300
Operating pressure max (PS)	350 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	2.25 l
DGRL 97/23/EG	Vessel category II
Air purification capacity (at ambient temperature 20°C and 300 bar) ¹	1,595 m ³

¹ When using a BAUER P 42 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!

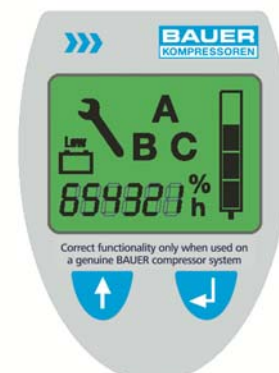
The mini-computer counts the operating hours and measures accurately the cartridge saturation.

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 P 31 and not in combination with B-SECURUS cartridge monitoring system!



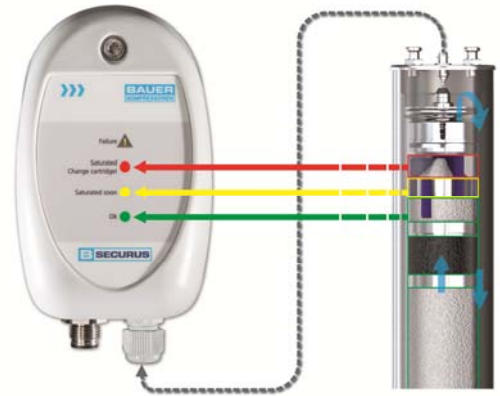
B-TIMER Display

➤ **B-SECURUS filter cartridge monitoring system**

The B-SECURUS System continuously monitors filter cartridge saturation levels by measuring the moisture in the molecular filter and showing a warning in the display of the B-CONTROL MICRO unit when it is time to change the cartridge. When the dryer cartridge is 100% saturated the B-SECURUS automatically shuts down the system.

Only in combination with P 42!

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



B-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).

	365 bar		420 bar	
	B 50	B 100	B 50	B 100
Number of tanks	1	2	1	2
Medium				
Geom. Content per tank	50 Liter		50 Liter	
Geom. Gas content storage	50 Liter	100 Liter	50 Liter	100 Liter
Max. pressure safety valve	365 bar		420 bar	
Design as per	DGLR 97/23-EG 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. 44 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 (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, or sent by BAUER on request.

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