

## High Pressure Air Compressor unit

**365 bar, 260 l/min**

**Model PE 120-7.5-VE**

### PE-VE Industry

These easy-to-operate systems are ideal for air and nitrogen compression at lower delivery volumes. They are equipped with the fully automatic B-CONTROL MICRO compressor control unit as standard.

In addition, their ultra-compact dimensions ensure fast installation and operation, saving time and money.



PE-VE Industrie – Super Silent version

**TECHNICAL DATA COMPRESSOR BLOCK**

| Parameter   | Data                                   |
|---|--|
| Medium  | Air & Nitrogen                         |
| Intake Condition                                      | Free of pollutions                     |
| Intake Pressure                                       | Atmospheric                            |
| Intake Temperature                                    | +5°C...+45°C                           |
| Ambient Temperature                                   | +5°C...+45°C                           |
| Nominal Pressure max.                                 | 365 bar adjusted by safety valve       |
| Working Pressure                                      | 90-350 bar                             |
| Capacity  | 260 l/min                              |
|   | Volume flow rate according to ISO 1217 |
| Speed approx.   | 1800 rpm                               |
| Number of Compression Stages                          | 3                                      |
| Number of Cylinders                                   | 3                                      |
| Stroke  | 40 mm                                  |
| Mean Piston Speed                                     | 2.4 m/s                                |
| Power Consumption at max. Pressure approx.            | 6.5 kW                                 |
| Residual oil content at outlet (without purification) | < 1.5 mg/m <sup>3</sup>                |
| Drive   | V-belt                                 |
| Cooling Airflow, min required.                        | 2250 m <sup>3</sup> /h                 |

**TECHNICAL DATA MOTOR**

| Parameters        | Data                       |
|-------------------|----------------------------|
| Type              | three phase electric motor |
| Power             | 7.5 kW                     |
| Speed approx.     | 2850 1/min                 |
| Enclosure         | IP55                       |
| Operating voltage | 400 V                      |
| Frequency         | 50 Hz                      |
| Energy efficiency | IE 3                       |

*Prices for other voltages and frequencies are available on request.*

## STANDARD SCOPE OF SUPPLY

### › COMPRESSOR BLOCK

- Oil pump for forced-feed lubrication with oil filter
- Oil sump content: 2.8 litre
- Micronic intake filter (air version only)
- Interstage coolers, air cooled after each stage
- Aftercooler, air cooled, outlet temperature approx. 10-15 K above ambient temperature
- Intermediate oil/water separators from 2<sup>nd</sup> stage
- Final oil/water separator
- Safety valves after each stage
- Final pressure safety valve
- Pressure maintaining and check valve before compressor outlet
- Final pressure gauge
- Crankcase venting back to suction side
- First fill of oil

### › AUTOMATIC CONDENSATE DRAIN DEVICE – B-DRAIN

The innovative design enables condensate to be drained in a gentle, controlled manner while minimising the pressure drop. This saves energy and helps to increase the efficiency of the compressor unit. At the same time, the new B-DRAIN is much quieter than conventional solutions.

- Drains regularly all oil/water separators during compressor operation and during shut-down of the unit
- Each separator is equipped with its own drain valve with solenoid valve.
- Draining interval is adjustable according to local situation
- Unloaded start integrated
- The condensate will be collected in an condensate collecting tank

### › CONFIGURATION AND STYLE OF UNIT

- Vertical arrangement of the compressor unit on solid frame
- Open version
- Shock absorbers for free standing installation
- V-belt tension is adjusted automatically by the weight of the motor
- Control panel and display integrated in compressor housing
- Condensate reservoir with 10 litre capacity
- Electrical connection: Cable length 5 m; CEE-plug; only for 400V/50Hz, max 11 kW
- High pressure outlet: fitting 8S (DIN EN ISO 8434) for pipe  $\varnothing$  8mm
- The compressor can be loaded using a lift truck and forklift
- Colour:
  - Compressor block: Silver
  - Base frame: RAL 7024 graphite grey
  - Compressor housing: RAL 9006 white aluminium / RAL 1028
- Powder coating for indoor installation in accordance with corrosivity category C2-C3



*PE-VE Industry*

## › COMPRESSOR CONTROL B-CONTROL MICRO

# Industrial Compressor Unit

PE 120-7.5-VE



The B-CONTROL MICRO is a modern, easy-to-use control system with colour display, which controls and monitors all basic functions of the compressor.



- Fully automatic monitoring of all relevant compressor data
- 3.5" TFT colour monitor with clear text display
- Maintenance management: Maintenance information is displayed.
- The system log stores incident history
- Password protection for various menu levels
- B-CLOUD ready

| Technical Data                                |   |
|---|---|
| Ambient temperature range (display + CPU):    | -10°C to + 60°C<br>(5-90% humidity; non-condensing) |
| Ambient temperature range (complete control): | +5°C to +45°C                                       |
| Control voltage (internal):                   | 24 VDC  |
| Protection class display:                     | IP 65   |

## FEATURES

- Indication of actual pressure, working hours and operation mode
- Semi and fully automatic operation selectable
- Common SI-units can be chosen for pressure and temperature
- Intuitive menu navigation (new user interface design)
- Service/maintenance interval indication
- Logbook to record incidents
- Easy software update and upload by SD card
- For software upload no B-Manager required
- Cycle counter & hour meter
  - Safety: information for the operator when to exchange the final separator
- Language selection option (German, English, French, Chinese, Czech, Danish, Dutch, Finnish, Flemish, French, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Taiwanese, Turkish)

## SUPERVISION OR CONTROL OF

- Compressor start/stop by final pressure
- Operation via signal (digital/analogue) from level indicator gas balloon (only applicable with rare gas recovery systems; please specify in case of order: digital or analogue 4-20 mA fill level signal (source or sink))
- Operation based on intake pressure (booster only, w/o inlet pressure reduction)
- Oil pressure monitoring
  - Protection from wrong rotation
- B-SECURUS monitoring (via CAN Bus)
  - Safety: compressor switch off possible in case of saturated filter cartridge
- Temperature monitoring
  - Security of too high/low temperatures (last stage)
- Intake pressure (gas version only)
  - To prevent the compressor from too high or low inlet pressure
- Motor over-current (indirect by PTC)

#### EXCHANGE CONNECTION FOR

- CAN bus included (for internal use)
- Remote start/stop (dry contact)
- External “emergency switch”
- Collective fault message (dry contact)
- External connections for: B-SECURUS, SECCANT, B-KOOL, B-DETECTION, external display, external operating panel, gas balloon fill level, des point sensor, gas measurement system, filling level integrated condensate vessel
- Ethernet connection (for connection with local LAN/WLAN or B-LINK – for communication with B-APP and B-CLOUD)
- Optional: Modbus RTU RS485, Modbus TCP RS485, Profibus DP slave, Profinet

#### OPERATING MODE

- Fully automatic operation / semi automatic operation
- Operation via digital signal from level indicator gas balloon (only applicable with rare gas recovery systems)
- Leakage test / final safety valve test

#### SCOPE OF SUPPLY

- Star-delta contactor combination
- Regulated power supply

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- Switchbox with all necessary auxiliary relays and terminal boards
  - Combined main switch / emergency off switch
  - Main circuit breaker
  - B-CONTRO MICRO with 3.5" colour display and with key pad

## OPTION

- External Display
- SD card for display unit
- B-LINK

## OPTIONS

### › INTAKE LINE

Necessary in case of nitrogen/gas compression

### SCOPE OF SUPPLY

- Gas connection:
  - PE100, PE120, PE12.14: female thread G1
  - PE150, PE180, PE18.1: female thread G1½
- Particle filter
- Intake pressure monitored by pressure sensor
- Shut-off solenoid valve

SERVICE MATERIAL

| Maintenance kits           | For compressor block |                            |
|----------------------------|----------------------|----------------------------|
|                            | Compression of Air   | Compression of inert gases |
| Maintenance kit 1000 hours | I-120II-F7-a1        |                            |
| Maintenance kit 2000 hours | I-120II-F7-ab1       |                            |
| Maintenance kit 4000 hours | I-120II-F7-abc1      |                            |

**DIMENSIONS / WEIGTH (approx.)**

COMPRESSOR STANDARD VERSION

| Length  | x | Width  | x | Height  | Weight |
|---------|---|--------|---|---------|--------|
| 1140 mm | x | 830 mm | x | 1520 mm | 305 kg |

SUPER SILENT-VERSION

| Length  | x | Width  | x | Height  | Weight |
|---------|---|--------|---|---------|--------|
| 1480 mm | x | 830 mm | x | 1520 mm | 395 kg |

See diagram for details

**Regulations und Standards**

**Relevant EC Directives (where applicable):**

- EC Machinery Directive
- EC Pressure Equipment Directive
- EC Electromagnetic Compatibility (EMC) Directive

**Documentation:**

Standard units:

- 1 × Instruction Manual (EC languages) and parts list with exploded drawings
- 1 × Declaration of conformity (CE)\* resp. EC manufacturer's declaration
- 1 × Pressure vessel documentation



**Testing:** Bauer Standard according to DIN EN 10204-3.1

Any further tests and/or technical documentation will be quoted upon request.

#### **\*CE Mark (Declaration of Conformity)**

BAUER Compressors, both as standard models and with optional features, undergo CE testing as whole units before shipping and are then shipped with CE certification. Where compressor systems or components need to be partially dismantled for shipping, they must be installed on site by specialist personnel in line with the operating instructions (piping schematic and circuit diagram) and inspected by specialists for fulfilment of their intended function (CE function). Assembly and inspection can be performed by BAUER Kompressoren specialists on request if required, and if the requisite conditions and specialist personnel are unavailable on site.

Otherwise, improper, non-professional or incorrect installation and operation startup will invalidate the CE declaration of conformity.

This applies to BAUER large-scale systems in the BK23-BK52 series and may also extend to other series depending on their configuration or model. BAUER KOMPRESSOREN will be happy to supply further information on request after clarifying the order.

## **TECHNICAL INFORMATION**

### **Flow rates**

The flow rates given are defined and specified in accordance with ISO 1217. In applications requiring continuous volume flow, please note that when condensate is drained at regular intervals, air / gas is released with the condensate and does not arrive at the compressor outlet. The actual flow rate is thus reduced by approx. 1-2% per stage or separator.

### **Intake pressure**

Unless otherwise specified, the compressors are designed for atmospheric intake pressure. In gas compression or where intake pressure reduction is used, the intake pressure is set at a low number of mbarg. If higher intake pressure is required, please contact BAUER KOMPRESSOREN for support (where necessary, larger motor / limitation of intake pressure depending on the block, unit configuration and gas involved).

### **Power consumption**

The power consumption of the compressors [kW] is given for atmospheric primary pressure and maximum final pressure, valid at 400 V 50 Hz. Optional accessories (e.g. Super Silent housing with its own fan, from the K22 series) or additional consumers can increase the total power requirement.

In gas compression (intake pressure reduction) primary pressure is several mbar higher, increasing power consumption. Energy consumption also increases at low temperatures, which may require a more powerful motor to be used.

**Installation**

The compressors are designed for an installation location at a maximum of 1000 m above sea level. Higher locations are possible on request depending on the compressor.

Further important information on installation and location is given in the Installation Manual.

**Electrical connection**

Medium- and high-pressure compressors require high startup current when powering up. Given this, they must be fitted with a K- or D-type automatic circuit breaker (type depending on device manufacturer). The system safety device must be configured for "heavy starts". Please contact your local electrical installation company if you have any questions on the subject.

**Electricity grid**

Compressor units from BAUER KOMPRESSOREN are designed for use with TN-S resp. TN-C-S electricity grids. In case of other electricity grids, please contact BAUER KOMPRESSOREN.

**Dimensioning**

For optimum lay-out of the complete system all components (compressor, purification, storage cylinders, etc.) shall be matched in the best possible way. The number of starting cycles (4 per hour up to 15 kW, 2 per hour from 18.5 kW) shall not be exceeded. Effective running time per cycle shall be min. 15 minutes (up to 15 kW) resp. 30 minutes (from 18.5 kW) in order to reach an optimum between exploitation of the unit and actual life time.

**Weight specifications**

Weight specifications are given for standard versions without optional features. The weight of the units will increase if optional extras, different voltages etc. are selected or if motors from different manufacturers are used.

**Systems at 60 Hz - Applications**

BAUER Compressors are designed for 50 Hz as standard.

V-belt drive: Different V-belt pulleys are used for operation at 60 Hz. This may result in deviations in block speed, FAD and power consumption.

Direct coupling: A frequency inverter is required for operation at 60 Hz to limit the speed to a maximum of 1485 rpm, unless otherwise specified. Some directly coupled units can be operated at 1785 rpm.

**GENERAL INFORMATION**

## Industrial Compressor Unit

PE 120-7.5-VE

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Please, consider our advice regarding the installation of the compressor unit which is available as download from our webpage. Furthermore, our staff will most gladly assist in case of questions and/or required support.

Our General Terms and Conditions (AGB) apply in their latest version at date of order entry. Our actual valid AGB are available on our homepage for download in the footer at [www.baugroup.com](http://www.baugroup.com); upon request we can forward by other means.

We reserve the right to modify without further notice.

Best Regards

**BAUER KOMPRESSOREN GmbH**