

Installation and operation instructions

BEKOMAT® 3 V und 6 V

Variants

for Vacuum Systems



BEKOMAT® V

MODEL VARIANTS

The BEKOMAT V variants have been designed specifically for the discharge of condensate from vacuum low pressure-systems. They should only be used for systems with an operating pressure from 0.1 to 1.8 bar (abs.). The electrical installation, piping and maintenance requirements are subject to the same rules and principles as the corresponding basic BEKOMAT units, apart from the special features described in the following.

BEKOMAT V units with appropriate modification are also available for

- hazardous locations
- areas where there is a danger of frost
- extremely aggressive condensates or media. The

units are distinguished by the letter V at the end of the name (e.g. BEKOMAT 3 Ex V).

The BEKOMAT V range comprises variants of the following basic types:

BEKOMAT 3 CO
BEKOMAT 3 Ex and **BEKOMAT 3 E**
BEKOMAT 3 E Ex
BEKOMAT 6 CO and **BEKOMAT 6 Ex**
BEKOMAT 6 E and **BEKOMAT 6 E Ex**

The power supply options of the BEKOMAT V variants are the same as for the basic BEKOMAT units. 110 Vac or 230 Vac power supply (or 12 Vdc for hazardous locations) is offered as a standard. Special voltages can be provided upon enquiry. Additionally, the operation of the BEKOMAT V condensate drains requires cleaned control air or gas of 4 to 8 bar (recommended 6 bar).

SPECIAL ASPECTS OF APPLICATION

Please note:

The operating pressure of the plant must be between 0.1 and 1.8 bar (abs.)!

The V variants extend the field of application of the basic BEKOMAT units by permitting operation in the **pressure range from 0.1 to 1.8 bar (abs.)**. Above this pressure range, the V variants should not be used since this may impair the sealing capacity of the diaphragm valve.

The V variants are particularly suitable for the discharge of condensate or other separated media from vacuum systems and for processes carried out under standard atmospheric conditions.

Please note:

Aggressive media require correspondingly resistant materials for housing and valves!

- BEKOMAT housings: Aluminium, Aluminium with HARD COATING, Stainless steel
- Shutoff valves: Brass, Stainless steel

Please note:

Control air or gas penetrates into the vacuum system during switching!

During switching of the BEKOMAT V unit, residual air or gas of the compressed air or gas providing auxiliary energy is able to penetrate into the vacuum system. In the case of

the BEKOMAT 3 V variants this amounts to approximately 2 to 3 litres with a control pressure of 6 bar, while the BEKOMAT 6 V variants have a standard volume of 1.5 litres.

The BEKOMAT V units must therefore only be used for discharge functions in systems where it is certain that these amounts cannot cause any technical, processing or safety problems (e.g., formation of explosive gas mixtures).

Please note:

With larger quantities of liquid it will be necessary to provide a balance air pipe to ensure correct discharge.

Normally, it will be sufficient to connect the piping of the BEKOMAT V unit to an inflow point. If cyclic operation is likely to produce large quantities of liquid, the installation of the BEKOMAT V unit should be carried out including a balance air pipe. This should be stated when ordering, since the BEKOMAT unit has to be manufactured with a corresponding shutoff device for the balance air pipe.

Please note:

The diaphragm cap is a special construction!

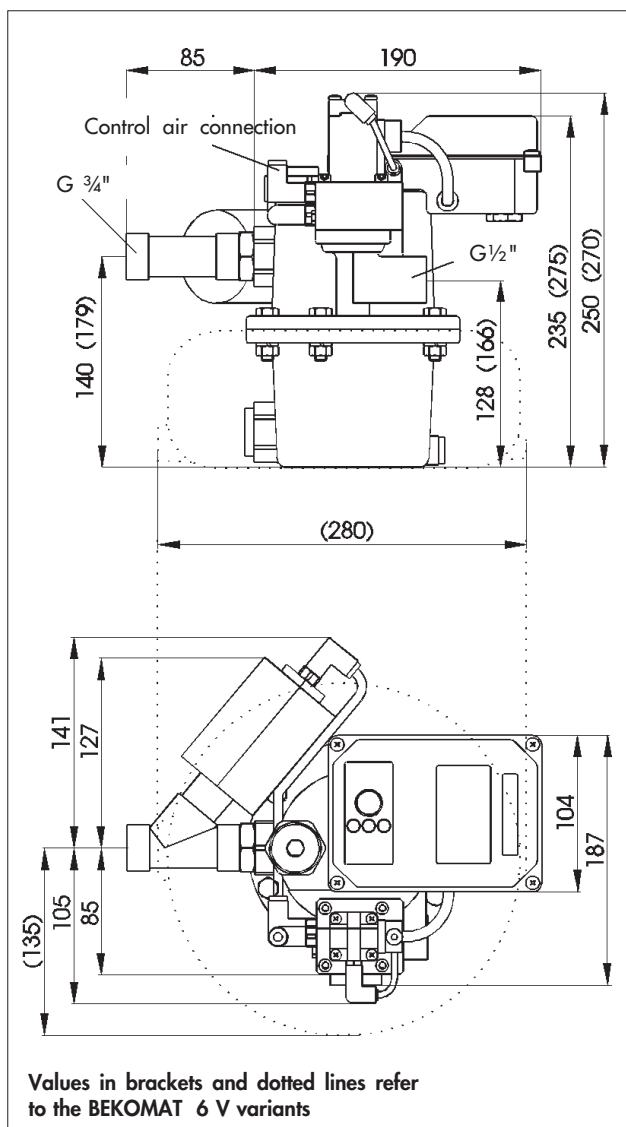
Apart from the additional shutoff devices, the main difference of the BEKOMAT V variants consists of a **diaphragm cap with a completely new design**. It serves both as an activating element for the shutoff valves and as a diaphragm cap with the normal arrangements for the diaphragm and the solenoid valve to ensure the discharge function.

BEKOMAT® V

FUNCTION

The capacitive sensor measures the condensate level in the collecting container. When the switching point is reached, the pilot valve opens the control-air or control-gas supply. The control pressure causes the inclined-seat valve to close thus shutting off the network connection of the condensate drain BEKOMAT V. The pressure build-up in the BEKOMAT V unit results in the opening of the diaphragm valve, and the condensate accumulated in the BEKOMAT V is then forced to flow out of the unit. The required valve opening time is determined by the electronic system in such a way that the condensate is discharged from the collecting space of the BEKOMAT V without wastage of compressed air or gas. Subsequently, the pilot valve closes the control-air or control-gas, vents the inclined-seat valve in the condensate feed line and thereby reconnects the condensate drain BEKOMAT V to the network. Timing or pressure adjustments at the device are not required.

FITTING DIMENSIONS



INSTALLATION

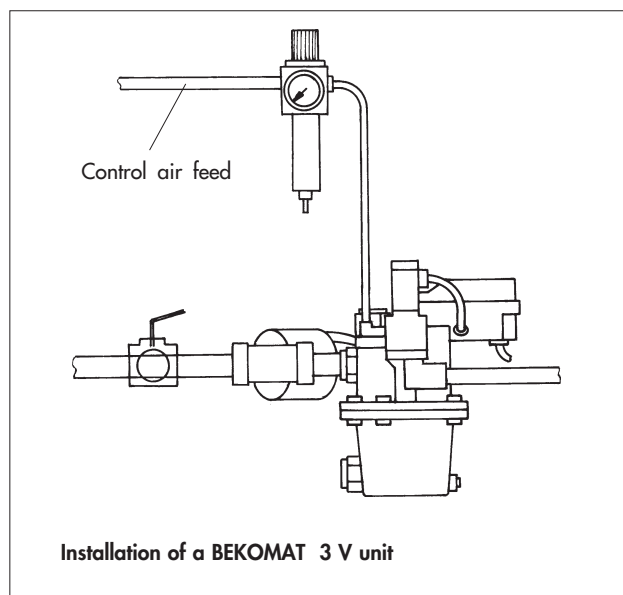
Please note:

The BEKOMAT V condensate drain requires a control air or control gas connection of 4 to 8 bar (optimum 6 bar). This control medium must be cleaned!

The BEKOMAT V unit requires compressed air or gas for the drainage of condensate. The control air connection on the diaphragm cap is designed for a internal dimension 4 mm, external dimension 6 mm, recommended material PA. The control air feed line must be fitted with an air-filter reducer (or simply with a reducer).

The reducer must be capable of keeping the pressure within the prescribed limits, since it may not be possible to drain the condensate if the pressure drops below 4 bar. If the pressure rises above 8 bar, the diaphragm may stay permanently open and the shutoff valve to the vacuum system may remain permanently closed.

Otherwise, the same instructions for installation apply as for the basic BEKOMAT types with regard to pipe laying, pipe cross-sections and installation of the collecting line.



Please note:

When the valve opens control air escapes into the atmosphere.

When the seat valve is deaerated control air or control gas escapes into the atmosphere (approx. 1 l). If explosive or any other hazardous gases are used for the controlling, this outlet should lead to a degasifying container.

BEKOMAT® V