# Condensate technology | BEKOMAT® 12 | 13 | 14 | 16

## Cost-effective and reliable: volume-controlled condensate discharge with the BEKOMAT®

During compressed air generation and processing, the optimum quality for the application should be achieved. It is important to remove contaminants and humidity from the compressed air as these can lead to quality problems, failures or loss of production.

### Condensate discharge without compressed air loss

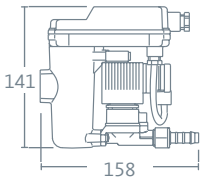
The BEKOMAT® drains off condensate without loss of compressed air, thus reducing energy costs and $CO_2$ emissions. This is made possible by the integrated capacitive sensor, smart electronics for volume-controlled condensate discharge and a proven pilot-controlled solenoid valve with a special discharge diaphragm.

### Suitable models for all applications

The standard model is made in corrosion-resistant aluminium, making the BEKOMAT® particularly reliable and sturdy. A special silver-coloured coating protects the outside of the housing. For oil-free or aggressive condensate, we recommend the BEKOMAT® hard coated models that come in a in a glass bead blasted housing with a high-grade hard coating.

- **No loss of compressed air during draining**
  - Low operating costs
- **Outstanding reliability**
  - Durable and resistant to dirt
  - Large valve diameters prevent the formation of emulsions
  - No delicate mechanical components
  - Suitable for up to +60 °C and 63 bar (gauge)
- **Easy to install and virtually maintenance-free**
  - Versatile connection options
- **Automated operation and monitoring**
  - Ready for integration into modern system monitoring installations
  - Automatic start of self-cleaning process based on dirt load

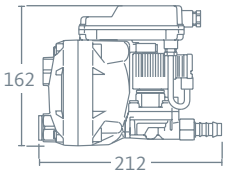
Dimensions in mm




Depth: 65

| Technical data | BEKOMAT® 12 | | BEKOMAT® 12 CO | | | BEKOMAT® 12 CO PN 63 | |
|---|---|---|---|---|---|---|---|
| Max. compressor capacity* | ■ 8 m³/min \| ▲ 6.5 m³/min \| ● 4 m³/min | | | | | | |
| Max. refrigeration dryer performance* | ■ 16 m³/min \| ▲ 13 m³/min \| ● 8 m³/min | | | | | | |
| Max. filter performance* | ■ 80 m³/min \| ▲ 65 m³/min \| ● 40 m³/min | | | | | | |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) | | | | | 1.2 ... 63 bar (gauge) | |
| Housing | aluminium | | aluminium, hard-coated | | | | |
| Diaphragm | FKM | | | | | FKM | |
| Ambient temperature | +1 °C ... +60 °C | | | | | | |
| Weight (empty) | 0.8 kg | | | | | 0.9 kg | |
| Condensate inlet | 1 x G½ (inside) [optional: NPT thread] | | | | | | |
| Condensate discharge | 1 x G⅜ (outside); hose connector, hose Ø = 10-13 mm (inside) | | | | | | |
| Operating voltage | 230 / 200 / 115 / 100 / 48 / 24 VAC ± 10%, 50 ... 60 Hz / 24 VDC ± 10% | | | | | | |
| Power consumption | P < 8.0 VA (W) | | | | | | |
| Protection class | IP 65 | | | | | | |
| Wire cross-section (mains connection) | recommended 3 x 0.75 ... 1.5 mm² (AWG 16 ... 18) | | | | | | |
| Protection | recommended for AC: 1 A slow / mandatory for DC: 1 A slow | | | | | | |
| Contact load | max. AC 250 V, DC 30 V / 1A; min. DC 5V / 10 mA | | | | | | |
| Condensate | oil-contaminated condensate | | oil-contaminated condensate; oil-free, potentially aggressive condensate | | | | |
| **Discharge performance** | | | | | | | |
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term) l/h | 20 | 23 | 27 | | | 30 | |
| Ø discharge rate l/h | 0.95 | 1.10 | 1.29 | | | 1.43 | |

Dimensions in mm




Depth: 93
Depth: 197 (PN25 | 40 | 50)

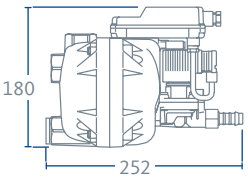
| Technical data | BEKOMAT® 13 | | BEKOMAT® 13 CO | | | BEKOMAT® 13 CO PN 25 \| 40 \| 50 | |
|---|---|---|---|---|---|---|---|
| Max. compressor performance* | ■ 35 m³/min \| ▲ 30 m³/min \| ● 20 m³/min | | | | | | |
| Max. refrigeration dryer performance* | ■ 70 m³/min \| ▲ 60 m³/min \| ● 40 m³/min | | | | | | |
| Max. filter performance* | ■ 350 m³/min \| ▲ 300 m³/min \| ● 200 m³/min | | | | | | |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) | | | | | 1.2 ... 25 or 40 bar or 50 bar (gauge) | |
| Housing | aluminium | | aluminium, hard-coated | | | | |
| Diaphragm | FKM | | | | | FKM | |
| Ambient temperature | +1 °C ... +60 °C | | | | | | |
| Weight (empty) | 2 kg | | | | | 2.2 kg | |
| Condensate inlet | 2 x G½ (inside) [optional: NPT thread] | | | | | | |
| Condensate discharge | 1 x G½ (outside); hose connector, hose Ø = 13 mm (inside) | | | | | 1 x G⅜ (inside); hose connector, hose Ø = 13 mm (inside) | |
| Operating voltage | 230 / 200 / 115 / 100 / 48 / 24 VAC ± 10%, 50 ... 60 Hz / 24 VDC ± 10% | | | | | | |
| Power consumption | P < 8.0 VA (W) | | | | | | |
| Protection class | IP 65 | | | | | | |
| Wire cross-section (mains connection) | recommended 3 x 0.75 ... 1.5 mm² (AWG 16 ... 18) | | | | | | |
| Protection | recommended for AC: 1 A slow / mandatory for DC: 1 A slow | | | | | | |
| Contact load | max. AC 250 V, DC 30 V / 1A; min. DC 5V / 10 mA | | | | | | |
| Condensate | oil-contaminated condensate | | oil-contaminated condensate; oil-free, potentially aggressive condensate | | | | |
| **Discharge performance** | | | | | | | |
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term)** l/h | 50 | 60 | 80 | 90 | 100 | 120 | |
| Ø discharge rate l/h | 3.17 | 4.12 | 5 | 5.7 | 6.35 | 7.61 | |

* For more information on climate zones (■ | ▲ | ●) see reverse
** Short-term peak volume can only be achieved if the device is correctly installed according to the operating manual. If in doubt, install a venting line.

| Technical data | BEKOMAT® 14 | BEKOMAT® 14 CO | BEKOMAT® 14 CO PN 25 |
|---|---|---|---|
| Max. compressor capacity* | ■ 150 m³/min \| ▲ 130 m³/min \| ● 90 m³/min | | |
| Max. refrigeration dryer performance* | ■ 300 m³/min \| ▲ 260 m³/min \| ● 180 m³/min | | |
| Max. filter performance* | ■ 1500 m³/min \| ▲ 1300 m³/min \| ● 900 m³/min | | |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) | | 1.2 ... 25 bar (gauge) |
| Housing | aluminium | aluminium, hard-coated | |
| Diaphragm | FKM | | FKM |
| Ambient temperature | +1 °C ... +60 °C | | |
| Weight (empty) | 2.9 kg | | 3.1 kg |
| Condensate inlet | 3 x G¾ (inside) [optional: NPT thread] | | |
| Condensate discharge | 1 x G½ (outside); hose connector, hose Ø = 13 mm (inside) | | 1 x G⅜ (inside); hose connector, hose Ø = 13 mm (inside) |
| Operating voltage | 230 / 200 / 115 / 100 / 48 / 24 VAC ± 10%, 50 ... 60 Hz / 24 VDC ± 10% | | |
| Power consumption | P < 8.0 VA (W) | | |
| Protection class | IP 65 | | |
| Wire cross-section (mains connection) | recommended 3 x 0.75 ... 1.5 mm² (AWG 16 ... 18) | | |
| Protection | recommended for AC: 1 A slow / mandatory for DC: 1 A slow | | |
| Contact load | max. AC 250 V, DC 30 V / 1A; min. DC 5V / 10 mA | | |
| Condensate | oil-contaminated condensate | oil-contaminated condensate; oil-free, potentially aggressive condensate | |

| Discharge performance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term)** l/h | 170 | 250 | | | 350 | | |
| Ø discharge rate l/h | 29.10 | 31.74 | | | 33.33 | | |

Dimensions in mm

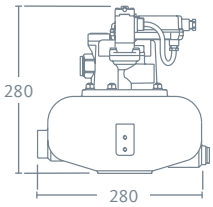



Depth: 120
Depth: 242 (PN25)

| Technical data | BEKOMAT® 16 CO |
|---|---|
| Max. compressor performance* | ■ 1700 m³/min \| ▲ 1400 m³/min \| ● 1000 m³/min |
| Max. refrigeration dryer performance* | ■ 3400 m³/min \| ▲ 2800 m³/min \| ● 2000 m³/min |
| Max. filter performance* | - \| - \| - |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) |
| Housing | aluminium, hard-coated |
| Diaphragm | FKM |
| Ambient temperature | +1 °C ... +60 °C |
| Weight (empty) | 5.9 kg |
| Condensate inlet | 2 x G¾ (inside), 1 x G1 (inside) [optional: NPT adapter] |
| Condensate discharge | 1 x G½ (inside) |
| Operating voltage | 230 / 200 / 115 / 100 / 48 / 24 VAC ± 10%, 50 ... 60 Hz / 24 VDC ± 10% |
| Power consumption | P < 8.0 VA (W) |
| Protection class | IP 65 |
| Wire cross-section (mains connection) | recommended 3 x 0.75 ... 1.5 mm² (AWG 16 ... 18) |
| Protection | recommended for AC: 1 A slow / mandatory for DC: 1 A slow |
| Contact load | max. AC 250 V, DC 30 V / 1A; min. DC 5V / 10 mA |
| Condensate | oil-contaminated condensate / oil-free, potentially aggressive condensate / aggressive condensate from compressed air compressors (after prior testing) |

| Discharge performance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term)** l/h | 950 | 1150 | 1400 | | 1700 | | |
| Ø discharge rate l/h | 226 | 243 | 263 | | 274 | | |

Dimensions in mm




Depth: 260

# Condensate technology | BEKOMAT® 20 | 20 FM

During compressed air generation and processing, the optimum quality for the application should be achieved. It is important to remove contaminants and humidity from the compressed air as these can lead to quality problems, failures or loss of production.

### Condensate discharge without compressed air loss

The BEKOMAT® drains off condensate without loss of compressed air, thus reducing energy costs and $CO_2$ emissions. This is made possible by the integrated capacitive sensor, smart electronics for volume-controlled condensate discharge and and the proven pilot control of the solenoid valve.

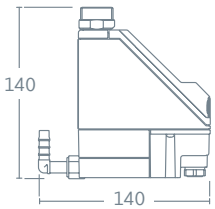
### The BEKOMAT® for filters and water separators

The BEKOMAT® 20 is a sturdy condensate drain designed for use in water separators, filters and similar equipment. It is suitable for oil-lubricated plants as well as oil-free compressors.

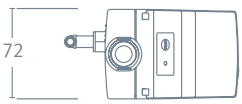

The control panel is accessible from the top and the front. It has a plastic housing with integrated aluminium condensate container.

The BEKOMAT® 20FM with integrated filter management (filter service life monitor and indicator) is a cost-effective monitoring solution for the connected filter element.

- **No compressed air lost during draining**
  - Low operating costs
- **Outstanding reliability**
  - Durable and resistant to dirt
  - Large valve diameters prevent the formation of emulsions
  - No delicate mechanical components
  - For operation at temperatures up to +60 °C
- **Easy to install and virtually maintenance-free**
- **Automated operation and monitoring**
  - Ready for integration into modern system monitoring installations
  - Automatic start of self-cleaning process based on dirt load




Dimensions in mm




| Technical data | BEKOMAT® 20 | | | BEKOMAT® 20 FM | | | |
|---|---|---|---|---|---|---|---|
| Max. compressor capacity | ■ 5 m³/min \| ▲ 4 m³/min \| ● 2.5 m³/min | | | | | | |
| Max. refrigeration dryer performance | ■ 10 m³/min \| ▲ 8 m³/min \| ● 5 m³/min | | | | | | |
| Max. filter performance | ■ 50 m³/min \| ▲ 40 m³/min \| ● 25 m³/min | | | | | | |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) | | | | | | |
| Housing | aluminium + plastic, glass fibre reinforced | | | | | | |
| Ambient temperature | +1 °C ... +60 °C | | | | | | |
| Weight (empty) | 0.7 kg | | | | | | |
| Condensate inlet | 1 x G¾ (outside) - G½ (inside) | | | | | | |
| Condensate discharge | 1 x G¼; hose connector, hose Ø = 8-10 mm (inside) | | | | | | |
| Operating voltage | 230 / 115 / ... / 24 VAC ± 10%, 50 ... 60 Hz / 24 VDC ± 10% | | | | | | |
| Power consumption | P < 3.0 VA (W) | | | P < 8.0 VA (W) | | | |
| Protection class | IP 55 | | | | | | |
| Wire cross-section (mains connection) | 3 x 0.75 mm² ...1.5 mm² (AWG 16...18) | | | | | | |
| Protection | recommended for AC: 1 A slow / mandatory for DC: 1 A slow | | | | | | |
| Contact load | none | | | max. AC 250 V, DC 30 W / 1A min. DC 5 V / 10mA | | | |
| Condensate | oil-contaminated condensate; oil-free, potentially aggressive condensate | | | | | | |
| **Discharge performance** | | | | | | | |
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term)* l/h | 3.4 | 9.9 | | 10.8 | | | |
| Ø discharge rate l/h | 0.33 | 0.95 | | 1.03 | | | |
| **Wearing parts kit** | 4003701 | | | 4003701 | | | |

* Short-term peak volume can only be achieved if the device is correctly installed according to the operating manual.

# Condensate technology | BEKOMAT® 31U | 32U | 33U | 33U CO

## The quickest route to efficiency: the BEKOMAT® with service unit

During compressed air generation and processing, the optimum quality for the application should be achieved. It is important to remove contaminants and humidity from the compressed air as these can lead to quality problems, failures or loss of production.

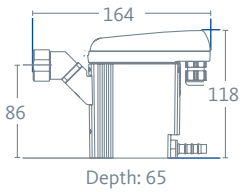
**Condensate discharge without compressed air loss**
The BEKOMAT® drains off condensate without loss of compressed air, thus reducing energy costs and $CO_2$ emissions. This is made possible by the integrated capacitive sensor, smart electronics for volume-controlled condensate discharge and the proven pilot-controlled solenoid valve.

**The BEKOMAT® designed for quick and cost-effective servicing**
The innovative design of the BEKOMAT® 31U, 32U, 33U and 33U CO models is optimised for easy handling, installation and maintenance. The devices consist of no more than three assemblies joined together with quick-release connectors. Once installed, the control and sensor unit stays in place as only the service unit (including all wear and pressure parts) needs to be exchanged.

This sturdy condensate drain is suitable for both oil-contaminated and oil-free, aggressive condensate.

- **No loss of compressed air during draining**
  - Low operating costs
- **Outstanding reliability**
  - Durable and resistant to dirt
  - Large valve diameters prevent the formation of emulsions
  - No delicate mechanical components
  - Suitable for temperatures up to +70 °C
- **Easy to install and virtually maintenance-free**
  - Versatile connection options
  - Easy exchange of service unit, even where space is confirmed with even in small areas
  - Servicing requires no installation work
- **Automated operation and monitoring**
  - Ready for integration into modern system monitoring installations
  - Automatic start of self-cleaning process based on dirt particle load
  - Service indicator warns operators in advance when the service unit needs to be replaced

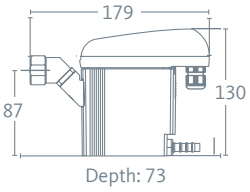
Dimensions in mm




| Technical data | BEKOMAT® 31U |
|---|---|
| Max. compressor performance* | ■ 3 m³/min \| ▲ 2.5 m³/min \| ● 1.5 m³/min |
| Max. refrigeration dryer performance* | ■ 6 m³/min \| ▲ 5 m³/min \| ● 3 m³/min |
| Max. filter performance* | ■ 30 m³/min \| ▲ 25 m³/min \| ● 15 m³/min |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) [optional: 1.2 ... 16 bar (gauge)] |
| Housing | aluminium + plastic, glass fibre reinforced |
| Diaphragm | AU [optional: FKM] |
| Ambient temperature | +1 °C ... +60 °C [optional: +1 °C ... +70 °C] |
| Weight (empty) | 0.8 kg |
| Condensate inlet | 1 x G½ (inside) [optional: NPT thread] |
| Condensate discharge | 1 x G¼; hose connector, hose Ø = 10 mm (inside) |
| Operating voltage | 95 ... 240 VAC ±10% (50 ... 60 Hz) / 100 ... 125 VDC ±10%<br>or<br>24...48 VAC ±10% (50...60 Hz) / 18...72 VDC ±10% |
| Power consumption | P = 0.6...3 VA (W) |
| Protection class | IP 67 |
| Wire cross-section (mains connection) | 0.75 ... 2.5 mm² (AWG 14...20) |
| Condensate | oil-contaminated condensate<br>oil-free, aggressive condensate |

| Discharge performance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term) l/h | 4.5 | | | 5.5 | | | |
| Ø discharge rate l/h | 0.51 | | | 0.63 | | | |

Dimensions in mm



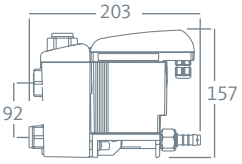

| Technical data | BEKOMAT® 32U |
|---|---|
| Max. compressor performance* | ■ 6 m³/min \| ▲ 5 m³/min \| ● 3.5 m³/min |
| Max. refrigeration dryer performance* | ■ 12 m³/min \| ▲ 10 m³/min \| ● 7 m³/min |
| Max. filter performance* | ■ 60 m³/min \| ▲ 50 m³/min \| ● 35 m³/min |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) [optional: 1.2 ... 16 bar (gauge)] |
| Housing | aluminium + plastic, glass fibre reinforced |
| Diaphragm | AU [optional: FKM] |
| Ambient temperature | +1 °C ... +60 °C [optional: +1 °C ... +70 °C] |
| Weight (empty) | 1 kg |
| Condensate inlet | 1 x G½ (inside) [optional: NPT thread] |
| Condensate discharge | 1 x G¼; hose connector, hose Ø = 10 mm (inside) |
| Operating voltage | 95 ... 240 VAC ±10% (50 ... 60 Hz) / 100 ... 125 VDC ±10%<br>or<br>24 ... 48 VAC ±10% (50 ... 60 Hz) / 18 ... 72 VDC ±10% |
| Power consumption | P = 0.6 ... 3 VA (W) |
| Protection class | IP 67 |
| Wire cross-section (mains connection) | 0.75 ... 2.5 mm² (AWG 14 ... 20) |
| Contact load | max. AC 250 V, DC 30 V / 1A; min. DC 5V / 10 mA |
| Condensate | oil-contaminated condensate<br>oil-free, aggressive condensate |

| Discharge performance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term) l/h | 10 | | | | | | |
| Ø discharge rate l/h | 1.14 | | | | | | |

| Data | BEKOMAT® 33U | BEKOMAT® 33U CO |
|---|---|---|
| Max. compressor performance* | ■ 12 m³/min \| ▲ 10 m³/min \| ● 7 m³/min | |
| Max. refrigeration dryer performance* | ■ 24 m³/min \| ▲ 20 m³/min \| ● 14 m³/min | |
| Max. filter performance* | ■ 120 m³/min \| ▲ 100 m³/min \| ● 70 m³/min | |
| Min./max. operating pressure | 0.8 ... 16 bar (gauge) [optional: 1.2 ... 16 bar (gauge)] | |
| Housing | aluminium + plastic, glass fibre reinforced | Aluminium, hard-coated + plastic, glass fibre reinforced |
| Diaphragm | AU [optional: FKM] | |
| Ambient temperature | +1 °C ... +60 °C [optional: +1 °C ... +70 °C] | |
| Weight (empty) | 1.65 kg | |
| Condensate inlet | 3 x G½ (inside) [optional: NPT thread] | |
| Condensate discharge | 1 x G½; hose connector Ø = 13mm (inside) | |
| Operating voltage | 95 ... 240 VAC ±10% (50 ... 60 Hz) / 100 ... 125 VDC ±10%<br>or<br>24 ... 48 VAC ±10% (50 ... 60 Hz) / 18 ... 72 VDC ±10% | |
| Power consumption | P = 0.6...3 VA (W) | |
| Protection class | IP 67 | |
| Wire cross-section (mains connection) | 0.75 ... 2.5 mm² (AWG 14 ... 20) | |
| Contact load | max. AC 250 V , DC 30 V / 1A; min. DC 5 V / 10 mA | |
| Condensate | oil-contaminated condensate | oil-contaminated condensate<br>oil-free, aggressive condensate |

| Discharge performance | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating pressure bar (gauge) | 1 bar | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | > 7 bar |
| Max. discharge rate (short-term)** l/h | 25 | | 33 | 40 | 45 | 50 | 60 |
| Ø discharge rate l/h | 1.59 | | 2.06 | 2.51 | 2.85 | 3.17 | 3.8 |

Dimensions in mm




Depth: 73

* For more information on climate zones (■ | ▲ | ●) see reverse

** Short-term peak volume can only be achieved if the device is correctly installed according to the operating manual. If in doubt, a install venting line.


# Condensate technology | BEKOMAT® Special Solutions

## Our BEKOMAT® Solutions for special requirements

During compressed air treatment, the formation of oil contaminate dirt particles occurs and is not constant in quantity in the condensate and is unavoidable. This can lead to malfunctions or even loss of production.

**Condensate discharge without the loss of compressed air**

The BEKOMAT® drains off condensate without loss of compressed air, thus reducing energy costs and $CO_2$ emissions. This is made possible by the integrated capacitive sensor, smart electronics for volume-controlled condensate drain system and a proven pilot-controlled solenoid valve with a special discharge diaphragm.

Within the framework of our decades of experience, we have developed and implemented numerous additional functions for special requirements for our customers in a wide variety of industries, which are based on the classic advantages of the BEKOMAT®. These have proven themselves in a wide range of applications - you too can benefit from our unique know-how.

**The Special Solutions in overview:**

**BEKOMAT® 03 / 06 LA / LALP / LP:** Condensate drain in CO or stainless steel with/without idle load valve especially for high-pressure, multi-stage and turbo compressors, also for low pressures.

**BEKOMAT® 03 / 06, CO or Stainless steel- ATEX:** Condensate drain also for explosive environments

**BEKOMAT® 08 / 09:** Condensate drain for large compressors in particular in refineries, petrochemicals, chemical industry and petroleum plants

**BEKOMAT® 03 / 06 VACU:** Condensate drain specialised for applications in vacuum systems

- **No loss of compressed air during draining**
  - Low operating costs
- **Outstanding reliability**
  - Durable and resistant to dirt
  - Largevalve diameters prevent the formation of emulsions
  - No delicate mechanical components
- **Easy to install and virtually maintenance-free**
  - Versatile connection options
- **Fully-automated operation and monitoring**
  - Connection to modern system monitoring
  - Automatic start of self-cleaning process based on dirt formation

# Our individual BEKOMAT® Solutions at a glance

**BEKOMAT® 03 / 06 LA / LALP / LP:**
With/without idle load valve especially for high pressure, multi-stage and turbo compressors, also for low pressures

Should the operating pressure of the compressor drop below 1.2 bar [g], the following must be observed (e.g. for multi-stage compressors in the idle phase), opens an additional valve attached to the container. The condensate can thus also drain off without pressure. If the operating pressure again exceeds 1.2 bar [g], the idle load valve closes and the BEKOMAT® operates in its standard function. The LP version has been specially developed for operating pressures that can drop to 0.4 bar [g]. High-pressure versions are available for operating pressures up to PN25 or PN63.

**BEKOMAT® 08 / 09:**
For applications with large compressors

The complete housing of these BEKOMAT® condensate drains is made of cast stainless steel and thus designed for use in aggressive atmospheres as well as for the discharge of condensates from special gas compression. They are mainly used in oil plants, refineries and the petrochemical industry. These are the largest electronic level-controlled condensate drains on the market, specifically designed and built to meet these requirements.

**BEKOMAT® 03 / 06 VACU:**
For applications with vacuum systems

The BEKOMAT® VACU condensate drains are specially designed to drain condensate and other media from negative pressure and vacuum systems with an operating pressure of 0.1 to 1.8 bar (abs). They are also suitable for process engineering drainage processes running under normal atmosphere. Robust, reliable steam trap, hard coated model or stainless steel, designed and built to meet your specific requirements.

## Also in ATEX-Variants!


## BEKOMAT® 03 / 06 CO or Stainless steel // ATEX:

**With EC type-examination certificate for use in explosive atmospheres**

These BEKOMAT® condensate drains are approved for use in potentially explosive atmospheres II 2G Ex ib IIB T4 Gb. The Physikalisch-Technische Bundesanstalt, Brunswick, confirms the applicability for potentially-explosive atmospheres in the type examination certificate BVS 03 ATEX E 214. Faults in the condensate drain are prevented by the integrated self-monitoring with NAMUR interface being displayed and forwarded. This requires an external power supply, a switching amplifier is recommended.

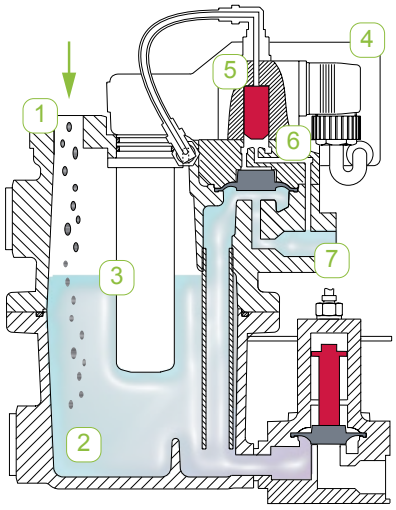
**Explosion-proof for all special drains, especially for multi-stage and turbo compressors:**

- with idle load valve - should the operating pressure of the compressor drop below 0.8 bar [g].
- for low pressure ranges - especially for operating pressures that can drop to 0.4 bar [g].
- for high pressure ranges - if more than 16 bar [g] is required, up to PN25 or up to PN63.
- Vacuum drain - for systems with an operating pressure from 0.1 to 1.8 bar(abs)

# Operating principle of BEKOMAT®

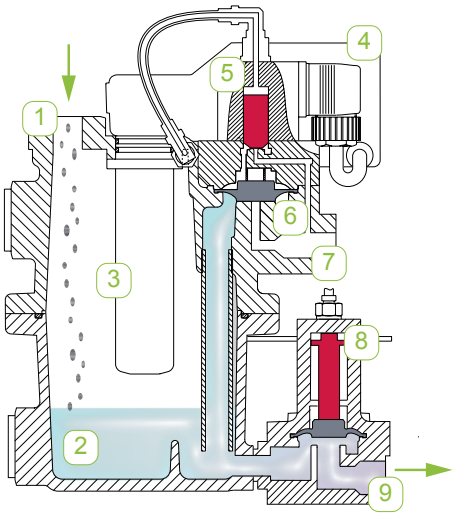
**BM03 / BM06 / Standard function**
Condensate discharge via solenoid valve

BEKOMAT® LA ≥ 1.2 bar [g] / LP & LALP ≥ 0.4 bar [g]




**BM03 / BM06 / LA / LALP Function**
Condensate discharge via the empty load valve

BEKOMAT® LA ≤ 1.2 bar [g] / LP & LALP ≤ 0.4 bar [g]




# Operating principle (BM03 and BM06 LA / LALP / VACU)

The condensate flows through the condensate inlet **(1)** and collects in the container **(2)**.

As soon as the container is full, the sensor **(3)** sends a signal to the electric control **(4)**. This actuates the solenoid valve **(5)**, relieves the diaphragm valve **(6)** and opens the condensate discharge **(7)** for condensate discharge. Under normal system pressure, the entire condensate volume then flows off.

The sensor measures the discharge rate, which is used to control the maximum valve opening time.
If the BEKOMAT® has been emptied, then the drain outlet pipe will be promptly sealed again before avoidable loss of compressed air can occur.

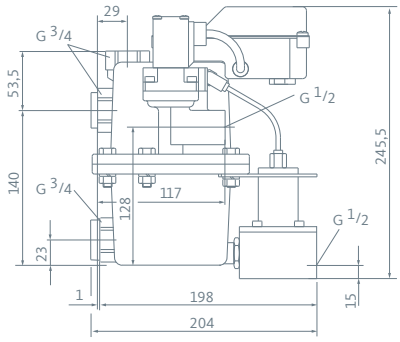
If the condensate drain is disturbed (e.g. blocked drain line or overloaded), the device automatically switches to alarm mode.

By cycling the valve, the automatic system automatically attempts to eliminate any faults.

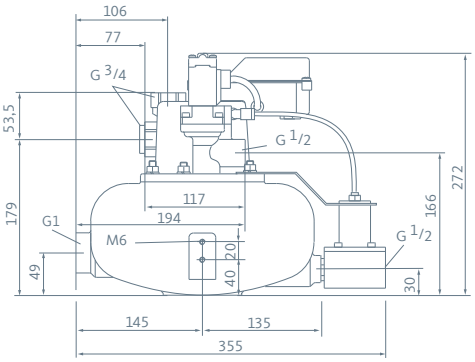
The BEKOMAT® LA and LALP are additionally equipped with an empty load valve. At an operating overpressure of ≤ 1.2 bar [g] (BEKOMAT® LA) or ≤ 0.4 bar [g] (BEKOMAT® LALP) respectively, the condensate discharge occurs via the empty load valve **(8)** and the lower condensate discharge **(9)**.

The BEKOMAT® VACU was equipped with a special pilot valve. As soon as the capacitive sensor **(3)** detects a high condensate level in the collecting container **(2)**, the condensate inlet line is closed pressure-tight with the pilot valve and draining is initiated. The pilot valve then shuts off the control-air or control-gas pipe, relieves the supply valve and re-establishes the connection of the BEKOMAT® VACU to the mains.

# Technical data BEKOMAT® 03 / 06: LA / LALP / LP




BEKOMAT® 03 CO LA




BEKOMAT® 06 CO LA

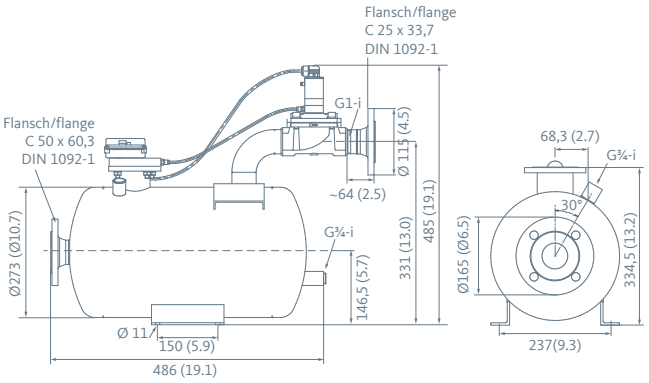
These dimensional drawings are examples. Drawings for other versions upon request.

| Designation | Operating pressure min. bar [g] | | Operating pressure max. bar [g] | Applications | | | Housing material | | | Connections | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Empty Load Valve | Magnetic Valve | | Oil-contaminated condensate | Oil-free, often aggressive condensate | Aggressive condensate from gas compressors | ATEX | Aluminium, hardcoated | Stainless steel | Inflow | Drain |
| 03 CO EX | -- | 0.8 | 16 | x | x | | x | x | | 3 x G¾ | 1 x G½ |
| 03 E EX | -- | 0.8 | 16 | x | x | x | x | | x | 3 x G¾ | 1 x G½ |
| 03 CO LA | 0...1.2 | 1.2 | 25 | x | x | | | x | | 3 x G¾ | 1 x G½ |
| 03 CO LA EX | 0...0.8 | 0.8 | 16 | x | x | | x | x | | 3 x G¾ | 1 x G½ |
| 03 CO LALP | 0...0.4 | 0.4 | 16 | x | x | | | x | | 3 x G¾ | 1 x G½ |
| 03 CO LALP EX | 0...0.4 | 0.4 | 16 | x | x | | x | x | | 3 x G¾ | 1 x G½ |
| 03 CO LP | -- | 0.4 | 16 | x | x | | | x | | 3 x G¾ | 1 x G½ |
| 03 CO LP EX | -- | 0.4 | 16 | x | x | | x | x | | 3 x G¾ | 1 x G½ |
| 03 E LP EX | -- | 0.4 | 16 | x | x | x | x | | x | 3 x G¾ | 1 x G½ |
| 03 E PN25 | -- | 1.2 | 25 | x | x | x | | | x | 3 x G¾ | 1 x G½ |
| 03 E PN63 | -- | 1.2 | 63 | x | x | x | | | x | 3 x G¾ | 1 x G½ |
| 03 E PN63 EX | -- | 0.8 | 63 | x | x | x | x | | x | 3 x G¾ | 1 x G½ |
| 06 CO EX | -- | 0.8 | 16 | x | x | | x | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 E EX | -- | 0.8 | 16 | x | x | x | x | | x | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 CO LA | 0...1.2 | 1.2 | 16 | x | x | | | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 CO LA EX | 0...0,8 | 0.8 | 16 | x | x | | x | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 CO LALP | 0...0.4 | 0.4 | 16 | x | x | | | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 CO LALP EX | 0...0.4 | 0.4 | 16 | x | x | | x | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 CO LP | -- | 0.4 | 16 | x | x | | | x | | 2 x G¾ 1 x G1 | 1 x G½ |
| 06 E PN25 | -- | 2 | | x | x | x | | x | | 2 x G¾ 1 x G1 | 1 x G½ |

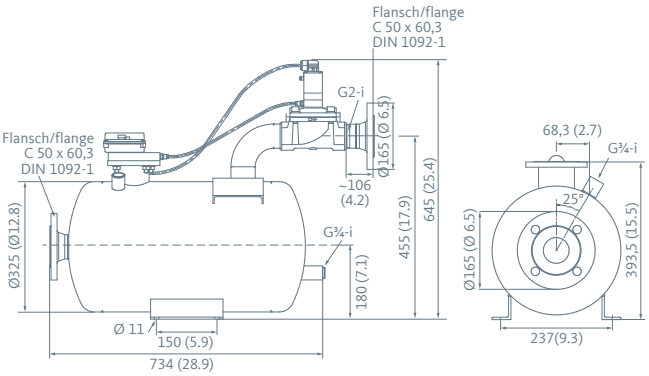
| Designation | Nominal capacity (l/h) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0 bar [g] | 0.4 bar [g] | 0.8 bar [g] | 1 bar [g] | 2 bar [g] | 4 bar [g] | >7 bar [g] |
| 03 CO / E EX | -- | -- | -- | -- | -- | -- | 50 |
| 03 CO LA | 105 | 17.5 | 17.5 | 17.5 | 22.4 | 42 | 49 |
| 03 CO LA EX | -- | -- | | 23 | 32 | 43 | 53 |
| 03 CO LALP | 105 | 17.5 | 20.3 | 21 | 25.2 | 27.3 | 27.3 |
| 03 CO LALP EX | -- | 14 | 18 | 22 | 31 | 43 | 51 |
| 03 CO LP | -- | 17.5 | 20.3 | 21 | 25.2 | 27.3 | 27.3 |
| 03 CO / E LP EX | -- | 14 | 18 | 22 | 31 | 44 | 52 |
| 03 E PN25/63 | -- | -- | -- | -- | -- | -- | 56 |
| 03 E PN63 EX | -- | -- | -- | -- | -- | -- | 50 |
| 06 CO/E EX | -- | -- | -- | -- | -- | -- | 252 |
| 06 CO LA | 105 | 60,5 | 81 | 81 | 103 | 222 | 251 |
| 06 CO LA EX | | | | 82 | 133 | 175 | 247 |
| 06 CO LALP | 105 | 60,5 | 108 | 111 | 125 | 127 | 129 |
| 06 CO LALP EX | -- | 38 | 50 | 56 | 86 | 125 | 167 |
| 06 CO LP | -- | 60,5 | 108 | 111 | 125 | 127 | 129 |
| 06 E PN25 | -- | -- | -- | -- | -- | -- | 228 |

| Designation | Peak capacity (l/h) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0 bar [g] | 0.4 bar [g] | 0.8 bar [g] | 1 bar [g] | 2 bar [g] | 4 bar [g] | >7 bar [g] |
| 03 CO / E EX | -- | -- | -- | -- | -- | -- | 530 |
| 03 CO LA | 105 | 250 | 250 | 250 | 320 | 600 | 700 |
| 03 CO LA EX | -- | -- | -- | 234 | 329 | 457 | 558 |
| 03 CO LALP | 105 | 250 | 290 | 300 | 360 | 390 | 390 |
| 03 CO LALP EX | -- | 142 | 187 | 234 | 328 | 454 | 540 |
| 03 CO LP | -- | 250 | 290 | 300 | 360 | 390 | 390 |
| 03 CO / E LP EX | -- | 144 | 187 | 230 | 329 | 461 | 544 |
| 03 E PN25/63 | -- | -- | -- | -- | -- | -- | 700 |
| 03 E PN63 EX | -- | -- | -- | -- | -- | -- | 530 |
| 06 CO/E EX | -- | -- | -- | -- | -- | -- | 1,588 |
| 06 CO LA | 105 | 410 | 550 | 550 | 700 | 1,500 | 1,700 |
| 06 CO LA EX | | | | 518 | 842 | 1,102 | 1,555 |
| 06 CO LALP | 105 | 410 | 730 | 750 | 850 | 860 | 870 |
| 06 CO LALP EX | -- | 239 | 313 | 354 | 540 | 788 | 1,058 |
| 06 CO LP | -- | 410 | 730 | 750 | 850 | 860 | 870 |
| 06 E PN25 | -- | -- | -- | -- | -- | -- | 1,700 |

# Technical data BEKOMAT® 08 / 09:




BEKOMAT® 08




BEKOMAT® 09

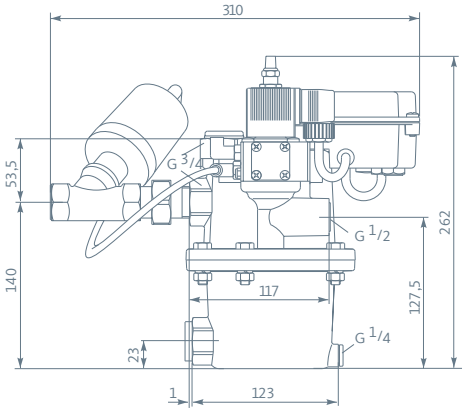
These dimensional drawings are examples. Drawings for other versions upon request.

| Designation | Operating pressure bar [g] | | Applications | | | Housing material |
|---|---|---|---|---|---|---|
| | min. | max. | Oil-contaminated condensate | Oil-free, often aggressive condensate | Aggressive condensate from gas compressors* | Stainless steel |
| 08 | 0.5 | 10 | x | x | x | x |
| 09 | 0.5 | 4 | x | x | x | x |

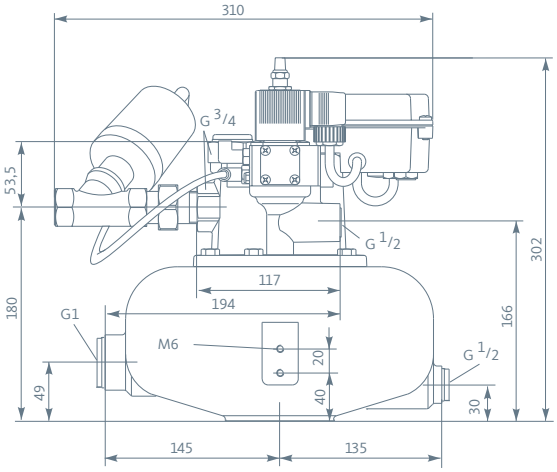
* after prior examination

| Designation | Connection | | Nominal capacity (l/h) | | | Peak capacity (l/h) | | |
|---|---|---|---|---|---|---|---|---|
| | Inflow | Drain | 2 bar [g] | 4 bar [g] | >7 bar [g] | 2 bar [g] | 4 bar [g] | >7 bar [g] |
| 08 | flange C50 x 60,3 DIN 1092-1 | 1 x G1 | 1,270 | 1,300 | 1,505 | 3,330 | 4,800 | 5,790 |
| 09 | flange C50 x 60,3 DIN 1092-1 | 1 x G2 | 3,380 | 3,425 | – | 8,880 | 12,600 | – |

# Technical data BEKOMAT® VACU




BEKOMAT® 03 EX VACU




BEKOMAT® 06 EX VACU

These dimensional drawings are examples. Drawings for other versions upon request.

| Designation | Operating pressure min. bar | Operating pressure max. bar | Applications | | | Housing material | | | Connections | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Oil-conta-minated condensate | Oil-free, often aggressive condensate | Aggressive conden-sate from gas com-pressors | ATEX | Aluminium, hardcoated | Stainless steel | Inflow | Drain |
| 03 CO VACU | 0.1 | 1.8 | x | x | | | x | | 1 x G¾ | 1 x G½ |
| 03 E VACU | 0.1 | 1.8 | x | x | x | | | x | 1 x G¾ | 1 x G½ |
| 03 CO EX VACU | 0.1 | 1.8 | x | x | | x | x | | 1 x G¾ | 1 x G½ |
| 03 E EX VACU | 0.1 | 1.8 | x | x | x | x | | x | 1 x G¾ | 1 x G½ |
| 06 CO VACU | 0.1 | 1.8 | x | x | | | x | | 1 x G¾ (2 x G¾) | 1 x G½ |
| 06 E VACU | 0.1 | 1.8 | x | x | x | | | x | 1 x G¾ (2 x G¾) | 1 x G½ |
| 06 CO EX VACU | 0.1 | 1.8 | x | x | | x | x | | 1 x G¾ (2 x G¾) | 1 x G½ |
| 06 E EX VACU | 0.1 | 1.8 | x | x | x | x | | x | 1 x G¾ (2 x G¾) | 1 x G½ |

| Designation | Nominal capacity (l/h) | | | Peak capacity (l/h) | | |
|---|---|---|---|---|---|---|
| | 4 bar [g] | 6 bar [g] | 8 bar [g] | 4 bar [g] | 6 bar [g] | 8 bar [g] |
| 03 CO VACU | 38 | 42 | 43 | 45 | 45 | 45 |
| 03 E VACU | 38 | 42 | 43 | 45 | 45 | 45 |
| 03 CO EX VACU | 17 | 32 | 37 | 20 | 40 | 45 |
| 03 E EX VACU | 17 | 32 | 37 | 20 | 40 | 45 |
| 06 CO VACU | 171 | 194 | 228 | 200 | 200 | 200 |
| 06 E VACU | 171 | 194 | 228 | 200 | 200 | 200 |
| 06 CO EX VACU | 68 | 137 | 183 | 80 | 150 | 200 |
| 06 E EX VACU | 68 | 137 | 183 | 80 | 150 | 200 |