



## 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<sub>2</sub> 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:

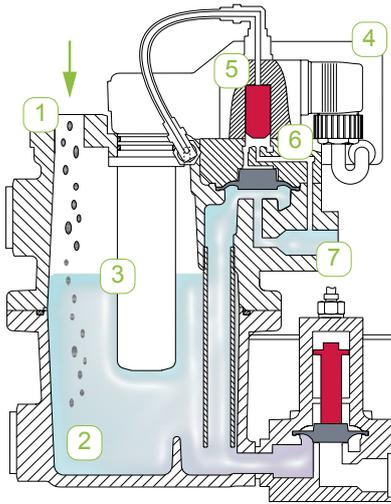
- › with idle load valve - should the operating pressure of the compressor drop below 0.8 bar [g].
- › for low pressure ranges - especially for operating pressures that can drop to 0.4 bar [g].
- › for high pressure ranges - if more than 16 bar [g] is required, up to PN25 or up to PN63.
- › Vacuum drain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

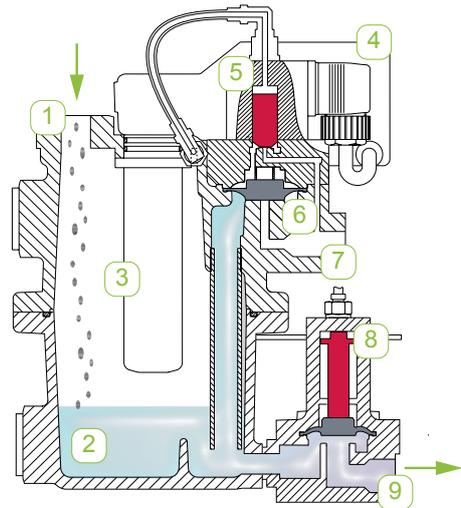
BEKOMAT® LA  $\geq 1.2$  bar [g] / LP & LALP  $\geq 0.4$  bar [g]



## BM03 / BM06 / LA / LALP Function

Condensate discharge via the empty load valve

BEKOMAT® LA  $\leq 1.2$  bar [g] / LP & LALP  $\leq 0.4$  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.

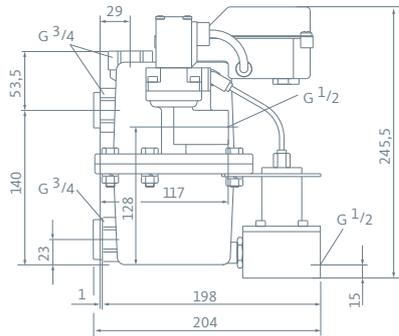
If the condensate drain is disturbed (e.g. blocked drain line or overloaded), the device automatically switches to alarm mode.

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

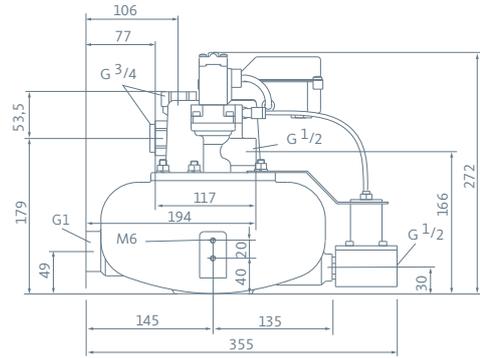
The BEKOMAT® LA and LALP are additionally equipped with an empty load valve. At an operating overpressure of  $\leq 1.2$  bar [g] (BEKOMAT® LA) or  $\leq 0.4$  bar [g] (BEKOMAT® LALP) respectively, the condensate discharge occurs via the empty load valve (8) and the lower condensate discharge (9).

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

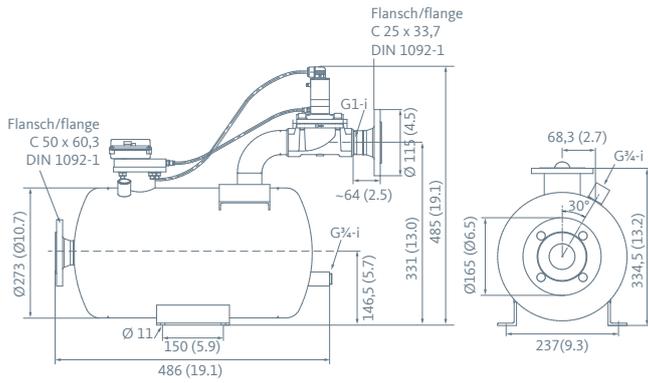
These dimensional drawings are examples. Drawings for other versions upon request.

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

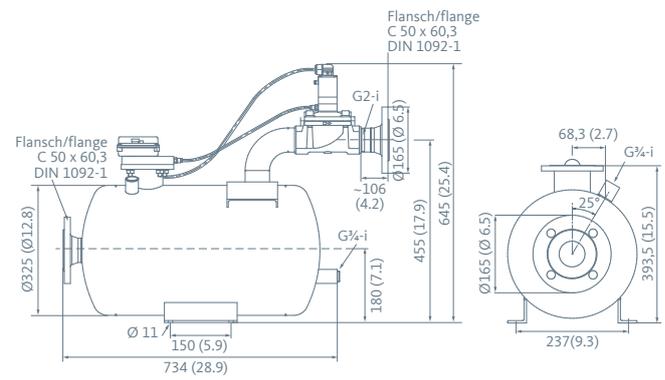
Designation	Nominal capacity (l/h)						
	0 bar [g]	0.4 bar [g]	0.8 bar [g]	1 bar [g]	2 bar [g]	4 bar [g]	>7 bar [g]
03 CO / E EX	--	--	--	--	--	--	50
03 CO LA	105	17.5	17.5	17.5	22.4	42	49
03 CO LA EX	--	--		23	32	43	53
03 CO LALP	105	17.5	20.3	21	25.2	27.3	27.3
03 CO LALP EX	--	14	18	22	31	43	51
03 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

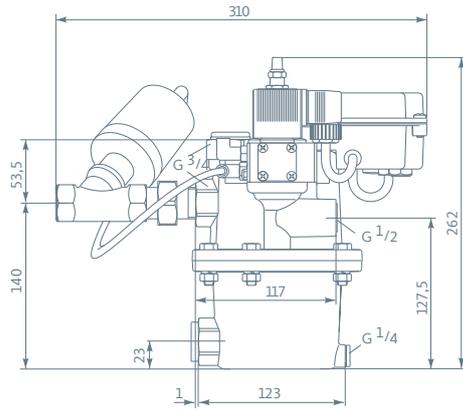
These dimensional drawings are examples. Drawings for other versions upon request.

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

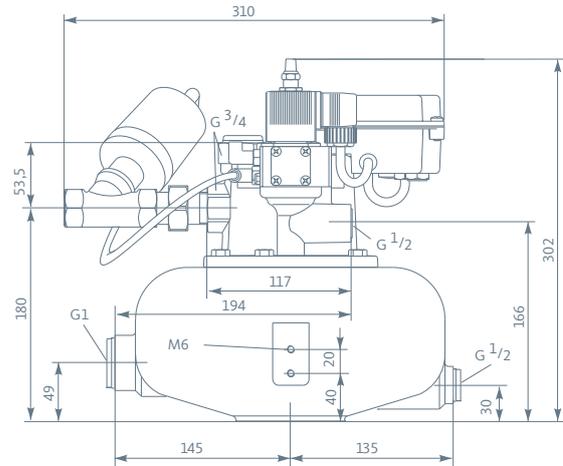
\* after prior examination

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



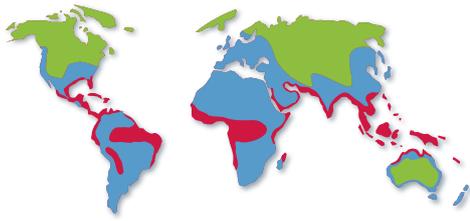
BEKOMAT® 06 EX VACU

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-contaminated condensate	Oil-free, often aggressive condensate	Aggressive condensate from gas compressors	ATEX	Aluminium, hardcoated	Stainless steel	Inflow	Drain
03 CO VACU	0.1	1.8	x	x			x		1 x G $\frac{3}{4}$	1 x G $\frac{1}{2}$
03 E VACU	0.1	1.8	x	x	x			x	1 x G $\frac{3}{4}$	1 x G $\frac{1}{2}$
03 CO EX VACU	0.1	1.8	x	x		x	x		1 x G $\frac{3}{4}$	1 x G $\frac{1}{2}$
03 E EX VACU	0.1	1.8	x	x	x	x		x	1 x G $\frac{3}{4}$	1 x G $\frac{1}{2}$
06 CO VACU	0.1	1.8	x	x			x		1 x G $\frac{3}{4}$ (2 x G $\frac{3}{4}$ )	1 x G $\frac{1}{2}$
06 E VACU	0.1	1.8	x	x	x			x	1 x G $\frac{3}{4}$ (2 x G $\frac{3}{4}$ )	1 x G $\frac{1}{2}$
06 CO EX VACU	0.1	1.8	x	x		x	x		1 x G $\frac{3}{4}$ (2 x G $\frac{3}{4}$ )	1 x G $\frac{1}{2}$
06 E EX VACU	0.1	1.8	x	x	x	x		x	1 x G $\frac{3}{4}$ (2 x G $\frac{3}{4}$ )	1 x G $\frac{1}{2}$

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

# Climate – a key factor



Depending on the climate and temperature, differing amounts of condensate can formed. For the BEKOMAT® models, we therefore quote the performance values on the basis of three climate zones:

- e.g. Northern Europe, Canada, Northern USA, Central Asia
  - ▲ e.g. Central and Southern Europe, Central America
  - e.g. South-East Asian coastal regions, Oceania, Amazon and Congo regions
- Temperature range: 1 to + 60 °C

## Matching maintenance kit

Like all high-performance devices, the BEKOMAT® needs to be serviced from time to time. For this, we offer a matching set of wearing parts. Of course, you can also contact our service technicians. In addition, we can carry out an evaluation of your entire compressed air treatment system and, if necessary, help you to optimise it.



For BEKOMAT®	03   06 LA, LP, PN 16...25	03   06 PN 25, PN 63	08	09
Set of wearing parts	2800670	2800702	2000450	4005382

For BEKOMAT®	03 CO   06 CO Hardcoated and Stainless steel vacuum	03 E   06 EX (stainless steel) Hardcoated	03   06 Ex LA, LP, LALP	03   06 Ex VACU CO and stainless steel	03   06 Ex PN 25, PN 63 stainless steel
Set of wearing parts	4003681	2800749	2800749	4000340	4004566

## Do you have questions about the best way of processing compressed air?

We have the answers! We offer efficient solutions for any type of processing chain. Please contact us with your queries. We would be delighted to tell you more about, and present, our

condensate processing, filtration, drying, measuring and process technology as well as our comprehensive services.

Visit us at



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Subject to technical changes without prior notice. Errors and omissions excepted.