

VACUUBRAND®

**VACUUM FOR
PROCESS INDUSTRY.**

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**VACUUM FOR
PROCESS INDUSTRY.**

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VACUUBRAND. THE COMPANY.

Our products are characterized by more than 60 years of experience in vacuum technology. Today VACUUBRAND produces a comprehensive range of vacuum pumps, instrumentation, gauges and controllers for rough and fine vacuum.

In 1961 we began to produce products under the trademark VACUUBRAND. Since then, Wertheim in Baden-Württemberg remains the only production site for our wide variety of products and stands for the high level of quality associated with „Made in Germany“.

VACUUBRAND has a high level of vertical integration and remarkable technical competence.

The latest CNC turning and machining centers, PC-controlled measuring and testing machines, continuous optimi-

sation of in-house workflow all contribute to deliver constant process improvement.

We attach great importance to the training and development of our employees. The extensive in-house production process in different areas allows the team to share a multidisciplinary exchange of knowledge. This creates high motivation and together it makes us more efficient and productive.

VACUUBRAND – Competence and experience from a family owned business. ■





QUALITY. PROVEN TECHNOLOGY.

Meeting the highest quality requirements, fulfilling maximum customer satisfaction through sustainable innovation, reliability and individuality are our guiding principles.

With proven technology and numerous innovations, VACUUBRAND is known as the leading manufacturer of vacuum technology for chemical, pharmaceutical and medical research laboratories. Attention to customer needs and the utmost care in production characterize the competence of our company.

Our high-quality products are extremely economical with an above-average service life. The vacuum performance of VACUUBRAND diaphragm pumps remains constant over long operating periods and

enables our customers to achieve reliable process control.

All new developments are subjected to extensive endurance tests before they are released for series production. Modern measuring and testing machines are used in the production processes. Each vacuum pump undergoes a precisely specified test routine before delivery. Thanks to an automated final test bench, our customers can rely on the specification and device safety.

VACUUBRAND combines the standards for quality, customer orientation, employee satisfac-

tion and environmental protection in an integrated management system in accordance with ISO 9001 and ISO 14001.

Proven technology – also for process requirements.

A WORLDWIDE BRAND. FROM WERTHEIM.

The VACUUBRAND brand is at home all over the world. Sales offices in Europe and subsidiaries in the USA, China and India underline our efforts to provide our customers with the best possible local support.

As a tradition-conscious family business, VACUUBRAND develops and produces products in Germany in close dialog with the user. For decades, we have been a pioneer for innovations in vacuum technology in laboratories, kilo labs, science and production. The VARIO® control system or the chemical-resistant vacuum pumps are just two examples of inventions “Made in Wertheim”. Many of our inventions help to conserve resources and make daily work easier for users worldwide.

VACUUBRAND is represented at numerous international events year after year. Personal support and competent advice are our claim. We remain true to this maxim.

A reliable partnership with our customers.





OIL-FREE VACUUM. GREEN TECHNOLOGY.

Energy-efficient products, careful use of valuable resources in production and responsibility for the future. These features characterize our philosophy of conscious environmental protection and environmentally friendly vacuum technology.

In addition to the company's internal environmental management, our products also aim to protect the environment. Our products are "green"! They are designed according to modern principles in order to use as few resources as possible in production and their product life cycle. Positive effects on the CO₂ balance in terms of climate protection are also achieved.

Oil-free diaphragm pumps from VACUUBRAND have now replaced the classic, oil-sealed rotary vane pumps, water jet pumps and water ring pumps

in many areas of application in chemical laboratories and also in kilo labs. Saving operating resources such as oil and water is an aspect that is becoming increasingly important.

VARIO® diaphragm pumps control the vacuum directly and precisely, the ideal prerequisite for efficient solvent recovery. The permanent magnet motors require significantly less energy. We mark products with these features with our GREEN VAC® label. It stands for environmentally friendly vacuum generation without oil or water consump-

tion with extended maintenance intervals and optimum energy savings.

Technology, economy and environmental protection are equally important to us.

GREEN VAC® - that is environmentally friendly vacuum generation.

CHEMICALLY RESISTANT
100 % OIL-FREE
MODULAR
PRECISE CONTROL
ENERGY SAVING
NO DOWNTIME

VAC 24 SEVEN

THE CONCEPT.

From lab to process, chemical and pharmaceutical industries, uncompromised chemical resistance, free from oil and water, demand oriented pump configuration, integrated vacuum control, uninterrupted operation, clean and green.

Chemistry diaphragm vacuum pumps, proven in the laboratory for decades, are now in the series VAC 24seven also available on a pilot plant scale. Individual pumps that have proven their reliability are combined on a modular basis to form powerful process vacuum pumps.

For applications with aggressive and condensable gases and vapors, a clean vacuum, free of operating fluids and possible sources of contamination, is now available. Suction-side separators keep the pumps clean and dry and are accessible from the

outside at all times. The VARIO®-Control system provides vacuum as required. The central control unit determines the required power and regulates the speed of the individual pumps for an optimum process flow. This minimizes energy consumption and extends maintenance intervals.

The ability to service individual pumps during operation ensures 24-hour availability, seven days a week - VAC 24seven.





CHEMICALLY RESISTANT
100 % OIL-FREE
MODULAR
PRECISE CONTROL
ENERGY SAVING
NO DOWNTIME

VAC 24 SEVEN

CHEMICAL COMPATIBILITY.

Universal chemical resistance of VACUUBRAND chemistry diaphragm pumps, modules and connecting parts, consistent use of fluoropolymers and perfluoroelastomers, delivers extremely long service life thanks to the uniquely stable core design and dry, 100% oil-free technology.

Diaphragm pumps operate oil-free, consume no water and therefore produce no waste water or waste oil. With this pump technology, the pump chamber is hermetically separated from the drive by a diaphragm. With its chemistry diaphragm pumps, VACUUBRAND offers devices that work reliably for years and have proven themselves in everyday laboratory use, even in harsh chemical applications.

The most highly stressed components - the head cover and diaphragm clamping disk - are

produced in a complex, multi-stage manufacturing process with a stability core. The fluoropolymers and perfluoroelastomers used are characterized by excellent universal chemical resistance and the extremely low surface energy also ensures low material adhesion. This opens up completely new possibilities for process technology. A specific design of the vacuum pump for the respective application is not necessary.

VACUUBRAND uses the above-mentioned high-quality materials for all wetted parts in

all chemistry diaphragm pumps - another feature for reliability. The pump modules and the connecting elements between the modules in the VAC 24seven are also designed for uncompromising resistance to chemicals.

Chemical diaphragm pumps from VACUUBRAND - the quality benchmark in the chemical industry.

CHEMICALLY RESISTANT
100 % OIL-FREE
MODULAR
PRECISE CONTROL
ENERGY SAVING
NO DOWNTIME

VAC **24** SEVEN

MODULARITY.

Application-specific pump modules (70 mbar and 5 mbar) with combined central control unit and integrated vacuum controller.

The VAC 24seven product line is a modular system. Depending on requirements, up to three pump modules can be combined with one control module. This combination brings the outstanding properties of VACUUBRAND chemistry diaphragm pumps from the laboratory to process technology. At the heart of each pump module are two speed-controlled individual pumps.

The pump modules are available in two different versions, either with 5 mbar ultimate vacuum and 30 m³/h pumping speed or

with 70 mbar and 40 m³/h.

The control module takes over the vacuum control and the demand-based speed control of up to three pump modules. Proven VACUUBRAND technology is also used here with the VACUU-SELECT vacuum controller.

VAC 24seven - reliable technology economically combined.

CONTROL MODULE

for controlling the pump modules



1 PUMP MODULE

5 mbar with 30 m³/h or
70 mbar with 40 m³/h

2 PUMP MODULES

5 mbar with 60 m³/h or
70 mbar with 80 m³/h

3 PUMP MODULES

5 mbar with 90 m³/h or
70 mbar with 120 m³/h





CHEMICALLY RESISTANT
100 % OIL-FREE
MODULAR
PRECISE CONTROL
ENERGY SAVING
NO DOWNTIME

VAC **24** SEVEN

ENERGY SAVING, PRECISE CONTROL.

On demand VARIO® control incorporating highly efficient permanent magnet motors, more than 90 % energy saving, chemically resistant precise vacuum sensors, digital interfaces.

The vacuum control of the VAC 24seven product line is based on the VACUU·SELECT controller.

In addition to the easy-to-read touch display with large, graphics and intuitive user guidance, the controller offers predefined processes and an application editor for the individual compilation of applications and parameters. The sophisticated functionality saves time when optimizing processes. The VARIO® controller adjusts the speed of the highly efficient GREEN VAC® permanent mag-

net motors continuously from 0-100 % as required. Compared to conventional control systems with a constant pump speed, energy savings of more than 90 % can be achieved, depending on the type of process.

The VACUU·SELECT vacuum controller can be integrated into process control systems via various interfaces such as RS-232 via USB and Modbus TCP via Ethernet. Direct control of peripheral valves is also possible, e.g. for ventilation. The interfaces also enable remote control for monitoring and con-

trolling the pump modules.

The chemically resistant ceramic diaphragm sensor achieves outstanding measurement and control accuracy for industrial applications.

VARIO® and VACUU·SELECT - vacuum control at its best.

CHEMICALLY RESISTANT
100 % OIL-FREE
MODULAR
PRECISE CONTROL
ENERGY SAVINGS
NO DOWNTIME

VAC **24** SEVEN

EASY SERVICE. NO DOWNTIME.

100 % availability and continuous operation, easy in-operation maintenance procedure, no need for a backup pump, service intervals of up to two years, demand-driven service offers.

The unique design of the head cover and diaphragm clamping disk with stability core ensures outstanding chemical resistance. It makes a decisive contribution to maintaining the specifications over many years. Depending on the application, an average service interval of 15,000 operating hours can be assumed.

The pumps only run at maximum speed temporarily. They can therefore be decoupled individually for servicing purposes without affecting the vacuum process. The speed of the other pumps is automatically adjusted

by the controller. In this way, VAC 24seven ensures maximum system availability even without a reserve pump.

The compact single pump can be removed and serviced by one person. Of course, VAC-UUBRAND also offers on-site service as required.

The VAC 24seven service concept - for maximum uptime.



CONTROL MODULE.

- ▶

Integrated VACUU-SELECT controller with intuitive full text menu guidance for precise, hysteresis-free control of processes
- ▶

Performance-based, centralized and synchronous activation of the pump modules from 0–100 % for maximum energy efficiency
- ▶

Digital interfaces, RS 232 via USB and Modbus TCP via ethernet
- ▶

Clear signal display for the power requirement and the operating status to facilitate easy monitoring

VAC 24seven control module



Technical information

| | |
|-----------------------------|---|
| Vacuum Controller | VACUU-SELECT integrated |
| Gauge head | ext., cable 2 m (max. 30 m), measurement connection small flange KF DN 16 |
| Measurement principle | ceramic diaphragm (alumina), capacitive, gas indep., absolute pressure |
| Upper measuring limit | 1080 mbar/810 torr |
| Lower measuring limit | 0.1 mbar/0.1 torr |
| Degree of protection | IP 42 |
| Mains voltage and frequency | 400 V/50-60 Hz, 16 A (EU, IN, CN) 208-240 V/50-60 Hz, 30 A (US) |
| Interfaces | Ethernet (RJ45) / USB (Typ A) / optional 0-10 V Modbus TCP and RS-232 are supported (Sub-D-USB adapter required) |
| Dimensions (L x W x H) | 385 x 775 x 449 mm |
| Weight | 17 kg |

Items supplied

VAC 24seven control module prepared for the setup with up to 3 pump modules, including manual.

PUMP MODULE 70 MBAR.

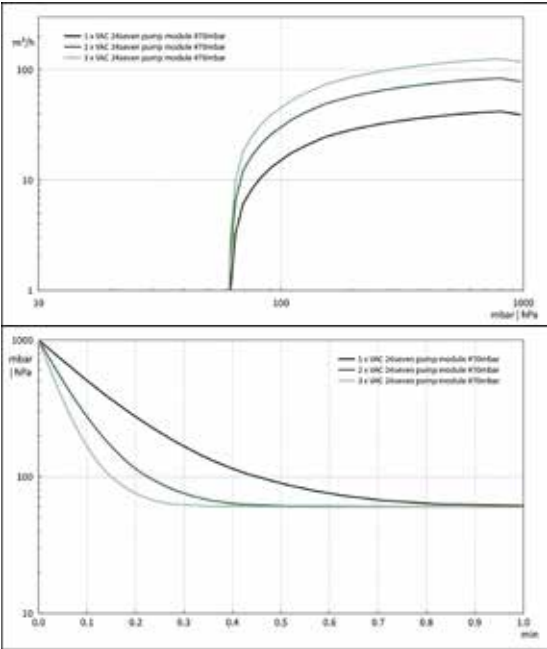
- Pump head and clamping disks with sturdy metal core and thick-walled fluoroplastic over-molding for unmatched service life and chemical resistance
- 100 % oil-free vacuum thanks to hermetic separation of pump chamber and drive to prevent any contamination
- Minimal energy consumption thanks to VACUUBRAND VARIO® technology and modern permanent magnet motors - GREEN VAC®
- ATEX equipment category 3 in the internal, wetted area, can be used for infrequent or short-term pumping of explosive mixtures

VAC 24seven pump module 70 mbar



Technical information
VAC 24seven pump module #70mbar

| | |
|---------------------------------------|---|
| Ultimate vacuum (abs.) | 70 mbar |
| Ultim. vac. (abs.) with gas ballast | 100 mbar |
| Max. pumping speed | 40 m³/h |
| Max. back pressure (abs.) | 1.1 bar |
| Ambient temperature range (operation) | 10-45 °C |
| ATEX conformity | II 3/- G Ex h IIC T3 Gc X Int. Atm. only |
| Degree of protection | IP 42 |
| Rated motor power | 2.0 kW |
| Inlet connection | small flange KF DN 40 |
| Outlet connection | small flange KF DN 40 |
| Dimensions (L x W x H) | 792 x 896 x 511 mm |
| Weight | 110 kg |



Items supplied

VAC 24seven pump module ready to connect, including manual. Operation only with VAC 24seven control module.

PUMP MODULE 5 MBAR.

- Pump head and clamping disks with sturdy metal core and thick-walled fluoroplastic over-molding for unmatched service life and chemical resistance

► 100 % oil-free vacuum thanks to hermetic separation of pump chamber and drive to prevent any contamination
- Minimal energy consumption thanks to VACUUBRAND VARIO® technology and modern permanent magnet motors - GREEN VAC®

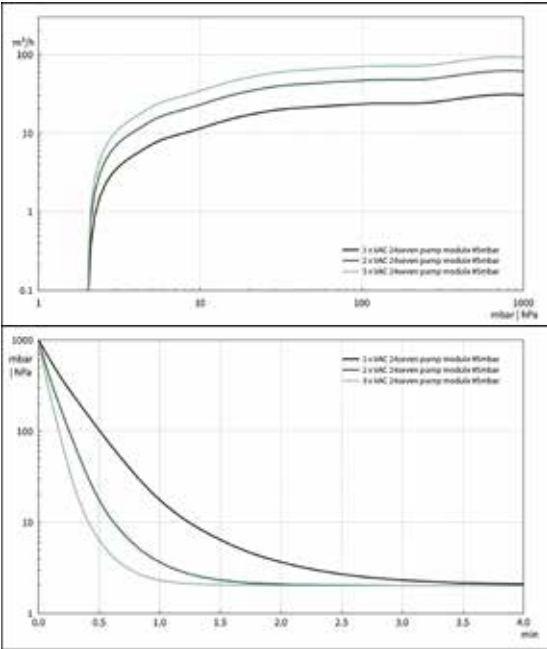
► ATEX equipment category 3 in the internal, wetted area, can be used for infrequent or short-term pumping of explosive mixtures

VAC 24seven pump module 5 mbar



Technical information
VAC 24seven pump module #5mbar

| | |
|---------------------------------------|---|
| Ultimate vacuum (abs.) | 5 mbar |
| Ultim. vac. (abs.) with gas ballast | 7 mbar |
| Max. pumping speed | 30 m³/h |
| Max. back pressure (abs.) | 1.1 bar |
| Ambient temperature range (operation) | 10-45 °C |
| ATEX conformity | II 3/- G Ex h IIC T3 Gc X Int. Atm. only |
| Degree of protection | IP 42 |
| Rated motor power | 2.0 kW |
| Inlet connection | small flange DN 40 |
| Outlet connection | small flange DN 40 |
| Dimensions (L x W x H) | 792 x 896 x 511 mm |
| Weight | 110 kg |



Items supplied

VAC 24seven pump module ready to connect, including manual. Operation only with VAC 24seven control module.

ACCESSORIES.

| | | | |
|---|----------|--|----------|
| INTERCONNECTION SET To connect 2 pump modules at vacuum inlet and outlet | 20745011 | SET EYE SCREWS Thread M 10, to transport the pumping unit | 20649917 |
| SET ADJUSTABLE FEET For installation and alignment of the pump module on the ground | 20649913 | TOOL KIT Diaphragm wrench and vertical pump holder | 20649918 |
| CLEANING SET For flushing the pumping unit | 20649914 | VACUU·SELECT INTERFACES Adapter cable USB to RS 232, 1 m | 20637838 |
| TEST KIT CVC 3000 with connection parts to test individual pumps in case of service | 20649915 | ADDITIONAL ACCESSORIES Tubings and components for individual setup on demand | |
| CATCH POT FOR CONDENSATE 2 Liter glass container to collect condensate from pump outlet | 20745016 | | |

SERVICES.

| | |
|---|---|
| FIRST INSTALLATION Connecting the control module with the pump modules, includes function test | TRAINING Demonstration of operation and programming of the system and further explanations concerning the unit |
| MAINTENANCE SET Diaphragms, valves, filter pad, blind flange and closing plug to maintain one pump module | SERVICE ARRANGEMENT Includes e.g. replacement of wear parts, functional testing and calibration of the controller |
| DAKKS Calibration of the vacuum sensor | VALIDATION SERVICE IQ Installation qualification, OQ Operational qualification |
| FURTHER SERVICES On demand | |

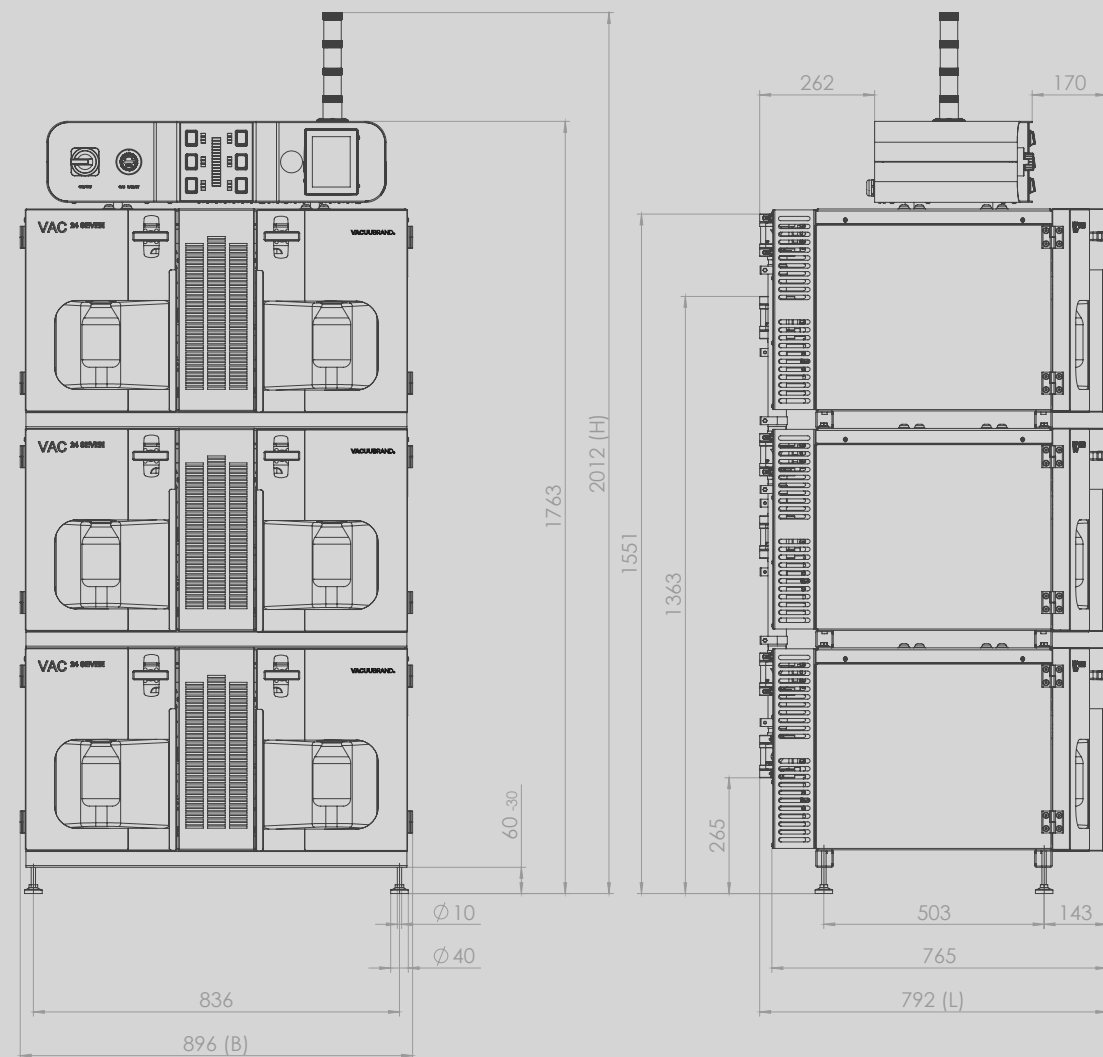
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TECHNICAL INFORMATION.



| | | | |
|---|---|---|--|
| VAC 24seven controle module | | VAC 24seven pump module #5mbar | |
| Vacuum Controller | VACUU-SELECT integrated | Ultimate vacuum (abs.) | 5 mbar |
| Gauge head | Small flange KF DN 16 | Ultimate vacuum (abs.) with gas ballast | 7 mbar |
| Measurement principle | Ceramic diaphragm (alumina), capacitive, gas indep., absolute pressure | Max. pumping speed (1/2/3 pump modules) | 30/60/90 m³/h |
| Upper measuring limit | 1080 mbar/810 torr | VAC 24seven | |
| Lower measuring limit | 0.1 mbar/0.1 torr | ATEX conformity | II 3/- G Ex h IIC T3 Gc X Int. Atm. only |
| Mains voltage and frequency | 400 V/50-60 Hz, 16 A (EU, IN, CN) 208-240 V/50-60 Hz, 30 A (US) | Inlet connection | Small flange KF DN 40 |
| Interfaces | Ethernet (RJ45) / USB (Typ A) / optional 0-10 V Modbus TCP and RS-232 are supported (Sub-D-USB adapter required) | Outlet connection | Small flange KF DN 40 |
| VAC 24seven pump module #70mbar | | Gas ballast connection | ID/OD 4/6 mm |
| Ultimate vacuum (abs.) | 70 mbar | Degree of protection | IP 42 |
| Ultimate vacuum (abs.) with gas ballast | 100 mbar | Rated motor power/pump module | 2.0 kW |
| Max. pumping speed (1/2/3 pump modules) | 40/80/120 m³/h | Ambient temperature range (operation) | 10-45 °C |
| | | Ambient humidity range (operation) | 30-85 % |
| | | Dimensions (L x W x H) | see drawing |
| | | Weight/pump module | 110 kg |
| | | Weight/control module | 17 kg |
| | | Weight (3 pump modules) | 346 kg |



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