



**VACUUM FOR  
PROCESS INDUSTRY.**

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Process Vacuum Solutions

**VACUUM FOR  
PROCESS INDUSTRY.**

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## VACUUBRAND. THE COMPANY.

*Our products are characterized by more than 50 years of experience in vacuum technology. With over 200 employees worldwide, VACUUBRAND produces a comprehensive range of vacuum pumps, instrumentation, gauges and controllers for rough and fine vacuum.*

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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 centres, PC-controlled measuring and testing machines, continuous optimisa-

tion 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. ■







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## QUALITY. PROVEN TECHNOLOGY.

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

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Taking good care of our customer needs and securing a sustainable future for them through innovation, has always been at the bedrock of VACUUBRAND's core competence throughout our company's long history.

As with all new pump developments, they are subject to extensive endurance tests before finally being approved for series production. Each vacuum pump which leaves our production goes through a rigorous and precise final check routine prior to delivery to our customers. With our modern production

methods and innovative technologies, we ensure the highest quality standards to deliver world-class products.

Performance specification and quality standards are ensured via fully automated measurement and testing within the production processes and again upon final test and inspection. We ensure that our products are not only technically superior in terms of quality, but that this also translates into real economical benefits to our customers through above-average life expectancy of our pumps. Stable vacuum per-

formance, over long periods of operation, even after servicing and replacement of worn parts, ensures that the reliable process control demands of our customers are consistently met.

We maintain an integrated management system in accordance with ISO 9001 and an in-house environmental management program, which in turn sets the benchmark in all areas of quality, customer, employee and environmental aspects.

Proven technology – now also for process requirements. ■

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## A WORLDWIDE BRAND. FROM WERTHEIM.

*The brand VACUUBRAND is known throughout the world. Sales offices in Europe, the US, China and India underpin our drive to provide the best possible support to our local customers.*

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As a traditional family owned business, VACUUBRAND seeks to develop and manufacture innovative products in Germany.

For decades we have pioneered new technologies for vacuum applications in the lab, kilo lab, science and production. VARIO® control and chemically resistant diaphragm pumps are just two such examples of developments "Made in Wertheim".

Many of our inventions contribute to help conserve resources and improve users' everyday worklife.

For years VACUUBRAND introduces its products at many international trade shows and events. Personal support and competent advice help users at their daily practical work.

A reliable partnership with our customers.









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## OIL-FREE VACUUM. GREEN TECHNOLOGY.

*Environmentally conscious production and efficient products, careful use of precious resources and responsibility for the future is the philosophy which characterizes our environmentally friendly vacuum technology.*

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In addition to our in-house environmental management program, our aim is to develop products which meet high environmental standards. In simple terms, our products are „green“! Our objective throughout the design stages through to production and finally the product lifecycle is to as far as possible consume fewer resources. This also contributes to a reduced carbon footprint in terms of climate protection.

For many applications both in the chemistry laboratory and also in kilolabs, VACUUBRAND

has now replaced the likes of classic oil-sealed rotary vane pumps, water-jet pumps and liquid ring pumps, with modern oil-free chemistry diaphragm pumps. The conservation of resources like oil and water has become an increasingly important consideration in this change process.

VARIO® diaphragm pumps regulate the vacuum directly and precisely, creating the ideal condition for efficient solvent recovery. Also our new permanent magnet motors consume considerably less energy.

Products with these features are characterized by our new GREEN VAC® label, highlighting their environmentally friendly vacuum generation without oil or water consumption, long service life and the maximum potential energy savings.

Technology, the economy and environmental protection are for us all equally important.

GREEN VAC® – environmentally friendly vacuum generation. ■

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

VAC **24** SEVEN

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## 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.*

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In addition to our proven chemistry diaphragm vacuum pumps we have added a new VAC 24seven series, which is now available for pilot and industrial scale applications. The proven reliability of our individual pumps has been combined to produce a powerful modular process vacuum system.

For applications with involving aggressive and condensable gases and vapours, it provides a clean, oil- and contamination-free vacuum source. Inlet catch pots keep the pumps clean and dry. These are front mounted for easy access.

The VACUUBRAND VARIO® regulation provides vacuum "on demand" as required. The central control unit determines the power required and controls the speed of the individual pumps accordingly during the entire process. This maximizes the energy savings and extends the maintenance intervals.

The unique ability to service individual pumps during operation leads to a plant availability of 24 hours, 7 days per week - VAC 24seven.

■





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

VAC **24** SEVEN

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## CHEMICAL COMPATIBILITY.

*Universal resistance from VACUUBRAND chemistry diaphragm pumps, consistent operation from use of fluoropolymers and perfluoroelastomers, extremely long service life through globally unique stability core design, dry and 100 % oil-free technology*

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Diaphragm pumps are oil-free and therefore do not consume water and oil, nor do they generate waste oil either. With diaphragm technology, the pump chamber is completely hermetically sealed from the drive mechanism. The technology behind the chemistry diaphragm pumps from VACUUBRAND provide optimal performance and unrivalled years of reliability even for use in harsh chemical applications.

Even the most highly stressed components, the head cover and diaphragm clamping disc, have a

unique stability core technology which is produced through an elaborate multi-stage production process. The fluoropolymers and perfluoroelastomers materials ensure not only an outstanding chemical resistance, but also provide extremely low surface energy resulting in minimal surface adherence.

VACUUBRAND only uses these high-quality materials for all its chemistry diaphragm pumps.

So as a result, completely new possibilities are now arising for process engineering. A process-

specific design of the vacuum pump for the particular application is not necessary.

VACUUBRAND chemistry diaphragm pumps – the quality benchmark in chemistry.

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

VAC **24** SEVEN

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## MODULARITY.

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

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The VAC 24seven product line is a modular system. Depending on requirements, up to three pump modules can be simply and economically combined with a single control module. This new combination option brings the outstanding properties of VACUUBRAND chemistry diaphragm pumps from the laboratory into the process environment.

At the heart of every pump modul are two individual variable speed pumps. The pump modules are available in two different, speed controlled

versions, with 5 mbar vacuum and 25 m<sup>3</sup>/h pumping speed or 70 mbar and 40 m<sup>3</sup>/h.

With VACUUBRAND's proven CVC 3000 vacuum control technology, the control module can take care of the vacuum control and the demand-oriented speed control of up to three pump modules.

VAC 24seven – reliable technology combined economically. ■

# CONTROL MODULE

for controlling the pump modules



## 1 PUMP MODULE

5 mbar with 25 m<sup>3</sup>/h or  
70 mbar with 40 m<sup>3</sup>/h



## 2 PUMP MODULES

5 mbar with 50 m<sup>3</sup>/h or  
70 mbar with 80 m<sup>3</sup>/h



## 3 PUMP MODULES

5 mbar with 75 m<sup>3</sup>/h or  
70 mbar with 120 m<sup>3</sup>/h





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

VAC **24** SEVEN

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## ENERGY SAVING, PRECISE CONTROL.

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

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The vacuum control of the VAC 24seven product line is provided by the CVC 3000 controller. With its robust, chemically resistant capacitive ceramic diaphragm sensor, this provides excellent measurement and control accuracy for industrial applications.

In addition to the large visual display and intuitive user interface, the controller also provides several modes of operation and programming options.

The VARIO® control technology controls the speed of the high-efficiency GREEN VAC®

permanent magnet motors from 0-100 % as required. In contrast to conventional control technology with constant speed pumps, energy saving of more than 90 % can be achieved depending on the nature of the process.

Designed for industrial requirements, the control module has various interface options for the integration of central control systems (BMS) or the direct controlling of external valves. The integrated LAN connector already contains a web-based software for remote control and documenting of the processes via a PC.

VARIO® control – vacuum control at its best. ■

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

VAC **24** SEVEN

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## 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.*

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The chemically resistant stability core design of head cover and diaphragm clamping disc contributes decisively to ensure that the diaphragm pump complies with the specifications over a long period of operation. Depending on the application an average service interval of 15,000 operating hours can be expected.

As the pumps run only temporarily at full speed, they can be decoupled separately for service purposes, without affecting the vacuum process. The speed of the remaining pump(s) is auto-

matically adjusted by the controller. In this way, VAC 24seven ensures maximum system availability without the need for a duty standby pump.

Each individual pump is compact and can be removed by just one person. Of course, VACUUBRAND also offers demand-oriented service on site.

The VAC 24seven service concept – for maximum uptime. ■





# CONTROL MODULE.

- ▶ integrated vacuum 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
- ▶ analog and digital interfaces, for easy integration into plant control systems, and LAN connection via web-based software for direct remote control and documentation of the vacuum levels
- ▶ clear signal display for the power requirement and the operating status to facilitate easy monitoring

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## VAC 24seven control module



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**Technical information**

|                             |   |
|-----------------------------|---|
| Vacuum Controller           | 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, 3-Phase, 16 Amp. (EU, IN, CN)<br>208 V/60 Hz, 1-Phase, 50 Amp. (US) |
| Interfaces                  | RS 232/Ethernet/optional 0–10 V   |
| Dimensions (L x W x H)      | 462 x 749 x 448 mm  |
| Weight                      | 13 kg   |

**Items supplied**

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

## PUMP MODULE.

- ▶ VACUUBRAND chemistry diaphragm pumps with head cover and diaphragm clamping disc in stability core design for unmatched durability and chemical resistance
- ▶ 100 % oil-free vacuum by hermetic separation of the pump chamber and the drive to avoid any contamination
- ▶ minimal energy consumption by VACUUBRAND VARIO® technology and modern permanent magnet motors - GREEN VAC®
- ▶ internal, wetted parts area complies to ATEX equipment category 3, and can be used for occasional or short-duration pumping of explosive mixtures

---

### VAC 24seven pump module



**Technical information**  
**VAC 24seven pump module #70mbar**

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| Ultimate vacuum (abs.)                | 70 mbar                           |
| Ultim. vac. (abs.) with gas ballast   | 100 mbar                          |
| Max. pumping speed                    | 40 m <sup>3</sup> /h              |
| Max. back pressure (abs.)             | 1.1 bar                           |
| Ambient temperature range (operation) | 10–45 °C                          |
| ATEX conformity                       | II 3G IIC T3 X Internal Atm. only |
| Degree of protection                  | IP 42                             |
| Rated motor power                     | 2.25 kW                           |
| Inlet connection                      | small flange KF DN 40             |
| Outlet connection                     | small flange KF DN 25             |
| Dimensions (L x W x H)                | 896 x 765 x 503 mm                |
| Weight                                | 100 kg                            |

**Technical information**  
**VAC 24seven pump module #5mbar**

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| Ultimate vacuum (abs.)                | 5 mbar                            |
| Ultim. vac. (abs.) with gas ballast   | 7 mbar                            |
| Max. pumping speed                    | 25 m <sup>3</sup> /h              |
| Max. back pressure (abs.)             | 1.1 bar                           |
| Ambient temperature range (operation) | 10–45 °C                          |
| ATEX conformity                       | II 3G IIC T3 X Internal Atm. only |
| Degree of protection                  | IP 42                             |
| Rated motor power                     | 2.25 kW                           |
| Inlet connection                      | small flange DN 40                |
| Outlet connection                     | small flange DN 25                |
| Dimensions (L x W x H)                | 896 x 765 x 503 mm                |
| Weight                                | 100 kg                            |

**Items supplied**

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

# ACCESSORIES.

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## **INTERCONNECTION SET**

To connect 2 pump modules at vacuum inlet and outlet

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## **SET CHANGING PUMP OUTLET**

For putting the pump outlet downwards

.....

## **SET ADJUSTABLE FEET**

For installation and alignment of the pump module on the ground

.....

## **CLEANING SET**

For flushing the pumping unit

.....

## **TEST KIT**

CVC 3000 with connection parts to test individual pumps in case of service

.....

## **BALL VALVE VKE 40**

To separate vacuum pumping unit from process

.....

## **CATCH POT FOR CONDENSATE**

2 Liter glass container to collect condensate from pump outlet

.....

## **SET EYE SCREWS**

Thread M 10, to transport the pumping unit

.....

## **TOOL KIT**

Diaphragm wrench and pump holder vertical

.....

## **ADDITIONAL ACCESSORIES**

Tubings and components for individual setup on demand

.....

# SERVICES.

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## FIRST INSTALLATION

Connecting the control module with the pump modules, inclusive function test

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## MAINTENANCE SET

Diaphragms, valves, filter pad, blind flange and closing plug to maintain one pump module

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## DAKKS

Calibration of the vacuum sensor

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## FURTHER SERVICES

On demand

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## TRAINING

Demonstration of operation and programming of the system and further explanations concerning the unit

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## SERVICE ARRANGEMENT

Includes e.g. replacement of wear parts, functional testing and calibration of the controller

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## VALIDATION SERVICE

IQ Installation qualification, OQ Operational qualification

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# CONTACT.

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## VAC 24seven controle module

|                             |   |
|-----------------------------|---|
| Vacuum Controller           | integrated  |
| Gauge head                  | 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   |
| Mains voltage and frequency | 400 V/50–60 Hz, 3-Phase, 16 Amp. (EU, IN, CN)<br>208 V/60 Hz, 1-Phase, 50 Amp. (US) |
| Interfaces                  | RS 232/Ethernet/optional 0–10 V   |

## VAC 24seven pump module #70mbar

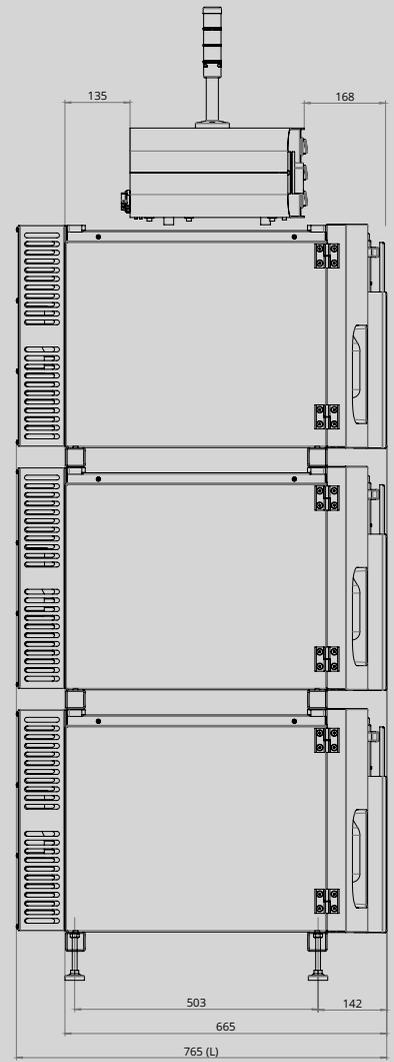
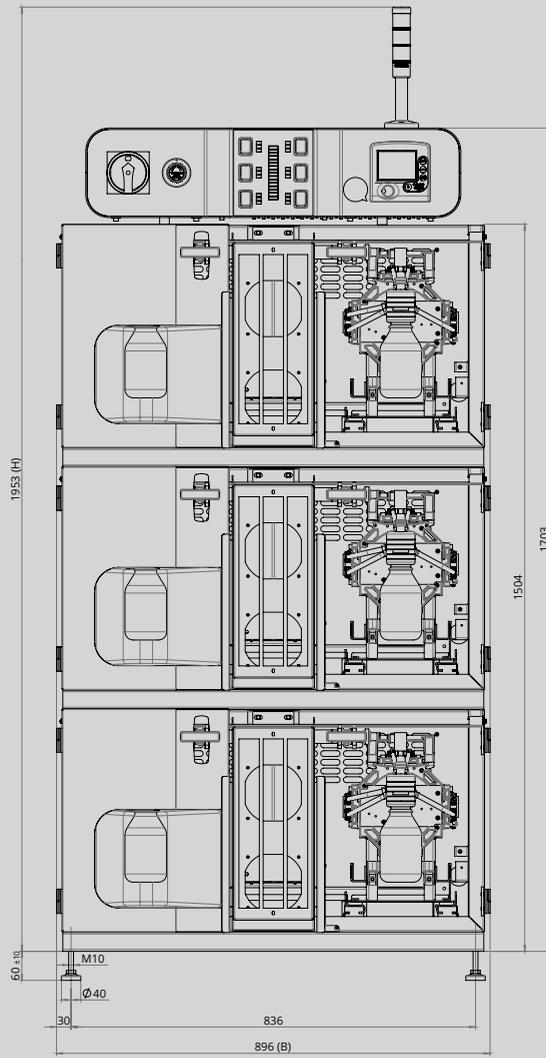
|   |                             |
|---|-----------------------------|
| Ultimate vacuum (abs.)                  | 70 mbar                     |
| Ultimate vacuum (abs.) with gas ballast | 100 mbar                    |
| Max. pumping speed (1/2/3 pump modules) | 40/80/120 m <sup>3</sup> /h |

## VAC 24seven pump module #5mbar

|   |                            |
|---|----------------------------|
| Ultimate vacuum (abs.)                  | 5 mbar                     |
| Ultimate vacuum (abs.) with gas ballast | 7 mbar                     |
| Max. pumping speed (1/2/3 pump modules) | 25/50/75 m <sup>3</sup> /h |

## VAC 24seven

|                                       |                             |
|---------------------------------------|-----------------------------|
| ATEX conformity                       | II 3G IIC T3 Int. Atm. only |
| Inlet connection                      | Small flange KF DN 40       |
| Outlet connection                     | Small flange KF DN 25       |
| Gas ballast connection                | ID/OD 4/6 mm                |
| Degree of protection                  | IP 42                       |
| Rated motor power/pump module         | 2.25 kW                     |
| Ambient temperature range (operation) | 10–45 °C                    |
| Ambient humidity range (operation)    | 30–85 %                     |
| Dimensions (L x W x H)                | see drawing                 |
| Weight/pump module                    | 100 kg                      |
| Weight/control module                 | 13 kg                       |
| Weight (3 pump modules)               | 313 kg                      |
| Floor load (3 pump modules)           | 457 kg/m <sup>2</sup>       |





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