

**VACUU**BRAND®

**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. With over 280 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 opti-

mization 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 inno-

vative 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 performance, 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 – 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 permanent magnet motors consume considerably less energy. Products with these

features are characterized by our 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 VAC 24seven series, which is 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 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, modules and connecting parts, 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 uses the above-mentioned high-quality materials for all wetted parts in all its chemistry diaphragm pumps - another feature for reliability. The pump modules and the connecting elements

between the modules are also designed to be uncompromisingly resistant to chemicals.

VACUUBRAND chemistry diaphragm pumps - the quality benchmark in chemistry.

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 regulator.*

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 module are two individual variable speed pumps. The pump modules are available in two different, speed controlled

versions, with 5 mbar vacuum and 30 m<sup>3</sup>/h pumping speed or 70 mbar and 40 m<sup>3</sup>/h.

With VACUUBRAND's proven VARIO® 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 30 m<sup>3</sup>/h or  
 70 mbar with 40 m<sup>3</sup>/h

### 2 PUMP MODULES

5 mbar with 60 m<sup>3</sup>/h or  
 70 mbar with 80 m<sup>3</sup>/h

### 3 PUMP MODULES

5 mbar with 90 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

## 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 provided by the VACUU-SELECT 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 touch display and intuitive user interface, the controller offers predefined vacuum processes for all common laboratory applications. With the application editor you can simply create individual vacuum processes

via drag and drop.

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. The VACUU-SELECT vacuum controller enables integration into process control systems through various interfaces such as RS-232 via USB and Modbus TCP via Ethernet. Direct control

of peripheral valves is also possible, e.g. for venting. The interfaces also enable remote control for monitoring and controlling the pump modules.

VARIO® control – 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 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 VACUU-SELECT 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	16 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 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

#### 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.

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

# SERVICES.

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

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## TECHNICAL INFORMATION.

VAC **24** SEVEN

### VAC 24seven controle module

Vacuum Controller	VACUU-SELECT 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, 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)

### 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

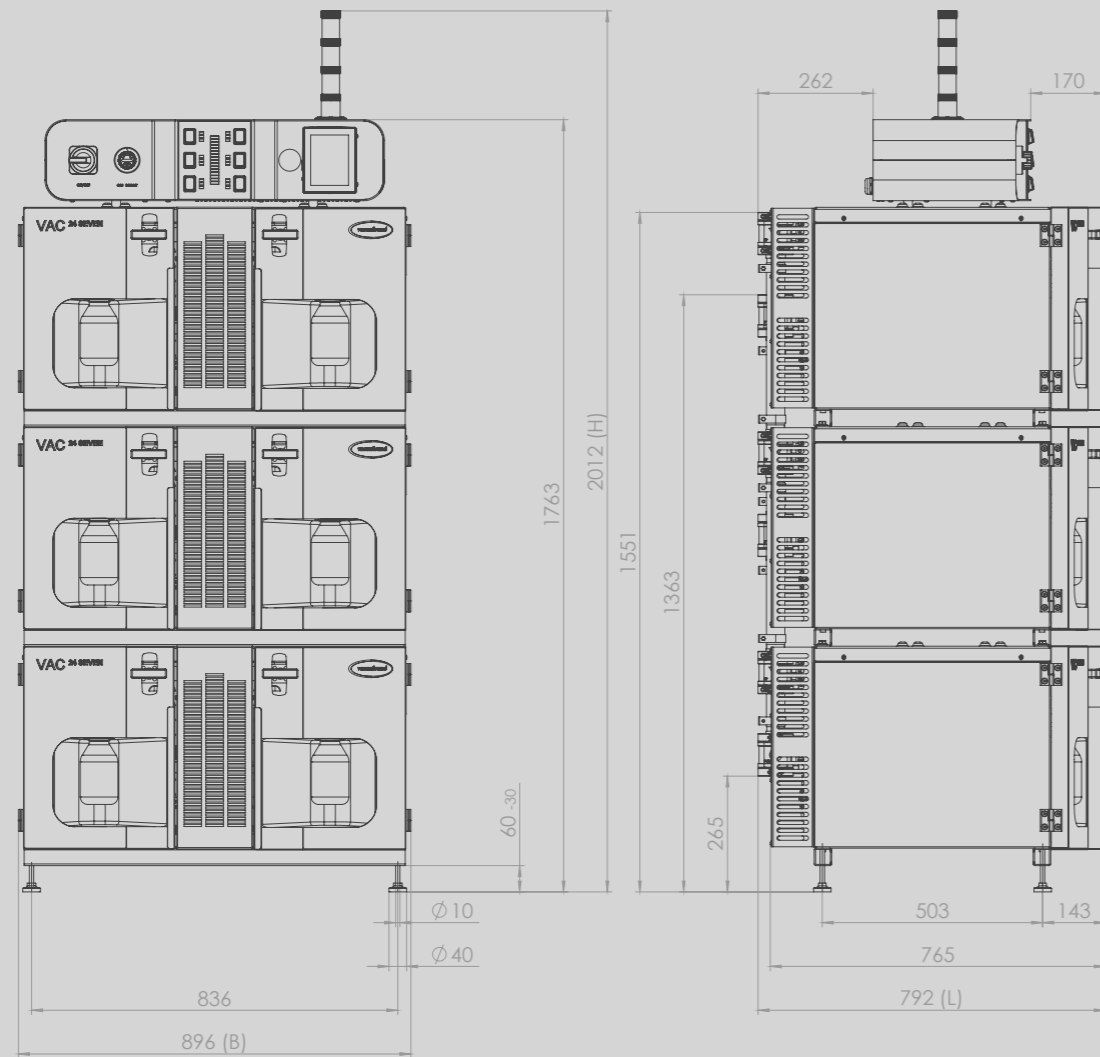
### VAC 24seven pump module #5mbar

Ultimate vacuum (abs.)	5 mbar
Ultimate vacuum (abs.) with gas ballast	7 mbar
Max. pumping speed (1/2/3 pump modules)	30/60/90 m <sup>3</sup> /h

### VAC 24seven

ATEX conformity	II 3/- G Ex h IIC T3 Gc X Int. Atm. only
Inlet connection	Small flange KF DN 40
Outlet connection	Small flange KF DN 40
Gas ballast connection	ID/OD 4/6 mm
Degree of protection	IP 42
Rated motor power/pump module	2.0 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	110 kg
Weight/control module	16 kg
Weight (3 pump modules)	346 kg





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