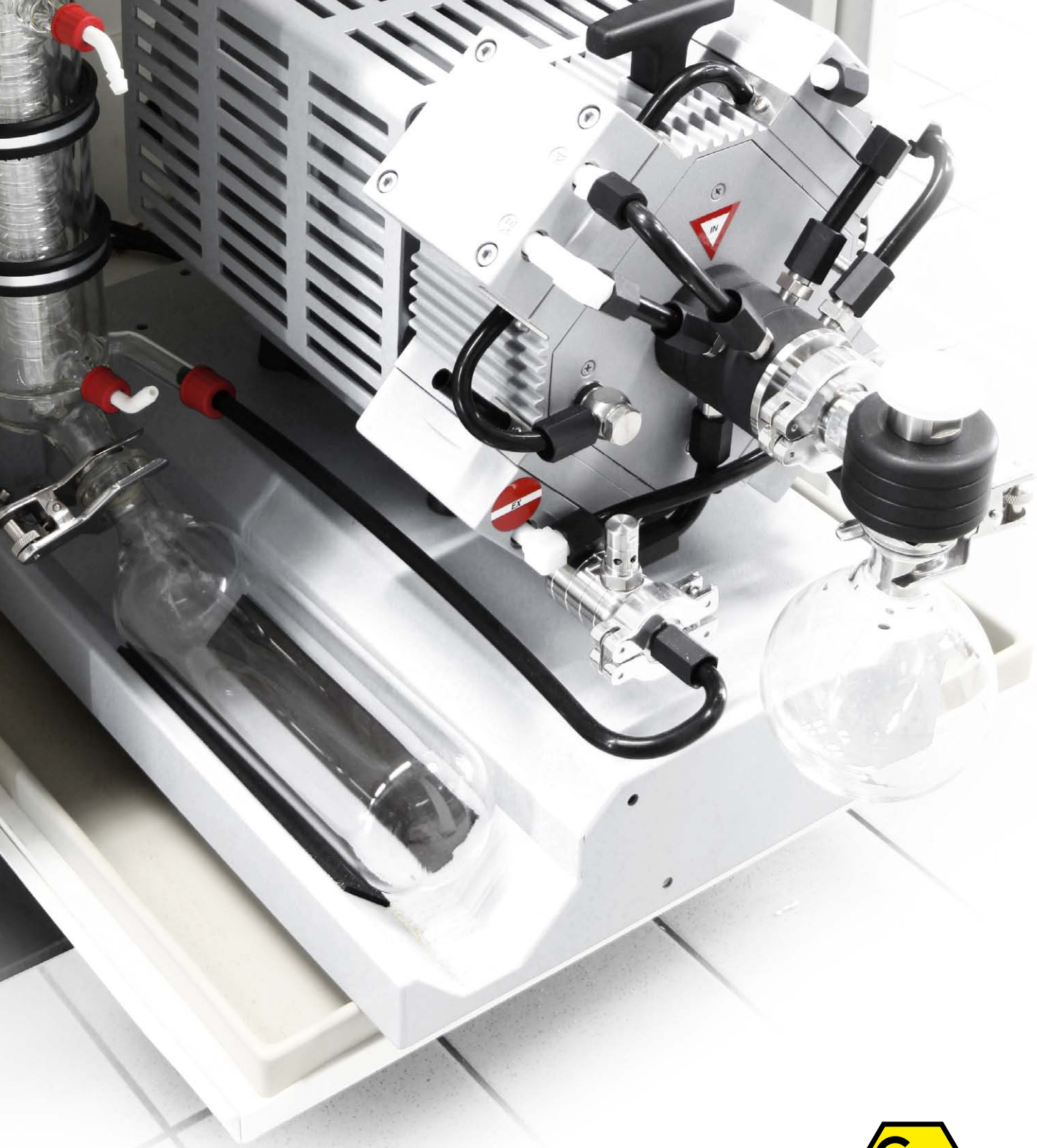


ATEX VACUUM PUMPS AND GAUGES

CHEMICALLY RESISTANT, OIL-FREE AND SAFE

vacuubrand

ATEX CHEMISTRY DIAPHRAGM PUMPS.
ATEX VARIO® CHEMISTRY DIAPHRAGM PUMPS.

Chemistry diaphragm pumps, vacuum systems and gauges
for use in areas with potentially explosive atmospheres

When intended for use in areas with potentially explosive atmospheres, European Community Directive 94/9/EC (ATEX) requires equipment in conformity with ATEX standards. VACUUBRAND offers Category 2 chemistry diaphragm pumps and vacuum systems in conformity with ATEX (for use in zones where an explosive atmosphere is likely to occur). These chemistry diaphragm pumps are appropriate for such locations because they are oil-free, have no sliding surfaces, and the expansion chamber is hermetically sealed against the drive zone. ATEX chemistry vacuum systems with solvent recovery provide safe, convenient vacuum while protecting the environment.

NEW: ATEX chemistry diaphragm pumps and vacuum systems are now avaible with variable speed motor for vacuum control as VARIO®-version.

The VACUUBRAND range of ATEX chemistry diaphragm pumps is supplemented by an ATEX vacuum gauge with excellent corrosion resistance and long-term stability. (Note: Compliance with EC Directive 94/9/EC does not ensure compliance with similar codes in countries outside of the EC. These pumps are not available in every location. Contact your local VACUUBRAND representative for availability.)

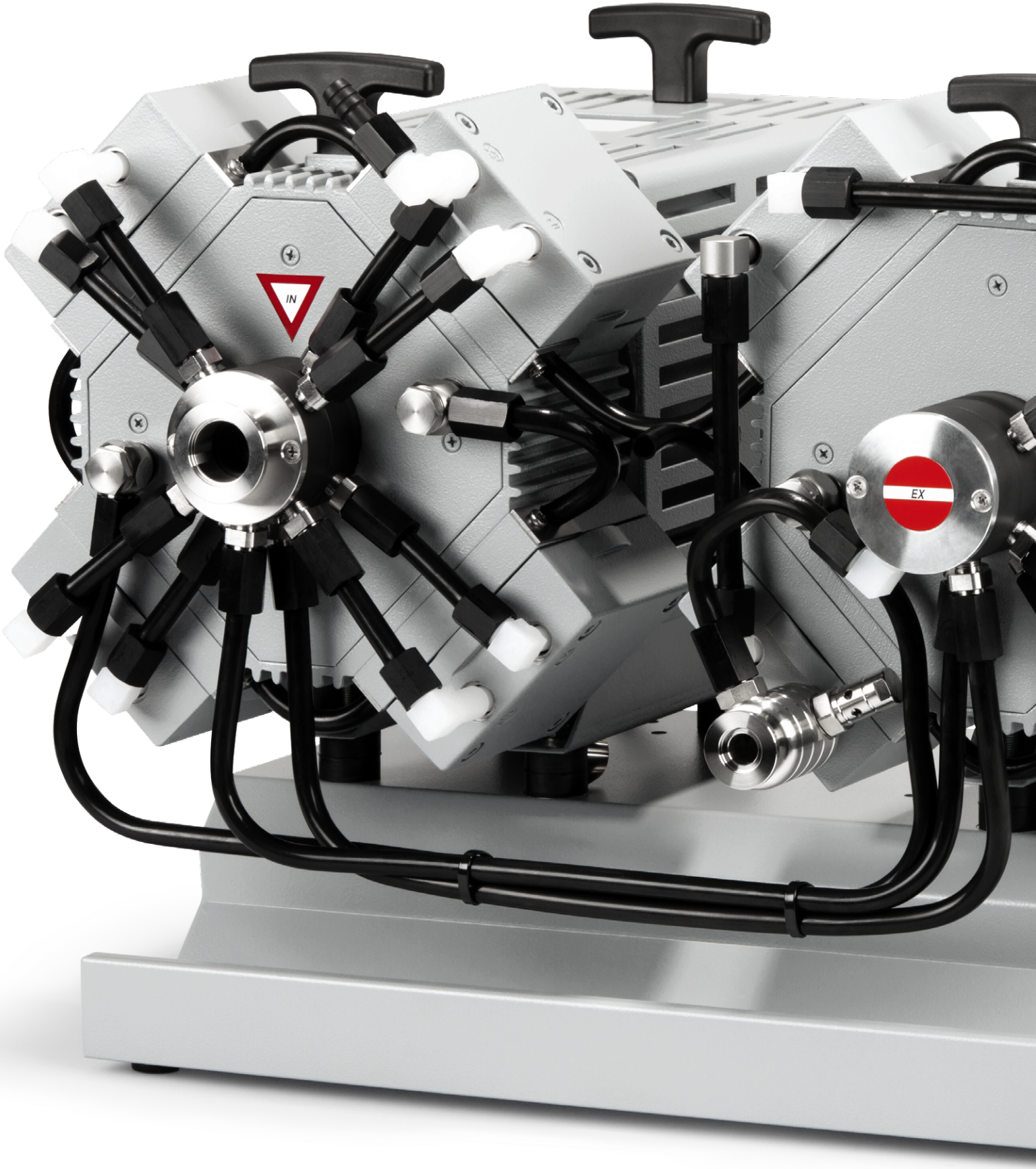
NEW **NOW AVAILABLE WITH VARIO®-CONTROL**

ATEX CHEMISTRY DIAPHRAGM PUMPS

ATEX chemistry diaphragm pumps offer all advantages of oil-free chemistry diaphragm pumps. Typical applications are rotary evaporators and drying ovens with potentially explosive atmospheres. The ATEX approval includes the interior of the pump (in contact with pumped gases) as well as the surrounding area of the pump. All wetted parts of the pumps have excellent chemical resistance and are mainly made of antistatic materials. Included in delivery is a separate gas ballast connection port for use of inert gas. ATEX chemistry vacuum systems are equipped with separator and condenser. The separator at the inlet (AK) retains particles and liquid droplets. The waste vapor condenser at the outlet (EK) is highly efficient and compact. The condenser enables near-100-percent solvent recovery.

ATEX VARIO® CHEMISTRY DIAPHRAGM PUMPS

With the new ATEX VARIO® chemistry diaphragm pumps and vacuum systems, the vacuum can be precisely controlled by the motor speed. The VARIO® pump is driven by an additional control signal line. The optional vacuum controller CVC 3000 with system accessories (I/O-Module, supply / isolation amplifier) and ATEX vacuum sensor enable fully automatic evaporations without the need for parameter settings or user programming. With the adaptive control it finds the boiling pressure independently and adjusts the vacuum continuously and optimally according to the vapor pressure. The vacuum controller and system accessories are installed in a non-hazardous area.

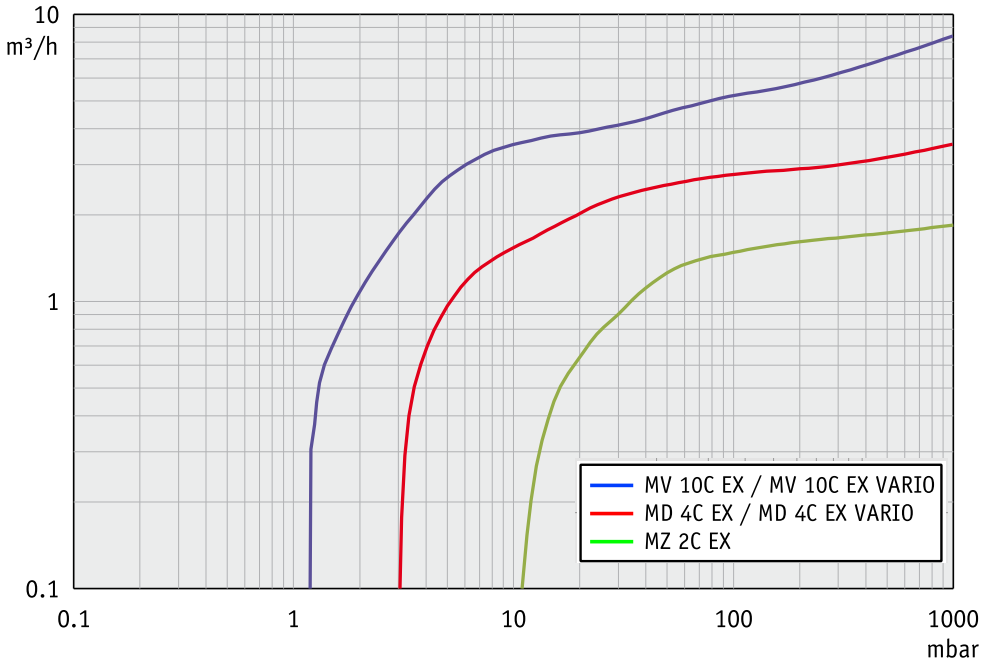

IN
EX

PUMPING SPEED DIAGRAM

at 50 Hz, without gas ballast

NEW

NOW AVAILABLE WITH VARIO®-CONTROL



A characteristic feature of all models is their high performance even close to specified ultimate vacuum. The pumps are also characterized by excellent long-term stability of performance.

MZ 2C EX
MZ 2C EX +AK +EK



down to 12 mbar // 1.9 m³/h

- outstanding chemical resistance and tolerance to condensate by use of fluoro plastics
- flame-proof motor with built-in and self-retaining overcurrent and excess temperature protection, the customer does not need any additional overcurrent protection system
- overpressure safety relief valve at the outlet
- safety diaphragm design with inert gas purge feature to permit optional installation of a diaphragm crack-detection system
- separator AK and emission condenser EK for pump protection and solvent recovery

Technical data

ATEX conformity	
Pumping chamber (pumped gases):	II 2G IIC T3X
Environment with inert purge gas:	II 2G IIB T4 X
Environment without inert purge gas:	II 3G IIB T4 X
Motor:	II 2G Ex d IIB T4 Gb
Max. pumping speed at 50 Hz	1.9 m³/h
Ultimate vacuum (abs.)	12 mbar
Ultimate vacuum (abs.) with bas ballast	18 mbar
Inlet connection	Small flange KF DN 16
Outlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 8–10 mm
Degree of protection	IP 54
Degree of protection	IP 52
Dimensions (L x W x H)	337 x 287 x 251 mm
Dimensions (L x W x H)	357 x 308 x 470 mm
Weight, approx.	21.6 kg
Weight, approx.	25.4 kg

Ordering data

MZ 2C EX	230 V~50 Hz	Open wires	696920
MZ 2C EX +AK +EK	230 V~50 Hz	Open wires	696921

Accessories

PTFE tubing KF DN 16 (1000 mm: 686031)

Items supplied

Pump completely mounted, ready for use, with manual, 2 m cable without plug. Shatter and shock protection for glass parts must be provided by the customer.

MD 4C EX
MD 4C EX +AK +EK



down to 3 mbar // 3.7 m³/h

- outstanding chemical resistance and tolerance to condensate by use of fluoro plastics
- flame-proof motor with built-in and self-retaining overcurrent and excess temperature protection, the customer does not need any additional overcurrent protection system
- overpressure safety relief valve internal and at the outlet
- safety diaphragm design with inert gas purge feature to permit optional installation of a diaphragm crack-detection system
- separator AK and emission condenser EK for pump protection and solvent recovery

Technical data

ATEX conformity	
Pumping chamber (pumped gases):	II 2G IIC T3X
Environment with inert purge gas:	II 2G IIB T4 X
Environment without inert purge gas:	II 3G IIB T4 X
Motor:	II 2G Ex d IIB T4 Gb
Max. pumping speed at 50 Hz	3.7 m³/h
Ultimate vacuum (abs.)	3 mbar
Ultimate vacuum (abs.) with bas ballast	10 mbar

Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 10 mm
Degree of protection	IP 54
Dimensions (L x W x H)	440 x 265 x 305 mm
Dimensions (L x W x H)	600 x 365 x 420 mm
Weight, approx.	29.3 kg
Weight, approx.	37.4 kg

Ordering data

MD 4C EX	230 V~50 Hz	Open wires	696930
MD 4C EX +AK +EK	230 V~50 Hz	Open wires	696931

Accessories

PTFE tubing KF DN 25 (1000 mm: 686033)

Items supplied

Pump completely mounted, ready for use, with manual, 2 m cable without plug. Shatter and shock protection for glass parts must be provided by the customer.

MV 10C EX
MV 10C EX +AK +EK



down to 2 mbar // 8.1 m³/h

- outstanding chemical resistance and tolerance to condensate by use of fluoro plastics
- flame-proof motor with built-in and self-retaining overcurrent and excess temperature protection, the customer does not need any additional overcurrent protection system
- overpressure safety relief valve internal and at the outlet
- safety diaphragm design with inert gas purge feature to permit optional installation of a diaphragm crack-detection system
- separator AK and emission condenser EK for pump protection and solvent recovery

Technical data

ATEX conformity	
Pumping chamber (pumped gases):	II 2G IIC T3X
Environment with inert purge gas:	II 2G IIB T4 X
Environment without inert purge gas:	II 3G IIB T4 X
Motor:	II 2G Ex d IIB T4 Gb
Max. pumping speed at 50 Hz	8.1 m³/h
Ultimate vacuum (abs.)	2 mbar
Ultimate vacuum (abs.) with bas ballast	10 mbar

Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 8–10 mm
Degree of protection	IP 54
Dimensions (L x W x H)	560 x 430 x 410 mm
Dimensions (L x W x H)	560 x 430 x 410 mm
Weight, approx.	63.2 kg
Weight, approx.	64.0 kg

Ordering data

MV 10C EX	230 V~50 Hz	Open wires	696945
MV 10C EX +AK +EK	230 V~50 Hz	Open wires	on demand

Accessories

PTFE tubing KF DN 25 (1000 mm: 686033)

Items supplied

Pump completely mounted, ready for use, with manual, two 2 m cables without plug (two motors).

MD 4C EX VARIO
MD 4C EX VARIO +AK +EK



down to 3 mbar // 3.7 m³/h

NEW

- full advantage of ATEX chemistry diaphragm pumps
- short process times due to hysteresis-free VARIO® vacuum control
- VARIO®-pump operates on demand only as fast as necessary – minimal power consumption, extended maintenance intervals, silent operation
- vacuum controller CVC 3000 (optional) for precise vacuum control and fully automatic processes
- complete system accessories I/O-Module, supply / isolation amplifier and ATEX vacuum sensor

Technical data

ATEX conformity	
Pumping chamber (pumped gases):	II 2G IIC T3X
Environment with inert purge gas:	II 2G IIB T4 X
Environment without inert purge gas:	II 3G IIB T4 X
Motor:	II 2G Ex d IIB T4 Gb
Max. pumping speed at 50 Hz	3.7 m³/h
Ultimate vacuum (abs.)	3 mbar
Ultimate vacuum (abs.) with bas ballast	10 mbar

Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 8–10 mm
Degree of protection	IP 54
Dimensions (L x W x H)	440 x 265 x 305 mm
Dimensions (L x W x H)	600 x 365 x 420 mm
Weight, approx.	27.0 kg
Weight, approx.	35.1 kg

Ordering data

MD 4C EX VARIO	230 V~50 Hz	Open wires	696936
MD 4C EX VARIO +AK +EK	230 V~50 Hz	Open wires	696937

Accessories

PTFE tubing KF DN 25 (1000 mm: 686033)

Items supplied

Pump completely mounted, ready for use, with manual. Shatter and shock protection for glass parts must be provided by the customer. Speed control via 4-20 mA current loop (4 mA = 0 rpm, 20 mA = 1500 rpm). Control signal line 10 m, mains cable 2 m without plug.

MV 10C EX VARIO
MV 10C EX VARIO +AK +EK



down to 2 mbar // 8.1 m³/h

NEW

- full advantage of ATEX chemistry diaphragm pumps
- short process times due to hysteresis-free VARIO® vacuum control
- VARIO®-pump operates on demand only as fast as necessary – minimal power consumption, extended maintenance intervals, silent operation
- vacuum controller CVC 3000 (optional) for precise vacuum control and fully automatic processes
- complete system accessories I/O-Module, supply / isolation amplifier and ATEX vacuum sensor

Technical data

ATEX conformity	
Pumping chamber (pumped gases):	II 2G IIC T3X
Environment with inert purge gas:	II 2G IIB T4 X
Environment without inert purge gas:	II 3G IIB T4 X
Motor:	II 2G Ex d IIB T4 Gb
Max. pumping speed at 50 Hz	8.1 m³/h
Ultimate vacuum (abs.)	2 mbar
Ultimate vacuum (abs.) with bas ballast	10 mbar

Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 8–10 mm
Degree of protection	IP 54
Dimensions (L x W x H)	560 x 430 x 410 mm
Dimensions (L x W x H)	649 x 525 x 452 mm
Weight, approx.	58,6 kg
Weight, approx.	61.0 kg

Ordering data

MV 10C EX VARIO	230 V~50 Hz	Open wires	696946
MV 10C EX VARIO +AK +EK	230 V~50 Hz	Open wires	696947

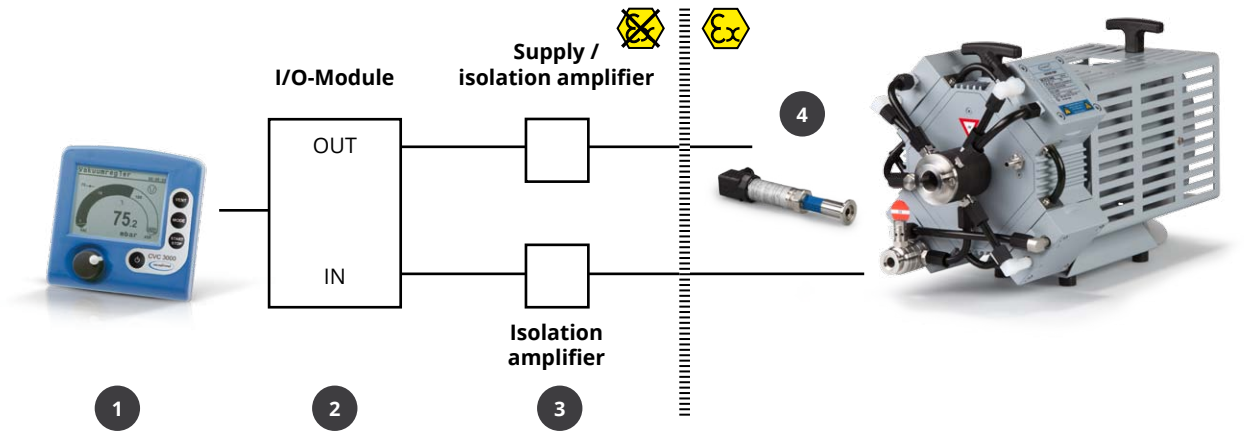
Accessories

PTFE tubing KF DN 25 (1000 mm: 686033)

Items supplied

Pump completely mounted, ready for use, with manual. Shatter and shock protection for glass parts must be provided by the customer. Speed control via 4-20 mA current loop (4 mA = 0 rpm, 20 mA = 1500 rpm). Control signal line 10 m, mains cable 2 m each without plug.

ACCESSORIES FOR VACUUBRAND
ATEX VARIO®-PUMPS



1 **CVC 3000** Installation outside of the EX-area, without integrated sensor

Control range (dependent on the sensor)	1080 - 0.1 mbar / 810 – 0.1 torr
Interface external	RS 232C
Interface to pump / sensor	Analog-I/O-Module, connectable via isolation amplifier
Dimensions (L x W x H)	144 x 124 x 115 mm
Weight, approx.	0.44 kg

Ordering data

1	CVC 3000, 100–230 V ~50–60 Hz	CEE/CH/UK/US/AUS/CN	636559+612090
2	Analog-I/O-Module	IN 4 – 20 mA, OUT 0 – 10 V	635425
3	Isolation amplifier	IN 0 – 10 V, OUT 4 – 20 mA	635426
	Supply / isolation amplifier	IN / OUT 4 – 20 mA	635427
4	ATEX-sensor	Accuracy 0.1 % FSO	635423
	ATEX-sensor	Accuracy < 0.5 % FSO	635424

DVR 3



- large analog and digital vacuum display
- mains independent power supply unit BVE 9V, with ATEX approval, mercury and cadmium free
- enhanced battery life due to automatic shutdown and variable sampling rate
- high reliability, low EMI emission level near detection limit, high degree of immunity to electromagnetic interference for use in industrial environments
- capacitive alumina ceramic diaphragm vacuum sensor with excellent chemical resistance, accuracy and long term stability

Vacuum Gauge
ATEX category 2 approval

Technical data

ATEX-approval	II 2G Ex ia IIC T4
Upper measuring limit	1080 mbar / 810 torr
Lower measuring limit	1 mbar / 1 torr
Accuracy of measurement	< +- 1 mbar/torr / +- 1 digit
Temperature coefficient	< 0.07 mbar / 0.05 torr/K

Material of outer housing	Robust plastic (conductive) with good chemical resistance
Power supply	Power supply unit BVE 9 V
Degree of protection	IP 40
Dimensions (L x W x H)	116 x 116 x 66 mm
Weight, approx.	0.43 kg
Connection	Small flange KF DN 16

Ordering data

DVR 3	ATEX vacuum gauge	682903

Accessories

PTFE tubing KF DN 16	(1000 mm: 686031)
Stainless steel tubing KF DN 16	(1000 mm: 673336)
Power supply unit BVE 9 V	(637986)
DAkkS calibration with first delivery	(900214)
DAkkS recalibration	(900215)

Items supplied

Vacuum gauge complete with integrated vacuum sensor and power supply unit, ready for use, with manual.



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