

## ACCESSORIES FOR CHEMISTRY DIAPHRAGM PUMPS

## PELTRONIC® EMISSION CONDENSER (EK)

The Peltronic® emission condenser performs condensation of solvent vapors without external coolant such as water or dry ice. It works electronically and uses Peltier elements as cooling system. All wetted parts are highly chemically resistant. The condenser is especially designed to be added to existing pumping units and allows the replacement of common condensers working with external coolant. The condenser is ideally suited for applications where cooling water is not available or desired, or in case of cost and productivity concerns associated with dry ice condensers. It is often used to reduce cooling water usage for environmental reasons or to prevent the risk of flooding from cooling water plumbing leakage. This frequently is requested for vacuum networks built into lab furniture. If the Peltronic® is connected to a CVC 3000 vacuum controller it is switched on/off automatically on demand.

Peltronic® emission condenser



## TECHNICAL DATA

## PELTRONIC

Rated mains voltage / mains frequency	100-120 V / 200-230 V ~ 50-60 Hz
Cooling capacity at 21°C ambient temp.	50 W
Ambient temperature range	10 - 40 °C
Condensation set-point temperature	10 °C
Inlet connection	PTFE tubing connection 10/8 mm
Outlet connection	PTFE tubing connection 10/8 mm, hose nozzle DN 10 mm
Volume of condensate catchpot	500 ml
Power draw	7 - 160 W (controlled)
Heat dissipation	7 - 200 W
Dimensions (L x W x H), approx.	175 x 179 x 392 mm
Weight, approx.	4.3 kg

## ITEMS SUPPLIED

Condenser ready for use with electronic control, status indicator, temperature control, switch, PTFE tubing ready to connect to many VACUUBRAND pumping units, catchpot 500ml, catchpot clamp. Universal power supply; please order power cable separately.

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 SUPPLEMENTARY MODULES FOR CHEMISTRY PUMPING UNITS

The upgrade kit SYNCHRO for a second vacuum connection can be equipped, depending on the application, with a manual flow control valve (677137) or an in-line solenoid valve (636668) for electronic vacuum control with the CVC 3000 vacuum controller. These functional elements for individual vacuum control are necessary to operate the vacuum ports. Order this essential accessory separately, please.

Upgrade kit for chemistry pumping units for a second inlet port



**Upgrade kit I: Inlet separator and CVC 3000 controller for PC 3001 basic**

Inlet separator, vacuum controller CVC 3000 and assembling accessory to upgrade the PC 3001 basic to a pumping unit with electronic vacuum control. The separator protects the pump effectively and extends diaphragm lifetime considerably.

Upgrade kits for PC 3001 basic



**Upgrade kit II: Complete exhaust vapor condenser assembly for PC 3001 basic**

Exhaust waste vapor condenser with catchpot for efficient solvent recovery.

The liquid level sensor is designed to be mounted at the neck of a VACUUBRAND 500 ml catchpot and works with the CVC 3000 controller. It monitors the liquid level in catchpots of emissions condensers and inlet separators. The process is halted and an alarm sounded if the catchpots are close to overflowing. The sensor detects all common solvents without any contact to the solvents.

Liquid level sensor for catchpot 500ml



Suitable for all VACUUBRAND exhaust vapor condensers and catch pots with glass joint connections

Solvent drain for exhaust vapor condenser



## ACCESSORIES FOR CHEMISTRY DIAPHRAGM PUMPS

## SUPPLEMENTARY MODULES FOR CHEMISTRY PUMPING UNITS

For all NT diaphragm pumps with flange KF DN 25 (all types ME 16(C) NT, MD 12(C) NT, MV 10(C) NT and their pumping units). Inlet with small flange KF DN 25 and hose nozzle DN 15 mm.

Inlet separator AK with round bottom flask 500 ml, with connections KF DN 25 and hose nozzle DN 15 mm



This upgrade kit enables the remote operation of all vacuum pumping units with the CVC 3000. The kit consists of a stand, a 2 m cable, and parts for assembly (including a cover plate for the controller mounting space of PC 3001 VARIO<sup>pro</sup> and pumping units with plastic housing).

Conversion kit for remote pump control with the CVC 3000



With VACUU·CONTROL<sup>®</sup> the user can control and monitor his application at any time, for example from the office, using a LAN or WLAN - enabled device. So at the same time users can focus on and carry out other work whilst monitoring the process remotely. The vacuum process is automatically documented with the datalogger function and is fully traceable. The remote VACUU·CONTROL<sup>®</sup> can be used as a flexible alternative to building in a CVC 3000 controller into the laboratory furniture. The monitoring of multiple vacuum systems via a central control station is also possible.

Remote Control VACUU·CONTROL



Further information pg. 182

The VACUU·LAN<sup>®</sup> Mini-Network is a space saving VACUU·LAN<sup>®</sup> network assembly with three VACUU·LAN<sup>®</sup> valve modules pre-plumbed on a channel that can be attached to a wall or lab frame. The Mini-Network tubing is to be connected to a new VACUUBRAND diaphragm vacuum pump, or an oil-free vacuum pump that you already own, with vacuum tubing, and your one pump now supports three applications. Each VACUU·LAN<sup>®</sup> Mini-Network includes three manual flow control valves for continuously variable pumping speed adjustment. Ball Valve control and electronically controlled ports are optionally available. Each port is check-valve controlled to minimize interference among applications.

Mini-Network VACUU·LAN<sup>®</sup> with 3 vacuum connections (manual valves)



## ACCESSORIES FOR CHEMISTRY DIAPHRAGM PUMPS

## ORDERING INFORMATION ACCESSORIES FOR CHEMISTRY DIAPHRAGM PUMPS

## ORDERING INFORMATION PAGE 92

Peltronic® Emission condenser	699905
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## ORDERING INFORMATION PAGE 93

Upgrade kit for chemistry pumping units for a second inlet port	699920
Upgrade kit for chemistry pumping units with plastic housing (PC 510 NT, PC 610 NT) for a second inlet port	699942
Add-on manual flow control valve C2	677137
Add-on in-line solenoid valve C3-B	636668
Vacuum controller CVC 3000	683160
Upgrade kit I: Inlet separator and CVC 3000 controller for PC 3001 basic	699921
Upgrade kit II: Complete exhaust vapor condenser assembly for PC 3001 basic	699922
Solvent drain for exhaust vapor condenser, Adapter from KS 35 to hose nozzle DN 6/10mm	2618398
Liquid level sensor for VACUUBRAND catchpot 500 ml	699908

## ORDERING INFORMATION PAGE 94

Conversion kit for remote pump control with the CVC 3000	699923
Small flange KF DN 16 / G1/2" as outlet for diaphragm pumps ME 16(C) NT, MD 12(C) NT, MV 10(C) NT	672101
VACUU-CONTROL® LAN	683120
VACUU-CONTROL® WLAN	683110
Mini-Network VACUU-LAN® with 3 vacuum connections (manual valves)	2614455
Inlet separator AK with connections KF DN 25 (ME 16C NT, MD 12C NT, MV 10C NT)	699979

## ORDERING INFORMATION ACCESSORIES / SPARE PARTS

Upgrade kit exhaust vapor condenser for NT series (ME 16C NT, MD 12C NT, MV 10C NT)	699948
Upgrade kit manometer for vacuum ports at pumping units NT SYNCHRO and PC 511 / 611 NT	699907
Cooling water valve VKW 230 V UK	676012
Cooling water valve VKW 230 V CEE	676014
Round bottom flask 500ml with spherical joint, coated	638497
Catchpot clip stainless steel	
suitable for all VACUUBRAND glass catchpots	637627
VACUU-BUS®-compatible accessories Page 184	

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL





## ATEX CHEMISTRY DIAPHRAGM PUMPS AND ATEX CHEMISTRY VACUUM SYSTEMS

When intended for use in areas with potentially explosive atmospheres, European Community Directive 2014/34/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 highly resistant to chemicals, 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.

ATEX chemistry diaphragm pumps and vacuum systems are now available 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 2014/34/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.)



### POWERFUL

Ultimate vacuum 12 to 2 mbar  
Pumping speed 1.9 to 8.1 m<sup>3</sup>/h

MV 10C EX  
Four stage ATEX chemistry diaphragm pump

### CHEMICALLY RESISTANT MATERIALS

Wetted materials: Fluoroplastics (PTFE, ETFE, FFKM)  
and stainless steel

### EXPLOSION PROOF

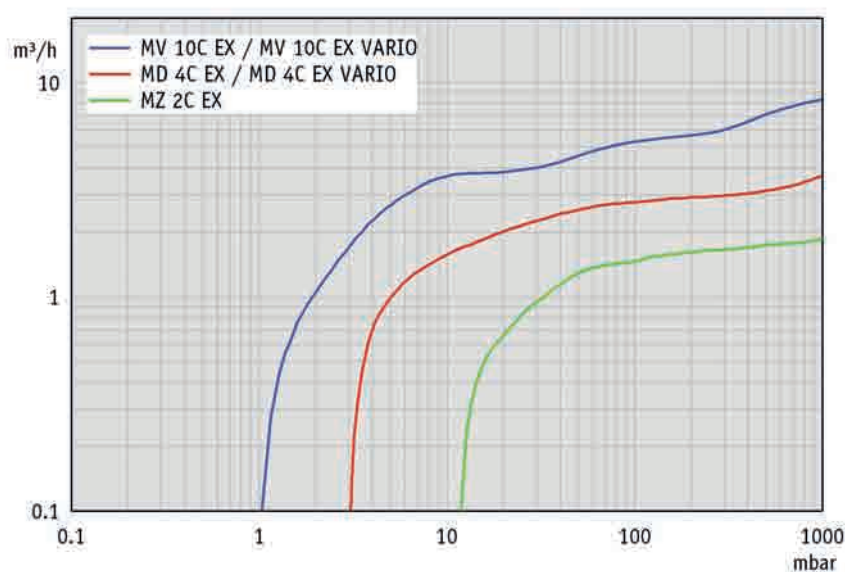
ATEX conformity:  
pumping chamber (pumped gas):  
II 2G IIC T3 X  
environment (around the pump):  
II 2G IIB T4 X (with inert gas purge)  
II 3G IIB T4 X (without inert gas purge)

## ATEX CHEMISTRY DIAPHRAGM PUMPS AND ATEX CHEMISTRY VACUUM SYSTEMS

**Explosion proof****Oil-free****Chemically resistant materials**

- ◆ **Flame-proof motor** with built-in and self-retaining overcurrent and excess temperature protection for direct 230 V/50 Hz single-phase connection; the customer does not need any additional overcurrent protection system
- ◆ **Antistatic materials** diaphragm pump heads made of antistatic carbon-reinforced fluoroplastics, heavily loaded parts with metallic stability core; connecting elements and other parts made of antistatic materials
- ◆ **Chemically resistant** wetted materials: Fluoroplastics (PTFE, ETFE, FFKM) and stainless steel
- ◆ **Gas ballast** included as separate inert gas connection
- ◆ **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

The ATEX range of products is supplemented by the DVR 3 ATEX vacuum gauge (ATEX Cat. 2) with excellent corrosion resistance and long-term stability



Pumping speed graph at 50 Hz without gas ballast

12 mbar - 1.9 m<sup>3</sup>/h

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL

- ✦ outstanding chemical resistance and superior vapor tolerance
- ✦ flame proof motor with integrated, self-locking overload and excess temperature protection for direct 230V / 50Hz single phase power supply
- ✦ no need for any additional and specific overcurrent protection device
- ✦ overpressure safety relief valve at outlet



## MZ 2C EX

## TECHNICAL DATA

## MZ 2C EX

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	2 / 2
Max. pumping speed at 50 Hz	1.9 m <sup>3</sup> /h
Ultimate vacuum (abs.)	12 mbar
Ultim. vac. (abs.) with gas ballast	18 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 16
Outlet connection	Small flange KF DN 16
Rated motor power	0.15 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	337 x 287 x 251 mm
Weight, approx.	21.6 kg

## ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)

## ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual, 2 m cable without plug.

## ORDERING INFORMATION

## MZ 2C EX

230 V ~ 50 Hz      Open wires      696920



- ✦ outstanding chemical resistance and superior vapor tolerance
- ✦ flame proof motor with integrated, self-locking overload and excess temperature protection for direct 230V / 50Hz single phase power supply
- ✦ no need for any additional and specific overcurrent protection device
- ✦ overpressure safety relief valve at outlet
- ✦ safety diaphragm technology with option for inert gas purge and detection of diaphragm breakage



## MZ 2C EX +AK+EK

### TECHNICAL DATA

### MZ 2C EX +AK+EK

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	2 / 2
Max. pumping speed at 50 Hz	1.9 m <sup>3</sup> /h
Ultimate vacuum (abs.)	12 mbar
Ultim. vac. (abs.) with gas ballast	18 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 16
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.15 kW
Degree of protection	IP 52
Dimensions (L x W x H), approx.	357 x 308 x 470 mm
Weight, approx.	25.4 kg

### ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)

### ITEMS SUPPLIED

Pumping unit completely mounted with inlet separator and emission condenser, ready for use, with manual, 2 m cable without plug. Shatter and shock protection for glass parts are to be provided by the customer.

### ORDERING INFORMATION

### MZ 2C EX +AK+EK

230 V ~ 50 Hz      Open wires      696921

3 mbar - 3.7 m<sup>3</sup>/h

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL

- ✦ outstanding chemical resistance and superior vapor tolerance
- ✦ flame proof motor with integrated, self-locking overload and excess temperature protection for direct 230V / 50Hz single phase power supply
- ✦ no need for any additional and specific overcurrent protection device
- ✦ overpressure safety relief valves internally and at outlet



## MD 4C EX

## TECHNICAL DATA

## MD 4C EX

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	4 / 3
Max. pumping speed at 50 Hz	3.7 m <sup>3</sup> /h
Ultimate vacuum (abs.)	3 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Rated motor power	0.25 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	440 x 265 x 305 mm
Weight, approx.	29.3 kg

## ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)

PTFE tubing KF DN 25 (1000 mm: 686033)

## ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual, 2 m cable without plug.

## ORDERING INFORMATION

## MD 4C EX

230 V ~ 50 Hz      Open wires      696930

- ✦ outstanding chemical resistance and superior vapor tolerance
- ✦ flame proof motor with integrated, self-locking over-load and excess temperature protection for direct 230V / 50Hz single phase power supply
- ✦ no need for any additional and specific overcurrent protection device
- ✦ overpressure safety relief valves internally and at outlet
- ✦ safety diaphragm technology with option for inert gas purge and detection of diaphragm breakage



## MD 4C EX +AK+EK

### TECHNICAL DATA

### MD 4C EX +AK+EK

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	4 / 3
Max. pumping speed at 50 Hz	3.7 m <sup>3</sup> /h
Ultimate vacuum (abs.)	3 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.25 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	600 x 365 x 420 mm
Weight, approx.	37.4 kg

### ACCESSORIES

PTFE tubing KF DN 25 (1000 mm: 686033)

### ITEMS SUPPLIED

Pumping unit completely mounted with inlet separator and emission condenser, ready for use, with manual, 2 m cable without plug. Shatter and shock protection for glass parts are to be provided by the customer.

### ORDERING INFORMATION

### MD 4C EX +AK+EK

230 V ~ 50 Hz      Open wires      696931

2 mbar - 8.1 m<sup>3</sup>/h

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL

- ✦ outstanding chemical resistance and superior vapor tolerance
- ✦ flame proof motor with integrated, self-locking overload and excess temperature protection for direct 230V / 50Hz single phase power supply
- ✦ no need for any additional and specific overcurrent protection device
- ✦ overpressure safety relief valves internally and at outlet



## MV 10C EX

## TECHNICAL DATA

## MV 10C EX

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	8 / 4
Max. pumping speed at 50 Hz	8.1 m <sup>3</sup> /h
Ultimate vacuum (abs.)	2 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Rated motor power	0.5 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	560 x 430 x 410 mm
Weight, approx.	63.2 kg

## ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)

PTFE tubing KF DN 25 (1000 mm: 686033)

## ITEMS SUPPLIED

Pump completely, ready for use, with manual, 2 m cable without plug at each of the two motors.

## ORDERING INFORMATION

## MV 10C EX

230 V ~ 50 Hz	Open wires	696945
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- ◆ outstanding chemical resistance and superior vapor tolerance
- ◆ flame proof motor with integrated, self-locking over-load and excess temperature protection for direct 230V / 50Hz single phase power supply
- ◆ no need for any additional and specific overcurrent protection device
- ◆ overpressure safety relief valves internally and at outlet
- ◆ safety diaphragm technology with option for inert gas purge and detection of diaphragm breakage



## MV 10C EX +AK+EK

### TECHNICAL DATA

### MV 10C EX +AK+EK

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	8 / 4
Max. pumping speed at 50 Hz	8.1 m <sup>3</sup> /h
Ultimate vacuum (abs.)	2 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.5 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	649 x 525 x 452 mm
Weight, approx.	64 kg

### ACCESSORIES

PTFE tubing KF DN 25 (1000 mm: 686033)

### ITEMS SUPPLIED

Pumping unit completely mounted with inlet separator and emission condenser, ready for use, with manual, 2 m cable without plug at each of the two motors. Shatter and shock protection for glass parts are to be provided by the customer.

### ORDERING INFORMATION

### MV 10C EX +AK+EK

230 V ~ 50 Hz      Open wires      2614250



3 mbar - 3.7 m<sup>3</sup>/h

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL

- ◆ full advantage of ATEX chemistry diaphragm pumps
- ◆ VARIO®: short process times due to hysteresis-free VARIO® vacuum control
- ◆ VARIO®: VARIO®-pump operates on demand only as fast as necessary – minimal power consumption, extended maintenance intervals, silent operation
- ◆ VARIO®: 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 - from one source



## MD 4C EX VARIO

### TECHNICAL DATA

TECHNICAL DATA	MD 4C EX VARIO
ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	4 / 3
Max. pumping speed	3.7 m <sup>3</sup> /h
Ultimate vacuum (abs.)	3 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Rated motor power	0.25 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	469 x 265 x 305 mm
Weight, approx.	28 kg

### ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)  
 PTFE tubing KF DN 25 (1000 mm: 686033)  
 Analog I/O module VACUU·BUS 4-20mA / 0-10V (635425)  
 Signal conditioner 0-10V/4-20mA (635426)  
 Power/input isolating amplifier 4-20mA (635427)  
 Vacuum sensor ATEX +-1 mbar 4-20mA (635423)  
 Vacuum sensor ATEX +-3 mbar 4-20mA (635424)  
 Vacuum controller CVC 3000 (635028+612090)  
 VACUU·BUS® male plug with cable 2m (612462)

### ITEMS SUPPLIED

Pump completely mounted, ready for use, with manual, speed control via 4-20 mA current loop (4 mA = 0 rpm, 20mA = 1500 rpm). Control signal cable 10 m, mains cable 2 m, without plugs.

### ORDERING INFORMATION

230 V ~ 50 Hz	Open wires	696936
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### MD 4C EX VARIO

- full advantage of ATEX chemistry diaphragm pumps with separator AK and emission condenser EK
- VARIO®: short process times due to hysteresis-free VARIO® vacuum control
- VARIO®: VARIO®-pump operates on demand only as fast as necessary – minimal power consumption, extended maintenance intervals, silent operation
- VARIO®: 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 - from one source



## MD 4C EX VARIO +AK+EK

### TECHNICAL DATA

ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	4 / 3
Max. pumping speed	3.7 m <sup>3</sup> /h
Ultimate vacuum (abs.)	3 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.25 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	600 x 365 x 420 mm
Weight, approx.	36 kg

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

### ACCESSORIES

PTFE tubing KF DN 25 (1000 mm: 686033)  
Analog I/O module VACUU·BUS 4-20mA / 0-10V (635425)  
Signal conditioner 0-10V/4-20mA (635426)  
Power/input isolating amplifier 4-20mA (635427)  
Vacuum sensor ATEX +-1 mbar 4-20mA (635423)  
Vacuum sensor ATEX +-3 mbar 4-20mA (635424)  
Vacuum controller CVC 3000 (635028+612090)  
VACUU·BUS® male plug with cable 2m (612462)

### ITEMS SUPPLIED

Pumping unit completely mounted with inlet separator and emission condenser, ready for use, with manual. Shatter and shock protection for glass parts are to be provided by the customer. Speed control via 4-20 mA current loop (4 mA = 0 rpm, 20mA = 1500 rpm). Control signal cable 10 m, mains cable 2 m, without plugs.

### ORDERING INFORMATION MD 4C EX VARIO +AK+EK

230 V ~ 50 Hz      Open wires      696937

2 mbar - 8.1 m<sup>3</sup>/h

CHEMISTRY DIAPHRAGM PUMPS WITH ATEX-APPROVAL

- full advantage of ATEX chemistry diaphragm pumps
- VARIO®: short process times due to hysteresis-free VARIO® vacuum control
- VARIO®: VARIO®-pump operates on demand only as fast as necessary – minimal power consumption, extended maintenance intervals, silent operation
- VARIO®: 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 - from one source



## MV 10C EX VARIO

### TECHNICAL DATA

	MV 10C EX VARIO
ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	8 / 4
Max. pumping speed	8.1 m <sup>3</sup> /h
Ultimate vacuum (abs.)	2 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Small flange KF DN 16
Rated motor power	0.5 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	560 x 457 x 410 mm
Weight, approx.	61 kg

### ACCESSORIES

PTFE tubing KF DN 16 (1000 mm: 686031)  
 PTFE tubing KF DN 25 (1000 mm: 686033)  
 Analog I/O module VACUU·BUS 4-20mA / 0-10V (635425)  
 Signal conditioner 0-10V/4-20mA (635426)  
 Power/input isolating amplifier 4-20mA (635427)  
 Vacuum sensor ATEX +-1 mbar 4-20mA (635423)  
 Vacuum sensor ATEX +-3 mbar 4-20mA (635424)  
 Vacuum controller CVC 3000 (635028+612090)  
 VACUU·BUS® male plug with cable 2m (612462)

### ITEMS SUPPLIED

Pump with two motors (with control and mains cables at each of the two motors) completely mounted, ready for use, with manual. Speed control via 4-20 mA current loop (4 mA = 0 rpm, 20mA = 1500 rpm). Control signal cable 10 m, mains cable 2 m, without plugs.

### ORDERING INFORMATION

230 V ~ 50 Hz      Open wires      696946

### MV 10C EX VARIO

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



## MV 10C EX VARIO +AK+EK

### TECHNICAL DATA

	MV 10C EX VARIO +AK+EK
ATEX conformity	Pumping chamber (pumped gases): II 2G IIC T3 X 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
Number of heads / stages	8 / 4
Max. pumping speed	8.1 m <sup>3</sup> /h
Ultimate vacuum (abs.)	2 mbar
Ultim. vac. (abs.) with gas ballast	10 mbar
Max. back pressure (abs.)	1.1 bar
Max. gas inlet temperature	40 °C
Inlet connection	Small flange KF DN 25
Outlet connection	Hose nozzle DN 8-10 mm
Rated motor power	0.5 kW
Degree of protection	IP 54
Dimensions (L x W x H), approx.	651 x 555 x 452 mm
Weight, approx.	63 kg

### ACCESSORIES

PTFE tubing KF DN 25 (1000 mm: 686033)  
 Analog I/O module VACUU·BUS 4-20mA / 0-10V (635425)  
 Signal conditioner 0-10V/4-20mA (635426)  
 Power/input isolating amplifier 4-20mA (635427)  
 Vacuum sensor ATEX +-1 mbar 4-20mA (635423)  
 Vacuum sensor ATEX +-3 mbar 4-20mA (635424)  
 Vacuum controller CVC 3000 (635028+612090)  
 VACUU·BUS® male plug with cable 2m (612462)

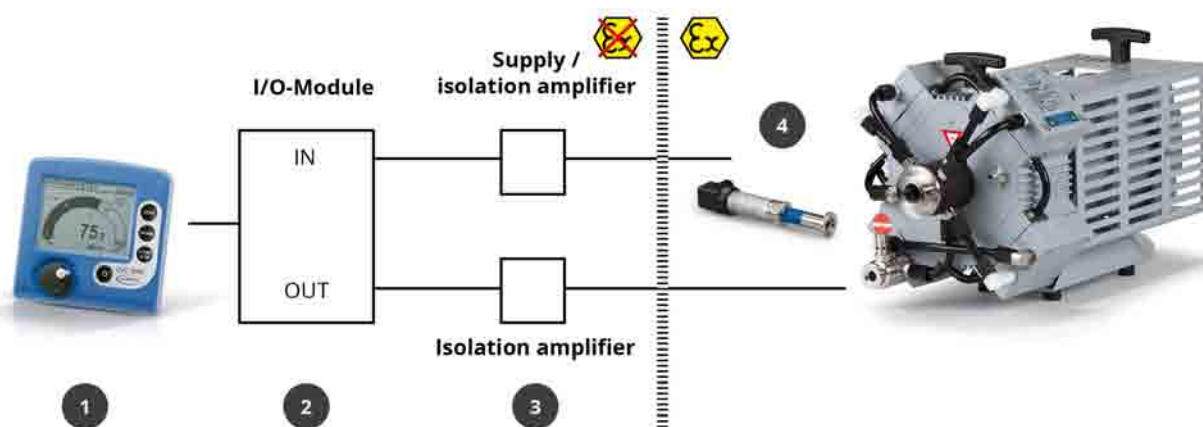
### ITEMS SUPPLIED

Pumping unit with two motors (with control and mains cables at each of the two motors) and inlet separator and emission condenser completely mounted, ready for use, with manual. Shatter and shock protection for glass parts are to be provided by the customer. Speed control via 4-20 mA current loop (4 mA = 0 rpm, 20mA = 1500 rpm). Control signal cable 10 m, mains cable 2 m, without plugs.

### ORDERING INFORMATION MV 10C EX VARIO +AK+EK

230 V ~ 50 Hz      Open wires      696947

## ACCESSORIES FOR VACUUBRAND ATEX VARIO®-PUMPS



**1 CVC 3000** Setup outside of hazardous area, without integrated vacuum sensor

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

## ORDERING INFORMATION

<b>1</b> CVC 3000, 100-230 V ~ 50-60 Hz	CEE/CH/UK/US/AUS/CN	635028+612090
VACUU-BUS cable 2 m with male plug and with litz wires		612462
<b>2</b> Analog-I/O-Module 4-20mA/0-10V VACUU-BUS®		635425
<b>3</b> Signal conditioner 0-10V/4-20mA EX		635426
Power/input isolating amplifier 4-20mA EX		635427
<b>4</b> ATEX-sensor	Accuracy: +-1 mbar	635423
ATEX-sensor	Accuracy: better than +-3 mbar	635424