

# Technical data

<b>General technical data valid for all pumps</b>	
ATEX approval if the ATEX marking is shown on the rating plate Inner part (pumped gases)	II 3/- G Ex h IIC T3 Gc X Internal Atm. only Tech.File: VAC-EX02
Maximum permissible inlet pressure (absolute)	psi (bar) 16 (1.1)
Maximum permissible outlet pressure (absolute)	psi (bar) 16 (1.1)
Maximum pressure difference between inlet and outlet	psi (bar) 16 (1.1)
Permissible ambient temperature storage / operation	°F (°C) 14 to 140 / 50 to 104 (-10 to +60 / +10 to +40)
Permissible relative atmospheric moisture during operation (no condensation)	% 30 to 85
Maximum permissible installation altitude above mean sea level	ft (m) 6500 (2000)
No-load speed 50/60 Hz	rpm 1500 / 1800
Maximum permissible range of supply voltage ( ±10% ) Attention: Observe specifications of rating plate!	100-115 V~ 50/60 Hz 120 V~ 60 Hz 220-230 V~ 50/60 Hz
Dual voltage motor	100-115 V~ 50/60 Hz / 120 V 60 Hz / 220-230 V~ 50/60 Hz
Device fuse	slow blow fuse 2.5 A
Motor protection	thermal cutout, manual reset*
Overvoltage category	II
Degree of protection IEC 60529	IP 40
Degree of protection UL 50E	type 1
Pollution degree	2
A-weighted emission sound pressure level** (uncertainty $K_{pA}$ : 3 dB(A))	dB(A) 49

\* In case of supply voltage below 115 V, the lock of the cutout might be impaired.

\*\* Measurement according to EN ISO 2151:2004 and EN ISO 3744:1995 at 230V/50Hz and at ultimate vacuum with exhaust tube (ME 1C / MZ 1C) or with silencer (ME 1) at outlet.

**We reserve the right for technical modification without prior notice!**

Type		ME 1	ME 1C
Maximum pumping speed 50/60 Hz (ISO 21360)	cfm (m <sup>3</sup> /h)	0.4/ 0.5 (0.7 / 0.8)	
Ultimate vacuum (absolute)	Torr (mbar)	75 (100)	
Rated motor power	hp (kW)	0.054 (0.04)	
Maximum rated current at: 100-115 V~ 50/60 Hz 120 V 60 Hz 220-230 V~ 50/60 Hz	A A A	1.9 / 1.4 1.4 0.8 / 0.6	
Inlet		hose nozzle for tubing I.D. 1/4" / 3/8" (hose nozzle DN 6/10 mm) / internal thread G 1/8"	hose nozzle for tubing I.D. 5/16"- 3/8" (hose nozzle DN 8-10 mm)
Outlet		silencer / internal thread G 1/8"	hose nozzle for tubing I.D. 5/16"- 3/8" (hose nozzle DN 8-10 mm)
Dimensions L x W x H approx.	in (mm)	9.7 x 4.8 x 5.7 (247 x 121 x 145)	
Weight approx. 100-115 V / 120 V version 220-230 V version 100-115 / 120 / 220-230 V version	lbs. (kg) lbs. (kg) lbs. (kg)	11.9 (5.4) 11.0 (5.0) 11.9 (5.4)	

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Type		MZ 1C
Maximum pumping speed 50/60 Hz (ISO 21360)	cfm (m <sup>3</sup> /h)	0.44 / 0.53 (0.75 / 0.9)
Ultimate vacuum (absolute) without gas ballast	Torr (mbar)	9 (12)
Ultimate vacuum (absolute) with gas ballast	Torr (mbar)	15 (20)
Maximum permissible pressure (absolute) at gas ballast valve	psi (bar)	17.5 (1.2)
Rated motor power	hp (kW)	0.08 (0.06)
Maximum rated current at: 100-115 V~ 50/60 Hz 120 V 60 Hz 220-230 V~ 50/60 Hz	A A A	2.0 / 1.4 1.4 0.8 / 0.6
Inlet		hose nozzle for tubing I.D. 5/16"-3/8" (hose nozzle DN 8-10 mm)
Outlet		hose nozzle for tubing I.D. 5/16"-3/8" (hose nozzle DN 8-10 mm)
Dimensions L x W x H approx.	in (mm)	12.3 x 4.8 x 6.7 (312 x 121 x 170)
Weight approx.	lbs. (kg)	14.8 (6.7)

## Gas inlet temperatures

Operating condition	Inlet pressure	Permitted range of gas temperatures at inlet
Continuous operation	> 75 Torr (100 mbar) (high gas load)	➡ 50 °F to 104 °F (+10°C to +40°C)
Continuous operation	< 75 Torr (100 mbar) (low gas load)	➡ 32 °F to 140 °F* (0°C to +60°C*)
Short-time (< 5 minutes)	< 75 Torr (100 mbar) (low gas load)	➡ 14 °F to 176 °F* (-10°C to +80°C*)

\* if pumping potentially explosive atmospheres: 50 °F to 104 °F (+10°C to +40°C)

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## Wetted parts

Components	Wetted materials		
	ME 1	ME 1C	MZ 1C
Housing cover	Aluminum alloy (AlMgSi)	-	-
Housing cover insert	-	PTFE carbon reinforced	PTFE carbon reinforced
Head cover	Aluminum alloy (AlMgSi)	ETFE	ETFE
Diaphragm clamping disc	Aluminum alloy (AlMgSi)	ETFE carbon fiber reinforced	ETFE carbon fiber reinforced
Diaphragm	PTFE	PTFE	PTFE
Valves	PTFE	PTFE	PTFE / FFKM
Inlet	Aluminum alloy (AlMgSi)	ETFE	ETFE
Outlet	PA / PE / aluminum alloy	ETFE	ETFE
Gas ballast tube	-	-	PTFE

## Abbreviations

**ETFE:** Ethylene/Tetrafluoroethylene

**FFKM:** Perfluoro elastomer

**PTFE:** Polytetrafluoroethylene

**PA:** Polyamide

**PE:** Polyethylene

## Pump parts

Position	Component
1	Power connection
2	ON/OFF switch
3	Pump rating plate
4	Inlet
5	Outlet
6	Fan
7	Gas ballast

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