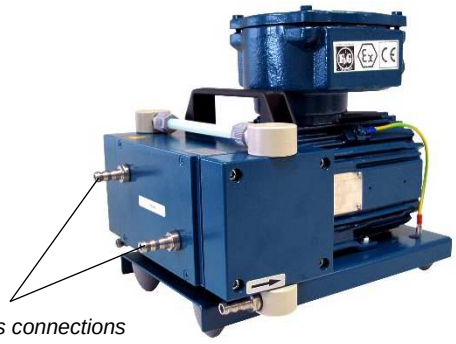
Data Sheet (EN)

Translation of the german original

Designation, Model	*Order no.*
Diaphragm pump chemical resistant *in an explosion-proof Design* *Model:* ⟨Ex⟩ **MPC 301 Zp Ex** ***II 2G c IIB T4 X*** *(10℃ ≤ Ta ≤ 40℃)*	**4000481-04**

Figure	*Description*
 *Inert gas connections*	The two phase diaphragm pump consists of the pump casing, the drive unit and the drive motor. The pump casing contains the drive unit and two pump heads. Both pump head contains a diaphragm and the work valves. The pump heads are arranged in a horizontally-opposed pattern. The pump heads are driven via an eccentric shaft with a connecting rod.

Technical Data		
Parameter	**Unit**	**MPC 301 Zp Ex**
Ex-Marking	-	⟨Ex⟩ II 2G c IIB T4 X (10℃ ≤ T_a ≤ 40℃)
Type Examination Certificate no.	*more information*	IBExU04ATEXB017 X
Pumping speed DIN 28432 (at speed of 1500 rpm)	m^3 / h	2.3
	l / min	38
Ultimate pressure (at speed of 1500 rpm)	mbar	< 8
Max. Inlet pressure	bar	1
Max. Outlet pressure (absolute pressure)	bar	1.5 ***)**
Inert flushing of the drive	l / h	20 ±10 % ****)**
Intake-/ Exhaust pressure	-	Hose nozzle DN8 for hose inside diameter 8 mm
Operating temperature	℃	+ 10 to + 40
Max. Operating gas temperature (measured on the inlet of the vacuum pump)	℃	+ 60 ***)**
Bearing		maintenance-free
Reference surface sound pressure level DIN EN ISO 2151	dB (A)	< 44
Voltage / Frequency	V, Hz	400, 50
Three-phase a.c. motor – model (without motor protection switch, switch and cable)	-	⟨Ex⟩ CD 71 L – 4 II 2G EEx de IIC T4 PTB 99 ATEX 1051
Power	W	180
Operating mode	-	S 1
Type of protection DIN EN 60529	-	IP 55
Weight	kg	22.9
Dimensions (W/D/H) (without connections)	mm	240 /300 / 260

***)** If this value is exceeded, the information about the temperature class inside and outside is no longer applicable.

****)** The inert gas flushing must be monitored. When exceeding or falling below the tolerances, the pump must be switched off.

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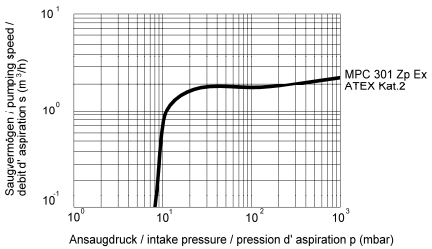
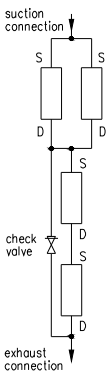
Intake pressure- / Pumping speed - Diagram	*Materials of the medium-affecting Pump parts*	
	**Connection heads / Pump heads with Insert**	PTFE carbon-fibre reinforced
	O-Rings	EPDM
	Screw fittings	PVDF
	Valves	PEEK
	Diaphragms	Elastomer + PTFE-Layer
	Manifolds	PP

Circuitry of the Pump heads		*Priciple of Operation*
	The two pump heads are connected in parallel, two further pumps in series.	Motor, eccentric shaft and connecting rod set the diaphragms in stroke movement. This changes the size of the space between the diaphragms and pump head (pump chamber). Increasing the size of the pump chamber opens the inlet valve while the outlet valve is closed (intake process). Decreasing the size of the pump chamber ejects the gas through the outlet valve. The valves are actuated by the gas being pumped.

Application

The Diaphragm pump in an explosion-proof Design is intended to:

- Aspirating, pumping and compressing neutral and aggressive gases and vapors.
- Generating a vacuum down to an ultimate pressure < 2 mbar.
- Aspirating, pumping and compressing an explosive atmosphere – comprising air and combustible gases, vapors and mists in any mix ratio – from zone 1 areas at risk of explosion (device category 2 according to ATEX).
- Installation and operation of the diaphragm pumps in zone 1 areas at risk of explosion (device category 2 according to ATEX).
- The permissible temperature classes and explosion groups of the atmospheres – comprising air and combustible gases, vapors and mists in any mix ratio – that are to be pumped or which are ambient are determined according to the specifications of standard EN 13 463-1. The diaphragm pumps mentioned here have been assigned to T4 IIB.

Substances that tend to decompose spontaneously, such as acetylene C_2H_2, carbon disulfide CS_2 and explosives, lie outside the scope of the application of Atex-Directive 2014/34/EU.

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