



MP-F05/EX and MP-F10

Full PTFE bellows Pump Series MP®

Versions MP-F05, MP-F10, MP-F05/R, MP-F10/R

Versions MP-F05/EX, MP-F10/EX, MP-F05/R/EX, M-F10/R/EX



Special Features

- Corrosion resistant
- 100 % lubricant free
- Gas tight
- Maintenance free
- Long service life
- A wide variety of connections available
- Also with integrated bypass valve in the pump head for adjustment of the pump capacity
- Ex versions suitable for mounting in zone 1 IIC T3 areas
- Ex versions suitable for gases of zone 1 IIC T3

Application


The bellows pump MP-F is suitable for corrosive gases. It is constructed especially for problems in the analysis technique.

Description

All parts of the bellows pump MP-F who get in contact with the gas sample are corrosion resistant. As an option for connecting the pump, the upper pump head is also available in stainless steel. The pump works absolutely lubricant free, so gases remain analytically unchanged. Due to a special bellows and valve system, the pump operates maintenance free with a long service life. The simple valve design guarantees low maintenance costs.

The pump capacity can be adjusted with a needle valve, which serves as an internal bypass. This valve is integrated into the pump head of the MP-F./R.

The pump is available in 230 V or 115 V. For other voltages, please contact M&C.

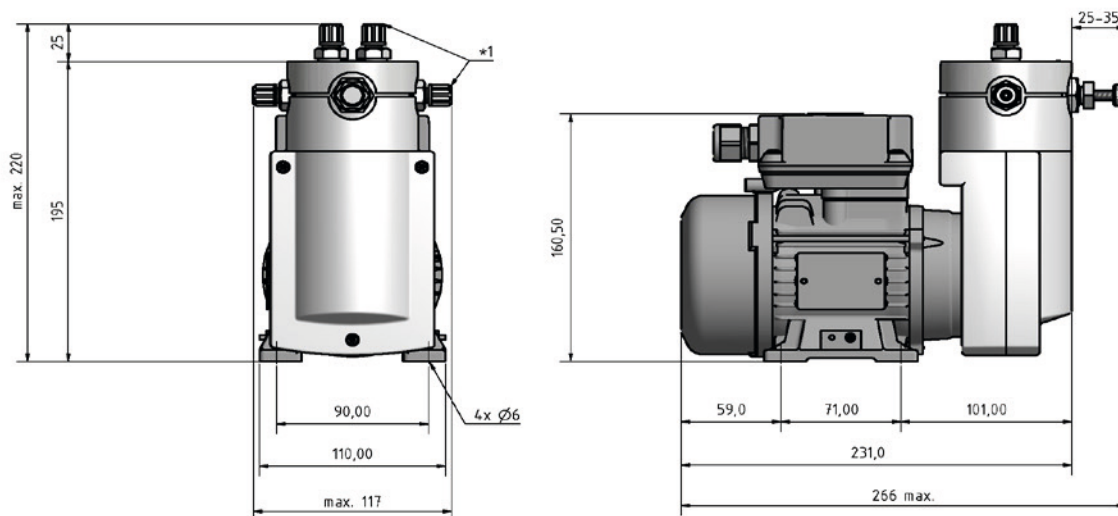
The Ex versions of the MP-F pumps are designed in accordance to  ATEX II 2G.

The Ex versions are also available with 5 l/min and 10 l/min capacity.

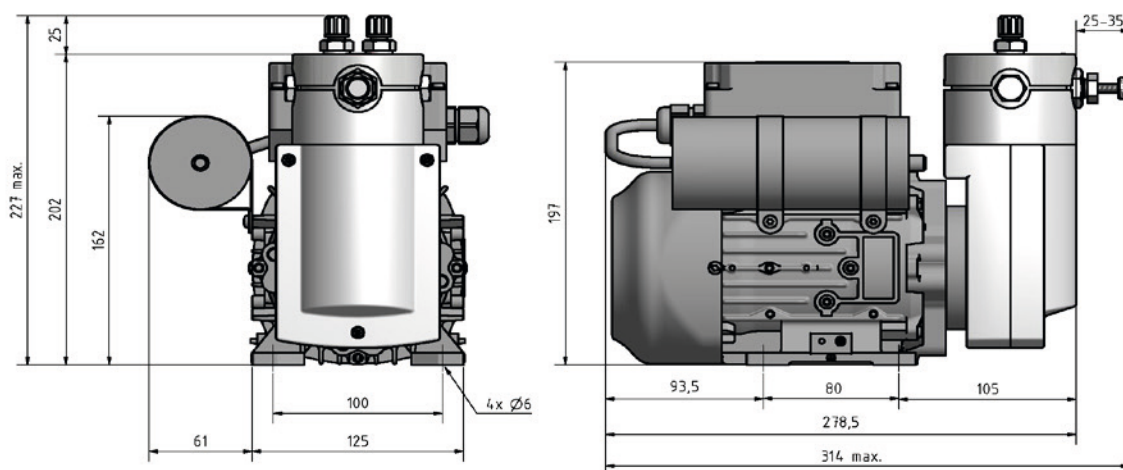
The pump head can be connected to the gas line from the top or side. It can also be rotated in 90° steps and mounted in any of these positions.

Dimensions

Pump MP-F

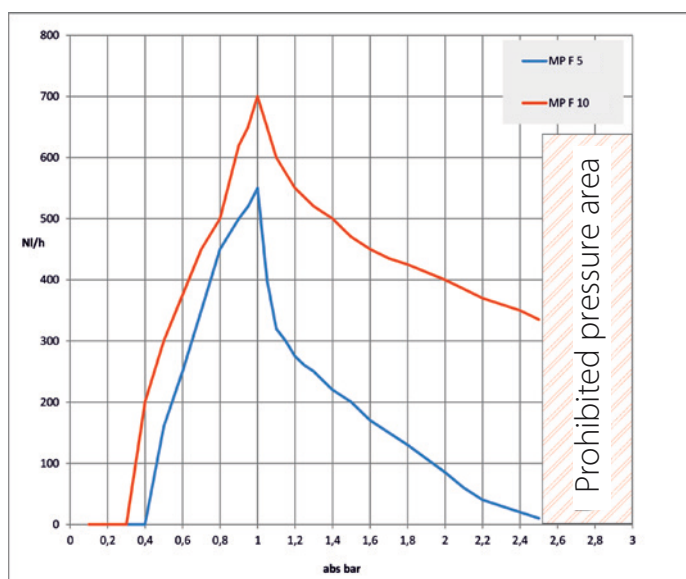


Pump MP-F EX



Dimensions in mm

Performance characteristics MP-F and MP-F EX



Capacity (in NI/h) without counter pressure on the vacuum and pressure side.

Technical Data

Bellows pump	MP-F05	MP-F05/R	MP-F10	MP-F10/R
Integrated needle valve	no	yes	no	yes
Part No. 230 V 50 Hz	05 P 1000	05 P 1010	05 P 1005	05 P 1015
Part No. 115 V 60 Hz	05 P 1000a	05 P 1010a	05 P 1005a	05 P 1015a
Voltage tolerance	In accordance with IEC 60034-1 Voltage +/- 5 % Frequency +/- 2 %			
Degree of protection	IP 55 EN 40050			
Capacity max.	320 NI/h (approx. 5 l/min) with a counter pressure of +/- 50 mbar on the vacuum and pressure side		600 NI/h (approx. 10 l/min) with a counter pressure of +/- 50 mbar on the vacuum and pressure side	
Operating pressure	max. 0.4 - 2.5 bar abs.		max. 0.3 - 2.5 bar abs.	
Gas sample temperature	-30 °C to +140 °C (-22 °F to +284 °F)			
Ambient temperature	+10 °C to +50 °C / 0 to +50 °C for dry sample gas (+50 °F to + 122 °F / +32 °F to + 122 °F for dry sample gas)			
Storage temperature	-20 to +60 °C (-4 °F to +140 °F)			
Current consumption 230 V / 115 V	230 V : 0.35 A / 115 V : 0.63 A			
Power consumption	65 W			
cos φ	230 V : 0.96 / 115 V : 0.99			
Gas connections	G1/4" i DIN ISO 228/1			
Material of sample contacting parts	PTFE, PFA, FEP, (+PVDF for type /R)			
Operating mode	100 % continuous duty, starting up of the pump only without pressure			
Electrical equipment standard	EN 60204-1			
Weight	4.7 Kg (10.36 lbs)			
Options				
05 P 1050	Mounting bracket with 4 anti-vibration pads for bellows pump MP-F			
05 P 1060	Extra charge for upper pump head of bellows pump MP-F made out of stainless steel			
05 P 1070	Extra charge for upper pump head of bellows pump MP-F./R made out of stainless steel with needle valve made out of PVDF			

Technical Data Version

Bellows pump	MP-F05/EX	MP-F05/R/EX	MP-F10/EX	MP-F10/R/EX
Integrated needle valve	no	yes	no	yes
Part No. 230 V 50 Hz	05 P 1100	05 P 1110	05 P 1105	05 P 1115
Part No. 115 V 60 Hz	05 P 1100a	05 P 1110a	05 P 1105a	05 P 1115a
Voltage tolerance	In accordance with IEC 60034-1 Voltage +/- 5 % Frequency +/- 2 %			
Degree of protection	IP 54 EN 40050			
Capacity max.	320 NI/h (approx. 5 l/min) with a counter pressure of +/- 50 mbar on the vacuum and pressure side		600 NI/h (approx. 10 l/min) with a counter pressure of +/- 50 mbar on the vacuum and pressure side	
Operating pressure	max. 0.4 - 2.5 bar abs.		max. 0.3 - 2.5 bar abs.	
Marking	II 2 G c IIC T3 IBEu 15 ATEX B 005 X			
Gas sample temperature	-20 bis +50 °C (-4 °F to +122 °F)			
Ambient temperature	+10 to +50 °C / 0 to +50 °C for dry sample gas (+50 °F to + 122 °F / +32 °F to + 122 °F for dry sample gas)			
Storage temperature	-20 bis +60 °C (-4 °F to +140 °F)			
Current consumption 230 V / 115 V	230 V : 0.88 A / 115 V : 1.78 A			
Power consumption	90 W			
cos φ	230 V : 0.83 / 115 V : 0.95			
Gas connections	G1/4" i DIN ISO 228/1			
Material of sample contacting parts	PTFE, PFA, FEP, (+PVDF bei Typ /R)			
Operating mode	100 % continuous duty, starting up of the pump only without pressure			
Electrical equipment standard	EN 60204-1, EN 13463-1: 2009, EN 13463-5: 2011, EN 60079-0:2012 + A11:2013			
Weight	230 V : 8.55 Kg (18.85 lbs)/ 115 V : 7.75 Kg (17.09 lbs)			
Options				
05 P 1050	Mounting bracket with 4 anti-vibration pads for bellows pump MP-F			
05 P 1060	Extra charge for upper pump head of bellows pump MP-F made out of stainless steel			
05 P 1070	Extra charge for upper pump head of bellows pump MP-F./R made out of stainless steel with needle valve made out of PVDF			

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

- [1] **TYPE EXAMINATION CERTIFICATE**
[2] **for non-electrical equipment
of the Equipment Groups I and II, Categories M2, 2 or 3**
(Translation)



[3] Type Examination Certificate Number: **IBExU15ATEXB005 X**

[4] Equipment: **Measuring gas pump MP-F .../Ex**
Sizes: 05 and 10 with or without needle valve

[5] Manufacturer: **M&C Techgroup Germany GmbH**

[6] Address: **Rehecke 79
40885 Ratingen
GERMANY**

[7] The design of the equipment mentioned in [4] and any acceptable variation thereto is specified in the schedule to this type examination certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH certifies that the equipment mentioned in [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive 94/9/EC.
The test results are recorded in the Test Report IB-14-4-030 of 30 April 2015.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 13463-1:2009, EN 13463-5:2011, and EN 60079-0:2012 + A11:2013.

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in [17] in the schedule to this type examination certificate.

[11] This type examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of the directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned in [4] shall include the following:

II 2G c IIC T3 X

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Freiberg, 4 May 2015

By order

(Dipl.-Ing. Willamowski)

Schedule



Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged.
In case of dispute, the German text shall prevail.