Sample gas pumps P2.x ATEX

Even in explosive systems in the chemical industry, petrochemistry or biochemistry, gas analysis is key for safe operation. Many of the analysis processes used in these fields require extracting and special conditioning of the sample gas.

Sample gas pumps convey the sample gas from the sampling point to the conditioning system. The main item in these specially designed pumps is the PTFE single-piece bellow. Combined with the pump head, also single-piece, this solution provides high resistance against particularly aggressive sample gas. Turning the pump head allows gas with condensate to be conveyed without a problem.

There are several different models with separate drive, depending on the requirements. These versions allow the installation of a coupling flange to install the pump heads inside heated housings away from the motor whilst the motor remains outside the housing.

The series are available for various EX hazard and classification zones with flow rates up to 700 l/h (11.7 lpm).

- **Easy, sturdy set-up**
- **Easy to replace valves**
- **Single-piece bellows**
- **For aggressive sample gas**
- **Conveys sample gas with condensate**
- **Long life**
- **Pump head with optional adjustable bypass valve**
- **Bypass valve for PTFE and VA pump body**
- **Low noise emission**
- **With mounting bracket**
- **ATEX versions category 2**

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Pump Overview

	Direct-drive pumps		Pumps with intermediate flange	
Flow rate (see flow curve)	**6.7 lpm**	**11.7 lpm**	**6.7 lpm**	**11.7 lpm**
ATEX types II 2G Ex h IIC T3/T4 Gb X	P 2.2 ATEX		P 2.4 ATEX	
ATEX types II 2G Ex h IIC T3 Gb X		P 2.72 ATEX		P 2.74 ATEX
Weight	approx. 16.5 lb		approx. 18.7 lb	

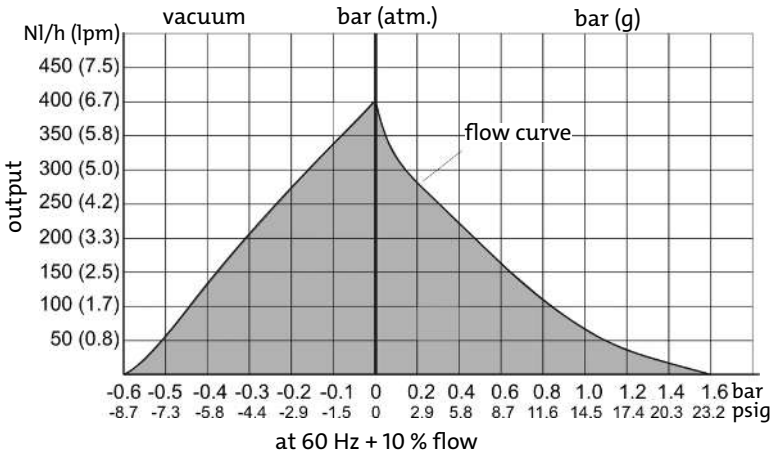
Technical data P 2.2 / P 2.4 ATEX

Technical Data	
Nominal voltage:	see ordering information
Marking:	II 2G Ex h IIC T3/T4 Gb X
IP rating:	electric IP65 mechanical IP20
Dead volume:	0.5 cu.in.
Weight:	approx. 16.5 lb (P 2.2 Atex) approx. 18.7 lb (P 2.4 Atex)
Materials in contact with media vary by configuration:	PTFE, PVDF (standard pump with 212 °F valves) + PEEK (standard pump with 284 °F valves) + Viton (standard pump with 212 °F valves and bypass valve) + PCTFE, Viton (standard pump with 284 °F valves and bypass valve) + 1.4571 (VA pump body) + 1.4401, Viton (VA pipe fittings) + Viton (VA pump body with bypass valve)

Pumps 6.7 lpm	
Ambient temperature Motor:	-4 °F to 122 °F
Pump head:	see temperature classes
Valve medium temperature*:	PTFE/PVDF max. 212 °F PTFE/PEEK max. 284 °F

*see temperature classes

Feed curve 6.7 lpm



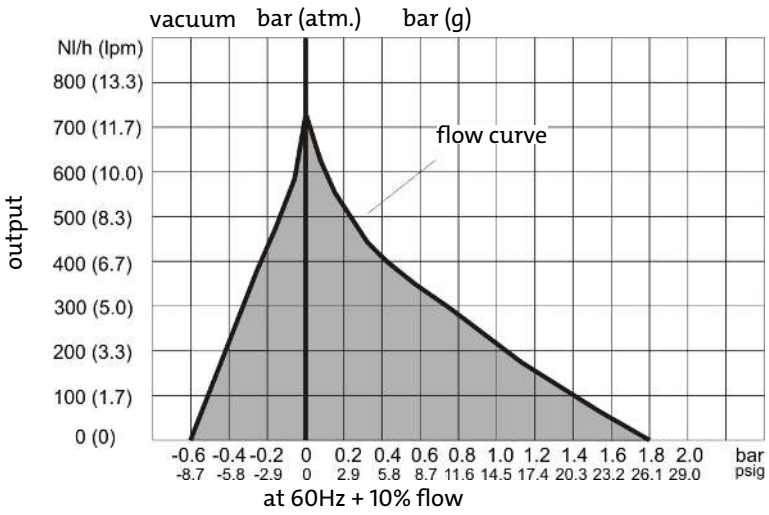
Technical data P 2.72 / P 2.74 ATEX

Technical Data	
Nominal voltage:	see ordering information
Marking:	II 2G Ex h IIC T3 Gb X
IP rating:	electric IP65 mechanical IP20
Dead volume:	0.5 cu.in.
Weight:	approx. 16.5 lb (P 2.72 Atex) approx. 18.7 lb (P 2.74 Atex)
Materials in contact with media:	PTFE, PEEK, 1.4571 (all models) + Viton (bypass valve) + 1.4401, Viton (VA pipe fitting)

Pumps 11.7 lpm	
Ambient temperature Motor:	-4 °F to 122 °F
Pump head:	see temperature classes
Valve medium temperature*:	PTFE/PEEK max. 248 °F

*see temperature classes

Flow curve 11.7 lpm



Temperature classes

P 2.2 ATEX		Medium temperature	Pump head temperature *
no flammable gasses in the gas circuit	T3	284 °F	122 °F
	T4	248 °F	122 °F
Flammable gasses in the gas circuit above the LEL	T3	248 °F	122 °F
	T4	122 °F	122 °F

P 2.4 ATEX		Medium temperature	Pump head temperature
no flammable gasses in the gas circuit	T3	248 °F	212 °F
	T4	176 °F	176 °F
Flammable gasses in the gas circuit above the LEL	T3	212 °F	176 °F
	T4	122 °F	122 °F

P 2.72 ATEX		Medium temperature	Pump head temperature *
no flammable gasses in the gas circuit	T3	248 °F	122 °F
Flammable gasses in the gas circuit above the LEL	T3	122 °F **	122 °F **

P 2.74 ATEX		Medium temperature	Pump head temperature
no flammable gasses in the gas circuit	T3	248 °F	212 °F
Flammable gasses in the gas circuit above the LEL	T3	122 °F **	122 °F **

* resulting from the pump's maximum ambient temperature.

** At a primary pressure of 0 to max. 7.3 PSI the pump head and medium temperature is max. 113 °F.

Important motor notices

Motors used in EX areas require a protection device!

Installing the motor protection switch outside the EX area

Motor voltage		Item no.
7 = 230 V 50/60 Hz	0,7 - 1 A	9132020041
8 = 115 V 50/60 Hz	1,4 - 2 A	9132020057
9 = 380-420 V 50 Hz	0.45 – 0.63 A	9132020055
0 = 500 V 50 Hz	0.35 – 0.5 A	9132020071

Installing the motor protection switch inside the EX area Zone 1 or 2 (ATEX only)

Motor voltage		Item no.
7 = 230 V 50/60 Hz	0,63 - 1 A	9132020036
8 = 115 V 50/60 Hz	1.6 - 2.5 A	9132020033
9 = 380-420 V 50 Hz	0.4 – 0.63 A	9132020073
0 = 500 V 50 Hz	0.25 – 0.4 A	9132020074

Information about the versions

Pump head position (only P2.2 and P2.72):

If the gas contains condensate, the pump head must be installed rotated by 180°. In this case, turn the pump head as described in the operating instructions. Please note the correct pump head position for your application when placing your order to avoid conversion.

Pump head material:

The standard material is PTFE.

The pump head may be fitted with a bypass valve (P2.2, P2.72 only) to reach all the values in the grey area of the flow curve. Depending on the inlet and outlet pipe style, a stainless steel pump body may be ordered.

Valve material (P2.2 models only):

PTFE/PVDF valves must be used for unheated applications with a media temperature up to 212 °F. For higher temperatures up to 284 °F, use the respective PTFE/PEEK valves. Please note, the max. temperatures are limited by the temperature classes (see temperature class table).

Ordering instructions P 2.2 / P 2.4 ATEX

42	xx	x	x	x	x	x	9	0	00	Product characteristic	
										Base model	
	61									P2.2 Atex 6.7 lpm (direct operation without intermediate flange)	
	62									P2.4 Atex 6.7 lpm (with intermediate flange)	
										Motor voltage	
		7								230 V 50/60 Hz; 0,78/0,86 A	
		8								115 V 50/60 Hz; 1,56/1,72 A	
		9								380 - 420 V 50 Hz; 0,46 A	
		0								500 V 50 Hz; 0,36 A	
										Pump head position	
			1							Normal position vertical	
			2							turned by 180° *	
										Pump head material	
				1						PTFE	
				2						Stainless steel 1.4571	
				3						PTFE with bypass valve *	
				4						Stainless steel 1.4571 with bypass valve *	
										Valve material	
					1					up to 212 °F; PTFE / PVDF *	
					2					up to 284 °F; PTFE / PEEK	
										Screw-in connections (depending on pump body)	
										PTFE Pump body	**Stainless steel pump body**
						9				DN 4/6 (Standard)	6 mm (Standard)
						1				DN 6/8	8 mm
						2				3/8"-1/4"	3/8"
						3				1/4"-1/8"	
						4				1/4"-1/6"	1/4"
										Mounting accessories	
							9			incl. mounting bracket and bumper *	

* not on P2.4 Atex

Ordering instructions P 2.72 / P 2.74 ATEX

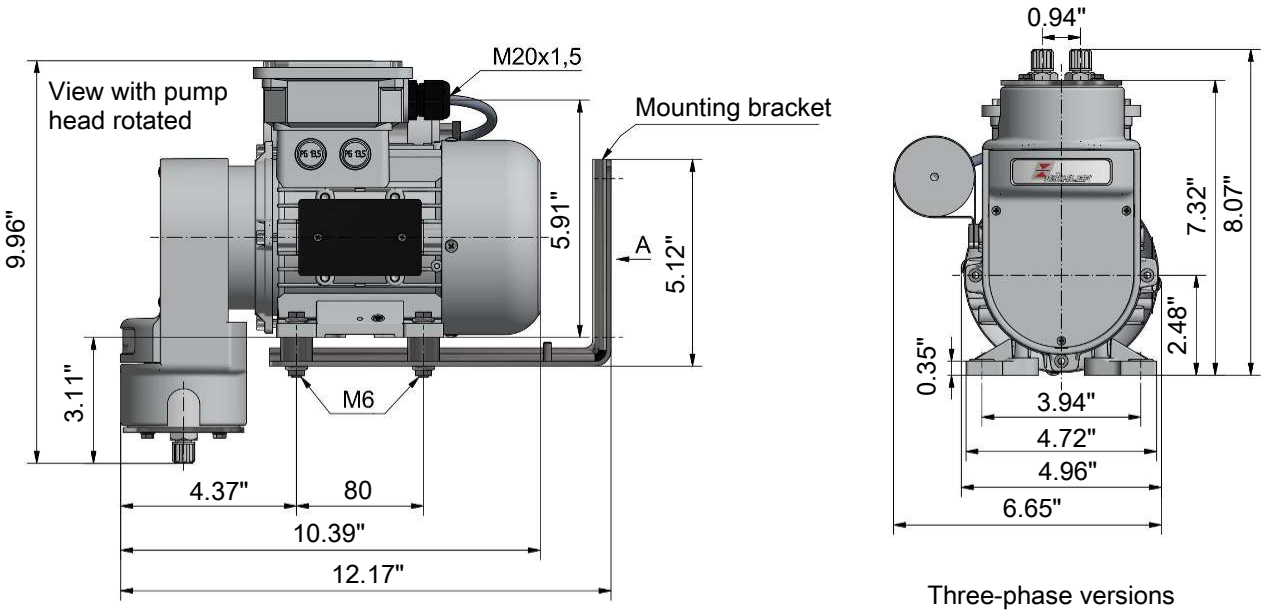
42	xx	x	x	x	x	x	9	0	00	Product characteristic
										Base model
	65									P2.72 Atex 11.7 lpm (direct operation without intermediate flange)
	66									P2.74 Atex 11.7 lpm (with intermediate flange)
										Motor voltage
		7								230 V 50/60 Hz; 0,78/0,86 A
		8								115 V 50/60 Hz; 1,56/1,72 A
		9								380 - 420 V 50 Hz; 0,46 A
		0								500 V 50 Hz; 0,36 A
										Pump head position
			1							Normal position vertical
			2							turned by 180° *
										Pump head material
				2						Stainless steel 1.4571
				4						Stainless steel 1.4571 with bypass valve *
										Valve material
					2					up to 284 °F; PTFE / PEEK
										Screw-in connections
						9				6 mm (Standard)
						1				8 mm
						2				3/8"
						4				1/4"
										Mounting accessories
							9			incl. mounting bracket and bumper *

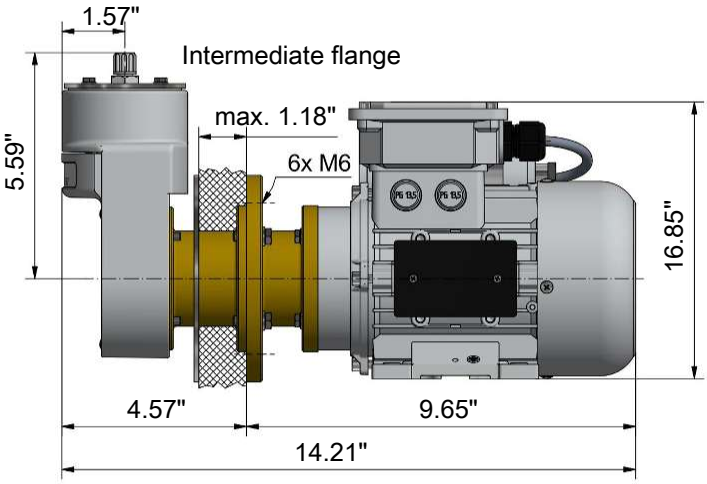
* not on P2.74 Atex

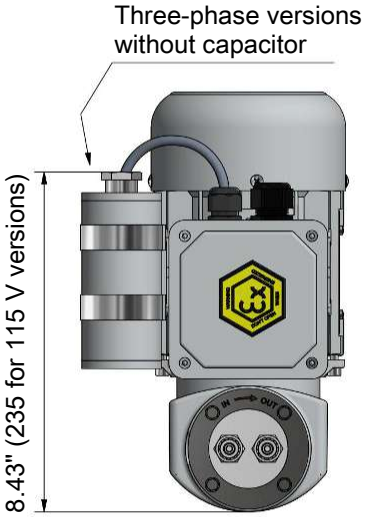
Dimensions

P2.2 Atex, P2.72 Atex – standard versions

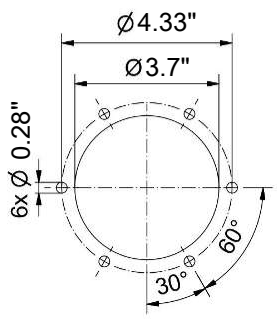
P2.4 Atex, P2.74 Atex – versions with intermediate flange

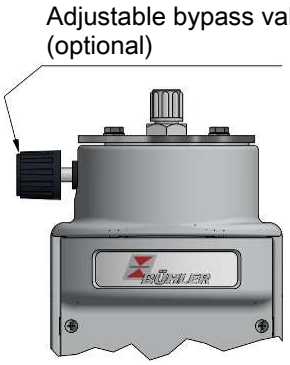


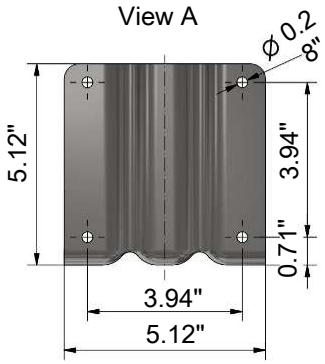




Cabinet cut-out for pumps with intermediate flange







Installation notices:
1) This pump should be installed horizontally
2) If necessary, rotate the pump head during installation. When conveying gasses with condensate content it must be installed valves down.