



Sample gas pumps P2.x AMEX-H2/-O2

Green hydrogen produced by electrolysis using renewable energy sources is the key to a sustainable, emission-free future in the energy industry. Our specially developed P2.x AMEX-H2/-O2 sample gas pumps are the ideal solution for reliable gas conditioning in the analysis of hydrogen (H₂) and oxygen (O₂).

In order to ensure safe operation in electrolysis systems, things such as LEL monitoring are of utmost importance. Our sample gas pumps offer reliable, tried-and-tested performance for your process: With high-quality, suitability-tested materials and processing adapted for the needs of either high-purity hydrogen or oxygen, our gas pumps are equipped for the high demands of gas analytics in the electrolyser.

As well as material-refining measures to prevent hydrogen-induced component damage, the products in the H₂ product series are subjected to a leak test using helium. Sample gas pumps for O₂ are subject to special cleaning processes to remove particles, oils and grease. The contamination limits are based on the internationally used and applicable guideline EIGA Doc 33/18 "Cleaning of Equipment for Oxygen Service".

For applications with high-purity hydrogen or oxygen

Leak tests using helium are performed on the H₂ version as standard

Transporting sample gas containing condensate (pump head rotated by 180°)

Cleaning standard complies with EIGA Doc 33/18 as regards the absence of particles, oils and fats (O₂ variant)

Suitability-tested materials for high H₂ and O₂ concentrations

All plastics in contact with media are BAM-tested (O₂ variant)

Produced under controlled cleanliness conditions based on VDA Band 19.1 (O₂ variant)

All of the benefits of the standard sample gas pump P2.x AMEX

FM C-US - approval for Class I Div. 2



Pump overview

	Direct-drive pumps	Pumps with intermediate flange
Flow rate (see flow curve)	400 l/h	400 l/h
AMEX Types (Amerika) NI / 1 / 2 / BCD / T3, T3C CL.I Div.2 Gr BCD T3, T3C FM C-US approval Nr.: 3038101 / 3038101C	P 2.2 AMEX	P 2.4 AMEX

Technical Data P2.x AMEX-H2/-O2

Nominal voltage:	see ordering information
Marking:	NI / 1 / 2 / BCD / T3, T3C CL.I Div.2 Gr BCD T3, T3C
IP rating:	electric IP44 mechanical IP 20
Dead volume:	8,5 ml
Weight:	approx. 7,5 kg (P 2.2 AMEX) approx. 8,5 kg (P 2.4 AMEX)
Materials in contact with media vary by configuration:	PTFE, PEEK, 1.4571 (contained in all models) + FKM (bypass valve) + 1.4401, FKM (VA pipe fittings for H ₂ variant) + 1.4401 (VA RT pipe fittings for O ₂ variant, BAM-tested PTFE sealing tape required [see accessories])

The following tables describe the temperature characteristics and the resulting limits for the permissible operation of the sample gas pumps. The temperature classes apply to the gas in the installation area (zone) as well as to the explosive medium in the gas path:

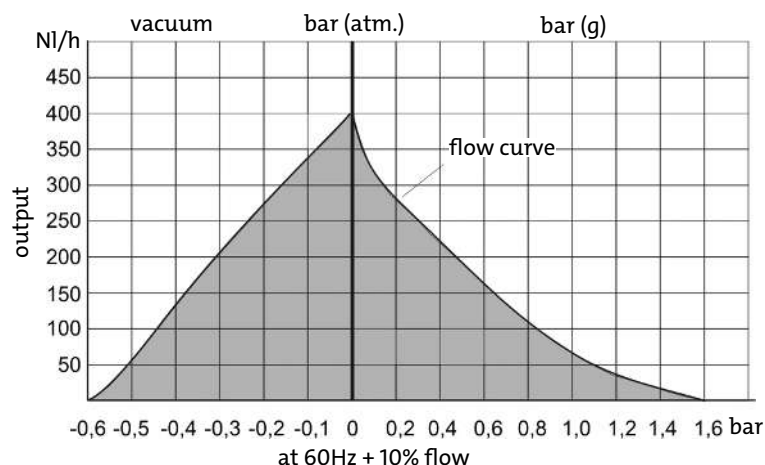
Temperature characteristics P2.x AMEX-H2 variants

		P2.2			P2.4	
Temperature class	Ambient temperature motor	Ambient temperature pump head	Media temperature		Ambient temperature pump head	Media temperature
			without bypass valve	with bypass valve		
T3	-20 °C...40 °C	max. 40 °C	max. 140 °C	max. 135 °C	max. 100 °C	max. 140 °C
T3C			max. 90 °C	max. 85 °C	max. 90 °C	max. 90 °C

Temperature characteristics P2.x AMEX-O2 variants

		P2.2		P2.4	
Temperature class	Ambient temperature motor	Ambient temperature pump head	Media temperature	Ambient temperature pump head	Media temperature
T3	-20 °C...40 °C	max. 40 °C	max. 75 °C	max. 75 °C	max. 75 °C
T3C				max. 75 °C	

Flow curve 400 l/h



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

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 – 1,6 A	9132020032

Information about the versions

Pump head position (P2.2 AMEX only):

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 stainless steel.

The pump head may be fitted with a bypass valve (P2.2 AMEX only) to reach all the values in the grey area of the flow curve.

Ordering instructions for P2.x AMEX-H2/-O2

42	xx	x	x	x	x	x	9	0	0	0	x	Product characteristics									
												Base model									
71												P2.2 AMEX 400 l/h (direct operation without intermediate flange)									
72												P2.4 AMEX 400 l/h (with intermediate flange)									
												Motor voltage									
7												230 V 50/60 Hz 0.8/0.7 A									
8												115 V 50/60 Hz 1.6/1.5 A									
												Pump head position									
1												Normal position vertical									
2												turned by 180° ¹⁾									
												Pump head material									
2												Stainless steel 1.4571									
4												Stainless steel 1.4571 with bypass valve ^{1) 2)}									
												Valve material									
2												PTFE/PEEK ²⁾									
												Screw-in connections (varies by application)									
												For -H ₂ (stainless steel)					For -O ₂ (stainless steel) ³⁾				
0												N/A					no screw-in connection				
9												1/4"					1/4"				
1												8 mm					8 mm				
5												6 mm					6 mm				
												Mounting accessories									
9												incl. mounting bracket and bumpers ¹⁾									
												Area of application									
												-H ₂ optimised for high-purity hydrogen									
												-O ₂ optimised for high-purity oxygen									

¹⁾ not possible with P2.4 AMEX.

²⁾ For O₂-BAM-tested materials version.

³⁾ For O₂version, cleaned fittings are enclosed in a separate bag. BAM-tested PTFE sealing tape required [see accessories].

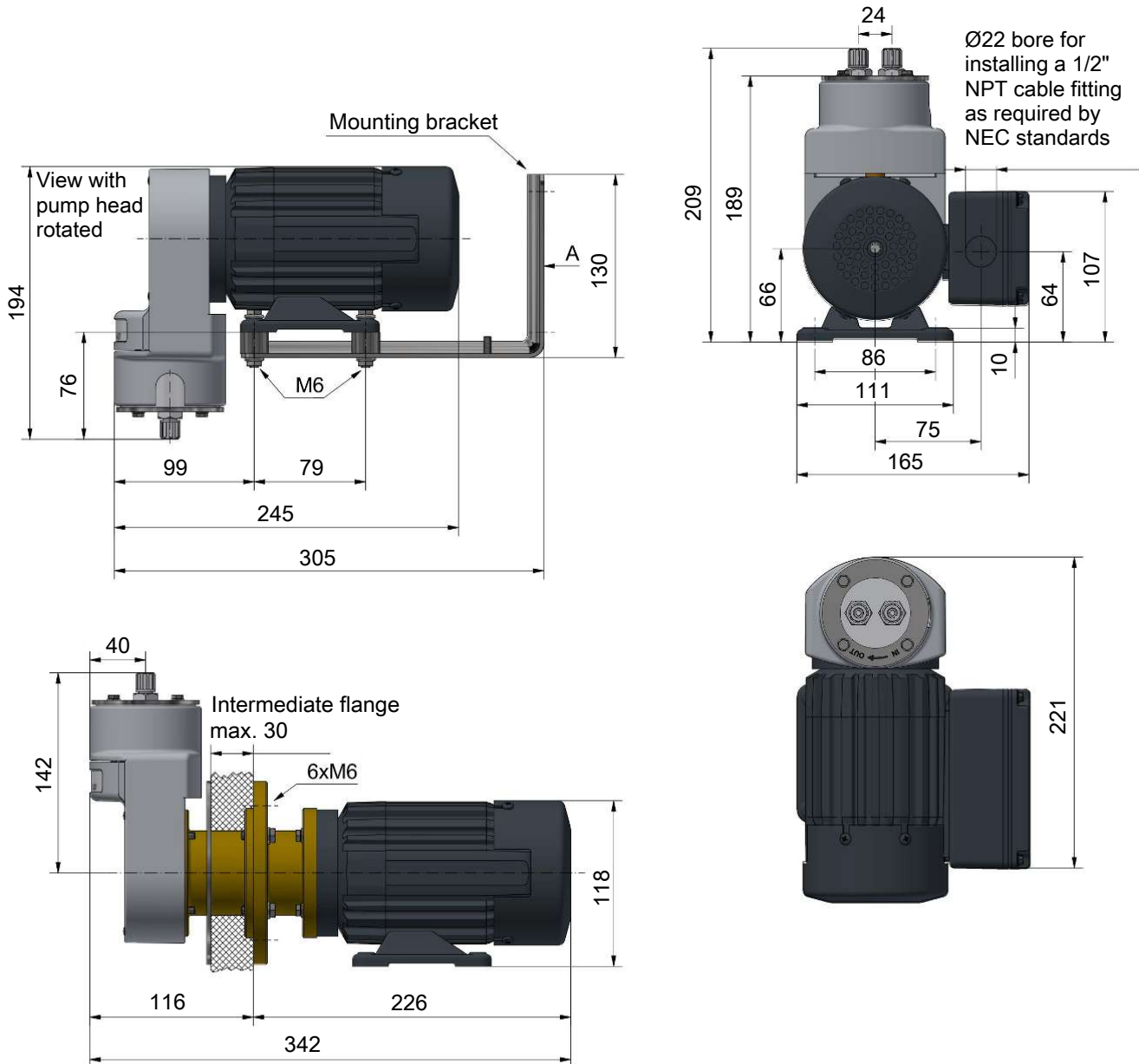
Spare parts and accessories

Item no.	Description
9022325	BAM-approved PTFE sealing tape (Roll of 4,5 m)

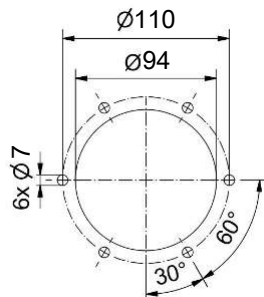
Dimensions

P2.2 AMEX – standard versions

P2.4 AMEX – versions with intermediate flange



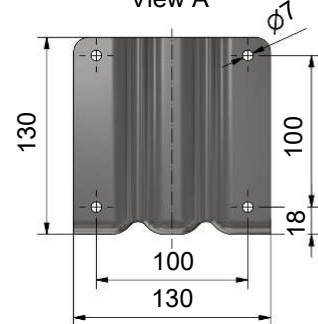
Cabinet cut-out for pumps with intermediate flange



Adjustable bypass valve (optional)



View A



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.