

# Hydraulic Diaphragm Metering Pump Hydro/ 4

For flexible metering with excellent process reliability in the medium pressure range

ProMinent®



## Capacity range of single head pump: 76 – 1,450 l/h; 40 – 7 bar

The Hydro/ 4 hydraulic diaphragm metering pump (HP4a), together with the Hydro/ 2 and Hydro/ 3 pumps, represents an integrated product range with stroke lengths of 15 and/or 20 mm. This covers the capacity range from 3 to 1,450 l/h at 100 – 7 bar. A wide range of power end versions is available for use in areas at risk from explosion with ATEX certification. The Hydro product range is designed to comply with API 675 among others.

### Your benefits

Excellent process safety and reliability:

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system.
- Integral hydraulic relief valve.
- Metering reproducibility is better than  $\pm 1\%$  within the 20-100% stroke volume range under defined conditions and with proper installation.

Excellent flexibility:

- The modular construction with single and double head versions permits a wide range of applications, with the double head designs being operated in push-pull mode.
- It is possible to combine up to 5 metering units, even with different pump capacities, in multiple pump systems.
- 5 different gear ratios are available.

### Field of application

- Oil and gas industry.
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water.
- Metering of reactants and catalysts in the chemical industry.
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips.



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## Technical Data

Type HP4a	With 1500 rpm motor at 50 Hz				With 1800 rpm motor at 60 Hz				Suction lift	Perm. pre-pressure suction side	Connection on suction/pressure side	Shipping weight	Plunger Ø
	Delivery rate at max.back pressure		Max. stroke rate		Delivery rate at max. back pressure		Max. stroke rate						
	bar	l/h	ml/stroke	Strokes/min	psi	l/h/gph (US)	Strokes/min	m WC	bar	G-DN	kg	mm	
400075	40	76	17.7	71	580	91/24	86	3	1	G 1 1/2-25	69	40	
400109	40	109	17.7	103	580	132/35	124	3	1	G 1 1/2-25	69	40	
400145	40	145	17.7	136	580	174/46	164	3	1	G 1 1/2-25	69	40	
400200	40	200	17.7	188	580	239/63	225	3	1	G 1 1/2-25	69	40	
400227	40	227	17.7	214	-	-	-	3	1	G 1 1/2-25	69	40	
250130	25	130	31.0	71	363	155/41	86	3	1	G 1 1/2-25	69	52	
250190	25	190	31.0	103	363	230/61	124	3	1	G 1 1/2-25	69	52	
250250	25	250	31.0	136	363	300/79	164	3	1	G 1 1/2-25	69	52	
250350	25	350	31.0	188	363	420/111	225	3	1	G 1 1/2-25	69	52	
250400	25	400	31.0	214	-	-	-	3	1	G 1 1/2-25	69	52	
160210	16	210	48.7	71	232	250/66	86	3	1	G 1 1/2-25	76	63	
160300	16	300	48.7	103	232	360/95	124	3	1	G 1 1/2-25	76	63	
160400	16	400	48.7	136	232	480/127	164	3	1	G 1 1/2-25	76	63	
160550	16	550	48.7	188	232	660/174	225	3	1	G 1 1/2-25	76	63	
160625	16	625	48.7	214	-	-	-	3	1	G 1 1/2-25	76	63	
100330	10	330	78.0	71	145	400/106	86	3	1	G 2-32	87	80	
100480	10	480	78.0	103	145	580/153	124	3	1	G 2-32	87	80	
100635	10	635	78.0	136	145	760/201	164	3	1	G 2-32	87	80	
100880	10	880	78.0	188	145	1,050/277	225	3	1	G 2-32	87	80	
101000	10	1,000	78.0	214	-	-	-	3	1	G 2-32	87	80	
070465	7	465	109.0	71	102	560/148	86	3	1	G 2 1/4-40	96	94	
070670	7	670	109.0	103	102	805/213	124	3	1	G 2 1/4-40	96	94	
070890	7	890	109.0	136	102	1,070/283	164	3	1	G 2 1/4-40	96	94	
071230	7	1,230	109.0	188	102	1,450/383	225	3	1	G 2 1/4-40	96	94	
071400	7	1,400	109.0	214	-	-	-	3	1	G 2 1/4-40	96	94	

## Materials in Contact With the Medium

Material	Dosing head	DN 25 ball valves			DN 32/DN 40 plate valves			
		Suction/pressure connector	Seals	Valve balls	Valve seats	Seals	Valve plates/ valve springs	Valve seats
SST	Stainless steel 1.4404	Stainless steel 1.4404	PTFE	Stainless steel 1.4404	PTFE	PTFE	Stainless steel 1.4404/ Hast. C	PTFE
PVT*	PVDF (polyvinylidene fluoride)	PVDF (polyvinylidene fluoride)	PTFE	Glass	PTFE	PTFE	Ceramic/E-CTFE	PTFE
HCT	Hastelloy C	Hastelloy C	PTFE	Hastelloy C	PTFE	PTFE	Hast. C / E-CTFE	PTFE
TTT	PTFE + 25 % carbon	PVDF (polyvinylidene fluoride)	PTFE	Glass	PTFE	PTFE	Ceramic/E-CTFE	PTFE

\* not for areas at risk from explosion



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## Motor Data

Identity code	specification	Power supply	Remarks
S	3-phase, IP 55	220 – 240V/380 – 420 V 250 – 280V/440 – 480 V	50 Hz 60 Hz 1.1 kW
T	3-phase, IP 55	220 – 240V/380 – 420 V 265 – 280V/440 – 480 V	50 Hz 60 Hz 1.1 kW with PTC, speed control range 1:5
R	3-phase, IP 55	230 V/400 V	50/60 Hz 1.5 kW with PTC, speed adjustment range 1:20 with external fan 1-phase 230V; 50/60 Hz
V0	1-phase, IP 55	400 V	50/60 Hz 1.5 kW Variable speed motor with integrated frequency converter
L1	3-phase, II 2G Ex h IIC T3 Gb X	220 – 240V/380 – 420 V	50 Hz 1.1 kW
L2	3-phase, II 2G Ex h IIC T4 Gb X	220 – 240V/380 – 420 V	50 Hz 1.1 kW with PTC, speed control range 1:5
P1	3-phase, II 2G Ex h IIC T3 Gb X	254 – 277V/440 – 480 V	60 Hz 1.1 kW
P2	3-phase, II 2G Ex h IIC T4 Gb X	254 – 277V/440 – 480 V	60 Hz 1.1 kW with PTC, speed control range 1:5
V2	3-phase, II 2G Ex h IIC T4 Gb X	400 V ±10%	50/60 Hz 1.1 kW Ex-variable speed motor with integrated frequency converter

Motor data sheets can be requested for more information. Motors for Sigma basic pumps, special motors or special motor flanges are available on request.

The motors are designed in compliance with the Ecodesign Directive 2009/125/EC.

## Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 2014/34/EU in premises at risk from explosion.

Ensure that the explosion group, category and degree of protection specified on the label corresponds to or is better than the conditions prevalent in the intended field of application.

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