Hydraulic diaphragm metering pump Hydro/ 3 API 675

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

Capacity range of single head pump: 15 – 201 l/h; 100 – 10 bar

The hydraulic diaphragm metering pump Hydro/ 3 API 675 (HA3e) meets the requirements of API 675, among other things due to its full-motion drive and automatic bleeding.

Some of the many drive options are also approved for use in areas at risk from explosion.

Your benefits

Excellent process reliability:

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integrated hydraulic relief valve with ventilation function
- Metering reproducibility is better than ± 1% in the 10-100% 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 (boxer principle) 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

Technical data for HA3a 50 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/pressure side	Shipping weight
		60	125	150	187	214				
mm	bar	l/h	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
22	100	–	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	64	–	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	40	–	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	25	–	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	10	–	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
26	64	–	(35) – 43.5	(40) – 51.5	(55) – 63	(65) – 73	7.9	3.0	G 3/4 – 10	41
26	40	(18) – 21	(37) – 45.5	(40) – 55	(50) – 71	(70) – 81	7.9	3.0	G 3/4 – 10	41
26	25	(15) – 21	(30) – 49.5	(40) – 59	(55) – 74	(70) – 84	7.9	3.0	G 3/4 – 10	41
26	10	(15) – 22	(30) – 49.5	(35) – 61	(50) – 77	(80) – 87	7.9	3.0	G 3/4 – 10	41
32	40	(25) – 25.5	(50) – 66	(70) – 80	(65) – 101.5	(70) – 116.5	12.0	3.0	G 1 – 15	41
32	25	(25) – 26.5	(50) – 69	(65) – 83	(65) – 105.5	(70) – 122.5	12.0	3.0	G 1 – 15	41
32	10	(22) – 31.5	(50) – 74	(70) – 90	(60) – 112.5	(65) – 129	12.0	3.0	G 1 – 15	41
38	25	(25) – 50.5	(70) – 110.5	(80) – 126	(150) – 166	(180) – 187	17.0	3.0	G 1 – 15	41
38	10	(30) – 51.5	(80) – 111.5	(90) – 135	(150) – 168	(180) – 191	17.0	3.0	G 1 – 15	41

Note: The pump type with a 22 mm piston diameter does not currently comply with API 675.

The permitted design of the rate flow is possible in the stated range with pump selection in accordance with API 675 (adjustment range 1:10).

Example: with plunger 26 mm, pressure 25 bar and stroke rate 150 strokes/min gives (40) - 59, i.e. the adjustment range of 1:10 is met for a rate flow of between 40 l/h and 59 l/h.

Version PVDF max. 25 bar

* Version SST with double ball valve, valve connector on the suction/discharge side with female thread Rp 3/8, male thread G 3/4-DN 10

Technical data for HA3a 60 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min				Theor. stroke volume	Suction lift	Connection on suction/pressure side	Shipping weight
		72	149	180	224				
mm	bar	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
22	100	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	64	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	40	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	25	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
22	10	–	–	–	–	5.7	3.0	Rp 3/8 – 10-DKV*	41
26	64	(21.5) – 22.5	(42) – 51.5	(48) – 61.5	(66) – 75	7.9	3.0	G 3/4 – 10	41
26	40	(21.5) – 25	(44) – 54	(48) – 66	(60) – 85	7.9	3.0	G 3/4 – 10	41
26	25	(18) – 25	(36) – 59	(48) – 70.5	(66) – 88.5	7.9	3.0	G 3/4 – 10	41
26	10	(18) – 26	(36) – 59	(42) – 73	(60) – 92	7.9	3.0	G 3/4 – 10	41
32	40	(30) – 30.5	(60) – 78.5	(84) – 96	(78) – 121	12.0	3.0	G 3/4 – 10	41
32	25	(30) – 31.5	(60) – 82	(78) – 99.5	(78) – 126	12.0	3.0	G 3/4 – 10	41
32	10	(26.5) – 37.5	(60) – 88	(84) – 108	(72) – 134.5	12.0	3.0	G 3/4 – 10	41
38	25	(30) – 60.5	(84) – 131	(96) – 151	(180) – 198	17.0	3.0	G 3/4 – 10	41
38	10	(36) – 61.5	(96) – 132	(108) – 162	(180) – 201	17.0	3.0	G 3/4 – 10	41

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Materials in Contact With the Medium

Material	Dosing head	Suction/pressure connector	Seals/ball seat	Balls
SST	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE/stainless steel 1.4404	Ceramic
PVT*	PVDF (polyvinylidene fluoride)	PVDF (polyvinylidene fluoride)	PTFE/PTFE	Ceramic
HCT	Hastelloy C	Hastelloy C	PTFE/Hastelloy C	Ceramic
TTT	PTFE + 25 % carbon	PVDF (polyvinylidene fluoride)	PTFE/PTFE	Ceramic

* not for areas at risk from explosion

Motor Data

Identity code specification		Power supply			Remarks
S	3-phase, IP 55	220 – 240 V/380 – 420 V 250 – 280 V/440 – 480 V	50 Hz 60 Hz	0.75 kW	
T	3-phase, IP 55	220 – 240 V/380 – 420 V 265 – 280 V/440 – 480 V	50 Hz 60 Hz	0.75 kW	with PTC, speed control range 1:5
R	3-phase, IP 55	230 V/400 V	50/60 Hz	0.75 kW	with PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V0	1-phase, IP 55	230 V ±10 %	50/60 Hz	0.75 kW	Variable speed motor with integrated frequency converter
L1	3-phase, II 2G Ex b IIC T3 Gb	220 – 240 V/380 – 420 V	50 Hz	0.75 kW	
L2	3-phase, II 2G Ex de IIC T4	220 – 240 V/380 – 420 V	50 Hz	0.75 kW	with PTC, speed control range 1:5
P1	3-phase, II 2G Ex e II T3	254 – 277 V/440 – 480 V	60 Hz	0.75 kW	
P2	3-phase, II 2G Ex de IIC T4	254 – 277 V/440 – 480 V	60 Hz	0.75 kW	with PTC, speed control range 1:5
V2	3-phase, II 2G Ex db IIC T3...T6 Gb	400 V ±10 %	50/60 Hz	0.75 kW	Ex-variable speed motor with integrated frequency converter

Motor data sheets can be requested for more information. 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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