

# Hydraulic Diaphragm Metering Pump HYDRO API

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



The HYDRO API 675 is an extremely robust hydraulic diaphragm metering pump, which meets the most exacting safety requirements and is designed in accordance with API 675. This is ensured by the PTFE multi-layer diaphragm with diaphragm monitoring, the full-motion drive and automatic bleeding, for example. Its modular construction makes it extremely versatile.

## Technical Details

- Stroke length: 15 mm (HA1a, HA2a, HA3a), 20 mm (HA4a)
- Rod force: 2000 N (HA1a, HA2a), 4200 N (HA3a), 5800 N (HA4a)
- Stroke volume adjustment range: 0 – 100%
- Stroke volume adjustment: manually using scaled rotary dial (with electric actuator or control drive as an option).
- Metering reproducibility is better than  $\pm 1\%$  in the 10 – 100% stroke volume range under defined conditions and with correct installation
- PTFE multi-layer diaphragm with electrical diaphragm monitoring with condition signals sent via contact
- Integrated hydraulic relief and bleed valve
- Full-motion drive
- Wetted materials: PVDF, PTFE+25% carbon, stainless steel 1.4571, Hastelloy C.
- A wide range of drive versions is available: Three-phase or standard three-phase motors or motors for use in areas at risk from explosion, different flange designs for use of customer-specific motors
- Degree of protection: IP 55
- Design in compliance with API 675

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# Hydraulic Diaphragm Metering Pump HYDRO API

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

## Hydraulic Diaphragm Metering Pump HYDRO HA1a

### Technical data for HYDRO HA1a (50 Hz)

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/discharge 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
9	100	[0.8]	[1.5]	[1.9]	[2.5]	[3.0]	0.9	3.0	NPT 1/4 – DN 3 *	31
9	64	(1.3) – 1.3	(2.9) – 2.9	(3.1) – 3.1	(4.0) – 4.8	(4.8) – 5.3	0.9	3.0	NPT 1/4 – DN 3 *	31
9	40	(1.7) – 1.8	(2.7) – 3.9	(3.6) – 4.7	(4.0) – 6.0	(5.5) – 6.8	0.9	3.0	NPT 1/4 – DN 3 *	31
9	25	(1.7) – 2.1	(2.8) – 4.5	(3.8) – 5.6	(4.6) – 7.0	(5.5) – 8.0	0.9	3.0	NPT 1/4 – DN 3 *	31
9	10	(1.7) – 2.5	(2.8) – 5.2	(3.8) – 6.3	(4.6) – 7.8	(5.5) – 9.1	0.9	3.0	NPT 1/4 – DN 3 *	31
12	100	(2.9) – 2.9	(5.5) – 6.0	(7.4) – 7.4	(8.0) – 9.3	(9.0) – 10.1	1.7	3.0	NPT 1/4 – DN 6 *	31
12	64	(2.8) – 3.6	(4.5) – 7.7	(7.0) – 9.1	(8.0) – 11.4	(9.0) – 13.0	1.7	3.0	NPT 1/4 – DN 6 *	31
12	40	(2.5) – 4.1	(4.5) – 8.7	(6.0) – 10.4	(7.0) – 13.0	(9.0) – 14.7	1.7	3.0	NPT 1/4 – DN 6 *	31
12	25	(2.3) – 4.5	(4.8) – 9.4	(6.0) – 11.1	(7.0) – 13.8	(9.0) – 15.9	1.7	3.0	NPT 1/4 – DN 6 *	31
12	10	(2.5) – 4.8	(4.8) – 10.1	(6.0) – 12.1	(7.0) – 15.1	(9.0) – 17.1	1.7	3.0	NPT 1/4 – DN 6 *	31

\* Double ball valve with female thread

### Technical data for HYDRO HA1a (60 Hz)

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/discharge side	Shipping weight
		59	72	149	180	224				
mm	bar	l/h	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
9	100	[0.5]	[0.8]	[1.8]	[2.0]	[3.0]	0.9	3.0	NPT 1/4 – DN 3 *	31
9	64	[1.2]	(1.6) – 1.6	(3.3) – 3.3	(3.7) – 3.7	(4.8) – 5.7	0.9	3.0	NPT 1/4 – DN 3 *	31
9	40	(1.7) – 1.7	(2.0) – 2.1	(3.2) – 4.6	(4.3) – 5.6	(4.8) – 7.2	0.9	3.0	NPT 1/4 – DN 3 *	31
9	25	(2.0) – 2.1	(2.0) – 2.5	(3.4) – 5.4	(4.5) – 6.7	(5.5) – 8.4	0.9	3.0	NPT 1/4 – DN 3 *	31
9	10	(2.0) – 2.5	(2.0) – 3.0	(3.4) – 6.2	(4.5) – 7.5	(5.5) – 9.3	0.9	3.0	NPT 1/4 – DN 3 *	31
12	100	(2.8) – 2.8	(3.5) – 3.5	(6.6) – 7.2	(8.8) – 8.8	(9.6) – 11.1	1.7	3.0	NPT 1/4 – DN 6 *	31
12	64	(2.4) – 3.6	(3.4) – 4.3	(5.4) – 9.2	(8.4) – 10.9	(9.6) – 13.6	1.7	3.0	NPT 1/4 – DN 6 *	31
12	40	(2.6) – 4.0	(3.0) – 4.9	(5.4) – 10.4	(7.2) – 12.4	(8.4) – 15.6	1.7	3.0	NPT 1/4 – DN 6 *	31
12	25	(2.6) – 4.4	(3.0) – 5.4	(5.7) – 11.2	(7.2) – 13.3	(8.4) – 16.5	1.7	3.0	NPT 1/4 – DN 6 *	31
12	10	(2.6) – 4.4	(3.0) – 5.7	(5.7) – 12.1	(7.2) – 14.5	(8.4) – 18.1	1.7	3.0	NPT 1/4 – DN 6 *	31

\* Double ball valve with female thread

Piston Ø 9 and 12, version with double ball valves.

The permitted rated flow configuration is possible in the stated range when pumps are selected in accordance with API 675 (control range 1:10).

The litre capacity indicated using [...] is the maximum litre capacity with an applicable control range of 1:5 and does not therefore satisfy API 675.

**Example:** a 12 mm piston, 40 bar pressure and stroke rate of 125 strokes/min results in (4.5) - 8.7, i.e. the control range of 1:10 is met for a rated flow of between 4.5 l/h and 8.7 l/h.

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# Hydraulic Diaphragm Metering Pump HYDRO API

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### Wetted materials for HYDRO HA1a

Identity code of material	Dosing head	Suction/discharge connection	Seals/ball seat	Balls
S1	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE/stainless steel 1.4404	Ceramic

### Motor data for HYDRO HA1a

Identity code specification		Power supply	Remarks
S	3-phase, IP 55°	230 V/400 V 50 Hz 0.37 kW	
T	3-phase, IP 55°	230 V/400 V 50 Hz 0.37 kW 265 V/460 V 60 Hz	With PTC, speed control range 1:5
R	3-phase, IP 55°	230 V/400 V 50 Hz 0.37 kW	With PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V	1-phase, IP 55°	230 V 50 Hz 0.37 kW	Variable speed stroke control motor with integrated frequency converter
L	3-phase, II 2G Ex de IIC T4 Gb	230 V/400 V 50 Hz 0.37 kW	With PTC, speed control range 1:5
Q	3-phase, II 2G Ex de IIC T4	265 V/460 V 60 Hz 0.37 kW	With PTC, speed control range 1:5

\* Three-phase motor according to IEC 60034-1

Motor data sheets can be requested for more information. Versions 265/460V - 60Hz, special motors or special motor flanges are available on request.

### Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 2014/34/EC in premises at risk from explosion. Ensure that the explosion group, category and degree of protection specified on the label correspond to or are superior to the conditions prevalent in the intended application.

### Hydraulic Diaphragm Metering Pump HYDRO HA2a

#### Technical data for HYDRO HA2a 50 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/discharge 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
16	100	[3.0]	[6.5]	(8.5) – 8.5	(10) – 11	(12) – 13	3.0	3.0	Rp 1/4 – DN 6 *	31
16	64	[4.0]	(10) – 10	(10) – 13	(12) – 16.5	(14) – 18.5	3.0	3.0	Rp 1/4 – DN 6 *	31
16	40	[5.5]	(10) – 13	(12) – 15.5	(14) – 19.5	(16) – 23.5	3.0	3.0	Rp 1/4 – DN 6 *	31
16	25	[6.5]	(12) – 14.5	(14) – 17.5	(17) – 22.5	(20) – 26.5	3.0	3.0	Rp 1/4 – DN 6 *	31
16	10	(7) – 7.5	(13) – 16.5	(15) – 19.5	(18) – 24.5	(22) – 29.5	3.0	3.0	Rp 1/4 – DN 6 *	31
18	64	[6.5]	(12) – 15.5	(18.5) – 18.5	(24.5) – 24.5	(26) – 26.5	3.8	3.0	G 3/4 – DN 10	31
18	40	(7) – 8	(13) – 18.5	(22) – 22	(26) – 28.5	(26) – 32.5	3.8	3.0	G 3/4 – DN 10	31
18	25	(8) – 9	(16) – 19.5	(23) – 24.5	(26) – 30.5	(28) – 35.5	3.8	3.0	G 3/4 – DN 10	31
18	10	(8) – 10	(16) – 21.5	(23) – 26.5	(29) – 33.5	(28) – 37.5	3.8	3.0	G 3/4 – DN 10	31
22	40	(7) – 7.5	(20) – 25.5	(27) – 28.5	(37) – 42.5	(44) – 48	5.7	3.0	G 3/4 – DN 10	31
22	25	(7) – 8.5	(20) – 25.5	(25) – 33.5	(35) – 43.5	(40) – 51	5.7	3.0	G 3/4 – DN 10	31
22	10	(8) – 10	(17) – 28.5	(25) – 36.5	(30) – 47	(40) – 54	5.7	3.0	G 3/4 – DN 10	31
26	25	(20) – 22	(35) – 49	(40) – 59	(65) – 72	(50) – 83	7.9	3.0	G 3/4 – DN 10	31
26	10	(20) – 23.5	(30) – 51	(35) – 61	(40) – 76	(45) – 86	7.9	3.0	G 3/4 – DN 10	31

\* Double ball valve with female thread

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# Hydraulic Diaphragm Metering Pump HYDRO API

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

## Technical data for HYDRO HA2a 60 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min				Theor. stroke volume	Suction lift	Connection on suction/ discharge side	Shipping weight
		72	149	180	224				
mm	bar	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
16	100	[3.5]	[7.5]	(10) – 10	(12) – 13	3.0	3.0	Rp 1/4 – DN 6 *	31
16	64	[4.5]	(10) – 11.5	(12) – 15.5	(14.5) – 19.5	3.0	3.0	Rp 1/4 – DN 6 *	31
16	40	[6.5]	(12) – 15.5	(14.5) – 18.5	(16.5) – 23	3.0	3.0	Rp 1/4 – DN 6 *	31
16	25	[7.5]	(14.5) – 17	(16.5) – 21	(20.5) – 27	3.0	3.0	Rp 1/4 – DN 6 *	31
16	10	(8.5) – 9	(15.5) – 19.5	(18) – 23	(21.5) – 29	3.0	3.0	Rp 1/4 – DN 6 *	31
18	64	[7.5]	(14.5) – 18.5	(22) – 22	(29) – 29	3.8	3.0	G 3/4 – DN 10	31
18	40	(8.5) – 9.5	(15.5) – 22	(26) – 26	(31) – 34	3.8	3.0	G 3/4 – DN 10	31
18	25	(9.5) – 10.5	(19.5) – 23	(27.5) – 29	(31) – 36.5	3.8	3.0	G 3/4 – DN 10	31
18	10	(9.5) – 12	(19.5) – 25.5	(27.5) – 31.5	(34.5) – 40	3.8	3.0	G 3/4 – DN 10	31
22	40	(8.5) – 9	(24) – 30	(32.5) – 34	(44) – 50.5	5.7	3.0	G 3/4 – DN 10	31
22	25	(8.5) – 10	(24) – 30	(30) – 40	(42) – 52	5.7	3.0	G 3/4 – DN 10	31
22	10	(9.5) – 12	(20) – 34	(36) – 43	(44) – 50.5	5.7	3.0	G 3/4 – DN 10	31
26	25	(24) – 26	(42) – 58	(48) – 70.5	(78) – 86	7.9	3.0	G 3/4 – DN 10	31
26	10	(24) – 28	(36) – 60.5	(42) – 73	(48) – 91	7.9	3.0	G 3/4 – DN 10	31

\* Double ball valve with female thread

The permitted rated flow configuration is possible in the stated range when pumps are selected in accordance with API 675 (control range 1:10).

The litre capacity indicated using [...] is the maximum litre capacity with an applicable control range of 1:5 and does not therefore satisfy API 675.

**Example:** with 16 mm piston, pressure 25 bar and stroke rate of 150 strokes/min gives (14) - 17.5, i.e. the control range of 1:10 is met for a rated flow of between 14 l/h and 17.5 l/h.

PVDF version max. 25 bar, PTFE + 25 % carbon; PTFE up to 16 bar

## Wetted materials for HYDRO HA2a

Identity code of material	Dosing head	Connection on suction/discharge side	Seals/ball seat	Balls
P1	PVDF	PVDF	PTFE/PTFE + 25 % carbon	Ceramic
S1	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE/stainless steel 1.4404	Ceramic
T1	PTFE + 25% carbon	PVDF	PTFE/PTFE + 25 % carbon	Ceramic

## Motor data for HYDRO HA2a

Identity code specification	Power supply	Remarks
S	3-phase, IP 55 <sup>*</sup> 230 V/400 V 50 Hz	0.37 kW
T	3-phase, IP 55 <sup>*</sup> 230 V/400 V 265 V/460 V 60 Hz	0.37 kW With PTC, speed control range 1:5
R	3-phase, IP 55 <sup>*</sup> 230 V/400 V	0.45 kW With PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V	1-phase, IP 55 <sup>*</sup> 230 V	0.37 kW Variable speed stroke control motor with integrated frequency converter
L	3-phase, II 2G Ex de IIC T4 Gb 230 V/400 V	0.37 kW With PTC, speed control range 1:5
Q	3-phase, II 2G Ex de IIC T4 265 V/460 V	0.37 kW With PTC, speed control range 1:5

\* 3-phase AC motor in accordance with IEC 60034-1

Motor data sheets can be requested for more information. 265/460V - 60Hz versions, special motors or special motor flanges are available on request.

# Hydraulic Diaphragm Metering Pump HYDRO API

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## Information for use in areas at risk from explosion

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## Hydraulic Diaphragm Metering Pump HYDRO HA3a

### Technical data for HYDRO HA3a 50 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/discharge 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	[9.0]	[19.0]	[25.0]	[30.5]	[32.0]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	64	[11.0]	[26.0]	[31.5]	[40.0]	[46.0]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	40	[12.0]	[28.5]	[35.5]	[45.0]	[51.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	25	[12.5]	[30.5]	[37.0]	[47.0]	[55.0]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	10	[13.5]	[31.5]	[39.0]	[50.0]	[57.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
26	64	(18) – 19	(35) – 43.5	(40) – 51.5	(55) – 63	(65) – 73	7.9	3.0	G 3/4 – DN 10	41
26	40	(18) – 21	(37) – 45.5	(40) – 55	(50) – 71	(70) – 81	7.9	3.0	G 3/4 – DN 10	41
26	25	(15) – 21	(30) – 49.5	(40) – 59	(55) – 74	(70) – 84	7.9	3.0	G 3/4 – DN 10	41
26	10	(15) – 22	(30) – 49.5	(35) – 61	(50) – 77	(80) – 87	7.9	3.0	G 3/4 – DN 10	41
32	40	(25) – 25.5	(50) – 66	(70) – 80	(65) – 101.5	(70) – 116.5	12.0	3.0	G 1 – DN 15	41
32	25	(25) – 26.5	(50) – 69	(65) – 83	(65) – 105.5	(70) – 122.5	12.0	3.0	G 1 – DN 15	41
32	10	(22) – 31.5	(50) – 74	(70) – 90	(60) – 112.5	(65) – 129	12.0	3.0	G 1 – DN 15	41
38	25	(25) – 50.5	(70) – 110.5	(80) – 126	(150) – 166	(180) – 187	17.0	3.0	G 1 – DN 15	41
38	10	(30) – 51.5	(80) – 111.5	(90) – 135	(150) – 168	(180) – 191	17.0	3.0	G 1 – DN 15	41

\* Double ball valve with female thread

### Technical data for HYDRO HA3a 60 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min				Theor. stroke volume	Suction lift	Connection on suction/discharge 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	[10.0]	[22.0]	[29.5]	[36.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	64	[13.0]	[30.5]	[38.0]	[47.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	40	[14.5]	[34.0]	[42.5]	[53.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	25	[15.0]	[36.5]	[44.5]	[56.0]	5.7	3.0	Rp 3/8 – DN 8 *	41
22	10	[16.0]	[37.5]	[47.0]	[59.5]	5.7	3.0	Rp 3/8 – DN 8 *	41
26	64	(21.5) – 22.5	(42) – 51.5	(48) – 61.5	(66) – 75	7.9	3.0	G 3/4 – DN 10	41
26	40	(21.5) – 25	(44) – 54	(48) – 66	(60) – 85	7.9	3.0	G 3/4 – DN 10	41
26	25	(18) – 25	(36) – 59	(48) – 70.5	(66) – 88.5	7.9	3.0	G 3/4 – DN 10	41
26	10	(18) – 26	(36) – 59	(42) – 73	(60) – 92	7.9	3.0	G 3/4 – DN 10	41
32	40	(30) – 30.5	(60) – 78.5	(84) – 96	(78) – 121	12.0	3.0	G 1 – DN 15	41
32	25	(30) – 31.5	(60) – 82	(78) – 99.5	(78) – 126	12.0	3.0	G 1 – DN 15	41
32	10	(26.5) – 37.5	(60) – 88	(84) – 108	(72) – 134.5	12.0	3.0	G 1 – DN 15	41
38	25	(30) – 60.5	(84) – 131	(96) – 151	(180) – 198	17.0	3.0	G 1 – DN 15	41
38	10	(36) – 61.5	(96) – 132	(108) – 162	(180) – 201	17.0	3.0	G 1 – DN 15	41

\* Double ball valve with female thread



# Hydraulic Diaphragm Metering Pump HYDRO API

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

The permitted rated flow configuration is possible in the stated range when pumps are selected in accordance with API 675 (control range 1:10).

The litre capacity indicated using [...] is the maximum litre capacity with an applicable control range of 1:5 and does not therefore satisfy API 675.

**Example:** a 26 mm piston, 25 bar pressure and stroke rate of 150 strokes/min results in (40) - 59, i.e. the control range of 1:10 is met for a rated flow of between 40 l/h and 59 l/h.

PVDF version max. 25 bar, PTFE + 25 % carbon; PTFE up to 16 bar

### Wetted materials for HYDRO HA3a

Identity code of material	Dosing head	Connection on suction/discharge side	Seals/ball seat	Balls
P1	PVDF	PVDF	PTFE/PTFE + 25 % carbon	Ceramic
S1	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE/ZrO <sub>2</sub> (DN 15/DN20 stainless steel 1.4404)	Ceramic
T1	PTFE + 25% carbon	PVDF	PTFE/PTFE + 25 % carbon	Ceramic

### Motor data for HYDRO HA3a

Identity code specification		Power supply		Remarks
S	3-phase, IP 55*	230 V/400 V	50 Hz 0.75 kW	
T	3-phase, IP 55*	230 V/400 V 265 V/460 V	50 Hz 0.75 kW 60 Hz	With PTC, speed control range 1:5
R	3-phase, IP 55*	230 V/400 V	50 Hz 0.75 kW	With PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V	1-phase, IP 55*	230 V	50 Hz 0.75 kW	Variable speed stroke control motor with integrated frequency converter
L	3-phase, II 2G Ex de IIC T4	230 V/400 V	50 Hz 0.75 kW	With PTC, speed control range 1:5
Q	3-phase, II 2G Ex de IIC T4	265 V/460 V	60 Hz 0.75 kW	With PTC, speed control range 1:5

\* 3-phase AC motor in accordance with IEC 60034-1

Motor data sheets can be requested for more information. 265/460V - 60Hz versions, special motors or special motor flanges are available on request.

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# Hydraulic Diaphragm Metering Pump HYDRO API

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

## Hydraulic Diaphragm Metering Pump HYDRO HA4a

### Technical data for HYDRO HA4a 50 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min					Theor. stroke volume	Suction lift	Connection on suction/discharge side	Shipping weight
		71	103	136	188	214				
mm	bar	l/h	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
40	40	[79]	[118]	(150) – 154	(200) – 211	(220) – 242	25.1	3	G 1 1/2 – DN 25	69
40	25	[80]	[121]	(150) – 160	(200) – 219	(220) – 250	25.1	3	G 1 1/2 – DN 25	69
40	16	[82]	[125]	[162]	(200) – 225	(220) – 254	25.1	3	G 1 1/2 – DN 25	69
40	10	[83]	(100) – 125	(150) – 166	(200) – 228	(220) – 256	25.1	3	G 1 1/2 – DN 25	69
40	7	[84]	(100) – 127	(150) – 167	(200) – 230	(220) – 261	25.1	3	G 1 1/2 – DN 25	69
52	25	[142]	(200) – 204	(200) – 271	(370) – 372	[425]	42.4	3	G 1 1/2 – DN 25	69
52	16	[143]	(190) – 205	(200) – 274	(370) – 376	[425]	42.4	3	G 1 1/2 – DN 25	69
52	10	[144]	(180) – 207	(200) – 276	(370) – 379	[426]	42.4	3	G 1 1/2 – DN 25	69
52	7	[145]	(180) – 209	(200) – 277	[380]	[426]	42.4	3	G 1 1/2 – DN 25	69
63	16	(200) – 212	(280) – 306	(390) – 401	[562]	[635]	62.3	3	G 1 1/2 – DN 25	76
63	10	(210) – 215	(280) – 311	(380) – 407	[562]	[638]	62.3	3	G 1 1/2 – DN 25	76
63	7	(210) – 216	(280) – 312	(370) – 408	[564]	[648]	62.3	3	G 1 1/2 – DN 25	76
80	10	(280) – 350	(420) – 509	(580) – 657	(890) – 914	(1,050) – 1,056	100.4	3	G 2 – DN 32	87
80	7	(270) – 352	(420) – 513	(590) – 683	(890) – 947	(1,050) – 1,080	100.4	3	G 2 – DN 32	87
94	7	(350) – 493	(500) – 710	(820) – 936	(1,000) – 1,258	(1,400) – 1,440	138.7	3	G 2 1/4 – DN 40	96

### Technical data for HYDRO HA4a 60 Hz

Plunger Ø	Max. pressure	Max. pump capacity in l/h at strokes/min				Theor. stroke volume	Suction lift	Connection on suction/discharge side	Shipping weight
		86	124	164	225				
mm	bar	l/h	l/h	l/h	l/h	ml/stroke	m WC	G-DN	kg
40	40	[95]	[142]	(180) – 200	(240) – 252	25.1	3	G 1 1/2 – DN 25	69
40	25	[96]	[145]	(180) – 185	(240) – 262	25.1	3	G 1 1/2 – DN 25	69
40	16	[99]	[150]	[195]	(240) – 269	25.1	3	G 1 1/2 – DN 25	69
40	10	[100]	(120) – 150	(180) – 200	(240) – 272	25.1	3	G 1 1/2 – DN 25	69
40	7	[101]	(120) – 152	(180) – 201	(240) – 275	25.1	3	G 1 1/2 – DN 25	69
52	25	[171]	(240) – 245	(240) – 327	(440) – 445	42.4	3	G 1 1/2 – DN 25	69
52	16	[172]	(230) – 246	(240) – 330	(450) – 450	42.4	3	G 1 1/2 – DN 25	69
52	10	[174]	(220) – 249	(240) – 333	(450) – 455	42.4	3	G 1 1/2 – DN 25	69
52	7	[176]	(220) – 251	(240) – 334	[454]	42.4	3	G 1 1/2 – DN 25	69
63	16	(245) – 256	(340) – 368	(470) – 483	[672]	62.3	3	G 1 1/2 – DN 25	76
63	10	(255) – 260	(340) – 374	(460) – 490	[672]	62.3	3	G 1 1/2 – DN 25	76
63	7	(260) – 262	(340) – 375	(445) – 491	[674]	62.3	3	G 1 1/2 – DN 25	76
80	10	(340) – 424	(505) – 613	(700) – 792	(1,065) – 1,094	100.4	3	G 2 – DN 32	87
80	7	(330) – 426	(505) – 618	(711) – 823	(1,065) – 1,133	100.4	3	G 2 – DN 32	87
94	7	(430) – 597	(600) – 854	(990) – 1,128	(1,200) – 1,506	138.7	3	G 2 1/4 – DN 40	96

The permitted rated flow configuration is possible in the stated range when pumps are selected in accordance with API 675 (control range 1:10).

The litre capacity indicated using [...] is the maximum litre capacity with an applicable control range of 1:5 and does not therefore satisfy API 675.

**Example:** with 52 mm piston, 10 bar pressure and stroke rate of 136 strokes/min results in (200) - 276, i.e. the control range of 1:10 is met for a rated flow of between 200 l/h and 276 l/h.

# Hydraulic Diaphragm Metering Pump HYDRO API

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

PVDF version max. 25 bar, PTFE + 25 % carbon; PTFE up to 10 bar

### Wetted materials for HYDRO HA4a

Identity code of material	Dosing head	Connection on suction/ discharge side	Seals	Valve seats	Valve balls up to DN 25	Valve plates/valve springs
P1	PVDF	PVDF	PTFE	PTFE + 25% carbon	Glass	Ceramic/E-CTFE
S1	Stainless steel 1.4404	Stainless steel 1.4404	PTFE	PTFE	Stainless steel 1.4401	Stainless steel 1.4404/Hastelloy C
T1	PTFE + 25% carbon	PVDF	PTFE	PTFE + 25% carbon	Glass	Ceramic/E-CTFE
V1	PVC	PVDF	PTFE	PTFE	Glass	Ceramic/E-CTFE
Y1	PPT	PVDF	PTFE	PTFE	Glass	Ceramic/E-CTFE

### Motor data for HYDRO HA4a

Identity code specification		Power supply			Remarks
S	3-phase, IP 55*	230 V/400 V	50 Hz	1.1 kW	
T	3-phase, IP 55*	230 V/400 V 265 V/460 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 Hz	1.5 kW	With PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V	3-phase, IP 55*	400 V	50 Hz	1.5 kW	Variable speed stroke control motor with integrated frequency converter
L	3-phase, II 2G Ex de IIC T4 Gb	230 V/400 V	50 Hz	1.1 kW	With PTC, speed control range 1:5
Q	3-phase, II 2G Ex de IIC T4	265 V/460 V	60 Hz	1.1 kW	With PTC, speed control range 1:5

\* 3-phase AC motor in accordance with IEC 60034-1

Motor data sheets can be requested for more information. 265/460V - 60Hz versions, special motors or special motor flanges are available on request.

### Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 2014/34/EC in premises at risk from explosion. Ensure that the explosion group, category and degree of protection specified on the label correspond to or are superior to the conditions prevalent in the intended application.

DosingPump.ir