Identity code: D4a Pumps

Series:
D4a D-pump Type 4
Version a

Measured variable:
- PH pH: measuring range 0-14 pH
- RH Redox: measuring range 0-999 mV
- CA Chlorine: measuring range 0-5 ppm; control range 0-2 ppm
- CB Chlorine: Measuring range 0-20 ppm

Pump version:
- 1601
- 1201
- 0803
- 1002
- 0308
- 0215

Liquid end material:
- NP Acrylic with Viton® O-ring
- PP Polypropylene with EPDM O-ring
- TT PTFE + 25% carbon with PTFE seal
- SS 316 Stainless steel with PTFE seal
- NS Auto-degassing Acrylic with Viton® seal (Not for 0308 or 0215)

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Power supply:
- A 230 V 50/60 Hz Euro plug
- D 115 V 50/60 Hz N. American plug

Sensor connection:
- 2 SN6 for pH/RH sensors
- 6 4-pin connector for chlorine sensor (CA/CB)
- 8 SN6 with temperature compensation for pH/RH

Correction variable:
- 0 None
- 1 Temperature (SN6) pH

Control direction:
- 1 Raise measured value
- 2 Lower measured value
- 3 Control direction selectable (pH only)

Signal current output:
- 0 None
- 1 0/4-20 mA ≤ pH 1-12; 0-999 mV; 0-2 ppm (CA)
- 2 0/4-20 mA ≤ 0-20 ppm (CB)

Relay:
- 0 None
- A Relay output, low tank level (pulls in)
- B Relay output, pump pacing (pulls in)
- C Relay output, pump stop (pulls in)
- D Relay output, setpoint reached (pulls in)
- E Control time monitoring (pulls in)
- F Safety and power failure signaling relay (drops out)

D 4a	PH	1601	PP	D	2	0	1	0	0

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Technical Data: D4a Pumps

D4a Pump Version	Maximum Pressure psig	(bar)	Capacity at max. Backpressure US GPH	(L/h)	mL/ stroke	mL/min	Capacity at 1/2 max. Backpressure US GPH	(L/h)	mL/ stroke	mL/min	Connections O.D. x I.D. (inches)
1601	232	16	0.22	(0.84)	0.14	14.0	0.26	(0.99)	0.16	16.5	1/4 x 3/16
1201	174	12	0.38	(1.45)	0.24	24.2	0.42	(1.59)	0.26	26.5	1/4 x 3/16
0803	101	7	0.76	(2.86)	0.48	47.7	0.84	(3.17)	0.53	52.9	1/4 x 3/16
1002	145	10	0.50	(1.91)	0.32	31.8	0.58	(2.18)	0.36	36.3	1/2 x 3/8
0308	43.5	3	1.85	(7.00)	1.17	116.6	2.01	(7.60)	1.27	126.6	1/2 x 3/8
0215	22	1.5	3.25	(12.30)	2.05	205.0	3.49	(13.20)	2.20	220.0	1/2 x 3/8

D4a with NS liquid end

D4a NS Pump Version	Capacity at Maximum Backpressure psig	(bar)	U.S. GPH	(L/h)	mL/ stroke	mL/ min	Max. Stroking Rate spm	Connections O.D. x I.D. (inches)	Suction Lift ft.	(m)
1601	232	(16)	0.14	(0.54)	0.09	9	100	1/4 x 3/16	5.9	(1.8)
1201	174	(12)	0.22	(0.84)	0.14	14	100	1/4 x 3/16	6.6	(2.0)
0803	116	(8)	0.52	(1.98)	0.33	33	100	1/4 x 3/16	9.2	(2.8)
1002	145	(10)	0.40	(1.50)	0.25	25	100	1/4 x 3/16	6.6	(2.0)

Liquid end materials

Material Version	Liquid End	Suction and Discharge	Seals	Ball valves (1/4"-1/2" connection)
NP	Acrylic	PVC	Viton®	Ceramic
PP	Polypropylene	Polypropylene	EPDM	Ceramic
TT	PTFE	PTFE	PTFE	Ceramic
SS	316 Stainless Steel	316 Stainless Steel	PTFE	Ceramic
NS*	Acrylic	PVC	Viton®	Ceramic

*Auto degassing liquid end

Measured Variables:

- pH value (0 - 14 pH)
- Redox potential (0 - 999 mV)
- Chlorine concentration (0 - 5* ppm or 0 - 20 ppm)
  *(*Control range is 0-2 ppm)*

Features:

- Solenoid-driven metering pump and controller integration in a chemically-resistant plastic casing rated NEMA 4X (IP65)
- Connection for single-stage level switch to monitor chemical tank level
- Various liquid end material options (PP, NP, TT, SS)
- Easy operation with 6 position selector switches (manual/OFF/measure/setpoint display/automatic mode/ automatic mode with control time) and setting potentiometer for setpoint simulation
- 3-digit LC display
- LEDs to indicate metering, setpoint reached and alarm

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Specifications: D4a Pumps
(see individual specifications for pH, RH and CA/CB)

Maximum stroke length:	0.05" (1.25 mm)
Materials of construction	
Housing:	Glass-filled Luranyl™ (PPE)
Diaphragm:	PTFE faced EPDM with steel core and Nylon reinforcement
Liquid end options:	Polypropylene, Acrylic/PVC, PTFE, 316 SS
Enclosure rating:	NEMA 4X (IP 65), transparent front cover standard
Insulation class:	F
Check valves:	Double ball
Repeatability of the metering:	When used according to operating instructions, ±2%
Power cord:	6 ft. (2 m)
Ambient temperature range:	14°F (-10°C) to 113°F (45°C)

Max. fluid operating temperatures:

Material	Constant	Short Term
Acrylic/PVC	113°F (45°C)	140°F (60°C)
Polypropylene	122°F (50°C)	212°F (100°C)
PTFE	122°F (50°C)	248°F (120°C)
316 SS	122°F (50°C)	248°F (120°C)

Average power drain at maximun stroking rate (Watts) / peak current drain at pump stroke (Amps):	15 W average (any voltage or frequency) / 1.5 A
Service factor:	1.15 (*Note:* performance is the same on 50 or 60 Hz power)
Control method:	Proportional (in manual mode, frequency adjustable from 0 to 100 spm by potentiometer)
Read-out:	3-digit liquid crystal display of measured value, set value or simulated measured value.
LED displays:	Stroke indication, set value reached (no error) Low tank level (functions with optional single-stage float switch) Relay output (optional) Time check (optional)
Signal current output:	4-20 mA (internally changeable to 0-20 mA), burden 750 Ohm, proportional to measured variable.
Connector, sensor input:	Socket for SN6 plug, moisture protected to connect a combination probe (pH/RH). Pin socket for optional solution ground (pH/RH). Terminal block for hard wiring optional PT 100 resistance thermometer for temperature compensation (pH). Moisture protected, 4-pole connector for CA/CB.
Maximum stroke rate:	100 strokes per minute
Relay output:	Contact load: max. 250 VAC/3 A/1100 VA; min. 24 VDC/25 mA
Warranty:	Two years on drive; one year on liquid end
Factory testing:	**Each pump is tested for rated flow and pressure**