

ProMinent® Technical Data: gamma/4b, gamma/5b

Pump version	Capacity at Maximum					Capacity at 1/2 Maximum					Maximum Stroking Rate**	Standard Suction/ Discharge Connectors***	Pre- Primed Suction Lift	Shipping Weight (higher weights are for SS)	
	Backpressure				Backpressure										
	U.S.		ml/		U.S.		ml/								
	psig	(bar)	GPH (L/h)	stroke	psig	(bar)	GPH (L/h)	stroke	spm	inches	ft.	(m)	lbs.	(kg)	
g/4b															
1000	145	(10)	0.05 (0.20)	0.027	73	(5)	0.07 (0.27)	0.038	120	1/4 x 3/16	4.9 (1.5)		6.0-7.1	(2.7-3.4)	
1001	145	(10)	0.09 (0.30)	0.027	73	(5)	0.11 (0.42)	0.038	180	1/4 x 3/16	4.9 (1.5)		6.0-7.1	(2.7-3.4)	
1601*	250	(17)	0.26 (1.00)	0.14	125	(8.5)	0.32 (1.2)	0.17	120	1/4 x 3/16	19.7 (6)		6.0-7.1	(2.7-3.4)	
1602*	250	(17)	0.40 (1.5)	0.14	125	(8.5)	0.48 (1.8)	0.17	180	1/4 x 3/16	19.7 (6)		6.0-7.1	(2.7-3.4)	
1201*	174	(12)	0.45 (1.7)	0.24	87	(6)	0.50 (1.9)	0.27	120	1/4 x 3/16	19.7 (6)		6.0-7.1	(2.7-3.4)	
1203*	174	(12)	0.66 (2.5)	0.24	87	(6)	0.77 (2.9)	0.27	180	1/4 x 3/16	19.7 (6)		6.0-7.1	(2.7-3.4)	
0803*	116	(8)	0.90 (3.4)	0.48	58	(4)	1.00 (3.8)	0.53	120	1/4 x 3/16	9.8 (3)		6.0-7.1	(2.7-3.4)	
0806*	116	(8)	1.40 (5.3)	0.48	58	(4)	1.48 (5.6)	0.53	180	1/4 x 3/16	9.8 (3)		6.0-7.1	(2.7-3.4)	
1002*	145	(10)	0.61 (2.3)	0.32	73	(5)	0.69 (2.6)	0.36	120	1/2 x 3/8	19.7 (6)		6.2-7.9	(2.9-4.1)	
1003*	145	(10)	0.90 (3.4)	0.31	73	(5)	0.98 (3.7)	0.34	180	1/2 x 3/8	19.7 (6)		6.2-7.9	(2.9-4.1)	
0308	43.5	(3)	2.22 (8.40)	1.17	21	(1.5)	2.40 (9.1)	1.27	120	1/2 x 3/8	19.7 (6)		6.2-7.9	(2.9-4.1)	
0313	43.5	(3)	3.43 (13.0)	1.20	21	(1.5)	4.09 (15.5)	1.43	180	1/2 x 3/8	19.7 (6)		6.2-7.9	(2.9-4.1)	
0215	21	(1.5)	3.91 (14.8)	2.05	14	(1)	4.20 (15.8)	2.20	120	1/2 x 3/8	4.9 (1.5)		6.8-10.4	(3.1-4.7)	
0223	21	(1.5)	6.08 (23.0)	2.13	14	(1)	6.74 (25.5)	2.36	180	1/2 x 3/8	4.9 (1.5)		6.8-10.4	(3.1-4.7)	
g/5b															
1602	232	(16)	0.61 (2.30)	0.32	116	(8)	0.67 (2.6)	0.36	120	1/2 x 3/8	19.7 (6)		11-13	(4.6-5.8)	
1605	232	(16)	1.25 (4.74)	0.79	116	(8)	1.5 (5.8)	0.96	100	1/2 x 3/8	19.7 (6)		15-18	(6.7-7.9)	
1006	145	(10)	1.5 (5.83)	0.81	73	(5)	1.9 (7.1)	0.98	120	1/2 x 3/8	19.7 (6)		11-13	(4.6-5.8)	
1310	188	(13)	2.5 (9.54)	1.59	87	(6)	2.8 (10.8)	1.80	100	1/2 x 3/8	19.7 (6)		15-19	(6.9-8.5)	
0613	87	(6)	3.4 (13.1)	1.82	44	(3)	3.9 (14.9)	2.08	120	1/2 x 3/8	18.0 (5.5)		11-15	(4.8-6.4)	
0813	116	(8)	3.5 (13.3)	2.21	58	(4)	3.8 (14.6)	2.44	100	1/2 x 3/8	19.7 (6)		16-19	(6.9-8.5)	
0417	50	(3.5)	4.6 (17.4)	2.42	29	(2)	4.7 (17.9)	2.48	120	1/2 x 3/8	14.8 (4.5)		11-15	(4.8-6.4)	
√0423	50	(3.5)	6.3 (24.0)	4.00	29	(2)	6.5 (24.6)	4.10	100	1/2 MNPT	16.4 (5)		18-25	(8.0-11.4)	
√0230	29	(2)	8.0 (30.3)	4.21	14	(1)	9.1 (34.5)	4.80	120	1/2 MNPT	8.2 (2.5)		13-20	(5.9-9.3)	

PP4 and PP5 gamma metering pumps are for **high viscosity fluids**.

√Not equipped with bleed valves - DN 10 connection

g/4b (DN 10 valve size)

									MNPT	Hose barb		
1002	145 (10)	0.45 (1.72)	0.24	73 (5)	0.66 (2.5)	0.34	120	1/2	5/8"	†	6.2	(3.2)

g/5b (DN 15 valve size)

1006	145 (10)	1.5 (5.8)	0.81	73 (5)	1.9 (7.1)	0.98	120	3/4	3/4"	†	12	(5.1)
1310	145 (10)	2.5 (9.5)	1.59	73 (5)	2.8 (10.8)	1.80	100	3/4	3/4"	†	17	(7.4)
0813	116 (8)	3.5 (13.3)	2.21	58 (4)	3.8 (14.6)	2.44	100	3/4	3/4"	†	17	(7.4)

* For NS2/NS3 and ES1/ES3 models capacities, consult page gamma-5 for rated capacities (derated from standard liquid ends).

** 180 spm pumps are recommended for water-like fluids only.

*** For SS2 pump heads, 1/4" FNPT fittings are standard; SS1 (0423 and 0230) are 3/8" FNPT.

† Positive suction recommended.

Above capacities and suction lift refer to pumps tested on water at 115 VAC, 60 Hz, and an ambient temperature of 70°F (20°C).

Higher specific gravity fluids will reduce suction lift. Higher viscosity fluids will reduce capacity.

Capacity at maximum pressure on all pumps is tested prior to shipment.

Liquid end materials

	Pump head	Suction/Discharge valves	Seals	Valve balls	0423/0230 Valve balls	Features
PP1*	Polypropylene	Polypropylene	EPDM	Ceramic	Duran	Bleed valve
PP2*	Polypropylene	Polypropylene	Viton®	Ceramic	Duran	Bleed valve
PP3*	Polypropylene	Polypropylene	Viton®	Ceramic	-	Bleed valve
PP4	Polypropylene	Polypropylene	EPDM	Ceramic	-	High viscosity w/springs
PP5	Polypropylene	Polypropylene	Viton®	Ceramic	-	High viscosity w/springs
NP1*	Acrylic	PVC	Viton®	Ceramic	Duran	Bleed valve
NP2*	Acrylic	PVC	EPDM	Ceramic	Duran	Bleed valve
NP3*	Acrylic	PVC	Viton®	Ceramic	-	Bleed valve
NS2*†	Acrylic	PVC	EPDM	Ceramic	-	Auto degassing valve
NS3*†	Acrylic	PVC	Viton®	Ceramic	-	Auto degassing valve
ES1*†	PP	PP	EPDM	Ceramic	-	Auto degassing valve
ES3*†	PP	PP	Viton®	Ceramic	-	Auto degassing valve
TT1	Carbon-loaded PTFE	Carbon-loaded PTFE	PTFE	Ceramic	Ceramic	
SS1, SS2	316 Stainless steel	316 Stainless steel	PTFE	Ceramic	Mat. No. 1.4401 (DN standard)	

* Standard - injection valves, foot valves, tubing included with pump.

† with Hastelloy C valve springs, PVDF valve core.

Acrylic (NP), Viton® and Duran (laboratory glass) are registered trademarks.

Identity code: gamma/b metering pumps

Series:
g/4b gamma/ 4 version b
g/5b gamma/ 5 version b

G/4b (120 strokes) 1000 1601 1201 0803 1002 0308 0215		G/4b (180 strokes) 1001 1602 1203 0806 1003 0313 0223		G/5b 1602* 0813 1605* 0417 1006 0423 1310* 0230 0613		Pump version: *available in NP and SS only, 1310 also available in PP4/PP5	
		Liquid end materials: PP1 Polypropylene/EPDM PP2 Polypropylene/Viton® PP3 Polypropylene/Viton® PP4 Polypropylene/EPDM high viscosity 1 psig Hast. C valve springs PP5 Same as PP4 but Viton® O-rings NP1 Acrylic/PVC Viton® NP2 Acrylic/PVC/EPDM NP3 Acrylic/PVC/Viton® TT1 PTFE/PTFE SS1 316 SS/PTFE 3/8" FNPT SS2 316 SS/PTFE 1/4" FNPT NS2 Auto-degassing Acrylic/EPDM/PVC NS3 Auto-degassing Acrylic/Viton®/PVC ES1 Auto-degassing PP/EPDM ES3 Auto-degassing PP/Viton®		Consult the "Liquid End Options" table for liquid ends available on selected pump version. Viton® is a registered trademark of DuPont Dow Elastomers			
		Valve springs: 0 Without springs 1 With 2 springs (1 psig) (1/4" valves: 316 SS; 1/2" valves: Hast. C)					
		Connector: 0 Standard according to technical data 6 1/2" x 3/8" tubing		NOTE: Connector option 6 must be used on all pumps with standard 1/2" x 3/8" tubing connections, and it may be used on pumps with 1/4" x 3/16" tubing connectors. Use option 0 on all pumps with standard NPT connections.			
		Transparent, hinged dust cover version: 0 Standard, without lock, with logo 1 With lock, with logo (not for gamma 5) 2 Without lock, without logo 3 With lock, without logo					
		Electrical connection: (With 6 ft. (2 m) power cord single phase) A 230 V 50/60 Hz Euro plug D 115 V 50/60 Hz N. American plug U 230 V 50/60 Hz N. American plug (6-15 P NEMA configuration)					
		Control type: (Note: May be ordered without illumination upon request.) 2 Standard with LCD illumination					
		Control version: 0 Manual + pulse (1:1) + remote pause 1 0 - 20 mA and 4 - 20 mA 2 0 - 60mV / 0 - 1V / 0 - 10V 3 20 - 0 mA and 20 - 4 mA		NOTE: Control versions 1, 2 and 3 (analog input) include features of control version 0.			
		Pulse multiplier/divider: 0 Without pulse control 1 With pulse control					
		7 Day, 31 event timer/RS interface: 0 Without timer or RS interface 1 With timer					
		Switching mode relay: 0 Without relay 1 Fault annunciating relay, drops out 2 Pacing relay, pulls in 3 Alarm relay, pulls in 4 Timer relay, pulls in (Note: Cannot be used if RS interface is selected.)					
g/4b 1000 PP1 0 0 0 D 2 0 0 0 0							

Liquid end options: gamma/b

gamma/b Liquid End Options

Type	Valve Size	PP1*	PP2*	PP3*	PP4	PP5	NP1*	NP2*	NP3*	NS2*	NS3*	ES1*	ES3*	TT1	SS1	SS2
g/4b 1000/01	4.7	✓		✓				✓	✓					✓		✓
g/4b 1601/02	4.7	✓		✓				✓	✓	✓		✓	✓	✓		✓
g/4b 1201/03	4.7	✓		✓				✓	✓	✓	✓	✓	✓	✓		✓
g/4b 0803/06	4.7	✓		✓				✓	✓	✓	✓	✓	✓	✓		✓
g/4b 1002/03	4.7	✓		✓	DN10	DN10		✓	✓	✓	✓	✓	✓	✓		✓
g/4b 0308/13	9.2	✓	✓				✓	✓						✓		✓
g/4b 0215/23	9.2	✓	✓				✓	✓						✓		✓
g/5b 1602	4.7						✓	✓								✓
g/5b 1605	9.2						✓	✓								✓
g/5b 1006	9.2	✓	✓		DN15	DN15	✓	✓						✓		✓
g/5b 1310	9.2				DN15	DN15	✓	✓								✓
g/5b 0613	9.2	✓	✓				✓	✓						✓		✓
g/5b 0813	9.2	✓	✓		DN15	DN15	✓	✓						✓		✓
g/5b 0417	9.2	✓	✓				✓	✓						✓		✓
g/5b 0423	DN10	✓	✓				✓	✓						✓	✓	
g/5b 0230	DN10	✓	✓				✓	✓						✓	✓	

*These models include accessory kits (foot valve, injection valve, tubing). Accessories are ordered separately on PP4, PP5, TT1, SS1 & SS2.

Note: Valve sizes DN10 & DN15 (normally supplied with 1/2" MNPT & 3/4" MNPT respectively) can be supplied with 5/8" & 3/4" hose barb (respectively).

Specifications: gamma/b

Maximum stroke length:	0.05" (1.25 mm) [except 0.026" (0.65 mm) on pump version 1000]		
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 (except single ball on PP4, PP5 models and all version 0423 and 0230 pumps)		
Standard production test:	Capacity at maximum pressure on all pumps is tested prior to shipment.		
Capacity test criteria:	-5% to +15%		
Repeatability of the metering:	When used according to the operating instructions $\pm 2\%$		
Power cord:	6 foot (2 m) 2 wire + ground		
Relay cable (optional):	6 foot (2 m) 3 wire (SPDT)		
Relay load:	250 V / 2 A		
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 maximum stroking rate (Watts) / peak current drain at pump stroke (Amps)			
g/4b:	115 VAC, 50/60 Hz: 16W/1.5A (120 spm models); 24W/1.5A (180 spm) 230 VAC, 50/60 Hz: 25W/0.9A (120 spm models); 38W/0.9A (180 spm)		
g/5b:	115 VAC, 50/60 Hz: 47W/4.1A (120 spm models), 65W/6.7A (100 spm) 230 VAC, 50/60 Hz: 61W/2.1A (120 spm models), 83W/3.1A (100 spm)		
Remote pause and/or Contact input			
Voltage level with open contact:	Approximately +5 VDC supply voltage		
Impedance:	10 kOhm		
Pulse Contact/Remote Pause Contact:	With form-C dry contact, or with semiconductor sink logic control (NPN), not source logic (PNP). With a residual voltage of <700 mV, the contact load is approximately 0.5 mA at +5 VDC. (Note: Semiconductor contacts that require >700 mV across a closed contact should not be used).		
Max. pulse input frequency:	40 pulses/sec		
Max. pulse memory:	65,535 pulses		
Necessary pulse contact duration:	20 ms		
Analog - Current input burden:	Approximately 70 Ohm		
Max. allowable input current:	50 mA		
Service factor:	1.15 (98-132 VAC or 195 to 264 VAC) Note: performance is the same on 50 or 60 Hz power		
Warranty:	Two years on drive, one year on liquid end		
Industry standards:	CSA (available standard in Canada); CE (approved)		
Max. solids size in fluid:	Pumps with 1/4" valves: 15μ - Pumps with 1/2" valves: 50μ		
Valve threads:	✓ NP, PP and TT (except PP4/PP5 and 0423/0230); M20 x 1.5 (tubing adapter supplied) ✓ NP, PP and TT 0423/0230, and g/4a 1002 PP4/PP5; DN10 (1/2" MNPT adapter supplied) ✓ PP4/PP5 1006, 1310 and 0813; DN15 (1/2" MNPT adapter supplied) ✓ SS (except 0423/0230); 1/4" FNPT ✓ SS 0423/0230; 3/8" FNPT		

Technical Data: gamma/L

Pump Version	Capacity at Maximum Backpressure					Capacity at 1/2 Maximum Backpressure					Pre-Primed Suction Lift		Max. Stroking Rate spm	Suction/Discharge Tubing Connectors**		Shipping Weight (higher weights are for SS)	
	U.S.				U.S.				O.D. x I.D.					lbs.	(kg)		
	psig	(bar)	GPH	(L/h)	mL/ stroke	psig	(bar)	GPH	(L/h)	mL/ stroke	ft.	(m)				inches	
GALa																	
1000	145	(10)	0.19	(0.74)	0.09	73	(5)	0.21	(0.82)	0.076	16.4	(5)	180	1/4 x 3/16	7.5-8.6	(3.4-3.9)	
1601	253	(17.5)	0.29	(1.1)	0.10	126	(8.75)	0.37	(1.4)	0.13	16.4	(5)	180	1/4 x 3/16	7.5-8.6	(3.4-3.9)	
1602	253	(17.5)	0.55	(2.1)	0.19	126	(8.75)	0.66	(2.5)	0.24	16.4	(5)	180	1/4 x 3/16	7.5-8.8	(3.4-4.0)	
1005	145	(10)	1.1	(4.4)	0.41	73	(5)	1.32	(5.0)	0.46	16.4	(5)	180	1/2 x 3/8	7.7-9.0	(3.5-4.1)	
0708	101	(7)	1.9	(7.1)	0.66	50.5	(3.5)	2.22	(8.4)	0.78	9.8	(3)	180	1/2 x 3/8	7.7-11.0	(3.5-5.0)	
0413	58	(4)	3.2	(12.3)	1.14	29	(2)	3.75	(14.2)	1.31	6.5	(2)	180	1/2 x 3/8	7.7-11.0	(3.5-5.0)	
0220	29	(2)	5.0	(19.0)	1.76	14.5	(1)	5.52	(20.9)	1.94	6.5	(2)	180	1/2 x 3/8	7.7-11.0	(3.5-5.0)	
1605	253	(17.5)	1.1	(4.1)	0.38	126	(8.75)	1.29	(4.9)	0.45	13.1	(4)	180	1/2 x 3/8	9.3-10.8	(4.2-4.9)	
1008	145	(10)	1.8	(6.8)	0.63	73	(5)	2.19	(8.3)	0.76	9.8	(3)	180	1/2 x 3/8	9.5-12.8	(4.3-5.8)	
0713	101	(7)	2.9	(11.0)	1.02	50.5	(3.5)	3.46	(13.1)	1.21	9.8	(3)	180	1/2 x 3/8	9.5-12.8	(4.3-5.8)	
0420	58	(4)	4.5	(17.1)	1.58	29	(2)	5.04	(19.1)	1.77	9.8	(3)	180	1/2 x 3/8	9.5-12.8	(4.3-5.8)	
0232*	29	(2)	8.4	(32.0)	2.96	14.5	(1)	9.56	(36.2)	3.35	6.5	(2)	180	1/2 x 3/8	9.9-13.9	(4.5-6.3)	

GALa with auto-degassing liquid ends

1601	253	(17.5)	0.16	(0.59)	0.055	126	(8.75)	0.21	(0.78)	0.07	5.9	(1.8)	180	1/4 x 3/16	7.7 (3.5)
1602	253	(17.5)	0.37	(1.4)	0.13	126	(8.75)	0.45	(1.7)	0.16	6.9	(2.1)	180	1/4 x 3/16	7.7 (3.5)
1005	145	(10)	0.95	(3.6)	0.33	73	(5)	1.05	(4.0)	0.37	8.8	(2.7)	180	1/2 x 3/8	7.7 (3.5)
0708	101	(7)	1.74	(6.6)	0.61	50.5	(3.5)	1.98	(7.5)	0.69	6.5	(2.0)	180	1/2 x 3/8	7.7 (3.5)
0413	58	(4)	2.8	(10.8)	1.00	29	(2)	3.3	(12.6)	1.17	6.5	(2.0)	180	1/2 x 3/8	7.9 (3.6)
0220	29	(2)	4.3	(16.2)	1.50	14.5	(1)	4.7	(18.0)	1.67	5.9	(1.8)	180	1/2 x 3/8	7.9 (3.6)
1605	253	(17.5)	0.87	(3.3)	0.31	126	(8.75)	1.00	(3.8)	0.35	9.8	(3)	180	1/2 x 3/8	9.5 (4.3)
1008	145	(10)	1.66	(6.3)	0.58	73	(5)	1.98	(7.5)	0.69	9.8	(3)	180	1/2 x 3/8	9.5 (4.3)
0713	101	(7)	2.77	(10.5)	0.97	50.5	(3.5)	3.2	(12.3)	1.14	8.2	(2.5)	180	1/2 x 3/8	9.5 (4.3)
0420	58	(4)	4.12	(15.6)	1.44	29	(2)	4.6	(17.4)	1.61	8.2	(2.5)	180	1/2 x 3/8	9.5 (4.3)

Above capacities and suction lift refer to pumps tested on water at 115 VAC, 60 Hz, and an ambient temperature of 70°F (20°C). Higher specific gravity fluids will reduce suction lift. Higher viscosity fluids will reduce capacity.

* Not available with bleed valve.

** SS versions use 1/4" female threads except models 0220, 0420, and 0232 which use 3/8" female threads.

Liquid end materials

Version	Liquid End	Suction/Discharge valves	Seals	Valve balls	Diaphragm*
PPE	Polypropylene	Polypropylene	EPDM	Ceramic	PTFE
PPB	Polypropylene	Polypropylene	Viton®	Ceramic	PTFE
PCE	PVC	PVC	EPDM	Ceramic	PTFE
PCB	PVC	PVC	Viton®	Ceramic	PTFE
NPE	Acrylic	PVC	EPDM	Ceramic	PTFE
NPB	Acrylic	PVC	Viton®	Ceramic	PTFE
TTT	PTFE with carbon	PTFE with Carbon	PTFE	Ceramic	PTFE
SST	316 Stainless steel	316 Stainless Steel	PTFE	Ceramic	PTFE

Auto-degassing type with Hastelloy C valve spring and PVDF valve seat.

Viton® is a registered trademark of DuPont Dow Elastomers.

*Other materials available for special applications.

Specifications: gamma/L

Maximum stroke length:	0.05" (1.25 mm)	
Materials of construction	Fiberglass reinforced PPE	
Housing:	PTFE-faced EPDM with plastic core	
Diaphragm:	Polypropylene, PVC, Acrylic/PVC, PTFE, 316 SS	
Liquid end options:	NEMA 4X (IP 65)	
Enclosure rating:	F	
Motor insulation class:	100-230 VAC, 1 phase, 50/60 Hz, +/- 10%	
Power supply:	Double ball	
Check valves:	When used according to operating instructions, ±2% under constant conditions and at minimum 30% stroke length. The minimum stroke length with auto-degassing liquid end is 50%.	
Repeatability of the metering:	6 foot (2 m)	
Power cord:	6 foot (2 m)	
Relay cable (optional):	Relay load	
Relay load	Contact load: 250 VAC, 2 A, 50/60 Hz	
Fault relay only (options 1 & 3):	Operating life: > 200,000 switch functions	
Fault and pacing relay (options 4 & 5):	Contact load: 24 V, 2 A, 50/60 Hz	
	Operating life: > 200,000 switch functions	
	Residual impedance in ON-position ($R_{DS(on)}$): < 8 Ω	
	Residual current in OFF-position: <1μA	
	Maximum voltage: 24 VDC	
	Maximum current: < 100 mA (for pacing relay)	
	Switch functions: 15x10 ⁹	
	Contact closure: 100 ms (for pacing relay)	
Ambient temperature range:	14°F (-10°C) to 113°F (45°C)	
Max. fluid operating temperatures:	Material	Constant
	Acrylic/PVC	113°F (45°C)
	Polypropylene	122°F (50°C)
	PVC	113°F (45°C)
	PTFE	122°F (50°C)
	316 SS	122°F (50°C)
		Short Term
		140°F (60°C)
		212°F (100°C)
		140°F (60°C)
		248°F (120°C)
		248°F (120°C)
Average power drain at maximum stroking rate (Watts) / current drain at pump stroke (Amps)	17W / 0.7 A or 15 A (peak current for approx. 1 ms)	
1000, 1601, 1602, 1005, 0708, 0413, & 0220 :	22W / 1.0 A or 15 A (peak current for approx. 1 ms)	
1605, 1008, 0713, 0420 & 0230 :	1.15	
Service factor:	2 years on drive, 1 year on liquid end	
Warranty:	CE approved, CSA and UL pending	
Industry standards:	NP, PP, PC, TT Versions: M20 x 1.5 (provided with tubing adapters)	
Valve threads:	All pumps are tested for capacity at maximum pressure prior to shipment	
Standard Production Test:	Pumps with 1/4" valves: 15μ - Pumps with 1/2" valves: 50μ	
Max. solids size in fluid:	With voltage free contact, or with semiconductor sink logic control (NPN), not source logic (PNP). With a residual voltage of <0.7 V, the contact load is approximately 0.5 mA at +5 VDC. (Note: Semiconductor contacts that require >0.7 V across a closed contact should not be used.) Pump ignores contacts exceeding maximum input rate, and will not remember.	
Controlling contact (pulse):	>20 mS	
Necessary contact duration:	max. 200 cPs for standard liquid end	
Recommended Viscosity:	max. 500 cPs for bleed valve (valves with springs)	
	max. 50 cPs for auto-degassing liquid ends	

Identity code: gamma/L metering pumps

ProMinent®

Series:
GALA gamma/L version a

1000 1601 1602 1005 0708 0413 0220	1605 1008 0713 0420 0232	Pump version:										
PP PC NP TT SS	Liquid end materials: Polypropylene PVC Acrylic/PVC PTFE SS											
	E B T P V	Seal: EPDM seals (PP, PC, NP) Viton® seals (PP, PC, NP) PTFE seals (TT, SS) EPDM diaphragm with EPDM seals (PP, PC, NP) Viton® diaphragm with Viton® seals (PP, PC, NP)										
		Liquid end version: 0 W/o bleed valve, w/o springs (TT, SS and version 0232) 1 W/o bleed valve, with springs (TT, SS and version 0232) 2 With bleed valve, w/o springs (PP, PC, NP except version 0232) 3 With bleed valve, with springs (PP, PC, NP except version 0232) 9 With auto-degassing (PP, NP - except versions 1000, 0232)										
		0 6	Connection: Standard according to technical data 1/2" x 3/8" tube fittings									
			0	Labeling: Standard, with logo								
				U	Electrical connection (± 10%): 100-230 V, 50/60 Hz							
					A D U	Cable and plug with 6 ft (2 m) power cord, single phase: European plug N. American plug, 115 V N. American plug, 230 V						
						0 1 3 4 5	Relay: Without relay Fault annunciating relay, drops out Fault annunciating relay, pulls in Option 1 + pacing relay Option 3 + pacing relay					
						0 1	Accessories: Not included Standard for PP, PC, NP; none for TT, SS					
							0 1 2 3	Control Variants: Manual + External 1:1 Manual + External with pulse control (multiplier/divider) Manual + External 1:1 with analog control Manual + External with pulse control & analog control				
							0 1	Access Code: No Access Code Access Code				
								0	Flow Monitor: Standard			
									0	Pause/Float: Standard		
GALA 1602 NP B 9 0 0 B D 0 0 0 0 0 0												