

1.3 ProMinent® Delta® Controlled Solenoid optoDrive® Diaphragm Metering Pumps

1.3.1

ProMinent® Delta®

The solenoid metering pumps of the series Delta® with controlled solenoid drive optoDrive® are microprocessor-controlled solenoid metering pumps with the following features:

- Continuous or pulsating dosing.
- Programmable suction and delivery stroke duration.
- Pump can be adapted to the dosing media.
- Integrated injection control optoGuard detects blocked dosing points, broken dosing lines and air or gas bubbles trapped in the dosing head.
- Capacity range 7.5-75 l/h, 25-2 bar.
- Stroke length continuously adjustable from 0 - 100% (recommended range 30 - 100%).
- Acrylic, PVDF and stainless steel material versions.
- Patented coarse/fine, manual bleeding on Acrylic/PVC versions
- Detection and indication of diaphragm failure.
- Adjustment and display of pump delivery from the keypad with choice of display in l/h or strokes/min.
- Large backlit graphic display.
- External control options via volt-free contacts with pulse multiply/divide function.
- Optional external control via standard 0/4-20 mA signal.
- Interfaces for PROFIBUS® or CANopen (Dulcomarin II).
- 14-day process timer option* for time and event-dependent dosing duties.
- Connection for 2-stage level switch.
- 3 LED displays for operation and warning and error message in plain text.
- Optional concentration input for volume-proportional dosing.
- Optional automatic degassing function.
- Control module with inputs for pH, ORP an chlorine
- EHEDG-certified stainless steel liquid ends



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Technical Data

Pump type ProMinent Delta®	Pressure bar	Capacity l/h	Stroke capacity ml/stroke	Stroke frequency strokes/min	Connector size mm	Suction lift* m WG	Shipping weight PVT-NP/SST in kg
DLTA 2508	25	7.5	0.62	200	8x5 & 8x4 (discharge)	5	10 / 11
DLTA 1608	16	7.8	0.65	200	8x5	6	10 / 11
DLTA 1612	16	11.3	0.94	200	8x5	6	10 / 11
DLTA 1020	10	19.1	1.59	200	12x9	5	10 / 11
DLTA 0730	7	29.2	2.43	200	12x9	5	10 / 11
DLTA 0450	4	49.0	4.08	200	DN10SWJ***/16mmHT	3	10 / 11
DLTA 0280	2	75.0	6.25	200	DN10SWJ***/16mmHT	2	10 / 11

NOTE: delta® metering pumps for higher-viscosity media have a 10 - 20 % lower metering capacity and are not self-priming.

Connection G 3/4 - DN 10 with tube nozzle d16 - DN 10.

* suction lift with primed dosing head and suction line

*** Male PVC Solvent Weld fittings supplied as standard 15mm (nominal), as well as standard 16mm HT ex Germany.

Materials in Contact with Chemicals

Version	Dosing head	Suction/discharge connector	Seals	Ball valves
NPB	Acrylic	PVC	FPM(viton®)	Ceramic
NPE	Acrylic	PVC	EPDM	Ceramic
PVT	PVDF	PVDF	PTFE	Ceramic
SST	Stainless steel Mat. No. 1.4404	Stainless steel Mat. No. 1.4404	PTFE	Ceramic

PTFE-coated dosing diaphragm

Dosing repeatability ± 2% when used in accordance with the operating instructions

Permissible ambient temperature -10°C to +45°C

Average power consumption 78 W

Protection IP65, insulation class F

Delivery package: metering pump with mains cord (2m) and plug, connection kit for hose/pipe connectors as per table.

Explanation of Relays

Relay	Description	Contacts
1	Alarm relay Normally Closed N/C	1 x changeover 240v - 8A
3	Alarm relay Normally Open N/O	1 x changeover 240v - 8A
4	Alarm relay Normally Closed N/C + pacing relay Normally Closed N/O	2 x make contact 24v 100mA
5	Alarm relay Normally Closed N/O + pacing relay Normally Closed N/O	2 x make contact 24v 100mA
6	Cut-off relay Normally Closed N/C	1 x changeover 240v - 8A
7	Cut-off relay Normally Closed N/O	1 x changeover 240v - 8A
8	Cut-off relay Normally Closed N/C + clock generator relay Normally Closed N/O	2 x make contact 24v 100mA
9	Cut-off relay Normally Closed N/O + pacing relay Normally Closed N/O	2 x make contact 24v 100mA
A	Cut-off relay Normally Closed N/C + warning relay Normally Closed N/C	2 x make contact 24v 100mA
B	Cut-off relay relay Normally Closed N/O + warning relay Normally Closed N/O	2 x make contact 24v 100mA
C	Current output 4-20mA + Alarm relay Normally Closed N/C	1 x make contact 24v 100mA
D	Current output 4-20mA + pacing indicator	1 x make contact 24v 100mA
F	Automatic degassing solenoid 240v	
G	Automatic degassing solenoid 240v + fault relay	2 x make contact 24v 100mA

Relays Type	Cable
1 - 1028839	1002130
3 - 1028839	1002130
4 - 1028840	Local
5 - 1028840	Local

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DLTA Delta series

2508	NPB/E 25 bar	7.5 l/h	SS 25 bar	7.5 l/h
1608	PVT 16 bar	7.8 l/h	SS 16 bar	7.8 l/h
1612	PVT 16 bar	11.3 l/h	SS 16 bar	11.3 l/h
1020	PVT 10 bar	19.1 l/h	SS 10 bar	19.1 l/h
0730	PVT 7 bar	29.2 l/h	SS 7 bar	29.2 l/h
0450	PVT 4 bar	49.0 l/h	SS 4 bar	49.0 l/h
0280	PVT 2 bar	75.0 l/h	SS 2 bar	75.0 l/h

NP PV SS	Liquid End Materials	Plexiglass/PVC *** ONLY available for 1608 / 2508, 1612, 1020 and 0730 ***
		PVDF/PTFE *** NOT available for 2508 ***
		Stainless Steel

B/E T S	Seals / Diaphragm Material	B = VITON® & E = EPDM only for NP Heads
		PTFE / PTFE coated
		PTFE / diaphragm additionally with FPM coating for silica-laden media

0 1 2 3 4	Liquid End Version	0 No bleed, no valve springs for NPB, NPE, and SST
		1 No bleed, plus valve springs for SST
		2 With bleed, no valve springs for NPB, NPE, and PVT
		3 With bleed, plus valve springs for PVT
		4 HV version for high-viscosity media *** ONLY available for 1608, 1612, 1020 and 0730 ***

0 F	Hydraulic Connection	0 Standard according to technical data
		F Discharge side connector & PTFE tube 8x4, (standard ONLY for 2508 NPB)

0 1	Diaphragm Rupture Indicator	0 No diaphragm rupture protection
		1 With diaphragm rupture protection

0	Design	0 With ProMinent Logo
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U	Electrical Connection	U 100-240 V, 50-60 Hz
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C	Cable & Plug	C Cable Length 2m with Australian 3-pin plug
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0 1 3 4 5 A C F G	Relays	0 No relay
		1 Fault indicating relay (N/C) (changeover relay)
		3 Fault indicating relay (N/O) (changeover relay)
		4 As 1 + pacing relay N/C
		5 As 3 + pacing relay N/C
		A Shut-down and alarm relay N/C 24v DC
		C as 1 + 4-20 mA output
		F Automatic degassing solenoid 240v - ***
		G Automatic degassing solenoid 24v DC + fault relay ***

0 1	Accessories	0 No accessories
		1 Foot valve & dosing valve - NOT for 0450 & 0280 or SS

0 3 4 5 C M R	Control Variants	0 Manual + external contact + pulse control
		3 Manual + external + pulse control + 0/4-20mA analogue
		4 as 0 + 14-day Process Timer
		5 as 3 + 14-day Process Timer
		C CANopen for Dulcomarin® II
		M with pH, ORP & chlorine control module
	R as 3 + PROFIBUS, M12	

0 1	Access Code	0 No access code
		1 With access code

EN	Language	EN English
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0	Pause / Level	0 Pause / level break contact
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P*	Prepack Option	P* See options
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Caution
See Page 20 for explanation of relays
A & G relays, customer to supply 24 volt power supply and connections. See Sydney office.
F & G relay *** **NOT for 2508**

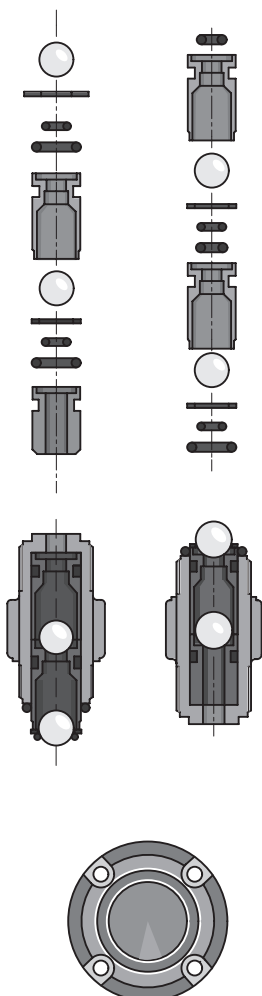
Note: If PROFIBUS® is specified refer to page 3.19 to determine which PROFIBUS® cables, adaptors and terminators are required. Also if PROFIBUS® option is selected NO relays can be fitted.

Prepacks = P*
P0 - includes 5m of delivery and 2m suction tube ** a CANbus cable, if specified.
P2 - as P0 but with 2m control Cable
P5 - as P2 but with 5m control Cable
PX - as P2 but with 10m control Cable
Note:
** 1608 & 1612 pumps supplied with 5m PTFE Tube
** 2508 special tube and connectors - see 'F'
** Not for 0450 & 0280 requires 16mm tube
0450 & 0280 supplied with DN10 PVC SW fittings, as well as PVT H/T ex ProMinent

DLTA 1612 PV T 2 0 0 0 U C 0 1 0 0 EN 0 P0

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Replacement spare parts kits

for ProMinent® Delta®,

consisting of:

- 1 dosing diaphragm
- 1 suction valve
- 1 delivery valve
- 2 valve balls
- 1 set seals
- 1 connector set

Note: Does not include valves for SS

Type 2508	NPB	1033171
	NPE	1033172
	SST	1030226
Type 1608	NPB	1030611
	NPE	1030620
	PVT	1030225
	SST	1030226
Type 1612	PVT	1027081
	SST	1027086
Type 1020	PVT	1027082
	SST	1027087
Type 0730	PVT	1027083
	SST	1027088
Type 0450	PVT	1027084
	SST	1027089
Type 0280	PVT	1027085
	SST	1027090

pk_1_008

Replacement Diaphragms for Delta® series pumps

Type 2508	all materials	1030353
Type 1608	all materials	1030353
Type 1612	all materials	1000248
Type 1020	all materials	1000249
Type 0730	all materials	1000250
Type 0450	all materials	1000251
Type 0280	all materials	1025075