

Catalogue | 2022

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1.0 ProMinent® alpha Motor-driven Metering Pumps

1.0.1 alpha Metering Pumps

The alpha is a metering pump designed for simple operations. It is ideal for continuous metering.

- Output range 1.0-30.6 l/h, 10-2 bar
- Stroke length adjustment in 10 % steps from 0-100 %
- Material options: PVDF and Acrylic/PVC
- Patented coarse/fine bleed valve
- Constant stroke rate
- Controlled via mains supply ON/OFF

It is an oscillating motor diaphragm metering pump for liquid chemicals and consists of drive and delivery unit as main components. The drives are available in 2 gear ratios, delivery units in 4 sizes and in the materials acrylic/PVC. It is therefore possible to specify the required output and the material combination. The alpha pumps are switched on/off via the mains power supply, the metering output can be changed via the stroke length adjustment between 100 % and 0.

The drive consists of a powerful split pole motor with gearbox, eccentric shaft and connecting rod as driving rod. The housing is made of glass fibre reinforced plastic and is resistant to shock and chemicals.

The eccentric for the stroke movement is guided in an eccentric cam. Suction and pressure stroke are positively driven.

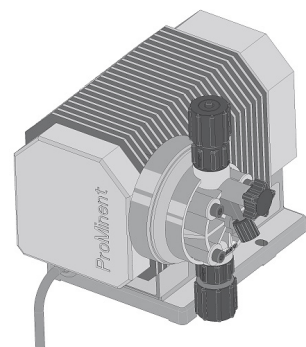
The stroke length adjustment is carried out by varying the eccentricity in 10 % steps via a notched slide when the pump is not working. This means that the diaphragm deflection is always made from the neutral centre position.

During operation, the alpha pump with its positively driven suction and metering strokes, as well as the stroke length adjustment by varying the eccentricity produces a smooth, sinusoidal stroke action for suction and metering stroke with diaphragm deflection from the centre position.

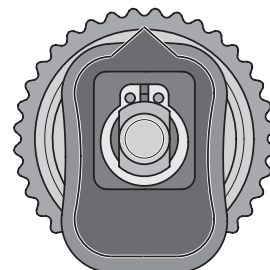
The result is a good suction performance, smooth metering stroke and consistently accurate metering with low mechanical load on the metering diaphragm.

The delivery unit consists of liquid end, metering diaphragm and head disc. The liquid end in the material combinations PVDF or plexiglass/PVC is equipped with double ball valves on the suction and pressure side as well as coarse/fine bleeding. The bleed valve facilitates suctioning and bleeding at full operating pressure without having to interrupt and de-pressurise the metering line.

For media of higher viscosity, the valves can be spring-loaded.



alpha



pk_1_002

1.0 ProMinent® alpha Metering Pumps

1.0.2 Technical Data

50 Hz version

	Max. Pump Capacity at Maximum Back Pressure			Max. Pump Capacity at Medium Back Pressure			Number of strokes	Stroke length	Connector Sizes Outer R x Inner R	Suction	Intake Head	shipping weight
	bar	l/h	ml/ stroke	bar	l/h	ml/ stroke	strokes/ min.	mm	mm	m WG	m WG	kg
1001	10.0	1.0	0.29	5	1.1	0.32	58	2	6 x 4	5.1	2.5	3
1002	10.0	1.8	0.52	5	2.1	0.60	58	2	6 x 4	5.1	2.5	3
1004	10.0	3.5	1.01	5	3.9	1.12	58	3	8 x 5	5.1	2.5	3
1008	10.0	7.7	1.00	4	8.6	1.12	128	3	8 x 5	5.1	3.0	3
0707	7	6.9	1.98	4	7.7	2.21	58	3	8 x 5	4.1	3.0	3
0417	4	17.0	2.51	3	18.3	2.76	128	3	8 x 5	4.1	3.0	3
0230	2	30.6	3.98	2	32.7	4.26	128	3	12 x 9	4.1	3.0	3

Materials In Contact with Chemicals

	Liquid End	Suction/Discharge Connector	Seals	Valve Balls
NPE	Plexiglass	PVC	EPDM	ceramic
NPB	Plexiglass	PVC	FPM (Viton®)	ceramic
PVT	PVDF	PVDF	PTFE	ceramic

DEVELOPAN® dosing diaphragms with PTFE coating for all versions.

Viton® is a registered trademark of DuPont Dow Elastomers. (FPM = fluororubber)

Included in delivery: Metering Pump with 2 m mains cable and plug, connector set for hose/tube connection as indicated in tables.

Motor Data

- **Type:** Split pole motor with integrated thermal overload protection
- **Power supply:** 220-240 V, 50Hz
- **Power input:** 50 W (at 230 V/50 Hz)
- **Power consumption:** 0.4 A (at 230 V/50 Hz)



1.0 ProMinent® alpha Metering Pumps

1.0.3 Identity Code & Pricing for alpha

ALPc		alpha version C					
Pump type	Capacity at 50 Hz						
	1001	1.2 l/h - 10 bar					NPE
	1001	1.2 l/h - 10 bar					NPB
	1001	1.2 l/h - 10 bar					PVT
	1002	1.8 l/h - 10 bar					NPE
	1002	1.8 l/h - 10 bar					NPB
	1002	1.8 l/h - 10 bar					PVT
	1004	3.5 l/h - 10 bar					NPE
	1004	3.5 l/h - 10 bar					NPB
	1004	3.5 l/h - 10 bar					PVT
	1008	7.7 l/h - 10 bar					NPE
	1008	7.7 l/h - 10 bar					NPB
	1008	7.7 l/h - 10 bar					PVT
	0707	6.9 l/h - 7 bar					NPE
	0707	6.9 l/h - 7 bar					NPB
	0707	6.9 l/h - 7 bar					PVT
	0417	17.0 l/h - 4 bar					NPE
	0417	17.0 l/h - 4 bar					NPB
	0417	17.0 l/h - 4 bar					PVT
0230	30.6 l/h - 2 bar					NPE	
0230	30.6 l/h - 2 bar					NPB	
0230	30.6 l/h - 2 bar					PVT	



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.1 ProMinent® Beta®

The Beta® range represents a new generation of ProMinent® solenoid diaphragm Metering Pumps. These micro-processor controlled pumps set new standards of operating safety and versatility: power surge compensation, wide-ranging power supply adaptability, triple LED operating-status display and flexible control options, including external contact, volt-free ON/OFF control, and external frequency adjustment via volt-free contacts make these pumps ideal for the watertreatment industry.

The 10 settings used to adjust dosing-frequency, along with “external”, “stop” and “test” settings are selected using a multi-function knob. Dosing heads are specifically designed in materials which withstand the chemicals used in this field: acids, alkalis, disinfectants, flocculation additives. In “test” mode, the pump operates at maximum frequency. On release, the spring-loaded button returns to “stop”. Variable stroke length adjustment enables precise selection of dosing capacity.

These settings options result in accurate dosing, and precise reproducibility of the required frequency. High frequencies ensure thorough blending of chemicals. A longer stroke length and correct installation ensures reliable dosing of highly viscous liquids. Self-deaerating dosing heads are available for gaseous chemicals. To complete the safety package we offer an optional dual-setting level switch to monitor chemical levels in containers. The hard-wearing drive systems for these solenoid diaphragm pumps meet the usual ProMinent® high standards of quality. The housing is made from glass-fibre reinforced PPE and carries IP 65 protection.

Foot and injection valves and 7m tube pack are included as standard, (PP/PVC only). This universal pump offers an excellent cost of ownership ratio.

FEATURES & BENEFITS

- Capacity range 0.74 - 32 l/h, 2 - 25 bar
- Continuous stroke length adjustment from 0 - 100 % (recommended 30-100%)
- Supplied in PP, PVC, Acrylic/PVC, PVDF, PTFE, stainless steel
- Patented coarse/fine, manual bleeding on PP, PVC and PVT Acrylic/PVC versions
- Self-deaerating dosing head type in PP and Plexi/PVC
- HV liquid end for highly viscous media
- 10-setting stroke frequency adjustment from 10 - 100 %
- External control via volt-free contacts
- External contact input with pulse control as standard 1:64 to 64:1
- Connector for dual-setting level switch
- 3 LED display for operation, warning and fault indication
- Wide range power supply 100-230 volt 50/60 Hz
- Milliamp input option 4-20 mA



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.2 Technical Data Beta®

	Max. Pump Capacity at Maximum Back Pressure			Max. Pump Capacity at Medium Back Pressure			Stroke Freq	Connector Sizes Outer R x Inner R	Suction Lift**	Delivery Weight PP, NP PC, TT	SS
pump type	bar	l/h	ml/stroke	bar	l/h	ml/stroke	strokes/min	mm	mm	kg	kg
BT4b 1000	10	0.74	0.069	5.0	0.82	0.076	180	6 x 4	6.0**	2.9	3.6
BT4b 0700 ***	7	0.8	0.074	3.5	0.8	0.074	180	6 x 4	6.0**	2.9	3.6
BT4b 0400 ***	4	0.84	0.078	2.0	0.84	0.078	180	6 x 4	6.0**	2.9	3.6
BT4b 2001	20	0.96	0.089	10.0	1.5	0.13	180	6 x 3	6.0**	3.1	3.9
BT4b 1601	16	1.1	0.10	8.0	1.4	0.13	180	6 x 4	6.0**	3.1	3.9
BT4b 1001 ***	10	1.3	0.12	5.0	1.5	0.14	180	6 x 4	6.0**	3.1	3.9
BT4b 0701 ***	7	1.4	0.13	3.5	1.5	0.14	180	6 x 4	6.0**	3.3	4.4
BT4b 0401 ***	4	1.5	0.14	2.0	2.0	0.18	180	6 x 4	6.0**	2.9	3.6
BT4b 2002	20	1.7	0.16	2.8	0.26	0.13	180	6 x 3	6.0**	2.9	3.6
BT4b 1602	16	2.2	0.20	8.0	2.5	0.24	180	6 x 4	6.0**	2.9	3.6
BT4b 1002 ***	10	2.4	0.22	5.0	2.8	0.26	180	6 x 4	6.0**	3.1	3.9
BT4b 0702 ***	7	2.6	0.24	3.5	3.1	0.29	180	6 x 4	6.0**	3.1	3.9
BT4b 0402 ***	4	2.8	0.26	2.0	3.9	0.36	180	6 x 4	3.0**	3.1	3.9
BT4b 1604	16	3.6	0.33	8.0	4.3	0.40	180	6 x 4	2.0**	3.3	4.4
BT4b 1004 ***	10	3.9	0.36	5.0	4.7	0.44	180	6 x 4	5.0**	2.9	3.6
BT4b 0704 ***	7	4.2	0.39	3.5	5.1	0.47	180	6 x 4	5.0**	2.9	3.6
BT4b 0404 ***	4	4.5	0.42	2.0	5.6	0.52	180	6 x 4	5.0**	2.9	3.6
BT4b 0708	7	7.1	0.66	3.5	8.4	0.78	180	8 x 5	6.0**	3.1	3.9
BT4b 0408 ***	4	8.3	0.77	2.0	10.0	0.93	180	8 x 5	4.0**	3.1	3.9
BT4b 0413	4	12.3	1.14	2.0	14.2	1.31	180	8 x 5	3.0**	2.9	3.6
BT4b 0220	2	19.0	1.76	1.0	20.9	1.94	180	12 x 9	2.0**	2.9	3.6
BT5b 2504	25	2.9	0.27	12.5	3.7	0.34	180	8 x 4	4.0**	3.1	3.9
BT5b 1008	10	6.8	0.63	5.0	8.3	0.76	180	8 x 5	3.0**	3.3	4.4
BT5b 0713	7	11.0	1.02	3.5	13.1	1.21	180	8 x 5	3.0**	4.5	5.3
BT5b 0420	4	17.1	1.58	2.0	19.1	1.77	180	12 x 9	3.0**	4.7	5.8
BT5b 0232	2	32.0	2.96	1.0	36.2	3.35	180	12 x 9	2.0**	5.1	6.6

Beta b® Metering Pumps with self-bleeding dosing head *

BT4b 1601	16	0.59	0.055	8.0	0.80	0.072	180	6 x 4	1.8**	2.9	-
BT4b 1001	10	0.72	0.067	5.0	0.60	0.08	180	6 x 4	2.1**	2.9	-
BT4b 0701	7	0.84	0.078	3.5	1.12	0.10	180	6 x 4	2.7**	3.1	-
BT4b 0401	4	0.90	0.083	2.0	1.2	0.11	180	6 x 4	2.0**	3.1	-
BT4b 2002	20	0.78	0.07	10.0	1.8	0.17	180	6 x 3	2.0**	3.1	-
BT4b 1602	16	1.4	0.13	8.0	1.74	0.174	180	6 x 4	2.0**	3.3	-
BT4b 1002	10	1.7	0.16	5.0	2.0	0.072	180	6 x 4	1.8**	2.9	-
BT4b 0702	7	1.8	0.17	3.5	2.2	0.20	180	6 x 4	2.1**	2.9	-
BT4b 0402	4	2.1	0.19	2.0	2.5	0.23	180	6 x 4	2.7**	3.1	-
BT4b 1604	16	2.7	0.25	8.0	3.6	0.33	180	6 x 4	2.0**	3.1	-
BT4b 1004	10	3.3	0.30	5.0	3.9	0.36	180	6 x 4	2.0**	3.1	-
BT4b 0704	7	3.6	0.33	3.5	4.0	0.37	180	6 x 4	2.0**	3.3	-
BT4b 0404	4	3.9	0.36	2.0	4.2	0.39	180	6 x 4	1.8**	2.9	-
BT4b 0708	7	6.6	0.61	3.5	7.5	0.69	180	8 x 5	2.1**	2.9	-
BT4b 0408	4	7.5	0.64	2.0	8.1	0.77	180	8 x 5	2.7**	3.1	-
BT4b 0413	4	10.8	1.0	2.0	12.6	1.17	180	8 x 5	2.0**	3.1	-
BT4b 0220	2	16.2	1.50	1.0	18.0	1.67	180	12 x 9	2.0**	3.3	-
BT5b 1008	10	6.3	0.58	5.0	7.5	0.69	180	8 x 5	3.0**	4.5	-
BT5b 0713	7	10.5	0.97	3.5	12.3	1.14	180	8 x 5	2.5**	4.5	-
BT5b 0420	4	15.6	1.44	2.0	17.4	1.61	180	12 x 9	2.5**	4.7	-

Beta® pumps with liquid ends for highly viscous media have 10-20 % less metering capacity and are not self-priming.

G 3/4-DN connector with d16-DN10 nozzle union.

* The values given in the capacity data tables are guaranteed minimum values, using medium hardness water at room temperature. Bypass bleed size 6x4 all sizes.

** Suction lift readings when liquid end and suction tubing are full, or for self-degassing liquid end when the suction tubing contains air.

*** Reduced pressure 4, 7 and 10 bar pump types are available for specialised applications, e.g. for use in swimming pool systems.

**** 6 mm inner diameter in stainless steel version.



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.3 Identity Code & Pricing for Beta® b 4 & 5

BT4b Beta® version b

BT4b 1000, 1601, 1602, 1604
also 2001* 1001, 0701, 0401
2002* 1002, 0702, 0402
1004, 0704, 0404

PP
PV
NP
TT
SS
PP
PV
NP
TT
SS

BT4b 0708, 0413, 0220
also 0408

BT5b 1008, 0713, 0420
also 2504*

PP
PV
NP
TT
SS
PP
PV
NP
TT
SS

Note: 2504*, 2002*, 2001* only NP & SS

BT5b 0232

Liquid End Materials / Seals *** Note: not all stocked *** 1004 ONLY available in NPT ***

PPE Polypropylene/EPDM
PPB Polypropylene/Viton (FPM-B) *not stocked FPM-B = Fluorine Rubber*
NPE Plexiglass/EPDM *not stocked*
NPB Plexiglass/Viton
PVT PVDF/PTFE, for L/E type 2 **not 0232** & type 4 **only 1004/1604, 0708/1008, 0413/0713, 0220/420**
TTT PTFE/PTFE
SST Stainless Steel 1.4571/PTFE

Liquid End Version

- 0** Non bleed, no valve springs, **ONLY for TT, SS and type 0232 PVT & PPE**
- 1** Non bleed, with valve springs, **ONLY for TT, SS and type 0232**
- 2** Bleed function, no valve springs for **PP, NP, & PVT only - not type 0232 EXCEPT NPB2**
- 3** Bleed function, with valve springs for **PP, NP, & PVT only - not type 0232**
- 4** Version for highly viscous media, **Beta® 4 only PVT type 1604, 0708, 0413, 0220**
- 7** PVT Self bleed (SER) no bypass **NOT 1000, 1601, 0232**
- 9** Self bleed, (SEK) **for PP, NP only all sizes EXCEPT type 1000 and 0232**

Design

- 0** Housing RAL 5003, Hood RAL 2003

Hydraulic Connections

- 0** Standard according to technical data

Logo

- 0** With ProMinent Logo

Power Supply

- U** 100 - 230 V, ±10%, 50/60 Hz
- M** 12-24 V DC (only BT4b) with 2 m open-ended cable **ONLY**
- N** 24 V DC with 2 m open-ended cable **ONLY**

Cable & Plug

- C** 2m Australian
- 1** 2m Open ended Cable for 12-24V pumps **ONLY**

Relay

- 0** No Relay
- 1** Fault indicating relay (N/C) (changeover relay) **Preferred**
- 3** Fault indicating relay (N/O) (changeover relay)
- 4** As for 1 + pacing relay (1 input each)
- 5** As for 3 + pacing relay (1 input each)

Accessories

- 0** No accessories
- 1** Tube FV & IV - **NOT for PTFE, SS or HV**

Electronic Locking

- 0** No lock
- 1** With electronic lock

Control Variant

- 0** Standard
- A** Milliamp

Pause

- 0** Standard

Options on Request

- 0** Standard

Prepack Option

- P*** See options

Prepacks = P*

P0 - includes 5m of delivery and 2m suction tube

P2 - includes 5m of delivery and 2m suction tube
a 2m Control Cable if required.

P5 - as P2 but with 5m control Cable

PX - as P2 but with 10m control Cable

Note: 2504, 2001, 2002, 1601, 1602, 1605 pumps are supplied with
5.0m PTFE tube (in appropriate size) and fittings to suit, other tube
is available on request.

BT4b 1601 PPE 2 0 0 0 U C 0 1 0 0 0 0 P0



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.4 Technical Data for Beta® a 4 & 5 – CAN Bus ONLY

pump type	Max. Pump Capacity at Maximum Back Pressure			Max. Pump Capacity at Medium Back Pressure			Stroke Freq	Connector Sizes Outer R x Inner R	Suction Lift**	Delivery Weight PP, NP PC, TT	SS
Beta®	bar	l/h	ml/stroke	bar	l/h	ml/stroke	strokes/min.	mm	m Wc	kg	kg
BT4a 1000***	10	0.74	0.07	5	0.82	0.08	180	6 x 4	6.0**	2.9	3.6
BT4a 1601***	16	1.1	0.10	8	1.4	0.13	180	6 x 4	6.0**	2.9	3.6
BT4a 1602***	16	2.1	0.19	8	2.5	0.24	180	6 x 4	6.0**	2.9	3.6
BT4a 1005***	10	4.4	0.41	5	5.0	0.46	180	8 x 5****	6.0**	3.1	3.9
BT4a 0708***	7	7.1	0.66	3.5	8.4	0.78	180	8 x 5	6.0**	3.1	3.9
BT4a 0413	4	12.3	1.14	2	14.2	1.31	180	8 x 5	3.0**	3.1	3.9
BT4a 0220	2	19.0	1.76	1	20.9	1.94	180	12 x 9	2.0**	3.3	4.4
BT5a 1605	16	4.1	0.38	8	4.9	0.45	180	8 x 5****	6.0**	4.5	5.3
BT5a 1008	10	6.8	0.63	5	8.3	0.76	180	8 x 5	6.0**	4.5	5.3
BT5a 0713	7	11.0	1.02	3.5	13.1	1.21	180	8 x 5	4.0**	4.5	5.3
BT5a 0420	4	17.1	1.58	2	19.1	1.77	180	12 x 9	3.0**	4.7	5.8
BT5a 0232	2	32.0	2.96	1	36.2	3.35	180	12 x 9	2.0**	5.1	6.6

Beta® Metering Pumps with self-bleeding dosing head *

BT4a 1601	16	0.59	0.06	8	0.78	0.07	180	6 x 4	1.8**	2.9	–
BT4a 1602	16	1.4	0.13	8	1.7	0.16	180	6 x 4	2.1**	2.9	–
BT4a 1005	10	3.6	0.33	5	4.0	0.37	180	8 x 5	2.7**	3.1	–
BT4a 0708	7	6.6	0.61	3.5	7.5	0.69	180	8 x 5	2.0**	3.1	–
BT4a 0413	4	10.8	1.00	2	12.6	1.17	180	8 x 5	2.0**	3.1	–
BT4a 0220	2	16.2	1.50	1	18.0	1.67	180	12 x 9	2.0**	3.3	–
BT5a 1605	16	3.3	0.31	8	3.8	0.35	180	8 x 5	3.0**	4.5	–
BT5a 1008	10	6.3	0.58	5	7.5	0.69	180	8 x 5	3.0**	4.5	–
BT5a 0713	7	10.5	0.97	3.5	12.3	1.14	180	8 x 5	2.5**	4.5	–
BT5a 0420	4	15.6	1.44	2	17.4	1.61	180	12 x 9	2.5**	4.7	–

Beta® pumps with liquid ends for highly viscous media have 10-20 % less metering capacity and are not self-priming.

G 3/4-DN connector with d16-DN10 nozzle union.

* The values given in the capacity data tables are guaranteed minimum values, using medium hardness water at room temperature. Bypass bleed size 6x4 all sizes.

** Suction lift readings when liquid end and suction tubing are full, or for self-degassing liquid end when the suction tubing contains air.

*** Reduced pressure 4, 7 and 10 bar pump types are available for specialised applications, e.g. for use in swimming pool systems. Further information on request.

**** 6 mm inner diameter in stainless steel version.

Materials on each Model in Contact with Chemicals

	Dosing head	Suction/pressure connector	Seals	Balls
PPE	Polypropylene	Polypropylene	EPDM	ceramic
PPB	Polypropylene	Polypropylene	FPM (Viton®)	ceramic
PCE	PVC	PVC	EPDM	ceramic
PCB	PVC	PVC	FPM (Viton®)	ceramic
NPE	Acrylic	PVC	EPDM	ceramic
NPB	Acrylic	PVC	FPM (Viton®)	ceramic
PVT	PVDF	PVDF	PTFE	ceramic
TTT	PTFE with carbon	PTFE with carbon	PTFE	ceramic
SST	stainless steel no. 1.4404	stainless steel no. 1.4404	PTFE	ceramic

Self-degassing version available in PP and NP only. Supplied with Hastelloy valve springs, PVDF valve core.

Dosing diaphragm with PTFE-coating.

Viton® is a registered trademark of DuPont Dow Elastomers.

Reproducible dosing accuracy ± 2 % under correct conditions (see operating instructions).

Ambient temperature -10 °C to +45 °C.

Mean power consumption: Type 1000-0220: 17 W / Type 1605-0232: 22 W

Type of enclosure: IP 65, insulation class F

Metering Pumps supplied with mains power cable (2 m) and plug, hose/pipe connector set as tables.



1.1 ProMinent® Beta® a 4 & 5 Metering Pumps

1.1.5 Identity Code & Pricing for Beta® a 4 & 5 – CAN Bus ONLY

BT4a Beta® version a

BT4a 1000, 1601, 1602,
also 0700, 0400
1001, 0701, 0401
1002, 0702, 0402

PPE
PVT
NPB
TTT
SST

BT5a 1605, 1008, 0713, 0420

PPE
PVT
NPB
TTT
SST

BT4a 1005, 0708, 0413, 0220
also 0405, 0705
0408

PPE
PVT
NPB
TTT
SST

BT5a 0232

PPE
PVT
NPB
TTT
SST

Liquid End Materials / Seals *** Note: not all stocked ***

PPE	Polypropylene/EPDM
PPB	Polypropylene/Viton (FPM-B) <i>not stocked</i> FPM-B = Fluorine Rubber
NPE	Plexiglass/EPDM <i>not stocked</i>
NPB	Plexiglass/Viton
PVT	PVDF/PTFE, for L/E type 2 not 0232 & type 4 only 1005/1605, 0708/1008, 0413/0713, 0220/420
TTT	PTFE/PTFE
SST	Stainless Steel 1.4404/PTFE

Liquid End Version

- 0** Non bleed, no valve springs, **ONLY available for TT, SS and type 0232 PVT & PPE**
- 1** Non bleed, with valve springs, **ONLY available for TT, SS and type 0232 ONLY EXCEPT NPB2**
- 2** Bleed function, no valve springs for PP & PVT - **NOT type 0232**
- 3** Bleed function, with valve springs for PP, NP, & PVT - **NOT type 0232**
- 4** Version for highly viscous media, **only PVT type 1005, 1605, 0708, 1008, 0413, 0713, 0220, 0420**
- 9** Self bleed, (SEK) **for PP, NP only - NOT available for types 1000 and 0232 PP = NP =**

Hydraulic Connections

- 0** Standard according to technical data

Design

- 0** With ProMinent Logo

Power Supply

- A** 200 - 230 V, ±10%, 50/60 Hz ***** CAN Bus ONLY *****
- U** 100 - 230 V, ±10%, 50/60 Hz ***** CAN Bus ONLY *****

Cable & Plug

- C** 2m Australian
- 1** 2m Open ended Cable for 12-24V pumps **ONLY**

Relay

- 0** No Relay
- 1** Fault indicating relay (N/C) (changeover relay) **Preferred**
- 3** Fault indicating relay (N/O) (changeover relay)
- 4** As for 1 + pacing relay (1 input each)
- 5** As for 3 + pacing relay (1 input each)

Accessories

- 0** No accessories
- 1** Tube FV & IV - **NOT for PTFE, SS or HV**

Electronic Locking

- 0** No lock
- 1** With lock: manual operation locked when external cable is plugged in.

Options on request

- D** CANopen for Dulcomarin® II

- 0 0** no option

Prepack Option

- P*** See

Prepacks = P*

P0 - includes 5m of delivery and 2m suction tube a CANbus cable, if specified.

Note: 1601, 1602, 1605 pumps are supplied with 5.0m PTFE tube, other tube is available on request.

BT4a 1601 PPE 2 0 0 A C 0 1 0 0 0 0 P0



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

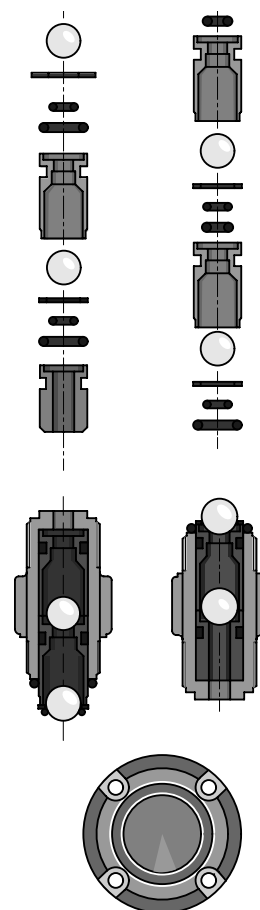
1.1.6 Beta® 4b & 5b Spare Parts Sets

		Part No.
Type 1000	PPT, NPT, PVT	1023107
also: 0700, 0400	TTT	1001737
	SST	1001729
Type 1601	PPT, NPT, PVT	1023108
also: 2001, 1001, 0701, 0401	TTT	1001738
	SST	1001730
Type 1602	PPT, NPT, PVT	1023109
also: 2002, 1002, 0702, 0402	TTT	1001739
	SST	1001731
Type 1604	PPT, NPT, PVT	1035332
also: 2504, 1004, 0704, 0404	PVT HV	1035342
	TTT	1035330
	SST	1035331
Type 0708	PPT, NPT, PVT	1023111
also: 1008, 0408	PVT HV	1019067
	TTT	1001741
	SST	1001733
Type 0413	PPT, NPT, PVT	1023112
also: 0713	PVT HV	1019069
	TTT	1001742
	SST	1001734
Type 0220	PPT, NPT, PVT	1023113
also: 0420	PVT HV	1019070
	TTT	1001754
	SST	1001735
Type 0232	PPT, NPT, PVT	1023124
	TTT	1001755
	SST	1001736

Replacement part sets for ProMinent® Beta, consisting of:

- 1x dosing diaphragm
- 1x suction valve
- 1x discharge valve
- 1x set seals
- 1x connector set

Note: Does not include valves for SS



pk_1_008

Spare Parts Kits for Solenoid-driven Metering Pump Beta® with Self-bleeding Dosing Head - TYPE SER

		Part No.
Type 100	NPT7, PVT7	1047830
Type 1604	NPT7, PVT7	1047858
Type 0708, 1008	NPT7, PVT7	1047832
Type 0413, 0713	NPT7, PVT7	1047833
Type 0220, 0420	NPT7, PVT7	1047837

Replacement part sets for ProMinent® Beta, consisting of:

- 1x metering diaphragm
- 1x suction valve assembly
- 1x discharge valve assembly
- 1x connector set



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.7 Pricing Schedule for Beta® 4a/b & 5a/b Spare Parts Sets

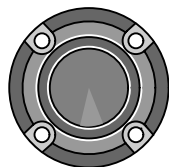
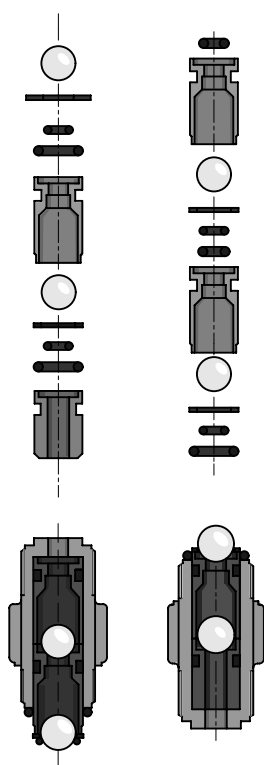
Replacement part sets

for ProMinent® Beta,
consisting of:

- 1x dosing diaphragm
- 1x suction valve
- 1x discharge valve
- 1x set seals
- 1x connector set

Note: Does not include valves for SS

Note: Gamma L Spare
Parts Sets are the same as the
Beta listed here.



pk_1_008



		Part No.
BT4a/b 1000 also: 0700, 0400	PPE	1001644
	PPB	1001652
	PCE/NPE	1001713
	PCB/NPB	1001721
	PVT	1023107
	TTT	1001737
	SST	1001729
BT4a/b 1601 also: 2001, 1001, 0701, 0401	PPE	1001645
	PPB	1001653
	PCE/NPE	1001714
	PCB/NPB	1001722
	PVT	1023108
	TTT	1001738
	SST	1001730
BT4a/b 1602 also: 2002, 1002, 0702, 0402	PPE	1001646
	PPB	1001654
	PCE/NPE	1001715
	PCB/NPB	1001723
	PVT	1023109
	PVT/HV	1035342
	TTT	1001739
	SST	1001731
BT4a/b 1604 also: 1004, 0704, 0404	PPE	1039989
	PPB	1039987
	PCE/NPE	1039988
	PCB/NPB	1039986
	PVT	1035332
	TTT	1035330
	SST	1035331
BT4a 1005, & BT5a 1605	PPE	1001647
	PPB	1001655
	PCE/NPE	1001716
	PCB/NPB	1001724
	PVT	1023110
	PVT/HV	1019066
	TTT	1001740
	SST	1001732
BT4a/b 0708 & BT5a/b 1008 also: 0408	PPE	1001648
	PPB	1001656
	PCE/NPE	1001717
	PCB/NPB	1001725
	PVT	1023111
	PVT/HV	1019067
	TTT	1001741
	SST	1001733
BT4a/b 0413 & BT5a/b 0713	PPE	1001649
	PPB	1001657
	PCE/NPE	1001718
	PCB/NPB	1001726
	PVT	1023112
	PVT/HV	1019069
	TTT	1001742
	SST	1001734
BT4a/b 0220 & BT5a/b 0420	PPE	1001650
	PPB	1001658
	PCE/NPE	1001719
	PCB/NPB	1001727
	PVT	1023113
	PVT/HV	1019070
	TTT	1001754
	SST	1001735
BT5a/b 0232	PPE	1001651
	PPB	1001659
	PCE/NPE	1001720
	PCB/NPB	1001728
	PVT	1023124
	TTT	1001755
	SST	1001736

1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

1.1.7 Beta® 4a/b & 5a/b Spare Parts Sets

Replacement part set: Beta® with self-deaerating headTYPE SEK

		Part No.
BT4a/b 1601	PPE9	1001756
also: 2001, 1001, 0701, 0401	PPB9	1001762
	NPE9	1001660
	NPB9	1001666
BT4a/b 1602	PPE9	1001757
also: 2002, 1002, 0702, 0402	PPB9	1001763
	NPE9	1001661
	NPB9	1001667
BT4a 1604	PPE9	1035339
also: 1004, 0704, 0404	PPB9	1035336
	NPE9	1035333
	NPB9	1035334
BT4a 1005, & BT5a 1605	PPE9	1001758
	PPB9	1001764
	NPE9	1001662
	NPB9	1001668
BT4a/b 0708 & BT5a/b 1008	PPE9	1001759
also: 0408	PPB9	1001765
	NPE9	1001663
	NPB9	1001669
BT4a/b 0413 & BT5a/b 0713	PPE9	1001760
	PPB9	1001766
	NPE9	1001664
	NPB9	1001670
BT4a/b 0220 & BT5a/b 0420	PPE9	1001761
	PPB9	1001767
	NPE9	1001665
	NPB9	1001671

Replacement part sets for ProMinent® Beta® with self-deaerating head, consisting of:

- 1x dosing diaphragm
- 1x suction valve
- 1x discharge valve
- 1x bleed valve complete
- 2x valve balls
- 1x set seals
- 1x connector set

Note: Does not include valves for SS

Beta®/GALA sizes of NP & PP Liquid Ends These no's engraved on side of Dosing Head

70 x 10	=	1000
70 x 12.5	=	1601
70 x 16.5	=	1602
70 x 20	=	1604
90 x 23	=	1005/1605
90 x 29	=	0708/1008
90 x 37	=	0413/0713
90 x 44	=	0220/0420
110 x 59	=	0232

Replacement diaphragms for Beta® & gamma/ L range

dia.	Model		
30.0	BT4a 1000	all materials	1000244
30.0	BT4a 1601	all materials	1000245
34.5	BT4a 1602	all materials	1000246
35.0	BT4b 1604 1004 & 2504	all materials	1034612
45.0	BT4a 1005 & BT5a 1605	all materials	1000247
45.5	BT4a 0708 & BT5a 1008	all materials	1000248
55.0	BT4a 0413 & BT5a 0713	all materials	1000249
76.0	BT4a 0220 & BT5a 0420	all materials	1000250
91.0	BT5a 0232	all materials	1000251

Replacement O-ring kits for Beta® & gamma/ L range

PPE2 1000, 1601, 1602, 1005, 1605	EPDM	1001775
0708, 0413, 1008, 0713, 0220, 0420, 0232	EPDM	1001776
NPB2 & PPB2 1000, 1601, 1602, 1005, 1605	Viton	1001773
0708, 0413, 1008, 0713, 0220, 0420, 0232	Viton	1001774
PPE9 1601, 1602, 1005, 1605	EPDM	1001674
0708, 0413, 1008, 0713, 0220, 0420, 0232	EPDM	1001675
NPB9 1601, 1602, 1005, 1605	Viton	1001672
0708, 0413, 1008, 0713, 0220, 0420, 0232	Viton	1001673



1.1 ProMinent® Beta® b 4 & 5 Metering Pumps

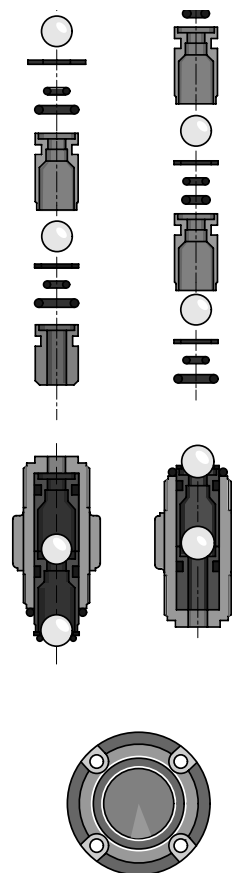
1.1.8 CONCEPT CONb Spare Parts Sets

CONb spare parts sets (identical to gamma/4)

		Part No.
CONb 1601	PP1	910720
gamma/ 4 1601	NP6	910719
CONb 1201	PP1	910724
gamma/ 4 1201	NP6	910723
CONb 0803	PP1	910728
gamma/ 4 0803	NP6	910727
CONb 1002	PP1	910732
gamma/ 4 1002	NP6	910731
CONb 0308	PP1	910736
gamma/ 4 0308	NP6	910735
CONb 0215	PP1	910740
gamma/ 4 0215	NP6	910739

Items included in Spare Parts Kits for material types PP & NP:

- 1x metering diaphragm
- 1x suction assembly
- 1x discharge valve assembly
- 1x seal set assembly
- 2x fuses



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CONb pump diaphragm

ProMinent® DEVELOPAN® EPDM pump diaphragm with fabric insert, large contact area with integral vulcanised steel core and PTFE coating areas in contact with the media.

Designation of pump type	Part No.
CONb 1601, gamma/ 4 1601,	811453
CONb 1201, gamma/ 4 1201,	811454
CONb 0803, gamma/ 4 0803,	811455
CONb 1002, gamma/ 4 1002, gamma/ 5 1602	811456
CONb 0308, gamma/ 4 0308, gamma/ 5 1605, 1006	811457
CONb 0215, gamma/ 4 0215, gamma/ 5 0613	811458

1.1.9 CONCEPT PLUS Spare Parts Sets

CONCEPT Plus CNPa Spare Parts Set

CNPa1000PPE2	1001644
CNPa1601PPE2	1001645
CNPa1002PPE2	1001646
CNPa0308PPE2	1001648
CNPa0213PPE2	1001649
CNPa1000NPB2	1001721
CNPa1601NPB2	1001722
CNPa1002NPB2	1001723
CNPa0704NPB2	1025430
CNPa0308NPB2	1001725
CNPa0213NPB2	1001726

CONCEPT Plus Pump Diaphragm

ProMinent® DEVELOPAN® EPDM pump diaphragm with fabric insert, large contact area with integral vulcanised steel core and PTFE coating areas in contact with the media.

CNPa1000	30.0	1000244
CNPa1601	29.5	1000245
CNPa1002	34.5	1000246
CNPa0704		1020672
CNPa0308	45.5	1000248
CNPa0213	55.0	1000249



1.2 ProMinent® gamma/ X Metering Pumps

1.2.1 ProMinent® gamma/ X

Solenoid Diaphragm Metering Pump gamma/ X

The proven best-seller intelligently extended

CAPACITY RANGE 2.3 – 45 L/H, 25 – 2 BAR

The solenoid diaphragm metering pump gamma incorporates a wealth of eXcellent ingenuity! With integrated pressure measurement, it ensures the smooth running of your metering process. The gamma/ X is ideal for all metering work involving liquid media.

The new solenoid diaphragm metering pump gamma/ X is user-friendly and, just like its predecessor, has an outstandingly long service life. An ingenious solenoid control measures the back pressure and protects the system from overload. This technology makes a pressure sensor superfluous, meaning that operating safety can be significantly increased.

No additional parts come into contact with the feed chemical, there are no additional sealing surfaces and no electronic components come into contact with the feed chemical. Whether the metering volume fluctuates or hydraulic failures affect the metering process – the gamma/ X keeps everything at your fingertips. It independently ensures a trouble-free metering process and, should the pump ever need maintenance, its service module draws attention to this.



BENEFITS

- Simple adjustment of the capacity directly in l/h
- Trouble-free processes by the detection of hydraulic malfunctions or blocked discharge lines
- Integrated pressure measurement and display for greater safety during commissioning and in the process
- Adaptation to existing signal transducers by external control via potential-free contacts with pulse step-up and step-down
- External control via 0/4-20 mA standard signal with adjustable assignment of signal value to stroke rate
- Integrated 7-day timer for timed metering tasks
- Guaranteed metering by means of automatic bleeding
- Connection to process control systems via bus interfaces, such as Profinet, PROFIBUS, CAN bus, others on request
- Organise work processes conveniently with the optional process timer. The alternative to a timer or PLC
- Virtually wear-free solenoid drive, overload-proof and economical
- Suitable for continuous micro-metering from 2 ml/h thanks to the regulated solenoid drive

TECHNICAL DETAILS

- Available material combinations: PP, PVDF, clear acrylic, PTFE and stainless steel
- Special dosing head designs for gaseous and high-viscosity media
- Illuminated LC display and 3-LED display for operating, warning and error messages, visible from all sides
- Factor with external contact control 99:1 - 1:99
- Batch operation with max. 65,536 strokes/start pulse
- Input concentration for simple adjustment with volume-proportional metering tasks
- Stroke rate adjustment in 1 stroke/hour increments from 0 to 12,000 strokes/h
- Continuous electronic stroke length adjustment from 0 - 100% (recommended 30 - 100%)
- Connector for 2-stage level switch
- External control via 0/4-20 mA standard signal with adjustable assignment of signal value to stroke rate
- Optional 4-20 mA output for remote transmission of stroke length and stroke rate
- Universal power supply unit 100 V - 230 V, 50/60 Hz
- Optional 230 V relay module, can also be easily and reliably retrofitted
- Optional 24 V combined relay, can also be easily and reliably retrofitted

FIELD OF APPLICATION

Can be integrated into automated processes and used in all industries. The pump can work as a control unit with the process timer, for example in cooling water treatment.



1.2 ProMinent® gamma/ X Metering Pumps

1.2.2 Technical Data & Materials for gamma/ X

	Delivery rate at max. back pressure			Number of Strokes	Connection Size OD x ID	Suction Lift	Shipping Weight PP, NP SS	
pump type gamma/ X	bar	l/h	ml/stroke	Strokes/min	mm	PV, TT mWC	kg	kg
GMXa 1602	16	2.30	0.19	200	6 x 4	6.0**	3.6	4.1
GMXa 1604	16	3.60	0.30	200	6 x 4	5.0**	3.6	4.1
GMXa 0708	7	7.60	0.63	200	8 x 5	4.0**	3.7	5.0
GMXa 0414	4	13.50	1.13	200	8 x 5	3.0**	3.7	5.0
GMXa 0220	2	19.70	1.64	200	12 x 9	2.0**	3.7	5.0
GMXa 2504	25	3.80	0.32	200	(6x4 suction) 8 x 4***	4.0**	4.9	5.5
GMXa 1009	10	9.00	0.75	200	8 x 5	3.0**	5.1	6.5
GMXa 0715	7	14.50	1.21	200	8 x 5****	3.0**	5.1	6.5
GMXa 0424	4	24.00	2.00	200	12 x 9	3.0**	5.1	6.5
GMXa 0245	2	45.00	3.70	200	12 x 9	2.0**	5.2	7.0

gamma/ X metering pumps with self-bleeding head without bypass (SER) PVT7

GMXa 1602	10	0.90	0.08	200	6 x 4	1.8**	3.6	–
GMXa 1604	10	1.60	0.13	200	6 x 4	1.8**	3.6	–
GMXa 0708	7	5.70	0.48	200	8 x 5	1.8**	3.7	–
GMXa 0414	4	12.00	1.00	200	8 x 5	1.8**	3.7	–
GMXa 0220	2	17.40	1.45	200	12 x 9	1.8**	3.7	–
GMXa 1009	10	6.00	0.50	200	8 x 5	1.8**	5.1	–
GMXa 0715	7	12.90	1.08	200	8 x 5	1.8**	5.1	–
GMXa 0424	4	19.20	1.60	200	12 x 9	1.8**	5.1	–

gamma/ X metering pumps with auto bleed (SEK) NPB9

GMXa 1602	10	1.3	0.11	200	6 x 4	2.1**	3.6	–
GMXa 1604	10	2.4	0.21	200	6 x 4	2.7**	3.6	–
GMXa 0708	7	6.8	0.57	200	8 x 5	2.0**	3.7	–
GMXa 0414	4	12.0	1.00	200	8 x 5	2.0**	3.7	–
GMXa 0220	2	18.0	1.50	200	12 x 9	2.0**	3.7	–
GMXa 1009	10	8.0	0.67	200	8 x 5	3.0**	5.1	–
GMXa 0715	7	13.5	1.12	200	8 x 5	2.5**	5.1	–
GMXa 0424	4	20.0	1.67	200	12 x 9	2.5**	5.1	–

Note: gamma/ X metering pumps with dosing heads for high-viscosity media have a 10 – 20% lower capacity, and are not self priming.

* The given performance data represents guaranteed minimum values, calculated using water as the medium at room temperature.

** Suction lift with a filled dosing head and filled suction line, with a self-bleeding dosing head with air in the suction line.

*** With stainless steel design 6 mm connector width.

**** With stainless steel design 12 mm connector width.

All data refers to water at 20 °C.

Materials in contact with the medium

Dosing head	Suction/pressure	Connector	Ball seat	Seals	Balls
PPT	Polypropylene	Polypropylene	PVDF	PTFE	Ceramic
NPT	Clear acrylic	PVC	PVDF	PTFE	Ceramic
PVT	PVDF	PVDF	PVDF	PTFE	Ceramic
TTT	PTFE with carbon	PTFE with carbon	Ceramic	PTFE	Ceramic
SST	Stainless steel material no. 1.4404	Stainless steel material no. 1.4404	Ceramic	PTFE	Ceramic

Self-bleeding design only in material designs PP and NP with a valve spring made of Hastelloy C and a PVDF valve insert.

Diaphragm with a PTFE coating. FKM = fluorine rubber

Metering reproducibility: ±2% when used according to the operating instructions

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

Mean power consumption: 24/30 W

Degree of protection: IP 65, insulation class F



1.2 ProMinent® gamma/ X Metering Pumps

1.2.3 Identity Code & Pricing for gamma/ X

GMXa	Type	PPT2	NPT2	NPB2	NPB9	PVT0	PVT2	PVT4	PVT7	TTT0	SST0
	1602, 1604 0708, 0414, 0220 2504 ** 1009, 0715, 0424 0245					PPT0 NPT0					
Liquid end/valve material PP Polypropylene/PVDF, with self-bleeding design polypropylene NP Clear acrylic/PVDF, with self-bleeding design clear acrylic/PVC PV PVDF/PVDF TT PTFE/PTFE SS Stainless steel 1.4404/1.4404											
Seal/diaphragm material T PTFE/PTFE coated											
Liquid end version 0 Non-bleed version, no valve spring <i>only with NP, TT and SS and type 0245</i> 1 Non-bleed version, with valve spring <i>only with NP, TT and SS and type 0245</i> 2 Bleed function, no valve springs <i>only with PP, PV, NP * not for type 0245 *</i> 3 Bleed function, with valve springs <i>only with PP, PV, NP * not for type 0245 *</i> 4 HV version for highly viscous media with valve spring <i>* not for types 1602 and 0245 *</i> 7 self-bleeding without bypass (SER), <i>only with NPT and PVT* not for types 2504 and 0245 *</i> 9 self-bleeding without bypass (SEK), <i>only with NPB not for types 2504 and 0245 *</i>											
Hydraulic connections 0 Standard according to technical data 5 Discharge side connection for hose 12/6, suction standard, only PP, NP, PV 9 Discharge side connection for hose 10/4, suction standard, only PP, NP, PV											
Diaphragm rupture indicator 0 Without diaphragm rupture indicator 1 With diaphragm rupture indicator, optical sensor, <i>electrical signal not for 0245</i>											
Version 0 Standard											
Logo 0 with ProMinent® logo											
Power supply U 100-230V, ±10 %, 50/60 Hz											
Cable and plug C 2 m Australian											
Relay, pre-set to 0 No relay 1 1 x changeover contact 230V – 2 A, fault indicating relay N/C 4 2 x N/O 24V – 100 mA, as 1 + pacing relay C 1 x N/O 24V – 100 mA, as 1 + 4 – 20 mA output F Automatic degassing solenoid 240v - *** G Automatic degassing solenoid 24v DC + Relay output											
Accessories 0 No accessories 1 Tube FV & IV - <i>NOT for PTFE, SS or HV</i>											
Control version 0 Manual + ext. 1:1 & pulse control 3 Manual+ext.&pulse control+analogue 0/4-20mA C such as 3 + CANopen D such as 3 + CANopen R as 3 + PROFIBUS® DP interface											
Metering monitor 0 Pulse signal input											
Remote Stop 0 without Bluetooth B with Bluetooth											
Language EN English P = Prepack											

Note: ** 2504 pump supplied with 2 off 8x4 tube nozzles & clamp rings, & 5.0 m of 8x4 PTFE tube.

Note: Relays type F & G can **ONLY** be fitted to pumps with PPT2, NPT2 and PVT2 Liquid Ends

Note: If PROFIBUS® is specified refer to page 3.20 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 - includes 5m of delivery and 2m suction tube a 2m Control Cable if required.

P5 - as P2 but with 5m control Cable

PX - as P2 but with 10m control Cable

Note: 1602, 1604, pumps are supplied with 5.0m PTFE tube, other tube is available on request.

GMXa 0708 PV T 2 0 1 0 0 U C 0 1 3 0 0 EN P*



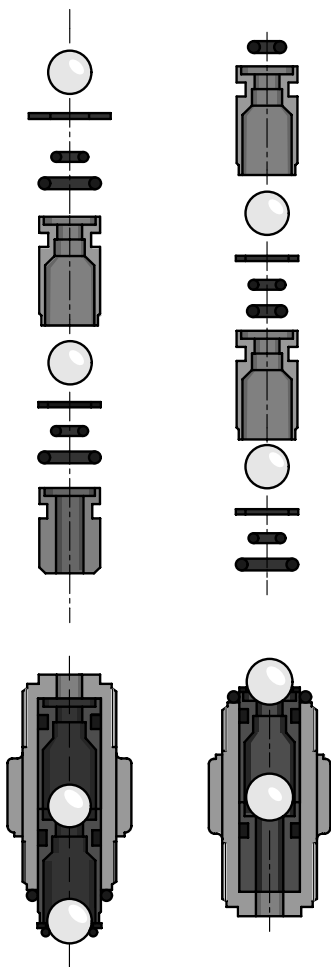
1.2 ProMinent® gamma/ X Metering Pumps

1.2.4 Accessories Spare Part Sets gamma/ X

Spare parts kits for gamma/ X, consisting of:

- 1 x diaphragm
- 1 x suction valve, complete
- 1 x discharge valve, complete
- 1 x connector set

Note: Suction and discharge valve set not included with stainless steel version.



Spare Parts Kit for gamma/ X

Type	Materials in contact with the medium	Part No.
Type 1602	PVT2, PPT, NPT2	1023109
	NBP2	1001723
	NBP9	1001667
	TTT	1001739
	SST	1001731
Type 1604 and Type 2504	PVT2, PPT, NPT2	1035332
	NBP2	1039986
	NBP9	1035334
	PVT4	1035342
	TTT	1035330
	SST	1035331
Type 0708 and Type 1009	PVT2, PPT, NPT2	1023111
	NPB2	1001725
	NPB9	1001669
	PVT4	1019067
	TTT	1001741
	SST	1001733
Type 0414 and Type 0715	PVT2, PPT, NPT2	1023112
	NPB2	1001726
	NPB9	1001670
	PVT4	1019069
	TTT	1001742
	SST	1001734
Type 0220 and Type 0424	PVT2, PPT, NPT2	1051129
	NPB2	1051107
	NPB9	1051113
	PVT4	1051134
	TTT	1051151
	SST	1051139
Type 0245	PVT2, PPT	1051130
	NPB2	1051108
	TTT	1051152
	SST	1051140

Spare Diaphragm for Product Range gamma/ X

Type	Materials in contact with the medium	Part No.
Type 1602	all materials	1000246
Type 1604 and Type 2504	all materials	1034612
Type 0708 and Type 1009	all materials	1000248
Type 0414 and Type 0715	all materials	1000249
Type 0220 and Type 0424	all materials	1045456
Type 0245	all materials	1045443



1.2 ProMinent® gamma/ X Metering Pumps

1.2.5 ProMinent® gamma/ X Metering Pumps with SER

Spare parts kits for gamma/ L with self-bleeding Dosing Head without bypass, consisting of:

- 1 x diaphragm
- 1 x suction valve, complete
- 1 x discharge valve, complete
- 1 x bleed valve, complete
- 1 x connector set

Materials in contact

Type	with the medium	Part No.
Type 1602	PVT7, NPT7	1047830
Type 1604	PVT7, NPT7	1047858
Type 0708 and Type 1009	PVT7, NPT7	1047832
Type 0414 and Type 0715	PVT7, NPT7	1047833
Type 0220 and Type 0424	PVT7, NPT7	1051111



1.3 ProMinent® gamma/ XL Metering Pumps

1.3.1 ProMinent® gamma/ XL

gamma/ XL – large output, great features

The new solenoid-driven metering pump gamma/ XL is the enhancement to our proven gamma/ X and covers a capacity range from 8 – 80 l/h at 25 – 2 bar.

The gamma/ XL also has other interfaces, for example CAN bus and Wi-Fi connections. This allows the gamma/ XL to network with all systems, devices and platforms. Like the gamma/ X, the gamma/ XL has an intuitive operating concept.

The pump is adjusted using a click wheel and 4 additional operating keys.

Pressure detection without wetted parts ensures maximum operational safety.

Hydraulic error statuses, like “Gas in the dosing head”, “Overpressure” and “No pressure” can be detected. Pressure fluctuations in the system are detected and compensated for, achieving a high level of dosing precision and reducing chemical consumption to the required level. The last 300 events are retrospectively saved in the integral log book, which permits rapid analysis of the cause and troubleshooting.

Deviations from the metering volume or hydraulic fault statuses are immediately detected and corrected by the gamma/ XL. The pump's operating menu includes ordering information for the wear parts required. Designed as a smart product, it can also be connected to our web-based DULCOnneX fluid management platform. The user can use this to monitor his metering process in real time, avoid downtimes and generate reports fully automatically.



YOUR BENEFITS

- Simple adjustment of the capacity directly in l/h or in gph
- Integrated pressure measurement and display for greater safety during commissioning and in the process
- Bluetooth and Wi-Fi connection for the simple configuration and call-up of process data (optional)
- Capacity adjustment range 1:40,000
- Direct input of the required final concentration with volume-proportional metering tasks in concentration mode
- Virtually wear-free solenoid drive, overload-proof and economical
- Suitable for continuous micro-metering from approx. 5 ml/h, thanks to the regulated solenoid drive
- Detection of hydraulic malfunctions, such as gas in the dosing head, and no or too high back pressure, ensures smooth processes
- External control via potential-free contacts with pulse step-up and step-down
- External control via 0/4-20 mA standard signal, scalable
- Integrated 1-week/1-month timer
- Guaranteed metering by means of automatic bleeding
- Connection to process control systems via a BUS interface, such as PROFIBUS®, PROFINET®, CANbus or Wi-Fi
- Automatic mode – volume settings only (l/h, ml/contact etc.)
- Non-automatic mode – settings via stroke length and stroke rate

TECHNICAL DETAILS

- Illuminated 3" LCD and 3-LED display for operating, warning and error messages, visible from all sides
- In non-automatic mode, stroke rate setting 1 stroke/h – 12,000 strokes/h, stroke length electronically continuously variable 0 – 100%, recommended 30 – 100%
- Factor with external contact control 99:1 – 1:99
- Batch operation with max. 99.99 or 99,999 strokes/start pulse
- Connector for 2-stage level switch
- 3 additional ports, switched as digital inputs or outputs
- Optional 0/4 – 20 mA output for remote transmission of stroke length, stroke rate and error messages
- Optional relay module with 1 x switchover contact, 230 V – 8 A
- Optional relay module with 2 x On, 24 V – 100 mA



1.3 ProMinent® gamma/ XL Metering Pumps

1.3.2 ProMinent® gamma/ XL Technical Data

Pump type gamma/ XL	Max. pressure bar	Delivery rate l/h	Theor. stroke volume ml/stroke	Max. stroke rate Strokes/min	Nominal diameter	Suction lift m WC	Shipping weight NPE, NPB, PVT / SST kg
GXL _a 2508	25	7.80	0.67	200	8 x 4** mm	5*	10/11
GXL _a 1608	16	7.80	0.67	200	8 x 5** mm	5*	10/11
GXL _a 1612	16	12	1	200	8 x 5 mm	6*	10/11
GXL _a 1020	10	19.6	1.7	200	12 x 9 mm	5*	10/11
GXL _a 0730	7	29.4	2.5	200	12 x 9 mm	5*	10/11
GXL _a 0450	4	49.0	4.2	200	G 3/4 - DN 10	3*	10/11
GXL _a 0280	2	78.5	6.7	200	G 3/4 - DN 10	2*	10/11
gamma/ XL metering pumps with self-bleeding dosing head without bypass*							
GXL _a 1608	10	7	0.6	200	8 x 5 mm	1.8	10
GXL _a 1612	10	10	0.8	200	8 x 5 mm	1.8	10
GXL _a 1020	10	15	1.25	200	12 x 9 mm	1.8	10
GXL _a 0730	7	27.5	2.3	200	12 x 9 mm	1.8	10

Note: gamma/ XL metering pumps with dosing heads for higher-viscosity media have a 10 – 20 % lower capacity and are not self-priming. G 3/4 - DN 10 connector with d 16 - DN 10 hose nozzle.

* Suction lift (m WC) = Suction lift with filled dosing head and filled suction line

** With stainless steel design 6 mm connector width

All data refers to water at 20 °C.

Materials in Contact with the medium

Design	Dosing head	Suction/pressure connector	Ball seat	Seals	Valve balls
NPT	Clear acrylic	PVDF	PVDF	PTFE	Ceramic
PVT	PVDF	PVDF	PVDF	PTFE	Ceramic
SST (8 – 12 mm)	stainless steel 1.4404	stainless steel 1.4404	Ceramic	PTFE	Ceramic
SST (DN 10)	stainless steel 1.4404	stainless steel 1.4404	PTFE with carbon	PTFE	Ceramic

Design of connectors

Plastic	8 - 12mm	Hose squeeze connector
	DN 10	d16 DN 10 hose nozzle
Stainless steel	6 - 12 mm	Swagelok system
	DN 10	Rp 3/8 insert

- Diaphragm with PTFE coating.
- Repeatability of metering $\pm 2\%$ when used in accordance with the operating instructions.
- Permissible ambient temperature -10 °C to 45 °C .
- Mean power consumption 78 W.
- Degree of protection IP 66, insulation class F.



1.3 ProMinent® gamma/ XL Metering Pumps

1.3.3 Identity Code & Pricing for ProMinent® gamma/ XL

GXL

EU Europe

Type	bar	l/h	NPB	PVT	SST	Type	bar	l/h	NPB	PVT	SST
2508	25	7.80				0730	7	29.4			
1608	16	7.80				0450	4	49.0			
1612	16	12				0280	2	78.5			
1020	10	19.6									

Material of dosing head/valves

PV	PVDF/PVDF, not for pump type 2508
NP	Clear acrylic/PVC, only for pump types 2508, 1608, 1612, 1020 and 0730
SS	stainless steel/stainless steel

Material of seals/diaphragm

T	only with PV and SS	PV	SS
F	FDA-compliant design, only for PV and SS		
B	VITON only with NP Heads		

Dosing head design

- 0** without bleed valve, without valve spring, only with material SS
- 1** without bleed valve, with valve spring, only with material SS
- 2** with bleed valve, without valve spring, only with material NP and PV
- 3** with bleed valve, with valve spring, only with material NP and PV
- 4** HV design for higher-viscosity media, only for types 1608, 1612, 1020 and 0730
- 7** self-bleeding without bypass (SER) for types 1608, 1612, 1020 and 0730

Hydraulic connector

- 0** Standard connection in line with technical data
- F** Connector on discharge side for 8/4 hose, standard on suction side, only with material NP 2508 NPB

Diaphragm rupture indicator

- 0** without diaphragm rupture indicator
- 1** with diaphragm rupture indicator, optical sensor, electrical sensor

Design

- 0** Housing RAL 5003, cover RAL 2003

Logo

- 0** with ProMinent® logo

Electrical Connection

- U** 100- 230 V ±10 %, 50/60 Hz

Cable and plug

- C** 2 m Australian

Relay, pre-set to

- 0** no relay
- 1** 1 x changeover contact 230V – 8 A, fault indicating relay N/C
- 4** 2 x N/O 24V – 100 mA, fault indicating relay N/C + pacing relay
- C** 1 x N/O 24V – 100 mA, fault indicating relay N/C + 4 – 20 mA output
- F** with automatic bleed valve, 230 V AC, not for pump type 2508
- G** with automatic bleed valve 24V DC and relay output, not for pump type 2508

Accessories

- 0** no accessories
- 1** with foot and injection valve, 2m suction line, 5m discharge line **NOT DN10**

Control version

- 0** Manual + external contact with pulse control
- 3** Manual + external contact with pulse control + analogue 0/4 – 20 mA
- C** as 3 + CANopen
- D** as 3 + CANopen, Dulcomarine
- E** as 3 + PROFINET® interface, M12
- R** as 3 + PROFIBUS® interface, M12

Communication

- 0** without interface
- B** with Bluetooth
- W** with Wi-Fi module

Operating menu language

- EN** English

Note: If PROFIBUS® is specified refer to page 3.20 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 - includes 5m of delivery and 2m suction tube a 2m Control Cable if required.

P5 - as P2 but with 5m control Cable

PX - as P2 but with 10m control Cable

Note: 2508 pumps are supplied with 5.0m PTFE tube, other tube is available on request.

GXL EU 1020 PV T 0 0 0 0 0 U C 0 0 0 0 EN



1.3 ProMinent® gamma/ XL Metering Pumps

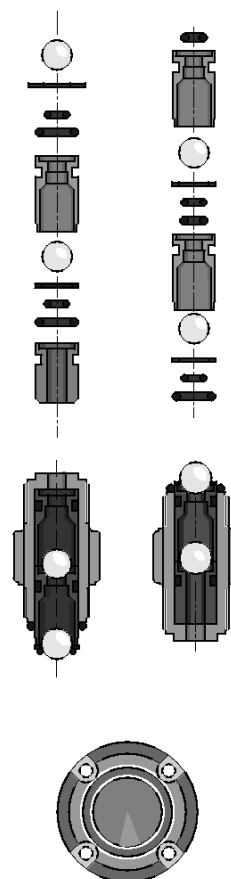
1.3.4 ProMinent® gamma/ XL Spare Parts Kits

Stainless steel version without suction valve assembly and without discharge valve assembly, with valve seats, seals and valve balls.

Type	Wetted materials	Part No.
Type 2508	NPT2	1095912
	SST0	1030226
	NPE	1033172
	NPB	1033171
Type 1608	PVT2/NPT2	1030225
	PVT7	1047831
	SST0	1030226
	NPE	1030620
Type 1612	NPB 1	1030611
	PVT2/NPT2	1027081
	PVT4	1019067
	PVT7	1047832
Type 1020	SST0	1027086
	NPE	1030536
	NPB	1030525
	PVT2/NPT2	1027082
Type 0730	PVT4	1019069
	PVT7	1047833
	SST0	1027087
	NPE	1030537
Type 0450	NPB	1030526
	PVT2/NPT2	1095626
	PVT4	1095499
	PVT7	1095503
Type 0280	SST0	1095501
	NPE	1095701
	NPB	1095700
	PVT2	1095502
Type 0280	SST0	1095625
	PVT2	1095500
Type 0280	SST0	1095624

Spare parts kits for gamma/ XL, consisting of:

- 1 x diaphragm
- 1 x suction valve assembly
- 1 x discharge valve assembly
- 1 x connector kit



Replacement Diaphragms for GXLa Series Pumps

Type	Materials	Part No.
Type 2508	all materials	1030353
Type 1608	all materials	1030353
Type 1612	all materials	1000248
Type 1020	all materials	1000249
Type 0730	all materials	1045456
Type 0450	all materials	1045443
Type 0280	all materials	1059691



1.4 ProMinent® delta® Metering Pumps Spare Parts

1.4.1 delta® Metering Pumps Spare Parts

Replacement spare parts kits
for ProMinent® delta®,
consisting of:

- 1x dosing diaphragm
- 1x suction valve
- 1x discharge valve
- 1x connector set

Note: Does not include valves for SS

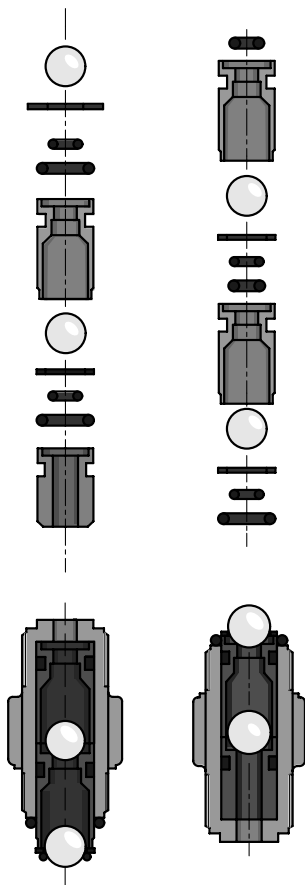
Part No.

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

Replacement Diaphragms for Delta® series pumps

Part No.

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



pk_1_008



1.5 ProMinent® EXtronic® Metering Pumps

1.5.1 EXBb G version – gas explosion proof

Property class II, property class 2G

(Zone 1, group II)

EXBb M version – firedamp

Property class I, property class M2 (group I)

The ProMinent EXtronic® series approved according to the new EG-EX-directive 94/9/EG (ATEX), for metering fluids in gas explosion endangered operations and firedamp endangered mining operations.

- Operating voltage 500 V. The application field for ProMinent EXtronic® equipment is thereby expanded, e.g. in conjunction with the new EXBb M version for firedamp endangered mining operations.
- The short stroke solenoid action is combined with the liquid ends from the ProMinent® gamma series. The SB material version is recommended for use with flammable media.
- The control inputs “external contact”, “analog” and “zero volts ON/OFF” are intrinsically safe for EXBb - registered in accordance with EN 50020 - available.
- The 2501 SSM/SBM type with diaphragm rupture signalling e.g. for use in gas odorization.

THE CAPACITY RANGES FROM 0.19 L/H TO 60 L/H AT BACK PRESSURES OF MAX. 25 BAR.

The ProMinent EXtronic® conforms to the unified EU standard EN 50014/50018 for “flameproof enclosure”. It carries the highest enclosure class for this protection type. This standard is recognised in many other countries outside the EU.

The short stroke solenoid and the pump controller are housed inside the pump housing.

Conforms to DIN 40050 standards on contact and moisture resistance, and carries IP 65 protection, even when front cover is open.

Key:

- 6 - resistant to dust entry and complete resistance to contact
- 5 - resistant to spray water from all directions

The liquid end with the proven DEVELOPAN® pump diaphragm with Teflon coating and the proven liquid ends in Acrylic, Polypropylene (PP), PTFE-Teflon®, stainless steel no. 1.4404 and SB for flammable chemicals, according to requirements, bring the highest levels of operating safety to ProMinent EXtronic® Metering Pumps.

Self bleeding liquid ends for gaseous chemicals are available in Acrylic (NS) and PVC (PS). The micrometer stroke length adjustment knob ensures precise and high reproducibility.

There is also a comprehensive range of explosion proof accessories and pump accessories available.

EXBb G for use in gas endangered areas

PROTECTION GRADE EEX [I, A] D IIC T6

Key:

- EEx** - explosion proof equipment conforms to European Standards
- [I, a]** - control input intrinsically safe in case of occurrence of two unrelated faults
- d** - fire proofing; flameproof enclosure
- IIC** - explosion group II for all explosion endangered areas apart from mining, sub group IIC (includes IIA and IIB)
- T6** - temperature class, permitted for gas and moisture with ignition temperature > 85 °C

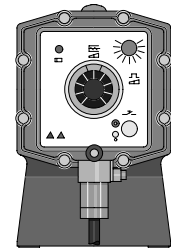
EXBb M for use in firedamp endangered mining operations

PROTECTION GRADE EEX D /II C T6

Key:

- EEx** - explosion proof equipment conforms to European Standards
- d** - fire proofing, flameproof enclosure
- IC** - explosion group I for firedamp endangered operations
- IIC** - explosion group II for all other hazardous locations, sub group IIC (includes IIA and IIB)
- T6** - temperature class, permitted for gas and moisture with ignition temperature > 85 °C. This is the highest temperature class, and includes T1 to T5.

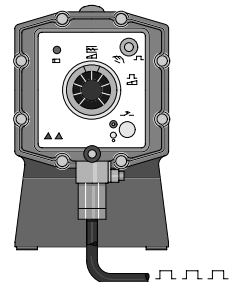
*) The electrical cables for mains connection, contact or analogue control are already connected to the pump. Observe all instructions concerning connecting and activating electrical systems.



pk_1_020

Control type “Internal”

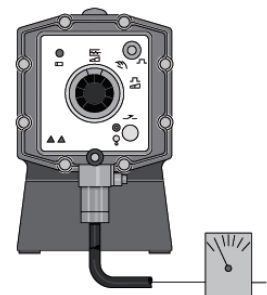
Stroke length adjustment 1:10, stroking rate adjustment 1:25, total adjustment range 1:250.



pk_1_019

Control type: “External Contact”

Stroke length adjustment 1:10, stroking rate control 0-100 % dependant upon external switch contacts. *)



pk_1_018

Control type: “Analogue”

Stroke length adjustment 1:10, Stoke frequency control 0-100 % proportional to analogue signal 0/4-20 mA. *)



1.5 ProMinent® EXtronic® Metering Pumps

1.5.2 Technical Data

Max. Pump Capacity at Maximum Back Pressure				Max. Pump Capacity at Medium Back Pressure			Stroking Rate	Connector Sizes Outer R X Inner R	Suction Lift	Shipping Weight** PP, NP, TT-SS
Pump Type Xtronic®	bar	l/h	ml/stroke	bar	l/h	ml/stroke	strokes/min.	mm	mWG	approx. kg
EXBb										
1000	10	0.19	0.032	5	0.3	0.042	120	6 x 4	1.5	12 - 16
2501	25	1.0	0.15	20	1.1	0.17	120	6 x 4	6	18
1601	16	1.1	0.15	8	1.3	0.18	120	6 x 4	6	12 - 16
1201	12	1.7	0.23	6	2.0	0.28	120	6 x 4	6	12 - 16
0803	8	3.7	0.51	4	3.9	0.54	120	6 x 4	3	12 - 16
1002	10	2.3	0.31	5	2.7	0.38	120	8 x 5	6	12 - 16
0308	3	8.6	1.20	1.5	10.3	1.43	120	8 x 5	6	12 - 16
2502	25	2.0	0.28	20	2.2	0.31	120	8 x 5	6	13 - 17
1006	10	6.0	0.83	5	7.2	1.00	120	8 x 5	6	13 - 17
0613	6	13.1	1.82	3	14.9	2.07	120	8 x 5	5.5	13 - 17
0417	3.5	17.4	2.42	2	17.9	2.49	120	12 x 9	4.5	13 - 17
2505	25	4.2	0.64	20	4.8	0.73	110	8 x 5	6	16 - 20
1310	13	10.5	1.59	6	11.9	1.80	110	8 x 5	6	16 - 20
0814	8	14.0	2.12	4	15.4	2.33	110	12 x 9	6	16 - 20
0430	3.5	27.0	4.09	2	29.5	4.47	110	DN 10	5	16 - 20
0260	1.5	60.0	9.09	-	-	-	110	DN 15	1.5	16 - 20

EXtronic® Metering Pumps for dosing highly viscous media

1002	10	2.3	0.31	5	2.7	0.38	120	DN 10	-	12
1006	10	6.0	0.83	5	7.2	1.00	120	DN 15	-	13
1310	10	10.5	1.59	5	11.9	1.80	110	DN 15	-	16
0814	8	14.0	2.12	4	15.4	2.33	110	DN 15	-	16

EXtronic® Metering Pumps with self bleeding liquid end***

1601	16	0.66	0.09	-	-	-	120	6 x 4	1.8	12
1201	12	1.0	0.14	-	-	-	120	6 x 4	2.0	12
0803	8	2.4	0.33	-	-	-	120	6 x 4	2.8	12
1002	10	1.8	0.25	-	-	-	120	6 x 4	2.0	12

** shipping weight for EXBb M version... additional 14 kg

*** The data given here represent guaranteed minimum values, achieved with medium water at room temperature.

Materials in Contact With Chemicals

	Liquid End	Suction/Discharge Connector	Seals	Valve Balls (Connector 6 - 12 mm)	Balls (DN 10 and DN 15 Connector)
PP1	Polypropylene	Polypropylene	EPDM	ceramic	Borosilicate glass
PP4*	Polypropylene	Polypropylene	EPDM	-	ceramic
NP1	Acrylic	PVC	FPM A (Viton® A)	ceramic	Borosilicate glass
NP3	Acrylic	PVC	FPM B (Viton® B)	ceramic	-
NS3**	Acrylic	PVC	FPM B (Viton® B)	ceramic	-
PS3**	PVC	PVC	FPM B (Viton® B)	ceramic	-
TT1	PTFE with carbon	PTFE with carbon	PTFE	ceramic	ceramic
SS..	stainless steel no. 1.4404	stainless steel no. 1.4404	PTFE	ceramic	stainless steel no. 1.4404

* PP4 with Hastelloy C valve springs.

** NS3 and PS3 with Hastelloy C valve springs, PVDF valve core.
Viton® is a registered trademark of DuPont Dow Elastomers.






1.5 ProMinent® EXtronic® Metering Pumps

1.5.3 Identity Code & Pricing for ProMinent EXtronic®

EXBb ProMinent EXtronic®, Version b									
Protection:									
G	Gas-EX-proof								
M	Fire and explosion protection (firedamp) - <i>permitted liquid end material = stainless steel and PTFE</i>								
Pump type: (figures 1 + 2 = back pressure [bar], figures 3 + 4 = pump capacity [l/h])									
1000	Capacity: 10 bar; 0.19 l/h								
2501	25 bar; 1.0 l/hr (available in SSM and SBM only)								
1601	16 bar; 1.1 l/h								
1201	12 bar; 1.7 l/h								
0803	8 bar; 3.7 l/h								
1002	10 bar; 2.3 l/h								
0308	3 bar; 8.6 l/h								
2502	25 bar; 2.0 l/h (available in SS and SB only)								
1006	10 bar; 6.0 l/h								
0613	6 bar; 13.1 l/h								
0417	3.5 bar; 17.4 l/h								
2505	25 bar; 4.2 l/h (available in SS and SB only)								
1310	13 bar; 10.5 l/h (available in NP, PP4, SS and SB only)								
0814	8 bar; 14.0 l/h								
0430	3.5 bar; 27.0 l/h								
0260	1.5 bar; 60.0 l/h								
Liquid end material:									
PP1	Polypropylene with EPDM O-ring								
PP4	HV Polypropylene for high viscosity liquids with EPDM O-ring and Hastelloy C valve springs (Types 1002, 1006, 1310 and 0814 only)								
NP1	Acrylic with FPM A (Viton® A) O-ring								
NP3	Acrylic with FPM B (Viton® B) O-ring								
NS3	Acrylic with FPM B (Viton® B) O-ring, self bleeding (Types 1601, 1201, 0803 and 1002 only)								
PS3	PVC with FPM B O-ring, self bleeding (Types 1601, 1201, 0803 and 1002 only)								
TT1	PTFE with carbon, PTFE seal								
SS1	Stainless steel, no. 1.4404, with PTFE seal								
SS2	Stainless steel with 1/4" NPT internal thread, PTFE seal								
SB1	Stainless steel with ISO 7 Rp 1/4 internal thread, ISO 7 Rp 1/2 on type 0260, PTFE seal (recommended for flammable materials)								
SSM	as SS1, with diaphragm rupture indicator <i>Type 2501 only</i>								
SBM	as SB1, with diaphragm rupture indicator <i>Type 2501 only</i>								
Valve springs:									
0	No springs								
1	With 2 valve springs, 1.4571, 0.1 bar								
Electrical connectors:									
A	230 V, 50/60 Hz								
B	115 V, 50/60 Hz								
E	500 V, 50/60 Hz (Note: Single Phase) Note: Cable length 5 metre open end								
Controller type:									
0	Stroking rate adjustment via potentiometer								
1	External contact								
2	Analogue 0-20 mA								
3	Analogue 4-20 mA								
4*	External contact, intrinsically safe [i,a]								
5*	Analogue 0-20 mA, intrinsically safe [i,a]								
6*	Analogue 4-20 mA, intrinsically safe [i,a]								
* intrinsically safe only with G = EX-protection									
Control variations:									
0	With potentiometer (control type 0 only)								
1	With manual auxiliary key for maximum stroking rate (control type 1-6 only) preferred type; spring return								
2	With manual auxiliary key for maximum stroking rate (control type 1-6 only) latching								
Approved/Language:									
0	BVS - Europe, German, 100 V - 500 V								
1	BVS - Europe, English, 100 V - 500 V								
2	FM - USA, English, 115 V								
3	CSA - Canada, English, 115 V, 230 V								
Viton® is a registered trademark of DuPont Dow Elastomers FPM = Fluorine Rubber									
<div><div>Note: May require certificate of conformity for some Australian applications at extra cost.</div><div>Extronic® pumps with liquid ends for highly viscous media PP4 have 10-20% less metering capacity and are not self-priming. G 3/4-DN connector with D16-DN10 nozzle union.</div><div>For any other Pricing: refer Sydney office</div></div>									
EXBb	G	1000	PP1	0	A	0	0	0	

www.prominentfluid.com.au





1.5 ProMinent® EXtronic® Metering Pumps

1.5.4 Connectors for ProMinent EXtronic® Metering Pumps

PP, NP, PS and TT	6, 8 and 12 mm	hose sleeve with clamping ring fitting
SS1/SSM stainless steel	6, 8 and 12 mm	Swagelok screw fitting system
SS2 stainless steel	6, 8 and 12 mm	internal thread 1/4" NPT
SB1/SBM stainless steel	6, 8 and 12 mm	internal thread ISO 7 Rp 1/4

PP and NP	DN 10 and DN 15	hose sleeve d 16 - DN 10 and d 20 - DN 15
TT	DN 10 and DN 15	fusion joint d 16 - DN 10 and d 20 - DN 15 (PVDF)
SS1 stainless steel	DN 10 and DN 15	insert, internal thread R 3/8 and R 1/2
SB1 stainless steel	DN 10 and DN 15	internal thread ISO 7 Rp 1/4 and 1/2

Reproducible metering accuracy ± 2 % when correctly installed, refer to operating instructions manual.

± 5 % for type 1601 with self bleeding liquid end.

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

Power supply: 500 V ± 6 %, 50/60 Hz
 230 V ± 10 %, 50/60 Hz
 115 V ± 10 %, 50/60 Hz

Protection: IP 65, insulation class F

Medium power consumption at max. stroking rate (W)/peak power consumption at dosing stroke (A) at 230 V, 50/60 Hz:

EXBb	Type 1000, 1601, 1201, 0803, 1002, 0308	13 W/0.7 A	at 120 strokes/min
EXBb	Type 2502, 1006, 0613, 0417	26 W/1.7 A	at 120 strokes/min
EXBb	Type 2505, 1310, 1014, 0430, 0260	45 W/2.0 A	at 110 strokes/min

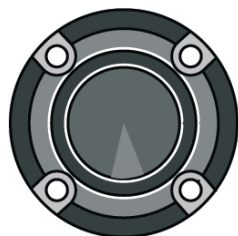
Included in delivery:

Metering Pump with 5 m mains cable, connector set for hose/pipe connections as described in tables.

1.5.5 Spare Parts Kits

PTFE pump diaphragms

ProMinent® DEVELOPAN® pump diaphragms in EPDM with woven inner layer, integrally vulcanised steel core and PTFE Teflon coating on the side in contact with the dosing chemical.



pk_1_008A

Description For Pump Type		Part No.
31.0 x 6.0	1000	811452
35.0 x 11.5	2501	1000246
48.0 x 9.5	1601	811453
48.0 x 12.5	1201	811454
48.0 x 18.5	0803	811455
60.0 x 17.0	1002, 2502	811456
60.0 x 28.0	0308, 2505, 1006	811457
76.0 x 37.0	1310, 0613	811458
76.0 x 45.0	0814, 0417	811459
127.5 x 63.0	0430, 0230	811460
127.5 x 91.0	0260	811461



1.5 ProMinent® EXtronic® Metering Pumps

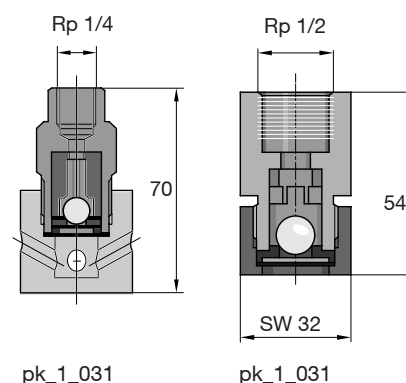
1.5.6 Accessories - Valves

Foot valve, 1.4404 stainless steel

With filter and ball check valve, for use with flammable media.

Materials: 1.4404/1.4401/PTFE/ceramic

	Part No.
Connection, 1/4" SB type for EXtronic	809301
Connection, 1/2" SB type for EXtronic	924561

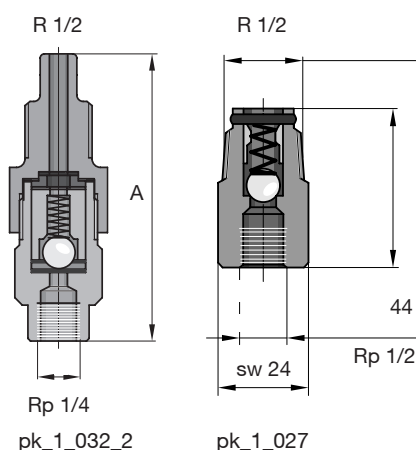


Dosing valve, "SB" 1.4404 stainless steel

Spring-loaded ball check valve, installation as desired, suitable for use with flammable media.

Materials: 1.4404/1.4401/Hastelloy C/PTFE coated/ceramic

	Part No.
Connection, 1/4" - 1/2" k, response pressure approx. 0.5 bar	809302
Connection, 1/2" - 1/2" k, response pressure approx. 0.5 bar	924560



Adjustable "SB" back pressure valve 1.4404 stainless steel

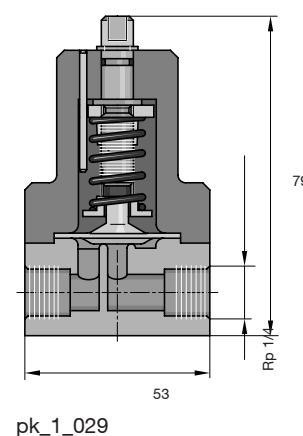
Material 1.4404; diaphragm PTFE coated, 1/4" connection at both ends. Adjusting range approximately 1 to 10 bar, enclosed type suitable for use with flammable media.

For generation of a back pressure for precise metering into an open outlet, where the back pressure is fluctuating below 1 bar where there is an inlet pressure on the suction side.

Can also be used as a pressure relief valve.

	Part No.
	924555
Replacement Diaphragm	811464

Further accessories such as foot valves, discharge valves and back pressure valves in the standard materials are identical to gamma accessories or for DN 15 connection, refer to section 3.



1.6 ProMinent® Pneumados Metering Pumps

1.6.1 ProMinent® Pneumados Metering Pumps

ProMinent® Pneumados is a pneumatically-operated metering pump. In contrast to solenoid-driven metering pumps, the metering stroke of this pump is effected by a pneumatically actuated diaphragm, the suction stroke by spring force.

The delivery capacity can be varied via the stroke frequency and the stroke length setting.

The external electrically-pneumatically or pneumatically activated compressed air valves facilitate a setting of up to 180 metering strokes per minute.

The stroke length and thus the stroke volume can be set between 10 and 100%.

Typical areas of application are:

FEEDING STUFF TREATMENT

Metering and spraying of feeding stuff with flavouring agents.

PAINTING PLANTS

Metering of coagulants.

GREENHOUSES

For metering of fertilisers and minerals compounds.

CAR WASH

Metering of cleaning agents, shampoo, brighteners, wax, drying agents as well as for the treatment of recycling water via metering of flocculants, pH adjusters, defoaming agents, and emulsion breakers.



Pneumatic Ancillary Equipment

Part No.

G 1/4 - 6 mm compressed air threaded connector in anodised aluminium with rotating seals; rapid quick release connector LCK 1/40 (fig. 1)

354641

G 1/8 A - 6 mm threaded connector for regulator valves with seal; threaded connector CK 1/80

354635

G 1/8 blanking plug with seal for regulator valves; G 1/80 plug thread

467921

3/2 way pneumatic solenoid valve G 1/8 220 V 50 Hz 21 VA; solenoid valve 311 C 1/80 (fig. 3)

303054

Sound absorber in sintered bronze with M 1/8 internal thread for solenoid valve (fig 4)

303812

Electric pulse generator for assembly into protective housing on DN 50022 hat rail, adjustable stroking rate 30 - 120 strokes/min. Electrical connection 230 V 50 - 60 Hz 3.5 VA. Switch power max. 3A. Adjustable flash relay (fig. 2)

For installation in Ex-protection zones, we recommend pneumatic pulse generator with mechanical regulator units,

700984

e.g. FESTO pulse generator Type 4025 VLG-4 1/80 (fig. 5)

All directives and regulations concerning use in hazardous location must be retained by the user.

303836



1.6 ProMinent® Pneumados Metering Pumps

1.6.2 Technical Data Pneumados

Pump type	Delivery output at maximum Pressure			Connection size OD R x id R	Suction 3) height	corresp. suction pres- sure 2)	Suction height 1)	corresp. suction pressure 2)	Admissible pre-pressure on suction side
Pneumados PNDb	bar	l/h	ml/	mm	mWC	mbar	mWC	mbar	bar
1000	10	0.76	0.7	6x4	6	600	2.0	200	8
1601	16	1.00	0.09	6x4	6	600	2.8	280	8
1602	16	1.70	0.16	6x4	6	600	3.0	300	5.5
1005	10	3.80	0.35	8x5	5	500	3.0	300	3
0708	7	6.30	0.58	8x5	4	400	2.0	200	2
0413	4	10.50	0.97	8x5	3	300	2.5	250	1.5
0220	2	16.70	1.55	12x9	2	200	2.0	200	1

1) Suction height / suction pressure (dry) determined with clean as well as moistened valves, is tested with empty liquid end.

2) Value corresponds to the obtainable vacuum compared to atmospheric pressure.

3) Suction height / suction pressure tested with filled liquid end and filled suction line, provided sufficiently dimensioned suction line cross-sections are given.

The delivery outputs were determined with an air hose length of 1m, using the Festo solenoid valve MHE3-M1H-3/2G-QS-6K, as well as at max. stroke frequency (180 strokes/min.) and 100% stroke length, with pump at operating state temperature, test medium water.

Compressed air: 6 bar ± 10 %, filter size 40µm

**Air consumption
for 1m line:** 47 l/min

**Stroking
frequency:** 180 strokes per min.

Connectors

PVT	6, 8 and 12 mm	hose sleeve with clamp ring fitting
SS1 stainless steel	6, 8 and 12 mm	swagelok screw fitting system

Materials in Contact with Chemicals

Liquid End Connector	Suction/Discharge (Connector 6 - 12 mm)	Seals	Balls
PVDF	PVDF	PTFE	Ceramic
stainless steel no. 1.4404	stainless steel no. 1.4404	PTFE	ceramic



1.6 ProMinent® Pneumados Metering Pumps

1.6.3 Identity Code & Pricing for Pneumados

PND b Pneumados

Pump Type:	Capacity (simplex)	PVT SIMPLEX	SS SIMPLEX	PVT DUPLEX	SS DUPLEX
1000	10 bar 0.76 l/h				
1601	16 bar 1.00 l/h				
1602	16 bar 1.70 l/h				
1005	10 bar 3.80 l/h				
0708	7 bar 6.30 l/h				
0413	4 bar 10.5 l/h				
0220	2 bar 16.7 l/h				

Liquid end material:

PVT PVDF and PTFE seal

SST Stainless steel (1.4404) and PTFE seal

Valve Springs:

- 0** No vent, no valve springs
- 1** No vent, with valve springs
- 2** With vent, no valve springs
- 3** With vent, with valve springs

Hydraulic connections:

- 0** Standard according to technical data

Version:

- 0** Pump only
- 1** Pump assembly complete with bracket and controller
- 2** Duplex Pump assembly with bracket (uses existing controller)

Power connector:

- 0** G 1/4 connector for compressed air 6 bar

Controller type:

- 0** Standard 4025 VLG - 1/8" AIR Controller

Approvals

- 01** CE

Note: All pumps are supplied mounted on a bracket with controller Dosing valve, Foot valve and suction and delivery hose and tube are extra.

PND b 1601 PVT 0 0 0 0 0 01

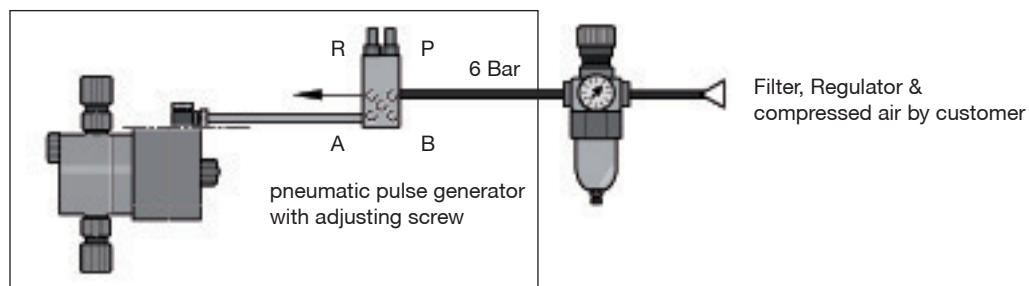


1.6 ProMinent® Pneumados Metering Pumps

1.6.4 Electric and Pneumatic Schematic Diagrams

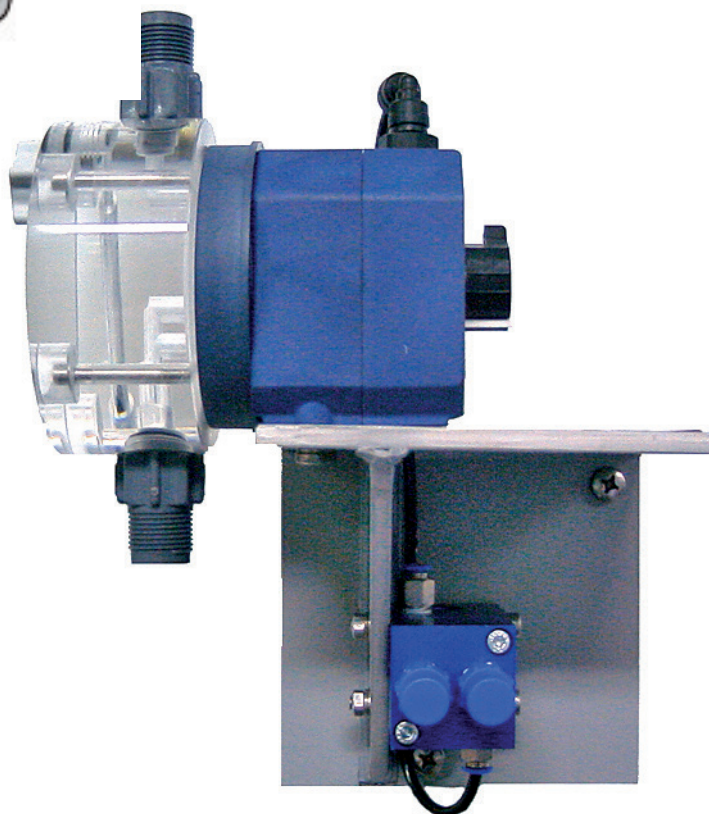
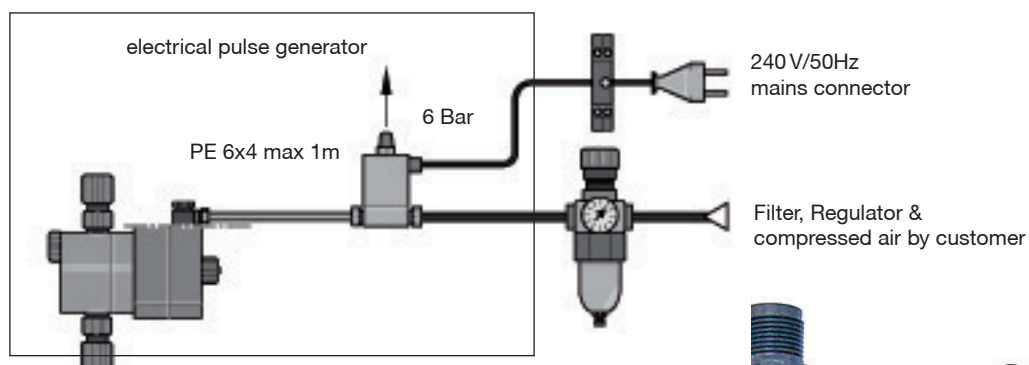
STANDARD

Pneumatic Controller Schematic diagram



OPTIONAL

Electrical/Pneumatic Controller Schematic diagram



1.7 ProMinent® DULCO® flex Pumps

1.7.1 ProMinent® DULCO® flex DF2a Pump

The ProMinent® DULCO® flex is a peristaltic pump. The metering chemical is displaced in the direction of flow as a rotor squeezes the hose. No valves are required which ensures that the chemical is treated extremely gently.

Typical applications are processes in which only a limited feed pressure is required such as the metering of conditioning agents in private pools, belt lubricants in bottling machines or the metering of cleaning agents in rinsing machines.

The robust, chemical-resistant PPE housing is protected on all sides from spray (IP 65), which guarantees its universal application capability.

- Performance range 0.4-2.4 l/h at max. 1.5 bar back pressure
- Hose material: PharMed® or Viton® (special applications)
- Suitable for continuous operation
- Control and/or quantity control via mains ON/OFF
- Practically silent operation
- Self-priming against max. 1.5 bar
- Gentle metering

OEM versions are available on request.



1.7 ProMinent® DULCO® flex Pumps

1.7.2 Identity Code & Pricing for ProMinent® DULCO® flex DF2a Pump

DF2a										
Type	Capacity:									
0204	1.5 bar:	0.4 l/h PharMed® supplied as standard								
0208	1.5 bar:	0.8 l/h PharMed® supplied as standard								
0216	1.5 bar:	1.6 l/h PharMed® supplied as standard								
0224	1.5 bar:	2.4 l/h PharMed® supplied as standard								
Hose material:										
P	ParMed®									
V	Viton® for fragrances (special version)									
Version:										
0	With ProMinent® label									
Hydraulic connection:										
0	Connector for hose 6/4 mm priming and discharge side									
9	Connector for hose 10/4 mm discharge side only									
Electrical connection:										
A	230 V ±10 %, 50/60 Hz									
Lead and plug:										
0	No mains lead									
1	With 2 m mains lead, open ended									
Drive:										
0	Mains ON/OFF									
Assembly type:										
W	Wall mounted									
Accessories:										
0	No accessories									
1	With weight held in place tube nozzle & clamp ring 1/4“ Dosing Valve, 2 m suction and 5 m discharge tubing									
Control Type:										
0	No Control									
T	Mounted on Board with 240 volt 7-day Timer									
PharMed® and Viton® are registered trademarks										
DF2a	0204	P	0	0	A	0	0	W	0	T

1.7.3 Technical Data for ProMinent® DULCO® flex DF2a Pump

Pump type DULCO® flex	Feed rate Frequency			Connector size	Suction Lift	Priming Lift
	bar	l/h	rpm	ext. dia. x int. dia	mWG	mWG
0204	1.5	0.4	5	6x4	4	3
0208	1.5	0.8	10	6x4	4	3
0212	1.5	1.6	20	6x4	4	3
0224	1.5	2.4	30	6x4	4	3

Admissible ambient temperature: 10-45 °C

Power consumption approx.: 5 W

Switching duration: 100 %

Enclosure rating: IP 65

Part No.

Spare Hose Set PharMed®

1009480

Spare Hose Set Viton®

1023842



1.7 ProMinent® DULCO®flex Pumps

1.7.4 ProMinent® DULCO®flex DF4a Pump

The DULCO®flex DF4a was specifically developed for metering chemicals in swimming pool applications. It is available in three versions with the system control menu as well as the inputs and outputs adapted to the respective application:

- Capacity range 0.4 - 12 l/h at max. 4-12 bar.
 - Hose material Pharmed®.
 - Powerful stepper motor, controlled speed.
 - Infinite adjustment of metering rate, manually or externally via contacts or 0/4-20mA analogue signal.
 - Intake function (high speed).
 - Sprung rollers for constant rolling pressure and extended service life of hose.
 - Metering rate displayed in l/h.
 - Direction of rotation reversible e.g. for backflush.
 - Enclosure type of protection IP65 in accordance with DIN EN 60529.
- 0** "Standard pump" as a volume-controlled metering pump for general applications. The metered quantity can be set either in l/h in the display or via external control signals. The pump can process contact signals as well as analogue signals, e.g. 0/4 - 20 mA or 0 - 10 V
- A** "Metering of activated carbon" with reversible direction of rotation for backflushing the hose over the entire output range.
- F** "Metering of flocculants" with a continuous metering rate as from 5 ml/h. Up to two auxiliary inputs can be configured to realise an increase in the metering rate in line with sudden increased load and a reduction in the metering rate for night-time operation.

Thanks to its universal operability and the three output stages, the pump can be used for a wide range of metering tasks. Pharmed® are used as the hose materials.



1.7 ProMinent® DULCO® flex Pumps

1.7.5 Identity Code & Pricing for ProMinent® DULCO® flex DF4a Pump

DF4a

Application

- 0** Standard Pump
- A** Activated carbon metering
- F** Flocculant metering

Installation

- W** Wall mounting

Version

- 0** with ProMinent® logo
- 1** without ProMinent® logo

Type bar l/h STD Connection Size

04004	4.0	0.4	6 x 4
04015	3.0	1.5	6 x 4
03060	2.0	6.0	6 x 4
02120	1.5	12.0	6 x 4

Hose material

- P** PharMed® *Note: PharMed® Not suitable for some liquid polymers*

Hydraulic connectors

- 0** Standard
- 9** Special connection 10x4 pressure side

Power supply

- U** 100-240 V, 50/60 Hz

Cable and plug

- 0** Without cable
- C** With Australian Plug

Accessories

- 0** Without accessories
- 1** Injection valve, suction weight, suction & discharge tube

Main material

- 0** None

Language

- 00** Language neutral

Relay

- 1** Fault indicating relay NC
- 3** Fault indicating relay NO

Control Variants

- 8** Manual + external contact
+ 0/4-20 mA / 0-10 V

Additional Inputs

- 1** Pause + 2 stage level
+ AUX 1
- 2** Pause + 2 stage level
+ AUX 1 + AUX 2

Pause/level

- 0** Pause break contact
+ level break contact

Approvals

- 01** CE-Symbol

PharMed® registered trademark.

BLACK = PharMed® 1.6x4.8 and 0.8x4.0
GREY = PharMed® 3.2x6.4
GREY = PharMed® 4.8x8.0

DF4a F W 0 04015 P 0 U C 1 0 0 3 2 2 0 01

Spare Parts

Description	Size	Material	Model	Part No.
Tube cpl.	0.8 x 4.0	PharMed®	DF4a04004	1034997
Tube cpl.	1.6 x 4.8	PharMed®	DF4a04015	1030722
Tube cpl.	3,2 x 6.4	PharMed®	DF4a03060	1030723
Tube cpl.	4.8 x 8.0	PharMed®	DF4a02120	1030774
Rotor cpl. size 1	black	DF4a04015P, DF4a04004P		1030778
Rotor cpl. size 2	grey	DF4a03060P, DF4a02120P		1031750

Note: The colour for the rotors denotes spring tension and relates to the expected life of the tubes.



1.8 ProMinent® DULCO®flex Control

1.8.1 ProMinent® DULCO®flex Control DFXa

- A peristaltic pump that brings together the best qualities of ProMinent metering pumps
- Feed rate of 10 ml/h to 30 l/h at up to 7 bar back pressure

The new DULCO flex Control meters reliably and is simple to operate. It enhances the ProMinent product range with an intelligent peristaltic metering pump. ProMinent is making use of its decades-long experience in the metering pump sector to bring together the best of two worlds. Valve-free metering with the accuracy of a diaphragm metering pump, with full use of the properties of a peristaltic pump.

The applications of this metering pump include strongly gaseous, high-viscosity, abrasive, shear-sensitive or chemically aggressive fluids. The liquid end developed and patented by ProMinent makes quick and straightforward hose replacement possible with a unique exchange technique. The display provides the fitter with precise instructions about the steps to be completed when replacing the hose. The high-performance hoses used guarantee exceptional chemical resistance and a long service life.

The order information required for replacement of the hose can be found on the pump's operating menu.

The intuitive user interface with click wheel ensures the simple operation of the peristaltic pump.

A brushless direct current motor forms the heart of the DULCO flex Control. Its ingenious control provides for precise metering and reduced pump capacity with continuous metering up to 10 ml/h. Moreover, the new peristaltic metering pump is IoT-enabled, meaning that it is fully networkable and can be connected to the DULCOnneX Platform especially developed by ProMinent, which enables it to work even smarter.



1.8 ProMinent® DULCO®flex Control

1.8.2 Technical Data ProMinent® DULCO®flex Control DFXa

Type	Maximum back pressure bar	Pump capacity	Max. speed rpm	Connector size o Ø x i Ø	Suction lift m WC	Intake head m WC	Shipping weight kg
0730	7	10 ml/h – 30 l/h	100	12 x 9	9	9	5.8
0530	5	10 ml/h – 30 l/h	100	12 x 9	9	9	5.8

Hose material:	Thermoplastic vulcanisate (TPV), polyurethane (PUR)
Hose connectors:	PVDF/PTFE
Metering reproducibility:	±2% with retracted hose (after approx. 200 revolutions)
Electrical connection:	100 - 230 V ±10%, 50/60 Hz
Nominal power:	approx. 45 W
Degree of protection:	IP 66, NEMA 4X Indoor
Permissible ambient temperature:	0 ... 45 °C

1.8.3 Spare Parts ProMinent® DULCO®flex Control DFXa

	Part No.
Spare parts kit for DFXa 0730 SPF	1103099
Spare parts kit for DFXa 0730 SPT	1103102
Spare parts kit for DFXa 0530 SPF	1103101
Spare parts kit for DFXa 0530 SPT	1103100
Spare parts kit for DFXa rotor, assembled	1103249
Spare parts kit for DFXa 0530 TPV	1104954
Retrofit kit hose rupture alarm for DFXa	1104953
Spare screw kit for DFXa	1104952
Dosing head cover for DFXa	1104961
Star screw knob DIN 6336 L M 5x15xd25 A2	1102764



1.8 ProMinent® DULCO®flex Control

1.8.4 Identity Code & Pricing for ProMinent® DULCO®flex Control DFXa

DFXa

Regional design

EU Europe

Type Capacity

	bar	l/h
0730	7	30
0530	5	30

Tube material

SP	Thermoplastic vulcanisate (TPV/PVDF)
VP	Polyurethane (PUR/PVDF)

Seal material

T	PTFE
F	FDA-compliant (PTFE)

Dosing head orientation

R	right (view from behind)
L	left (view from behind)
U	top
D	bottom

Hydraulic connector

0	Standard connector (12x9)
2	Connector 8x5
5	Connector 12x6 discharge side
7	no connector kit
8	Connector 9x5
E	Connector DN 10 with nozzle

Tube rupture alarm

0	none
1	with hose rupture alarm

Design

0	Housing RAL 5003 / cover RAL 2003
---	-----------------------------------

Logo

0	with ProMinent logo
---	---------------------

Power unit version

U	universal 100-240 V
---	---------------------

Cable and plug

C	2 m Australian
---	----------------

Relay

0	no relay
1	1 x changeover contact 230V – 8 A, fault indicating relay N/C
4	2 x N/O 24V – 100 mA, fault indicating relay N/C + pacing relay
C	1 x N/O 24V – 100 mA, fault indicating relay N/C + 4 – 20 mA output

Accessories

0	no accessories
1	Injection valve 1/2" and foot valve, 2m suction tube, 5m discharge tube

Control version

0	Manual + external with pulse control
3	Manual + external with pulse control + analogue 0/4 - 20 mA
C	as 3 + CANopen*
P	as 3 + Profinet*
R	as 3 + PROFIBUS® DP interface M12
M	as 3 + Modbus*
-	*No relay can be selected with these options

Note: Control Variant D to be confirmed.

Communication interface

0	none
---	------

Language

EN	English
----	---------

Certification

01	CE [STANDARD]
----	---------------

CAUTION

Pump is supplied assembled.
However storage periods will deform the squeeze tube.
Customer MUST BE advised to remove the pump rotor if storing the pump

Note: If PROFIBUS® is specified refer to page 3.20 to determine which PROFIBUS® cables, adaptors and terminators are required. Also if PROFIBUS® option is selected NO relays can be fitted.

Prepacks = P

P0 - no control cable
P2 - 2m control cable
P5 - 5m control Cable
PX -10m control Cable

DFXA EU 0503 SP T R 0 0 0 0 0 0 U C 0 0 0 0 EN



1.9 ProMinent® DULCO flex Control DFYa

1.9.1 ProMinent® DULCO® flex Control DFYa

The peristaltic pump DULCO flex Control - DFYa combines the properties of top products from the ProMinent product range.

FEED RATE OF 5.5 L/H TO 410 L/H AT UP TO 8 BAR BACK PRESSURE

The new metering pump DFYa, the big brother of the DFXa, adds an intelligent peristaltic pump to the top capacity range of the ProMinent portfolio.

The new generation of peristaltic metering pumps is now controlled electronically. It meters without the need for a valve, with precision hitherto impossible. All the benefits of a peristaltic pump are retained, which is why seriously gaseous, high-viscosity, abrasive or shear-sensitive fluids, sometimes containing particles, can also be perfectly metered with the DFYa.

As with the DFXa, hose replacement on the DFYa is also assisted by the pump. When the hose needs to be changed, the pump displays exact instructions for the steps to be followed and automatically moves into the correct positions for hose replacement. The different hose materials (NR, NBR, NBR-A, EPDM Hypalon) enable the DFYa to work with a very wide range of media to be metered.

The peristaltic pump DFYa is simple to operate from the intuitive user interface with 4 keys and the click wheel. The DFYa thus joins the remaining ProMinent product range of intelligent metering pumps, which all share the same menu structure and user interface.

The new peristaltic metering pump is even IoT-capable. This means that it is fully connectible and can be connected to ProMinent's in-house developed DULCOnneX platform, which enables it to work even smarter.

YOUR BENEFITS

- Operation by contact, batch, manual, analogue or BUS control
- Adjustment of the metering rate directly in l/h or gph
- Connection to process control systems via a BUS interface, such as PROFIBUS®, Profinet or CANbus
- No problems with very gaseous media or air locks
- Simple, menu-guided hose change
- Reversible direction of rotation

FIELD OF APPLICATION

- Mining
- Potable water and waste water industry
- Chemical industry
- Paper industry
- Food and beverage industry

All industrial applications, either as a stand-alone unit or integrated in a complete system.



1.9 ProMinent® DULCO flex Control DFYa

1.9.2 Technical Data ProMinent® DULCO® flex Control DFYa

Type	Maximum back pressure bar	Pump capacity rpm	Max. speed m WC	Suction lift m WC	Intake head
08410	8	410 l/h \pm 10 %	80	8	8
04410	4	410 l/h \pm 10 %	80	8	8
02410	2	410 l/h \pm 10 %	80	8	8

Hose material: NR, NBR, EPDM, NBR-A, Hypalon

Self-priming: Up to 8 m

Rollers/shoes: Rollers

Metering reproducibility: \pm 2% with retracted hose after 500 revolutions

Electrical connection: 100 – 230 VAC \pm 10 % 50/60 Hz

Electrical power consumption: Max. 400 W

Degree of protection: IP 55

Weight: 30 kg

Permissible ambient temperature: 0 ... 45 °C

All data refers to water at 20 °C

Approximate Life of Hoses

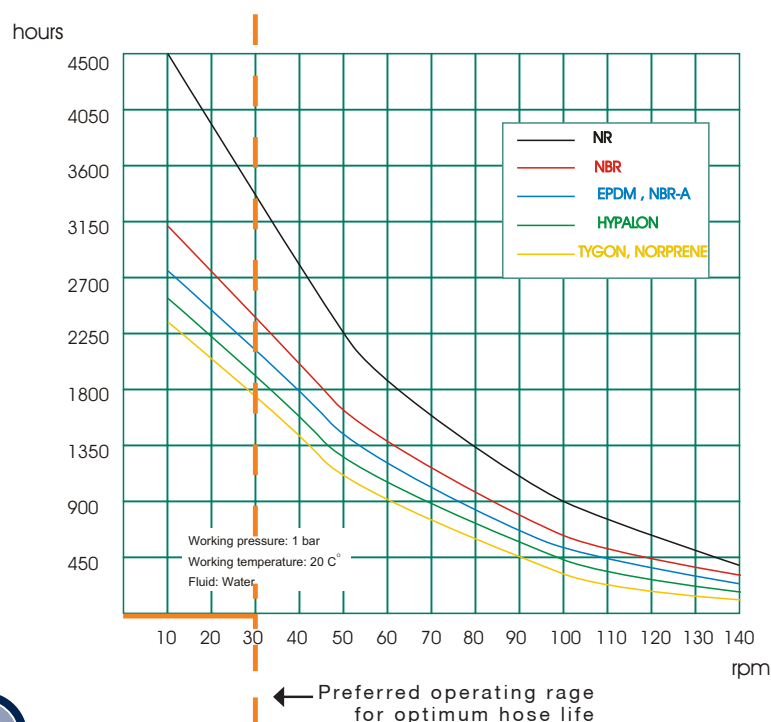
The technical department of PROMINENT, has prepared a series of curves representing the duration of the peristaltic hoses in function of the pump rotation speed and of the type of installed hose.

These curves, which are for guideline purposes, have been prepared in accordance with tests carried out using our test set/up, together with multiple references received from our customers and distributors.

All this data has been used to produce real average values, taking into account however, that due to the nature of the rubber, its components, additives and manufacturing process, it is possible that some of the hoses may have a life which is much higher than the estimated in the curves, and others could be lower.

These curves are therefore intended for guideline purposes only and must not be interpreted as being any form of guarantee for hose duration. The aim of these curves is to provide a useful tool when the time comes to select a pump and hose.

Evidently, there are other variables which can condition the life of a hose, such as temperature, pressure, abrasion, and specially the chemical compatibility of the product being pumped with respect to the selected hose material, which makes it practically necessary to have a different curve for each specific pumping situation. These curves can therefore be extremely useful in spite of being for guideline purpose only.



1.9 ProMinent® DULCO flex Control DFYa

1.9.3 Identity Code & Pricing for ProMinent® DULCO® flex Control DFYa

DFYa	Type Capacity	
	bar	l/h
08410	8	410
04410	4	410
02410	2	410

Hose Material	
0	NR
B	NBR
E	EPDM
A	NBR-A [food safe]
C	NBR-A
H	Hypalon

Dosing Head Orientation	
R	Right

Hydraulic Connection	
A	VA BSP 3/4"
B	VA NPT 3/4"
C	PP BPS 3/4"
D	PVDF BSP 3/4"
E	PVDF NPT 3/4"
F	PVC NPT 3/4"
G	Tri-Clamp, VA, 1"
H	DIN 11851,VA, NW20

Hose Break Detector	
0	Without hose break detector
1	With hose break detector

Version	
P	ProMinent
B	Boyser
A	Axflow
M	Modified

Special Version	
0	Standard
H	Chemical version - Halar coated

Logo	
0	With logo
1	Without logo
M	Modified

Electric Power Supply	
U	Universal 100-230V +/- 10 %, 50/60 Hz

Cable and Plug	
C	2 m Australian

Relay	
0	no relay
1	fault indicating relay (230V, 8A)
3	fault indicating relay (24V ,100 mA) + pacing relay (24V, 100mA)
8	0/4-20mA output relay + fault indicating/pacing relay

Accessories	
0	No accessories

Control Version	
0	Manual + External contact with Pulse Control
1	Pulse Control + Analogue
6	Profibus M12 plug
7	CANopen

Control Unit	
0	HMI with Click Wheel 0,5 m
4	HMI with Click Wheel 2 m
5	HMI with Click Wheel 5 m
6	HMI with Click Wheel 10 m

Access Code	
0	Without access code
1	With access code

Communication	
0	Without

Languages	
EN	English

Approval	
01	CE

DFYa084100 R 0 0 0 0 0 U C 0 0 0 0 0 0 0 EN 01



2.0 ProMinent® High Viscosity Pumps

2.0.1 ProMinent® Viscosity Metering Pumps



- For small capacity High Viscosity pumps see:**

 - **Beta, GALA and gamma/ XL**
refer Sydney office
 - also available in **EXtronic Pumps**
- For higher capacity High Viscosity pumps see:**

 - Sigma/ 1
 - Sigma/ 2
 - Sigma/ 3
 - Hydro/ 2
 - Hydro/ 3
 - Hydro/ 4 and Makro TZ or Makro/ 5 *refer Sydney office*
 - Spectra® progressive cavity pumps
 - DULCO® flex hose pumps
 - Orlita pumps

Effect of Viscosity on Metering Pumps

Below 250 centipoise	=	Standard Pump
250 - 500 centipoise	=	One stainless ball each side + spring on discharge side
500 - 1000 centipoise	=	Springs fitted to suction and discharge, flooded suction
1000 centipoise	=	Delta HV head required
		Slow pump running bellow 100 SPM
		Double capacity
		Spectra® or DULCOflex® hose pump.

On the following pages we have colour coded the pumps and the corresponding dots indicate the correct size for the fittings and accessories in section 3 and also the fittings in Green Pages.

These codes also apply in the Yellow Pages 2.36

- DN10
- DN15
- DN20
- DN25
- DN32



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

Sigma/ 1 Diaphragm Metering Pumps

The Sigma/1 motor diaphragm metering pumps are produced with a high-strength inner housing for parts subject to load as well as an additional plastic housing to protect against corrosion. The capacity range extends from 17 - 144 l/h at a max. back pressure of 12 to 4 bar. Stroke length 4mm.

Under defined conditions and when installed correctly, the reproducibility of the metering is better than $\pm 2\%$ at a stroke length of between 30 % and 100 % (instructions in the operating instructions manual must be followed).

In all motor-driven metering pumps without integrated overload protection, for safety reasons, suitable overload protection must be provided during installation.

Sigma/ 1 control type (S1Cb)

DETACHABLE OPERATING UNIT (HMI)

The optional control via contact or analog signals (e.g. 0/4 - 20 mA) for the Sigma control type results in good adaptability, even to fluctuating metering requirements.

The microprocessor control is an optimum combination of speed control and stop & go operation, i.e. it works in a wide control field with customised fine adjustment. Moreover it enables an optimum metering result thanks to the metering behaviour of the metering pump being matched to the chemicals or application.

The task of the control is to measure the movement and speed profile in conjunction with the power demand. This leads to a real reduction in the actually required power, which means an increase in efficiency.

Moreover, the analysis of the power demand makes possible an internal overload switching off of the metering pump, i.e. an integral pressure relief function for pump protection without an additional hydraulic assembly such as relief valves and manometer.

Sigma/ 1 basic type (S1Ba)

The ProMinent® Sigma Basic type is a motor driven Metering Pump with no internal electronic control system. The ProMinent® S1Ba has a number of different drive options, including single and 3 ph. motor (standard IP55), or the three phase AC motor for use in hazardous Exe and EXde areas.

Different flanges are always available so that customers can use their own motor to drive the pump.

DIAPHRAGM RUPTURE WARNING SYSTEM

The liquid end has a patented multilayer safety diaphragm as standard and a visual diaphragm rupture indicator. The diaphragm is coated on both sides with PTFE film.

This coating ensures that no leakage to the outside occurs even if the diaphragm ruptures.

If the diaphragm ruptures, feed chemical enters between the diaphragm layers and thus triggers a mechanical indication or an alarm via the sensor area.

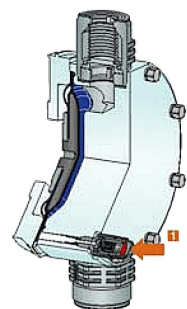
This concept ensures reliable metering - even under critical operating conditions.

Sigma Basic Type Control Functions (S1Ba)

STROKE LENGTH ACTUATOR/CONTROLLER

Actuator for automatic stroke length adjustment, actuating period approx. 1 sec for 1% stroke length, 1k Ohm response signal potentiometer, enclosure rating IP 54.

Controller consists of actuator with servomotor and integrated servo control for stroke length adjustment via a standard signal. Standard signal input 0/4-20 mA, corresponds to stroke length 0 - 100 %. Automatic/manual operation selection key for manual stroke adjustment. Mechanical status display of actual stroke length value output 0/4-20 mA for remote display.



S1Ba with
Stroke length
controller



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.2 Technical Data for Sigma/ 1

at 50 Hz Pump Capacity at Max. Back Pressure					Max Stroke Freq	S1Cb at 60 Hz Pump Capacity at Max. Back Pressure		Stroking rate at Max. Back Pressure	Suction Lift	Adm. Priming Pressure Suction Side	Connector Suction/ Discharge Side	Shipping Weight
Pump type S1Ba	bar	l/h	ml/ stroke.	strokes/ min.	bar S1Cb	l/h	strokes/ min.	mWG	bar	DN	Optional BSPM / Hosetail	kg
12017 PVT	10	17	3.9	73	10	21	87	7	1	10	1/2" / 16mm	9
12017 SST	12	17	3.9	73	12	21	87	7	1	10	1/2" / 16mm	12
12035 PVT	10	35	4.0	143	10	42	172	7	1	10	1/2" / 16mm	9
12035 SST	12	35	4.0	143	12	42	172	7	1	10	1/2" / 16mm	12
10050 PVT	10	50	4.0	205	10	49	200	7	1	10	1/2" / 16mm	9
10050 SST	10	50	4.0	205	10	49	200	7	1	10	1/2" / 16mm	12
10022 PVT	10	22	5.1	73	10	27	87	6	1	10	1/2" / 16mm	9
10022 SST	10	22	5.1	73	10	27	87	6	1	10	1/2" / 16mm	12
10044 PVT	10	44	5.1	143	10	53	172	6	1	10	1/2" / 16mm	9
10044 SST	10	44	5.1	143	10	53	172	6	1	10	1/2" / 16mm	12
07065 PVT	7	65	5.1	205	7	63	200	6	1	10	1/2" / 16mm	9
07065 SST	7	65	5.1	205	7	63	200	6	1	10	1/2" / 16mm	12
07042 PVT	7	42	9.7	73	7	52	87	3	1	15	3/4" / 20mm	9.5
07042 SST	7	42	9.7	73	7	52	87	3	1	15	3/4" / 20mm	13.5
04084 PVT	4	84	9.7	143	4	101	172	3	1	15	3/4" / 20mm	9.5
04084 SST	4	84	9.7	143	4	101	172	3	1	15	3/4" / 20mm	13.5
04120 PVT	4	120	9.7	205	4	117	200	3	1	15	3/4" / 20mm	9.5
04120 SST	4	120	9.7	205	4	117	200	3	1	15	3/4" / 20mm	13.5

Note: All pumps that are fitted with integral PRV must have the outlet piped to an appropriate place.

● DN10

● DN15

Materials in Contact with Chemicals

Liquid End	Suction/Discharge connector	Valve	Seals	Balls	Integrated Pressure Bleed Valve
PVT	PVDF (Polyvinylidene fluoride)	PVDF (Polyvinylidene fluoride)	PTFE	Ceramic	PVDF/Viton® or EPDM
SST	stainless steel no. 1.4404/1.4581	Stainless steel no. 1.4404	PTFE	Stainless steel no. 1.4404	Stainless steel/Viton®

Motor Data for S1Ba

Identity code specifications	Power supply	Δ/Y			Remarks
S	3-phase, IP 55	220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V	50 Hz 60 Hz	0.09 kW 0.09 kW	
T	3-phase, IP 55	220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V	50 Hz 60 Hz	0.09 kW 0.09 kW	with PTC, speed control range 1:5
R	3-phase, IP 55	220 - 240 V/380 - 420 V	50 Hz	0.09 kW	with PTC, speed adjustment range 1:20 with external fan (1-phase 230 V; 50/60Hz, 20W)
M	1-phase AC, IP 55	230 V ± 5 %	50 Hz/ 60 Hz	0.12 kW	
L1	3-phase, II2GEEExIICT3	220 - 240 V/380 - 420 V	50 Hz	0.12 kW	
L2	3-phase, II2GEEExIICT4	220 - 240 V/380 - 420 V	50 Hz	0.18 kW	with PTC, speed control range 1:5
P1	3-phase, II2GEEExIICT3	250 - 280 V/440 - 480 V	60 Hz	0.12 kW	
P2	3-phase, II2GEEExIICT4	250 - 280 V/440 - 480 V	60 Hz	0.18 kW	with PTC, speed control range 1:5

Motor data sheets can be requested for more information. Special motors or special motor flanges are available on request.

Motors less than 0.75 kW and motors designed for speed-controllable operation are not subject to the IEC2 standard in compliance with the Ecodesign Directive 2005/32/EC.

Information for use in areas at risk from explosion: Only use pumps with the appropriate labelling in line with the ATEX Directive 94/9/EC 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.



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.3 Identity Code Ordering System for Basic Type Sigma (S1Ba)

S1BaH	Sigma Basic Type (S1Ba) Pump Type (Figure 1 + 2 = back pressure [bar], figures 3 -5 = feed rate [l/h]):	
● 12017*	12 bar; 17 l/h	PVDF
● 12035*	12 bar; 35 l/h	SS
● 10050	10 bar; 50 l/h	
● 10022	10 bar; 22 l/h	PVDF
● 10044	10 bar; 44 l/h	SS
● 07065	7 bar; 65 l/h	
● 07042	7 bar; 42 l/h	PVDF
● 04084	4 bar; 84 l/h	SS
● 04120	4 bar; 120 l/h * for PVDF max. 10 bar	
Liquid end material with PTFE Seal:		
PVT	PVDF (max 10 bar)	
SST	Stainless steel - select this option if using Hygenic Head option	
Diaphragm:		
S	Multi-layer safety diaphragm with optical rupture display	
A	Multi-layer safety diaphragm with electrical rupture signal	
H	Diaphragm for Hygenic Head	
Liquid end version:		PVDF SS
0	No springs	
1	With 2 valve springs, Hastelloy C 4; 0.1 bar	
4	With bleed valve, Viton® seal, no valve spring	
5	With bleed valve, Viton® seal and valve spring	
H	Hygenic Head with Tri-Clamp connection (maximum 10 bar), contact Sydney	
Hydraulic connector:		
1	Union nut and PVC Solvent Weld	
2	Union nut and PVC Male BSP	
3	Union nut and PVDF Male BSP	
4	Union nut and stainless steel insert <i>inc. w/SS pump</i>	
5	Union nut and PVC Hosetail	
7	Union nut and PVDF Hosetail	
Version		
0	With ProMinent® logo (standard)	
M	Modified	
5	Liquid End Left ... <i>Note: only available ex Germany</i>	
Power supply:		
S	3 ph, 400 V; 50 Hz; 0.09 kW	
T	3ph, 400V, 50Hz, 0.09kW, PTC Thermistor	
M	1 ph. AC, 230 V; 50 Hz; 0.12 kW	
L	3 ph, 400 V, 50Hz, (EExe, EExde) see below	
R	3ph, variable speed motor 4 pol. 400 V 0.09kW, external fan	
3	No Motor, with flange size 56; B5 (DIN)	
Enclosure rating:		
0	IP 55 (standard)	
1	Exe motor version (ATEX-T3)	
2	Exd motor version (ATEX-T4)	
Stroke sensor:		
0	No stroke sensor (standard)	
2	Pacing relay (reed relay)	
3	Stroke Sensor (Namur for EX area)	
Stroke length adjustment:		
0	Manual 0	
1	Stroke positioning motor, 85-265V AC 50/60Hz	
4	Stroke control motor, 4-20 mA 85-265V AC 50/60Hz	
Prepack Option		
P*	Manual 0	

Note: PRV/Bleed valve available on request.
The preferred option is relief valve in-line.

Prepack option P* for PVDF
P0 - 12017 - 12035 - 10050 - 10022 - 10044 - 07065
4 EPDM flat gaskets
Refer page 2.36 for fitting sizes
07042 - 04084 - 04120
4 EPDM flat gaskets
Refer page 2.36 for fitting sizes
P1 as P0 but with Viton® Flat Gaskets
240 volt motor supplied with power cord.

● DN10
● DN15

Note: PRV/Bleed valve available on request.
The preferred option is relief valve in-line.

Prepack option P* for PVDF

P0 - 12017 - 12035 - 10050 - 10022 - 10044 - 07065

4 EPDM flat gaskets
Refer page 2.36 for fitting sizes

07042 - 04084 - 04120

4 EPDM flat gaskets
Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

240 volt motor supplied with power cord.

● DN10

● DN15

S1BaH 12050 PVT S 0 1 0 S 0 0 0 P0



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.4 Identity Code Ordering System for Sigma (S1Cb)

S1CbH	Sigma Control Type (S1Cb)		
	Pump type (Figures 1 + 2 = back pressure [bar], figures 3 - 5 = feed rate [l/h]):		
● 12017*	12 bar;	21 l/h	PVDF
● 12035*	12 bar;	42 l/h	SS
● 10050	10 bar;	49 l/h	
● 10022	10 bar;	27 l/h	PVDF
● 10044	10 bar;	53 l/h	SS
● 07065	7 bar;	63 l/h	
● 07042	7 bar;	52 l/h	PVDF
● 04084	4 bar;	101 l/h	SS
● 04120	4 bar;	117 l/h	*for PVDF max. 10 bar
Liquid end material with PTFE Seal			
PVT	PVDF (max 10 bar)		
SST	Stainless steel		
Diaphragm			
S	Multi-layer safety diaphragm with optical rupture display		
A	Multi-layer safety diaphragm with electrical rupture signal "Pump stops"		
Liquid end version			PVDF
0	No bleed valve and springs		
1	No bleed valve, with 2 valve springs, Hastelloy C 4; 0.1 bar		
4	With relief valve, Viton® seal, no valve spring		
5	With relief valve, Viton® seal and valve spring		
Hydraulic connector			
1	Union nut and PVC Solvent Weld		
2	Union nut and PVC Male BSP		
3	Union nut and PVDF Male BSP		
4	Union nut and stainless steel insert <i>inc. w/ss pump</i>		
5	Union nut and PVC Hosetail		
7	Union nut and PVDF Hosetail		
Version			
0	With ProMinent® logo (standard)		
F	Physiologically harmless (FDA)		
M	Modified		
5	Liquid end left ... <i>Note: only available ex Germany</i>		
Electrical Power supply			
U	1 ph, 100 - 240V; 50 Hz		
Power Cable and Plug			
C	2m Australia		
Relays			
0	No relay (Standard)		
1	Fault relay (230V - 8A)		
3	Fault + pacing relay (24V - 100mA)		
8	0/4-20 mA analogue output + fault indicating relay / pacing relay (24V - 100mA)		
Control Variant			
0	Manual + External Control + Pulse Control		
1	Manual + External Control + Pulse Control + analog + metering profiles		
6	As 1 + PROFIBUS® DP M12		
7	As 1 + CANopen** WITHOUT OPERATING UNIT		
Overload switch-off			
0	Without overload switch-off		
Operating Unit (HMI)			
0	Operating unit with Click Wheel 0.5 m cable		
4	Operating unit with Click Wheel 2 m cable		
5	Operating unit with Click Wheel 5 m cable		
6	Operating unit with Click Wheel 10 m cable		
X	without operating unit (HMI)		
Dosing Monitor:			
0	Without access code		
1	With access code		
Language:			
EN	English		

Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.

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.

Prepack option P* for PVDF

P0 - 12017 - 12035 - 10050 - 10022 - 10044 - 07065

4 EPDM flat gaskets & CANBUS cable if required. Refer page 2.36 for fitting sizes

07042 - 04084 - 04120

4 EPDM flat gaskets & CANBUS cable if required. Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

P2 As P0 but with a 2.0m control cable

P5 As P2 but with a 5.0m control cable

PX As P2 but with a 10.0m control cable

PA As P1 but with a 2.0m control cable

PB As P1 but with a 5.0m control cable

PC As P1 but with a 10.0m control cable

Note: for SS pumps as per P2, P5 & P7 but only require control cables ... prices also as above.

** For manual operating HMI Required 1042550

● DN10

● DN1

Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.

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.

Prepack option P* for PVDF

P0 - 12017 - 12035 - 10050 - 10022 - 10044 - 07065

4 EPDM flat gaskets & CANBUS cable if required.

Refer page 2.36 for fitting sizes

07042 - 04084 - 04120

4 EPDM flat gaskets & CANBUS cable if required.

Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

P2 As P0 but with a 2.0m control cable

P5 As P2 but with a 5.0m control cable

PX As P2 but with a 10.0m control cable

PA As P1 but with a 2.0m control cable

PB As P1 but with a 5.0m control cable

PC As P1 but with a 10.0m control cable

Note: for SS pumps as per P2, P5 & P7 but only require control cables ... prices also as above.

**** For manual operating HMI Required 1042550**

● DN10

● DN15

S1CbH 10050 PVT S 01 0 U C 0 1 0 1 0 EN P2



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.5 Spare Parts Kits Sigma/ 1

The spare parts kits contain all components for maintenance of liquid ends.

PVT version

- 1 x pump diaphragm
- 1 x suction valve
- 1 x discharge valve
- 2 x valve balls
- 1 x seal set (PTFE Gaskets, ball seats, ball seat housings).

SST version

- 1 x pump diaphragm
- 1 x seal set (PTFE Gaskets, ball seat discs).

IN ALL CASES CHECK
PUMP MODEL CODE

Spare Parts Kits for versions with multilayer safety diaphragm

- Type PVTs, PVTA, SSTs, SSTA

Type 12017, 120035, 10050		Part No.
Liquid end FM 50 - DN 10	PVT	1035964
	PVT - FDA	1046466
	SST	1035966
	SST - FDA	1046468
	SST (with 2 valve sets)	1035965
Type 10022, 10044, 07065		Part No.
Liquid end FM 65 - DN 10	PVT	1035967
	PVT - FDA	1046469
	SST	1035969
	SST - FDA	1046471
	SST (with 2 valve sets)	1035968
Type 07042, 04084, 04120		Part No.
Liquid end FM 120 - DN 15	PVT	1035961
	PVT - FDA	1046453
	SST	1035963
	SST - FDA	1046465
	SST (with 2 valve sets)	1035962

Spare Parts Kits for versions with original diaphragm - Type PVT0/1/2, SST0/1/2

Type 12017, 120035, 10050		Part No.
Liquid end FM 50 - DN 10	PVT	1010541
	SST	1010554
	SST (with 2 valve sets)	1010555
Type 10022, 10044, 07065		Part No.
Liquid end FM 65 - DN 10	PVT	1010542
	SST	1010556
	SST (with 2 valve sets)	1010557
Type 07042, 04084, 04120		Part No.
Liquid end FM 120 - DN 15	PVT	1010543
	SST	1010558
	SST (with 2 valve sets)	1010559

Multilayer Safety Diaphragms - [CURRENT] Types PVTs, PVTA, SSTs, SSTA

	Part No.
Sigma/ 1 FM 50 Type: 12017, 120035, 10050	1030114
Sigma/ 1 FM 65 Type: 10022, 10044, 07065	103011
Sigma/ 1 FM 120 Type: 07042, 04084, 04120	1035828

Pump Diaphragms [ORIGINAL diaphragm] Types PVT0/1/2, SST01/2

	Part No.
Sigma/ 1 FM 50 Type: 12017, 120035, 10050	1010279
Sigma/ 1 FM 65 Type: 10022, 10044, 07065	1010282
Sigma/ 1 FM 120 Type: 07042, 04084, 04120	1010285

Suction - Discharge Valves PVT

	Part No.
Sigma/ 1 12017, 120035, 10050 DN10	1002267
Sigma/ 1 10022, 10044, 07065 DN10	1002267
Sigma/ 1 07042, 04084, 04120 DN15	792517

PTFE Moulding Gasket

	Part No.
Sigma/ 1 12017, 120035, 10050 DN10	1019364
Sigma/ 1 10022, 10044, 07065 DN10	1019364
Sigma/ 1 07042, 04084, 04120 DN15	1019365

	Part No.
Visual Diaphragm Failure Indicator	1033323
Retrofit rupture signalling switch & cable	1034312



2.2 ProMinent® Sigma/ 2 Diaphragm Metering Pumps

2.2.1 ProMinent Sigma/ 2 Diaphragm Metering Pumps

Sigma/ 2 Diaphragm Metering Pumps

The Sigma/2 motor diaphragm metering pumps are produced with a high-strength inner housing for parts subject to load as well as an additional plastic housing to protect against corrosion. The capacity range extends from 50 - 420 l/h at a max. back pressure of 16 to 4 bar. Stroke length 5mm.

Under defined conditions and when installed correctly, the reproducibility of the metering is better than $\pm 2\%$ at a stroke length of between 30 % and 100 % (instructions in the operating instructions manual must be followed).

In all motor-driven metering pumps without integrated overload protection, for safety reasons, suitable overload protection must be provided during installation.

Sigma/ 2 control type (S2Cb)

DETACHABLE OPERATING UNIT (HMI)

The optional control via contact or analog signals (e.g. 0/4 - 20 mA) for the Sigma control type results in good adaptability, even to fluctuating metering requirements.

The microprocessor control is an optimum combination of speed control and stop & go operation, i.e. it works in a wide control field with customised fine adjustment. Moreover it enables an optimum metering result thanks to the metering behaviour of the metering pump being matched to the chemicals or application.

The task of the control is to measure the movement and speed profile in conjunction with the power demand. This leads to a real reduction in the actually required power, which means an increase in efficiency.

Moreover, the analysis of the power demand makes possible an internal overload switching off of the metering pump, i.e. an integral pressure relief function for pump protection without an additional hydraulic assembly such as relief valves and manometer.

Sigma/ 2 basic type (S2Ba)

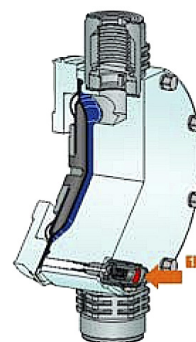
The ProMinent® Sigma Basic type is a motor driven Metering Pump with no internal electronic control system. The ProMinent® S2Ba has a number of different drive options, including single and 3 ph. motor (standard IP55), or the three phase AC motor with ATEX certification for use in hazardous Exe and EXde areas.

Different flanges are always available so that customers can use their own motor to drive the pump.

DIAPHRAGM RUPTURE WARNING SYSTEM

The liquid end has a patented multilayer safety diaphragm as standard and a visual diaphragm rupture indicator. The diaphragm is coated on both sides with PTFE film. This coating ensures that no leakage to the outside occurs even if the diaphragm ruptures. If the diaphragm ruptures, feed chemical enters between the diaphragm layers and thus triggers a mechanical indication or an alarm via the sensor area.

This concept ensures reliable metering - even under critical operating conditions.



2.2 ProMinent® Sigma/ 2 Diaphragm Metering Pumps

2.2.2 Technical Data for Sigma Sigma/ 2

at 50 Hz					S2CbH at 60 Hz							
Pump Capacity at Max. Back Pressure		Max. Stroke Freq.			Pump Capacity Max. Back Pressure	Stroking rate at at max. back pressure	Suction Lift	Adm. Priming Pressure Suction Side	Connector Suction/ Discharge Side	Shipping Weight		
Pump type	bar	l/h	ml/ stroke	strokes/ min.	bar S2CbH	l/h	strokes/ min.	mWG	bar	DN	Optional BSPM/Hosetail	kg
16050 PVT	10	50	11.4	73	10	61	90	7	3	15	3/4" / 20mm	15
16050 SST	16	47	11.4	73	16	56	90	7	3	15	3/4" / 20mm	20
16090 PVT	10	88	11.4	132	10	109	160	7	3	15	3/4" / 20mm	15
16090 SST	16	82	11.4	132	16	99	160	7	3	15	3/4" / 20mm	20
16130 PVT	10	135	10.9	198	10	131	200	7	3	15	3/4" / 20mm	15
16130 SST	16	124	10.9	198	16	129	200	7	3	15	3/4" / 20mm	20
07120 PVT	7	126	27.4	73	7	150	90	5	1	25	1" / 25mm	16
07120 SST	7	126	27.4	73	7	150	90	5	1	25	1" / 25mm	24
07220 PVT	7	220	27.7	132	7	271	160	5	1	25	1" / 25mm	16
07220 SST	7	220	27.7	132	7	271	160	5	1	25	1" / 25mm	24
04350 PVT	4	350	29.4	198	4	353	200	5	1	25	1" / 25mm	16
04350 SST	4	350	29.4	198	4	353	200	5	1	25	1" / 25mm	24

NOTE: The valves in the liquid end of the Sigma types 07120, 07220 and 04350 are dimensioned DN25 (R1-1/2"). Since a piping size of DN20 is generally sufficient for these types (see Technical Date, connection intake/delivery side), the connection parts (eg inserts) which can be ordered in the identity code are reduced to DN 20, ie. piping and accessories can be sized to DN 20.

NOTE: All pumps that are fitted with integral PRV must have the outlet piped to an appropriate place.

● DN15

● DN25

Materials in contact with Dosing Medium

Liquid End	Suction/Discharge connector	Valve	Seals	Balls	Integrated Pressure Bleed Valve
PVT	PVDF (Polyvinylidene fluoride)	PVDF (Polyvinylidene fluoride)	PTFE	ceramic	PVDF/Viton® or EPDM
SST	stainless steel no. 1.4571/1.4404	stainless steel no. 1.4581	PTFE	stainless steel no. 1.4404	stainless steel/Viton®

Viton® is a registered trademark of DuPont Dow Elastomers.

Motor Data S2Ba

Identity code specifications	Power supply	Δ/Y	Remarks		
S	3-phase, IP 55	220 - 240 V/380 - 420 V	50 Hz	0.25 kW	
		220 - 280 V/440 - 480 V	60 Hz	0.25 kW	
T	3-phase, IP 55	220 - 240 V/380 - 420 V	50 Hz	0.25 kW	with PTC, speed control range 1:5
		220 - 280 V/440 - 480 V	60 Hz		
R	3-phase, IP 55	220 - 240 V/380 - 420 V	50 Hz	0.37 kW	with PTC, speed adjustment range 1:20 with external fan (1-phase 230 V; 50/60Hz, 134W)
M	1-phase AC, IP 55	230 V ± 5 %	50 Hz/ 60 Hz	0.18 kW	
L1	3-phase, II2GEEExII T3	220 - 240 V/380 - 420 V	50 Hz	0.18 kW	
L2	3-phase, II2GE-ExdII CT4	220 - 240 V/380 - 420 V	50 Hz	0.18 kW	with PTC, speed control range 1:5
P1	3-phase, II2GEEExII T3	250 - 280 V/440 - 480 V	60 Hz	0.18 kW	
P2	3-phase, II2GE-ExdII CT4	250 - 280 V/440 - 480 V	60 Hz	0.21 kW	with PTC, speed control range 1:5

Sigma Basic Type Control Functions (S2Ba)

Actuator for automatic stroke length adjustment, actuating period approx. 1 sec for 1% stroke length, 1k Ohm response signal potentiometer, enclosure rating IP 54. Controller consists of actuator with servomotor and integrated servo control for stroke length adjustment via a standard signal. Standard signal input 0/4-20 mA, corresponds to stroke length 0 - 100 %. Automatic/manual operation selection key for manual stroke adjustment. Mechanical status display of actual stroke length value output 0/4-20 mA for remote display.



2.2 ProMinent® Sigma/ 2 Diaphragm Metering Pumps

2.2.3 Identity Code Ordering System for Basic Type Sigma (**S2Ba**)

[illegible]

2.2 ProMinent® Sigma/ 2 Diaphragm Metering Pumps

2.2.4 Identity Code Ordering System for Sigma (S2Cb)

S2Cb Sigma Control Type (S2Cb)									
H Main power end, diaphragm									
Pump type: (Figures 1 + 2 = back pressure [bar], figures 3 - 5 = feed rate [l/h]):									
●	16050*	16 bar;	61 l/h	PVT 10 bar	56 l/h	SS	PVDF		
●	16090*	16 bar;	109 l/h	PVT 10 bar	99 l/h	SS	SS		
●	16130*	16 bar;	131 l/h	PVT 10 bar	129 l/h	SS			
●	07120	7 bar;	150 l/h				PVDF		
●	07220	7 bar;	271 l/h				SS		
●	04350	4 bar;	353 l/h	* for PVDF max. 10 bar					
Liquid end material with PTFE Seal:									
PVT	PVDF (max 10 bar)								
SST	Stainless steel								
Diaphragm:									
S	Multilayer safety diaphragm with visual rupture indicator								
A	Multilayer safety diaphragm with rupture signalling; pump stops								
Liquid end version:									
PVDF									
0	No valve springs								
1	With 2 valve springs, Hastelloy C 4: 0.1 bar								
4	With relief valve, Viton® seal, no valve springs								
5	With relief valve, Viton® seal and valve springs								
H	Hygienic head with tri-clamp connection (maximum 10 bar), contact Sydney								
Hydraulic connector:									
1	Union nut and PVC Solvent Weld								
2	Union nut and PVC male BSP								
3	Union nut and PVDF male BSP								
4	Union nut & stainless steel insert inc. w/SS pump								
5	Union nut and PVC Hosetail								
7	Union nut and PVDF Hosetail								
Version:									
0	With ProMinent® logo (standard)								
F	Physiologically harmless (FDA)								
M	Modified								
Electrical Power supply:									
U	1 ph 100 - 230 V ±10% 50 Hz								
Cable and plug:									
C	2 m Australian								
Relays:									
0	No relay (Standard)								
1	Fault relay (230V - 8A)								
3	Fault + pacing relay (24V - 100mA)								
8	0/4-20 mA analogue output + fault indicating relay / pacing relay (24V - 100mA)								
Control Variant:									
0	Manual + External Control + Pulse Control								
1	Manual + External Control + Pulse Control + analog + metering profiles								
6	As 1 + PROFIBUS DP M12								
7	As 1 + CANopen ** WITHOUT OPERATING UNIT								
Overload switch-off									
0	Without overload switch-off								
1	With overload switch-off [Size 07720 exPDT only]								
Operating Unit (HMI):									
0	Operating unit with Click Wheel 0.5 m cable								
4	Operating unit with Click Wheel 2 m cable								
5	Operating unit with Click Wheel 5 m cable								
6	Operating unit with Click Wheel 10 m cable								
X	without operating unit (HMI)								
Dosing Monitor:									
0	Without access code								
1	With access code								
Language:									
EN	English								
Prepack Option									
P*	See options								

Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.

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.

Prepack option P* for PVDF

P0 - 16050 - 16090 - 16130

4 EPDM flat gaskets & CANbus cable if required. Refer page 2.36 for fitting sizes

07120 - 07220 - 04350

4 EPDM flat gaskets & CANBUS cable if required. Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

P2 As P0 but with a 2.0m control cable

P5 As P2 but with a 5.0m control cable

PX As P2 but with a 10.0m control cable

PA As P1 but with a 2.0m control cable

PB As P1 but with a 5.0m control cable

PC As P1 but with a 10.0m control cable

Note: for SS pumps as per P2, P5 & P7 but only require control cables ... prices also as above.

** For manual operating HMI Required 1042550

DN15

DN2

● DN15

● DN25

S2Cb H 12050 PVT S 0 1 0 U C 0 1 0 1 0 EN P2



2.2 ProMinent® Sigma/ 2 Diaphragm Metering Pumps

2.2.5 ProMinent® Sigma Pumps Spare Parts Sigma/ 2

Spare Parts Kits for versions with multilayer safety diaphragm
Types PVTs, PVTA, SSTs, SSTA

Type 16050, 16090, 16130		Part No.
Liquid end FM 130 - DN 15	PVT	1035951
	PVT - FDA	1046472
	SST	1035957
	SST - FDA	1046473
	SST (with 2 valve sets)	1035954
Type 07120, 07220, 04350		Part No.
Liquid end FM 350 - DN 25	PVT	1035953
	PVT - FDA	1046475
	SST	1035960
	SST - FDA	1046472
	SST (with 2 valve sets)	1035959

The spare parts kit contains all components required for maintenance of liquid ends.

PVT version

1 x pump diaphragm
 1 x suction valve
 1 x discharge valve

SST version

1 x pump diaphragm
 2 x valve balls
 1 x seal set
 (4 x composite Gaskets,
 2 x ball seats, 2 x ball seat housings)

**IN ALL CASES CHECK
PUMP MODEL CODE**

Spare Parts Kits for versions with [ORIGINAL diaphragm]
Types PVT0/1/2, SST0/1/2

Type 16050, 16090, 16130		Part No.
Liquid end FM 130 - DN 15	PVT	740324
	SST	740326
	SST (with 2 valve sets)	740328
Type 07120, 07220, 04350		Part No.
Liquid end FM 350 - DN 25	PVT	740325
	SST	740327
	SST (with 2 valve sets)	740329
Diaphragms [ORIGINAL] Types PVT0/1/2, SST0/1/2		Part No.
FM 130 (Type 12050, 12090, 12130)		792495
FM 350 (Type 07120, 07220, 04350)		792496
Multilayer Safety Diaphragms Type PVTs, PVTA, SSTs, SSTA		Part No.
FM 130 (Type 16050, 16090, 16130)		1029771
FM 350 (Type 07120, 07220, 04350)		1033422
Suction - Discharge Valves PVT		Part No.
Type 16050, 16090, 16130	DN15	792517
Type 07120, 07220, 04350	DN25	740615
PTFE Moulding Gasket		Part No.
Type 16050, 16090, 16130	DN15	1019365
Type 07120, 07220, 04350	DN25	1019367
		Part No.
Visual Diaphragm Failure Indicator		1033323
Retrofit rupture signalling switch & cable		1034312



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

2.3.1 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

Sigma/ 3 Diaphragm Metering Pumps

The Sigma/1 motor diaphragm metering pumps are produced with a high-strength inner housing for parts subject to load as well as an additional plastic housing to protect against corrosion. The capacity range extends from 145 - 1003 l/h at a max. back pressure of 12 to 4 bar. Stroke length 6mm.

Under defined conditions and when installed correctly, the reproducibility of the metering is better than $\pm 2\%$ at a stroke length of between 30 % and 100 % (instructions in the operating instructions manual must be followed).

In all motor-driven metering pumps without integrated overload protection, for safety reasons, suitable overload protection must be provided during installation.

Sigma/ 3 control type (S3Cb)

DETACHABLE OPERATING UNIT (HMI)

The optional control via contact or analog signals (e.g. 0/4 - 20 mA) for the Sigma control type results in good adaptability, even to fluctuating metering requirements.

The microprocessor control is an optimum combination of speed control and stop & go operation, i.e. it works in a wide control field with customised fine adjustment.

Moreover it enables an optimum metering result thanks to the metering behaviour of the metering pump being matched to the chemicals or application.

The task of the control is to measure the movement and speed profile in conjunction with the power demand. This leads to a real reduction in the actually required power, which means an increase in efficiency.

Moreover, the analysis of the power demand makes possible an internal overload switching off of the metering pump, i.e. an integral pressure relief function for pump protection without an additional hydraulic assembly such as relief valves and manometer.

Sigma/ 3 basic type (S3Ba)

The ProMinent® Sigma Basic type is a motor driven Metering Pump with no internal electronic control system.

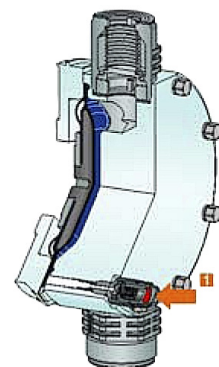
The ProMinent® S3Ba has a number of different drive options, including single and 3 ph. motor (standard IP55), or the three phase AC motor for use in hazardous Exe and EXde areas.

Different flanges are always available so that customers can use their own motor to drive the pump.

DIAPHRAGM RUPTURE WARNING SYSTEM

The liquid end has a patented multilayer safety diaphragm as standard and a visual diaphragm rupture indicator. The diaphragm is coated on both sides with PTFE film. This coating ensures that no leakage to the outside occurs even if the diaphragm ruptures. If the diaphragm ruptures, feed chemical enters between the diaphragm layers and thus triggers a mechanical indication or an alarm via the sensor area.

This concept ensures reliable metering - even under critical operating conditions.



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

2.3.2 Technical Data for Sigma/ 3

at 50 Hz				Max. Stroke Freq.	S3CbH at 60 Hz		Stroking rate at max. back pressure	Suction Lift	Adm. Priming Pressure Suction Side	Connector Suction/ Discharge Side	Shipping Weight	
Pump Capacity at Max. Back Pressure					Pump Capacity at Max. Back Pressure							
Pump type S3BaH	bar	l/h	ml/ stroke	strokes/ min.	bar S3CbH	l/h	strokes/min.	mWG	bar	DN	Optional BSPM/Hosetail	kg
120145 PVT	10	146	33.7	72	10	182	90	5	2	25	1" / 25mm	22
120145 SST	12	146	33.7	72	12	182	90	5	2	25	1" / 25mm	26
120190 PVT	10	208	33.7	103	10	243	120	5	2	25	1" / 25mm	22
120190 SST	12	208	33.7	103	12	243	120	5	2	25	1" / 25mm	26
120270 PVT	10	292	33.8	144	10	365	180	5	2	25	1" / 25mm	22
120270 SST	12	292	33.8	144	12	365	180	5	2	25	1" / 25mm	26
120330 PVT	10	365	33.8	180	10	-	-	5	2	25	1" / 25mm	22
120330 SST	12	365	33.8	180	12	-	-	5	2	25	1" / 25mm	26
070410 PVT	7	410	95.1	72	7	500	90	4	1	32	1 1/2" / 32mm	24
070410 SST	7	410	95.1	72	7	500	90	4	1	32	1 1/2" / 32mm	29
070580 PVT	7	580	95.1	103	7	670	120	4	1	32	1 1/2" / 32mm	24
070580 SST	7	580	95.1	103	7	670	120	4	1	32	1 1/2" / 32mm	29
040830 PVT	4	830	95.1	144	4	1040	180	3	1	32	1 1/2" / 32mm	24
040830 SST	4	830	95.1	144	4	1040	180	3	1	32	1 1/2" / 32mm	29
041030 PVT	4	1030	95.1	180	4	-	-	3	1	32	1 1/2" / 32mm	24
041030 SST	4	1030	95.1	180	4	-	-	3	1	32	1 1/2" / 32mm	29

Note: All pumps that are fitted with integral PRV must have the outlet piped to an appropriate place.

● DN25

● DN32

Liquid End Materials in Contact with Dosing Chemical

Liquid End	Suction/Discharge connector	Valve	Seals	Balls	Integrated Pressure Bleed Valve
PVT	PVDF (polyvinylidene fluoride)	PVDF (polyvinylidene fluoride)	PTFE	glass	PVDF/Viton® or EPDM

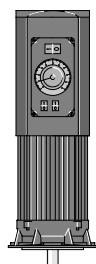
Note: Large PVDF Liquid Ends have Hastalloy C valve discs and Hastalloy C springs which are coated with CTFE (similar to PTFE).

SST	stainless steel no. 1.4581	stainless steel no. 1.4581	PTFE	stainless steel no. 1.4404	stainless steel/Viton®
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Viton® is a registered trademark of DuPont Dow Elastomers.

Motor Data S3Ba

Identity code specifications	Power supply	Δ/Y	Remarks		
S	3-phase, IP 55	220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V	50 Hz 60 Hz	0.37 kW 0.37 kW	
T	3-phase, IP 55	220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V	50 Hz 60 Hz	0.37 kW	with PTC, speed control range 1:5
R	3-phase, IP 55	220 - 240 V/380 - 420 V	50 Hz	0.55 kW	with PTC, speed adjustment range 1:20 with external fan (1-phase 230 V; 50/60Hz, 134W)
M	1-phase AC, IP 55	230 V ± 5 %	50 Hz/ 60 Hz	0.55 kW	
L1	3-phase, II2GEEExIICT3	220 - 240 V/380 - 420 V	50 Hz	0.37 kW	
L2	3-phase, II2GEEExIICT4	220 - 240 V/380 - 420 V	50 Hz	0.37 kW	with PTC, speed control range 1:5
P1	3-phase, II2GEEExIICT3	250 - 280 V/440 - 480 V	60 Hz	0.37 kW	
P2	3-phase, II2GEEExIICT4	250 - 280 V/440 - 480 V	60 Hz	0.37 kW	with PTC, speed control range 1:5
V2	3-phase, II2GEEExIICT4	400 V ± 10 %	50 Hz/ 60 Hz	0.55 kW	Ex-variable speed motor with integrated frequency converter. Mains feed: 3-phase + neutral + earth, adjustment range 1:10



Variable speed motor

Sigma Basic Type Control Functions (S3Ba)

Stroke length actuator/controller

Actuator for automatic stroke length adjustment, actuating period approx. 1 sec for 1% stroke length, 1k Ohm response signal potentiometer, enclosure rating IP 54. Controller consists of actuator with servomotor and integrated servo control for stroke length adjustment via a standard signal. Standard signal input 0/4-20 mA, corresponds to stroke length 0 - 100 %. Automatic/manual operation selection key for manual stroke adjustment. Mechanical status display of actual stroke length value output 0/4-20 mA for remote display.

Variable speed motors with integrated speed controller (identcode characteristic V)

Power supply 1 ph 230 V, 50/60 Hz, 0.18 kW
External control with 0/4-20 mA

Speed Controllers

Speed controllers in metal housing (identcode characteristic Z)
The speed controller assembly consists of a speed controller and a 0.09 kW variable speed.



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

2.3.3 Identity Code Ordering System Basic Type For Sigma/ 3 (S3Ba)

S3Ba Sigma Basic Type (S3Ba) at 50Hz												
H Main Drive, diaphragm												
Pump type: (Figures 1 + 2 = back pressure [bar], figures 3 - 5 = feed rate [l/h]):												
●	120145*	12 bar; 146 l/h	*for PVDF max. 10 bar						PVDF			
●	120190*	12 bar; 208 l/h							SS			
●	120270*	12 bar; 292 l/h										
●	120330*	12 bar; 365 l/h										
●	070410	7 bar; 410 l/h	Size 070410, 070580, 040830 & 0410030 are supplied fitted with DN32 Valves. ALL DN32 valves are fitted with Hastalloy springs. Option 1 & 5 are ONLY available for these sizes.						PVDF			
●	070580	7 bar; 580 l/h							SS			
●	040830	4 bar; 830 l/h										
●	041030	4 bar; 1030 l/h										
Liquid end material with PTFE Seal:												
PVT	PVDF (max 10 bar)											
SST	Stainless steel											
Diaphragm:												
S	Multilayer safety diaphragm with visual rupture indicator											
A	Multilayer safety diaphragm with visual rupture signaling; pump stops											
H	Diaphragm for Hygienic Head											
Liquid end version:												
0	No valve springs (standard)										PVDF	SS
1	With 2 valve springs, Hastelloy C 4: 0.1 bar No Charge DN32										●	
4	With relief valve, Viton® seal, no valve springs										●	
5	With relief valve, Viton® seal and valve springs STD for DN32										●	●
H	Hygienic head with tri-clamp connection (maximum 10 bar), *CONTACT SYDNEY*											
Hydraulic connector:												
1	Union nut and PVC Solvent Weld											
2	Union nut and PVC male BSP										● DN25	● DN32
3	Union nut and PVDF male BSP										● DN25	● DN32
4	Union nut and stainless steel insert inc. w/SS pump											
5	Union nut and PC Hosetail											
7	Union nut and PVDF Hosetail											
Version:												
0	With ProMinent® logo (standard)											
F	Physiologically harmless (FDA)											
M	Modified											
Power supply:												
S	3 ph, 230 V/400 V, 0.37 kW (standard)											
M	1 ph, 230 V 0.55 kW											
L	3 ph, 230 V/400 V, 0.37 kW, 50Hz, (EEExe, EEExde)											
R	3ph, variable speed motor 4 pol. 230/400 V											
T	3 ph, 230 V/400 V 50/60 Hz, with PTC											
1	No motor, flange B5, 80 frame											
2	No motor, flange B5, 71 frame											
Enclosure rating:												
0	IP 55											
1	Exe motor version (ATEX-T3)											
2	Exd motor version (ATEX-T4)											
Stroke sensor:												
0	No stroke sensor (standard)											
2	Pacing relay (read relay)											
3	Stroke sensor (Namur) for explosion-proof appli.											
Stroke length adjustment:												
0	Manual											
1	With stroke positioning motor, 85-265V AC 50/60Hz											
4	With stroke control motor, 4...20 mA 85-265V AC 50/60Hz											
Prepack Option												
P*	See options											
Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.												
Prepack option P* for PVDF												
P0 - 120145 - 120190 - 120270 - 120330												
4 EPDM flat gaskets												
Refer page 2.36 for fitting sizes												
070410 - 070580 - 040830 - 041030												
4 EPDM flat gaskets												
Refer page 2.36 for fitting sizes												
P1 as P0 but with Viton® Flat Gaskets												
240 volt motor supplied with power cord.												
S3Ba	H	120145	PVT	A	0	1	0	S	0	0	0	P1

Note: PRV/Bleed valve available on request.
The preferred option is relief valve in-line.

Prepack option P* for PVDF

P0 - 120145 - 120190 - 120270 - 120330

4 EPDM flat gaskets

Refer page 2.36 for fitting sizes

070410 - 070580 - 040830 - 041030

4 EPDM flat gaskets

Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

240 volt motor supplied with power cord.

S3Ba H 120145 PVT A 0 1 0 S 0 0 0 P1

● DN25
● DN32



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

2.3.4 Identity Code Ordering System for Sigma (S3Cb)

S3Cb Sigma Control Type (S3Cb)

H Main power end, diaphragm

Pump type: (Figures 1 + 2 = back pressure [bar], figures 3 - 5 = feed rate [l/h]):

● 120145	12 bar; 182 l/h	PVDF
● 120190	12 bar; 243 l/h	SS
● 120270	12 bar; 365 l/h	
● 070410	7 bar; 500 l/h	PVDF
● 070580	7 bar; 670 l/h	SS
● 040830	4 bar; 1040 l/h	

Liquid end material with PTFE Seal:

PVT	PVDF (max 10 bar)
SST	Stainless steel

Diaphragm:

S	Multilayer safety diaphragm with visual rupture indicator
A	Multilayer safety diaphragm with rupture signalling; pump stops

Liquid end version:

	PVDF	SS
0	No valve springs	
1	With 2 valve springs, Hastelloy C 4: 0.1 bar <i>No Charge</i> DN32	●
4	With relief valve, Viton® seal, no valve springs	●
5	With relief valve, Viton® seal and valve springs <i>STD for DN32</i>	● ●

Hydraulic connector:

1	Union nut and PVC Solvent Weld		
2	Union nut and PVC male BSP	● DN25	● DN32
3	Union nut and PVDF male BSP	● DN25	● DN32
4	Union nut & stainless steel insert <i>inc. w/SS pump</i>		
5	Union nut and PVC Hosetail		
7	Union nut and PVDF Hosetail		

Version:

0	With ProMinent® logo (standard)
F	Physiologically harmless (FDA)
M	Modified

Electrical Power supply:

U	1 ph 100 - 230 V ±10% 50 Hz
---	-----------------------------

Cable and plug:

C	2 m Australian
---	----------------

Relays:

0	No relay (Standard)
1	Fault relay (230V - 8A)
3	Fault + pacing relay (24V - 100mA)
8	0/4-20 mA analogue output + fault indicating relay / pacing relay (24V - 100mA)

Control Variant:

	Manual + External Control + Pulse Control
1	Manual + External Control + Pulse Control + analog + metering profiles
6	As 1 + PROFIBUS® DP M12
7	As 1 + CANopen ** WITHOUT OPERATING UNIT

Overload switch-off

0	Without overload switch-off
---	-----------------------------

Operating Unit (HMI):

0	Operating unit with Click Wheel 0.5 m cable
4	Operating unit with Click Wheel 2 m cable
5	Operating unit with Click Wheel 5 m cable
6	Operating unit with Click Wheel 10 m cable
X	with out operating unit (HMI)

Dosing Monitor:

0	Without access code
1	With access code

Language:

EN	English
----	---------

Prepack Option

P*	See options
----	-------------

●	DN25
●	DN32

Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.

Note: DN32 Valves only use soft gaskets, due to smooth insert faces. PVT exceptions.

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.

Prepack option P* for PVDF

P0 - 120145 - 120190 - 120270

4 EPDM flat gaskets & CANBUS cable if required.
Refer page 2.36 for fitting sizes

070410 - 070580 - 040830

4 EPDM flat gaskets & CANBUS cable if required.
Refer page 2.36 for fitting sizes

P1	as P0 but with Viton® Flat Gaskets
P2	As P0 but with a 2.0m control cable
P5	As P2 but with a 5.0m control cable
PX	As P2 but with a 10.0m control cable
PA	As P1 but with a 2.0m control cable
PB	As P1 but with a 5.0m control cable
PC	As P1 but with a 10.0m control cable

Note: for SS pumps as per P2, P5 & P7 but only require control cables ... prices also as above.

**** For manual operating HMI Required 1042550**

S3Cb H 120270 PVT S 0 1 0 U C 0 0 0 1 0 EN P2



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

2.3.5 Spare Parts Kits Sigma/ 3

Spare parts kits Sigma/ 3 with multilayer safety diaphragm Types PVTS, PVTA, SSTs, SSTA

The spare parts kits generally contain the consumable components for the liquid ends.

PVT version

- 1 x pump diaphragm
- 1 x suction valve
- 1 x discharge valve

SST version

- 1 x pump diaphragm
- 2 x valve balls or valve discs with spring for DN32
- 1 x seal set (PTFE Gaskets, ball seat discs)

**IN ALL CASES CHECK
PUMP MODEL CODE**

Type 120145, 120190, 120270, 120330		Part No.
Liquid end FM 330 - DN 25	PVT	1034678
	PVT - FDA	1046478
	SST	1034679
	SST - FDA	1046479
	SST (with 2 valve set)	1034680
Type 070410, 070580, 040830, 041030		Part No.
Liquid end FM 1000 - DN 32	PVT	1034681
	SST	1034682
	SST (with 2 valve set)	1034683

Spare Parts Kits for versions with [ORIGINAL] diaphragm Types PVT0/1/2, SST0/1/2

Type 120145, 120190, 120270, 120330		Part No.
Liquid end FM 330 - DN 25	PVT	1005308
	SST	1005310
	SST (with 2 valve set)	1005312
Type 070410, 070580, 040830, 041030		Part No.
Liquid end FM 1000 - DN 32	PVT	1020032
	SST	1005311
	SST (with 2 valve set)	1005313

Pump Diaphragms [ORIGINAL] Types PVT0/1/2, SST0/1/2

	Part No.
FM 330 Type 120145, 120190, 120270, 120330	1004604
FM 1000 Type 070410, 070580, 040830, 041030	1002835

Multilayer Safety Diaphragm Types PVTS, PVTA, SSTs, SSTA

	Part No.
FM 330 Type 120145, 120190, 120270, 120330	1029604
FM 1000 Type 070410, 070580, 040830, 041030	1029603

Suction - Discharge Valves PVT

	Part No.
Sigma/3 120145, 120190, 120270, 120330 DN25	740615
Sigma/ 3 070410, 070580, 040830, 041030 DN32	1020031

PTFE Moulding Gasket

	Part No.
Sigma/ 3 120145, 120190, 120270, 120330 DN10 (Bleed Valve)	1019364
Sigma/ 3 120145, 120190, 120270, 120330 DN25	1019367
Sigma/ 3 Type 070410, 070580, 040830, 041030 DN15 (Bleed Valve)	1019365
Sigma/3 Type 070410, 070580, 040830, 041030 DN32	1019353

	Part No.
Visual Diaphragm Failure Indicator	1033323
Retrofit rupture signalling switch & cable	1034312



2.4 ProMinent® Sigma/ 2 Piston Metering Pumps

2.4.1 Technical Data ProMinent Sigma Piston HK Metering Pumps

at 50 Hz Pump Capacity at Max. Back Pressure				Max. Stroke Freq.	at 60 Hz Pump Capacity at Max. Back Pressure		Stroking rate at max. back pressure	Suction Lift	Adm. Priming Pressure Suction Side	Connector Suction/ Discharge Side	Shipping Weight	
Pump type SBKaHK	bar	l/h	ml/ stroke	strokes/ min.	bar SCKaHK	l/h	strokes/ min.	mWG	approx. 50% of max permissible pressure	bar	Rp-DN	kg
32002 SST	320	1.9	0.46	71	320	2.3	84	5		1/4"	24	
23004 SST	230	4.0	0.52	125	230	4.8	154	5		1/4"	24	
10006 SST	100	6.4	0.55	195	100	6.5	200	5		1/4"	24	
14006 SST	140	6.1	1.42	71	140	7.1	84	4		1/4"	24	
10011 SST	100	11.0	1.43	125	100	13.1	154	4		1/4"	24	
05016 SST	50	16.7	1.43	195	50	17.1	200	4		1/4"	24	
07012 SST	70	12.4	2.90	71	70	14.8	85	5		1/4"	24	
04522 SST	45	22.5	2.91	125	45	26.7	153	4		1/4"	24	
02534 SST	25	34.1	2.92	195	25	35.0	200	4		1/4"	24	
04022 SST	40	22.4	5.26	71	40	26.5	84	4		3/8"	25	
02541 SST	25	41.5	5.37	125	25	49.2	154	4		3/8"	25	
01264 SST	12	64.0	5.45	196	12	65.2	200	4	3/8"	25		

Materials in Contact with Chemicals

Material	Liquid End	Suction / Discharge connection	Seals	Valve Balls	Ball Seat
SST	Stainless steel 1.4571 / 1.4404	Stainless steel 1.4571 / 1.4404	PTFE/PTFE with graphite	Ceramic	Stainless steel 1.4571 / 1.4404

Motor Data

3 ph IP55	400V	50 Hz	0.18 kW	0.7/1.1 A	S
1 ph AC	230V	50 Hz	0.18 kW	1.7/1.5 A	M
3 ph EXe or EXde	400V	50 Hz	0.18 kW	0.7/1.1 A	L
3 ph EXe or EXde	400V	60 HZ	0.18 kW	0.6/1.0 A	P
1 ph AC	115V	60 HZ	0.18 kW	3.3 A	N
1 ph IP55	240V	50/60Hz	0.37 kW	Variable speed motor with integrated frequency converter	V0

The ProMinent Sigma basic version is also available with a standard motor flange (DIN ISO/NEMA standards).
The electrical connection data specified here apply to the standard motor supplied.

2.4.2 Spare Parts Kits Sigma Piston HK

Spare parts kits Sigma HK

Consisting of: 1 ceramic dosing plunger, 4 valve balls, 4 ball seat discs, 2 ball PTFE/graphite ball seals, 2 plunger guides, 14 flat seals, 2 O-rings.

	Part No.
Applies to identity code: 32002, 23004, 10006 FK 0.8 for Sigma HK	1001572
Applies to identity code: 14006, 10011, 05016 FK 12.5 for Sigma HK	910470
Applies to identity code: 07012, 04522, 02534 FK 25 for Sigma HK	910471
Applies to identity code: 04022, 02541, 01264 FK 50 for Sigma HK	910472



2.4 ProMinent® Sigma/ 2 Piston Metering Pumps

2.4.3 Identity Code & Pricing for ProMinent Sigma Piston Metering Pumps **SBKaHK**

SBKa	Sigma Basic Type (SBKaHK)										
	HK Main Displacement component, piston										
		Pump type: (figures 1 - 3 = back pressure [bar], figures 4 + 5 = feed rate [l/h])									
		32002	320 bar, 1.9 l/h								
		23004	230 bar, 4.0 l/h								
		10006	100 bar, 6.4 l/h								
		14006	140 bar, 6.1 l/h								
		10011	100 bar, 11.0 l/h								
		05016	50 bar, 16.7 l/h								
		07012	70 bar, 12.4 l/h								
		04522	45 bar, 22.5 l/h								
		02534	25 bar, 34.1 l/h								
		04022	40 bar, 22.4 l/h								
		02541	25 bar, 41.5 l/h								
		01264	12 bar, 64,2 l/h								
		Liquid end materials:									
		SS	Stainless steel								
		Seal Material:									
		T	PTFE seal								
		Displacement component:									
		4	Piston (oxide ceramic)								
		Liquid end version:									
		0	No spring								
		1	With 2 valve springs, Hastelloy C4, 0.1 bar								
		Hydraulic connection:									
		0	Standard according to technical data								
		Version:									
		0	With ProMinent® (standard)								
		1	Without ProMinent® logo								
		Electrical power supply:									
		S	3 ph. 230 V/400 V 50/60 Hz, 0.18 kW								
		M	1 ph. AC, 230 V/50/60 Hz, 0.18 kW								
		N	1 ph. AC 115 V 60 Hz, 0.18 kW								
		L	3 ph. 230 V/400 V, 50Hz, (EEExe, EEExde)							} See Enclosure Rating	
		P	3 ph. 230 V/400 V, 60Hz, (EEExe, EEExde)								
		R	3ph, variable speed motor 4 pol. 230/400 V								
		V (0)	var. speed motor with integral speed control 230/1/50								
		Enclosure rating:									
		0	IP 55 (standard)								
		1	Exe motor version (ATEX-T3)								
		2	Exde motor version (ATEX-T4)								
		Stroke sensor:									
		0	No stroke sensor (standard)								
		2	Pacing relay (reed relay)								
		3	Stroke sensor (Namur) for hazardous locations								
		Stroke length adjustment:									
		0	Manual (standard)								
		1	With stroke positioning motor, 230V/50/60 Hz								
		2	With stroke positioning motor, 115V/50/60 Hz								
		4	With stroke control motor, 4...20 mA 230 V/50/60Hz								
		6	With stroke control motor, 4...20 mA 115 V/50/60Hz								

SBKa

HK

23004

SS

T

4

0

0

0

S

0

0

0

SBKa HK 23004 SS T 4 0 0 0 S 0 0 0



2.4 ProMinent® Sigma/ 2 Piston Metering Pumps

2.4.4 Identity Code & Pricing for ProMinent Sigma Piston Metering Pumps SCKaHK

SCKa	Sigma Control Type (SCKaHK)														
	HK	Main drive, piston													
		Pump type: (figures 1 - 3 = back pressure [bar], figures 4 + 5 = feed rate [l/h])													
		32002	320 bar, 2.3 l/h												
		23004	230 bar, 4.8 l/h												
		10006	100 bar, 7.6 l/h												
		14006	140 bar, 7.1 l/h												
		10011	100 bar, 13.1 l/h												
		05016	50 bar, 20.0 l/h												
		07012	70 bar, 14.8 l/h												
		04522	45 bar, 26.7 l/h												
		02534	25 bar, 40.8 l/h												
		04022	40 bar, 26.5 l/h												
		02541	25 bar, 49.2 l/h												
		01264	2 bar, 76.0 l/h												
		Liquid end materials:													
		SS	Stainless steel												
		Seal material:													
		T	PTFE seal												
		Displacement component:													
		4	Pistons (oxide ceramic)												
		Liquid end version:													
		0	No spring (standard)												
		1	With 2 valve springs, Hastelloy C 4, 0.1 bar												
		Hydraulic connection:													
		0	Standard threaded connector (according to technical data)												
		Version:													
		0	With ProMinent® logo												
		1	Without ProMinent® logo												
		Electrical power supply:													
		U	1 ph 200-230 V ±10 %, 50/60 Hz												
		Cable and plug:													
		C	2 m Australian												
		Relays:													
		0	No relay												
		1	With fault indicating relay (N/C)												
		3	With fault indicating relay (N/O)												
		4	As 1 with pacing relay												
		5	As 3 with pacing relay												
		Control variant:													
		0	Manual + external with pulse control												
		1	Manual + external + pulse control + analogue												
		4	As 1 + Process Timer												
		5	As 3 + Process Timer												
		Access code:													
		0	No access code												
		1	With access code												
		Metering monitor:													
		0	Input with pulse evaluation												
		1	input with permanent contact evaluation												
		Stroke length adjustment:													
		0	Manual												
		Prepack Option													
		P*	See options												

Note: Prepack option P*

P2 - includes a 2.0m control cable

P5 - includes a 5.0m control cable

PX - includes a 10.0m control cable

SCKa	HK	23004	SS	T	4	0	0	0	U	C	1	0	0	0	0	P2
------	----	-------	----	---	---	---	---	---	---	---	---	---	---	---	---	----

Note: Prepack option P*

P2 - includes a 2.0m control cable

P5 - includes a 5.0m control cable

PX - includes a 10.0m control cable

SCKa HK 23004 SS T 4 0 0 0 U C 1 0 0 0 0 P2



2.5 ProMinent® Makro TZ Diaphragm Metering Pumps

2.5.1 Makro TZ Diaphragm Metering Pumps

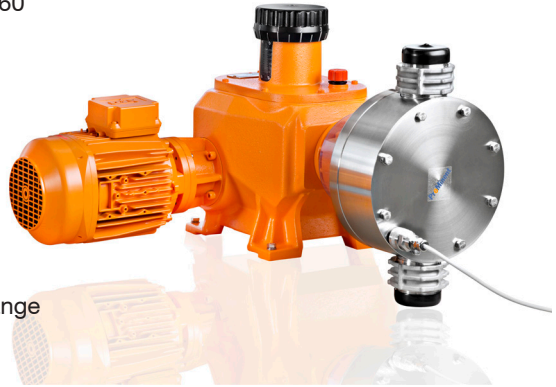
The ProMinent® Makro TZ diaphragm metering pump is a 0.75 kW dual-wound three phase motor driven metering pump, 230/400 V, 50/60 Hz, enclosure rating IP 55, insulation class F.

The stroke length can be adjusted by means of the shift ring mechanism from 0-10 mm (TZMb), with 0.5 % accuracy. The 5-speed gearbox is encased in a cast, seawater resistant, acrylic resin lacquered housing. Liquid ends are available in different material combinations to suit differing applications.

The suction lift varies according to the density and viscosity of the medium, the dimension of the pipework and the pump stroke rate. Reproducibility of metering is better than ± 2 % in the stroke length range from

30 % -100 % subject to defined conditions and correct installation. (You must follow the instructions in the operating instruction manual).

All motor driven metering pumps must be fitted with appropriate cut-out systems for safety reasons.



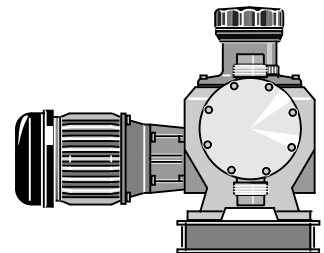
TZMbA Add-On Pumps

The ProMinent® Makro TZ main diaphragm metering pump can be converted to a duplex or triplex pump with the ProMinent® Makro TZ add-on diaphragm pump (several add-on pumps can be operated at reduced back pressure). Multiplex pumps can also be retrofitted by the operator; all the necessary components and fittings are included with the TZMbA. Different stroke rates can be achieved with the add-on pump independently of the main pump as each TZMbA has its own reducing gear. The main power end can be fitted for this purpose with a more powerful drive motor. A base frame is required when using add-on power ends.

Double Head Version TZMbD/TZMbB

The double head version of the ProMinent® Makro TZ is similar to the simplex pump. It is, however, fitted with a second liquid end.

The liquid ends work in push-pull mode by means of a coupling element in the gearbox.



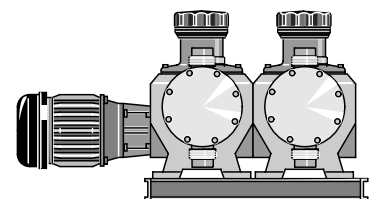
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ACTUATION OF MAKRO TZ METERING PUMPS

- Makro TZ stroke length-actuator/stroke controller
- Makro TZ stroke actuator

Stroke adjustment motor for automatic stroke length adjustment, adjustment time approx. 1 sec. for 1 % stroke length, fitted with 2 limit switches for min. /max. setting, 1 k Ohm feedback potentiometer; enclosure rating: IP 54. Power supply 230 V (± 10 %), 50/60 Hz, 40 W. Mech. stroke length indicator fitted to Makro TZ power end.

Alternative current / higher enclosure rating / Ex-protection to order.



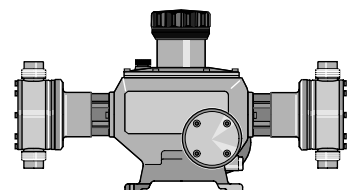
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MAKRO TZ STROKE CONTROLLER

Stroke controller comprising actuator with stroke adjustment motor and integrated microprocessor controller for stroke length adjustment via a standard signal. Technical data see actuator.

Version:

Standard 0/4-20 mA current input, corresponds to 0-100 % stroke length. Change over switch for manual/automatic mode. Key switch for stroke adjustment in manual operating mode. 0/4-20 mA actual value output for remote display.



pk_2_014



2.5 ProMinent® Makro TZ Diaphragm Metering Pumps

2.5.2 Identity Code Makro TZ Diaphragm Metering Pumps

TZMb Motor-Driven Metering Pump TZMb Makro TZ 10 (mechanically driven add-on diaphragm pump)

Drive type

- H** Main drive
- A** Add-on drive
- D** Double main drive
- B** Double add-on drive

Pump type: (digits 1 +2 = back pressure [bar], digits 3-6 = feed rate [l/h])

120260	070430	040840
120340	070570	041100
120430	070720	041400
120510	070860	041670
120650	071070	042100

material version PCT/PPT/TTT max. 10 bar

Liquid end material:

- PC** PVC
- PP** Polypropylene
- SS** Stainless steel
- TT** PTFE + 25% carbon

Seal material:

- T** PTFE

Positive displacement element:

- 1** Multi-layer safety diaphragm with rupture indicator

Liquid end version:

- 0** No valve springs
- 1** With valve springs

Hydraulic connection:

- 0** Standard connection
- 1** PVC union nut and insert
- 2** PP union nut and insert
- 3** PVDF union nut and insert
- 4** SS union nut and insert

Version:

- 0** with ProMinent® logo
- 2** No ProMinent® logo
- A** 0 with ProMinent® logo, with frame, simplex
- B** 0 with ProMinent® logo, with frame, duplex
- C** 0 with ProMinent® logo, with frame, triplex
- M** Modified

Electrical power supply:

- S** 3 ph. 230/400 V 50/60 Hz (dual wound)
- P** 3 ph. 230/400 V 60 Hz (Exe, Exde)
- L** 3 ph. 230/400 V 50 Hz (Exe, Exde)
- R** Variable speed motor 4 pole 230/400 V
- V (0)** Variable speed motor with integr. frequency converter
- V (2)** variable speed motor with integr. frequency converter (Exde)
- Z** Speed control kit
- 4** No motor, with 56 C flange
- 7** No motor, with 120/80 flange
- 8** No motor, with 160/90 flange
- 0** No motor, externally mounted drive

Enclosure rating:

- 0** IP 55 (Standard) ISO class F
- 1** Exe version (ATEX-T3)
- 2** Exde version (ATEX-T4)
- A** ATEX power end

Stroke sensor:

- 0** No stroke sensor
- 1** With stroke sensor (Namura)

Stroke length adjustment:

- 0** 0 Stroke length adjustment, man.
- 1** 230 V stroke actuator
- 2** 115 V stroke actuator
- 3** 230 V 0-20 mA stroke controller
- 4** 230 V 4-20 mA stroke controller
- 5** 115 V 0-20 mA stroke controller
- 6** 115 V 4-20 mA stroke controller (servo motors for Ex zones on request)

Applications:

- 0** Standard

TZMb H 120260PC T 1 0 0 0 S 0 0 0 0



2.5 ProMinent® Makro TZ Diaphragm Metering Pumps

2.5.3 Spare Parts Makro TZ Diaphragm Metering Pumps

The spare parts kit generally consists of liquid end consumables;

- 1 x pump diaphragm
- 1 x suction valve assembly.
- 1 x discharge valve assembly
- 2 x valve balls (Multi-layer safety diaphragm DN 32/ DN 40 with shim and springs)
- 1 x set of seals (O-rings, ball seat discs, ball seat housings)

Delivery unit	Materials in contact with medium	Part no.
FM 650 - DN 25	PCT, PPT, TTT	1025164
	SST	1022896
	SST (without valve cpl.)	1022895

Delivery unit	Materials in contact with medium	Part no.
FM 1100 - DN 32	PCT, PPT, TTT	1025167
	SST	1022917
	SST (without valve cpl.)	1022916

Delivery unit	Materials in contact with medium	Part no.
FM 2100 - DN 40	PCT, PPT, TTT	1025169
	SST	1022930
	SST (without valve cpl.)	1022929

Multi-layer safety diaphragm for TZMb

ProMinent® multi-layer safety diaphragm with diaphragm rupture indication and PTFE Teflon coating on the wetted side.

Pump type	Part No.
Identcode: 120260, 120340, 120430, 120510, 120650; Makro TZ FM 650	1022887
Identcode: 070430, 070570, 070720, 070860, 071070; Makro TZ FM 1100	1022900
Identcode: 040840, 041100, 041400, 041670, 042100; Makro TZ FM 2100	1022921

Makro TZ spare parts kits for TZMa

Delivery unit	Materials in contact with medium	Part no.
Identcode: 120190, 120254, 120317, 120381 Liquid end FM 530 - DN 25	PP	910452
	P	910455
	T	910458
	S (without valve cpl.)	910475
	S	910461
Identcode: 060397, 060529, 060661, 060793 Liquid end FM 530 - DN 25	PP	910453
	P	910456
	T	910459
	S (without valve cpl.)	910476
	S	910462
Identcode: 030750, 031000, 031250, 031500, 031875, 031050, 031395, 031740, 032100, 032500 Liquid end FM 1500/2100	PP	1001573
	P	1001574
	T	1001575
	S (without valve cpl.)	1001577
	S	1001576



2.5 ProMinent® Meta HM Diaphragm Metering Pumps

2.5.4 Spare Parts Kits Meta

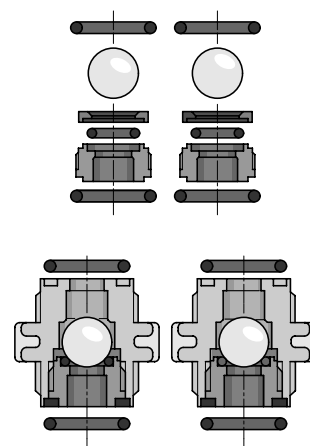
Spare parts kit Meta HM

		Part No.
Liquid end FM 130 - DN 20	PPE	910451
Types: 12065, 12086	PCA	910454
12108, 12130	TTT	910457
	SST	910474
	SST additionally complete with 2 valves	910460
		Part No.
Liquid end FM 260 - DN 20	PPE	910452
Types: 10130, 09173	PCA	910455
07216, 06260, 10173	TTT	910458
10216, 10260, 10200	SST	910475
10263, 10330, 09395	SST additionally complete with 2 valves	910461
	PPT/PCT (MTMa 6mm)	1001570
		Part No.
Liquid end FM 530 - DN 25	PPE	910453
Types: 05265, 04353	PCA	910456
03441, 03530, 05440	TTT	910459
05530, 04400, 04527	SST	910476
03662, 03790	SST additionally complete with 2 valves	910462
	PPT/PCT (MTMa 6mm)	1001568
		Part No.
Liquid end FM 1500 - DN 40	PPE	910463
Types: 030750, 031200	TTT	910465
031400, 031700	SST	910477
	SST additionally complete with 2 valve	910466

The spare parts kit generally consists of the liquid end parts which are subject to wear.

Standard kit for PP/P material version:

- 1 x pump diaphragm
- 1 x suction connector compl.
- 1 x discharge connector compl.
- 1 x set of seals compl. (O rings, ball seat discs, ball seat liners)



pk_2_002

	Part No.
Types: 21606, 24006, 16208, 22508	
12910, 21610, 10812, 21012	for Meta FK 12.5
	910470
Types: 10213, 11313, 07617, 10617	
06122, 10222, 05126, 09926	for Meta FK 25
	910471
Types: 05425, 06025, 04033, 05633	
03241, 05441, 02749, 05249, 0324, 05441	for Meta FK 50
	910472

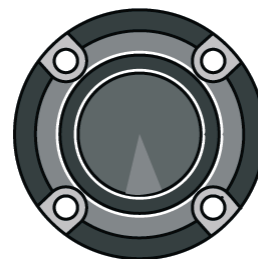
Spare parts kit, Meta HK

- 1 x ceramic plunger
- 4 x valve balls
- 4 x ball seat discs
- 2 x plunger packings of PTFE/graphite
- 2 x plunger guide ribbons 14 gaskets
- 2 x O-rings

Pump diaphragm, PTFE

ProMinent® DEVELOPAN® pump diaphragm of fabric-reinforced EPDM, with large-area vulcanised steel core and PTFE Teflon coating on the media-contacted surface.

	Part No.
Meta FM 130	811470
Meta FM 260	811471
Meta FM 530	811472
Meta FM 1500	811473



pk_1_008_A



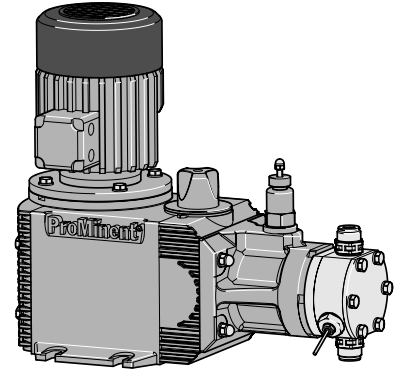
2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.1 Hydro hydraulic Diaphragm Metering Pumps

Hydro main pump H

The hydraulic diaphragm metering pump is a standard sized metering pump with a 0.37/0.75 kW dual wound three phase motor, 230/400 V, 50/60 Hz, enclosure rating IP 55, insulation class F. The stroke length is 15 mm and is adjustable within 1 % accuracy. The cast aluminium housing is combined at any one time with 4 gear reductions. Comes in 2 liquid end sizes and 2 liquid end materials. All pump types are standard sized and fitted with a preset bypass (**relief**) valve integrated into the hydraulics, as well as a multi-layer diaphragm with diaphragm rupture signalling.

Metering reproducibility under defined conditions and when installed correctly, is better than ± 1 % in a stroke length range of between 20 and 100 % (instructions in the operating instructions manual must be followed precisely).



Hydro double-head version

The double-head version is fitted with a second liquid end which operates on a push-pull action (Boxer principle). Each liquid end is provided with a separate stroke length-adjusting knob so that each liquid end can operate at an independent feed rate.

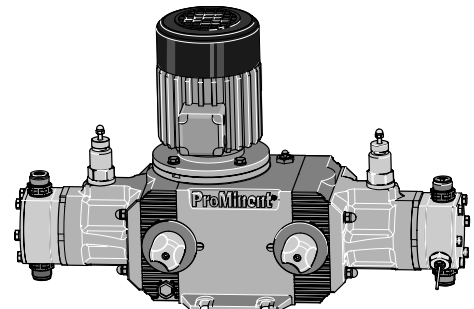
Hydro add-on pumps

For the Hydro add-on pumps the same basic instructions apply as for the simplex pumps. A main power end can be combined with an add-on power end in both simplex and duplex forms.

Hydro Triplex

The Hydro Triplex pump comprises a main drive (arranged centrally) and 2 add-on drives. Typical applications for Triplex pumps include metering applications in medium to upper pressure levels with pulsation reduction.

The pulsation damping features are produced by the offset pressure stroke (offset 120° crank angle).



STROKE LENGTH ACTUATOR/CONTROLLER

Actuator for automatic stroke length adjustment, actuating period approx.

1 sec for 1% stroke length, 1k Ohm response signal potentiometer, enclosure rating IP 54.

Controller consists of actuator with servomotor and integrated servo control for stroke length adjustment via a standard signal. Standard signal input 0/4-20 mA, corresponds to stroke length 0 - 100 %. Automatic/manual operation selection key for manual stroke adjustment. Mechanical status display of actual stroke length value output 0/4-20 mA for remote display.

Variable speed motors with integrated speed controller (identcode characteristic V)

Power supply 1 ph 230 V, 50/60 Hz, 0.18 kW

External control with 0/4-20 mA



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.2 Technical Data Hydro/ 2 & Hydro/ 3

Type HP2aH	With motor 1500 rpm at 50 Hz				With motor 1800 rpm at 60 Hz							
	Delivery rate at max. back pressure		Max. stroke rate		Delivery rate at max. back pressure		Max. stroke rate	Suction height	Perm. admiss. pressure suction side	Connection on suction/ pressure side	Shipping weight	
	bar	l/h	ml/stroke	strokes/ min	psi	l/h / gph	min	mWC	bar	G-DN	kg	
100003*	100	3	0.8	60	1,450	3.6/1.0	72	3.0	5	Rp 1/4	31	
100006*	100	6	0.8	125	1,450	7.0/1.8	150	3.0	5	Rp 1/4	31	
100007*	100	7	0.8	150	1,450	8.0/2.1	180	3.0	5	Rp 1/4	31	
100009*	100	9	0.8	187	1,450	11.0/2.9	224	3.0	5	Rp 1/4	31	
100010*	100	10	0.8	212	–	–	–	3.0	5	Rp 1/4	31	
064007	64	7	2.0	60	928	8.4/2.2	72	3.0	5	G 3/4-10	31	
064015	64	15	2.0	125	928	18.0/4.8	150	3.0	5	G 3/4-10	31	
064018	64	18	2.0	150	928	21.0/5.5	180	3.0	5	G 3/4-10	31	
064022	64	22	2.0	187	928	26.0/6.9	224	3.0	5	G 3/4-10	31	
064025	64	25	2.0	212	–	–	–	3.0	5	G 3/4-10	31	
025019	25	19	5.3	60	362	23.0/6.	172	3.0	5	G 3/4-10**	31	
025040	25	40	5.3	125	362	48.0/12.7	150	3.0	5	G 3/4-10**	31	
025048	25	48	5.3	150	362	58.0/15.3	180	3.0	5	G 3/4-10**	31	
025060	25	60	5.3	187	362	72.0/19.0	224	3.0	5	G 3/4-10**	31	
025068	25	68	5.3	212	–	–	–	3.0	5	G 3/4-10**	31	

Material version PVDF max. 25 bar.

* Material version SST/HCT with double ball valve, valve connection on suction/pressure side with internal thread Rp 1/4 and external, thread G 3/4-DN 10

** HV version for G1-DN 15 designed as standard

Material in contact with media

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel no. 1.4571/1.4404	stainless steel no. 1.4581	PTFE/ZrO2	stainless steel
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic
HCT	Hast. C	Hast. C	PTFE/Hast. C	ceramic

Type HP3aH	With motor 1500 rpm at 50 Hz				With motor 1800 rpm at 60 Hz						
	Delivery rate at max. back pressure		Max. stroke rate		Delivery rate at max. back pressure		Max. stroke rate	Suction height	Perm. admiss. pressure suction side	Connection on suction/ pressure side	Shipping weight
	bar	l/h	stroke	min	psi	l/h / gph	min	mWC		G-DN	kg
100010*	100	10	2.8	60	1,450	12.0/3.2	72	3.0	5	Rp 3/8-10	41
100021*	100	21	2.8	125	1,450	25.0/6.6	150	3.0	5	Rp 3/8-10	41
100025*	100	25	2.8	150	1,450	30.0/7.9	180	3.0	5	Rp 3/8-10	41
100041*	100	41	2.8	187	1,450	37.0/9.8	224	3.0	5	Rp 3/8-10	41
100035*	100	35	2.8	212	–		–	3.0	5	Rp 3/8-10	41
064019	64	19	5.3	60	928	23.0/6.1	72	3.0	5	G 3/4-10**	41
064040	64	40	5.3	125	928	48.0/12.7	150	3.0	5	G 3/4-10**	41
064048	64	48	5.3	150	928	58.0/15.3	180	3.0	5	G 3/4-10**	41
064060	64	60	5.3	187	928	72.0/19.0	224	3.0	5	G 3/4-10**	41
064068	64	68	5.3	212	–		–	3.0	5	G 3/4-10**	41
025048	25	48	13.4	60	362	58.0/15.3	172	3.0	5	G 1-15***	41
025100	25	100	13.4	125	362	120.0/31.7	150	3.0	5	G 1-15***	41
025120	25	120	13.4	150	362	144.0/38.0	180	3.0	5	G 1-15***	41
025150	25	150	13.4	187	362	180.0/47.6	224	3.0	5	G 1-15***	41
025170	25	170	13.4	212	–		–	3.0	5	G 1-15***	41

Material version PVDF max. 25 bar.

* Material version SST/HCT with double ball valve, valve connection on suction/pressure side, with internal thread Rp 3/8 and external, thread G 3/4-DN 10

** HV version for G1-DN 15 designed as standard

*** HV version for G1 1/4"-DN 20 connection

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel no. 1.4571/1.4404	stainless steel no. 1.4581	PTFE/ZrO2	stainless steel
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic
HCT	Hast. C	Hast. C	PTFE/Hast. C	ceramic



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.3 Identity Code Ordering System For Hydro/ 2 - SINGLE HEAD

HP2a Hydro/ 2

H Main power end

Pump type:

100003 100 bar, 3 litre
100006 100 bar, 6 litre
100007 100 bar, 7 litre
100009 100 bar, 9 litre
100010 100 bar, 10 litre

PVT Liquid End Maximum 25 Bar

Pump type:

064007 64 bar, 7 litre
064015 64 bar, 15 litre
064018 64 bar, 18 litre
064022 64 bar, 22 litre
064025 64 bar, 25 litre

Pump type:

025019 25 bar, 19 litre
025040 25 bar, 40 litre
025048 25 bar, 48 litre
025060 25 bar, 60 litre
025068 25 bar, 68 litre

Liquid end material:

PV PVDF
SS Stainless steel
HC Hastalloy C

Seal material:

T PTFE seal

Positive displacement element:

0 Standard multi-layer diaphragm with rupture protection signal

Liquid end version:

0 No valve springs
1 With valve springs
D Double ball valve (only for SST & HCT 100003-100010)
H HV-Version (only for SST version 025019-025060)

Hydraulic connector:

0 Standard threaded connector SEE NOTE IN BOX BELOW
E With DIN ISO flange
F With ANSI flange

Version:

0 With ProMinent® logo
1 Without ProMinent® logo

Power supply:

S 3 ph. 230 V/400 V 50/60 Hz, 0.37kW
L 3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating
P 3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating
R 3ph, variable speed motor 4 pol. 230/400V
V (0) var. speed motor with integral speed control 230/1/50
V (2) var. speed motor with integral speed control Exd

Enclosure rating:

0 IP 55
1 Exe motor version (ATEX-T3)
2 Exde motor version (ATEX-T4)

Stroke sensor:

0 No stroke sensor (standard)
1 Stroke sensor for explosion-proof applications

Stroke length adjustment:

0 Manual (standard)
1 With stroke positioning motor, 230V/50/60Hz
2 With stroke positioning motor, 115V/60Hz
B With stroke control motor, 4...20 mA 230 V/50/60Hz
D With stroke control motor, 4...20 mA 115 V/50/60Hz

Hydraulic oil:

0 Standard
1 Food products grade
2 Temp. < 10 °C

Note: For pumps 100003 to 100010 the connection size is 1/4" BSPF

Connection Sizes for PVDF

P0 - 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 1/2" Male BSPT PVDF adaptor

for SS

064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 3/8" Female BSP insert and union nut

HP2a H 025060 SS T 0 0 0 0 S 0 0 0 0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.4 Identity Code Ordering System For Hydro/ 2 - DOUBLE HEAD

HP2a	Hydro/ 2	NOTE: Capacities shown are per Head									
D Main power end, duplexed											
Pump type:				Pump type:				Pump type:			
100003		100 bar, 3 litre		064007		64 bar, 7 litre		025019		25 bar, 19 litre	
100006		100 bar, 6 litre		064015		64 bar, 15 litre		025040		25 bar, 40 litre	
100007		100 bar, 7 litre		064018		64 bar, 18 litre		025048		25 bar, 48 litre	
100009		100 bar, 9 litre		064022		64 bar, 22 litre		025060		25 bar, 60 litre	
100010		100 bar, 10 litre		064025		64 bar, 25 litre		025068		25 bar, 68 litre	
PVT Liquid End Maximum 25 Bar											
Liquid end material:											
PV		PVDF									
SS		Stainless steel									
HC		Hastalloy C									
Seal material:											
T		PTFE seal									
Positive displacement element:											
0		Standard multi-layer diaphragm with rupture protection signal									
Liquid end version:											
0		No valve springs									
1		With valve springs									
D		Double ball valve (only for SST & HCT 100003-100010)									
H		HV-Version (only for SST version 025019-025060)									
Hydraulic connector:											
0		Standard threaded connector SEE NOTE IN BOX BELOW									
E		With DIN ISO flange									
F		With ANSI flange									
Version:											
0		With ProMinent® logo									
1		Without ProMinent® logo									
Power supply:											
S		3 ph. 230V/400V 50/60 Hz, 0.37kW									
L		3 ph. 230V/400V 50 Hz (EExe, EExde) } See Enclosure Rating									
P		3 ph. 230V/400V 60 Hz (EExe, EExde) } See Enclosure Rating									
R		3ph, variable speed motor 4 pol. 230/400V									
V (0)		var. speed motor with integral speed control 230/1/50									
V (2)		var. speed motor with integral speed control Exd									
Enclosure rating:											
0		IP 55									
1		Exe motor version (ATEX-T3)									
2		Exde motor version (ATEX-T4)									
Stroke sensor:											
0		No stroke sensor (standard)									
1		Stroke sensor for explosion-proof applications									
Stroke length adjustment:											
0		Manual (standard)									
1		With stroke positioning motor, 230V/50/60Hz									
2		With stroke positioning motor, 115V/60Hz									
B		With stroke control motor, 4...20 mA 230V/50/60Hz									
D		With stroke control motor, 4...20 mA 115V/50/60Hz									
Hydraulic oil:											
0		Standard									
1		Food products grade									
2		Temp. < 10 °C									

Note: For pumps 100003 to 100010 the connection size is 1/4" BSPF

Connection Sizes for PVDF
P0 - 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 1/2" Male BSPT PVDF adaptor
for SS
 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 3/8" Female BSP insert and union nut

HP2a
D
025060
SS
T
0
0
0
0
S
0
0
0
0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.5 Identity Code Ordering System For Hydro/ 3 - SINGLE HEAD

HP3a Hydro/ 3

H Main power end

Pump type:		Pump type:		Pump type:	
100010	100 bar, 10 litre	064019	64 bar, 19 litre	025048	25 bar, 48 litre
100021	100 bar, 21 litre	064040	64 bar, 40 litre	025100	25 bar, 100 litre
100025	100 bar, 25 litre	064048	64 bar, 48 litre	025120	25 bar, 120 litre
100031	100 bar, 31 litre	064060	64 bar, 60 litre	025150	25 bar, 150 litre
100035	100 bar, 35 litre	064068	64 bar, 68 litre	025170	25 bar, 170 litre

PVT Liquid End Maximum 25 Bar

Liquid end material:

- PV** PVDF
SS Stainless steel
HC Hastalloy C

Seal material:

- T** PTFE seal

Positive displacement element:

- 0** Standard multi-layer diaphragm with rupture protection signal

Liquid end version:

- 0** No valve springs
1 With valve springs
D Double ball valve (only for SST & HCT 100010-100035, 064019-064060)
H HV-Version (only for SST version)

Hydraulic connector:

- 0** Standard threaded connector *SEE NOTE IN BOX BELOW*
E With DIN ISO flange
F With ANSI flange

Version:

- 0** With ProMinent® logo
1 Without ProMinent® logo

Power supply:

- S** 3 ph. 230 V/400 V 50/60 Hz, 0.75kW
L 3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating
P 3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating
R 3ph, variable speed motor 4 pol. 230/400 V
V (0) var. speed motor with integral speed control 230/1/50
V (2) var. speed motor with integral speed control Exd

Enclosure rating:

- 0** IP 55
1 Exe motor version (ATEX-T3)
2 Exde motor version (ATEX-T4)

Stroke sensor:

- 0** No stroke sensor (standard)
1 Stroke sensor for explosion-proof applications

Stroke length adjustment:

- 0** Manual (standard)
1 With stroke positioning motor, 230V/50/60Hz
2 With stroke positioning motor, 115V/60Hz
B With stroke control motor, 4...20 mA 230 V/50/60Hz
D With stroke control motor, 4...20 mA 115 V/50/60Hz

Hydraulic oil:

- 0** Standard
1 Food products grade
2 Temp. < 10 °C

Note: For pumps 100010 to 100035 the connection size is 3/8" BSPF

Connection Sizes for PVDF

P0 - 064019 - 064040 - 064048 - 064060 - 064068
 1/2" Male BSPT PVDF adaptor
 025048 - 025100 - 025120 - 025150 - 025170
 3/4" Male BSPT PVDF adaptor

for SS

064019 - 064040 - 064048 - 064060 - 064068
 3/8" Female BSP insert and union nut
 025048 - 025100 - 025120 - 025150 - 025170
 1/2" Female BSP insert and union nut

HP3a H 100035 SS T 0 0 0 0 S 0 0 0 0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.6 Identity Code Ordering System For Hydro/ 3 - DOUBLE HEAD

HP3a Hydro/ 3 NOTE: Capacities shown are per Head			
D Main power end, duplexed			
Pump type:		Pump type:	
100010	100 bar, 10 litre	064019	64 bar, 19 litre
100021	100 bar, 21 litre	064040	64 bar, 40 litre
100025	100 bar, 25 litre	064048	64 bar, 48 litre
100031	100 bar, 31 litre	064060	64 bar, 60 litre
100035	100 bar, 35 litre	064068	64 bar, 68 litre
PVT Liquid End Maximum 25 Bar		025048	25 bar, 48 litre x 2
		025100	25 bar, 100 litre x 2
		025120	25 bar, 120 litre x 2
		025150	25 bar, 150 litre x 2
		025170	25 bar, 170 litre x 2
Liquid end material:			
PV PVDF			
SS Stainless steel			
HC Hastalloy C			
Seal material:			
T PTFE seal			
Positive displacement element:			
0 Standard multi-layer diaphragm with rupture protection signal			
Liquid end version:			
0 No valve springs			
1 With valve springs			
D Double ball valve (only for SST & HCT 100010-100035, 064019-064060)			
H HV-Version (only for SST version)			
Hydraulic connector:			
0 Standard threaded connector SEE NOTE IN BOX BELOW			
E With DIN ISO flange			
F With ANSI flange			
Version:			
0 With ProMinent® logo			
1 Without ProMinent® logo			
Power supply:			
S 3 ph. 230 V/400 V 50/60 Hz, 0.75kW			
L 3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating			
P 3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating			
R 3ph, variable speed motor 4 pol. 230/400 V			
V (0) var. speed motor with integral speed control 230/1/50			
V (2) var. speed motor with integral speed control Exd			
Enclosure rating:			
0 IP 55			
1 Exe motor version (ATEX-T3)			
2 Exde motor version (ATEX-T4)			
Stroke sensor:			
0 No stroke sensor (standard)			
1 Stroke sensor for explosion-proof applications			
Stroke length adjustment:			
0 Manual (standard)			
1 With stroke positioning motor, 230V/50/60Hz			
2 With stroke positioning motor, 115V/60Hz			
B With stroke control motor, 4...20 mA 230 V/50/60Hz			
D With stroke control motor, 4...20 mA 115 V/50/60Hz			
Hydraulic oil:			
0 Standard			
1 Food products grade			
2 Temp. < 10 °C			

Note: For pumps 100010 to 100035 the connection size is 3/8" BSPF

Connection Sizes
for PVDF
 064019 - 064040 - 064048 - 064060 - 064068
 1/2" Male BSPT PVDF adaptor
 025048 - 025100 - 025120 - 025150 - 025170
 3/4" Male BSPT PVDF adaptor
for SS
 064019 - 064040 - 064048 - 064060 - 064068
 3/8" Female BSP insert and union nut
 025048 - 025100 - 025120 - 025150 - 025170
 1/2" Female BSP insert and union nut

HP3a D 025120 SS T 0 0 0 0 S 0 0 0 0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.7 Technical Data Hydro/ 4

Type HP4aH	With motor 1500 rpm at 50 Hz						With motor 1800 rpm at 60 Hz			
	Delivery rate at max. back pressure		Max. stroke rate	Delivery rate at max. back pressure		Max. stroke rate	Suction height	Perm. admiss. pressure suction side	Connection on suction/ pressure side	Shipping weight
	bar	l/h	strokes/ min	psi	l/h	strokes/ min	mWC	bar	G-DN	kg
250130	25	130	71	363	155	86	3	1	1-1/2" 25	69
250190	25	190	103	363	230	124	3	1	1-1/2" 25	69
250250	25	250	136	363	300	164	3	1	1-1/2" 25	69
250350	25	350	188	363	420	225	3	1	1-1/2" 25	69
250400	25	400	214	-	-	-	3	1	1-1/2" 25	69
160210	16	210	71	232	250	86	3	1	1-1/2" 25	76
160300	16	300	103	232	360	124	3	1	1-1/2" 25	76
160400	16	400	136	232	480	164	3	1	1-1/2" 25	76
160550	16	550	188	232	660	225	3	1	1-1/2" 25	76
160625	16	625	214	–	–		3	1	1-1/2" 25	76
100330	10	330	71	145	400	86	3	1	2" 32	87
100480	10	480	103	145	580	124	3	1	2" 32	87
100635	10	635	136	145	760	164	3	1	2" 32	87
100880	10	880	188	145	1050	225	3	1	2" 32	87
101000	10	1000	214	–	–		3	1	2" 32	87
070465	7	465	71	102	560	86	3	1	2-1/4" 40	96
070670	7	670	103	102	805	124	3	1	2-1/4" 40	96
070890	7	890	136	102	1070	164	3	1	2-1/4" 40	96
071230	7	1230	188	102	1450	225	3	1	2-1/4" 40	96
071400	7	1400	214	-			3	1	2-1/4" 40	96

Material in contact with media

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel 1.4404	stainless steel no. 1.4401	PTFE/PTFE	stainless steel 1.4404
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	glass
HCT	Hast. C	Hast. C	PTFE/PTFE	Hast. C

DN32 and DN40 plate valves		Suction/Discharge connector	Seals/seats	Valve plates	Springs
Material	Liquid End				
SST	stainless steel 1.4404	stainless steel no. 1.4401	PTFE/PTFE	stainless steel 1.4404	Hast. C
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic	C-CTFE
HCT	Hast. C	Hast. C	PTFE/PTFE	Hast. C	C-CTFE

Motor Data

Identity code	Power supply	Remarks
specification		
S	3 ph, IP 55 220-240 V/380-420 V 50 Hz 1.1 kW 250-280 V/440-480 V 60 Hz	
T	3 ph, IP 55 220-240 V/380-420 V 50 Hz 1.1 kW 265-280 V/440-480 V 60 Hz	With PTC, speed control range 1:5
R	3 ph, IP 55 230 V/400 V 50/60 Hz 1.5 kW	With PTC, speed control range 1:20, with external fan 1 ph 230 V; 50/60 Hz
V0	3 ph, IP 55 400 V 50/60 Hz 1.5 kW	Variable speed motor w/integrated frequency converter
L1	3 ph, II2GEEeIICT3 220-240 V/380-420 V 50 Hz 1.1 kW	
L2	3 ph, II2GEEeIICT4 220-240 V/380-420 V 50 Hz 1.1 kW	With PTC, speed control range 1:5
P1	3 ph, II2GEEeIICT3 254-277 V/440-480 V 60 Hz 1.1 kW	
P2	3 ph, II2GEEeIICT4 254-277 V/440-480 V 60 Hz 1.1 kW	With PTC, speed control range 1:5
V2	3 ph, II2GEEeIICT4 400 V ±10 % 50/60 Hz 1.5 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 2005/32/EC (IE2 standard).

Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 94/9/EC 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.



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.8 Identity Code Ordering System For Hydro/ 4 - SINGLE HEAD

HP4a Hydro/ 4			
H Main power end			
Pump type:		Pump type:	
250130	25 bar, 130 l/h	PVT	160210 16 bar, 210 l/h PVT
250190	25 bar, 190 l/h	SS	160300 16 bar, 300 l/h SS
250250	25 bar, 250 l/h		160400 16 bar, 400 l/h
250350	25 bar, 350 l/h		160550 16 bar, 550 l/h
250400	25 bar, 400 l/h		160625 16 bar, 625 l/h
100330	10 bar, 330 l/h	PVT	070465 7 bar, 465 l/h PVT
100480	10 bar, 480 l/h	SS	070670 7 bar, 670 l/h SS
100635	10 bar, 635 l/h		070890 7 bar, 890 l/h
100880	10 bar, 880 l/h		071230 7 bar, 1230 l/h
101000	10 bar, 1000 l/h		071400 7 bar, 1400 l/h
Liquid end material:			
PV	PVDF		
SS	Stainless steel		
HC	Hastalloy C Price on Application		
Seal material:			
T	PTFE seal		
Positive displacement element:			
0	Standard multi-layer diaphragm with rupture protection signal		
Liquid end version:			
0	No valve springs		
1	With valve springs DN32 and DN40		
Hydraulic connector:			
0	Standard threaded connector		
E	With DIN ISO flange		
F	With ANSI flange		
Version:			
0	With ProMinent® logo, with overpressure signal		
1	Without ProMinent® logo, with overpressure signal		
M	Modified		
Power supply:			
S	3 ph. 230 V/400 V 50/60 Hz, 1.1kw		
L	3 ph. 230 V/400 V 50 Hz (Exe, Exd) } See Enclosure Rating		
P	3 ph. 230 V/400 V 60 Hz (Exe, Exd) } See Enclosure Rating		
R	3ph, variable speed motor 4 pol. 230/400 V 1.5 kw		
V (0)	var. speed motor with integral speed control		
V (2)	var. speed motor with integral speed control Exd		
Enclosure rating:			
0	IP 55		
1	Exe motor version (ATEX-T3)		
2	Exde motor version (ATEX-T4)		
Stroke sensor:			
0	No stroke sensor (standard)		
1	Stroke sensor for explosion-proof applications		
Stroke length adjustment:			
0	Manual (standard)		
1	With stroke positioning motor, 230V/50/60Hz		
2	With stroke positioning motor, 115V/60Hz		
B	With stroke control motor, 4...20 mA 230V/50/60Hz		
D	With stroke control motor, 4...20 mA 115V/50/60Hz		
Hydraulic oil:			
0	Standard		
1	Food products grade		
2	Low Temp. to -25 °C		

Connection Sizes for PVDF
P0 - 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT PVDF Adaptor
for SS
 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Female BSPF SS Insert and Union Nut
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/4" Female BSPF SS Insert and Union Nut

HP4aH 025130 SS T 0 0 0 0 S 0 0 0 0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.9 Identity Code Ordering System For Hydro/ 4 - DOUBLE HEAD

HP4a Hydro/ 4 **NOTE: Capacities shown are per Head**

D Main power end Double Head V\version

Pump type:

250130 25 bar, 130 l/h
250190 25 bar, 190 l/h
250250 25 bar, 250 l/h
250350 25 bar, 350 l/h
250400 25 bar, 400 l/h

PVT
SS

Pump type:

160210 16 bar, 210 l/h
160300 16 bar, 300 l/h
160400 16 bar, 400 l/h
160550 16 bar, 550 l/h
160625 16 bar, 625 l/h

PVT
SS

100330 10 bar, 330 l/h
100480 10 bar, 480 l/h
100635 10 bar, 625 l/h
100880 10 bar, 880 l/h
101000 10 bar, 1000 l/h

PVT
SS

070465 7 bar, 465 l/h
070670 7 bar, 670 l/h
070890 7 bar, 890 l/h
071230 7 bar, 1230 l/h
071400 7 bar, 1400 l/h

PVT
SS

Liquid end material:

PV PVDF
SS Stainless steel
HC Hastalloy C *Price on Application*

Seal material:

T PTFE seal

Positive displacement element:

0 Standard multi-layer diaphragm with rupture protection signal

Liquid end version:

0 No valve springs
1 With valve springs DN32 and DN40

Hydraulic connector:

0 Standard threaded connector
E With DIN ISO flange
F With ANSI flange

Version:

0 With ProMinent® logo, with overpressure signal
1 Without ProMinent® logo, with overpressure signal
M Modified

Power supply:

S 3 ph. 230 V/400 V 50/60 Hz, 1.1kw
L 3 ph. 230 V/400 V 50 Hz (Exe, Exd) } See Enclosure Rating
P 3 ph. 230 V/400 V 60 Hz (Exe, Exd) } See Enclosure Rating
R 3ph, variable speed motor 4 pol. 230/400 V 1.5 kw
V (0) var. speed motor with integral speed control
V (2) var. speed motor with integral speed control Exd

Enclosure rating:

0 IP 55
1 Exe motor version (ATEX-T3)
2 Exde motor version (ATEX-T4)

Stroke sensor:

0 No stroke sensor (standard)
1 Stroke sensor for explosion-proof applications

Stroke length adjustment:

0 Manual (standard)
1 With stroke positioning motor, 230V/50/60Hz
2 With stroke positioning motor, 115V/60Hz
B With stroke control motor, 4...20 mA 230 V/50/60Hz
D With stroke control motor, 4...20 mA 115 V/50/60Hz

Hydraulic oil:

0 Standard
1 Food products grade
2 Low Temp. to -25 °C

Connection Sizes for PVDF

P0 - 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT PVDF Adaptor

for SS

250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Female BSPF SS Insert and Union Nut
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/4" Female BSPF SS Insert and Union Nut

HP4aH 025130 SS T 0 0 0 0 S 0 0 0 0



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.10 Spare Parts Kits

The spare parts kits generally contain the consumable components for the liquid ends.

Supplied as standard for SST material version

- 1 x dosing diaphragm
- 2 x valve balls
- 1 x seal set

Supplied as standard for PVT material version

- 1 x dosing diaphragm
- 1 x suction connector set
- 1 x discharge connector set
- 1 x seal set

Spare parts kits Hydro/ 2

Applies to identity code:		Part No.
Type 100010, 100009, 100007, 100006, 100003, 064025, 064022, 064018, 064015, 064007,		
FMH 25 - DN 10	PVT	1005548
	SST	1005549
	SST (with 2 valve set)	1005550

Applies to identity code:

Type 025068, 025060, 025048, 025040, 025019

FMH 60 - DN 10	PVT	1005552
	SST	1005553
	SST (with 2 valve set)	1005554

Spare parts kits Hydro/ 3

Applies to identity code:		Part No.
Type 100035, 100031, 100025, 100021, 100010, 064068, 064060, 064048, 064040, 064019		
FMH 60 - DN 10	PVT	1005552
	SST	1005553
	SST (with 2 valve set)	1005554

Applies to identity code:

Type 025170, 025150, 025120, 025100, 025048

FMH 150 - DN 15	PVT	1005556
	SST	1005557
	SST (with 2 valve set)	1005558

Pump Diaphragms PTFE/SS - 1.4404

FMH 25 applies to identity code:	Part No.
Type 100010, 100009, 100007, 100006, 100003, 064025, 064022, 064018, 064015, 064007,	1005545
FMH 60 applies to identity code:	
Type 025068, 025060, 025048, 025040, 025019, 100035, 100031, 100025, 064068, 100021, 100010, 064060, 064048, 064040, 064019	1005546
FMH 150 applies to identity code:	
025150, 025120, 025100, 025048	1005547

Pump Diaphragms PTFE/Hastalloy C covered with PTFE

FMH 25 applies to identity code:	Part No.
064025, 064022, 064018, 064015, 064007	1006481
FMH 60 applies to identity code:	
025068, 025060, 025048, 025040, 025019, 064068, 064060, 064048, 064040, 064019	1006482
FMH 150 applies to identity code:	
025170, 025150, 025120, 025100, 025048	1006483



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.10 Spare Parts Kits

Spare parts kits Hydro/ 4

Applies to identity code:		Part No.
Type 250130, 250190, 250250, 250350, 250400		
FMH 400 - DN 25	PVT	1023057
	SST	1040812
	SST (with 2 valve set)	1040813
Applies to identity code:		Part No.
Type 160210, 160300, 160400, 160550, 160625		
FMH 625 - DN 32	PVT	1040863
	SST	1040824
	SST (with 2 valve set)	1040825
Applies to identity code:		Part No.
Type 100330, 100480, 100635, 100880, 101000		
FMH 1000 - DN 32	PVT	1040866
	SST	1040826
	SST (with 2 valve set)	1040827
Applies to identity code:		Part No.
Type 070465, 070670, 070890, 071230, 071400		
FMH 1400 - DN 40	PVT	1040869
	SST	1040828
	SST (with 2 valve set)	1040829

Hydro /4 Diaphragm PTFE/1.4404

	Part No.
Type 250130, 250190, 250250, 250350, 250400	1040808
Type 160210, 160300, 160400, 160550, 160625	1040809
Type 100330, 100480, 100635, 100880, 101000	1040810
Type 070465, 070670, 070890, 071230, 071400	1040811

Hydro /4 Diaphragm PTFE/Hast.C coated

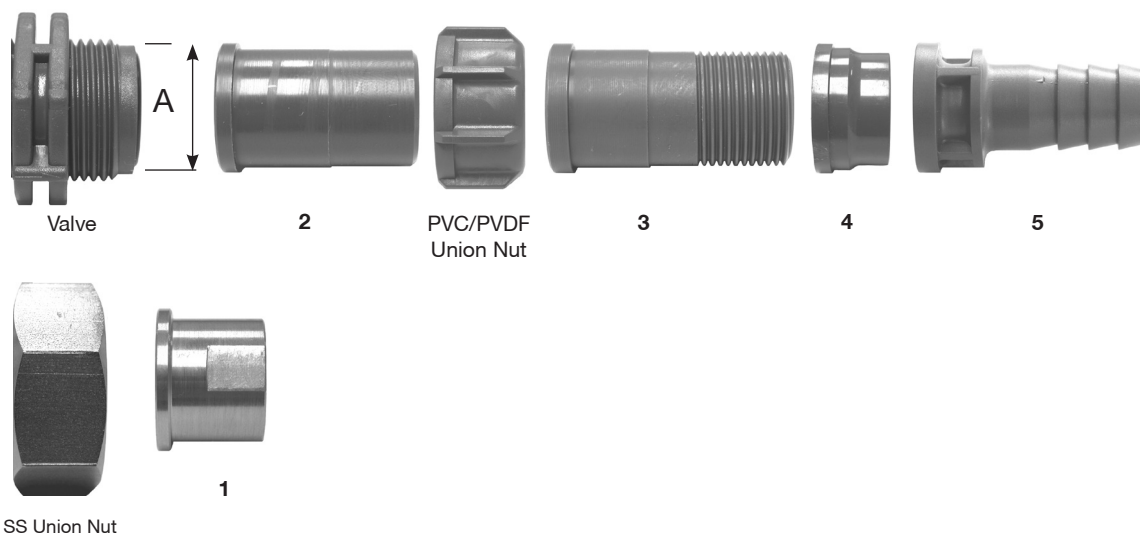
	Part No.
Type 250130, 250190, 250250, 250350, 250400	1040874
Type 160210, 160300, 160400, 160550, 160625	1040875
Type 100330, 100480, 100635, 100880, 101000	1040876
Type 070465, 070670, 070890, 071230, 071400	1040877



2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6.11 Adaptor Sizes for Motor Driven Pumps

Standard Sizes & Fittings for Motor Driven Pumps



Size		'A' Actual dia.	'A'	1 SSF Socket	2 SWM PVC	3 BSPM PVC/PVDF	4 SWF PVC	5 Hosetail PVC/PVDF
DN10	●	21.3mm	3/4"	3/8" BSP	15 NB	1/2"		16 mm
DN15	●	32.8 mm	1"	1/2" BSP	20 NB	3/4"		20 mm
DN20	●	41.6 mm	1-1/4"	3/4" BSP	25 NB	1"		25mm
DN25	●	47.5 mm	1-1/2"	1" BSP	25 NB	1"		25mm
DN32	●	58.8 mm	2"	2" BSP		1-1/2"	32 NB	40mm
DN40		65.1 mm	2-1/4"	1-1/2" BSP				

		Suction Discharge	PRV
Sigma/ 1	12017 12035 10050	DN10 ●	16 mm
	10022 10044 07065	DN10 ●	16 mm
	07042 04084 04120	DN15 ●	16 mm
Sigma/ 2	12050 12090 12130	DN15 ●	16 mm
	07120 07220 04350	DN 25 ●	16 mm
Sigma/ 3	120145 120190 120270 120330	DN 25 ●	DN10
	070410 070580 040830 041030	DN 32 ●	DN20
Hydro/ 2	ALL	DN 10 ●	
Hydro/ 3	ALL 100 bar & 64 bar pumps	DN 10 ●	
	ALL 25 bar pumps	DN 15 ●	

Gaskets

MOULDED PVDF MATERIAL

Size	Part No.
DN10 3/4"	1019364
DN15 1"	1019365
DN20 1-1/4"	1019366
DN25 1-1/2"	1019367
DN32 2"	1019353
DN40 2-1/4"	1019368

VITON SOFT FLAT

Part No.
V483983
V483984
V483985
V483986
V1000308

EPDM SOFT FLAT

Part No.
E483983
E483984
E483985
E483986
E1000308



2.7 ProMinent® VAMb, VAMc & VAMd Spare Parts

2.7.1 Spare Parts Kits

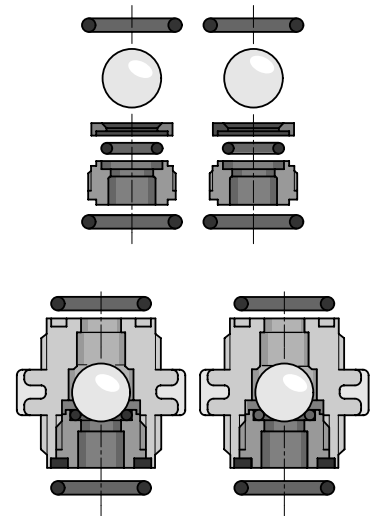
The spare parts kit generally consists of the liquid end parts which are subject to wear.

Standard kit for PVT material version:

- 1 x pump diaphragm
- 1 x suction connector compl.
- 1 x discharge connector compl.
- 1 x set of seals complete (gaskets, ball seat discs)

Standard kit for SS stainless steel version:

- 1 x pump diaphragm
- 2 x valve balls
- 1 x set of seals complete (gaskets, ball seat discs)



pk_2_002

Spare parts kit Vario

Part No.

VAMb, 12017, 12026, 12042		
VAMc, 10008, 10016, 07026, 07042 & VAMd 12017, 12042		
Liquid end FM42 - DN 10	PVT	1003641
VAMb, 10025, 09039, 07063		
VAMc, 07012, 07024, 04039, 04063 & VAMd 10025, 09039, 07063		
Liquid end FM 63 - DN 10	PVT	1003642
Liquid end FM 63 - DN 10	PCB	910759
VAMb, 06047, 05075, 04120		
Liquid end FM 120 - DN 15	PVT	1003643

Dosing diaphragms

	Part No.
VAMb, 12017, 12026, 12042	811458
VAMc, 10008, 10016, 07026, 07042	811458
VAMd 12017, 12042	811458
VAMb, 10025, 09039, 07063	811459
VAMc, 07012, 07024, 04039, 04063	811459
VAMd 10025, 09039, 07063	811459
VAMb, 06047, 05075, 04120	811460



pk_1_008_A



2.8 ProMinent® Makro/ 5 Piston Metering Pumps

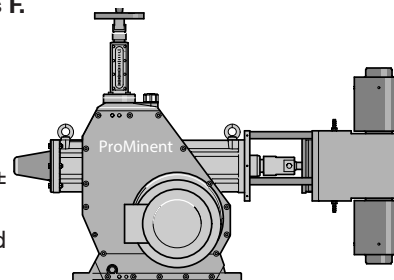
2.8.1 ProMinent® Piston Metering Pumps Makro/ 5

The ProMinent® Makro/ 5 piston Metering Pump is driven by a dual wound three phase, 3 kW motor, 230/400 V, 50/60 Hz, enclosure rating IP 55, insulation class F.

The stroke length is adjustable between 0...50 mm.

The gearbox is housed in a sea water-resistant acrylic resin lacquered cast housing.

The piston liquid end is made of stainless steel 1.4571 and pistons are made of oxide ceramic or stainless steel with a ceramic wear-resistant coating. Dosing reproducibility under defined conditions and when installed correctly, is better than $\pm 0.5\%$ in a stroke length range of between 10 and 100 % (instructions in the operating instructions manual must be followed). The suction lift varies with the density and viscosity of the dosing chemical, the connection tubing and the pump stroking rate. For all motor-driven Metering Pumps, for safety reasons, suitable overload protection must be provided during installation. A tensioning key is supplied as standard for re-tensioning packing rings.

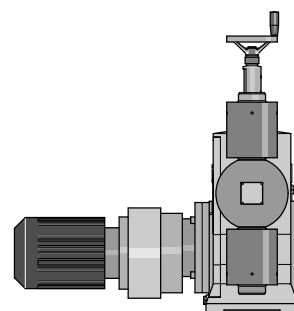


pk_2_075

Capacity with 1500 rpm motor and 50Hz

M5KaH

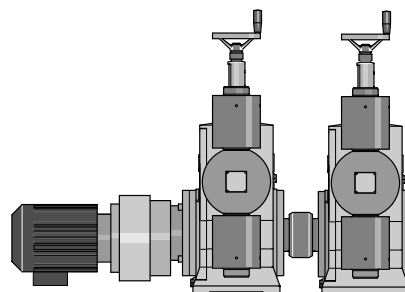
Bar l/hr	Bar l/hr	Bar l/hr	Bar l/hr	Bar l/hr
320 0038	140 0120	050 0335	025 0658	012 1343
320 0048	140 0151	050 0419	025 0822	012 1678
320 0066	140 0207	050 0576	025 1129	012 2305
320 0085	140 0267	045 0744	023 1458	012 2977
320 0100	100 0314	035 0872	018 1710	010 3491
240 0070	080 0214	035 0483	016 0970	006 2269
240 0088	080 0268	035 0604	016 1212	006 2837
240 0121	080 0368	035 0829	016 1665	006 3896
216 0157	070 0476	030 1071	016 2150	006 5031
170 0184	056 0558	025 1257	016 2522	006 6000



pk_2_076

ProMinent® Makro/ 5 AK add-on pumps

The ProMinent® Makro/ 5 AK add-on piston Metering Pump can be used with the ProMinent® Makro/ 5 HK piston main power end to expand to a duplex or triplex system. (At reduced backpressures up to four add-on power ends can be combined with a single main power end.). The customer can retrofit the add-on power ends on site. If required, the main power end can be fitted with a 3 kW or a 5.5 kW motor. When using add-on power ends a mounting frame should be provided.



pk_2_077

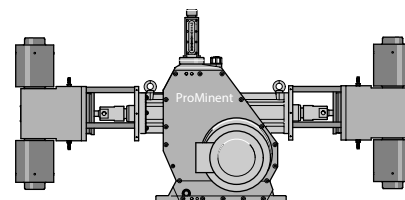
ProMinent® Makro/ 5 double head version

HDK (MAIN PUMP)/AKD (ADD-ON PUMP)

For the ProMinent® Makro/ 5 HKD and AKD the same basic instructions as for the simplex pumps apply. It is also fitted, however, with a second liquid end.

The liquid ends operate in push-pull mode.

NOTE: ALL \$ P.O.A. CONTACT SYDNEY OFFICE



pk_2_078



2.9 ProMinent® ORLITA® Metering Pumps

2.9.1 ProMinent® ORLITA® Metering Pumps

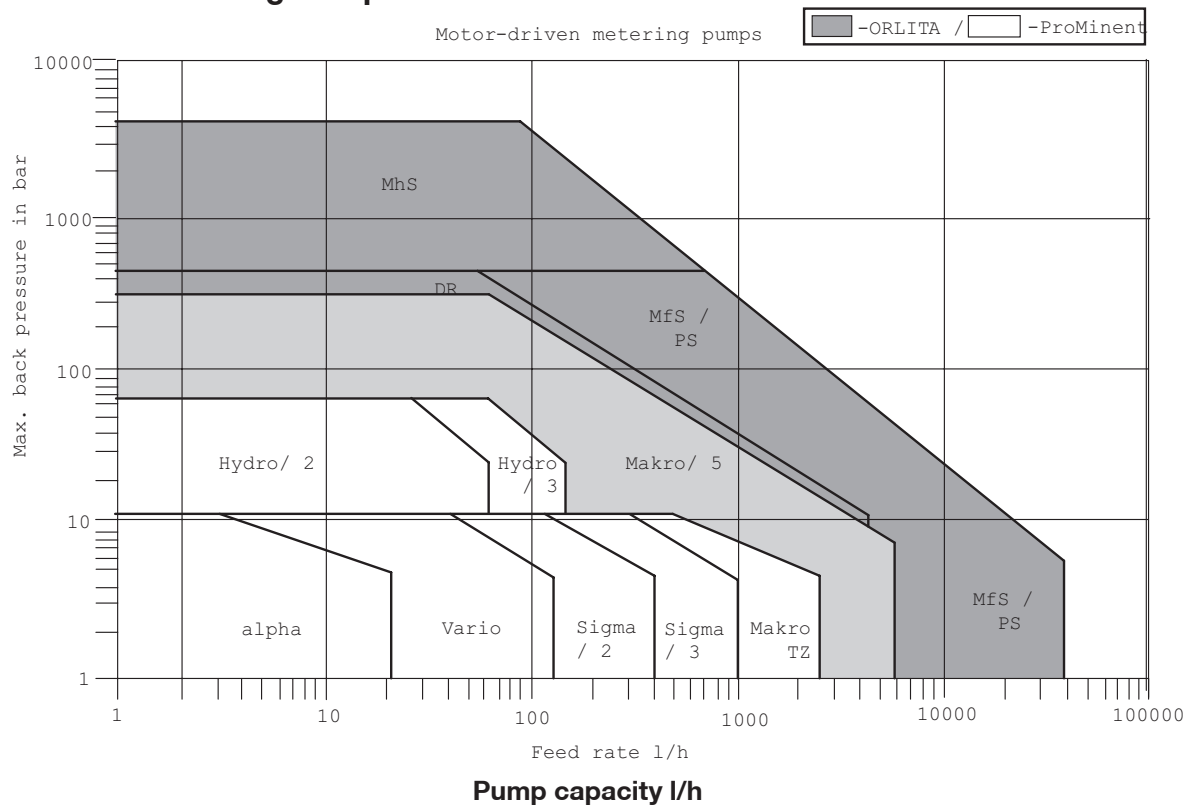
ORLITA® Metering Pumps are motor-driven, oscillating positive displacement pumps with adjustable stroke volumes.

There are four series available:

- Mf diaphragm Metering Pumps with hydraulically driven PTFE double diaphragms
- Mh diaphragm Metering Pumps with hydraulically driven metal diaphragms
- PS piston Metering Pumps with stuffing box packing rings
- DR valve-free piston Metering Pumps

ORLITA® Metering Pumps have established a wide application range in process technology, due in part to their cost effectiveness.

Motor-driven Metering Pumps



NOTE: FOR ALL \$ P.O.A. CONTACT SYDNEY OFFICE



2.9 ProMinent® ORLITA® Metering Pumps

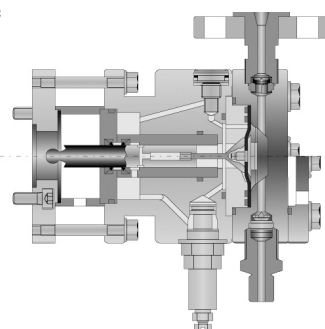
2.9.2 MF Diaphragm Liquid End

Hydraulically operating diaphragm liquid end. A double PTFE diaphragm forms a hermetic seal between the liquid and hydraulic ends.

During the discharge stroke the diaphragm is balanced by the hydraulic liquid only. During the suction stroke the diaphragm operation is aided by the mechanical coupling. This combined principle offers an extraordinary suction lift capability of the Mf pump.

Integrated in the hydraulic chamber are the pressure relief valve and an automatic venting valve. The valveless forced reflow of the internal oil leakage operates wearfree and guarantees optimum dosing accuracy.

The pump check valves are of cone type. This guarantees low wear, short pressure loss ($NPSH_R$) and self-cleaning.



2.9.3 Diaphragm Head MH

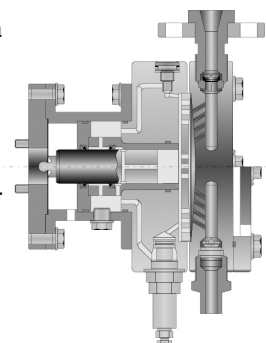
Hydraulic actuated diaphragm head. A metal diaphragm hermetically separates the wetted area from the hydraulic chamber.

Both during discharge and suction stroke the diaphragm is balanced by the hydraulic liquid which has been displaced by the piston.

Integrated in the hydraulic chamber are the pressure relief valve and an automatic venting valve. The valveless forced reflow of the internal oil leakage operates wearfree and guarantees optimum dosing accuracy.

The pump check valves are of cone, ball or prismatic type depending on size and design pressure.

All wetted parts are fabricated from stainless steel.



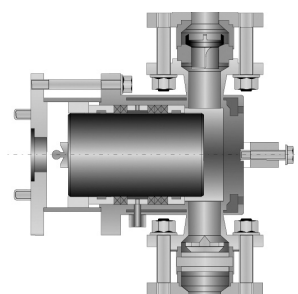
2.9.4 PS Piston Liquid End

Plunger head with stuff box packing. The plunger oscillates in the cylinder and displaces the liquid. The packing adjustment is achieved by the front-sided adjusting screw, which is also possible during operation.

The lantern on the rear head end serves to drain the leakage or can be used as an area to flush, lubricate or seal the pump with suitable media.

The pump check valves are of cone type. This guarantees low wear, short pressure loss ($NPSH_R$) and self-cleaning.

All wetted parts are fabricated from stainless steel and sealed by PTFE.



2.9.5 DR Valve-Free Piston Liquid End

The valve-free piston liquid end functions by means of the oscillating and rotating piston action. The suction and discharge sides are opened and closed by the piston itself. This means that the pump requires no valves and can operate across a large stroking rate range.

This principle enables the exact dosing of highly viscous liquids which also might contain – even large – solids.

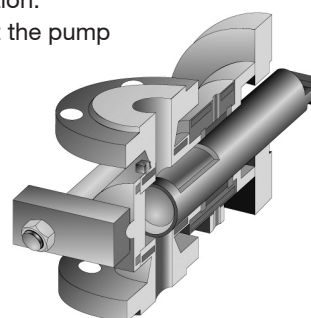
The pump head is fabricated from stainless steel. Piston and liner are treated by a special wear-resistant coating.

Depending on the application the pump head also is available from other high performance materials.

The clearance between piston and liner which mainly seals the pump is adapted to the viscosity of the liquid.

The lantern on the rear head end serves to drain the leakage or can be used as an area to flush, lubricate or seal the pump with suitable media.

The lantern is sealed by elastomer lip rings. The flow direction is selectable by the assembly position of the piston. By turning the head around its horizontal axis an effect of re-suction is adjustable.



3.0 Accessories - Beta/gamma/Delta & Pneumados

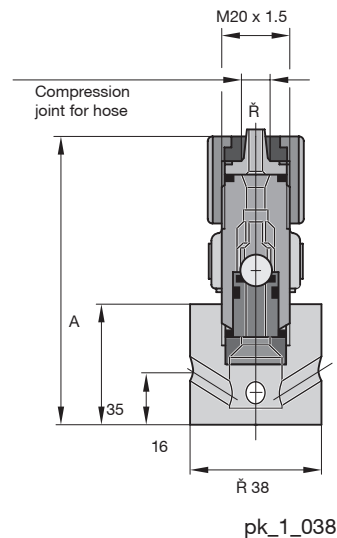
3.0.1 Foot Valves

For connection to the end of the suction line as suction aid and to protect the pump from contamination, with strainer and ball check. For connection diameters 6, 8, 12 and 12/6 mm with ceramic weight. The same materials are used as for the liquid ends.

FOOT VALVE, PPE

Valve body of PPE, seals of EPDM

			Ø	A		Part No.
Connection	6 mm	for hose	6 x 4	84	(Fig.1)	924558
Connection	8 mm	for hose	8 x 5	84	(Fig.1)	809468
Connection	12 mm	for hose	12 x 9	87	(Fig.1)	809470



FOOT VALVE, PPB

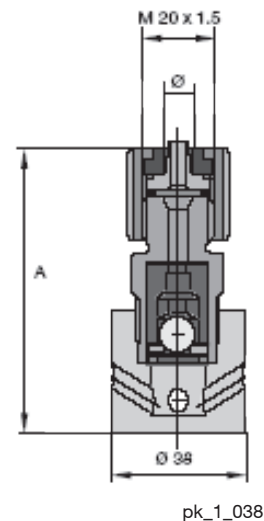
Valve body of PP, seals of Viton

			Ø	A		Part No.
Connection	6 mm	for hose	6 x 4	84	(Fig.1)	924559
Connection	8 mm	for hose	8 x 5	84	(Fig.1)	924683
Connection	12 mm	for hose	12 x 9	87	(Fig.1)	924684

FOOT VALVE, PVC

With strainer, ball check, valve body of PVC, seals of Viton

			Ø	A		Part No.
Connection	6 mm	for hose	6 x 4	84	(Fig.1)	924557
Connection	8 mm	for hose	8 x 5	84	(Fig.1)	924562
Connection	12 mm	for hose	12 x 9	87	(Fig.1)	924564



FOOT VALVE, PVT

With non-return valve, PVDF housing, PTFE seals, with ceramic weight

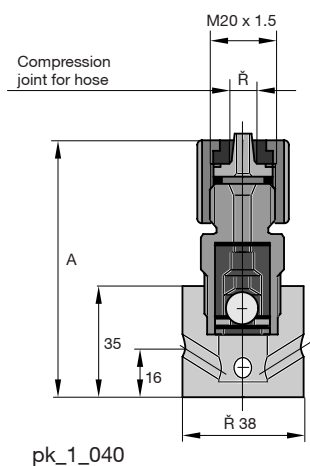
			Ø	A		Part No.
Connection	6 mm	for hose	6 x 4	79	(Fig.2)	1024705
Connection	8 mm	for hose	8 x 5	79	(Fig.2)	1024706
Connection	12 mm	for hose	12 x 9	82	(Fig.2)	1024707

3.0 Accessories - Beta/gamma/Delta & Pneumados

3.0.1 Foot Valves

FOOT VALVE, PTFE

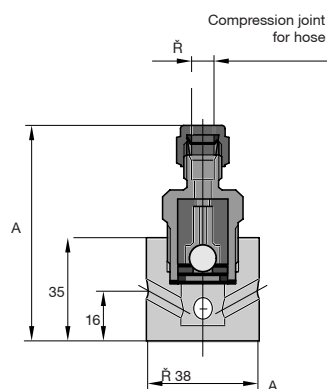
Valve body, ball check and seals of PTFE, for connection diameters 6, 8 and 12 mm with ceramic weight.



			Ø	A		Part No.
Connection	6 mm	for hose	6 x 4	79	(Fig.2397/4)	809455
Connection	8 mm	for hose	8 x 5	79	(Fig.2397/4)	809471
Connection	12 mm	for hose	12 x 9	82	(Fig.2397/4)	809473

FOOT VALVE, STAINLESS STEEL 1.4404

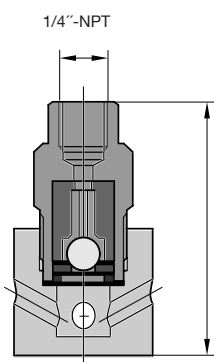
With strainer and ball check, valve body of stainless steel 1.4571, seals of PTFE, For 6x4, 8x5 and 12x 9 mm hose connection a support sleeve is required (see page 3.23).



	Ø	A	Part No.
Connection	for 6 mm O.D. pipe	74	924568
Connection	for 8 mm O.D. pipe	74	809474
Connection	for 12 mm O.D. pipe	74	809475

FOOT VALVE, STAINLESS STEEL 1.4404

With strainer and ball check, valve body of stainless steel 1.4571, seals of PTFE, as above but with threaded connection.



	Ø	A	Part No.
Connection	1/4" BSP/F *		803730
Connection	3/8" BSP/F		803731

*See also 924567

pk_1_031



3.1 Accessories - Sigma/Vario/Meta & Makro TZ

3.1.1 Foot Valves

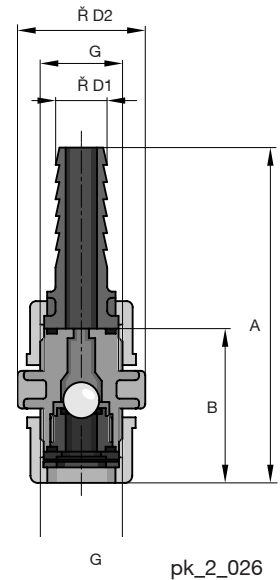
For connection to the end of the suction line to prevent return flow and to protect the pump from contamination, with strainer and ball check valve. The same materials are used as for the liquid ends. The union nut and union end/hose connector are part of the standard delivery package.

Caution: Foot valves are not suitable as absolutely leakproof isolating elements.

FOOT VALVE, PVC

Valve body of PVC, seals of Viton, with strainer and ball check-valve

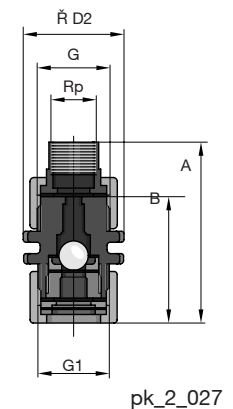
	G	Solvent weld male	B	Ø D2	Part No.
●	DN 10	15 mm	51	40	P809464
●	DN 15	20 mm	56	47	P924515
●	DN 20	25 mm	67	55	P803723
●	DN 25	25 mm	73	60	P803724
●	DN 32 PVT	32 mm Female	85	74	P1006434
●	DN 40	32 mm	100	90	P1004204
●	DN 10	1/2" BSP	51	40	P809464B
●	DN 15	3/4" BSP	56	47	P924515B
●	DN 20	1" BSP	67	55	P803723B
●	DN 25	1" BSP	73	60	P803724B
●	DN 32 PVT	1-1/2" BSP	85	74	P1006434B
●	DN 40	2" BSP	100	90	P1004204B
●	DN 10	16 mm HT	51	40	P809464H
●	DN 15	20 mm HT	56	47	P924515H
●	DN 20	25 mm HT	67	55	P803723H
●	DN 25	25 mm HT	73	60	P803724H
●	DN 32 PVT	40 mm HT	85	74	P1006434H
●	DN 40	40 mm HT	100	90	P1004204H



FOOT VALVE, PVDF

Valve body of PVDF, seals of PTFE, with strainer and ball check-valve

	G	BSPTM	B	SW	Ø D2	Part No.
●	DN 10	1/2"	69	30	35	P1029471
●	DN 15	3/4"	75	36	47	P1029472
●	DN 20	1"	69	46	57	P1029473
●	DN 25	1"	75	50	64	P1029474
●	DN 32	1-1/2"	103	75	89	P1006434-PVT

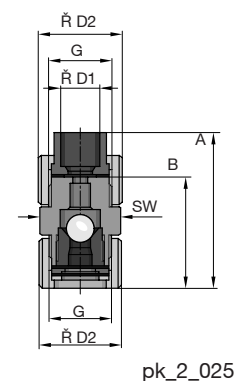


Note: DN32 valve has Hastalloy-C Disc and Spring

FOOT VALVE, STAINLESS STEEL

Valve body of stainless steel, seals of PTFE, with strainer and ball check valve (1.4571/1.4581)

	G1	BSPF	G2	A	B	Ø D2	Part No.
●	DN 10	3/8"	BSP/F	-	48	37	809467
●	DN 15	1/2"	BSP/F	-	51	48	924518
●	DN 20	3/4"	BSP/F	-	64	55	P803727
●	DN 25	1"	BSP/F	-	72	63	P803728
●	DN 32	1-1/4"	BSP/F	-	82	75	P1006435
●	DN 40	1-1/2"	BSP/F	-	98	90	P1004206



3.2 Accessories - Sigma/Vario/Meta & Makro TZ PP/EPDM

3.2.1 Foot & Injection Valves

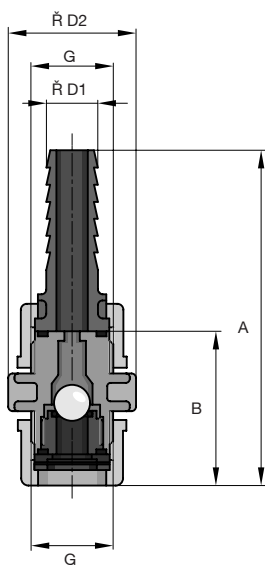
For connection to the end of the suction line to prevent return flow and to protect the pump from contamination, with strainer and ball check valve. The same materials are used as for the liquid ends. The union nut and union end/hose connector are part of the standard delivery package.

Caution: Foot valves are not suitable as absolutely leakproof isolating elements.

FOOT VALVE, PP

Valve body of PP, seals of EPDM, with strainer and ball check-valve

Note: Solvent Weld, BSP and Hosetail adaptors are PVC



pk_2_026

	G	Solvent weld male	B	Ø D2	Part No.
●	DN 10	15 mm	51	40	P809465
●	DN 15	20 mm	56	47	P924516
●	DN 20	25 mm	67	55	P803721
●	DN 25	25 mm	73	60	P803722
●	DN 32 PVT	32 mm Female	85	74	P1006434
	DN 40	32 mm	100	90	P1004204
●	DN 10	1/2" BSP	51	40	P809465B
●	DN 15	3/4" BSP	56	47	P9245516B
●	DN 20	1" BSP	67	55	P803721B
●	DN 25	1" BSP	73	60	P803722B
●	DN 32 PVT	1-1/2" BSP	85	74	P1006434B
	DN 40	2" BSP	100	90	P1004204B
●	DN 10	16 mm HT	51	40	P809465H
●	DN 15	20 mm HT	56	47	P924516H
●	DN 20	25 mm HT	67	55	P803721H
●	DN 25	25 mm HT	73	60	P803722H
●	DN 32 PVT	40 mm HT	85	74	P1006434H
	DN 40	40 mm HT	100	90	P1004204H

INJECTION VALVE, PP

Valve body of PP, seals of EPDM, with ball check, spring-loaded, response pressure approx. 0.5 bar

Note: Solvent Weld, BSP and Hosetail adaptors are PVC

		BSPM x solvent weld	B	Ø D2	Part No.
●	DN 10	1/2" x 15 mm	51	40	P809461
●	DN 15	3/4" x 20 mm	56	47	P924521
●	DN 20	1" x 25 mm	67	55	P803710
●	DN 25	1" x 25 mm	73	60	P803711
●	DN 32 PVT	1-1/2" x 32 mm female	73	60	P1002783
	DN40	2" x 32 mm			P804761
●	DN 10	1/2" x 1/2" BSP	51	40	P809461B
●	DN 15	3/4" x 3/4" BSP	56	47	P924521B
●	DN 20	1" x 1" BSP	67	55	P803710B
●	DN 25	1" x 1" BSP	73	60	P803711B
●	DN 32 PVT	1-1/2" x 1-1/2" BSP	73	60	P1002783B
	DN40	2" x 32 mm			P804761B
●	DN 10	1/2" x 16 mm HT	51	40	P809461H
●	DN 15	3/4" x 20 mm HT	56	47	P924521H
●	DN 20	1" x 25 mm HT	67	55	P803710H
●	DN 25	1" x 25 mm HT	73	60	P803711H
●	DN 32 PVT	1-1/2" x 40 mm HT	73	60	P1002783H
	DN40	2" x 40 mm HT			P804761H



3.3 Accessories - Beta/gamma/Delta/Concept & Pneumados

3.3.1 Injection Valves

For the connection of the discharge line to the point of injection. The injection valves are equipped with ball check, for PP, PVC and stainless steel versions spring-loaded with Hastelloy C spring, 0.5 bar response pressure (for connection 1/4" stainless steel spring 1.4571, response pressure approx. 1 bar), can be installed in any position.

For PTFE version without spring for vertical installation from below. Valve spring can be retrofitted. The same materials are used as for the liquid ends.

Caution: Injection valves and injection lances are not suitable as absolutely leak proof isolating elements.

INJECTION VALVE, PPE

Valve body of PP, seals of EPDM, with spring-loaded ball check, response pressure approx. 0.5 bar.

			Ø	A	Part No.
Connection	6 mm - 1/2"	for PE/PTFE tubing	6 x 4	96	924681
Connection	8 mm - 1/2"	for PE/PTFE tubing	8 x 5	96	809476
Connection	12 mm - 1/2"	for PE/PTFE tubing	12 x 9	99	809478

INJECTION VALVE, PPB

Valve body of PP, seals of Viton.

			Ø	A	Part No.
Connection	6 mm - 1/2"	for PE/PTFE tubing	6 x 4	96	924682
Connection	8 mm - 1/2"	for PE/PTFE tubing	8 x 5	96	924687
Connection	12 mm - 1/2"	for PE/PTFE tubing	12 x 9	99	924688

INJECTION VALVE PP/PTFE

To prevent deposits, body of PP, mounting insert of PTFE, seals of EPDM, with ball check and Hast. C spring, response pressure approx. 0.5 bar.

			Ø	A	Part No.
Connection	6 mm - 1/2"	for PE/PTFE tubing	6 x 4	103	924588
Connection	8 mm - 1/2"	for PE/PTFE tubing	8 x 5	103	924589
Connection	12 mm - 1/2"	for PE/PTFE tubing	12 x 9	106	924590

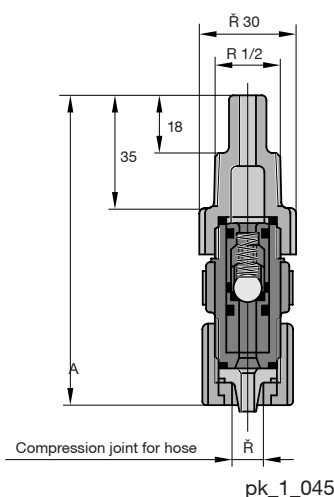
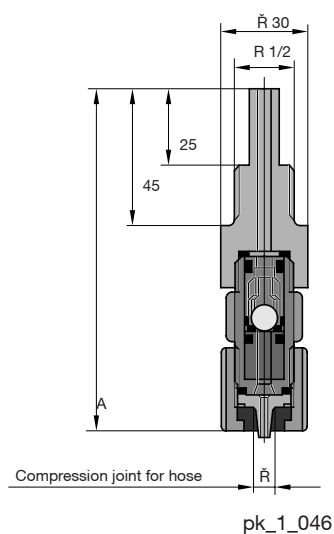
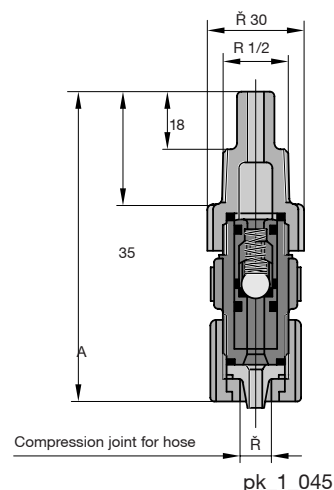
INJECTION VALVE, PVC

			Ø	A	Part No.
Connection	6 mm - 1/2"	for PE/PTFE tubing	6 x 4	96	924680
Connection	8 mm - 1/2"	for PE/PTFE tubing	8 x 5	96	924592
Connection	12 mm - 1/2"	for PE/PTFE tubing	12 x 9	99	924594

INJECTION VALVE, PVC / PTFE (ANTISCALE VERSION)

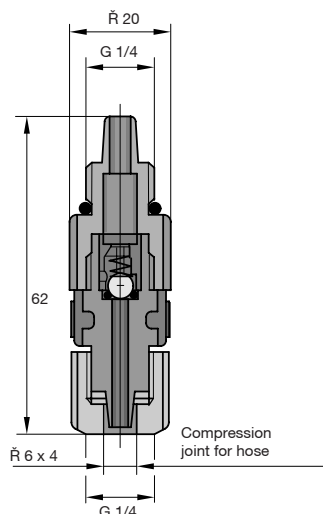
Body of PVC, PTFE with 1/2" BSPT Male tailpiece

			Ø	Part No.
Connection	6 mm - 1/2"	for PE/PTFE tubing	6 x 4	809450
Connection	8 mm - 1/2"	for PE/PTFE tubing	8 x 5	809451
Connection	12 mm - 1/2"	for PE/PTFE tubing	12 x 9	809452



3.3 Accessories - Beta/gamma/Delta/Concept & Pneumados

3.3.1 Injection Valves



pk_1_042

INJECTION VALVE PVC, CONNECTION 1/4"

With ceramic ball check, spring of 1.4571 s/s, response pressure approx. 1 bar.

Part No.

Connection 6 mm - 1/4" for PE/PTFE tubing 6 x 4mm

914559

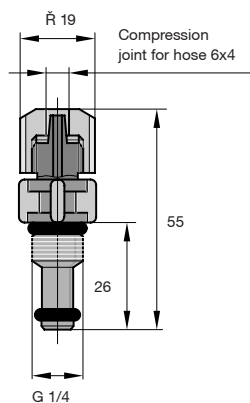
INJECTION VALVE PVC, O-RING LOADED

Valve body of PVC, seals of Viton, response pressure approx. 0.5 bar.

Part No.

Connection 6 mm - 1/4" (long) for PE/PTFE tubing 6 x 4 (Fig 1016/4)

915091

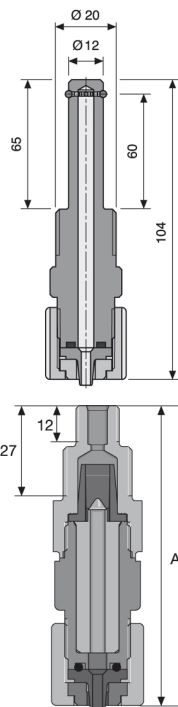


pk_1_044

PTFE INJECTION VALVES O-RING, LOADED

PTFE housing, FPM (Viton) seals.

Connection	oR x iR mm	A mm	Part No.
6/4 – for PE/PTFE line	6 x 4	104	809484
8/5 – for PE/PTFE line	8 x 5	104	809485
10/4 – for PE/PTFE line	10 x 4	104	1002925
12/6 – for PVC hose	12 x 6	104	809487
12/9 – for PE/PTFE line	12 x 9	104	809486



pk_1_070

LIP SEAL INJECTION VALVE PCB

Body PVC, seals FPM, inlet pressure approx. 0.05 bar. For dosing sodium hypochlorite in conjunction with peristaltic pumps DF2a

Connection	oR x iR mm	A mm	Part No.
6/4 – R 1/2 - 1/4 for PE/PTFE	6 x 4	90	1019953



3.3 Accessories - Beta/gamma/Delta/Concept & Pneumados

3.3.2 gamma Injection Valves

INJECTION VALVE PVT

PVDF housing, PTFE seals, with non-return valve, spring-loaded with Hastalloy C spring, priming pressure approx. 0.5 bar with extended threaded connection.

				Ø	A	Part No.
Connection	6/3 mm	*	1/2" for PTFE pipe	6 x 3	120	1024713
Connection	6 mm	-	1/2" for PE/PTFE pipe	6 x 4	120	1024708
Connection	8 mm	-	1/2" for PE/PTFE pipe	8 x 5	120	1024710
Connection	12 mm	-	1/2" for PE/PTFE tubing	12 x 9	120	1024711
Connection	10/4 mm	*	1/2" for PVC hose	10 x 4	120	1024709
Connection	12/6 mm	*	1/2" for PVC hose	12 x 6	120	1024712

* Not Stocked

INJECTION VALVE PTFE

For vertical installation from below, without spring, with ball check. Valve spring can be retrofitted. Body and seals of PTFE.

				Ø	A	Part No.
Connection	6 mm	-	1/2" for PE/PTFE tubing	6 x 4	98 (fig.1)	809488
Connection	8 mm	-	1/2" for PE/PTFE tubing	8 x 5	98 (fig.1)	809479
Connection	12 mm	-	1/2" for PE/PTFE tubing	12 x 9	101 (fig.1)	809481

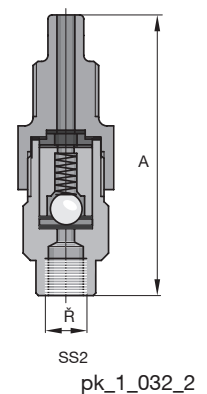
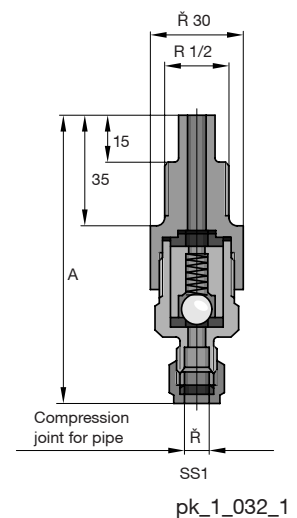
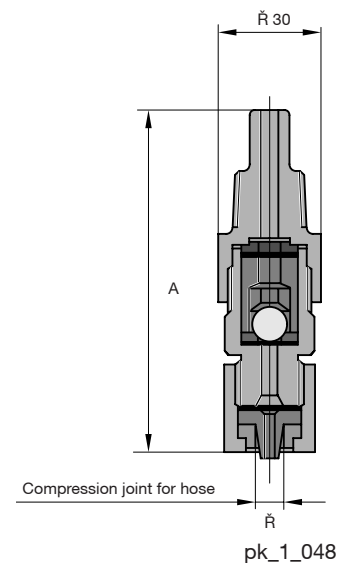
INJECTION VALVE STAINLESS STEEL

Body of 1.4404, seals of PTFE with spring-loaded ball check. Hastel. C spring with 0.5 bar response pressure; for connection 1/4" stainless steel spring 1.4571 and response pressure approx. 1 bar.

For connection of PE/PTFE tubing a ferrule is required.

SS1				Ø	A	Part No.
Connection	6 mm - 1/2"	for pipe	6 x 5	93		809489
Connection	8 mm - 1/2"	for pipe	8 x 7	93		809482
Connection	12 mm - 1/2"	for pipe	12 x 10	93		809483

SS2				Ø	A	Part No.
Connection	1/4"NPT - 1/2"	for pipe	12 x 10	93		924597

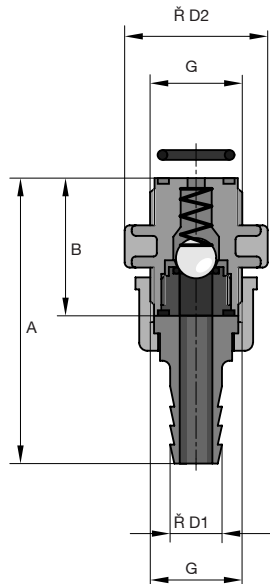


3.4 Accessories Sigma/Vario/Meta/Makro TZ

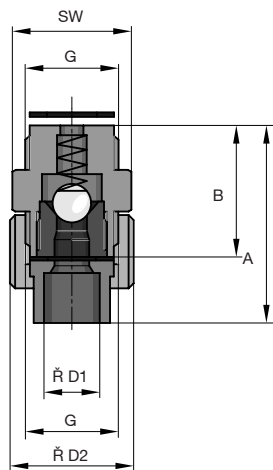
3.4.1 Injection Valves

For the connection of the pump metering line to the point of injection. The injection valves are equipped with ball check and a Hastelloy C spring (0.5 bar response pressure) and can be installed in any position. They are used for creating pressure and preventing return flow. The same materials are used as for the liquid ends. Union nuts and union ends are part of the standard delivery package.

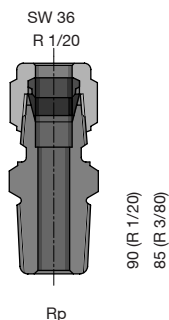
Caution: Injection valves are not suitable as absolutely leakproof isolating elements.



pk_2_029



pk_2_030



pk_2_028

INJECTION VALVE, PVC

Valve body of PVC, seals of Viton, with ball check, spring-loaded, response pressure approx. 0.5 bar

	G	BSPTM x solvent weld	B	Ø D2	Part No.
● DN 10	3/4"	1/2" x 15mm	51	40	P809460
● DN 15	1"	3/4" x 20mm	56	47	P924520
● DN 20	1 1/4"	1" x 25mm	67	55	P803712
● DN 25	1 1/2"	1" x 25mm	73	60	P803713
● DN 32 PVT	2"	1-1/2" x 32mm female	73	60	P1002783
● DN40	2 1/4"	2" x 32mm			P804760
BSPTM x BSPT Male or female					
● DN 10	3/4"	1/2" x 1/2" BSPTM	51	40	P809460B
● DN 15	1"	3/4" x 3/4" BSPTM	56	47	P924520B
● DN 20	1 1/4"	1" x 1" BSPTM	67	55	P803712B
● DN 25	1 1/2"	1" x 1" BSPTM	73	60	P803713B
● DN 32 PVT	2"	1-1/2" x 1-1/2" BSPF	73	60	P1002783B
● DN40	2 1/4"	2" x 1-1/2" BSPTM			P804760B
BSPTM x Hosetail					
● DN 10	3/4"	1/2" x 16 mm	51	40	P809460H
● DN 15	1"	3/4" x 20 mm	56	47	P924520H
● DN 20	1 1/4"	1" x 25 mm	67	55	P803712H
● DN 25	1 1/2"	1" x 25 mm	73	60	P803713H
● DN 32 PVT	2"	1-1/2" x 40 mm	73	60	P1002783H
● DN40	2 1/4"	2" x 40 mm			P804760H

INJECTION VALVE, PVDF

Valve body of PVDF, seals of PTFE, with ball check, spring-loaded, response pressure approx. 0.5 bar. **ALL are supplied Male/Male BSP**

	G	BSPM x BSPM	B	Ø D2	Part No.
● DN 10		1/2" BSPTM			PA07002486
● DN 15		3/4" BSPTM			PA07002487
● DN 20		1"	55	46	PA07002488
● DN 25		1"	60	50	PA07002489
● DN 32		1-1/2"	85	75	PA07002490

Note: DN32 valve has Hastelloy-C Disc and Spring

INJECTION VALVE, STAINLESS STEEL

Valve body of stainless steel 1.4404, seals of PTFE, ball check, spring-loaded (1.4571/1.4581), response pressure approx. 0.5 bar

	G1	BSPF x BSPF	B	Ø D	Part No.
● DN 10		3/8" BSPF inlet & outlet			P809463
● DN 15		1/2" BSPF inlet & outlet			P924523
● DN 20		3/4" x 3/4" BSPF	56	56	P803716
● DN 25		1" x 1" BSPF	60	59	P803717
● DN 32		1-1/4" x 1-1/4" BSPF	60	59	P1002801
● DN 40		1-1/2" x 1-1/2" BSPF	85	90	P804763

INJECTION VALVE DN 10 FOR META/MAKRO TZ-HK

Valve body and valve spring of 1.4571 s/s, ball of 1.4401 s/s, seals of PTFE, response pressure approx. 0.1 bar

Connection 1/4" x 1/2" BSP

803732

Connection 3/8" x 1/2" BSP

803733



3.5 Accessories Beta/gamma/Delta & Pneumados

3.5.1 Back Pressure Valves S Series

TYPE DHV-S-DL BACK PRESSURE VALVE/RELIEF VALVE

ADJUSTABLE 1-10 BAR, 6-12 MM

Adjustable back pressure valve for installation in the discharge line to generate a constant back pressure for precise delivery when injecting into an open outlet with an inlet pressure on the suction side, a fluctuating back pressure or into a vacuum.

Application is the same as for the safety pressure relief valve.

When used as a back pressure valve in long lines to avoid resonance vibration, it should be mounted on the end of the injection line or the set pressure should be greater than the line pressure loss.

Use in conjunction with a pulsation dampener only where there is an open outlet and short injection line.

CAUTION: Back pressure valves are not designed for use as completely-sealing, isolating elements!

APPLICATION: Beta, Gamma, Concept, Pneumados, Delta, EXtronic, electronic metering pumps.

					Part No.
DHV-S-DL	1-10 bar	PP	6 x 4mm		P6-302323
DHV-S-DL	1-10 bar	PP	8 x 5mm		P8-302323
DHV-S-DL	1-10 bar	PP	12 x 9mm		P12-302323
DHV-S-DL	1-10 bar	PVC	6 x 4mm		P6-302324
DHV-S-DL	1-10 bar	PVC	8 x 5mm		P8-302324
DHV-S-DL	1-10 bar	PVC	12 x 9mm		P12-302324
DHV-S-DL	1-10 bar	TT	6 x 4mm		P6-302325
DHV-S-DL	1-10 bar	TT	8 x 5mm		P8-302325
DHV-S-DL	1-10 bar	TT	12 x 9mm		P12-302325
DHV-S-DL	1-10 bar	SS	6mm O.D.		302326
DHV-S-DL	1-10 bar	SS	8mm O.D.		302327
DHV-S-DL	1-10 bar	SS	12mm O.D.		302328

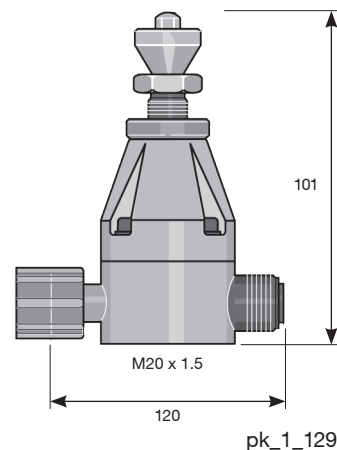
PIPE NIPPLE, 316 S.S., 40MM LONG

For connecting to the liquid end use back pressure valve DHV-S-DL of stainless steel in conjunction with an appropriate pipe nipple.

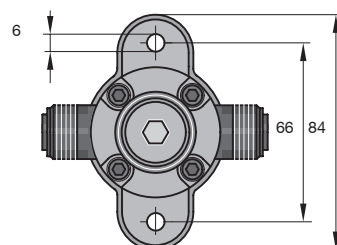
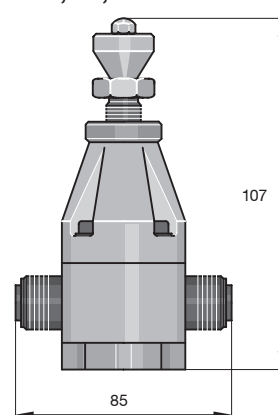
		Part No.
	6mm O.D.	818537
	8mm O.D.	818538
	12mm O.D.	818539

TUBING - 316 STAINLESS STEEL

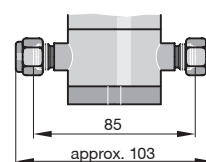
		Part No.
	6mm O.D.	015738
	8mm O.D.	015740
	12mm O.D.	015743



PP, PC, TT version



SS version



pk_1_054



pk_1_017



3.6 Accessories - Adjustable Relief Valves

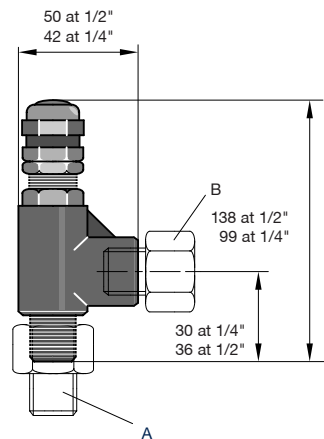
3.6.1 Adjustable Relief Valves

ADJUSTABLE RELIEF VALVE, 1/4" NPT

For use as safety relief valve and as back pressure valve.

Housing: Stainless steel 316/Viton

Connection: 1/4" NPT female and male thread



pk_2_032

Part No.

202505

Relief valve without spring, can be ordered separately.

Adjustment range in bar

Spring		Bar	Colour:	Part No.
3.4	-	24 bar	BLUE	202519
24	-	52 bar	YELLOW	202520
52	-	103 bar	VIOLET	202525
103	-	155 bar	ORANGE	202524
155	-	207 bar	BROWN	202523
207	-	276 bar	WHITE	202522
276	-	345 bar	RED	202521

***A & B Adaptor nipples to be ordered separately**

ADAPTOR NIPPLE

1/4" NPT female thread - 1/4" male thread (A)

359378

1/4" NPT male thread - 1/4" female thread (B)

359379

Note: 1/2" NPT size available

Note: For Piston/Plunger Pumps - Take care with capacity.



3.7 Accessories - Motor Driven Dosing Pumps

3.7.1 Back Pressure Valves or Relief Valves

Back pressure valves of the DHV-U series can be used universally and are back-pressure free piston diaphragm valves with an internal flow. They can be used to generate a constant back pressure, used as relief valves and be assembled anywhere in the pipework system.

Back pressure valves act to generate a constant back pressure for precise chemical feed, and/or to protect against overdosing with a free outlet, fluctuating back pressure or to dose into a vacuum. They can also be used in conjunction with pulsation dampers for low pulsation metering.

Relief valves are installed in the bypass to protect pumps, pipework and fittings from excess pressure as a result of operational errors or blockages. In the event of a malfunction, the pump conveys in a loop or back into the storage tank.

Important: Back pressure valves cannot be used as absolutely leak-tight shut-off devices. All relevant safety precautions must be taken when using with hazardous chemicals.

Important: Appropriate safety measures should be implemented when used as relief valves in conjunction with agglutinative media (e. g. milk of lime), (for instance flushing after activation).

Back Pressure Valve / Relief Valve Type DHV-U

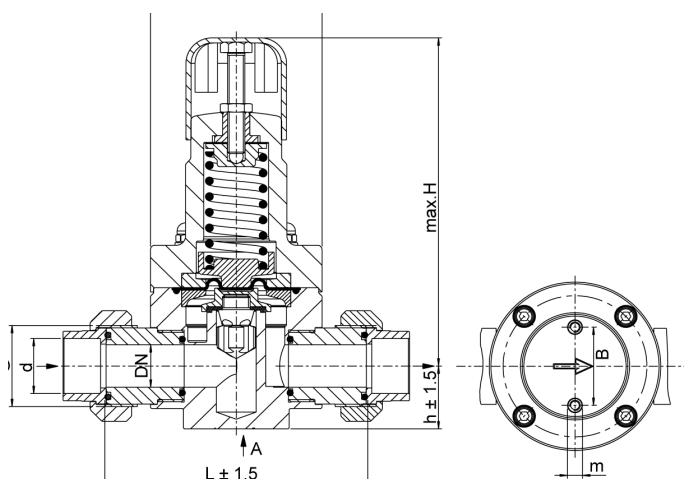
- **Adjustable pressure**
0.5 – 10 bar
- **Areas of application of PPE / PPB / PCE / PCB**
20 °C - maximum operating pressure 10 bar
- **Area of application of PVDF**
30 °C - maximum operating pressure 10 bar

DHV-U

DN	G	L	H	h	D	m	B	d
10	3/4"	118	144	24	79	M6	40	16
15	1"	118	144	24	79	M6	40	20
20	1-1/4"	150	196	37	99	M6	46	25
25	1-1/2"	150	196	37	99	M6	46	32
32	2"	205	260	59	147	M8		
40	2-1/4"	205	260	59	147	M8		

Materials

Version	Housing/ Connectors	Plungers	Plunger Seal	Seal Connectors
PPE	PP	PVDF	EPDM	EPDM
PCB	PVC	PVDF	FKM	FKM
PVT	PVDF	PVDF	PVDF	PTFE



Back Pressure Valve and Relief valve

Suit ProMinent® Sigma/ 1 Dosing Pump

- DN 10 valve = 1/2" BSP M/M, S/W or ● DN 15 valve = 3/4" BSP M/M

Suit ProMinent® Sigma/ 2 & small Sigma/ 3 Dosing Pump

- DN 15 valve = 3/4" BSP M/M, S/W or ● DN 20 valve = 1" BSP M/M

Suit ProMinent® Sigma/ 3 Dosing Pump

- DN 15 valve = 3/4" BSP M/M, S/W or ● DN 20 valve = 1" BSP M/M
- DN 25 valve = 1" BSP M/M or ● DN 32 valve = 1-1/2" BSP M/M

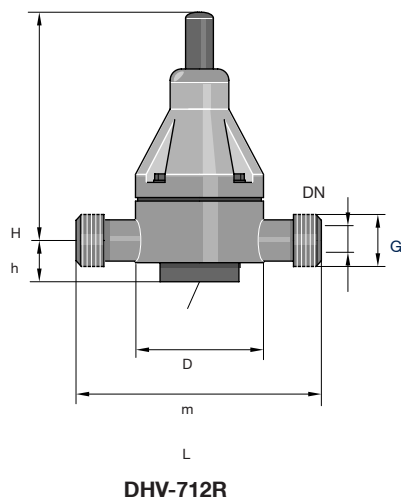
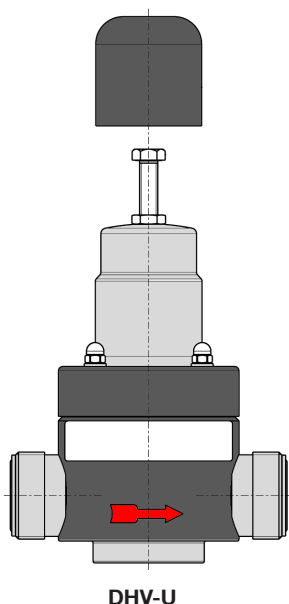
Suit ProMinent® Sigma/ 3 & Makro Dosing Pump

- DN 25 valve = 1" BSP M/M, S/W or ● DN 32 valve = 1-1/2" BSP M/M
- DN 40 valve = 1-1/2" BSP M/M
- = 2-1/4" BSP M/M for S/S



3.7 Accessories - Motor Driven Dosing Pumps

3.7.1 Back Pressure Valves or Relief Valves



							Part No.
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10	•	PPE	P1037285
●	DHV- U	0.5 - 10 bar	G 1"	DN 15	•	PPE	P1036816
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20	•	PPE	P1037284
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25	•	PPE	P1036633
●	DHV- U	0.5 - 10 bar	G 2"	DN 32	•	PPE	P1051517
	DHV- U	0.5 - 10 bar	G 2-1/4"	DN 40	•	PPE	P1051518
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10	•	PCE	P1038144
●	DHV- U	0.5 - 10 bar	G 1"	DN 15	•	PCE	P1038146
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20	•	PCE	P1038148
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25	•	PCE	P1038150
PVC valves complete with Male/Male Solvent Weld fittings							
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10		PCB	P1037765
●	DHV- U	0.5 - 10 bar	G 1"	DN 15		PCB	P1037764
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20		PCB	P1037775
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25		PCB	P1037774
●	DHV- U	0.5 - 10 bar	G 2"	DN 32		PCB	P1051520
	DHV- U	0.5 - 10 bar	G 2-1/4"	DN 40		PCB	P1051519
PVC valves complete with Male/Male BSPT fittings							
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10		PCB	P1037765B
●	DHV- U	0.5 - 10 bar	G 1"	DN 15		PCB	P1037764B
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20		PCB	P1037775B
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25		PCB	P1037774B
●	DHV- U	0.5 - 10 bar	G 2"	DN 32		PCB	P1051519B
PVC valves complete with Male/Male Hose Tail fittings							
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10		PCB	P1037765H
●	DHV- U	0.5 - 10 bar	G 1"	DN 15		PCB	P1037764H
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20		PCB	P1037775H
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25		PCB	P1037774H
●	DHV- U	0.5 - 10 bar	G 2"	DN 32		PCB	P1051519H
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10	•	PVT	P1037767
●	DHV- U	0.5 - 10 bar	G 1"	DN 15	•	PVT	P1037766
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20	•	PVT	P1037777
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25	•	PVT	P1037776
●	DHV- U	0.5 - 10 bar	G 2"	DN 32	•	PVT	P1051503
	DHV- U	0.5 - 10 bar	G 2-1/4"	DN 40	•	PVT	P1051502
●	DHV- 712R	0.5 - 10 bar	G 3/4"	DN 10	•	TTT	P1000059
●	DHV- 712R	0.5 - 10 bar	G 1"	DN 15	•	TTT	P1000060
●	DHV- 712R	0.5 - 10 bar	G 1-1/4"	DN 20	•	TTT	P1000061
●	DHV- 712R	0.5 - 10 bar	G 1-1/2"	DN 25	•	TTT	P1000062
●	DHV- 712R	0.5 - 10 bar	G 2"	DN 32	•	TTT	P1000063
	DHV- 712R	0.5 - 10 bar	G 2-1/4"	DN 40	•	TTT	P1000064
●	DHV- U	0.5 - 10 bar	G 3/4"	DN 10	•	SST	P1043194
●	DHV- U	0.5 - 10 bar	G 1"	DN 15	•	SST	P1043193
●	DHV- U	0.5 - 10 bar	G 1-1/4"	DN 20	•	SST	P1043192
●	DHV- U	0.5 - 10 bar	G 1-1/2"	DN 25	•	SST	P1043191
●	DHV- U	0.5 - 10 bar	G 2"	DN 32	•	SST	P1051516
	DHV- U	0.5 - 10 bar	G 2-1/4"	DN 40	•	SST	P1051515

• This item not stocked - order on PDT

Note: Valves should normally be set to the desired back pressure on site after installation. However if you require them to be pre-set prior to dispatch then there would be an additional charge.



3.8 Accessories - Multifunction Valves

3.8.1 Multifunction valve Type MFV-DK

MULTIFUNCTION VALVE TYPE MFV-DK

ProMinent® multifunction valve mounted directly on the liquid end of the pump with the functions:

- Backpressure valve, opening pressure approx. 1.5 bar
- Relief valve, opening pressure approx. 10 or 16 bar
- Priming aid when backpressure applied, no need to releasedelivery line
- Pressure relief in delivery line, e.g. before servicing work

The ProMinent® multifunction valve is operated by means of smooth-action rotary knobs which automatically return to their initial position when released. This feature ensures safe and reliable operation even under difficult access conditions. The ProMinent® multifunction valve is made of the material PVDF and can be used in feed systems for virtually all chemicals.

Caution: Back pressure valves are not absolutely leakproof isolating elements!

Materials in contact with media

Valve body - PVDF; Diaphragm - PTFE coated;

Seals - Viton or EPDM; DN10 adaptor - PVC

Type	Overflow Opening Pressure	Bypass Size	Connection	Part No.
Size I	16 bar	6x4	6 - 12 mm	P792011
Size I	10 bar	6x4	6 - 12 mm	P791715
Size I	6 bar	6x4	6 - 12 mm	P1005745
Size II	10 bar	12x9	6 - 12 mm	P792203
Size II	6 bar	12x9	6 - 12 mm	P740427
Size III	10 bar	12x9	DN10	P792215

ALSO AVAILABLE

Size I	8-10 bar	6x4	6 - 12 mm	P791715C
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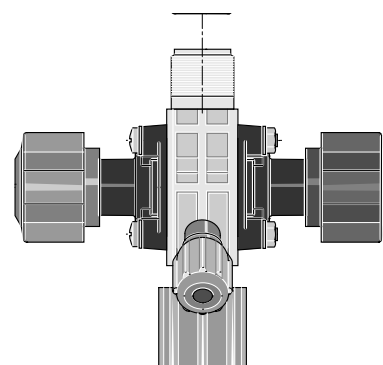
Note: this unit is made by prominent China BUT has German diaphragms

APPLICATIONS

Size I	ALPc 1001, 1002, 1004, 1008, 0708 Beta®, gamma/ L type 1000, 1601, 1602, 1604, 1605, 1005, 1008, 0708, 0413, 0220 gamma/ X type 1602, 1604, 1009, 0708, 0414, 0220 delta® type 1608, 1612
Size II	ALPc 0417, 0230 Beta®, gamma/ L type 1605, 1008, 0713, 0420, 0232 gamma/ X type 1009, 0715, 0424, 0245 delta® type 1020, 0730
Size III	delta® type 0450, 0280

Note For material design PP, PV, P, TT

Note: Valve Pre-Pack is supplied with 2m PVC clear tube, for return to tank.



pk_1_053



MFV WITH BYPASS PLUGGED WITH TEFLON SOCKET

Use this as an alternative injection valve for aggressive media as it has no spring in contact with the chemical.

				Part No.
Size I	1.5 bar	6x4	6 x 4 mm	• P1027652-6
Size I	1.5 bar	6x4	8 x 5 mm	P1027652-8

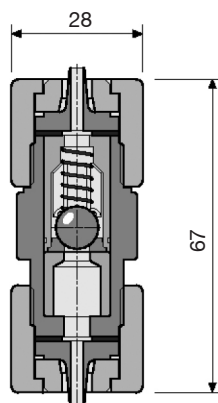
3.9 Accessories Beta/gamma/Delta & Pneumados

3.9.1 Anti-Return Valves & Injection Valve Assembly

PVDF NON-RETURN VALVE, FOR INLINE MOUNTING

With dual-end connector set, for installation inline (tube), valve body of PVDF seals of PTFE, with ball check, spring-loaded with Hastelloy C spring, response pressure approx. 0.5 bar.

By using different connector sets, different tube sizes from 6 - 12 mm can be connected with each other.



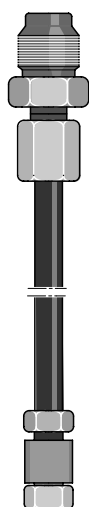
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Applications when using appropriate tubing

25° C - max. operating pressure 16 bar

45° C - max. operating pressure 12 bar

			OD x ID	A	Part No.
Connection	6 mm	for PE/PTFE tubing	6 x 4	67	1030463
Connection	8 mm	for PE/PTFE tubing	8 x 5	67	1030975
Connection	12 mm	for PE/PTFE tubing	12 x 9	67	1030976



pk_1_049

Dosing Connector For Hot Water Up To 200 °C

INJECTION VALVE ASSEMBLY FOR HOT WATER UP TO 200°C

Comprising injection valve of stainless steel 1.4404, 1 m stainless steel 1.4571 discharge line and adaptor unions with ferrule to connect PE/PTFE tubing with stainless steel pipe.

		Part No.
Hot water connection	6 mm - 1/4"	913166
Hot water connection	6 mm - 1/2"	913167
Hot water connection	8 mm - 1/2"	913177
Hot water connection	12 mm - 1/2"	913188



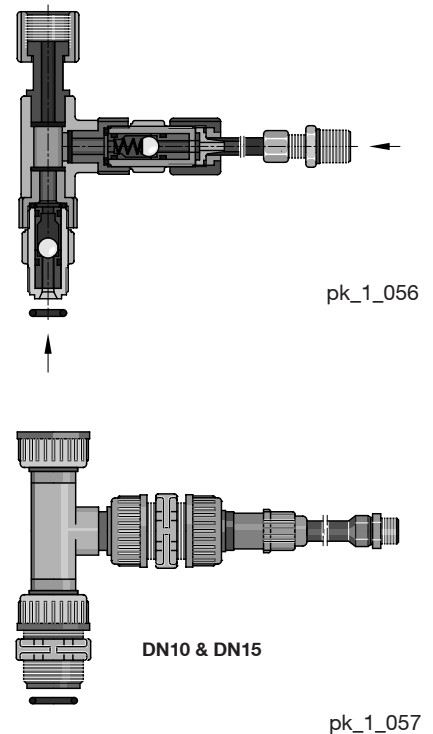
3.10 Accessories - Flushing Device & Rigid Suction Assemblies

3.10.1 Flushing Devices

For flushing and cleaning the liquid end, discharge line and injection valve and for protection against deposits.

FLUSHING DEVICE, PVC

	Part No.
for 6, 8, and 12 mm connector	809925
	Part No.
for DN 10 connector	809926
for DN 15 connector	803960
for DN 20 connector	809361
for DN 25 connector	809362



Rigid Suction Assemblies

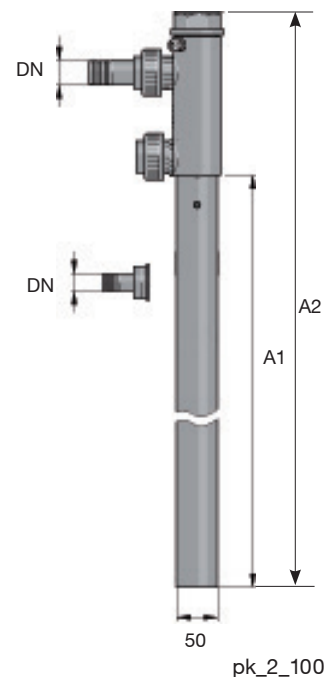
Suction lances for motor-driven metering pumps. Universal PVC suction lances with float switch in protective tube R 50 incorporating foot/check valve (not detachable), hydraulic connector with PVC hose nozzles. DN 10/15: fitted with ball check valve (borosilicate glass ball, FPM seals), DN 20/25; DN 32 fitted with FPM flutter valve.

FPM Seals

	Size	Float switch	Contact	A1	A2	Part No.
● ●	DN 10/15	2-stage 3 m lead	3 pin round plug	1000	1100	P1037748
● ●	DN 20/25	2-stage 3 m lead	3 pin round plug	1000	1100	P1037750
● ●	DN 32	2-stage 3 m lead	3 pin round plug	1000	1100	P1037752

EPDM Seals *** Not Stocked

	Size	Float switch	Contact	A1	A2	Part No.
● ●	DN 10/15	2-stage 3 m lead	3 pin round plug	1000	1100	P1037749
● ●	DN 20/25	2-stage 3 m lead	3 pin round plug	1000	1100	P1037751
● ●	DN 32	2-stage 3 m lead	3 pin round plug	1000	1100	P1037753



3.11 Accessories - Float Switches for Solenoid Driven Pumps

3.11.1 Concept Float Switches

SINGLE-STAGE FLOAT SWITCH

For minimum level indication with simultaneous shutdown of the metering pump, with or without a flat connector.

Technical data:

Max. switching voltage 60 V, switching current 0.3 A

Making/breaking capacity 5 W/5 VA

Temperature range -25 °C to 75 °C, enclosure rating IP 67

Materials:

Body PVC, 21 dia. foamed PP float, PE cable



	Part No.
PVC 2m Cable, with Flat Plug	142056
PVC 5m Cable, with Flat Plug	142058
PVC 2m Cable, No Plug	142062
PVC 5m Cable, No Plug	142064



3.12 Accessories for Solenoid Driven Pumps

3.12.1 Float Switches & Ceramic Weight

TWO-STAGE FLOAT SWITCH

For monitoring the level in a batching tank, two-stage with early alarm. Stops the metering pump if the level drops a further 30 mm.

Fitted with 3-pole round plug for direct connection to Beta® and GALA®.

Technical data:

Max. switching voltage 100 V, switching current 0.5 A, switch power 5 W/5 VA.

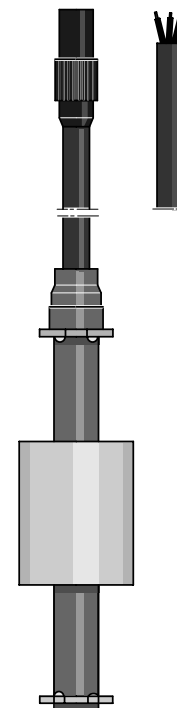
Temperature range -10°C to 65°C, enclosure rating IP 67.

Switching mode: 2 x N/C for low liquid levels.

Materials:

Body of PVDF, 25 dia. float of PVDF, PE cable

			Part No.
PVDF with 3-pole round plug	Cable Length	2 m	1034697
PVDF with 3-pole round plug	Cable Length	5 m	1034698
PVDF with 3 cores	Cable Length	2 m	1034699
PVDF with 3 cores	Cable Length	5 m	1034700
Float only			790585
Circlip			790593



pk_1_081

DO NOT FORGET Z CLIP

		Part No.
Z-Clip, PP,	For two-stage float switch &	
	6 x 4, 8 x 5 & 12 x 9 foot valves	800692
Z-Clip, PVC,	For two-stage float switch &	
	6 x 4, 8 x 5 & 12 x 9 foot valves	800573



CERAMIC WEIGHT FOR VERTICAL LOCATION OF FLOAT SWITCH

Size 1 Dia 25 x 50, 40g with 10 dia. opening

to suit round plug and jack plug.

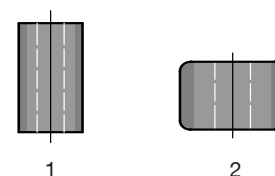
1019244

Size 2 Dia 39 x 32, 65g with elongated 13 x 27 opening

for round plug and flat connector type.

404008

For the two-stage float switch with a round plug the weight is slid into place from below after removal of the float.



pk_1_082



3.13 Accessories - gamma/Sigma Metering Monitors

3.13.1 Accessories - gamma and Sigma Metering Monitors

ADJUSTABLE FLOW CONTROL MONITOR

Suitable for gamma/L series in material versions PP, PC, NP and TT. Supplied with connection cable for assembly directly to liquid end.

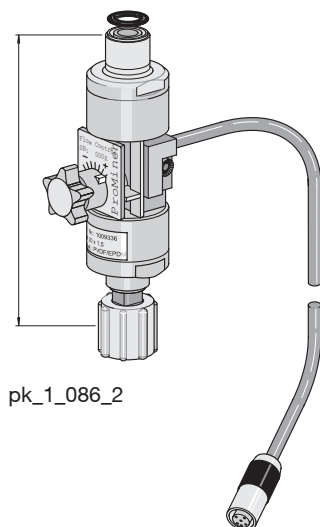
Monitors individual strokes according to the float and orifice principle. The partial quantity of chemical flowing past the float is adapted to the preset stroke volume via the adjusting screw so that an alarm is actuated if the flow falls below 20 %. The user can select the number of incomplete strokes permitted (between 1 and 127) in accordance with the actual process requirements.

Materials

Flow meter: PVDF

Float: PTFE-coated

Seals: Viton® B/EPDM



Flow Control	Material	for pump type	Part no.
Size I	PVDF/EPDM	1000, 1601, 1602	1009229
Size II	PVDF/EPDM	1005, 1605, 0708, 1008, 0413, 0713, 0220, 0420, 0232	1009336
Size I	PVDF/Viton® B	1000, 1601, 1602	1009335
Size II	PVDF/Viton® B	1005, 1605, 0708, 1008, 0413, 0713, 0220, 0420, 0232	1009338

Suitable for Sigma/ 1 / 2 / 3 series in PVT & SS material versions. Supplied with connection cable for assembly directly to liquid end.

Monitors individual strokes according to the float and orifice principle. The partial quantity of chemical flowing past the float is adapted to the preset stroke volume via the adjusting screw so that an alarm is actuated if the flow falls below 20 %. The admissible number of incomplete strokes can be set at the Sigma Control (S1Ca/S2Ca/S3Ca) to between 1 and 127 to allow optimum adjustment to the process requirements.

			Part No.
●	Size III - DN 10	PVDF/EPDM	Sigma/1 12017, 10022, 12035 10044, 10050, 07065
●	Size III - DN 10	PVDF/Viton® B	Sigma/1 12017, 10022, 12035 10044, 10050, 07065
●	Size III - DN 15	PVDF/EPDM	Sigma/1 07042, 07084, 04120 Sigma/2 12050, 12090, 12130
●	Size III - DN 15	PVDF/Viton® B	Sigma/1 07042, 07084, 04120 Sigma/2 12050, 12090, 12130
●	Size IV	PVDF/EPDM	Sigma/2 07120, 07220, 04350 Sigma/3 120145, 12190, 12270
●	Size IV	PVDF/Viton® B	Sigma/2 07120, 07220, 04350 Sigma/3 120145, 12190, 12270
●	Size V	PVDF/EPDM	Sigma/3 07410, 07580, 04830
●	Size V	PVDF/Viton® B	Sigma/3 07410, 07580, 04830

Note: When using the above with Delta Pumps these can be mounted on the suction side of pump if using slow discharge. Additional adaptors may be required.

NOTE: FOR DE-GASSING LIQUID ENDS USE KITS AS BELOW.

For GALA degassing heads use wall mounting kit	Part No.
For PVC	PA55002429
For P.P.	PA55002430

Note: Mounting kit suitable for multi-function valve as well as metering monitor
ADD RELAY to PUMP for an EXTERNAL ALARM

Note: See also GREEN PAGE price List for LOCAL Flow Switches



3.14 Accessories Beta/gamma/Delta & Sigma

3.14.1 Flow Control Monitor, Control Cables, Profibus Cables

UNIVERSAL CONTROL CABLE

For Beta 4, Beta 5 , gamma/ L, DELTA, mikro g/ 5 and Sigma with 5-pole plastic round connector and 5-wire cable with open end. For pacing a metering pump through contacts - external pacing, standard signals - analogue pacing and for voltage-free remote on/off control.

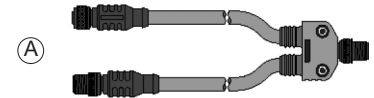
	Part No.
Universal control cable, 5-pole round connector, 5-wire, 2 m	1001300
Universal control cable, 5-pole round connector, 5-wire, 5 m	1001301
Universal control cable, 5-pole round connector, 5-wire, 10 m	1001302



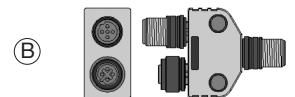
PROFIBUS ADAPTOR, ENCLOSURE RATING IP65

eurofast 5-pin M12 male to M12 Female, length approx 500 mm.

	Part No.
A: PROFIBUS® Y-adaptor 2 x M12 x 1 male/female to M12 male	1040956



	Part No.
B: PROFIBUS® Y-adaptor	1036621

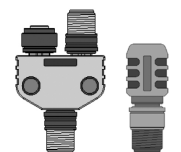


	Part No.
C: PROFIBUS® termination resistance , plug-in	1036622



	Part No.
PROFIBUS® Terminating Assembly , comprising;	1040955

1 off Y-adaptor and 1 off termination resistance. (B) + (C)



GAMMA/ XL CONTROL CABLE

Control cable and round plug for configurable inputs and outputs for the control of the process timer or for additional alarm messages.

	Lead length	Part No.	Part No.
Control cable for configurable inputs and outputs, 4-wire	2 m		1094091
Control cable for configurable inputs and outputs, 4-wire	5 m		1094093



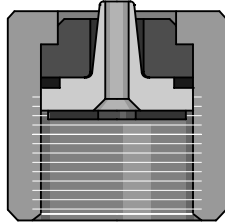
3.15 Accessories - Mechanical/Hydraulic Pumps

3.15.1 Connectors & Fittings

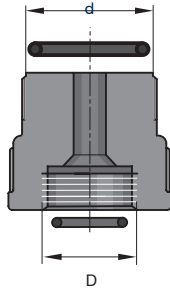
CONNECTOR SET

Connector set for connecting hoses of different sizes to suction and discharge connectors on the liquid end of Beta, gamma, Delta, EXtronic, CONCEPT, Pneumados, D4a and accessories. The set consists of 2 of each, hose sleeve, grip ring, union nut and seal.

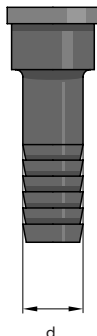
One connector set is required for the metering pump.



pk_1_089



pk_1_114



pk_2_046



Connector set (Pair)

			Part No.
PP/EPDM	for hose	6 x 4 mm	817150
PP/EPDM	for hose	8 x 5 mm	817153
PP/EPDM	for hose	12 x 9 mm	817151
PP/EPDM	for hose	12 x 6 mm	817152
PVC/Viton	for hose	6 x 4 mm	817050
PVC/Viton	for hose	8 x 5 mm	817053
PVC/Viton	for hose	12 x 9 mm	817051
PVC/Viton	for hose	12 x 6 mm	817052
PVDF (PVT)	for hose	6 x 4 mm	1023246
PVDF (PVT)	for hose	8 x 5 mm	1023247
PVDF (PVT)	for hose	12 x 9 mm	1023248
PTFE	for hose	6 x 4 mm	817201
PTFE	for hose	8 x 5 mm	817204
PTFE	for hose	12 x 9 mm	817202

Connector set (Single)

			Part No.
PVC/Viton	for hose	6 x 4 mm	817065
PVC/Viton	for hose	8 x 5 mm	817066
PVC/Viton	for hose	12 x 9 mm	817067
PVDF (PVT)	for hose	6 x 4 mm	1024619
PVDF (PVT)	for hose	8 x 4 mm	1033148
PVDF (PVT)	for hose	8 x 5 mm	1024620
PVDF (PVT)	for hose	12 x 9 mm	1024618
PVC/Viton	for hose	10 x 4 mm	1002589
PVC/Viton	for hose	12 x 6 mm	817068

Adaptor for connecting from connectors on system + GF + to liquid end and accessories.

		Part No.
PP for connector	DN 8 with external thread 5/8" M 20 x 1.5 (Fig.)	817164
PP for connector	DN 10 with external thread 3/4" M 20 x 1.5	817165
PVC for connector	DN 8 with external thread 5/8" M 20 x 1.5 (Fig.)	817069
PVC for connector	DN 10 with external thread 3/4" M 20 x 1.5	817099

Fittings

		Part No.
● pressure hose tail	PVC d 16 - DN 10	800554
● pressure hose tail	PVDF d 16 - DN 10	1002288

Part No.

PVC Adaptor 15mm Rigid PVC to 20 x 1.5 Female Union Nut	PA27022382
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3.15 Accessories - Mechanical/Hydraulic Pumps

3.15.1 Connectors & Fittings

STRAIGHT MALE ADAPTER, STAINLESS STEEL

Swagelok system, SS 316 (1.4401) stainless steel for connecting pipes to internally-threaded suction heads and valves and for SB type.

	Part No.
6 mm - 1/4" ISO	359526
8 mm - 1/4" ISO	359527
12 mm - 1/4" ISO	359528
12 mm - 3/8" ISO	359520
16 mm - 3/8" ISO	359521
16 mm - 1/2" ISO	359529

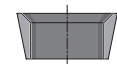


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GRIP RING SET, STAINLESS STEEL

For use with stainless steel connectors of metering pumps and accessories using the Swagelok system. The rings must always be changed in pairs. A ring set consists of a front and rear grip ring.

	Part No.
Ring set 6 dia. for tubing 6 mm o.d.	104232
Ring set 8 dia. for tubing 8 mm o.d.	104236
Ring set 12 dia. for tubing 12 mm o.d.	104244

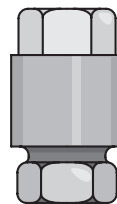


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STRAIGHT CONNECTOR, STAINLESS STEEL

Serto system for connecting a PE or PTFE injection line to stainless steel tubing, made of stainless steel with a grip ring but no support sleeve (components in contact with the medium stainless steel 1.4571).

	Part No.
6 mm o.d. to 6 mm o.d. stainless steel tubing	359317
8 mm o.d. to 8 mm o.d. stainless steel tubing	359318
12 mm o.d. to 12 mm o.d. stainless steel tubing	359320



pk_1_118

GRIP RING, STAINLESS STEEL

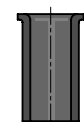
Serto system for use with stainless steel connectors.

	Part No.
6 dia. for tubing 6 mm o.d.	359357
8 dia. for tubing 8 mm o.d.	359355
12 dia. for tubing 12 mm o.d.	359356

REDUCING GRIP RING, STAINLESS STEEL

Serto system. By changing the grip ring for a reducing grip ring, and the support sleeve in the case of plastic tubing, a smaller pipe can be connected.

	Part No.
8/6 dia. for tubing 6 mm o.d. x 4 mm	359376



pk_1_090

SUPPORT SLEEVE, STAINLESS STEEL

For connecting PE or PTFE tubing to stainless steel connectors using Swagelok and Serto systems.

	Part No.
for hose 6 dia. x 4 mm standard tubing	359365
for hose 8 dia. x 5 mm standard tubing	359366
for hose 12 dia. x 9 mm standard tubing	359368



3.16 Accessories - Solenoid Driven Pumps

3.16.1 Flexible & Rigid Tubing

SUCTION AND DISCHARGE LINE

For pumps and accessories. It is recommended that only original tubing be used so as to ensure that the mechanical strength of the clamp unions and also the resistance to pressure and chemicals are maintained.

Max. working pressure bar*							Part No.
PTFE	1.75	mm o.d.	x	1.15	mm i.d.	12*	37414
PTFE	3.24	mm o.d.	x	2.4	mm i.d.	8*	37415
PTFE	6	mm o.d.	x	3	mm i.d.	20*	1021353
PTFE	6	mm o.d.	x	4	mm i.d.	14*	37426
PTFE	8	mm o.d.	x	4	mm i.d.	25*	1033166
PTFE	8	mm o.d.	x	5	mm i.d.	16*	37427
PTFE	12	mm o.d.	x	9	mm i.d.	17*	37428
PTFE	19	mm o.d.	x	16	mm i.d.	10*	37430

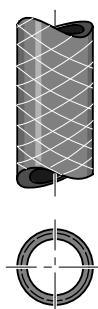
* Maximum working pressure at 20°C in accordance with DIN EN ISO 7751, provided there is media compatibility and the connection is properly made.

				Part No.
Stainless steel 1.4435	1.58	o.d. x 0.9 mm i.d.	400	1020774
Stainless steel 1.4435	3.175	o.d. x 1.5 mm i.d.	400	1020775
Stainless steel 1.4571	6	o.d. x 5 mm i.d.	175	15738
Stainless steel 1.4571	8	o.d. x 7 mm i.d.	131	15740
Stainless steel 1.4571	12	o.d. x 10 mm i.d.	185	15743

F.V. & I.V		Tube		Part No.
Tube Kit - Beta/Gamma	PVT	6 x 4	PE,PVC	1024715
Tube Kit - Beta/Gamma	PVT	8 x 5	PE,PVC	1024717
Tube Kit - Beta/Gamma	PVT	12 x 9	PE,PVC	1024718

HIGH PRESSURE TUBE

For small capacity pumps 10-16 bar working pressure



Max. working pressure bar*					Part No.
10 X 4 Tube Fabric Reinforced	PVC	16*	5m		1004533
10 X 4 Tube Fabric Reinforced	PVC	16*	50m		1004536
12 X 6 Tube Fabric Reinforced	PVC	16*	5m		1004538
12 X 6 Tube Fabric Reinforced	PVC	16*	50m		1004541

* Maximum working pressure at 20°C in accordance with DIN EN ISO 7751, provided there is media compatibility and the connection is properly made.

FOR PE AND PVC TUBE SEE 'GREEN PAGE' Price List

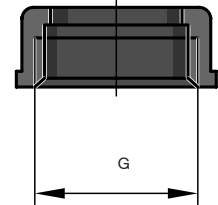
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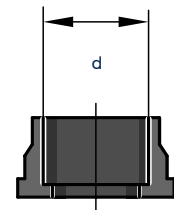
3.17 Accessories - Motor-Driven Pumps General

3.17.1 Accessories - Union Nuts & Inserts

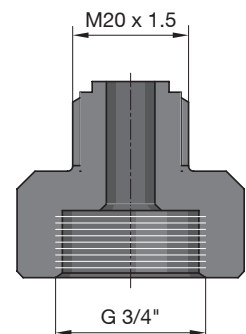
Connecting parts/ fittings						Part no.
	Union nut	PP	5/8"	-	DN 8	800665
●	Union nut	PP	3/4"	-	DN 10	358613
●	Union nut	PP	1"	-	DN 15	358614
●	Union nut	PP	1 1/4"	-	DN 20	358615
●	Union nut	PP	1 1/2"	-	DN 25	358616
●	Union nut	PP	2"	-	DN 32	358617
	Union nut	PP	2 1/4"	-	DN 40	358618
	Union nut	PP	2 3/4"	-	DN 50	358619
●	Union nut	PVC	3/4"	-	DN 10	356562
●	Union nut	PVC	1"	-	DN 15	356563
●	Union nut	PVC	1 1/4"	-	DN 20	356564
●	Union nut	PVC	1 1/2"	-	DN 25	356565
●	Union nut	PVC	2"	-	DN 32	356566
	Union nut	PVC	2 1/4"	-	DN 40	356567
	Union nut	PVC	2 3/4"	-	DN 50	356568
●	Union nut	PVDF	3/4"	-	DN 10	358813
●	Union nut	PVDF	1"	-	DN 15	358814
●	Union nut	PVDF	1 1/4"	-	DN 20	358815
●	Union nut	PVDF	1 1/2"	-	DN 25	358816
●	Union nut	PVDF	2"	-	DN 32	1003639
	Union nut	PVDF	2 1/4"	-	DN 40	358818
	Union nut	PVDF	2 3/4"	-	DN 50	358819
●	Union nut	SS	3/4"	-	DN 10	805270
●	Union nut	SS	1"	-	DN 15	805271
●	Union nut	SS	1 1/4"	-	DN 20	805272
●	Union nut	SS	1 1/2"	-	DN 25	805273
●	Union nut	SS	2"	-	DN 32	805274
	Union nut	SS	2 1/4"	-	DN 40	805275
	Union nut	SS	2 3/4"	-	DN 50	805276
●	Union end (female thread)	SS	3/8"	-	DN 10	805285
●	Union end (female thread)	SS	1/2"	-	DN 15	805286
●	Union end (female thread)	SS	3/4"	-	DN 20	805287
●	Union end (female thread)	SS	1"	-	DN 25	805288
●	Union end (female thread)	SS	1 1/4"	-	DN 32	805289
	Union end (female thread)	SS	1"	-	DN 40	805290
	Union end (female thread)	SS	2"	-	DN 50	805291



pk_2_069



pk_2_069



pk_1_112

Note: PVC Solvent Weld fittings are standard with Sigma and optional with Vario.

ADAPTOR

PVC DN10 - 3/4" F to 20x1.5 M	800816
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3.18 Accessories - Contact Water Meters COLD

3.18.1 Accessories - Contact Water Meter for use in Potable Water

ZENNER PULSE-TYPE WATER METER, DIN TYPE

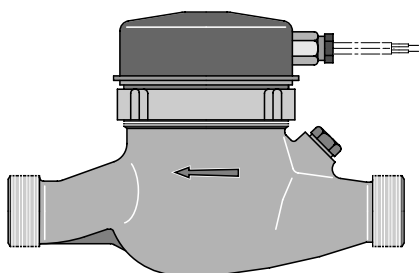
- PN 16 bar, readable, type series MTKD1-N, max. working temperature 50°C
- $Q_{max.}$ = over loading Q_d = continuous max. duty loading
- Q_n = nominal loading
- Horizontal mounting

Q_{max} Q_d/Q_n NG - m ³ /h	Union connector size inch DN/mm	Installed length without union mm	Litres per pulse	Part No.
5/4/2.5	3/4" - DN 20	190	1	P304434
12/10/6	1" - DN 25	260	1	P304445
20/16/10	1 1/2" - DN 40	300	1	P304436
31/25/15	2" - DN 50	300	1	P304430

Note

- 2" water meters previously supplied by ProMinent had a length of 270mm.
- all other water meters listed are same length as earlier supplied unit.

NOTE: All water meters complete with Union assemblies.



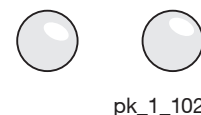
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3.19 Accessories - Mechanical / Hydraulic

3.19.1 Accessories - Mechanical / Hydraulic Accessories

Valve Balls		Part No.
PTFE diameter 4.7	for valve diameter 6 mm	404255
PTFE diameter 9.5	for valve diameters 8 & 12 mm	404258
PTFE diameter 11.0	for DIN 10 valve	404260
PTFE diameter 16.0	for DIN 15 valve	404259
PTFE diameter 20	for DN 20 valve	404256
PTFE diameter 25	for DN 25 valve	404257
PTFE diameter 38.1	for DN 40 valve	404261
Ceramic diameter 4.7	for valve diameter 6 mm	404201
Ceramic diameter 9.2	for valve diameters 8 & 12 mm	404281
Ceramic diameter 11.1	for DIN 10 valve	404277
Ceramic diameter 16.0	for DIN 15 valve	404275
Ceramic diameter 20	for DN 20 valve	404273
Ceramic diameter 25	for DN 25 valve	404274
Ceramic diameter 38.1	for DN 40 valve	404278
Stainless Steel diameter 4.7	for valve diameter 6 mm	404233
Stainless Steel diameter 9.5	for valve diameters 8 & 12 mm	404240
Stainless Steel diameter 11.1	for DIN 10 valve	404243
Stainless Steel diameter 16.0	for DIN 15 valve	404244
Stainless Steel diameter 20	for DN 20 valve	404246
Stainless Steel diameter 25	for DN 25 valve	404247



Valve Springs for Liquid Ends		Part No.
1.4571 valve spring	0.1 bar for valve 4.7	469406
1.4571 valve spring	0.1 bar for valve 9.2	469403
Hastelloy C valve spring	0.5 bar DN10	469115
Hastelloy C valve spring	0.1 bar DN 10	469114
Hastelloy C valve spring	0.5 bar DN 15	469108
Hastelloy C valve spring	0.1 bar DN 15	469107
Hastelloy C valve spring	0.1 bar DN 20	469451
Hastelloy C valve spring	0.1 bar DN 25	469452

Valve Springs for Injection Valves		Part No.
1.4571 valve spring	1.0 bar for R 1/4" - 6 diameter connector	469401
Hastelloy C valve spring	0.5 bar for R 1/2" - 6, 8 & 12 mm diameter connector	469404
Hastelloy C valve spring	1.0 bar for R 1/2" - 6, 8 & 12 mm diameter connector	469413
Hastelloy C valve spring	0.5 bar DN 10	469115
Hastelloy C valve spring	1.0 bar DN 10	469119
Valve spring	0.5 bar DN 15	469108
Valve spring	1.0 bar DN 15	469116
Hastelloy C valve spring	0.5 bar DN 20	469409
Hastelloy C valve spring	1.0 bar DN 20	469135
Hastelloy C valve spring	0.5 bar DN 25	469414
Hastelloy C valve spring	1.0 bar DN 25	469136
Hastelloy C valve spring	0.5 bar DN 40	469104
Hastelloy C valve spring	1.0 bar DN 40	469137



Hastelloy C valve spring with FEP coating		Part No.
Hastelloy C/PVDF valve spring	0.5 bar for R 1/2" - 6, 8 & 12 mm diam. connector	818590
Hastelloy C/PVDF valve spring	1.0 bar for R 1/2" - 6, 8 & 12 mm diam. connector	818536
Hastelloy C/PVDF valve spring	0.5 bar DN 10	818515
Hastelloy C/PVDF valve spring	0.5 bar DN 15	818516
Hastelloy C/PVDF valve spring	0.5 bar DN 20	818517
Hastelloy C/PVDF valve spring	0.5 bar DN 25	818518
Hastelloy C/PVDF valve spring	0.5 bar DN 40	818519



3.20 Accessories - Suction Pressure Regulator

3.20.1 Suction Pressure Regulator

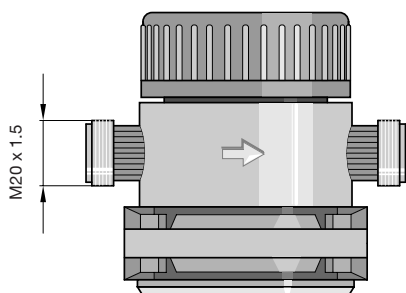
SUCTION PRESSURE REGULATOR

The suction pressure regulator is a spring-loaded diaphragm valve which opens as a result of the pump suction pressure. This ensures that chemicals cannot flow when the pump is not running, nor can a vacuum be created as a result of tube rupture.

A ball check valve must be fitted to prevent undesirable suction action at the pump outlet(e.g. siphon effect).

An adjustable spring is used to set the maximum required negative pressure for each operating situation up to 400 mbar. For pumps with positive inlet pressure a minimal vacuum of approx. 50 mbar is sufficient. The pump must produce this vacuum in any case, even for an atmospheric pressure inlet.

CAPACITY: 50 l/h max.



pk_2_079

	Mat.	Connector	Part No.
SDR 50	PVC	M 20 x 1.5 (solenoid pumps)	P6-1005505
SDR 50	PVC	M 20 x 1.5 (solenoid pumps)	P8-1005505
SDR 50	PVC	M 20 x 1.5 (solenoid pumps)	P12-1005505
SDR 50	PVC	DN10 (3/4" up to 50l/hr)	P1005506



3.21 Accessories - Relay for Dosing Pumps

3.21.1 Accessories - Relay for Dosing Pumps

RETROFIT & REPLACEMENT

Pump Type	Relay Type	Relay Part No.	Cable Part No.
BT4a	1 & 3*	731082	1002130
BT5a	4 & 5*	1002528	
BT4b	1 & 3*	1029311	1002011
BT5b	4 & 5*	1029310	1002011
GMXA & GXLA	1	1050643	1002130
	4	1050654	1002011
	C	1105292	1002011
	F**	1050824	1002130
	G**	1050057	1002011
Delta	1 & 3	1029311	
	4	1029310	1002011
	5	1029310	1002011
	A	1029310	1002011
	C	1031273	1002011
	F**	1030460	1002011
	G**	1030459	1002011
S1Cb	1	1029311	
S2Cb	3	1029310	1002011
S3Cb	8	1031273	1002011
5m & 10m cables available:			
	5 m		1002011-5
	10m		1002011-10

Note: Relay can be retrofitted into pumps.

*Relay needs to be programmed in our workshop.

**Relay card ONLY, does not include solenoid.



3.22 Accessories - DulcoFlow® Flow Meter

3.22.1 DulcoFlow Flow Meter

The DulcoFlow® flow meter measures all liquid media without any media contact. The rate of flow of non-continuous volume flows and the amount of liquid which has passed through in pulsing flow regimes are measured.

The measuring instrument operates based on the ultrasonic measurement method. Media contacting parts are manufactured using chemically resistant PVDF/PTFE. This ensures that aggressive media can also be measured without problem. The instrument is installed directly in the pipe of the medium being measured.

Interfering influences, such as air bubbles, are identified by the DulcoFlow® and forwarded to the analysis unit as an error message. The instrument, which is structured for wall mounting, is designed for a measurement range of 0.1 to 30 litres per hour.

FEATURES

- Direct display of the instantaneous flow and cumulative flow in litres.
- Compact universal housing.
- Two-line display.
- Frequency output for metering pump control.
- Analogue output 0/4...20 mA, can be configured as a recorder output or a control output.

MAIN APPLICATIONS

- Monitoring and recording the dosing of chemicals in:
- Water treatment, Paper industry.
- Waste water treatment.
- Chemical industry, Power plants, etc.

MEASURING PRINCIPLE

The DulcoFlow® flow meter measures the volume flow of pulsing flows. The ultrasonic, time of flight measurement method is used. For the time of flight measurement, a sound signal is alternately transmitted in and against the direction of flow. The time difference is then a measure of the mean flow velocity. Use of the ultrasound measurement method automatically compensates any temperature induced changes in the medium. Operation without moving parts guarantees a long service life and wear-free operation.

ADVANTAGES

- Direct display of the instantaneous flow and cumulative flow in litres.
- Can be switched over to display the pulsing frequency of the liquid or pump.
- Safety and reliability through display of the device operating status using LEDs.
- Safety and reliability through display of the measurement status using LEDs

Technical Data

Measuring range:	0.1..... 50 l/h
Accuracy:	< 2 % after calibration
Analogue output:	4...20 mA
Frequency output:	< 10 kHz (optional on special order)
Protection class:	IP 65
Power supply:	100...230 V AC/ 50/60 Hz
Dimensions:	183.6 x 121 x 122.7 mm (H x W x D)
Media to be measured Connector:	Tube connection with 6x4, 8x5 or 12x9 mm
Medium pressure:	(min.) 3 ...16 bar
Medium temperature :	-10 ... 45 °C
Dyn. viscosity (rj):	0.5 ... 2000 mPa

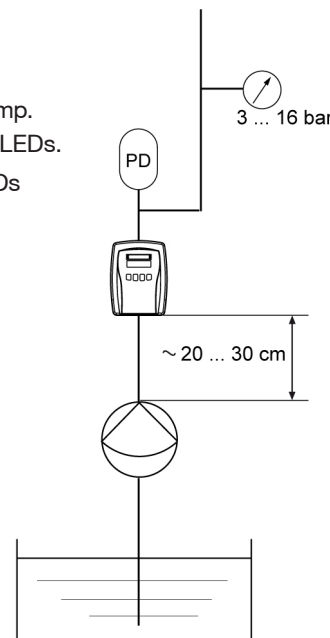
Part No.

Current output	DFMa05T1C100	6x4
Contact output	DFMa05T1C200	6x4
Current output	DFMa05T2C100	8x5
Contact output	DFMa05T2C200	8x5
Current output	DFMa08T3C100	12x9
Contact output	DFMa08T3C200	12x9

DFMa05 Beta/Gamma L ... 1000 - 0413/0713, Delta 1608-1612

DFMa08 Beta/Gamma L ... 0420, Delta 1020 - 0450

GMXa & GLXa - **CHECK STROKE SETTINGS**



Hydraulic Installation Parameters

The DulcoFlow® can also be used at constant pressures under 3 bar. However, in such cases, we recommend consulting with ProMinent head office, Sydney.

NOTE

Not suitable for liquids, which have minimal acoustic conductivity, e.g. sodium hydroxide (NaOH) with a concentration of greater than around 20%

We recommend first testing the measurability with emulsions and suspensions. Not recommended for pumps with SER type liquid end.



3.23 Accessories - Pulsation Dampeners

3.23.1 Accessories - Pulsation Dampeners

The pulsation dampener is used to produce minimal pulsation metering and to reduce flow resistance in long discharge lines.

The cushion of gas located between the hose and the housing is compressed by a thrust stroke from the metering pump, allowing a quantity of feed chemical to pass along the discharge line. On the next suction stroke, the excess pressure created by the cushion of gas forces the chemicals through the pipe. The gas is now released from pressure, and returns to its original volume.

Important notice: The pulsation dampener must be used in conjunction with a relief valve.

PVC In Line Dampener

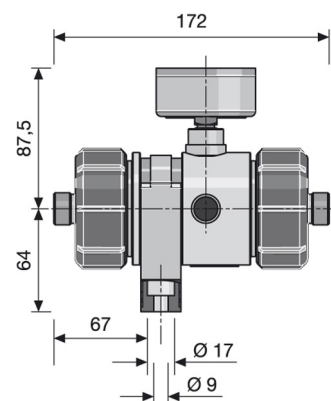
Operating conditions: 5 - 20 °C - max. operating pressure 10 bar

40 °C - max. operating pressure 6 bar

60 °C - max. operating pressure 2 bar

	Volume l	Dampener diaphragm	Seal material	Connection	Part no.
PCE	0.05	CSM*	EPDM	M 20 x 1.5	P1026774-6
PCE	0.05	CSM*	EPDM	M 20 x 1.5	P1026774-8
PCE	0.05	CSM*	EPDM	M 20 x 1.5	P1026774-12
PCB	0.05	FPM	FPM	M 20 x 1.6	P1026777-6
PCB	0.05	CSM*	FPM	M 20 x 1.5	P1026777-8
PCB	0.05	CSM*	FPM	M 20 x 1.5	P1026777-12
PCE	0.05	CSM*	EPDM	G 3/4 – DN 10	P1026775
PCB	0.05	FPM	FPM	G 3/4 – DN 10	P1026778

Note: M20x1.5 supplied with connection set G3/4 - DN10 supplied with SW fittings.



P_AC_0180_SW

Connection in-line dampener	Stroke volume (ml/stroke)	ProMinent® pump type
M20 x 1.5	0.05 ... 3.00	Beta® BT4a / BT5a gamma/ L GALa, GMXa delta® DLTa 1612 - 0730, GXLa
G3/4 – DN 10	3.00 ... 4.00	DLTa 0450, GXLa Vario C VAMc 10008 – 07042 Sigma S1Ba / S1Ca / S1Cb 12017 – 10050



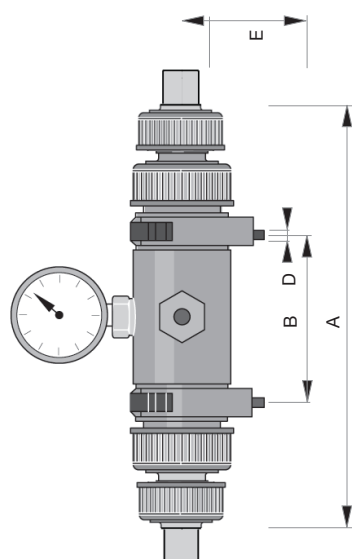
3.23 Accessories - Pulsation Dampeners

3.23.1 Accessories - Pulsation Dampeners

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Important notice: The pulsation dampener must be used in conjunction with a relief valve.



Note: A for total space required for installation in-line.

PVC IN LINE DAMPENER

Removable hose, EPDM/Viton seals.

Type	Volume ml	Hose/Seal Material	Connector	Part No.
PDS	2500	Hypalon/E	Solvent Weld 40 Male	P1001342
PDS	2500	Viton/V	Solvent Weld 40 Male	P1001343

PP IN LINE DAMPENER

Removable hose, EPDM seals.

Type	Volume ml	Hose material	Part No.
PDS	2500	Hypalon *** non-stock item ***	P1001344
PDS	2500	Viton *** non-stock item ***	P1001345

MEASUREMENTS

Type	Measurements				
	A	B	C	D	E
PDS 2500	541	525	G 2	d 11	99.5

To select the correct inline dampener you need to consider the stroke volume of the dosing pump. The higher the volume of the dampener is, the better is the dampening effect.

Type Operation	Stroke Volume*up to ... ml/stroke	Max Admissible Pressure (bar)
PDS 2500	400	8

The pre-pressure is = 0.6 x operating pressure.

*referring to the rest fluctuations +/- 10% of the nominal pressure for singlehead pumps.

Note: as a rule of thumb you can use the following formula:

volume of the pulsation dampener (in litres) = [26 x max. stroke volume (in ml)] /1000

Note:

Refer to maximum permissible pressure rating in tables

Note:

When using Sodium Hypochlorite select PVC & Viton.



3.23 Accessories - Pulsation Dampeners

3.23.1 Accessories - Pulsation Dampeners

Accumulators

Pulsation dampers with separating bubble for providing separation between the gas cushion and metered chemical are used for low-pulsation metering as well as for reducing the flow resistance in long metering lines and in connection with viscous media. The response pressure of the gas cushion should be approx. 60-80% of the operating pressure.

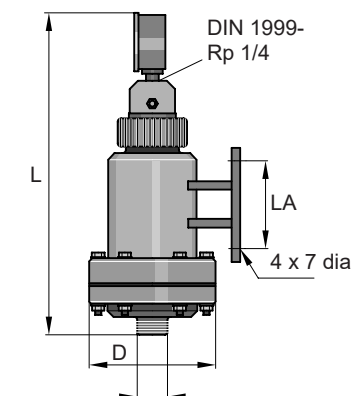
Important: When using a pulsation damper, the pressure relief valve should be fitted with an adjustable back pressure valve.

PVC ACCUMULATORS

Accumulator removable, FKM seals.

Volume Litres	Diaphragm material	Connection	L mm	RD mm	LA mm	Part no.
0.5	Butyl	G 1 DN 15	361	145	100	791691
0.5	FKM	G 1 DN 15	361	145	100	791695
1.0	Butyl	G 1 1/4 DN 20	411	170	100	791692
1.0	FKM	G 1 1/4 DN 20	411	170	100	791696
2.5*	Butyl	G 1 1/2 DN 25	571	170	190	791693
2.5*	FKM	G 1 1/2 DN 25	571	170	190	791697
5.0*	Butyl	G 2 1/4 DN 40	936	170	230	791694
5.0*	FKM	G 2 1/4 DN 40	936	170	230	791698

***Caution:** The product contains adhesive joints with Tangit.
Please note the resistance of Tangit adhesive.



DIN ISO 118 G1A

IN-LINE DAMPER PVDF

Function: Hydropneumatic accumulator with deflection facility.

The PVDF pulsation damper with PTFE diaphragm offers outstanding resistance to chemicals and is therefore used in connection with a large number of different liquids. The pulsation damper has two liquid connections and can therefore be installed directly in the piping system (in-line). The deflection facility in the liquid valve directs the volumetric flow straight at the diaphragm thus ensuring direct contact of the volumetric flow with the diaphragm. Fluctuations in volumetric flow are optimally balanced out by the enclosed gas volume.

Important: The pulsation dampers must be protected by an overflow valve.

Type	Rated volume in l	Max. pressure	Connection in bar	Part No.
PD In-line	0.2	10	G1 - DN15	P1026252
PD In-line	0.5	10	G1 - DN15	P1026736

The preload is approx. 0.6x operating pressure. Medium temperature max. 65°C

The accumulator is filled with nitrogen or with compressed air using a commercially available filler fitting (e.g. car tyre inflation fitting) via the VG8 gas filler connection.

Caution: Nitrogen should be used as the filler gas in connection with combustible liquids. On no account fill with oxygen!

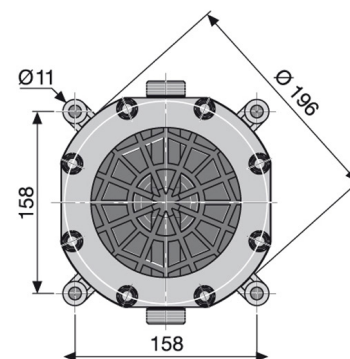
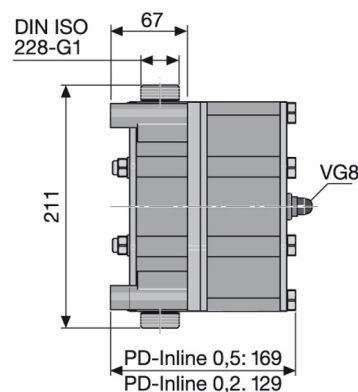
Design: DGRL97/23/EC, other acceptance procedures/countries available on request.

Fluid group: 1 and 2

Certificates: Manufacturer's test certificate M DIN55350-18

Manufacturer: HYDAC Technology

NOTE: HYDAC Units are supplied pre-filled in min 2 Bar, to maintain bladder shape.



CONNECTION/ADAPTER KITS

Consisting of PTFE-formed composite seal, insert/adaptor and union nut.

Connection PD In-line	Connection Piping	Materials	Part No.
G1 - DN15	DN10	PVDF	P1029426
G1 - DN15	DN15	PVDF	P1029445
G1 - DN15	DN20	PVDF	P1029429
G1 - DN15	DN25	PVDF	P1029432



4.0 ProMinent® Chemical Tanks and Bunds

4.0.1 ProMinent Chemical Tanks

Made of transparent UV-stabilised polyethylene, with scale for litre and US gallons, lockable screw cap, moulded-in threaded sleeves (except 35l) to bolt down a ProMinent® electronic metering pump, mounting flange with moulded-in stud bolts for manual or electric stirrer. All tanks of especially rugged design with ProMinent® logo.

All tanks are fitted with 3/4" BSPF plugged outlet

useful volume (litre)	Ø mm D	Height mm H	Thread sleeves for metering pump	Empty weight kg	Cubic weight kg	Part No.
35	350	485	w/o threaded sleeves	3.5	10	791993
60	410	590	4 Gamma, Beta, Alpha	5	17	791994
100	500	760	4 Gamma, Beta, Alpha	7	32	1001490
140	500	860	4 Gamma Beta, Alpha	9.5	36	791995
250	650	1100	5 Delta GALa, Beta, Alpha, Vario	17.5	78	1023175
500	820	1190	7 2 x Beta, Alpha, Vario & Sigma	24.5	133	791997
1000	1070	1260	8 Alpha, Vario & Sigma	48	240	1010909
1500	1150	1735	8 Gamma X, Beta, Delta Sigma1/2/3	80		1060975

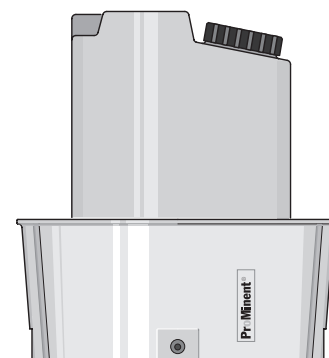
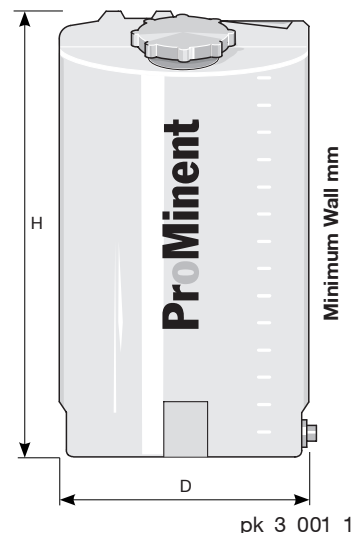
Note: These tanks are fully enclosed, and as such cannot be stacked. For freight purposes the cubic capacity rather than weight will be charged for shipment.

NOTE: FOR LARGER TANKS SEE GREEN PAGES PRICE LIST

SCREW PACK FOR PUMPS

Includes 2 x SS screws and washers for mounting pumps on above ProMinent tanks.

	Part No.
Beta / Gamma	PA39002781
Sigma 1	PA39002782
Sigma 2	PA39002783
Sigma 3	PA39002784



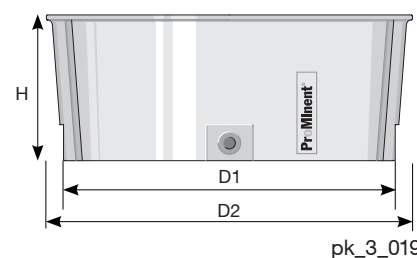
4.0.2 Stackable Bunds For Dosing Tanks PE

Made of UV stabilised polyethylene, stackable, with ProMinent® logo. Incorporating 2 lateral flats for mounting bund.

Note: There is NO Australian Standard for bunds of 250 litres and under capacity. ProMinent have made their bunds to comply with their tanks above PLUS 10% reserve.

PE COLOURLESS/TRANSPARENT STACKABLE BUNDS

Usable capacity in litres	Material	D2 R mm	D1 R mm	H mm	Cubic weight kgs	Part No.
60	PE	680	607	270	21	1010880
100	PE	802	727	320	34	1010881
140	PE	811	727	370	41	1010882
250	PE	917	807	520	74	1010883

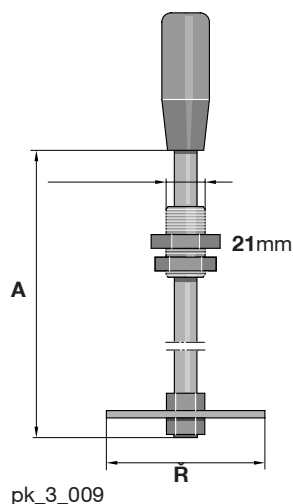


4.1 ProMinent® Dosing Tanks

4.1.1 Accessories for Dosing Tanks

PP HAND MIXER

Completely assembled

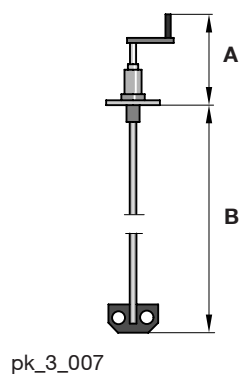


	A	Ř	Part No.
for tanks 35 l and 60 l **	460 mm	90 mm	741118
for tanks 100 l and 140 l **	660 mm	90 mm	741119
for tanks 250 l and 500 l	980 mm	90 mm	741120

** = non stocked item

PP HAND STIRRER

With crank, completely assembled



	A	B	Part No.
for tanks 60 l **	220 mm	450 mm	914701
for tanks 100 l **	220 mm	635 mm	914738
for tanks 140 l **	220 mm	760 mm	914702
for tanks 250 l **	220 mm	900 mm	914703
for tanks 500 l **	220 mm	900 mm	914703
for tanks 1000 l **	220 mm	1065 mm	914705

** = non stocked item

Note: for Electric Stirrers see GREEN PAGE price list

4.1.2 Spare Parts for Tanks

	Part No.
Push cap for 35 l tank	740708
Screw cap with seals for 60-100-140-250 l tank	1031429
Screw cap with seals for 500-1000 l tank	740718



5.0 DULCOMETER® Compact Controller

5.0.1 DULCOMETER® Compact Controller

DULCOMETER® Compact transmitters with control functions for pH, ORP, Chlorine and conductive conductivity measured variables provide basic functions for applications in water treatment. They have a fixed configuration with the following features.

Measured variables pH and ORP (can be changed on the controller)

- Operation independent of the operating language (use of abbreviations, such as CAL, PARAM, CONFIG, ERROR)
- Illuminated display
- 3 LED display operating state (relay 1 / 2 active, Error)
- Sensor monitoring for pH
- P and PID control characteristics
- Selectable control direction (raise or lower measured value)
- Pulse frequency relay for control of metering pump
- Power relay can be configured as an alarm, limit value or pulse width modulated control output for metering pumps, (connection function or switch on operating voltage)
- Analogue output 0/4...20 mA can be configured as a writer output or control output
- Digital input to switch off the control or to process a sample water limit contact by remote control
- Temperature sensor input (Pt 1000) for temperature compensation of the pH value

Applications

- Waste water treatment
- Treatment of drinking water
- Swimming pool water treatment



Technical Data

Measurement range	pH: 0.00 ... 14 ORP: -1000 ... +1000 mV ... Chlorine: 0.05- 10 ppm
Resolution	pH: 0.01 pH ... ORP: 1 mV ... Chlorine: 0.01 ppm Conductivity: 1 µS/cm depends on measuring range)
Correction variable	Temperature for pH via Pt 1000
Correction range	0 ... 120 °C
Control characteristic	P/PID
Control	1-way controller with selectable control direction (raise/lower)
Signal current output	1 x 0/4-20 mA galvanically isolated max. load 400 Ω Range and assignment (measured or actuating variable) can be set
Control outputs	1 pulse frequency output for control of the metering pump1 relay (alarm or limit value relay or pulse length control) 1 x analogue output 0/4 ... 20 mA
Electrical connection	90 - 253 V ~
Ambient temperature	-10 ... +60 °C
Enclosure rating	IP 67
Dimensions	135 x 125 x 75 mm (H x W x D)
Weight	0,5 kg

Part No.

Panel Mounting Kit

1037273



5.0 DULCOMETER® Compact Controller

5.0.2 Identity Code & Pricing for DULCOMETER® Compact Controller

DCCa	Version
W	Wall / Pipe mounted IP67 for Panel Mounting use this 'W' and add Panel Mounting Kit P/N 1037273 above
S	Do not use this for panel Mounting see above
Design	
00	with ProMinent® logo
Operating voltage	
6	90 ... 253 volts, 48-63 Hz
Measured Variable	
CO	Free Chlorine
PR	pH / ORP (switchable)
L3	Conductive Conductivity (Unit designation COND_C)
L6	Inductive Conductivity (Unit designation COND_I)
Hardware Extension	
0	None
Certification	
01	CE (Standard)
Certificates	
0	none
Documentation language	
EN	English

DCCa W 00 6 PR 0 01 0 EN



5.1 DULCOMETER® Measurement and Control Technology

5.1.1 DULCOMETER® D1C Series Controller

Microprocessor-based controller

The measured variables are:

- pH/value
- Conductivity
- Redox potential
- Chlorine dioxide
- Temperature
- Ozone
- Chlorine concentration
- Oxygen
- mA signal

Various expansion stages permit process adaptation to various measurement, control and metering requirements.

- Large, clear display of measured value
- Easy operation and clear prompting of settings by texts in the display
- Menu-assisted calibration of measuring probes
- Activation of ProMinent® metering pumps, solenoid valves or actuators
- Monitoring of limit values
- Connection of measuring probes also via converter with disturbance free mA signal
- Connection facility for recording measured value by mA signal

MICRO-PROCESSOR-BASED CONTROLLER FOR WALL MOUNTING

The most important data:

Standard format: 189 x 200 x 76 mm (W x H x D)

Enclosure rating: IP65

Accessories

Part no.

Kit to convert Wall mounting D1C & D2C into Panel mount

792908



5.1 DULCOMETER® Measurement and Control Technology

5.1.2 Identity Code & Pricing for DULCOMETER® D1Cb Series Controller

D1Cb DULCOMETER® D1C series b controller	
Installation	
W	Wall mounting
Version	
00	with ProMinent logo
Power Supply	
6	90 - 253 V 48/63 Hz
Approvals	
01	CE Mark
Hardware Expansion 1	
0	None
Hardware Expansion 2	
0	None
1	RC protection of the 2 power relays by using a inductive load (motor driven pump) together with power Relay 'M' or 'G'
External Connection	
0	None
Software Preset	
V	Software preset
Measured variables	
A	PES (peracetic acid) -
B	Bromine 0-10 ppm -
C	Chlorine 0-0.5/2/5/10/20/50/100 ppm -
D	Chlorine dioxide 0-0.5/2/10/20 ppm -
F	Fluoride -
L	Conductivity (check probe compatibility) -
H	Hydrogen Peroxide H ₂ O ₂ -
P	pH 0-14 -
R	Redox -1000...+1000 mV -
S	Standard signal 0/4-20 mA -
T	Temperature 0-100° C, 32-212° F -
X	Dissolved Oxygen O ₂ -
Z	Ozone 0-2 ppm O ₃ -
Connection of measured variable	
1	Standard signal /04-20 mA terminal (signal converters are necessary for controllers with standard signal 0/4-20mA measured variable connection Terminal mV for P or R) -
Correction variable	
0	None
2	Temperature via Pt 100 (via terminal) for pH
4	Manual temperature compensation for pH
Control input	
0	None
1	Pause
Standard signal output	
0	None
1	Standard signal 0/4-20 mA configurable output
Power relay	
G	Alarm, 2 limit relays or 2 timer
M	Alarm, 2 solenoid valve relays or 2 timer
Pump control	
0	None
2	Two pumps via pulse frequency
Control characteristic	
0	None
1	P control
2	PID control
Language	
EN	English

Example shown:

D1Cb for Chlorine with pause and 4-20 mA output.

D1Cb W 00 6 01 0 0 0 V C 1 0 1 1 G 0 0 EN



5.2 DULCOMETER® diaLog DACb Multi-parameter Controller

5.2.1 diaLog DACb Multi-parameter Controller

Have you been looking for a simple controller for water analysis? One that is easy to operate and with which you can freely select between all common measured variables per channel? There is one: our all-rounder DULCOMETER® diaLog DACb. What is more, it is Ethernet-/LAN-capable and can be ideally integrated into existing networks.

The DULCOMETER diaLog DACb is our compact all-rounder for water analysis. With its specially designed functionalities, e.g. processing or interference variables and switch-over of control parameters, it closes the control circuit between DULCOTEST® sensors and ProMinent® metering pumps. The two measuring and control channels of the DULCOMETER® diaLog DACb can be individually configured to meet customer requirements.

Everything that you need for the reliable treatment of industrial and process water, potable water or even swimming pool water.

BENEFITS

- Simple operation thanks to a clearly arranged display
- More for your money: two measuring and control channels now in the basic configuration
- Versatile use: all common measured variables can be set per channel and subsequently altered
- Control from everywhere: LAN-capable and convenient remote access via integrated web server
- Maximum flexibility: individually adjustable to different operating statuses, e.g. Day-Night mode
- Excellent process safety and reliability: avoidance of incorrect metering by time-based monitoring of control variables
- Minimal time and effort: effortless duplication of device settings
- Precise monitoring and documentation: Event, calibration and measured data logger with easy-to-access SD memory card
- Optimum communication: Integration into customer networks by means of different field bus systems (PROFIBUS® DP and Modbus RTU etc.)

FIELD OF APPLICATION

- Measurement and control of water parameters in industrial and process water treatment plants
- Monitoring of the water parameters potable water
- Measurement of pH value and disinfection parameters in the food and beverage industry
- Measurement and control of the hygiene parameters in swimming pools
- Monitoring of the chlorine dioxide concentration in systems for legionella control and prevention, for example in schools, hotels or hospitals
- Measurement of the disinfection parameters of irrigation and sprinkler irrigation water in market gardens



5.2 DULCOMETER® diaLog DACb Multi-parameter Controller

5.2.2 Technical Data diaLog DACb Multi-parameter Controller

Measuring range	mV connection type: pH: 0.00 ... 14.00 ORP voltage: -1500 ... +1500 mV Connection type mA (amperometric measured variables, measuring ranges corresponding to the sensors): Chlorine Chlorine dioxide Chlorite Bromine Ozone Hydrogen peroxide (PER sensor) Hydrogen peroxide (PEROX sensor with PEROX transducer V2 Order No. 1047979) Peracetic acid Dissolved oxygen Connection type mA (potentiometer measured variables, measuring ranges corresponding to the sensors): pH ORP voltage Fluoride Conductivity (measuring ranges corresponding to the transmitters): via Transmitter 0/4 ... 20 mA Temperature: via Pt 100/Pt 1000, measuring range 0 ... 150 °C
Resolution	pH: 0.01 ORP voltage: 1 mV Temperature: 0.1 °C Amperometric analysis (chlorine etc.): 0.001/0.01 ppm, 0.01 vol.%, 0.1 vol.%
Accuracy	0.3% based on the full-scale reading
Measurement input	pH/ORP (input resistance > $0.5 \times 10^{12} \Omega$)
Temperature compensation	Pt 100/Pt 1000 for pH, chlorine dioxide (CDP) sensor and fluoride
Correction range	0 ... 100 °C
pH compensation range for chlorine	Sensor CLE 3 and CLE 3.1: 6.5 ... 8.5, sensor CBR: 6.5 ... 9.5
Disturbance signals	Flow via 0/4 ... 20 mA or contact water meter 1 - 500 Hz, the interference variable acts on both channels (depending on identcode)
Control characteristic	P/PID control
Control	2 x bidirectional control outlets
Analogue outputs	2 (3) x 0/4 ... 20 mA electrically isolated, max. load 450 Ω , range and assignment (measured, correction, control variable) can be set
Control outputs	2 x 2 pulse frequency outputs for metering pump control 2 relays (limit value, 3-point step or pulse length control)
Alarm relay	250 V ~3 A, 700 VA contact type changeover contact
Digital control inputs	4 (7) as a remote control input for the functions pause control / sample water fault, parameter set switch-over, level monitoring of chemical tanks
Electrical connection	90 – 253 V, 50/60 Hz, 25 VA, 24 V DC
Field bus connection	PROFIBUS® -DP, Modbus RTU
Ambient temperature	0 ... 50 °C (for use indoors or with a protective enclosure)
Enclosure rating	Wall-mounted: IP 66 and IP 67 (NEMA 4X) Installation in the control cabinet: IP 54 for control cabinet door
Tests and approvals	CE, MET (corresponding to UL according to IEC 61010)
Housing material	PC with flame proofing equipment
Dimensions	250 x 220 x 122 mm (WxHxD)
Weight	1.3 kg



5.2 DULCOMETER® diaLog DACb Multi-parameter Controller

5.2.3 Identity Code & Pricing for diaLog DACb

DACb									
Mounting type									
W Wall-mounted									
S Control panel-mounted									
Design									
00 with ProMinent logo									
01 without ProMinent logo									
Operating voltage									
4 24 V DC									
6 100 - 230V AC 50/60 Hz									
Basic measured variables - Select 1 of the following									
VA 2 measuring and control channels, connector type mV/temperature + mA, e.g. for PH + chlorine sensors or Ph + fluoride									
AA 2 measuring and control channels, connector type mA + mA, e.g. for chlorine dioxide/chlorite sensors									
VV 2 measuring and control channels, connector type mV/temperature + mV temperature, e.g. for pH + ORP or two pH sensors									
L3 2 measuring and control channels, connector type: conductive conductivity and temperature via Pt100/Pt1000									
Extended functions									
0 none									
2 Package 2: third measure variable, Ph compensation for chlorine or interference variable (mA) or external setpoint specification via mA, additionally: 2 pump outputs, 3 digital control inputs, 1 mA output									
3 Package 3: third measure variable of your choice + control, additionally: 2 pump outputs, 3 digital control inputs, 1 mA output									
4 Package 4: combination of packages 2 and 3									
Software default settings									
0 no default settings									
Connection of the measured variables									
0 all sensor inputs via terminal									
Connection of digital sensors/actuators									
0 none									
Communication interface									
0 none									
A Modbus RTU, terminal									
B Profibus DPV1, terminal									
E LAN with web server, connect via M12 C-coded									
G Profinet 2xM12 coded									
Data logger									
1 with data logger (SD card interface + SD card + card reader)									
Hardware extension									
0 none									
1 Protective RC circuit (relay)									
Approvals									
01 CE (Standard)									
Certificates									
0 none									
English									
RC Protection board [spare part] P/N 733880									

Extended Functions

Versions 0 & 4 are stocked in Sydney
Versions 2 & 3 are ex Germany

***Note:** NOT for 24VDC Version

DACb W 00 6 VA 0 0 0 X 0 1 0 01 0 EN



5.3 DULCOnneX

5.3.1 DULCOnneX from ProMinent®

The complete soliton for the era of digitalisation and networking.

As more products are digitalised and networked the scope for monitoring, controlling and optimising's processes is taking on new forms. Our solution for digital fluid management is able to record, make available and efficiently create a wide range of information to help you optimise control processes. With DULCOnneX ProMinent is producing data from sensors, pumps and systems offering high value-added optimized information for systems operators.

READY FOR DIGITAL NETWORKING AND CONTROL.

ProMinent DULCOnneX products have all the characteristics needed for digital fluid management and smart control.

Network – capable: the DULCOnneX products communicate using WiFi, Ethernet or CANopen, PROFIBUS and PROFINET via the DULCOnneX gateway to our DULCOnneX web based fluid management platform.

User friendly: DULCOnneX products have clear intuitive install, start-up and operational setup for dashboards, reporting, alarms and accessing data.

Adaptive: DULCOnneX products adapt automatically to constantly changing operating conditions.

Robust: The construction of DULCOnneX products ensures a long service life and high availability.



Solenoid-driven metering pump
gamma/ X or gamma/ XL
with DULCOnneX gateway



Motor-driven metering pump
Sigma X



Remote monitoring module
DULCOnneX gateway for
connection to the CAN interface



Measuring and control system
DULCOnneX gateway for
DULCOMETER® dialog DACb



Controller
AEGIS II



5.3 DULCOnneX

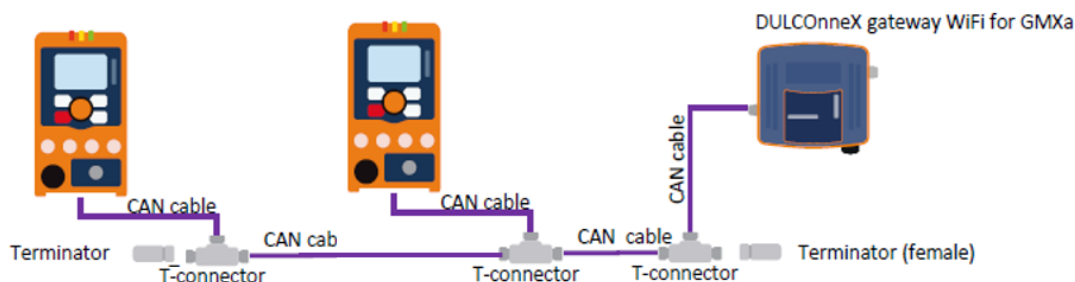
5.3.2 Identity Code & Pricing for DULCOnneX from ProMinent®

Gateway Type	
A DX Gateway LAN	No of DX Gateway for DACb LAN to Wi-Fi. One gateway required for each DACb. Includes 2m LAN cable M12 to M12 connection. 24VDC to 240V power supply included.
B DX Gateway CAN	No of DX Gateway CAN bus to Wi-Fi. One gateway supports 16 GammaX or one Sigma pump or one UVCb. Includes one M12 CAN Cable 0.5m and one "T" and 240V to 24VDC power supply NOTE: For 2 pumps or more connected to the gateway one CAN cable and "T" is required per pump. CAN option required on pump IDENT CODE.
Subscription	
C DULCOnneX subscription	No of DX Subscription, 12 months *.
Module	
D CIO50	No of CIO50 modules (I/O 2in.) CAN termination resistor switched on module, include M12 CAN flange wire to CIO- module, CAN termination resistor and 1.0M of CAN cable . 24VDC powered by the same supply used with the Gateway.
E CIO300	No of CIO300 modules (I/O 8in.) CAN termination resistor switched on module, include M12 CAN flange wire to CIO- module, CAN termination resistor and 1.0M of CAN cable. 24VDC powered by the same supply used with the Gateway.
F CIO57	No of CIO 57 module (4 x 4-20mA inputs). CAN termination resistor switched on module, includes M12 CAN flange wire to CIO- module, CAN termination resistor and 1.0M of CAN cable 24VDC powered by the same supply used with the Gateway.
G UVCb CAN connector set	"No of CAN connector set UVCb Includes*: 2x CAN cable M12 5pol. 0.5m, 1x Resistor female, 1x Resistor male, 1x Flange M12 UVCb, 1x CAN cable M12 5pol. 2.0m, 1x Skintop fitting M25x1.5, 1x Locknut M25 PA6 RAL7305" **See note below **
Modules	
H CIO Modules housed and wired	No of, CIO housing junction box internal CAN and pre wired inputs. Provides one CAN connection point irrespective of number of CAN CIO modules mounted within junction box. The CAN CIO node addressing setup and 4-20 and or I/O inputs all pre wired each with 2 meters of control wire available to connect devices. *
Factory Set-up	
I	No of, Factory setup onto DULCOnneX system pre shipment
Level Sensor	
J	No of, UGT204 Ultrasonic level sensor 4-20mA output. Range 150 to 1600mm with M12 PNP connector
Temperature and Transducer	
K	"PT100 Temperature Sensor and 4-20mA transducer and SN6 cable. * requires sample flow DGMA"
On request DX Gateway IPC. Provides DULCOnneX to DACb and Device Access to DACb web interface.	

ORDERING EXAMPLE [DX-A-B-C-D-E-F-G-H-I-J-K]

2 x gamma/ X pumps would be; 1 x DX Gateway, 1, x subscription, 1 x Factory Set-up

ORDER CODE WOULD BE; DX-0-1-1-0-0-0-0-0-1-0-0



NOTES

- Item "A" DACb Requires LAN Card
- Item "C" DULCOnneX subscription must be ordered.
- Item "G" is required when quoting DULCOnneX for a UVCb.
- Item "I" CIO modules need to be ordered separately.
- Item "K" Sensor needs to be in the sample flow, requires DLG flow.



5.3 DULCOnneX

5.3.3 Pricing for DULCOnnex Packages from ProMinent®

DULCOnneX Package for DACb

DX ADDER - DULCOnneX Add on Kit for DACb

PA51003580

Adds DULCOnneX to DACb pool packages. **Includes LAN & DX Gateway.**

Subscription included @ / month

Customer to provide Wi- Fi

Contractor subscription discount / month

DULCOnneX Annual Subscription

zzDulcoSub

12 month subscription

ProConnect Package for DACb

ProConnect Package for use with DULCOnnex

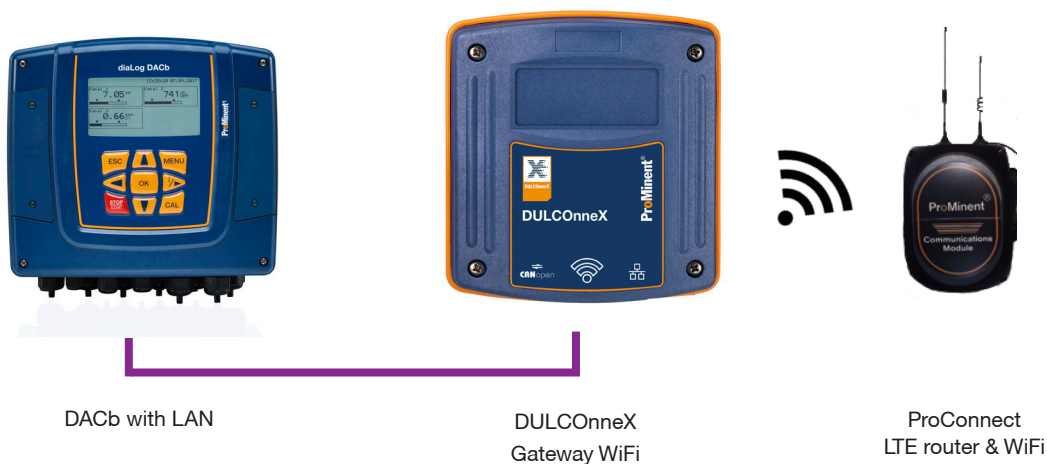
PA51003593

ProConnect Network Communications Box - LTE & WiFi [excludes SIM]

ProConnect Annual Subscription

zzProSub

12 month data SIM plan [1G per month]



5.4 DULCOMETER® Fluoride Monitoring

5.4.1 Measured Variable, Fluoride in Drinking Water

Measurement principle and application

The DULCOMETER® fluoride meter is a potentiometric meter which uses an ion selective electrode (ISE) and a reference electrode to deliver a measurement signal in mV. The expertise of the newly developed fluoride ISE lies in the physical-chemical characteristics of the LaF3 crystals and the ion electrolytes which permit long-term stable and continuous measurement without additional use of special conditioning chemicals. Photometric measurement-based calibration is necessary only when commissioning and at occasional intervals.

The typical and only use of our fluoride meter is for continuous monitoring at waterworks in which fluoride is metered for the prevention of tooth decay. Installation conditions for the fluoride electrode.

Measurement range: 0.05... 10 mg/l fluoride

pH range: 5.5... 8.5

Temperature range: 1...35 °C

Max operating pressure: 1 bar

Note: The maximum admissible operating pressure for the following mounted measurement equipment is 1-bar.

Fully-mounted Fluoride Monitor

For quick and easy installation our fluoride meter is supplied ready-mounted on a PE panel. The following components are included:

- FLEP 010 SE fluoride sensor
- Reference electrode
- Pt 100 SE temperature sensor
- 4-20 mA FVP1 measurement transducer
- DLG IV inline probe housing for electrodes
- DACb diaLog fluoride monitor, with display of fluoride concentration and temperature, with automatic temperature compensation, 0/4 ... 20 mA output for measured variable, with pause control input, alarm and two threshold value relay outputs, (90-253 VAC)
- Magnetic stirrer with magnetic stirring rod for stirring sample water during calibration
- PVC pipework with ball stop/adjustment valve, rotameter with sample water connector

All parts are ready mounted on a white 600 x 500 mm PE panel and fully wired.

Power Supply 90-253 VAC

Part No.

Fluoride Monitor mounted on panel with REFR

PA56003465

Note: c/w air-break, REFR reference electrode, 25m 8x5 sample line, and 1 x 1/2" BSP to 8x5 PVC adaptor.

Part No.

Fluoride Monitor mounted on panel with PHEN

PA56003336

Note: c/w air-break, PHEN flowing junction reference electrode, KCl reservoir, 1000ml KCl, 25m 8x5 sample line and 1 x 1/2" BSP to 8x5 PVC adaptor.

Part No.

TISAB Add-on Module assembly c/w 60 lt tank

PA56003043



PA56003465 - with REFR Standard Supply



PA56003336 - with PHEN



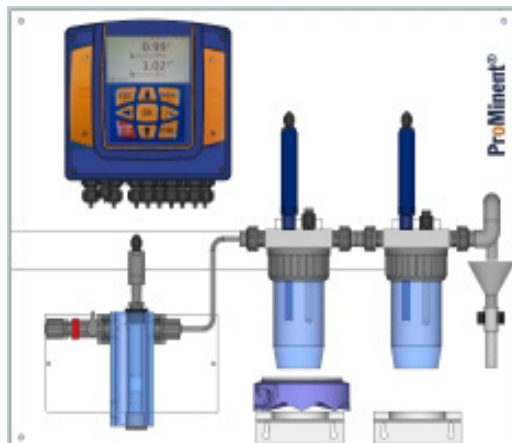
PA56003043



5.4 DULCOMETER® Fluoride Monitoring

5.4.2 Measured Variable, Fluoride in Drinking Water

Double Validation Unit



Using the same sensors as for the single measurement stations, the dual measurement station can be used to give an alarm output if the 2 measured variables differ more than a preset amount.

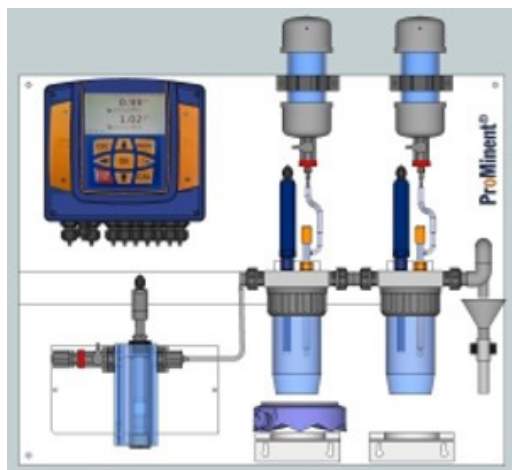
This means that the unit can be used where there is a requirement for double validation. A 0/4...20 mA output is available for each channel of the 2 channel dialLog® instrument.

A single magnetic stirrer is provided as standard as normally one channel is calibrated at a time. A second magnetic stirrer is available as an option.

Both options with the REFR or the PHEN reference electrodes with flowing junctions are available.

All come pre-mounted on a 750mm wide x 600mm high panel, fully wired.

Power Supply 90-253 VAC



Part No.

Dual Channel Fluoride Monitor with REFR **PA56003466**

Note: c/w air-break, REFR reference electrodes, 25m 8x5 sample line, and 1 x 1/2" BSP to 8x5 PVC adaptor.

Part No.

Dual Channel Fluoride Monitor with PHEN **PA56003338**

Note: c/w air-break, PHEN flowing junction reference electrodes, KCl reservoir, 1000ml KCl, 25m 8x5 sample line and 1 x 1/2" BSP to 8x5 PVC adaptor.

Note: this unit is NOT our STANDARD SUPPLY.
IF REQUIRED CONTACT SYDNEY OFFICE.

Replacement Parts

Part No.

FLEP 010 SE fluoride sensor

1028279

Transmitter FPV1 4-20mA

1028280

REFR-SE reference electrode

1083790

PHEN 112 SE 3D reference electrode

150078

REFP-SE reference electrode

1018458

Pt 100 SE temperature sensor

305063

Bubble Assist

A27023421

Polishing paste

559810

KCl solution 3 molar 250ml.

791440

KCl solution 3 molar 1000ml.

791441

KCl Reservoir (new style)

PA08023334

For older Systems

FLE 010 SE fluoride sensor

1010311

Transmitter FV1 4-20mA

1009962

Electrolyte Vessel

305058



5.5 ProMinent® DULCOMARIN® II

5.5.1 DULCOMARIN® II Multi-Channel Measurement & Control System

The multi-channel measuring and control system DULCOMARIN® II is characterised by the following features:

- 5.7", 1/4 VGA colour display for easy operation
- Integrated data logger with screen recorder: directly view the measuring data at the controller
- SD card and card reader for PC included: simply transfer measuring data to the PC as standard
- Control of up to 16 drinking water systems or filtration circuits in swimming pools
- CAN bus system: simple wiring and subsequent upgradability
- Visualisation*: easy with embedded Web server* and standard Web browser
- LAN interface*: easy connection to PC or PC network or Internet
- Intelligent sensors: with CANopen bus, save the sensor data and are always within the optimal measuring range thanks to auto ranging
- Intelligent metering pumps: with CANopen bus, inform about the operating parameters such as e.g.: chemicals levels and output in the metering range of 0.74 l/h to 1,030 l/h
- Standby metering pump for disinfectant (automatic switching in case of low level and pump failure)

AREA OF APPLICATION DRINKING WATER (AND GENERAL APPLICATIONS)

- Using a power input module (I module), the following measuring parameters can be measured via 0/4...20 mA and displayed. These values are also available on the data logger/screen recorder, the Web and OPC server:
- Flow rate (as disturbance for pH and chlorine control)
- UV intensity
- Conductivity
- Chlorine dioxide
- Chlorite
- Ammonia
- Fluoride (via D1Ca)
- Pt100 resistance thermometer via transducer
- Display and controlling of free chlorine and total available chlorine
- OPC server*: easy connection to superordinated visualisation systems

*optional

AREA OF APPLICATION SWIMMING POOL

- Combined chlorine: is safely minimised via controller output and corresponding systems
- OPC server*: easy connection to superordinated visualisation systems
- Controlling of pool temperature via standard temperature controller
- High chlorination or off-peak reduction by contact via second parameter set
- The decentral modular DULCOMARIN® II system is designed for use in public swimming pools in accordance with DIN 19643.
- Depending on requirements, the system can be supplied as compact system DULCOMARIN® II compact or as decentral modular system DULCOMARIN® II DULCO® -Net.



5.5 ProMinent® DULCOMARIN® II

5.5.2 DULCOMARIN® II DULCO®-net Swimming Pool Controllers

The **DULCOMARIN® II - DULCO®-Net** swimming pool control system uses the CANopen –BUS as the medium for transmission of the data between the measurement and actuator units and the sensors and the central unit.

In its maximum expanded form the system can control up to 16 filtration cycles, i.e. 16 measurement units and 16 dosing units and corresponding sensors can be operated from a single central unit. For this purpose a central unit is combined with the number of measurement and dosing units required for the application.

A M12 T-distributor is required for connection to any CANopen device (sensors module, actuator module, metering pumps and chlorine sensors). This connects the device to the main bus train via a stub cable.

The sum of the lengths of all stub cables in a CANopen - system cannot exceed 15 m. DULCOMARIN® II DULCO®-Net and compact can both be easily expanded later. What components make up a DULCOMARIN® II DULCO®-Net system?

A DULCOMARIN® II DULCO®-Net system comprises:

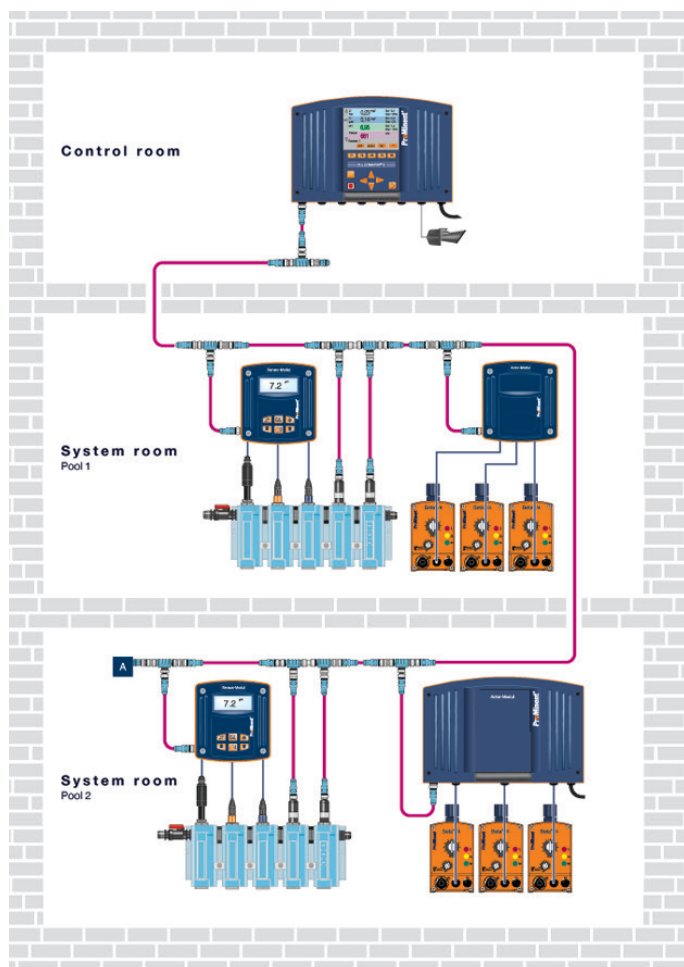
- a central unit and an individual combination of the following components:
- measurement unit
- dosing unit without mains power module
- dosing unit with mains power module (optional)

CENTRAL UNIT

The central unit can be installed anywhere, e.g. in a control room or in the office. It serves as an in/output module (for viewing and configuring individual modules) and has the following functions: screen recorder, interfaces, Embedded Web Server and the power supply. The central unit may optionally incorporate a sensor and an actuator module.

The central unit is connected with the other units via the main Bus train. CAN connection cables are used for this purpose. The main Bus train of the first unit must be connected with a M 12 load resistor coupling and the final unit by a M 12 load resistor plug. You can find these components in section 5 Accessories.

The central unit in the above example comprises the following components:



ACCESSORIES

Description:	Part no.
Chlorine sensor CLE 3-CAN-10 ppm	1023425
Chlorine sensor CLE 3.1-CAN-10 ppm	1023426
Chlorine sensor CTE 1-CAN-10 ppm	1023427
Chlorine sensor CGE 2-CAN-10 ppm	1024420
Chlorine sensor BRE 3-CAN-10 ppm	1029660
Cable connection-CAN M12 5pol. 0,5m	1022137
Cable connection-CAN M12 5pol. 1m	1022139
Cable connection-CAN M12 5pol. 2m	1022140
Cable connection-CAN M12 5pol. 5m	1022141
T-splitter M12 5pol. CAN	1022155
Terminator M12-female 120R(4-5)	1022154
Terminator M12-male 120R(4-5)	1022592
CAN-BUS-Cable	1022160
Joining Kit CAN-BUS-Cable	1026589

See Green Pages Price List for above components and complete POOL Systems



5.5 ProMinent® DULCOMARIN® II

5.5.3 Identity Code & Pricing for for DULCOMARIN® II DULCO® -net

Central unit:

DXCa DULCOMARIN® II Swimming Pool Controller, DXC Series

Mounting type:

W Wall mounted (IP 65)**S** Control cabinet (IP 54)

Design:

0 With controls

Communication interfaces:

0 None**5** LAN incl. plug M12**6** OPC Server

Optional:

1 Measurement data archiving incl. 128 MB MMC

Module 1:

0 Not in use**M** Sensor module - pH, Redox, temperature**A** Actuator module - pump and analogue output

Module 2:

0 Not in use**M** Sensor module - pH, Redox, temperature**A** Actuator module - pump and analogue output

Module 3:

P Mains power supply, alarm relay, solenoid valve relay**N** Mains power module without relay

Applications:

S Swimming pool

Preset language:

DE German**EN** English**ES** Spanish**FR** French**IT** Italian

Approvals:

01 CE-mark

See Section 6

GREEN PAGE PRICE LIST for complete pool packages and accessories or consult Sydney office

DXCa W 0 0 1 0 0 P S EN 01



5.6 DULCOMETER® Transducers DMT

5.6.1 Measured Variables: pH, Redox, Temperature, Conductivity

DULCOMETER® DMT type transmitters are compact 2-wire transmitters for measured variables pH, redox, chlorine, conductive conductivity, temperature. Easily combined with programmable memory controllers.

SUMMARY OF ADVANTAGES:

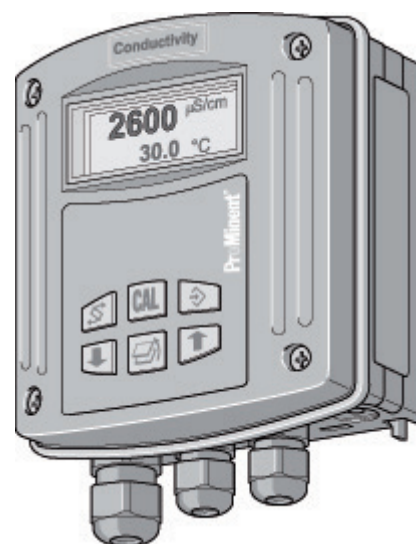
- Reliable measurement due, e.g., to symmetrical input for pH/redox signals
- High level of operating safety, e.g. probe monitoring (pH), electrical isolation
- Simple flexible installation
- Full text user guidance
- Automatic buffer recognition (pH)
- Autoranging (conductivity)
- Compact design
- Switch between pH, redox and temperature

APPLICATIONS:

- process control in
- food and beverage industry
- chemical and pharmaceutical industries
- water treatment
- waste water treatment
- power stations

TECHNICAL DATA

Measurement range:	pH -1.00...15.00 -1200...+1200 mV redox voltage 0.01...50.0 mg/l chlorine -20...+150 °C 1 µS/cm...200 mS/cm (autoranging)
Cell constant:	0.006...12.0/cm for conductivity
Resolution:	pH 0.01 1 mV 0.1 % from measurement range for chlorine 0.1 °C Conductivity 1/1000 of display value (min. 0.001 µS/cm)
Reproducibility:	0.5 % from measurement range
Measurement input:	mV terminal (pH, redox); input resistance >5 x 10 ¹¹ Ω Chlorine terminal (DMT chlorine probes) Pt 100/1000 terminal Conductivity terminal (2 or 4 wire connector)
Correction variable:	Temperature via Pt 100/1000 (pH, chlorine, conductivity)
Current output:	4...20 mA, fault current 23 mA
Supply voltage:	16...35 V DC (nominal 24V)
Communication interface:	Profibus DP (wall-mounted version only)
Ambient temperature:	-5...+55 °C
Climatic conditions:	up to 95 % relative humidity (non-condensing)
Enclosure rating:	IP 65 (wall/pipe mounted) IP 54 (control panel installation)
Display:	graphical display
Housing:	PPE
Dimensions:	125 x 135 x 75 mm (WxHxD)
Weight:	approx. 450 g



pk_5_001

Sensors see section 6.
In-line probe housings, signal cables,
see section 6/16



5.6 DULCOMETER® Transducers DMT

5.6.2 Identity Code Ordering System For DMT

DMT DULCOMETER® Transducers												
A Version												
Installation:												
S Control panel mounted ¹												
W Wall mounted (also column mounted)												
Version:												
0 With ProMinent® logo -												
Electrical connection:												
9 Loop powered 4-20 mA (2 wire, auxillary power 16 ... 40 v DC) standard -												
5 Profibus DP version 24 v DC ² nominal -												
Communication interface:												
0 None -												
4 Profibus® DP ³ (Assembly type W only)												
Measured variable 1:												
P pH -												
R Redox -												
T Temperature -												
C Chlorine -												
L Conductivity												
Measured variable 2 (Correction variable)												
0 None (for measured variable T) nil												
1 Temperature Pt 1000/Pt 100												
Enclosure rating:												
0 Standard -												
Language:												
E English -												
The final 4 digits in the identity code give the software presets, e.g. cell constant at conductivity. 0 = standard settings Presetting options available on request.												
Note: 1) The panel mounted version does not include the rear housing. 2) Choose the 24 V DC electrical connection with the Profibus DP 3) Wall-mounted version only Note: Power Supply if required 24Volt DC up to 1 amp MP3494												
DMT	A	W	0	9	0	P	1	0	E	0	0	0



5.7 DULCOMETER® Test Instruments

5.7.1 KCl Solutions & Buffers



pk_5_073_A

	Part No.
3-molar KCl solution, 50 ml	505533
3-molar KCl solution, 250 ml	791440
3-molar KCl solution, 1000 ml	791441
Buffer solution 465 mV, 50 ml	506240
Buffer solution 475 mV, 100 ml	A52003313
Buffer solution 475 mV, 250 ml	A52003314
Buffer solution 220 mV, 50 ml	506244
Buffer solution pH 4.0 - red, 50 ml	506251
Buffer solution pH 4.0 - red, 100 ml	A52003308
Buffer solution pH 4.0 - red, 250 ml	A52003309
Buffer solution pH 4.0 - red, 1000 ml	A52003310
Buffer solution pH 7.0 - green, 50 ml	506253
Buffer solution pH 7.0 - green, 100 ml	A52003305
Buffer solution pH 7.0 - green, 250 ml	A52003306
Buffer solution pH 7.0 - green, 1000 ml	A52003307
Buffer solution pH 10.0 - blue, 50 ml	506255
Buffer solution pH 10.0 - blue, 100 ml	A52003311
Buffer solution pH 10.0 - blue, 250 ml	A52003312



5.7 DULCOMETER® Test Instruments

5.7.2 Portamess® Portable Meters, Measured Variable pH, Hazardous & Safe-Area Applications

Advantages

- Smooth membrane keypad
- Large easy-to-read LC display
- Integrated sensor quivers for protection of electrode
- Robust housing (enclosure rate IP 66)
- Robust, watertight gold plated connector sockets

Applications

- Industrial
- Environmental protection
- Food production
- Water & wastewater investigation

Technical Data

Portamess® 911pH

Measurement range:	pH: -2.00...+16.00 mV: -1300...+1300 °C: -20.0...+120
Measurement error:	pH: < 0.01 mV: < 0.1 % of measured value ±0.3 mV °C: < 0.3 K
Measured variable	
buffer memory:	100 storage spaces: pH/mV, °C, time and date
Sensor adjustment:	8 buffer record options
Temperature	
compensation:	manual
Explosion protection:	IP 66
Operating life:	2000 hours with 3 AA batteries
Dimensions:	133 x 160 x 30 mm (WxHxD)
Weight:	Approx. 560 g with batteries
Supplied as standard:	measuring device, carrying case, operating instructions manual in German, English and French.



pk_5_099

Part No.

Portamess® 911 pH (not Ex)

1008710

Notice: the PHEKT 013 F pH electrode and the buffer solutions are **NOT INCLUDED** as standard.

NOT A STOCK ITEM

Part No.

PHEKT 013 F

1036537

Buffer solution pH 4.0 - red, 50 ml

506251

Buffer pH 7, 50 ml

506253

See page 6.3 for pH probe data



5.8 DULCOMETER® Photometer DT1

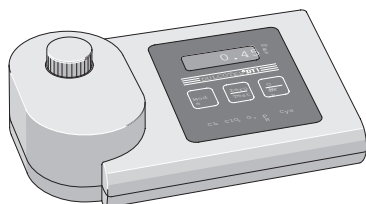
5.8.1 DULCOMETER® Photometer DT 1

Advantages

- Portable compact Photometer
- Simple to operate with support text
- Simple reliable measurement of chlorine, chlorine dioxide, bromine, ozone, pH and cyanuric acid
- Self-diagnostic

Applications

- swimming pool
- drinking water
- process water



pk_5_021

TECHNICAL DATA

Measurement range of DT1:	0.05...6.0 mg/l Chlorine free (DPD1) + total (DPD1+3) 0.1...13.0 mg/l Bromine (DPD1) 0.05...11 mg/l Chlorine Dioxide (DPD1) 0.03...4.0 mg/l Ozone (DPD4) 6.5...8.4 pH (phenol red) 1...80 mg/l Cyanuric Acid
Measurement range of DT3:	1...50 / 40...500 mg/l Hydrogen Peroxide
Measurement range of DT4:	0.03...2.5 mg/l Chlorite 0.05...11 mg/l Chlorine Dioxide 0.05...6.0 mg/l Chlorine
Measuring tolerance:	Dependant upon measured value and measuring method
Battery:	4 x batteries AA/LR6
Ambient temperature:	5...40 °C
Relative humidity:	30...90 % (non-condensing)
Housing material:	ABS
Keypad:	Polycarbonate
Dimensions:	190 x 110 x 55 mm (LxWxH)
Weight:	approx. 0.4 kg

Part No.

Photometer DT1B kit with carrying case

1039315

Included as standard with DT1 are accessories, cells and 15ml bottles of reagents DPD1, DPD1 Buffer, DPD3, Phenol Red tablets (50) and Cyanuric Acid tablets (50).

Photometer DT3B kit with carrying case

1023143

Included as standard with DT3 are accessories, cells and reagents for hydrogen peroxide.

Photometer DT4B kit with carrying case

1022695

Included as standard with DT1 are accessories, cells and reagents for chlorine and chlorine dioxide detection.

Consumable items

Part No.

DPD 1 buffer, 15 ml (Note: approx 360 drops per 15ml)

1002857

DPD 1 reagent, 15 ml

1002858

DPD 3 solution, 15 ml

1002859

Phenol red tablets R 175 (100 in each)

305532

Cyanuric acid tablets R 263 (100 in each)

305531

3 off spare cells: round cells with covers for DPD phenol red and cyanuric acid detection (DT1 and DT2B)

1007566

3 off spare cells for fluoride detection (DT2A and B)

1010396

DPD reagents set, 15 ml each: 3 x DPD 1 buffer,

1 x DPD 1 reagent, 2 x DPD 3 solution

(Total = 6 BOTTLES)

1007567



5.9 DULCOMETER® Technology Ancillary Equipment

5.9.1 DULCOMETER® 4...20 mA Transmitters (2-Wire Technology)

Typical Applications

Measurement signal transfer over large distances, or to transfer signals subject to disturbance (e.g. pH, redox) in conjunction with D1C, D2C & DULCOMARIN® measurement and control systems, or for direct connection to PC/PLC.

Advantages

- Safer signal transfer, even across large distances
- Interference free 4-20 mA signal
- Simple installation directly onto sensor

TECHNICAL DATA pH transmitter 4...20 mA, type pHV1

Measurement range:	pH 0...14
Accuracy:	better than pH 0.1 (typical \pm pH 0.07)
Socket:	SN6
Input resistance:	$> 5 \times 10^{11} \Omega$
Signal output:	4...20 mA \pm -500...+500 mV \pm pH 15.45...-1.45 not calibrated, not electrically isolated
Power supply:	18...24 V DC
Ambient temperature:	-5...50 °C, non-condensing
Enclosure rating:	IP 65
Dimensions:	141 mm length, 25 mm \varnothing

Part No.

809126

Redox transmitter 4...20 mA, type RH V1

TECHNICAL DATA as for pH transmitter, but:

Measurement range:	0...1000 mV
Accuracy:	better than ± 0.5 mV (typical ± 3 mV)
Input resistance:	$> 5 \times 10^{11} \Omega$
Signal output:	4...20 mA \pm 0...+1000 mV not electrically isolated
Power supply:	18...24 V DC

Part No.

809127

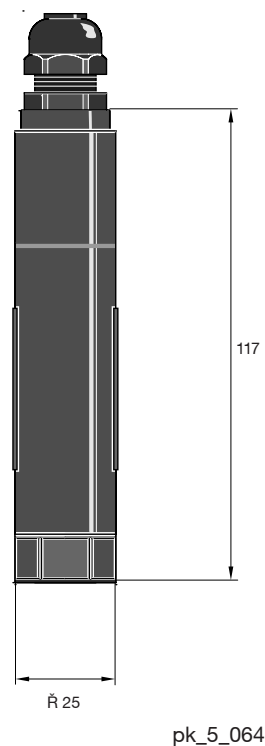
Temperature transmitter 4...20 mA, type Pt 100 V1

TECHNICAL DATA as for pH transmitter, but:

Measurement range:	0...100 °C
Accuracy:	better than ± 0.5 °C (typical ± 0.3 °C)
Input resistance:	$\sim 0 \Omega$
Signal output:	4...20 mA \pm 0...+100 °C not electrically isolated
Power supply:	18...24 V DC

Part No.

809128



pk_5_064



5.9 DULCOMETER® Technology Ancillary Equipment

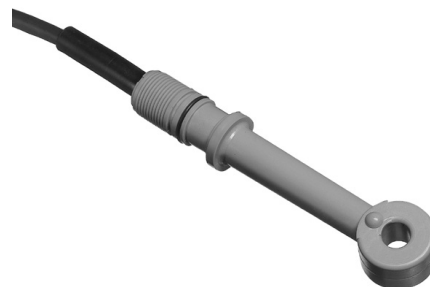
5.9.2 Electrodeless Conductivity Sensor

Inductive Conductivity

ELECTRODELESS SENSOR LF 654X

Cell factor:	Nominal value 2.15 cm ⁻¹
Measurement range:	0.001 mS/cm ... 2000 mS/cm
Material:	Cell: PEEK, Seal EPR
Temperature probe:	NTC 100 k Ω
Temperature:	-5...+120 °C
Pressure:	0...17.5 bar
Cable length:	6 m
Explosion protection:	EEx ia IIC T4...T6
Mounting:	3/40 NPT thread

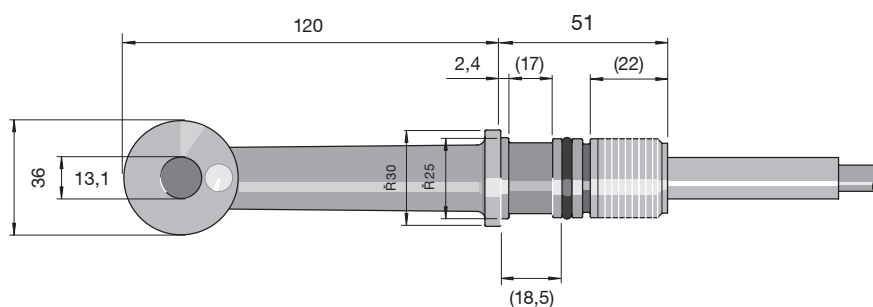
Note: LF 654X can be used for explosive and non-explosive applications.



pk_5_097

Part No.

1024416



pk_5_022

Note: See also Section 6 Sensors



5.9 DULCOMETER® Technology Ancillary Equipment

5.9.3 Conductivity Sensor

Conductivity sensor

4-ELECTRODE SENSOR LF 204

Number of electrodes:	4
Electrode shaft material:	Black Epoxy
Electrode material:	Graphite
Shaft length:	120 mm
Shaft diameter:	15.3 mm
Cable length:	1.5 m
Temperature probe:	NTC (30 k Ω) -5...+100 °C
Immersion depth:	min. 36 mm
	Max. total length inc. cable
Pressure resistance:	2 bar
Temperature range:	0...90 °C
Cell constant:	0.475 cm ⁻¹ \pm 1.5 %
Measurement range:	1 μ S/cm...500 mS/cm



pk_5_093

Part No.

Conductivity sensor LF 204

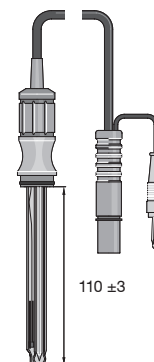
1008723

Note: See also Green Pages Price List

ILFa-PHEKT 013 F for Portamess®

manual measuring devices Plastic shaft electrode with inbuilt Pt 1000 for temperature display and compensation, 1 m fixed cable, device side DIN and banana plug.

pH range:	0...13
Temperature:	0...80 °C
Max. pressure:	atmospheric pressure
Min. conductivity:	>150 μ S/cm
Diaphragm:	fibreglass
Length:	110 mm \pm 3 mm
Device plug:	DIN plug/banana plug

110 \pm 3

pk_6_008

Part No.

PHEKT 013 F ex HD works

1036537



pk_5_067



5.10 Turbidity Measuring Points DULCOTEST®

5.10.1 Turbidity Measuring Point DULCO® turb C

Reliable on-line measurement of turbidity with DULCOTEST® DULCO® turb C measuring points

Measuring range 0 – 1,000 NTU

Turbidity measurements with DULCOTEST® DULCO® turb C: Compact measuring instrument that uses light scatter to measure turbidity, with a large measuring range and different designs to comply with ISO and EPA standards. Available with or without automatic cleaning.

The DULCOTEST® measuring points for turbidity DULCO® turb C with TUC 1, TUC 2, TUC 5, TUC 6 versions are compact, on-line turbidity measuring points consisting of a sensor, flow fitting and measuring instrument. The measuring instrument allows the calibration to be displayed, the measured value to be forwarded using a 4– 20 mA signal and limit violations and equipment failure to be indicated. The measuring cuvette integrated in the measuring instrument allows the device to be operated in the process line bypass. The optical measuring equipment will not make contact with the measured medium.

The intended application is the treatment of potable water, in which DULCO® turb C can be used in all treatment stages from raw water and filter monitoring to measurement of fine turbidity in dispensed potable water. Further applications include the monitoring of turbidity in slightly polluted process water, waste water as well as water requiring treatment from the food and beverage industry up to turbidity values of 1,000 NTU. In contrast to the TUC 1/TUC 2 types, the measuring points TUC 5, TUC 6 are the successor models to types TUC 3 and TUC 4 and like these include an ultrasound-based self-cleaning function. This helps particularly when used for deposit-forming waters for extending the maintenance intervals.

The measuring principle is similar to a scattered light measurement. The light beam radiated into the measuring cuvette filled with sample water is scattered on turbidity particles and the scattered light is measured at right angles (90°) to the radiated light (nephelometric measurement). The unit of measurement for turbidity can be given as a NTU (Nephelometric Turbidity Unit) or as an FNU (Formazin Nephelometric Unit). The measuring process in types TUC 1/TUC 5 (infrared light) corresponds to the global standard ISO 7027 and the European standard DIN EN 27027. The measuring process in types TUC 2/TUC 6 (white light) corresponds to the US standard USEPA 180.1.

YOUR BENEFITS

- Compact turbidity measuring station with integrated sensor, flow cuvette and measuring instrument saves space and is simple to install and operate.
- High dynamic measuring range between 0.02 and 1,000 NTU permits broad-based use in all stages of potable water treatment. Also ideal for monitoring waste water from clarification plants and for monitoring ruptures with filters.
- Short response times thanks to small-volume measuring cuvette.
- Long-term stable measurements, even in contaminated water, by the optional ultrasonic cleaning of the measuring cuvette.
- Fast and simple calibration on site by optionally available, pre-assembled and time-stable calibration standards.

TECHNICAL DETAILS

- The measuring process in types TUC 1/TUC 5 (infrared light) corresponds to the global standard ISO 7027 and the European standard DIN EN 27027.
- The measuring process in types TUC 2/TUC 6 (white light) corresponds to the US standard USEPA 180.1.

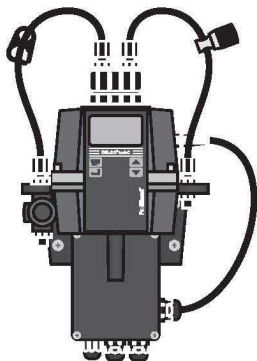
FIELD OF APPLICATION

- Potable water treatment, for all treatment steps: from raw water and filter monitoring to measuring fine turbidity in the potable water that is to be discharged
- Monitoring of turbidity in slightly polluted industrial water, waste water and water requiring treatment in the food and beverage industry up to a turbidity value of 1,000 NTU



5.10 Turbidity Measuring Points DULCOTEST®

5.10.1 Turbidity Measuring Point DULCO® turb C



Measuring Range	0 - 1000 NTU
Accuracy:	± 2 % of the indicated value or ± 0.02 NTU below 40 NTU depending on which value is greater ± 5 % of the indicated value above 40 NTU
Resolution:	0.0001 NTU below 10 NTU
Response time:	Configurable
Display:	Multiple row LCD display with background lighting
Alarm Relay:	Two programmable alarms, 120-240 VAC, 2 A Form C relay
Output Signal:	4...20 mA, 600 Ω, electric isolation: dual insulation, interference surge category II
Communication interface Max. pressure	Bi-directional RS-485, Modbus Integrated pressure regulating valve regulates 1380 kPa (200 psi), based on the flow rate
Flow:	6...60 l/h
Temperature:	1...50 °C
Materials in Contact With the Medium:	Polyamide (PA), silicone, polypropylene (PP), stainless steel, borosilicate glass
Voltage supply:	100 – 240 V AC, 47 – 63 Hz, 80 VA
Hydraulic connections:	Black hose, inside 4.75 mm, outside 8 mm, installation in the bypass for the process main line
Ambient conditions:	Not suitable for operation outdoors. Maximum operating altitude 2000 m above sea level. Maximum 95% relative air humidity (non-condensing).
Enclosure rating:	IP 66, NEMA 4x
Standard:	Infrared light: ISO 7027, DIN EN 27027
Dimensions H x W x D	35 x 30 x 30 cm
Shipping weight:	2.5 kg

	Standard	Ultrasonic Cleaning	Part No.
TUC 5	Infrared light: ISO 7027, DIN EN 27027	Yes	P1115440
TUC 6	White light: US EPA 180.1	Yes	P1115441

Note: both the above supplied with 25m 8x5 sample line x 2 off 1/2" BSPT to 8x5 adaptors. TUC 1 & TUC 2 models are available, but do not feature ultrasonic cleaning.

SPARE PARTS

	Part No.
Drying agent	1037701
TUC 1/TUC 2 cuvette (set with 3 no.)	1037877
Cuvette TUC 3/TUC 4/TUC 5/TUC 6	1037878
Infrared lamp TUC 1/TUC 3/TUC 5	1037702
White light lamp TUC 2/TUC 4/TUC 6	1037703
Hose set TUC 1/TUC 2/TUC 3/TUC 4	1037879
Hose set for TUC 5 and TUC 6	1116180
Pressure regulating valve	1037885

ACCESSORIES

	Part No.
Calibration set	1037699
Flow control	1037880
Air bubble trap	1037700



6.0 DULCOTEST® Sensor Technology

6.0 Dulcotest® PT100 Temperature Sensor

All probes are combination probes that have been proven in both industrial and laboratory applications.

Before being dispatched all probes are tested twice to ensure they are functioning correctly; the first time immediately after being manufactured,

the second time about a fortnight afterwards in order to eliminate glass-specific manufacturing risks.

All pH combination probes have their voltage zero at pH 7 ± 0.5.

In the reference electrode system of the ProMinent® pH and Redox combination probes an Ag/AgCl conductance is generally used which is not only less harmful to the environment than the calomel type (mercurous chloride) but can also be used in a wider temperature application range.

The shaft diameter of all probes is 12 mm. All dimensions specified are approximate since pH and Redox probes are handmade.

Please note:

The service life and storage life of all pH and Redox electrodes is limited which is why they should only be kept in storage for as short as possible.

The electrodes must be stored solely with the plugged on wetting caps in 3-molar potassium chloride solution.

They may not be stored dry on any account!

The ageing of electrodes depends greatly on the application conditions.

The service life is between one and three years for problem-free applications as well as at room temperature and average pH values. In extreme operating temperatures only two to three months. Every electrode ages even when it is not in operation!

Various influences can shorten the service life of electrodes, e.g. chemical reactions with the reference electrode or in the diaphragm, extreme pH values, high temperatures, abrasive media or media containing hydrofluoric acid.

From the date of delivery a 6 month warranty for material and workmanship is granted for all pH and Redox electrodes.

- Pt 100 with Push-and-Twist Connector for Type SN 6
- Coax Connector
- pH Combination Probes with Push-and-Twist Connector for Type SN 6 Coax Connector
- Redox Combination Probes with Push-and-Twist Connector for Type SN 6 Coax Connector

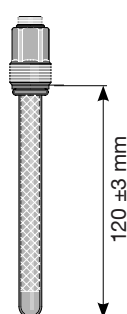
For all other pH & Redox Probes and associated equipment see the appropriate section in the 'Green Page' Price List

Temperature Sensors

Robust Pt 100/Pt 1000 temperature sensor, compatible with bypass, immersion and installation fittings, for temperature monitoring or temperature compensation of sensors for other measured variables.

Your benefits

- Mechanically stable and chemically inert glass surround.
- Simple process connection together with all the sensors needed for the overall solution with suitable fittings.
- Transmitter with display/operation and without display/operation for transmission/conversion of the primary signal into a 4-20 mA signal and for transmission to a central control unit (PLC).
- Control units with graded performance properties, coordinated to requirements.



pk_5_034

Temperature:	0 ... 100 °C
Max. pressure:	10.0 bar
Thread:	PG 13.5
Electrical connection:	SN6
Typical applications:	Temperature measurement and pH temperature correction

	Part No.
Pt 100 SE	305063
Pt 1000 SE	1002856

Note: for cables see page 6.26



6.1 DULCOTEST® pH Probes

6.1 Dulcotest® PHER, PHEN and pH Combination Probes

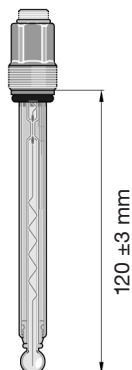
PHER 112 SE

pH range:	1...12
Temperature:	0...80 °C
Max. pressure:	6 bar
Min. conductivity:	>50 µS/cm

ELECTROLYTE WITH SOLID KCL SUPPLY (SALT RINGS IN THE REFERENCE ELECTROLYTE)

Diaphragm:	PTFE ring diaphragm
Installation Length:	120 ±3 mm
Connection:	PG 13.3 SN6

Typical applications: Municipal and industrial wastewater, process water, water in the chemical and paper manufacturing industries.
General, for water with suspended solid content.



pk_6_018

Part No.

1001586

PHEN 112 SE 3D

pH range:	1...12
Temperature:	0...80 °C
Max. pressure:	Atmospheric pressure
Min. conductivity:	>50 µS/cm
	KCl electrolyte, refillable

Diaphragm:	3 Ceramic diaphragms
Installation Length:	120 ±3 mm
Connection:	PG 13.3 SN6
Typical applications:	Waste water

Note: Supplied without storage container and tubing.

Part No.

150078

ACCESSORIES

PE storage container and tubing	305058
PVC Australian storage container and tubing	PA08023334
KCl solution 3 molar 250ml.	791440
KCl solution 3 molar 1000ml.	791441

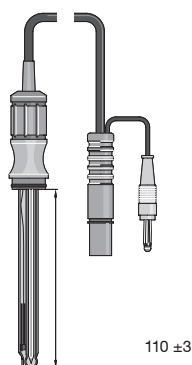
Note: See Green Pages Price List for POOL Probes and industrial probes.

pH-Combination Probes With Fixed Cable

PHEKT 013 F for Portamess® manual measuring devices

Plastic shaft electrode with inbuilt Pt 1000 for temperature display and compensation, 1m fixed cable, device side DIN and banana plug.

pH range:	0...13
Temperature:	0...80 °C
Max. pressure:	atmospheric pressure
Min. conductivity:	>150 µS/cm
Diaphragm:	fibreglass
Length:	110 mm ± 3 mm
Device plug:	DIN plug/banana plug



110 ±3

pk_6_008

Part No.

PHEKT 013 F ex HD works

1036537



6.2 DULCOTEST® pH Probes

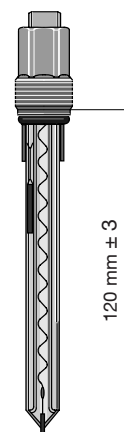
6.2 Dulcotest® CLB 2-µA Chlorine Senso/ RHEP-Au-SE Gold Tipped Sensor

Note: See Green Pages Price List for POOL Probes & alternative Industrial probes.

RHEP-Au-SE

GOLD PIN ELECTRODE

Temperature:	0...80 °C
Max. pressure:	6 bar
Min. conductivity:	>150 µS/cm
Diaphragm:	ceramic
Installation length:	120 mm ± 3 mm Mounting hole minimum 14.5 dia. mm
Connection:	PG 13.3 SN6
Typical applications:	Cyanide detoxification, ozone monitoring, saltwater pools or for use with saltwater generator. Do not use with media containing chlorine.



pk_6_035

Part No.

RHEP-Au-SE ex HD works

1003875

Sensor for Chlorine, **ONLY** for use with **Compact Controller**

CLB 2-µA

Measured variable:	free chlorine (hypochlorous acid HOCl)
Measuring range:	0.05 - 5.0 mg/l: linear, can be used for shock chlorination up to 10.0 mg/l
Reference method:	DPD1
pH range:	5.0 ... 9.0
Temperature:	5 ... 45 °C
Max. pressure:	3.0 bar
Intake flow:	30...60 l/h (in DGMA), constant flow needed as flow-dependent signal
Power supply:	16...24 V DC (2-wire)
Connection:	PG 13.3 SN6
Output signal:	Non-amplified primary current signal, not temperature-compensated, uncalibrated, not electrically isolated
Temperature compensation:	Pt 1000, integrated, calculation in the compact controller
Typical applications:	Swimming pool, drinking water, can also be used with membrane-free chlorine production electrolysis processes, even with varying media temperatures
Measurement and control equipment:	Compact controller
In-line probe fitting:	DGM, DLG III
Measuring principle:	amperometric, 3 electrodes, no diaphragm
Measuring range:	CLB 2-µA-5 ppm

Part No.

1038902



6.3 DULCOTEST® Amperometric Sensors

6.3.1 Amperometric Sensors for Chlorine, Bromine, Chlorine Dioxide, Chlorite, Ozone, Dissolved Oxygen and Peracetic Acid

For optimum functioning of chlorine, bromine, chlorine dioxide and ozone measuring cells please note the following guidelines:

- Use DULCOMETER® measurement and control systems.
- Install only in ProMinent® DGM or DLGA in-line probe housings.
- Defined flow between 30 and 60 l/h.
- Chlorine measurement must only take place when pH is stable (CLE 3).
- Regular calibration with a Photometer (e.g. Type DT 1).

Important: Amperometric probes are **NOT electrically isolated**. When installing in external appliances (e.g. PLC), you should electrically isolate the supply voltage and the analogue input signal.

- Summary of features:
- High zero point stability
- Compact design
- Integrated temperature correction
- Simple to install
- Simple to maintain
- Short warm up period time
- Measurement signal virtually unaffected by flow

CHLORINE DISSOLVED IN WATER IS PRESENT IN DIFFERENT FORMS:

Free (active) chlorine:	Cl ₂ , HOCl (hypochlorous acid), OCl ⁻ (hypochlorite) recommended sensors: CLE (analysis: DPD 1).
Combined chlorine:	mono, di, trichloramine (analysis: DPD 4 - DPD 1).
Organic combined chlorine:	Of isocyanuric acid / isocyanurate bound chlorine (total available chlorine) and the resulting free (effective) chlorine; recommended sensor: CGE (analysis: DPD 1).
Total chlorine:	Sum of free and combined chlorine; recommended sensor: CTE (analysis: DPD 4).
Applications:	Chlorine measurement in drinking, swimming pool, process, industrial water and water of similar quality e.g. seawater/brine with up to 15 % chloride content. We recommend the CGE, CTE chlorine sensors for measuring chlorine if pH value is high (8...9.5).
Guidelines for device usage:	The measuring cells type CLE cannot be used in the presence of iso-cyanuric acid/chlorine stabilisers! The sensors with the suffix -mA are used with the measurement and control devices D1C, D2C and DULCOMARIN®. The sensors with the suffix -4P are used with the earlier WS controllers and for metering pumps with integrated chlorine controllers. DMT-type sensors are used for the DMT transducer. CAN-type sensors are used with the DULCOMARIN® II swimming pool controller.

Note: *CLE sensors:* The CLE type sensors cannot be used in liquids containing isocyanuric acid/chlorine stabilisers.



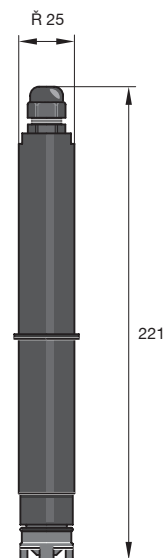
6.3 DULCOTEST® Amperometric Sensors

6.3.2 DULCOTEST® Sensors for free chlorine - CLE 3-mA and CLE 3.1-mA

MEASUREMENT OF FREE CHLORINE

CLE 3-mA

Measured variable:	Free chlorine (hypochlorous acid HOCl)
Analysis:	DPD 1
Measurement range:	0.01... 50 mg/l
pH range:	5.5...8.0 (up to pH 8.5 for pH correction in the D1C)
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	16...24 VDC (two-wire technology)
Output signal:	4...20 mA \uparrow measurement range (un-calibrated) Warning: no electrical isolation!
Typical applications:	CLE 3-mA-0.5 ppm, potable water CLE 3-mA-2.0/10 ppm, swimming pool, potable, industrial, process water (surfactant free)
Measurement and control devices:	D1C, D2C, DULCOMARIN® (2/10 ppm only)
In-line probe housing:	DGM, DLGA

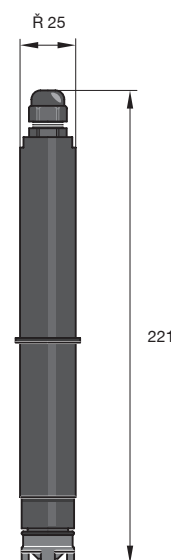


pk_5_046

	Part No.
CLE 3-mA-0.5 ppm set, with 100 ml electrolyte *** not stocked***	792927
CLE 3-mA-2 ppm set, with 100 ml electrolyte *** not stocked***	792920
CLE 3-mA-5 ppm set, with 100 ml electrolyte	1033392
CLE 3-mA-10 ppm set, with 100 ml electrolyte	792919
CLE 3-mA-20 ppm set, with 100 ml electrolyte	1002964
CLE 3-mA-50 ppm set, with 100 ml electrolyte	1020531
CLE 3-mA-100 ppm set, with 100 ml electrolyte	1022786

CLE 3.1-mA

Measured variable:	Free chlorine (hypochlorous acid HOCl) where there is a high rate of combined chlorine and/or in the case of pH values up to 8.5 (with D1C pH correction).
Analysis:	DPD 1
Measurement range:	0.02...2.00 mg/l (CLE 3.1-mA-2 ppm) 0.01...5.0 mg/l (CLE 3.1-mA-5 ppm) 0.1...10.0 mg/l (CLE 3.1-mA-10 ppm)
pH range:	5.5...8.0 (up to pH 8.5 for pH correction in the D1C)
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	16...24 VDC (two-wire technology)
Output signal:	4...20 mA \uparrow measurement range (un-calibrated) Warning: no electrical isolation!
Typical applications:	CLE 3-mA-2.0/10 ppm, swimming pool, potable, industrial, process water (surfactant free)
Measurement and control devices:	D1C, D2C, DULCOMARIN®
In-line probe housing:	DGM, DLGA



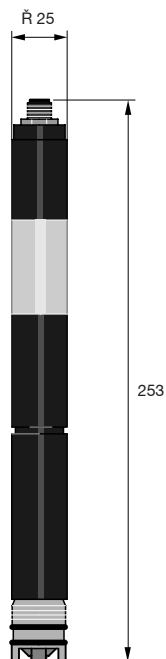
pk_5_046

	Part No.
CLE 3.1-mA-0.5 ppm set, with 100 ml electrolyte	1020530
CLE 3.1-mA-2 ppm set, with 100 ml electrolyte	1018369
CLE 3.1-mA-5 ppm set, with 100 ml electrolyte	1019398
CLE 3.1-mA-10 ppm set, with 100 ml electrolyte	1018368



6.3 DULCOTEST® Amperometric Sensors

6.3.3 DULCOTEST® Sensors for Free Chlorine - CLE 3-CAN



pk_6_096

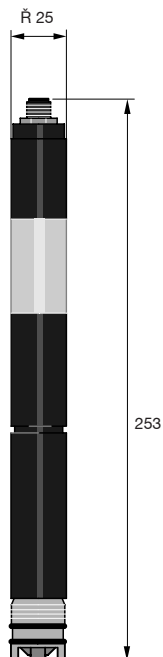
CLE 3-CAN

Measured variable:	Free chlorine (hypochlorous acid HOCl)
Analysis:	DPD 1
pH range:	5.5...8.0
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	Via CAN interface (11-30V)
Output signal:	un-calibrated, temperature compensated, electrically isolated
Typical applications:	swimming pool, potable water (surfactant free)
Measurement and control devices:	DULCOMARIN®
In-line probe housing:	DGM, DLGA

Part No.

CLE 3-CAN-10 ppm 0.01 ... 10.0 mg/l
complete with 100 ml electrolyte

1023425



pk_6_096

CLE 3.1-CAN

Measured variable:	Free chlorine (hypochlorous acid HOCl) with large proportions of bound chlorine; to detect bound chlorine using DULCOMARIN® II and Sensor for Total Chlorine type CTE 1-CAN
Reference Method:	DPD 1
pH range:	5.5...8.0 (up to pH 8.5 for pH correction in the D1C)
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	Via CAN interface (11-30V)
Output signal:	un-calibrated, temperature compensated, electrically isolated
Typical applications:	swimming pool, potable water with a high percentage of boundchlorine (surfactant free)
Measurement and control devices:	DULCOMARIN® II
In-line probe housing:	DGM, DLGA

Part No.

CLE 3.1-CAN-10 ppm 0.01 ... 10.0 mg/l
complete with 100 ml electrolyte

1023426



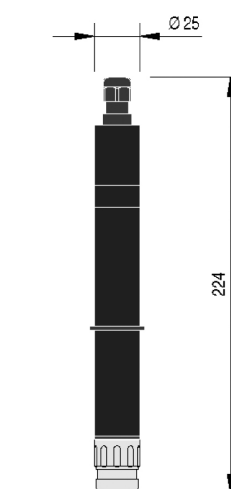
6.3 DULCOTEST® Amperometric Sensors

6.3.4 DULCOTEST® Sensors for Free Chlorine CL0/CLR

CLO 1-mA

Measured variable:	free chlorine (hypochlorous acid HOCl)
Reference method:	DPD1
pH range:	5,0 ... 9,0
Temperature range:	5 ... 45 °C
Max. pressure:	8,0 bar
Intake flow:	30...60 l/h (in DGM or DLG III), constant flow as flow-dependent signal
Power supply:	16...24 V DC (2-wire)
Output signal:	4...20 mA = Measuring range, temperaturecompensated, uncalibrated, not electrically isolated
Typical applications:	swimming pool, uncontaminated drinking water and industrial service water, and can also be used together with diaphragm-free electrolysis processes
Measurement and control equipment:	D1C, D2C, DULCOMARIN®
In-line probe housing:	DGM, DLG III to 60 °C, special fitting for 60 °C-70 °C (on request)
Measuring principle:	amperometric, 3 electrodes, no diaphragm

		Part No.
CLO 1-mA-2 ppm	0,02...2,0 mg/l	1033871
CLO 1-mA-10 ppm	0,10...10,0 mg/l	1033870

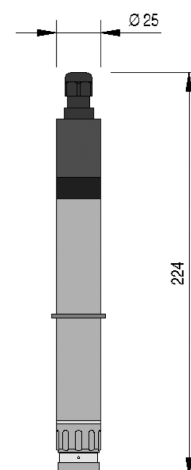


P_DT_0072_SW1

CLO 2-mA

Measured variable:	free chlorine (hypochlorous acid HOCl)
Reference method:	DPD1
pH range:	5,0 ... 9,0
Temperature range:	5 ... 70 °C
Max. pressure:	8,0 bar
Intake flow:	30...60 l/h (in DGM oder DLG III), constant flow as flow-dependent signal
Power supply:	16...24 V DC (two-wire system)
Output signal:	4...20 mA = Measuring range, temperature-compensated, uncalibrated, not electrically isolated
Typical applications:	Hot water up to 70°C, combating legionella, uncontaminated drinking water and industrial service water, and can also be used together with diaphragm-free electrolysis processes
Measurement and control equipment:	D1C, D2C, DULCOMARIN®
In-line probe housing:	DGM, DLG III to 60°C, special fitting for 60°C-70°C (on request)
Measuring principle:	amperometric, 3 electrodes, no diaphragm

		Part No.
CLO 2-mA-2 ppm	0,02...2,0 mg/l	1033878

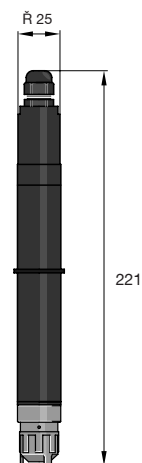


P_DT_0073_SW1

CLR 1-mA-200ppm

Measured variable:	Free chlorine (hypochlorous acid HOCl)
Reference method:	DPD1 pH range 5.5 ... 8.0
Temperature:	5 ... 45 °C
Max. pressure:	1.0 bar
Intake flow:	30...60 l/h (in DGM, DLG II)
Power supply:	16...24 V DC (2-wire)
Output signal:	4...20 mA = Measuring range, temperature-compensated, uncalibrated, not electrically isolated
Typical applications:	Salad, vegetable and poultry washing water, contaminated process and waste water
Measuring and control equipment:	D1Cb, DAC, delta® solenoid diaphragm metering pump
In-line probe fitting:	DGM, DLG III
Measuring principle:	amperometric, 2 electrodes, diaphragm-covered

		Part No.
CLR 1-mA-200 ppm	20.00 ... 200,0 mg/l	1047978



pk_5_047_1



6.3 DULCOTEST® Amperometric Sensors

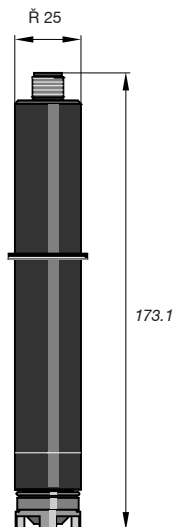
6.3.5 DULCOTEST® Sensors for Free Chlorine - CLE3-DMT and CTE1-DMT

CLE 3-DMT

Measuring cell for use with the DMT “chlorine” measurement transducer.

Measured variable:	Free chlorine (hypochlorous acid HOCl)
Reference method:	DPD1
Measurement range:	0.01...5.0 mg/l 0.05...50 mg/l
Supply:	From the DMT measurement transducer (3.3 VDC)
Output signal:	Un-calibrated, not temperature compensated
Temperature:	5...45 °C
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Measurement:	Via integrated Pt 1000: compensation carried out in DMT
Measuring cell output:	5-pin plug

Other data as for CLE-3 mA.



pk_5_045

	Part No.
CLE 3-DMT-5 ppm set with 100 ml electrolyte	1005511
CLE 3-DMT-50 ppm set with 100 ml electrolyte	1005512

SEE SECTION 3.21

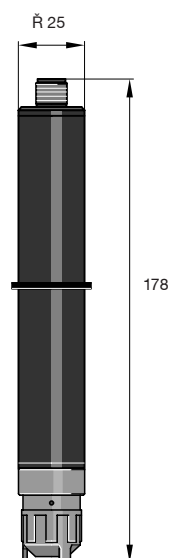
	Part No.
Universal control cable, 5-pole round connector, 5-wire, 2 m	1001300
Universal control cable, 5-pole round connector, 5-wire, 5 m	1001301
Universal control cable, 5-pole round connector, 5-wire, 10 m	1001302

CTE 1-DMT

Measuring cell for use with the DMT “chlorine” measurement transducer.

Measured variable:	Total Chlorine
Reference method:	DPD4
Measurement range:	0.01...10 mg/l
Supply:	From the DMT measurement transducer (3.3 VDC)
Output signal:	Un-calibrated, not temperature compensated
Temperature:	5...45 °C
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Measurement:	Via integrated Pt 1000: compensation carried out in DMT
Measuring cell output:	5-pin plug

Other data as for CLE-3 mA.



pk_5_022

	Part No.
CTE 1-DMT-10 ppm set with 50 ml electrolyte	1007540

SEE SECTION 3.21

	Part No.
Universal control cable, 5-pole round connector, 5-wire, 2 m	1001300
Universal control cable, 5-pole round connector, 5-wire, 5 m	1001301
Universal control cable, 5-pole round connector, 5-wire, 10 m	1001302



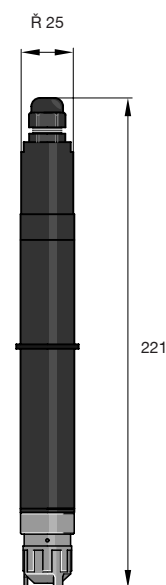
6.3 DULCOTEST® Amperometric Sensors

6.3.6 DULCOTEST® Sensors for Total Chlorine - CTE

MEASURED VARIABLE OF TOTAL CHLORINE

CTE 1-mA

Measured variable:	total chlorine
Analysis:	DPD 4
Measurement range:	0.01...0.50 mg/l (CTE 1-mA-0.5 ppm) 0.02... 2.00 mg/l (CTE 1-mA-2 ppm) 0.05... 5.00 mg/l (CTE 1-mA-5 ppm) 0.1...10.0 mg/l (CTE 1-mA-10 ppm)
pH range:	5.5...9.5
Temperature range:	5...45 °C
Max. pressure:	3 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	16...24 V DC (two-wire technology)
Output signal:	4...20 mA † measurement range (un-calibrated)
	WARNING: NO ELECTRICAL ISOLATION!
Typical applications:	CTE 1-mA-0.5 ppm, potable water CTE 1-mA-2/5/10 ppm, potable, industrial, process water, In swimming pool in combination with CLE3.1 for determining combined chlorine.
Measurement and control devices:	D1C, DULCOMARIN® (2/10 ppm only)
In-line probe housing:	DGM, DLGA

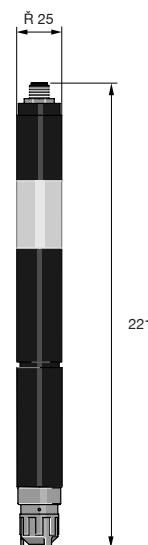


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	Part No.
CTE 1-mA-0.5 ppm set, with 50 ml electrolyte	740686
CTE 1-mA-2 ppm set, with 50 ml electrolyte	740685
CTE 1-mA-5 ppm set, with 50 ml electrolyte	1003203
CTE 1-mA-10 ppm set, with 50 ml electrolyte	740684

CTE 1-CAN

Measured variable:	total chlorine
Analysis:	DPD 4
pH range:	5.5...9.5
Temperature range:	5...45 °C
Max. pressure:	3 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	Via CAN interface (11-30V)
Output signal:	un-calibrated, temperature compensated, electrically isolated
Typical applications:	In swimming pool in combination with CLE3.1 for determining combined chlorine.
Measurement and control devices:	DULCOMARIN® II
In-line probe housing:	DGM, DLGA



pk_6_084

	Part No.
CTE 1-mA-10 ppm 0.01 ... 10.0 mg/l	1023427

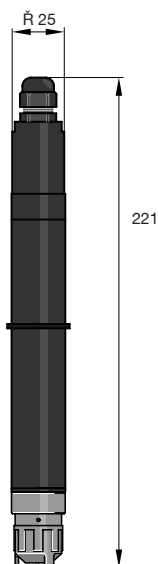


6.3 DULCOTEST® Amperometric Sensors

6.3.7 DULCOTEST® Sensors for Total Chlorine - CGE

MEASURED VARIABLE OF ORGANIC COMBINED CHLORINE & FREE CHLORINE (TOTAL AVAILABLE CHLORINE)

CGE 2-mA



pk_5_047_1

Measured variable:	Organic combined chlorine and free chlorine (e.g. trichloroisocyanuric acid)
Analysis:	DPD 1
Measurement range:	0.02...2.00 mg/l (CGE 2-mA-2 ppm) 0.1...10.0 mg/l (CGE 2-mA-10 ppm)
pH range:	5.5...9.5
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	3 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	16...24 V DC (two-wire technology)
Output signal:	4...20 mA † measurement range (un-calibrated)
Warning: no electrical isolation!	
Typical applications:	Swimming pool, potable, industrial, process water, cooling water and water with a high pH value
Measurement and control devices:	D1C, D2C, DULCOMARIN®
In-line probe housing:	DGM, DLGA

Part No.

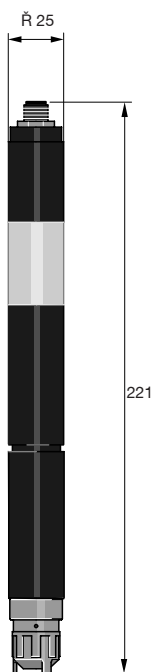
CGE 2-mA-2 ppm set, with 50 ml electrolyte

792843

CGE 2-mA-10 ppm set, with 50 ml electrolyte

792842

CGE 2-CAN



pk_6_084

Measured variable:	Organic combined chlorine and free chlorine (e.g. trichloroisocyanuric acid)
Analysis:	DPD 1
pH range:	5.5...9.5
Temperature range:	5...45 °C (temperature compensated)
Max. pressure:	3 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	Via CAN interface (11-30V)
Output signal:	un-calibrated, temperature compensated, electrically isolated
Typical applications:	Swimming pool water
Measurement and control devices:	DULCOMARIN® II
In-line probe housing:	DGM, DLGA

Part No.

CGE 2-CAN-10 ppm - with 50 ml electrolyte 0.01 ... 10.0 mg/l

1024420



6.4 DULCOTEST® Bromine Sensors

6.4.1 DULCOTEST® Sensors for Bromine - BCR

The following bromating agents are used as disinfectants:

ORGANIC BROMATING AGENT

- a) DBDMH (1.3-dibrom-5.5-dimethyl-hydantoin) e. g. sold as Albrom 100®
- b) BCDMH (1-bromine-3-chlorine-5.5-dimethyl-hydantoin) e.g. sold as Brom-Sticks®

These bromating agents are solid and are metered as saturated solutions via brominators.

INORGANIC FREE BROMINE

Free bromine is produced via the so-called Acti-Brom process® (Nalco) chlorine bleach + acid + sodium bromide.

For measuring DBDMH or free bromine as a bromating agent in the measurement range: 0.2 -10 ppm bromine the BRE 2-mA-10 ppm sensor is recommended along with DPD1-method calibration.

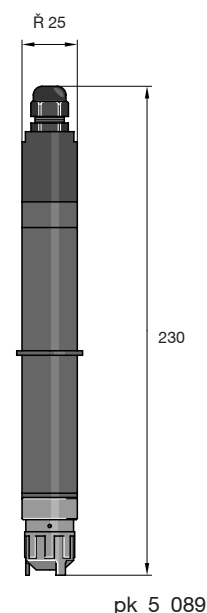
Alternatively, to measure BCDMH in the same measurement range, the BRE 1-mA-10 ppm sensor is recommended along with DPD4-method calibration.

Typical applications are in swimming pools, Jacuzzis and cooling systems. Particularly in cooling systems the quality of the sample water must be tested and, where applicable, compatibility with other chemicals employed (e.g. corrosion inhibitors). Dissolved copper(>0.1 mg/l) will interfere with the measurement.

Photometric DPD measurement is the recommended method for calibrating the bromine sensor (e.g. with DT 1), calculated and displayed as bromine. If bromine is determined as "chlorine" with DPD, note when selecting the measurement range that you need to lower the result by a factor of 2.25.

BCR 1-mA (Replaces earlier BRE1)

Measured variable:	Total available bromine from BCDMH (bromo-3-chloro-5.5-dimethylhydantoin) and N-Bromanide sulphonate
Reference method:	DPD4
pH drange:	5.0 ... 9.5
Temperature range:	5 ... 45 °C
Max. pressure:	1 bar
Sample flow:	30 ... 60 l/h (in DGM or DLGA)
Voltage:	16 ... 24 V DC (two-wire technology)
Output signal:	4 ... 20 mA measurement range, temperature compensated
	Warning: not electrically isolated!
Typical applications:	Cooling water, process water, waste water, water with higher pH values (stable pH)
Measurement and control device:	D1C, D2C, DAC
In-line probe housing:	DGM, DLGA



BCR 1-mA (replaces earlier BRE1)	Part no.
BCR 1-mA-0.5 ppm with 50 ml electrolyte	1041697
BCR 1-mA-2 ppm with 50 ml electrolyte	1040115
BCR 1-mA -10 ppm with 50 ml electrolyte	1041698

Measurement range relates to BCDMH

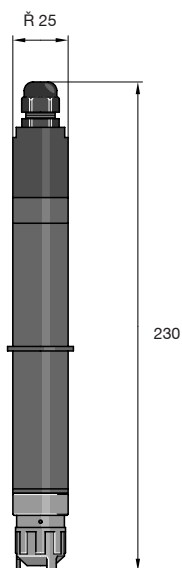


6.4 DULCOTEST® Bromine Sensors

6.4.2 DULCOTEST® Sensors for Bromine - CBR/BRE

CBR 1-mA (replaces earlier BRE2)

Measured variable:	Free chlorine (hypochlorous acid HOCl), free bromine, bound bromine
Reference method:	DPD1
pH range:	5.0 9.5
Temperature:	5 ... 45 °C
Max. pressure:	1 bar
Flow:	30 ... 60 l/h (in DGM or DLGA)
Power supply:	16 ... 24 V DC (2-wire)
Supply:	From the DMT measurement transducer (3.3 VDC)
Output signal:	4 ... 20 mA = Measuring range, temperature compensated, uncalibrated, not electrically isolated
Typical applications:	Cooling water, Process water, Waste water, Water with higher pH values (stable pH)
Measurement and control equipment:	D1C, ProMcon
In-line probe fitting:	DGM, DLGA
Measuring principle:	amperometric, 2 electrodes, diaphragm-covered



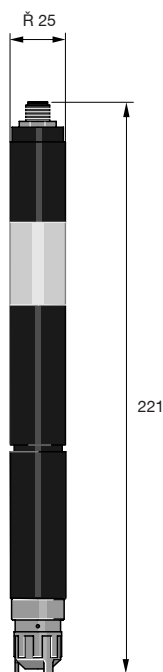
pk_5_089

		Part No.
CBR 1-mA-0.5 ppm	0.01 ... 0.5 mg/l	1038016
CBR 1-mA-2 ppm	0.02 ... 2.0 mg/l	1038015
CBR 1-mA-5 ppm	0.05 ... 5.0 mg/l	1052138
CBR 1-mA-10 ppm	0.10 ... 10.0 mg/l	1038014

Note: the above measuring range is based on chlorine. The upper and lower limits of the measuring range are increased by a factor of 2.25 when measuring bromine e.g. CBR 1-mA-2 ppm = 4.5 ppm.

BRE 3-CAN

Measured variable:	Total available bromine
Bromine chemicals:	DBDMH (1.3-dibromine 5.5-dimethyl hydantoin) BCDMH (1-bromine-3-chlorine-5.5-dimethyl hydantoin), free bromine
Reference method:	DBDMH, free bromine: DPD1 BCDMH: DPD4
Measurement range:	DBDMH free bromine: 0.2...10.0 mg/l with type BRE 2-mA-10 ppm BCDMH: 0.2...10.0 mg/l with type BRE 1-mA-10 ppm
pH dependence:	if changes from pH 7 to pH 8 the sensor sensitivity is reduced; a) in the case of DBDMH and free bromine by approx. 10% b) in the case of BCDMH by approx. 25 %
Temperature range:	5...45 °C
Max. pressure:	3 bar
Sample flow:	30...60 l/h (in DGM or DLGA)
Voltage:	Via CAN interface (11-30V)
Output signal:	uncalibrated, temperature compensated, electrically isolated
Typical applications:	Swimming pools / whirlpools and cooling water; can also be used in seawater
Measurement and control device:	Dulcomarin® II
In-line probe housing:	DGM, DLGA



pk_6_084

		Part No.
BRE 3-CAN-10ppm	0.02 ... 10.0 mg/l	1029660

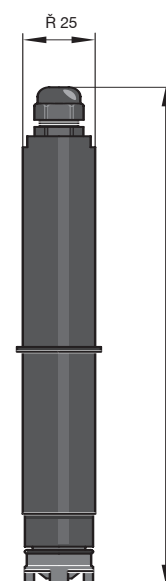


6.5 DULCOTEST® Chlorine Dioxide Sensors

6.5.1 DULCOTEST® Sensors for Chlorine Dioxide - CDE/CDP

CDE 2-mA

Measured variable:	Chlorine dioxide (ClO ₂)
Reference method:	DPD1
pH range:	4.0 ... 11
Cross sensibility:	Ozone, compared with chlorine <2%
Temperature range:	1 ... 45 °C
Max. pressure:	1,0 bar
Intake flow:	30...60 l/h (in DGMA or DLG III)
Supply voltage:	16...24 V DC
Output signal:	4...20 mA temperature compensated, uncalibrated, not electrically isolated
Typical applications:	uncontaminated potable water (surfactant-free)
Measurement and control equipment:	D1C, DAC
In-line probe housing:	DGMA / DLG III
Measuring Principle:	amperometric, 2 electrodes, diaphragm-covered



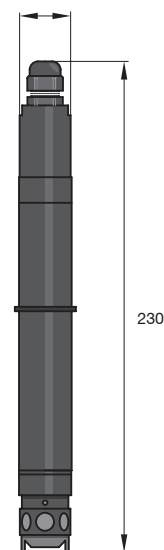
pk_5_046

Part No.

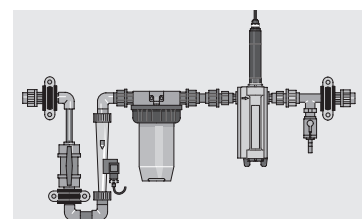
CDE 2-mA-0.5 ppm	0,01...0,5 mg/l	792930
CDE 2-mA-2 ppm	0,02...2,0 mg/l	792929
CDE 2-mA-10 ppm with 100 ml of electrolyte	0,10...10,0 mg/l	792928

CDP 1-mA-2 ppm (ClO₂-process probe)

Applications:	Bottle washing machines and water containing surfactants
Measured variable:	Chlorine dioxide (ClO ₂)
Analysis:	DPD 1
Measurement range:	0.02...2.00 mg/l
pH range:	5.5...10.5
Temperature range:	10...45 °C (short term periods 55 °C) with external temperature correction via Pt 100 (no internal temperature correction!)
Temperature variation speed:	Up to 10 K/min
Max. pressure:	3 bar (no pressure surges)
Flow:	30...60 l/h (in DGM or DGMA)
Supply voltage:	16...24 V DC (two-wire technology)
Output signal:	4...20 mA † measurement range (un-calibrated)
Warning: no electrical isolation!	
Type application:	Process water containing surfactants (bottle washing machines)
Measuring and control device:	D1C with automatic temperature compensation only
In line probe housing:	the following is recommended (see fig.) <u>Probe housing quote on request.</u>



pk_5_081



pk_5_050

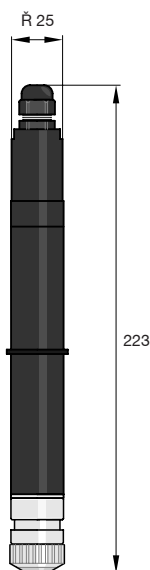
Part No.

CDP 1-mA-2 ppm set with 100 ml electrolyte	1002149
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6.5 DULCOTEST® Chlorine Dioxide Sensors

6.5.2 DULCOTEST® Sensors for Chlorine Dioxide - CDR



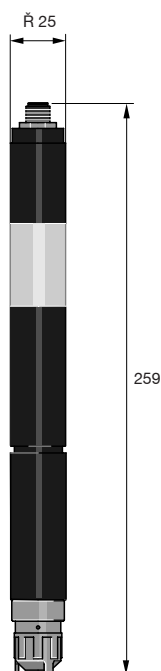
pk_6_083

CDR 1-mA

Measured variable:	Chlorine dioxide (ClO ₂)
Reference method:	DPD1
pH range:	1.0 ... 10
Temperature range:	1 ... 55 °C (short-term periods 60 °C)
Max. pressure:	3.0 bar (30 °C in DGMA)
Intake flow:	30...60 l/h (in DGMA or DLG III)
Supply voltage:	16...24 V DC
Output signal:	4...20 mA temperature compensated, uncalibrated, not electrically isolated
Typical applications:	contaminated industrial, process water, containing surfactants, Cooling water, irrigation water, slightly contaminated waste water, warm water
Measurement and control equipment:	D1C, DAC
In-line probe housing:	DGMA / DLG III
Measuring Principle:	amperometric, 2 electrodes, diaphragm-covered

Part No.

CDR 1-mA-0.5 ppm	0,01...0,5 mg/l	1033762
CDR 1-mA-2 ppm	0,02...2,0 mg/l	1033393
CDR 1-mA-10 ppm	0,10...10,0 mg/l	1033404



pk_6_084

CDR 1-CAN

Measured variable:	Chlorine dioxide (ClO ₂)
Reference method:	DPD1
pH range:	1.0 ... 10
Temperature range:	5 ... 45 °C
Max. pressure:	1.0 bar (30 °C in DGMA)
Response time sensor:	t ₉₀ ~ 3 min.
Intake flow:	30...60 l/h (in DGMA or DLG III)
Supply voltage:	Via CAN interface (11-30V)
Temperature measurement:	via integral digital semi-conductor device
Output signal:	uncalibrated, temperature-compensated, electrically isolated
Typical applications:	contaminated industrial, process water, containing surfactants, cooling water, irrigation water, slightly contaminated waste water, warm water
Measurement and control equipment:	Dulcomarin® Disinfection Controller
In-line probe housing:	DGMA / DLG III
Measuring Principle:	amperometric, 2 electrodes, diaphragm-covered

Part No.

CDR 1-can-10 ppm	0,10...10,0 mg/l	1041145
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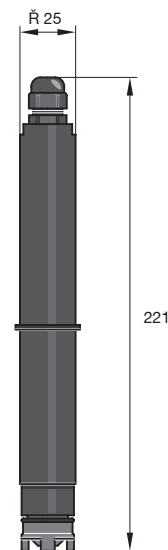


6.6 DULCOTEST® Ozone Sensor

6.6 DULCOTEST® Sensors for Ozone - OZE 3-mA

OZE 3-mA

Measured variable:	Ozone (O ₃)
Analysis:	DPD 4
Measurement range:	0.02...2.00 mg/l
pH range:	Ozone stability range
Temperature range:	5...40 °C (temperature compensated), no significant Temperature fluctuations
Max. pressure:	1 bar
Flow:	30...60 l/h (in DGM or DLGA)
Power supply:	16...24 VDC (two-wire technology)
Output signal:	4...20 mA † measurement range (un-calibrated)
Warning: no electrical isolation!	
Typical applications:	Swimming pools, potable, industrial, process water, surfactant free
Measurement and control devices:	D1C
In-line probe housing:	DGM , DLGA



pk_5_046

	Part No.
OZE 3-mA-2 ppm set, with 100 ml electrolyte	792957
OZE 3-mA-5 ppm set, with 100 ml electrolyte***	792957-5PPM

*** **special** *** not carried in stock, 6 week delivery

The DULCOTEST® PAA 1 sensor models are membrane-covered amperometric 2-electrode sensors for the selective measurement of peracetic acid. Peracetic acid is used as a disinfectant particularly in the food and beverage industries as well as in the cosmetic, pharmaceutical and medical industries. The continuous measurement and control of the peracetic acid is essential to comply with demanding disinfection requirements and for quality control. Unlike with the sensors in the earlier Perox PES system the PAA 1-mA can be used with the D1Ca controller. Commissioning and maintenance is greatly simplified.

The sensors can even be used in the presence of surfactants (tensides).

The DULCOTEST® PEROX and PER1 sensors are membrane-covered, amperometric sensors for the online concentration measurement of hydrogen peroxide. Due to its complete biodegradability, hydrogen peroxide is a disinfectant and oxidising agent frequently used in water treatment and production: chemical bleach in the wood, paper, textile and mineral compounds industries, organic synthesis in the chemical, pharmaceutical and cosmetics industries, oxidation of potable water, landfill seepage water, contaminated ground water, disinfection of cooling, process and production water in the pharmaceutical, food and beverage industries as well as in swimming pools, deodorisation (gas scrubbers) in municipal and industrial clarification plants, dechlorination in chemical processes.

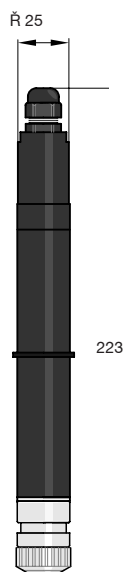


6.7 DULCOTEST® PAA Sensor

6.7 DULCOTEST® Sensor for Peracetic Acid - PAA/PER

PAA 1-mA

Measured variable:	peracetic acid
Reference method:	titration
Measurement range:	10...200 mg/l (PAA 1-mA-200 ppm) 100...2000 mg/l (PAA 1-mA- 2000 ppm)
pH range:	1...9 (peracetic acid stability range)
Temp. range:	1...45 °C (temperature compensated)
Admissible Temperature fluctuation:	0.3 °C/min
Response time T90:	3 min. Max.
Pressure.:	3 bar (30 °C, in DGM)
Intake flow:	30- 60 l/h (with DGM or DLGA in-line probe housing)
Power supply:	16...24 V DC (two wire)
Output signal:	4...20 mA measurement range (uncalibrated) Important not electrically isolated
Typical application:	scouring in Cleaning in Place (CIP) and rinsing systems, also designed for use in the presence of cationic and anionic tensides. Selective measurement of peracetic acid as well as hydrogen peroxide is possible.
Measurement and control equipment:	D1C
In-line probe housing:	DGM, DLGA



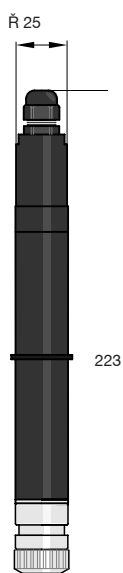
pk_6_083

Part No.

PAA 1-mA-200ppm	1022506
PAA 1-mA-2000ppm	1022507

PER 1-mA

Measured variable:	hydrogen peroxide
Calibration:	Photometric with manual DT3B photometer
pH range:	2.5 ... 11.0
Temperature:	0 ... 50 °C
Admissible Temperature:	<0.3 °C/min
Response time sensor:	T ₉₀ approx. 480 sec.
Measuring accuracy:	≥ 1 ppm or better than ± 5% of measured value
Min. conductivity:	0.05 ... 5.00 mS/cm
Max. pressure:	1.0 bar
Intake flow:	20 - 100 l/h (with DGM or DLGA in-line probe housing)
Power supply:	16...24 V DC (two wire)
Output signal:	4...20 mA measurement range (uncalibrated) Important not electrically isolated
Typical application:	Swimming pools, treatment of contaminated waste waters, treatment of process media from production
Measurement and control equipment:	D1Cb, DAC
In-line probe housing:	DGM, DLGA



pk_6_083

Part No.

PER 1-mA-200ppm	1022509
PER 1-mA-2000ppm	1022510



DULCOTEST® PEROX Sensor

6.8 DULCOTEST® Sensor for PEROX

YOUR BENEFITS

- Measured variable hydrogen peroxide without cross sensitivity to chlorine
- Diaphragm-covered sensor minimises faults caused by changing flow
- Control of fast processes through rapid response time by the sensor in conjunction with fast external temperature measurement for temperature correction
- Reliable measurement even after periods of absence of hydrogen peroxide by pulsed, self-regenerating measuring electrode

Measured variable:	Hydrogen peroxide
Calibration:	Photometric with manual DT3B photometer
Measuring range:	1...20, 10...200, 100...2000 mg/l, switchable
pH range:	2.5 ... 10.0
Temperature:	0 ... 40 °C
Admissible temperature fluctuation:	< 1 °K/min (with external T measurement)
Response time sensor t_{90}	approx. 20 sec
Min. conductivity	With 20 mg/l range: 5 µS/cm With 200 mg/l range: 200 µS/cm Up to 1,000 mg/l: 500 µS/cm Up to 2,000 mg/l: 1 mS/cm
Max. pressure:	2.0 bar
Intake flow	30...60 l/h
Supply voltage	16...24 V DC(3-wire system)
Output signal	4...20 mA not temperature-compensated, uncalibrated, not electrically isolated
Selectivity:	Hydrogen peroxide selective towards free chlorine
Installation	Bypass: open outlet or return of the sample water into the process line
Sensor fitting:	DGM, DLG III
Output signal:	4...20 mA assigned to the measuring range, temperature-corrected, calibrated and galvanically isolated
Measuring & control equipment:	DGM, DLG III
Typical applications:	Exhaust air scrubbers, treatment of swimming pool water, potable water, controls with requisite very short response times.
Resistance to:	Salts, acids, lyes, surfactants.
Measuring principle, technology	amperometric, 2 pulsing electrodes, diaphragm-covered

Part No.

H ₂ O ₂ sensor PEROX-H2.10 P	792976
PEROX transducer V1 for D1Ca	1034100
PEROX Transducer V2	1047979

Accessories

Part No.

Photometer DT3B hydrogen peroxide (for calibration)	1039317
Polishing paste (to electrode cleaning)	559810



6.9 DULCOTEST® Dissolved Oxygen Sensors

6.9 Dissolved Oxygen Sensors - DO 3-mA

The measured variable "Dissolved oxygen" indicates the volume of gaseous oxygen physically dissolved in the aqueous phase in mg/l (ppm).

"Dissolved oxygen" is therefore an important parameter for assessing the quality of surface water and water that has to be treated for the breeding of livestock with the addition of oxygen. Dissolved oxygen is also used for controlling processes in clarification plants and waterworks.

The following sensors are assigned to the different applications and can be offered separately as 4 - 20 mA encoders to central controls or as a decentralised solution along with D1C and DAC.

DO 3-mA

Measured variable:	Dissolved oxygen
Calibration:	On atmospheric oxygen or by reference measurement in the process water
Measuring accuracy:	±0.1 mg/l
Response time sensor t90	< 60 s at 25 °C from air to nitrogen
Temp. range:	0 -50 °C
Temperature correction	integrated Pt1000, fed to the outside
Max. pressure:	2.0 bar
Intake flow	Measurement even possible without flow
Electrical connection	Fixed cable, 10 m
Enclosure rating:	IP 68
Power supply:	18...30 V DC
Electrical connection:	fixed lead, 10 m
Output signal:	4...20 mA assigned to the measuring range, temperature-corrected, calibrated and galvanically isolated
Process integration:	<p>a) Immersion by immersion pipe (PVC, d40/DN 32, provided by the customer). The connection is possible using the immersion pipe adapter (reducing nipple, order no. 356924) and the 45° angle (order no. 356335) (reducing nipple, order no. 356924) and the 45° angle (order no. 356335). Both parts are included in the scope of delivery: and can be ordered as an accessory (also see Accessories).</p> <p>b) Installation into ProMinent bypass fittings, type DGMa with mounting kit</p>
Measuring & control equipment:	DACb as of firmware 02.01.01.02 with complete calibration functionality and all correction variables (temperature, salinity, air pressure, height above sea level). Displayed units: [ppm] and [% oxygen saturation] DACa, AEGIS II, D1C: calibration only possible by the input of a reference concentration determined from the process water. Only temperature correction variable. Displayed unit: [ppm]
Typical applications:	Control of oxygen input into the aeration tank (clarification plant), control of oxygen input in water works, breeding of fish and shrimps, conditioning of the water of large aquaria in zoos, assessment of the biological condition of surface water.
Resistance to:	Contaminated water and the following chemical compounds: carbon dioxide, hydrogen sulfide, sulfur dioxide, ethylene oxide and against gamma sterilisation.
Interference by:	Oxidant (e.g. chlorine, chlorine dioxide, ozone) and many organic solvents (e.g. chloroform, toluene, acetone)
Measuring principle, technology	Optical: Measurement of the relaxation time of a pulsed fluorescence beam

Part No.

DO 3-mA-20 ppm

1094609

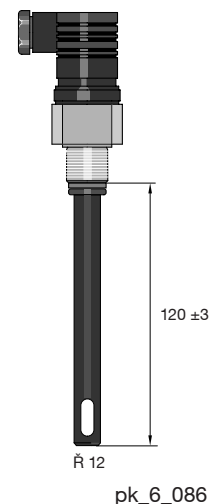


6.10 DULCOTEST® Conductivity Sensors

6.10.1 DULCOTEST® Conductivity Sensors - LF1/LFTK

LF1 DE Conductive

Measuring range:	0.01...20 mS/cm
Cell constant:	k1 cm-1 ±5 %
Temperature compensation:	–
Fluid temperature:	0...80 °C
Max. pressure:	16.0 bar
Sensors:	special graphite
Shaft material:	Epoxy
Thread:	PG 13.5
Fitting length:	120 ± 3 mm
Electrical connection:	DIN 4-pin angle plug
Typical applications:	Potable, cooling, industrial water. Sensors of the LF series have only limited applicability for taking measurements in cleaning solutions containing surfactants and media containing solvents.



Part No.

1001375

LF1 DE

Suitability: Compact Controller, DMTa, DICa

NOTE: if using this with a Compact Controller a Shielded 4 wire cable **MUST** be used.

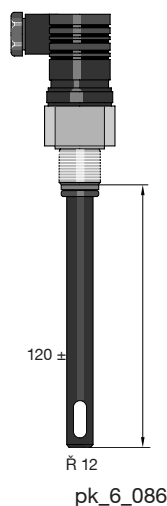
Part No.

1045183

4-wire shielded cable 100CY 4x0, 25qmm 5.7 grey

LFTK 1 DE Conductive

Measuring range:	0.01...20 mS/cm
Cell constant:	k1 cm-1 ±5 %
Temperature compensation:	Pt 1000
Fluid temperature:	0...80 °C
Max. pressure:	16.0 bar
Sensors:	special graphite
Shaft material:	Epoxy
Thread:	PG 13.5
Fitting length:	120 ± 3 mm
Electrical connection:	DIN 4-pin angle plug
Typical applications:	Potable, cooling, industrial water. Sensors of the LF series have only limited applicability for taking measurements in cleaning solutions containing surfactants and media containing solvents.



Part No.

1002822

LFTK 1 DE

Suitability: Compact Controller

NOTE: if using this with a Compact Controller a Shielded 4 wire cable **MUST** be used.

Part No.

1045183

4-wire shielded cable 100CY 4x0, 25qmm 5.7 grey

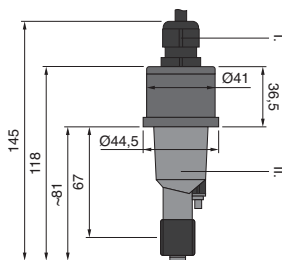


6.10 DULCOTEST® Conductivity Sensors

6.10.2 Inductive Conductivity Sensors - ICT 5

Inductive conductivity sensors consist of a transducer, encapsulated in an inert material. The electrolytic conductivity is measured inductively without direct contact with the medium.

The sensors are used to measure electrolytic conductivity over a wide measuring range, even in heavily contaminated and/or aggressive media and, as such, offer particularly low maintenance operation. The sensors are particularly suitable for measuring high conductivities, as no electrode polarisation occurs. The inductive conductivity sensors are operated using the Compact Controller.



P_AC_0282_SW1

Conductivity Sensor ICT 5

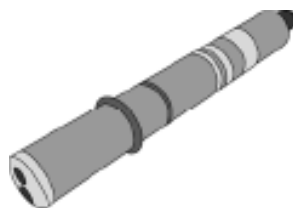
Measuring range :	0.2...2,000 mS/cm
Cell constant:	6.25 cm-1
Measuring accuracy:	±1% based on the measured value, below 3 mS/cm: ±30 µS/cm
Temperature sensor:	Pt 1000, wetted material Stainless steel 1.4301
Process chemical temperature:	-10...80 °C -10...60°C for installation in PVC pipes, -10...80 °C for installation in PP pipes
Max. pressure:	10.0 bar up to 20 °C, 6.0 bar up to 60 °C, 0.0 bar at 80 °C
Min. pressure :	-0,1 bar (-10 ... 80 °C)
Sensor material :	PP
Seals:	EPDM
Electrical connection:	10 m fixed cable, 7x 0.35 mm, via a terminal
Enclosure rating:	IP 65
Typical applications:	Contaminated waste water, blowdown control in cooling towers, control of electroplating and rinsing baths, cleaning in Place (CIP), product monitoring, sea water, brine swimming pools.
Resistance to:	Ingredients in the water of the target application, taking into account compatibility to PP/EPDM, deposit-forming media
Installation:	With union nut, PVC, 1 1/2 inch female thread, including DN 40 bonded nozzle with 1 1/2 inch external thread for fitting in DN 40 PVC standard pipes (included in the scope of delivery). The corresponding set-in nozzle for fitting in PP standard pipe is available as an accessory.
Measuring & control equipment:	Compact controller DCCa
Measuring principle:	Inductive, 2 coils. Integrated temperature measurement

Part No.

ICT 5

1095248

Conductivity Sensor CCT 1-mA



P_DT_0078_SW

Measuring range:	0.2...20 mS/cm
Temperature measurement:	NTC, integrated
Medium temperature:	0 ... 50 °C (at 1 bar)
Max. pressure:	8.0 bar, (at 25 °C)
Installation:	Bypass via sensor fittings DGM, DLGIII or installation into G1" PP pipe via INLI sensor fitting
Electrical connection:	4-wire cable, 0.25mm ²
Output signal:	4...20 mA, temperature-compensated, factory-calibrated, galvanically isolated
Enclosure rating:	IP 65
Typical applications:	Cooling, industrial, process water, general water with higher salt content up to 20 mS/cm
Resistance to:	Ingredients in the water of the target application, taking into account the compatibility of the material
Measurement & control equipment:	diaLog DACb
Measuring principle	Conductive, 2 electrodes. Integrated temperature measurement, integrated 4...20mA transducer

Note: Other ranges are possible. Please consult Sydney Technical department for requirements. For connection to DACb ONLY.

Part No.

CCT 1-mA-20 mS/cm

1081545

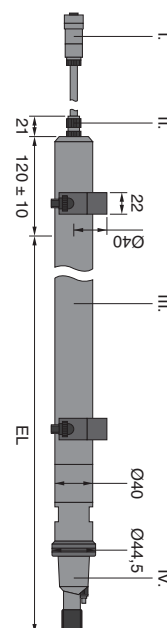


6.10 DULCOTEST® Conductivity Sensors

6.10.3 Inductive Conductivity Sensors - ICT 5-IMA

ICT 5-IMA

Measuring range:	0.2...2,000 mS/cm
Cell constant k:	6.25 cm ⁻¹
Measuring accuracy:	±2% based on the measured value ±30 µS/cm
Temperature sensor:	Pt 1000, wetted material Stainless steel 1.4301
Process chemical temperature:	-10...60 °C
Max. pressure:	0.0 bar
Min. pressure:	-0,1 bar (-10 ... 60 °C)
Sensor material:	PP
Immersion pipe material:	PP
Sensor guard material:	SS 1.4301, AISI 304
Seals:	EPDM
Electrical connection 1:	0 m fixed cable, 7x 0.35 mm, via a terminal
Enclosure rating:	IP 65
Typical applications:	Contaminated waste water, blowdown control in cooling towers, control of electroplating and rinsing baths, cleaning in Place (CIP), product monitoring, sea water, brine swimming pools.
Resistance to:	Ingredients in the water of the target application, taking into account compatibility to PP/EPDM, deposit-forming media
Installation:	Immersion with immersion length 1 m
Measuring & control equipment:	Compact controller DCCa
Measuring principle, technology:	Inductive, 2 coils. Integrated temperature measurement



P_AC_0278_SW1

Part No.

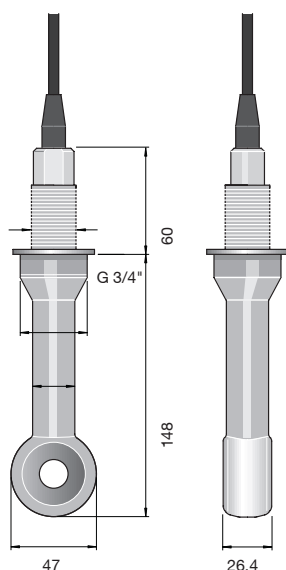
ICT 5-IMA

1095249

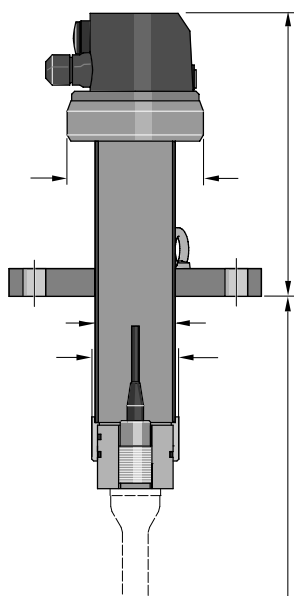
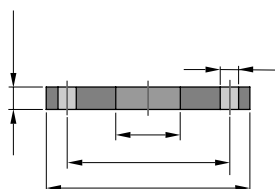


6.10 DULCOTEST® Conductivity Sensors

6.10.4 Inductive Conductivity Sensors - ICT 2



pk_6_082



pk_6_094

Flange:	DN 80/PN 16
Ø D	200
Ø K	160
Ø d ₂	8 x 18
b	20
Ø a	63.5
Screws	M 16

ICT 2

High performance sensors for aggressive media, maximum conductivity and high temperatures up to 125 °C. Available for installation in tanks, pipes or the IMA-ICT 2 in-line probe housing.

Measurement range:	0-2000 mS/cm
Cell constant:	2 cm-1
Reproducibility of measurement:	±(5 µS/cm + 0.5 % of the measured value)
Temperature compensation:	Pt 100, class A, completely extrusion-coated
Medium temperature:	0 °C...125 °C <i>Note: for use together with D1C, temperature compensation is limited to 100 °C</i>
Max. pressure:	16 bar
Material: sensor:	PFA, completely extrusion-coated

Assembly:

Installation in pipes,

tanks (on the side): G 3/4 stainless steel thread(1.4571) with PTFE O-ring and locknut (scope of supply)

or flange mounted: With accessories: Stainless steel flange ANSI 2 imperial 300lbs, SS 316L (can be adapted to DIN counter-flange DN 50 PN 16)

Installation in immersion pipe for tank from above: With accessories: IMA-ICT 2 in-line probe housing via stainless steel flange DN 80 PN (see section 6.5.3)

Length when fitted:	1 m, diameter when fitted 70 mm
Power supply:	5 m fixed cable
Measurement and control equipment:	D1C
Enclosure rating:	IP67
Typical applications:	Production processes in the chemical industry, Phase separation of product mixtures, Determining concentrations of aggressive chemicals

Part No.

ICT 2

1023352

IMMERSION ASSEMBLY TYPE IMA-ICT 2

To hold an inductive conductivity sensor, type ICT 2.

Material fittings:	Stainless steel 1.4404
Material seal:	Viton®
Max. temperature:	125 °C
Max. pressure:	10 bar
Length:	1 m
Pipe diameter:	70

Flange mounting for installation in tank from above, stainless steel flange DN 80 PN 16

Part No.

IMA-ICT 2

1023353

Note: See 'Green Pages' for local probe & controllers

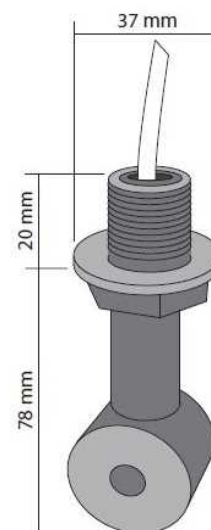


6.10 DULCOTEST® Conductivity Sensors

6.10.5 Inductive Conductivity Sensors - ICT 8-mA

ICT 8-mA

Measuring range:	Three configurable measuring ranges 0.2...2.0 mS/cm / 0.5...20 mS/cm / 1...200 mS/cm
Temperature correction:	integrated in the sensor electronics, temperature co-efficient: 1.7%/K
Medium temperature /pressure:	max. 50 °C at 1 bar
Sensor material:	PP
Seals:	EPDM
Installation length:	75
Electrical connection:	Fixed cable, 6-wire (6x0.25 mm.). The cable length is: 2 m cable between the sensor and 4-20 mA cable transmitter and 10 m between the cable transmitter and monitor.
Typical applications:	Desalination control in cooling towers, contaminated waste water, control of electroplating and rinsing baths, salt water desalination, adjustment of the salt content in swimming pool water
Resistance to:	Water ingredients in the target application, taking into account compatibility to PP/EPDM and combating film-forming media
Installation:	1/2" male thread (BSP) for mounting by flange, installation in PVC pipes, immersion using an immersion pipe, 1 m, order no. 1105964
Measuring and control equipment:	diaLog DAC, D1Cb, D1Cc, AEGIS II
Measuring principle, technology:	Inductive, 2 coils. Integrated temperature measurement, integrated 4...20mA transducer



Part No.

1098530

ICT 8 -mA-200 mS/cm



6.11 DULCOTEST® Accessories

6.11 Accessories Electrolyte & Membrane Caps

Electrolyte for Sensors	ml	Part No.
Electrolyte for all CLE, CLR type chlorine sensors	100	506270
Electrolyte for CDM 1 and CDE 3 type chlorine dioxide sensors	100	506271
Electrolyte for CDE 2 and CDR 1 type chlorine dioxide sensors	100	506272
Electrolyte for OZE type ozone sensors	100	506273
Electrolyte for CGE/CTE/BRE type sensors	50	792892
Electrolyte for CDP type chlorine dioxide sensors	100	1002712
Electrolyte for PAA 1 type peracetic acid sensors	100	1023896
Electrolyte for CLT 1 type chlorite sensors	50	1022015
Electrolyte for PER 1 type hydrogen peroxide sensors	50	1025774
Electrolyte for CLO 1 type chlorine sensor	100	1035191
Electrolyte for CLO 2 type chlorine sensor	100	1035480
Electrolyte for CBR 1 type chlorine/bromine sensor	100	1038017
Electrolyte for BCR 1 type bromine sensor	50	1044843

Membrane Caps for Sensors		Part No.
Membrane cap for types CLE II T, CDM 1, & OZE 1	–	790488
Membrane cap for types: CLE 2.2, CLE 3, CDE 1.2, CDE 2, OZE 2, & OZE 3	–	1035197
Sensor cap for CLO 1	–	1035198
Sensor cap for CLO 2	–	792862
Membrane cap for CGE/CTE 1 (2/5/10 ppm), BRE 1 (10 ppm), and BRE 2	–	741274
Membrane cap for CTE 1 (0.5 ppm), CBR 1, BCR 1	–	1002710
Membrane cap for CDP 1, BRE 1 (0.5 / 2 ppm), CLT	–	1026578
Membrane cap for CDE 3	–	1023895
Membrane cap for PAA 1, CDR 1, CLR 1, OZR1	–	1025776
Membrane cap for PER 1	–	792978
Membrane cap for H2.10 P		

Accessory Sets for Sensors	ml	Part No.
Accessory set for CGE 2/CTE 1 (2/5/10 ppm), & BRE 1 (10 ppm), BRE 2 (2 membrane caps + electrolyte)	50	740048
Accessory set for CTE 1 (0.5 ppm) (2 membrane caps + electrolyte)	50	741277
Accessory set for CLE (2 membrane caps + electrolyte)	100	1024611
Accessory set for CDP 1 (2 membrane caps + electrolyte), BRE 1 (0.5 / 2 ppm), CLT	100	1002744
Accessory set for PAA 1 (2 membrane caps + electrolyte)	100	1024022
Accessory set for PER 1 (2 membrane caps + electrolyte)	50	1025881
Accessory set for CDE 3 (2 membrane caps + electrolyte)	100	1026361
Accessory set for CLO 1 (electrolyte, grinding disc, plug)	100	1035482
Accessory set for CLO 2 (electrolyte, grinding disc, plug)	100	1035483
Accessory set for CBR 1 (2 membrane caps + electrolyte)	100	1038984
Accessory set for BCR 1 (2 membrane caps + electrolyte)	100	1044844
Accessory set for CDR 1 (2 membrane caps + electrolyte)	100	1034231

Spare parts for dissolved oxygen sensors

	Measuring range	Part No.
Sensor insert for DO 1-mA-20 ppm	0-20 mg/l 2.00...20.0 mg/l	
Sensor insert for DO 2-mA-10 ppm		
Membrane thickness 50 µm,	0-10 mg/0.10...10.0 mg/l	1020535



6.12 DULCOTEST® Accessories Modular In-Line Probe Housing

6.12 Technical Data DGM

DGM modular in-line probe housing

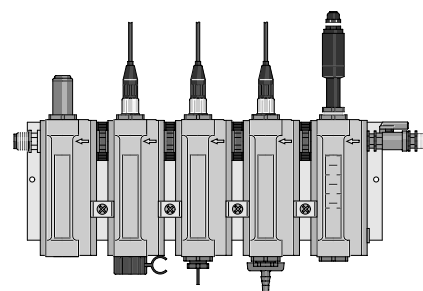
For conductivity, Pt 100, pH or redox probes with 13.5 PG internal thread or chlorine, bromine, chlorine dioxide, ozone measuring cells with R 10 internal thread.

- Simple to assemble (already mounted on panel up to max. 5 units)
- Expansion options
- Water flow monitor module
- Simple to calibrate measured variables due to low sample water volume

Input-side ball valve for stopping and adjusting flow.

Every fully mounted DGM set is fitted with a simple sampling tap.

Material:	Transparent PVC (all modules) Viton® (seals) PP (calibration cup) PVC white (mounting panel)
Max. temperature:	60 °C
Max. pressure:	6 bar (30 °C) 1 bar (60 °C) 2 bar (note: with flow monitor ... typical)
Flow volume:	Up to 80 l/h (40 l/h recommended)
Flow sensor:	Reed contact max. switch power 3 W max. switch voltage 175 V max. switch current 0.25 A max. operating current 1.2 A max. contact resistance 150 mΩ
Switch hysteresis:	approx. 20 %
Enclosure rating:	IP 65
Applications:	Potable, swimming pool water or water of similar quality with no suspended solids
Assembly:	Max. 5 modules pre-assembled onto baseboard: more than 5 modules, pre-assembled onto baseboard as custom version, priced accordingly.



pk_5_080_1

DULCOTEST® Accessories Modular In-Line Probe Housing DGM

6.12.1 Identity Code & Pricing for DGM

DGM Flow Housing Module

A Series Version

Flow monitor module:

- 0 No flow monitor
- 1 With l/h scale
- 3 With flow monitor, l/h scale

Number of PG 13.5 modules:

- 0 No PG 13.5 modules
- 1 One PG 13.5 modules
- 2 Two PG 13.5 modules
- 3 Three PG 13.5 modules
- 4 Four PG 13.5 modules

Number of 25 mm modules:

- 0 No 25 mm modules
- 1 One 25 mm module*
- 2 Two 25 mm modules*

Main material:

- T Transparent PVC

Seal material:

- 0 Viton® A

Connections:

- 0 8 x 5 hose
- 1 PVC DN 10 threaded connector
- 9 Connector nipple/expansion module

Versions:

- 0 With ProMinent® logo
- 1 Without ProMinent® logo

Accessories included:

Wall mounting; for Pg 13.5 module; calibration cup; Pg 13.5 probe assembly set.

DGM A 3 2 1 T 0 0 0

The identity code opposite describes a fully assembled combination of flow monitor with sensor, two Pg 13.5 modules (e.g. for pH and redox probes) and a 25 mm module (e.g. for chlorine probe CLE 3). Fitted with 8 x 5 hose connector.

Recommended accessories:

	Part No.
for potential equaliser plug	791663
flow sensor	791635
additional calibration cup	791229

	Part No.
Flow Control Unit c/w float & sensor switch	DGMA300T000
Flow Control plus pH Cell Unit	DGMA310T000
Flow Control plus pH Cell Unit & rH Unit	DGMA320T000
Flow Control plus Chlorine Cell <i>includes Fitting Kit</i>	DGMA301T000
Flow Control plus pH plus Chlorine Cell <i>includes Fitting Kit</i>	DGMA311T000
Flow Control plus pH plus rH Cell plus Chlorine Cell <i>includes Fitting Kit</i>	DGMA321T000

Note: ALL complete DGMA assemblies are supplied with a simple sampling tap.

For alternate by-pass, submersible and withdrawal probe Housings and Buffer Solutions, refer 'GREEN PAGE' Price List



DULCOTEST® Accessories DGMa

6.13 Accessories

Accessory: Sampling tap for DGMa

for PG 13.5 and 25 mm modules designed as a convenient ball valve.

	Part No.
PG 13.5 sampling tap	1004737
25 mm sampling tap	1004739

CABLES & CONNECTORS

	Part No.
SN6 coax connector for 5 mm dia. coax cable	304974
SN6 coax connector for 3 mm dia coax cable	304975

CABLE & GLANDS

Cables per meter	Part No.
Military Grade, 50 ohm, type AM-900, Low Noise	A04001118
Grey HC2049 Cable, (2 core pulse)	A04001289
Grey cable entry gland 1/4" BSPM	703830
Black cable entry gland 3/8" BSPM	703885
4-wire shielded cable 100CY 4x0, 25qmm 5.7 grey	1045183

DULCOTEST COMPLETE SIGNAL CABLES

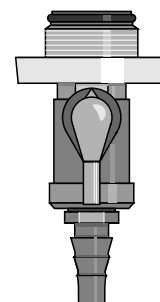
	Part No.
2 x SN6 Coax 0.8 m - SS	305077
2 x SN6 Coax 2.0 m - SS	304955
2 x SN6 Coax 5.0 m - SS	304956
2 x SN6 Coax 10.0 m - SS	304957

BELOW CABLES FOR TYPICAL USE WITH PH / ORP PROBES

	Part No.
SN6 - open end Coax 0.8m - S *** use this for panels ***	1024105
SN6 - open end Coax 2.0m - S	305030
SN6 - open end Coax 5.0m - S	305039
SN6 - open end Coax 10.0m - S	305040
SN6 - open end Coax 20.0m - S <i>non-stock item</i>	304952
SN6 - open end 2 core 5.0m for PT probes	1003208

The signal lead is required for connection of DMT type measuring cells to the DMT transducer.

	Part No.
Universal cable, 5-pole round plug, 5-wire, 2 m	1001300
Universal cable, 5-pole round plug, 5-wire, 5 m	1001301
Universal cable, 5-pole round plug, 5-wire, 10 m	1001302



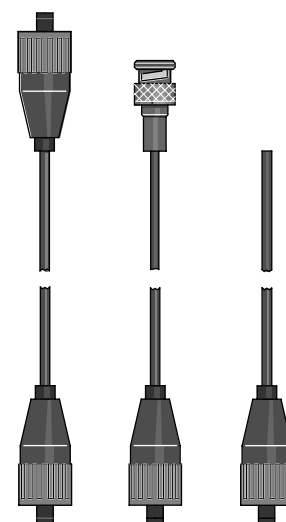
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pk_5_071



pk_5_070



SS

SB

S

pk_5_071



pk_1_085



1.1 Tube, Hose & Fittings



Note: Soft PVC tubing is only rated to 0.5 bar.

TUBE PACK 7 METRE, INCLUDES: 5m TRANSLUCENT LDPE DOSING TUBE & 2M SOFT PVC SUCTION TUBE

	Part No.
6mm O.D. x 4mm I.D.	PA01181048
8mm O.D. x 5mm I.D.	PA01281048
12mm O.D. x 9mm I.D.	PA01381048

TUBE PACK 7 METRE, INCLUDES: 5 BLACK LDPE DOSING TUBE & 2M SOFT PVC SUCTION TUBE

6mm O.D. x 4mm I.D.	PA01181049
8mm O.D. x 5mm I.D.	PA01281049
12mm O.D. x 9mm I.D.	PA01381049

SUCTION TUBE, CLEAR SOFT PVC - 25 METRE ROLL

6mm O.D. x 4mm I.D. - 0.5 bar	A25121801
8mm O.D. x 5mm I.D. - 0.5 bar	A25221801
12mm O.D. x 9mm I.D. - 0.5 bar	A25321801

DOSING TUBE, TRANSLUCENT LDPE - 25 METRE ROLL

6mm O.D. x 4mm I.D. - 11 bar	A25121800
8mm O.D. x 5mm I.D. - 11 bar	A25221800
12mm O.D. x 9mm I.D. - 7 bar	A25321800

DOSING TUBE, BLACK LDPE - 25 METRE ROLL

6mm O.D. x 4mm I.D. - 11 bar	A25151003
8mm O.D. x 5mm I.D. - 11 bar	A25251004
12mm O.D. x 9mm I.D. - 7 bar	A25351005

SUCTION TUBE, CLEAR SOFT PVC - 50 METRE ROLL

6mm O.D. x 4mm I.D. - 0.5 bar	A01181006
8mm O.D. x 5mm I.D. - 0.5 bar	A01281006
12mm O.D. x 9mm I.D. - 0.5 bar	A01381006

DOSING TUBE, TRANSLUCENT LDPE - 50 METRE ROLL

6mm O.D. x 4mm I.D. - 11 bar	A01181007
8mm O.D. x 5mm I.D. - 11 bar	A01281007
12mm O.D. x 9mm I.D. - 7 bar	A01381007

DOSING TUBE, BLACK LDPE - 50 METRE ROLL

6mm O.D. x 4mm I.D. - 11 bar	A01181008
8mm O.D. x 5mm I.D. - 11 bar	A01281008
12mm O.D. x 9mm I.D. - 7 bar	A01381008

HIGH PRESSURE FABRIC REINFORCED PVC TUBE

10x4 Tube Fabric reinforced 5m roll - 18 bar	1004533
10x4 Tube Fabric reinforced 50m roll - 18 bar	1004536
12x6 Tube Fabric reinforced 5m roll - 17 bar	1004538
12x6 Tube Fabric reinforced 50m roll - 17 bar	1004541

Prices Below are Per Metre

SUCTION /DOSING TUBE, CLEAR PVC/FABRIC, FOOD GRADE

16 mm ID - 16 bar	A01721802
20 mm ID - 16 bar	A01821802
25 mm ID - 16 bar	A01921802
32 mm ID - 16 bar	A01021802

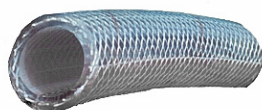
DOSING TUBE, PTFE OD X ID

1.75 mm x 1.15 mm - 12 bar	37414
3.2 mm x 2.4 mm - 8 bar	37415
6 mm x 3 mm - 20 bar	1021353
6 mm x 4 mm - 14 bar	37426
8 mm x 4 mm - 25 bar	1033166
8 mm x 5 mm - 16 bar	37427
12 mm x 9 mm - 10 bar	37428
19 mm x 16 mm - 6 bar	37430

DOSING TUBE, STAINLESS STEEL OD X ID

1.58 mm x 0.9 - 400 bar	1020774
3.175 mm 1.5 mm - 400 bar	1020775
6 mm x 4 mm - 185 bar	15739
6 mm x 5 mm - 175 bar	15738
8 mm x 7 mm - 160 bar	15740
12 mm x 10 mm - 200 bar	15743

Note: When "Fabric Reinforced PVC Tube" is used under high pressure the tube may shrink significantly, so allow extra length especially during installation.



1.2 Tube & Pipe Fittings



Valve to Solvent Weld



Valve to Tube



3/4" Valve to 1/2" BSPT Adaptor



1" Valve to 16mm Hose Tail

NOTE: Sigma 1 has 3/4" & 1" Valves
Sigma 2 has 1" & 1-1/2" Valves
Sigma 3 has 1-1/2" & 2" valves

VALVE TO SOLVENT WELD

	Part No.	
3/4" to 15mm PVC Pipe (DN 10)	A27022364	●
1" to 20mm PVC Pipe (DN 15)	A27022365	●
1-1/4" to 20mm PVC Pipe (DN 20)	A27022366	●
1-1/2" to 20mm PVC Pipe (DN 25)	A27022367	●

PVC - PREFERRED STOCKING

Note: PP, PVDF & SS mostly to order only

3/4" VALVE TO 12X9 TUBE (DN 10)

PVC	PA07321337	●
PVDF (Cap Nut in PP)	PA07331337	●

3/4" VALVE TO 16MM HOSE TAIL (DN 10)

PVC	A07621788	●
PVDF	1002288	●
SS	A07641788	●

PVC	A07621303	●
PVDF	A07631303	●
SS	A07641303	●

3/4" VALVE TO 1/2" BSPT MALE (DN 10)

PVC	A07521066	●
PVDF	A07531066	●
SS	A07541066	●

Note: PVDF 12x9 fittings fitted with PVC Cap Nuts

1" VALVE TO 12X9 TUBE (DN 15)

PVC	PA07321369	●
PVDF (Cap Nut in PVC)	PA07331369	●

1" VALVE TO 16MM HOSE TAIL (DN 15)

PVC	A07521224	●
PVDF	A07531224	●

1" VALVE TO 20MM HOSE TAIL (DN 15)

PVC	A07521211	●
PP*** Not Stocked ***	A07551211	●
PVDF	740632	●

1" VALVE TO 25MM HOSE TAIL (DN 15)

PVC	A07621309	●
PVDF	A07631309	●

1" VALVE TO 3/4" BSPT MALE (DN 15)

PVC	A07521212	●
PVDF	A07531212	●
SS	A07541212	●

Note: PVDF 12x9 fittings fitted with PVC Cap Nuts

Tube & Pipe Fittings

1-1/4" VALVE ADAPTOR TO 16MM HOSETAIL (DN 20)

PVC	A07521213	●
PVDF	A07531213	●

1-1/4" VALVE ADAPTOR TO 20MM HOSETAIL (DN 20)

PVC	A07521092	●
PVDF	A07531092	●
SS	A07541092	●

1-1/4" VALVE ADAPTOR TO 25MM HOSETAIL (DN 20)

PVC	A07521093	●
PVDF	1006014	●



1.2 Tube & Pipe Fittings

1-1/4" VALVE ADAPTOR TO 1/2" BSPT MALE (DN 20)		Part No.	
PVC		A07521098	●
PVDF		A07531098	●
1-1/4" VALVE ADAPTOR TO 3/4" BSPT MALE (DN 20)			
PVC		A07521069	●
PVDF		A07531069	●
SS		A07541069	●
1-1/4" VALVE ADAPTOR TO 1" BSPT MALE (DN 20)			
PVC		A07521070	●
PVDF		A07531070	●
SS		A07541070	●
1-1/2" VALVE ADAPTOR TO 25MM HOSETAIL (DN 25)			
PVC		A07521095	●
PVDF		A07531095	●
1-1/2" VALVE ADAPTOR TO 32MM HOSETAIL (DN 25)			
PVC		A07621455	●
PVDF		1005560	●
1-1/2" VALVE ADAPTOR TO 1" BSPT MALE (DN 25)			
PVC		A07521094	●
PVDF		A07531094	●
SS		A07541094	●
2" VALVE ADAPTOR TO 32MM FEMALE SOLVENT WELD ADAPTOR (DN 32)			
PVC only		721-601-109	●
2" VALVE ADAPTOR TO BSMT MALE ADAPTOR (DN 32)			
PVC only x 1-1/4"		A07022463	●
PVC only x 1-1/2"		A07022462	●
2-1/4" VALVE ADAPTOR TO 38MM HOSETAIL (DN 40)			
PVC		A07621425	
PVDF		A07631425	
2-1/4" VALVE ADAPTOR TO 1-1/4" BSPT MALE (DN 40)			
PVC		A07521799	
PVDF		A07531799	
SS		A07541799	
2-1/4" VALVE ADAPTOR TO 48MM SOLVENT WELD (DN 40)			
PVC		A07021426	
ADAPTORS SS DN FEMALE TO BSPT MALE			
1-1/4" valve DN to 1" BSPT Male (DN 20)		A07542085	●
1-1/2" valve DN to 1" BSPT Male (DN 25)		A07542086	●
2-1/4" valve DN to 1-1/2" BSPT Male (DN 40)		A07542087	



1-1/4" Valve (Meta 130) to 16mm Hosetail



1-1/4" Valve (Meta 130 - 260) to 3/4" BSPT



1.3 BSPM to Hosetail Adaptors



BSPM to Hosetale Adaptors

BSPM TO HOSETAIL ADAPTORS

Part No.

PP- 1/2" BSPM to 16mm Hosetail - Moulded	A01551096
PP- 1/2" BSPM to 20mm Hosetail - Moulded	A01551089
PP- 3/4" BSPM to 20mm Hosetail - Moulded	A01551087
PP- 1" BSPM to 25mm Hosetail - Moulded	A01551088
PP- 1-1/4" BSPM to 35mm Hosetail - Moulded	A01551090
PP- 1-1/2" BSPM to 40mm Hosetail - Moulded	A01551091
PVC- 1/2" BSPM to 16mm Hosetail	A01521096
PVC- 3/4" BSPM to 20mm Hosetail	A01521087
PVC- 1" BSPM to 25mm Hosetail	A01521088



HEX Nipples

HEX NIPPLES

PVC-1/2" BSPT M/M - Machined	A07521064
PVC- 3/4" BSPT M/M - Machined	A07521065

REDUCING BUSH

PVC- 3/4" BSPTM to 1/2" BSPT Female - Moulded	A01521416
PP- 3/4" BSPTM to 1/2" BSPT Female - Moulded	A01551416

TUBE FITTINGS

Tube Joiner 6x4 to 6x4

PVC	PA07121060
PVDF	*** Not Stocked *** PA07131060

Tube Joiner 8x5 to 8x5

PVC	PA07221060
PVDF	*** Not Stocked *** PA07231060

Tube Joiner 12x9 to 12x9

PVC	PA07321060
PVDF	*** Not Stocked *** PA07331060

Tube Joiner 6x4 to 8x5

PVC	PA07321059
PVDF	*** Not Stocked *** PA07331059

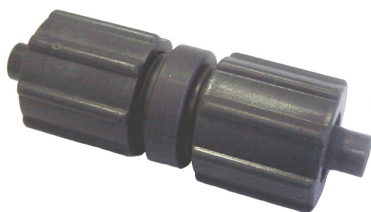
Tube Joiner 6x4 to 12x9

PVC	PA07321058
PVDF	*** Not Stocked *** PA07331058

Tube Joiner 8x5 to 12x9

PVC	PA07321057
PVDF	*** Not Stocked *** PA07331057

Note: PVDF Hose Adaptors are fitted with PVC Cap Nuts.



Tube Joiner 8x5 to 8x5



1.3 BSPM to Hosetail Adaptors

MISCELLANEOUS FITTINGS

TUBE TO PIPE FITTINGS

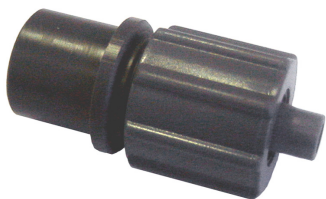
TUBE ADAPTOR 6X4 TO 1/2" BSPT MALE		Part No.
PVC		PA07121061
PTFE	*** Not Stocked ***	PA07131061
TUBE ADAPTOR 8X5 TO 1/2" BSPT MALE		
PVC		PA07221061
PTFE	*** Not Stocked ***	PA07231061
TUBE ADAPTOR 12X9 TO 1/2" BSPT MALE		
PVC		PA07321061
PTFE	*** Not Stocked ***	PA07331061
TUBE ADAPTOR 12X9 TO 3/4" BSPT MALE		
PVC		PA07321062
PTFE	*** Not Stocked ***	PA07331062
TUBE ADAPTOR 8X5 TO 1/4" BSPT MALE		
		PA07522276



Tube Adaptor 8x5 to BSPT Male



1.4 Tube Adaptors



PVC Tube Adaptor 8x5 to 1/2" Solvent Weld



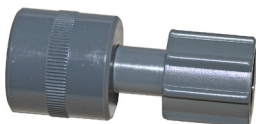
16mm Hose Joiner PP



PP Equal Tee Pieces 16mm Hosetail all round



20x1.5 Female Union to 15mm Solvent Weld



20x1.5 Female Fixed / Female Union



20x1.5 Female Union / 1/2" BSPT



PA03422617



PA06022635

TUBE TO SOLVENT WELD

	Part No.
PVC Tube 6x4 to 1/2" Solvent Weld	PA07121184
PVC Tube 8x5 to 1/2" Solvent Weld	PA07221184
PVC Tube 12x9 to 1/2" Solvent Weld	PA07321184
PVC Tube 16mm Hosetail to 1/2" Solvent Weld	A07421184
PVC Tube 20mm Hosetail to 3/4" Solvent Weld	A
PVC Tube 20mm Hosetail to 1" Solvent Weld	A

PP HOSE JOINERS

16 mm Hose Joiner PP	A01651316
20 mm Hose Joiner PP	A01651317

PP EQUAL TEE PIECES

16 mm Hosetails all round	A01651318
20 mm Hosetails all round	A01651319

UNION ADAPTORS

20x1.5 Female Union to 15mm Solvent Weld PVC	PA27022382
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20x1.5 Female Union to 20x1.5 Female	PA03022627
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20x1.5 Female Union to 1/2" BSPT Male	PA01722804
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ADAPTORS FOR SUCTION / FOOT VALVES FOR VARIO & SIGMA

3/4" valve to 16mm hose	PA03422617
1" valve to 16mm hose	PA06022635
1-1/4" valve to 20mm hose	PA06022618



2.1 Chemical Tanks and Accessories



CHEMICAL TANKS - POLYETHYLENE

ONE PIECE ROTATIONALLY MOULDED MDPE with vented lid.

***** PLEASE NOTE *****

Prices below are a GUIDE ONLY as prices may vary from time to time and state to state.
For accurate prices please consult Sydney office.

Prices include vented lids and poly BSP F socket up to 2"

STRICTLY NETT

	Diameter	Wall height	Apex height	Weight
1,600 litre tank	1.10 m	1.85 m	2.10 m	70
2,000 litre tank	1.20 m	1.79 m	1.98 m	85
2,600 litre tank	1.45 m	1.45 m	1.67 m	90
3,000 litre tank	1.47 m	1.78 m	1.98 m	115
5,000 litre tank	1.84 m	1.97 m	2.17 m	150
9,100 litre tank	2.37 m	2.14 m	2.41 m	275
10,000 litre tank	2.62 m	1.88 m	2.08 m	300
13,600 litre tank	2.86 m	2.26 m	2.64 m	355
22,600 litre tank	3.68 m	2.24 m	2.76 m	525

Note: Prices are for delivery into **Sydney, ONLY.**

For other sizes and destinations consult Sydney office.

Tanks are manufactured in NSW, QLD, and VIC offering a full range of fittings and attachments to your specifications.

The above tanks are precision rotomoulded to comply with ASMD 1998-93 and manufactured to contain liquids with a specific gravity to 1.5. All tanks are compatible with the storage of a wide range of chemicals, such as sodium hypochlorite, liquid alum, and hydrochloric acid.

NOTE: PLEASE CHECK CHEMICAL COMPATIBILITY

BUNDS

The Standard for Storage of Corrosive Liquids specifies the inside lip of the bund at 63.5 degrees down from the top of the tank. Tanks of 250 litres or less are considered minor storage and do not have to comply with the standard.

Note: ProMinent Tanks up to 1,500 litres can be found in the Yellow Pages Price List.
Bunds up to 250 litres are also in the Yellow Pages.

TANK FITTINGS

Part No.

Tank drain fitting with 3/4" Plug

809756

Note: Large tanks can be fitted with outlets by the tank manufacturer.

TANK DRAIN

Valve assembly for ProMinent tanks

3/4" BSPT M/M PVC/FPM

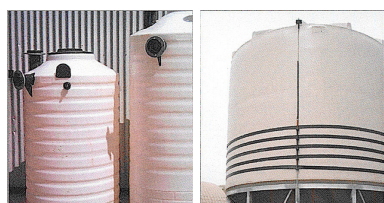
PA02823318

Valve assembly for ProMinent tanks

As above 3/4" BSPT to 20 x 1.5 M/M

PA02823329

(see yellow pages for connection set 6x4, 8x5, 12x9)



2.1 Chemical Tanks and Accessories



240 Volt Electric Stirrer



415 Volt Slow Speed Stirrer



Slow Speed Stirrer on 500 litre ProMinent Tank

Electric Stirrers for ProMinent Tanks

415 VOLT ELECTRIC STIRRER

Part No.

to suit 60 litre tanks

0.09k W 415/3/50 IP 55 Motor S/S shaft, P.P. Impeller

PA17002786

240 VOLT ELECTRIC STIRRER

to suit 60 litre tanks

0.02 kW 240/1/50 IP55 Motor S/S Shaft, P.P. Impeller

P818576

415 VOLT ELECTRIC STIRRER

to suit 100, 140, 250 litre tanks

0.25 kW 415/3/50 IP 55 Motor S/S shaft, P.P. Impeller

PA17002408

240 VOLT ELECTRIC STIRRER

to suit 100, 140 & 250 litre tanks

0.18 kW 240/1/50 IP55 Motor S/S Shaft, P.P. Impeller

PA17002409

415 VOLT ELECTRIC STIRRER - LIGHT DUTY

to suit 500 litre tanks

0.25 kW 415/3/50 IP 55 Motor S/S shaft, P.P. Impeller

PA17002370

240 VOLT ELECTRIC STIRRER - LIGHT DUTY

to suit 500 litre tanks

0.18 kW 240/1/50 IP55 Motor S/S Shaft, P.P. Impeller

PA17002371

SLOW SPEED STIRRERS

415 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 250 - 500 litre tanks

0.25 kW 415/3/50 IP 55 Motor, Gearbox, S/S shaft,
SS Impeller 200-260 dia.

PA17002339

240 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 250 - 500 litre tanks

0.18 kW 240/1/50 IP 55 Motor, Gearbox, S/S shaft,
SS Impeller 200-260 dia.

PA17032339

415 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 1000 litre tanks

0.25 kW 415/3/50 IP 55 Motor, Gearbox, S/S shaft,
2 x SS Impeller 260 dia.

PA17012339

240 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 1000 litre tanks

0.0.18 kW 240/1/50 IP 55 Motor, Gearbox, S/S shaft,
2 x SS Impeller 260 dia.

PA17022339

Note: Please advise size of tank when ordering.



2.2 Suction Assemblies

Suction Assemblies

CONCEPT

Rigid 1000 mm PVC assembly with foot valve & single stage PP level switch No. 142058. with 5m tube (42 OD PVC Pipe) for CONCEPT pumps.

	Part No.
6 x 4 tube	PA06181829
8 x 5 tube	PA06281830
12 x 9 tube	PA06381831

BETA, GALA, DELTA

Rigid 1000 mm PVC assembly with foot valve with 2 stage PVDF switch No. 1034698. for: BETA, GALA, DELTA with 5m tube.

6 x 4 tube	PA06181832
8 x 5 tube	PA06281833
12 x 9 tube	PA06381834

BETA, GALA, DELTA

same as above but 1200 mm long to suit BULKI BOX

Rigid 1200 mm PVC assembly with foot valve with 2 stage PVDF switch No. 1034698. for: BETA, GALA, DELTA with 5m tube.

6 x 4 tube	PA06481832
8 x 5 tube	PA06581833
12 x 9 tube	PA06681834

Note: Black LDPE tube is supplied as standard.
If translucent or PVC Clear is required 25m roll is available at customers expense.
For prices see page 1.1

[Ask about Suction Guide Tubes](#)

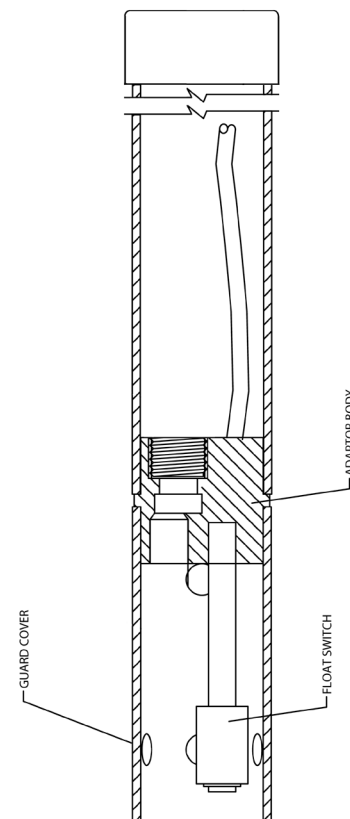
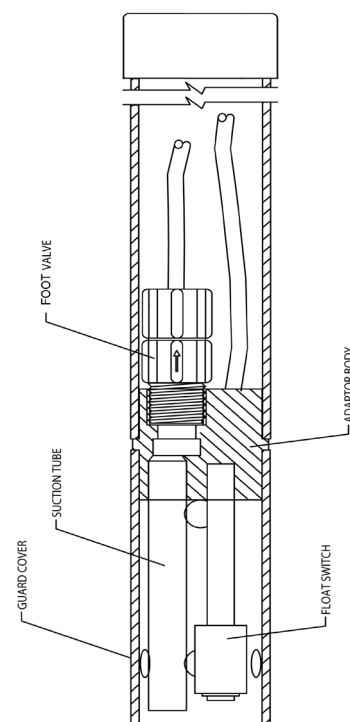
BETA, GALA, DELTA, AND SIGMA Rigid Level Switch Assembly

same as above but 1200 mm long to suit up to 1000 lt tank

for use when Stirrer is mounted on tank.

Rigid 1200 mm PVC assembly with with 2 stage PVDF switch No. 1034698.

PA02003300



3.1 Miscellaneous Items

Withdrawable Injection Tube Assemblies

WITH SPRING-LOADED INJECTION VALVE

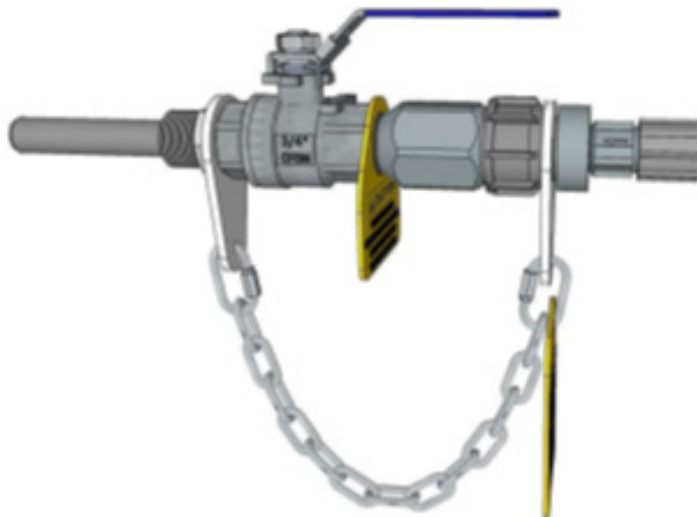
	Part No.
6x4 tube connection x 3/4" BSPT PVC/FKM	PA07123517
6x4 tube connection x 3/4" BSPT PP/EPDM	PA07153564
8x5 tube connection x 3/4" BSPT PVC/FKM	PA07223518
8x5 tube connection x 3/4" BSPT PP/EPDM	PA07253565
12x9 tube connection x 3/4" BSPT PVC/FKM	PA07323519
12x9 tube connection x 3/4" BSPT PP/EPDM	PA07353566
12x6 tube connection x 3/4" BSPT PVC/FKM	PA07C23520

Notes:

- The above assemblies all include a 3/4" 316 stainless steel ball valve and nipple for connection into the process pipework.
- The injection tube assemblies are made from uPVC. The injection valves are spring loaded (approx 0.5 bar) with FPM (Viton) seals for the PVC version and EPDM seals for the PP versions. The tube itself is Schedule 80 uPVC.
- The standard length is approximately 75mm past the nipple.
- Lengths are up to 150mm are available. Contact the Sydney office for details.

OPERATIONAL LIMITS:

Pressure	7 bar (100 psi)
Temp.	0 ... 45°C
Max. Flows	6x4mm up to 4 l/h
	8x5mm up to 14.5 l/h
	12x9mm up to 45 l/h



3.1 Miscellaneous Items

Withdrawable Injection Tube Assemblies

LARGER SIZES WITH SPRING-LOADED INJECTION VALVES

	Part No.
1" withdrawable with DN15 PVC IV & 16mm Hosetail	PA07623534
1" withdrawable with DN15 PVC IV & 20mm Hosetail	PA07623535
1" withdrawable with DN20 PVC IV & 25mm Hosetail	PA07623536
1" withdrawable with DN15 PP IV & 16mm Hosetail	PA07653544
1" withdrawable with DN15 PP IV & 20mm Hosetail	PA07653545
1" withdrawable with DN20 PP IV & 25mm Hosetail	PA07653546

Notes:

- The above assemblies all include a 1" 316 stainless steel ball valve and nipple for connection into the process pipework.
- The injection tube assemblies are made from uPVC. The injection valves are spring loaded (approx 0.5 bar) with FKM (Viton) seals for the PVC version and EPDM seals for the PP versions. The tube itself is Schedule 80 uPVC.
- The standard length is approximately 75mm past the nipple.
- Lengths are up to 150mm are available. Contact the Sydney office for details.

OPERATIONAL LIMITS:

Pressure 7 bar (100 psi)

Temp. 0 ... 45°C

Max. Flows

16mm HT	120 l/h GXL a 0450 & 0280 & all Sigma 1
20mm HT	270 l/h All Sigma 2 up to 07220
25mm HT	365 All Sigma 3 up to 120270



3.1 Miscellaneous Items

Withdrawable Injection Tube Assemblies

LARGER SIZE WITHOUT INJECTION VALVE

	Part No.
1" BSPT to 16mm Hosetail PVC	PA071623531
1" BSPT to 20mm Hosetail PVC	PA071623532
1" BSPT to 25mm Hosetail PVC	PA071623533

Notes:

- The above assemblies all include 1" 316 stainless steel ball valve and nipple for connection in the process pipework.
- The injection tube assemblies are made from uPVC with no elastomers in direct contact with the chemicals being dosed.
- The tube itself is Schedule 80 uPVC.
- The standard length is approximately 75mm past the nipple.
- Lengths up to 150mm are available. Contact the Sydney office for details.

OPERATIONAL LIMITS:

Pressure	7 bar (100 psi)
Temp.	0 ... 45°C
Max. Flows	16mm HT 120 l/h GXL a 0450 & 0280 & all Sigma 1
	20mm HT 270 l/h All Sigma 2 up to 07220
	25mm HT 365 All sigma 3 up to 120270

***FOR LARGER FLOW RATES USE FIXED LAGER INJECTION VALVES**



NIPPLES		Part No.
1/2"	BSPT Hex Nipple 316 SS	A27541236
3/4"	BSPT Hex Nipple 316 SS	A27841819
1"	BSPT Hex Nipple 316 SS	A27591234

BALL VALVES		
1/2"	BSPF Full Bore Stainless Steel Ball Valve	A09591256
3/4"	BSPF Full Bore Stainless Steel Ball Valve	A09891818
1"	BSPF Full Bore Stainless Steel Ball Valve	A09591257

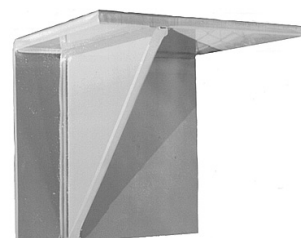


WALL MOUNTING BRACKETS PVC - NOT DRILLED

	H x W x D	
suit for Beta 4 & Concept pumps	120 x 120 x 120	A07051045
suit for Beta 5 & GALA pumps	150 x 150 x 150	A07051046
suit for Delta, Sigma 1, 2 & 3 pumps	210 x 160 x 210	A07051047

MOUNTING BOARDS - H.D.P.E. 15 MM THICK

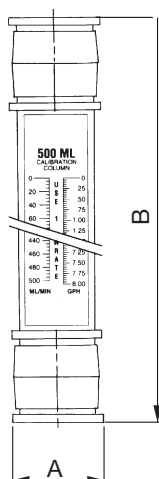
Size A 500 x 400	A35052176
Size B 600 x 500	A35082644
Size C 750 x 600	A35051307



Size No.	Typical Use	Assembly Time
Size A	Conductivity D2C + DGMA	3 hours
Size B	diaLog or D2C + CO ₂ + DGMA	4 hours
Size C	As per B + 2 small pumps	4 hours

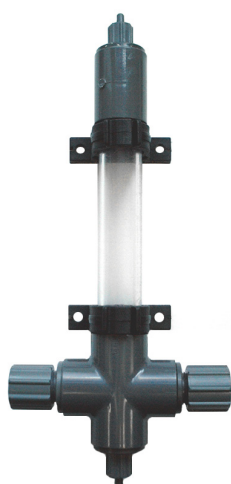


3.2 Miscellaneous Items



ProMinent CALIBRATION CYLINDERS

Part No.	Capacity	Max. Flow	Increment Length		OD	End Solvent Weld
CAL-100-SW	100ml	12LPH	1ml	279mm	38mm	1/2"
CAL-300-SW	300ml	36LPH	5ml	330mm	56mm	1/2"
CAL-500-SW	500ml	60LPH	5ml	330mm	63.5mm	3/4"
CAL-1000-SW	1,000ml	120LPH	5ml	559mm	63.5mm	3/4"
CAL-5000-SW	5,000ml	600LPH	10ml	711mm	124mm	1.5"
CAL-10000-SW	10,000ml	1,200LPH	100ml	635mm	176.5mm	2"
CAL-20000-SW	20,000ml	2,400LPH	100ml	1194mm	176.5mm	2"
CAL-30000-SW	30,000ml	3,600LPH	200ml	1651mm	241.3mm	4"



PA16121080

PVC PULSATION DAMPERS - AIR TO LIQUID

		Part No.
6x4	Clear Sight Tube	PA16121080
8x5	Clear Sight Tube	PA16221081
12x9	Clear Sight Tube	PA16321082
3/4"	BSPT Male 0.5 Litres 120 l/h	PA16821404
1"	BSPT Male 1.0 Litres 130 l/h	PA16921405
1"	BSPT Male 2.0 Litres 260 l/h	PA16921406
1"	BSPT Male 4.0 Litres 530 l/h	PA16921407

Note: See Yellow Pages for Bladder Type

Note: The 3/4" & 1" require an inline "T" by others. MAXIMUM 10 Bar pressure.

Acid Fume Scrubber

The Acid Fume Scrubber (AFS) is a proprietary device that allows for direct venting of an acid tank located inside a mechanical room. The AFS eliminates the need for costly venting via fans to outside areas or secondary water tank type fume traps. The result is a fume-free workplace with added protection of metal and electrical components. The proprietary reagent will change from white to purple when reagent is no longer effective.

FEATURES & BENEFITS

Designed for muriatic/ hydrochloric acid tanks

- Eliminates fume attack on electrical components
- For use on sealed tanks
- Standard with 3/4 inch tank adaptor and equipped with proprietary reagents
- Reagent needs changing when white turns to purple
- Includes 1 x 500g reagent set with scrubber



Ordering Information:

	Part No.
Acid fume scrubber:	PA55003274
Refill reagent kit:	SL020-500G
SDS Reagent:	Soda-Lime-ICH64-SDS



3.3 Hidracar® Pulsation Dampers

Pulsation dampers are used to stabilize the flow and the pressure in circuits with dosing pumps.

A pulsation damper is a vessel with gas inside, normally Nitrogen. In the pulsation dampers there is an element to isolate the gas from the circuit liquid. Its main function is to avoid the gas loss. This piece that separates both fluids is made basically with 2 materials: rubber (Nitrile, EPDM, FPM, Butyl, Silicone, etc.), and a thermoplastic material (usually PTFE).

When rubber is used, the dampener is named bladder or bag type. And if PTFE is used, we talk of membrane or bellows type, according to the separator element shape. The choice of one type or other will depend on the special performances of the circuit such as; the pressure, the temperature and the possible corrosive effect that could be produced by the liquid of the circuit.

Part No.

U001A01E1-PC 10 Bar EPDM Bladder PVC

U001A01V1-PC 10 Bar Viton Bladder PVC

U002A01E1-PC 10 Bar EPDM Bladder PVC

U002A01V1-PC 10 Bar Viton Bladder PVC

U003A01E1-PC 10 Bar EPDM Bladder PVC

U003A01V1-PC 10 Bar Viton Bladder PVC

U007A01E1-PC 10 Bar EPDM Bladder PVC

U007A01V1-PC 10 Bar Viton Bladder PVC

U010A01E1-PC 10 Bar EPDM Bladder PVC

U010A01V1-PC 10 Bar Viton Bladder PVC

U015A01E1-PC 10 Bar EPDM Bladder PVC

U015A01V1-PC 10 Bar Viton Bladder PVC

U001E-PC Bladder Insert EPDM Pulsation Damper

U002E-PC Bladder Insert EPDM Pulsation Damper

U003E-PC Bladder Insert EPDM Pulsation Damper

U007E-PC Bladder Insert EPDM Pulsation Damper

U015E-PC Bladder Insert EPDM Pulsation Damper

U001V-PC Bladder Insert Viton Pulsation Damper

U002V-PC Bladder Insert Viton Pulsation Damper

U003V-PC Bladder Insert Viton Pulsation Damper

U007V-PC Bladder Insert Viton Pulsation Damper

U015V-PC Bladder Insert Viton Pulsation Damper

BV010A1TM Filling kit ... 10 bar

BV(010)(100)A1TM Filling Kit with 2 Pressure Gauges ... 10 bar

ADACNEU.5 Filling Adapter ... 10 bar

BT010A-A1 + 004-A1 Charging valve and pressure gauge

Note: 100 bar Filling kits are available

DRB.A/B Damper dismantling tool



Note: Dampers are supplied uncharged & have to be filled according to the pressure in the system they will be installed in with either dry nitrogen or air. As a rule of thumb 70% of line pressure.

Other charging sizes & materials are available. For more information contact Sydney office.

Recommended sizes (for more information see next page)

All Beta, Gala		U001 volume 0.075 l
Delta & GXLa	up to 0730	U001 volume 0.075 l
Delta & GXLa	0450 & 0280	U002 volume 0.150 l
Sigma 1	up to 35 lph	U001 volume 0.075 l
Sigma 1	42 lph & above	U002 volume 0.150 l
Sigma 2	up to 109 lph	U002 volume 0.150 l
Sigma 2	above 120 lph	U003 volume 0.350 l
Sigma 3	up to 330 lph	U007 volume 0.650 l
Sigma 3	410 lph & above	U015 volume 1.400 l



3.3 Hidracar® Pulsation Dampers

FOR OTHER PRESSURES, PLASTIC MATERIALS, THREAD, CONNECTIONS AND RUBBERS, PLEASE CONSULT																																																																																																								
ORDER EX.: U007 A01 E 1 PP Capacity; 0.65 litre A01 ≡ 10 bar E=EPDM rubber bladder Body&insert material polypropylene 3/4" standard connection																																																																																																								
<div><div><div>PP=POLYPROPYLENE (+) PD= PVDF PC= PVC</div><div>PRESSURE DESIGN 10 bar-g ALL SIZES</div></div><div><div></div><div><div></div><div>U150 & U200</div><div>U001 TO U100</div></div></div></div>																																																																																																								
TOLERANCES: EXTERNAL DIMINTIONS; ± 2 % VOLUME; ± 1.5% WEIGHT; ± 3,5%																																																																																																								
<table><tr><th rowspan="2">PULSATION DAMPER REF.</th><th rowspan="2">VOLUME (litres)</th><th rowspan="2">D (mm)</th><th rowspan="2">L (mm)</th><th rowspan="2">R (BSP)</th><th colspan="2">WEIGHT (Kg)</th><th rowspan="2">K VALUE</th></tr><tr><th>PC & PD</th><th>PP</th></tr><tr><td>U001</td><td>0.07</td><td>60</td><td>98</td><td>3/8"</td><td>0,35</td><td>0.25</td><td rowspan="2">2,5</td></tr><tr><td>U002</td><td>0.15</td><td>80</td><td>135</td><td>1/2"</td><td>0,7</td><td>0.5</td></tr><tr><td>U003</td><td>0.35</td><td>90</td><td>170</td><td>3/4"</td><td>1,2</td><td>0,8</td><td>3</td></tr><tr><td>U007</td><td>0.65</td><td>100</td><td>230</td><td rowspan="4">1"</td><td>1,8</td><td>1,2</td><td>3,5</td></tr><tr><td>U010</td><td>0.95</td><td>130</td><td>245</td><td>3</td><td>2</td><td>3</td></tr><tr><td>U015</td><td>1.40</td><td rowspan="2">160</td><td>295</td><td>3,5</td><td>2,4</td><td>3,5</td></tr><tr><td>U030</td><td>2.60</td><td>325</td><td>5</td><td>3,5</td><td rowspan="2">5</td></tr><tr><td>U040</td><td>3.70</td><td>422</td><td>5,8</td><td>4</td><td>5</td></tr><tr><td>U060</td><td>5.60</td><td>198</td><td>458</td><td>1 1/2"</td><td>13</td><td>9</td><td rowspan="2">4</td></tr><tr><td>U100</td><td>9.50</td><td rowspan="2">250</td><td>500</td><td rowspan="2">2"</td><td>20,4</td><td>14</td><td>4</td></tr><tr><td>U150</td><td>15</td><td>672</td><td>23,3</td><td>17</td><td>2,5</td></tr><tr><td>U200</td><td>20</td><td>880</td><td>27,7</td><td>21</td><td>3</td></tr></table>										PULSATION DAMPER REF.	VOLUME (litres)	D (mm)	L (mm)	R (BSP)	WEIGHT (Kg)		K VALUE	PC & PD	PP	U001	0.07	60	98	3/8"	0,35	0.25	2,5	U002	0.15	80	135	1/2"	0,7	0.5	U003	0.35	90	170	3/4"	1,2	0,8	3	U007	0.65	100	230	1"	1,8	1,2	3,5	U010	0.95	130	245	3	2	3	U015	1.40	160	295	3,5	2,4	3,5	U030	2.60	325	5	3,5	5	U040	3.70	422	5,8	4	5	U060	5.60	198	458	1 1/2"	13	9	4	U100	9.50	250	500	2"	20,4	14	4	U150	15	672	23,3	17	2,5	U200	20	880	27,7	21	3
PULSATION DAMPER REF.	VOLUME (litres)	D (mm)	L (mm)	R (BSP)	WEIGHT (Kg)		K VALUE																																																																																																	
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5	BODY	1			(+) PP, PD or PC																																																																																																			
4	RETAINING RING	1			(+) PP, PD or PC																																																																																																			
3	INFLATING (AIR OR N2) VALVE	1			AISI 316 1/4"BSP																																																																																																			
2	INSERT (BUTTON)	1			(+) PP, PD or PC																																																																																																			
1	BLADDER	1			NBR, EPDM, & FPM																																																																																																			
N°	DENOMINATION	QT.			MATERIALS																																																																																																			
Customer Ref.		Replaced Drg.No			Drawn		Approved																																																																																																	
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| HIDRACAR SA Customer INFLATING WITH GAS(N2),AND MOUNTING POSITION:VERTICAL ,VALVE ③ UP STANDARD BLADDER RUBBERS N=NBR, E=EPDM, V=FPM MAXI.WORKING TEMPERATURES +50, -5°C THE MAXI.WORKING TEMPERATURES CAN BE REDUCED DEPENDING UPON THE LIQUID AND TIME OPERATION | | | | | | | | | |
| ** MINIMUM SAFETY FACTOR; 4:1 | | | | | | | | | |

3.4 Metering Pump Auto Change Over Controller

Pump Automatic Change Over Controller

For Metering pumps fitted with chemical flow switches and relay:
i.e.- Gala or Sigma.

The controller monitors for loss of chemical flow and actuates change from Pump One to Pump Two. Redirects the 4-20 mA signal when used with Gala or Sigma pumps.

Features:

- Pump sequence switch (Select pump A to B or B to A)
- Fault alarm
- By-Pass switch.

Note: Add price of chemical flow monitors and relays to selected pump price.



Part No.

CTP-CO

ProMinent Pump Automatic Change Over Controller

The ProMinent Fluid Controls Automatic Change Over unit allows 2 ProMinent® Dosing pumps to operate in a duty/stand by arrangement. Flow detectors on the outlet of each pump provide fault detection. The switch over unit connects to each pump using ProMinent® standard control cable connections and receives an external 4-20mA control signal.

Normal Operation

During normal operation, both pump selector switches are placed in the AUTO position and either PUMP 1 or Pump 2 is selected on the duty selector.

The selected duty pump will then operate until either a fault develops or the position of the selector switches changes.

Fault Operation

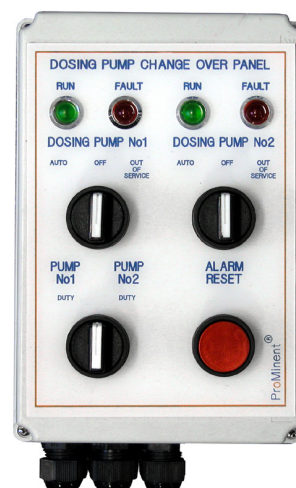
If a fault is detected in the operation of the duty pump, the operation will switch to the standby pump. The fault light on the display panel will illuminate and the retransmit fault signal will close.

To Clear a Fault

After rectifying the fault, the ALARM RESET button is pressed and the switch over unit will revert operation to the duty pump.

Pump removal for service

To remove a pump for service, first switch the required pump selector switch to OUT of SERVICE before removing the pump. When returning the pump to service, reconnect the pump then switch the duty selector to the AUTO position. Clear any fault indication on the pump and press the ALARM RESET switch on the switch over panel.



Part No.

PA10002637

ProMinent Chloramination Dosing System Pump Automatic Change Over

For automatic control of chloramination. Has all the functions of PA1002637 above, however this is a 2 x 2 system system which controls 2 Chlorine pumps and 2 Amonia pumps. If both chlorine pumps fail then Amonia pumps are shut down.

Part No.

PA10002692



3.5 ProMinent® Beta® Liquid Polymer Blending System

ProMinent® Beta® PROMIX-LB1000 Liquid Polymer Blending System

Australian designed and manufactured. The Liquid Polymer Blending System is a liquid polyelectrolyte preparation system for continuous production of a consistent quality polymer solution.

The polyelectrolyte is prepared by the injection of liquid polymer into a mixing chamber by the ProMinent® Beta metering pump. Feed water is supplied to the mixing chamber by a flow controlled centrifugal pump. The metering pump is adjustable to achieve the required polymer dilution.

SELF CONTAINED

The unit is mounted on a polyethylene stand designed for easy installation and maintenance. Site installation requires only the connection of process water, liquid poly and a standard 3-pin 240-volt power outlet.

WETTING ASSEMBLY

The heart of the Liquid Polymer Blending System is the Australian designed & built mixing chamber incorporating a venturi which ensures the creation of long chain molecules and no unmixed polymer solution.

FLUSHING

After polymer make up is stopped a timer allows for the mixing chamber to be flushed with water.

SYSTEM CAPACITY

PROMIX-LB1000-1008	1000 l/h flow @ 0.40% solution
PROMIX-LB1000-0713	1000 l/h flow @ 0.70% solution
PROMIX-LB1000-0420	1000 l/h flow @ 1.00% solution

Note: solution % will depend on type of poly used.

SPECIFICATION

Each system includes:

- 1 x Polyethylene Stand
- 1 x Water Transfer Pump
- 1 x ProMinent Beta Metering Pump
- 1 x Mixing Chamber
- 1 x Blending Pipe Work
- 1 x Control Panel

Part No.

PROMIX-LB1000-1008

PROMIX-LB1000-0713

PROMIX-LB1000-0420



Liquid_polyrig_Beta



3.6 ProMinent® Spectra® Liquid Polymer Blending System

ProMinent® Spectra® PROMIX-LS2000 Liquid Polymer Blending System

Australian designed and manufactured. The Liquid Polymer Blending System is a liquid polyelectrolyte preparation system for continuous production of a consistent quality polymer solution.

The polyelectrolyte is prepared by the injection of liquid polymer into a mixing chamber by the ProMinent® Spectra metering pump. Feed water is supplied to the mixing chamber by a flow controlled centrifugal pump. The metering pump is adjustable to achieve the required polymer dilution.

SELF CONTAINED

The unit is mounted on a polyethylene stand designed for easy installation and maintenance. Site installation requires only the connection of process water, liquid poly and a standard 3-pin 240-volt power outlet.

WETTING ASSEMBLY

The heart of the Liquid Polymer Blending System is the Australian designed & built mixing chamber incorporating a venturi which ensures the creation of long chain molecules and no unmixed polymer solution.

FLUSHING

After polymer make up is stopped a timer allows for the mixing chamber to be flushed with water.

SYSTEM CAPACITY

Up to 2,000 l/h flow of a 1% solution. The Spectra progressive cavity pump is able to handle highly viscous polymers.

TIMER

Standard run time factory set at 99 minutes. If requested Max. time run can be set to 99 hours or deactivated completely.

SPECIFICATION

Each system includes:

- 1 x Polyethylene Stand
- 1 x Water Transfer Pump
- 1 x ProMinent Spectra Metering Pump
- 1 x Mixing Chamber
- 1 x Blending Pipe Work
- 1 x Control Panel

Other capacities available on request.

Part No.

PROMIX-LS2000

Note: Additional static mixing for improved activation of difficult products



Liquid_polyrig_spectra

3.7 Custom Packages



Custom made packages are available on request Please contact head office at sales@prominentfluid.com.au



3.7 Custom Packages



4.1 pH & RH Probes

Part No.
PROBE pH 0-12 pH 0 to 80°C HT3 glass Polymer Body SN6 connector and PG13.5 standard mounting
SP100-4330-DH

SPECIFICATIONS

pH range:	0-13 pH
Temperature range:	0° to 80° C
Glass Membrane Type:	HT-3, Low sodium ion error
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Isopotential Point:	pH 7
Output per pH @ 25° C:	Approx 59 millivolts
Maximum Pressure:	4 bar
Wetted Materials:	Glass, Ceramic, Epoxy, Silicone
Diameter:	12mm
Length:	120mm

APPLICATIONS:

- Pool Water
- Clean Water applications



SP100-4330-DH

Suitable Housings: PA02032258, PA03023238, DGMA, PA03022958

NOTE: Cable not included - Please add cable

Part No.
PROBE RH 0-1000mV 0 to 80°C HT3 glass Polymer Body SN6 connector and PG13.5 standard mounting
SP100-4PB0-DH

SPECIFICATIONS

Range:	0-1000mV
Temperature range:	0° to 80° C
Measurement half cell:	Platinum Band
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Maximum Pressure:	4 bar
Wetted Materials:	Glass, Ceramic, Epoxy, Silicone
Diameter:	12mm
Length:	120mm

APPLICATIONS:

- Pool Water
- Clean Water applications



SP100-4PB0-DH

Suitable Housings: PA02032258, PA03023238, DGMA, PA03022958

NOTE: Cable not included - Please add cable

Part No.
PROBE pH 0-12 pH -5 to 110°C HT3 glass Glass Body SN6 connector and PG13.5 standard mounting
SP200-2330-DH

SPECIFICATIONS

pH range:	0-13 pH
Temperature range:	- 5° to 110° C
Glass Membrane Type:	HT-3, Low sodium ion error
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Isopotential Point:	pH 7
Output per pH @ 25° C:	Approx 59 millivolts
Maximum Pressure:	10 bar
Wetted Materials:	Glass, Ceramic
Diameter:	12mm
Length:	120mm

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers

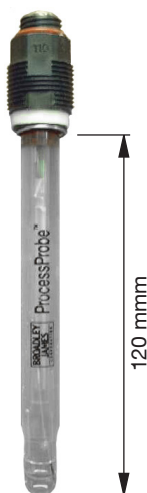


SP200-2330-DH

Suitable Housings: PA02032258, PA03023238, DGMA, PA03022958



4.1 pH & RH Probes



SP200-2430-DH

PROBE pH 11+pH -5 to 110°C HT4 glass Glass Body
SN6 connector and PG13.5 standard mounting

Part No.

SP200-2430-DH

SPECIFICATIONS

pH range:	0-14 pH
Temperature range:	-5° to 110° C
Glass Membrane Type:	HT-4, Low sodium ion error
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Isopotential Point:	pH 7
Output per pH @ 25° C:	Approx 59 millivolts
Maximum Pressure:	10 bar
Wetted Materials:	Glass, Ceramic
Diameter:	12mm
Length:	120mm

APPLICATIONS:

- Industrial Trade Waste
- Cooling Towers
- High pH Applications

Suitable Housings: PA02032258, PA03023238, DGMA, PA03022958



SP200-2PB0-DH

PROBE RH 0-1000mV -5 to 110°C HT3 glass Glass Body
SN6 connector and PG13.5 standard mounting

Part No.

SP200-2PB0-DH

SPECIFICATIONS

ORP range:	0±1000 mV
Temperature range:	-5° to 110° C
Measurement half cell:	Platinum Band
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Maximum Pressure:	10 bar
Wetted Materials:	Glass, Ceramic
Diameter:	12mm
Length:	120mm
Thread:	PG13.5
Connection:	SN6

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers

Suitable Housings: PA02032258, PA03023238, DGMA, PA03022958

SENSOR CONDUCTIVITY

Conductivity Sensor 25 mm

1081545-10

Range:	0-10,000 µS
Power supply:	16...24 V DC (two-wire technology)
Output signal:	4...20 mA measurement range (un-calibrated)
Warning: no electrical isolation!	
In-line probe housing:	DGM, DLGA

Note: Other ranges are possible.

Please consult Sydney Technical department for requirements.



4.2 pH & Redox Industrial Probes

Part No.

PROBE pH 0-13 pH -5 to 100°C HT3 glass Glass Body Pinwick, Double Junction, SS Flared Cap, 10.0 m Co-axial Cable Pin Lug Connections.

A41021851

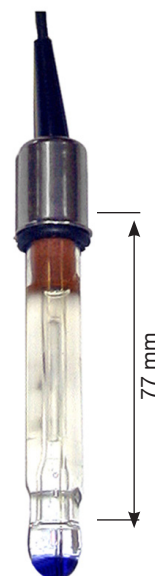
SPECIFICATIONS

pH range:	0-13 pH
Temperature range:	-5° to 100° C
Glass Membrane Type:	HT-3, Low sodium ion error
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Isopotential Point:	pH 7
Output per pH @ 25° C:	Approx 59 millivolts
Maximum Pressure:	10 bar
Wetted Materials:	Glass, Ceramic
Diameter:	12mm
Length:	77mm

Suitable Housings: PA02031390, PA03021391, DGMA, PA02031880

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers



Part No.

PROBE rH Peripheral Probe 3.5mm Platinum Band. 0-100°C HT3 glass Glass Body, Pinwick, Double Junction, SS Flared Cap, 10.0m Co-axial Cable, Pin Lug Connections.

A42022002

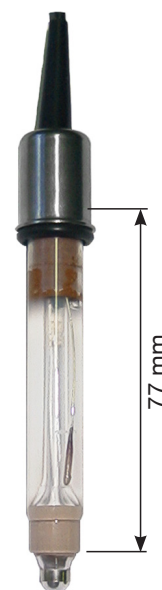
SPECIFICATIONS

ORP range:	0±1000 mV
Temperature range:	-5° to 100° C
Measurement half cell:	Platinum Band
Reference:	Silver / Silver Chloride (Ag/AgCl)
Reference Junction:	Precision low porosity ceramic
Maximum Pressure:	10 bar
Wetted Materials:	Glass, Ceramic
Diameter:	12mm
Length:	77mm

Suitable Housings: PA02031390, PA03021391, DGMA, PA02031880

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers



4.2 pH & Redox Industrial Probes



INDUSTRIAL SENSORS FOR IN-LINE OR SUBMERSIBLE APPLICATIONS:

	Part No.
PROBE pH	S400-RT330-A33FF
PROBE pH with PT100	S400-RT33D-E33FF
PROBE rH ORP	S400-RTPB0-A33FF
PROBE pH for HF Acid	S400-RT530-A10FF

These high quality sensors are constructed of corrosion-resistant wetted materials including Ryton®, Teflon®, ceramic, glass, platinum, 10.0 m Co-axial Cable, Pin Lug Connections. Coaxial Porous Teflon® Reference Junction. The large annular junction resists fouling. Additionally, the sealed, double-junction reference electrode is highly resistant to poisoning.

SPECIFICATIONS

pH range:	0-14 pH
ORP range:	0±1000 mV
Temperature range:	0° to 105° C
Reference:	Silver / Silver Chloride (Ag/AgCl)
Maximum Pressure:	10 bar @ 100° C
Wetted Materials pH:	Ryton, PTFE or ceramic & glass
Wetted Materials ORP:	Ryton, PTFE or ceramic & platinum
Body Diameter:	29.2 mm
Length:	150 mm
Width accross flats:	25.4 mm
Thread:	3/4" NPT - top & bottom

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers

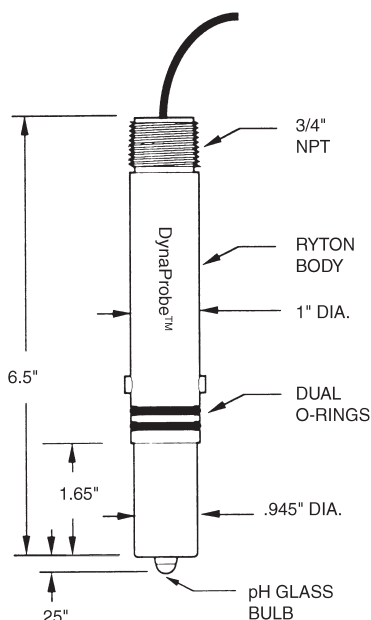
	Part No.
Pipe Adaptor Bush ... 3/4" Female NPT to 25mm Male Solvent Weld	A27022797
Additional heavy duty PVC protection cap for S400 series	PA03022896

For **SUBMERSIBLE** applications See Page 4.5 for PA02032789 or PA02032790



4.3 DYNAPROBE™ pH & ORP Sensors & probe holders

The ST851 is a rugged, sealed sensor assembly designed for in-line or submersion applications. The patented solid state reference cell features the unique IonTrap™ design for extended service life in the most severe applications. The body is molded from chemically resistant Ryton (PPS) and the reference junction is either porous Teflon or wood. Built-in temperature compensators are available. Optional sensor guard locks onto the front of the sensor and protects the sensor tip from impact. Sensor also available in ORP (Redox) version.



SPECIFICATIONS

pH Range:	0 - 14 pH
ORP Range:	± 5000 mV
Temp Range:	0-120°C
Max Press./Temp:	50 psig at 120°C
Reference:	Ag-AgCl
Wetted materials:	Ryton, Teflon or Wood, Glass, Viton O-Rings

OPTIONS

pH DynaProbe™ with Rugged Dome pH Bulb.

Choice of either Teflon or Wood Coaxial Liquid Junction. Designed to withstand the toughest industrial applications for best overall performance.

pH DynaProbe™ with Flat pH Bulb.

Choice of Teflon Coaxial Liquid Junction only. Designed for obstructionless contact with the sample stream for self cleaning service.

ORP DynaProbe™ with Platinum Band.

Choice of either Teflon or Wood Coaxial Liquid Junction. Designed for measuring the Oxidation-Reduction Potential of the sample.



Part No.

pH DynaProbe ST851-T330-A33TE Twist lock Ryton body HT3 dome bulb and Teflon Junction, c/w 10m co-axial cable and pin lugs.

A41022120

pH DynaProbe ST851-RPB0-A33TE Twist lock Ryton body platinum band HT3 dome bulb and Teflon Junction, c/w 10m co-axial cable and pin lugs.

A42022136

Note: Alternate higher pressure and temperature sensors available.

Probe Holders for DynaProbe™

For **SUBMERSIBLE** applications, Flexible pipe assembly with J-Box has union connection to top of DYNAPROBE and protective cover, 1.8m approx.

PA02032252

Top



Note: DYNAPROBE not included, must be ordered separately.

For **SUBMERSIBLE or IN-LINE** applications, Flexible pipe assembly with J-Box has union connection to top of DYNAPROBE and TWIST-LOCK protective cover, 1.8m approx.

PA02032253

Top



PVC Twist-Lock Probe Adaptor for either submersible or 3/4" In-Line applications, with 1/4" plug for jet wash connections. To suit Twist Lock DYNAPROBES.

A03821496

CHEMICAL JET WASH applications add:- Special Jet Valve assy, 6x4 to 1/4" BSP. suitable for submersible or if holder mounted in line, flow must be stopped.

A914559.0

ADD Concept CNPA1002PPE200C0100 Pump or other set at 180 SPM
- see 'Yellow Pages' or BETA4



4.4 Submersible Electrode Holders

Submersible, Direct Pipe mounting and Withdrawable



INDUSTRIAL SUBMERSIBLE HOLDERS

Part No.

Heavy duty electrode gland assy in PVC 1.8m approx Complete with 2.0m flexible submersible connection and J-Box for pH / Redox probes A41021851 & A42022002

PA03021390

Note: For pH our preferred option is A41021851 with 10m cable.
To complete installation customers should provide stilling chamber.
This can be in PVC drainage pipe with a minimum I.D. of 50mm.
The preferred diameter is 80mm of any PVC pipe.

Heavy duty electrode gland assy in PVC 1.8m approx Complete with 2.0m RIGID submersible connection and J-Box for pH / Redox probes A41021851 & A42022002

PA03021391

Note: for pH our preferred option is A41021851 with 10m cable.

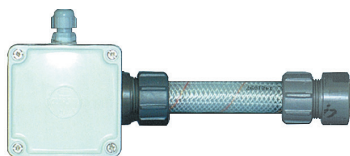
Option for above holders enclosure in lieu of J-Box to suit pH / RH Transducer

PA21002939

Note: does NOT include pH / RH Transducer, see Yellow Pages.

PROBE HOLDERS FOR S400

Part No.



Heavy duty flexible assembly in PVC 1.8m approx and J-Box for BJC S400 Industrial pH / Redox probes

PA02032789

Heavy duty Rigid assembly in PVC 1.8m approx and J-Box for BJC S400 Industrial pH / Redox probes

PA02032790



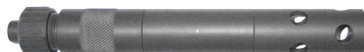
Rigid probe holder assembly for, PG13.5 to 1/2" BSPP Male PVC 102 mm long to suit 120mm/130mm probe. For mounting in-line. Suitable for SP100 & SP200 probes. Suit Vinidex Cat 15 Faucet Tee 1/2". For different pipeline sizes ask ProMinent.

PA02032258



Rigid probe holder assembly for, PG13.5 to 1/2" BSPP Male PVC 65 mm long to suit 77mm/80mm probe. For mounting in-line. Suitable for A41021851 and A42022002 probes. For different pipeline sizes ask ProMinent.

A03001876



Heavy duty electrode gland assy, MKII, PVC. Suit pH / Redox probes A41021851 & A42022002

PA03021880



Electrode gland assembly for pipeline mounting, heavy duty type with 1-1/4" BSPT connection. Suit pH / Redox probes A41021851 & A42022002

PA03021134



Withdrawable probe holder, to suit 16mm I.D. hose and 1-1/2" BSP full bore valve. Suit pH / Redox probes A41021851 & A42022002



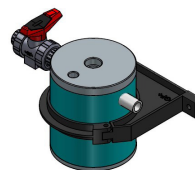

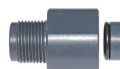


PA03001113

Note: Above Part No includes 1-1/2" brass/nickel plated valve & S/S nipple



4.5 Electrode Holders

Electrode Holders - & Filters

		Part No.	
BY-PASS SENSOR HOLDER DLG 2 TYPE for 25mm CLE, CTE etc. and 2 x PG13.5 probe with sight glass, sample valve, mounting bracket, 8 x 5 tube inlet and outlet. Includes 791818. mounting kit for CLE, CTE etc		PA03023238	  
BY-PASS SENSOR HOLDER DLG 5 High iron, dirty water applications for use with 25mm CLE, CTE etc. Includes 1 x 25 mm port, and 2 x PG13.5 ports for pH and Pt100 sensors (if required), mounting bracket, 8 x 5 tube inlet and 16mm hose outlet, mounting kit 791818. for CLE, CTE etc.		PA03002885	
BY-PASS SENSOR HOLDER DLG 9 For use the the sample flow is unfilled with suspended food fragmentse.g lettuce / salad. For use with the 25mm CLE, CTE etc. Includes 1 x 25mm port for sensor and 1 x PG13.5 ports for pH and PT100 probe (if required), mounting bracket, 2 x 3/4" PVC nipples, 1 x PVC 3/4" ball valve, large drain outlet and nut and mounting kit 791818 for CLE, CTE		PA3003436	
ROTAMETER & FLOW SWITCH FOR ABOVE		P86515T	
ADD FLOW CONTROL MARIC 33 L/HR ASSEMBLY (NOT REQ'D FOR POOLS)			  
20x1.5 F to 15mm Solvent Weld - including MARIC insert assembly		PA27002656	
20x1.5 M to 20x1.5 F - including MARIC insert assembly		PA27002657	
20x1.5 F to 1/2" BSPT M - including MARIC insert assembly		PA27002805	
Note: If using a Maric Valve you MUST use an in-line filter. The following Filter Assemblies can be used for Pool and Industrial, and can be used in conjunction with all of our Sensor Holders and Flow switch.			
<ul style="list-style-type: none"> Max. working pressure 10 bar Element 316 Stainless Steel 27 dia x 69 Filter size 80 mesh Bowl transparent nylon 		<ul style="list-style-type: none"> 1/2" BSP threads Filtering capacity 55 l/m at .5 bar Body fibreglass reinforced polypropylene Viton gaskets 	
		Part No.	
Filter only		3240T0235	
Filter with 8x5 to 20x1.5F Kit		P3240T0235-A	
Filter with 8x5 to 20x1.5F with Maric Kit		P3240T0235-B	
Filter with 8x5 to 8x5 Kit		P3240T0235-C	
Fitted with 1/4" BSPF to 20x1.5F + DGMa adaptor for connection direct to DGMa		P3240T0235-D	
Filter Arag Inox 80 Mesh Element		3240035.030	

Note: Systems require valve at sample take-off point, **BR-B/V-TEE-MXF-15**

Note: See also ProMinent DGMa units in **section 6.0 'Yellow Pages'**.



4.6 Probe Holder Accessories

Probe Holder Accessories



Part No.

Sample Water Low Flow Switch, suitable for fitting to inlet connection on by-pass probe holder assembly, (8 x 5). Arranged to pause controller. This unit is fitted with opposing magnets that act like a spring so it can be mounted in any position. Supplied complete with fittings. Normally Open or Normally Closed contacts available.

PA03022425

Low Flow Switch, SW15 connections mounting in any position

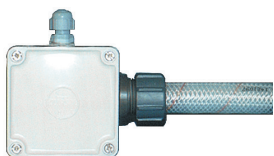
P20-C

Low Flow Switch, SW15 connections only without magnets
- vertical mounting only

P20-NM

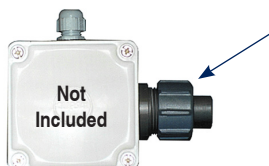
Low Flow Switch, paddle type, pipe size 25 -150mm

F-H-25B



Flexible submersion pipe assembly to be used with DYNAPROBE or the MKII Gland Assembly below.

PA02032256



Adaptor PVC tube fitting, from J-Box to 23x16 hose

A27021362

Cap Nut

356562



J-Box assembly with 2 glands and terminal strip for joining extension cable, pulse cable, probe cables, etc.

PA03021783



COMPONENTS FOR INDUSTRIAL SUBMERSIBLE ELECTRODE HOLDERS

1-1/2" full bore valve - nickel plated brass

A09591853



1-1/2" nipple BSPT Hex SS

A07541866



1/2" BSP M/F Ball Valve (nickle plated brass)

BR-B/V-TEE-MXF-15



4.7 Cables & Accessories

CABLES & CONNECTORS

SN6 COAX CONNECTOR

SN6 coax connector for 5 mm dia. coax cable
SN6 coax connector for 3 mm dia coax cable

Part No.

304974
304975



CABLE & GLANDS

COAX CABLE, PER METRE

Military Grade, 50 ohm, type AM-900, Low Noise

Grey HC2049 Cable, (2 core pulse)

Grey cable entry gland 1/4" BSPM

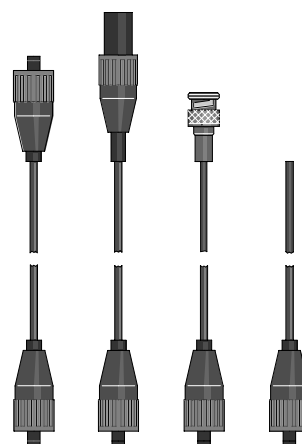
Black cable entry gland 3/8" BSPM

A04001118

A04001289

703830

703885



PROMINENT[®] DULCOTEST COMPLETE SIGNAL CABLES

2 x SN6 Coax 0.8 m - SS

2 x SN6 Coax 2.0 m - SS

2 x SN6 Coax 5.0 m - SS

2 x SN6 Coax 10.0 m - SS

305077

304955

304956

304957

BELOW CABLES FOR TYPICAL USE WITH PHE / RHE PROBES AND SP100 AND SP200 PROBES

SN6 - open end Coax 2.0m - S*

SN6 - open end Coax 5.0m - S*

SN6 - open end Coax 10.0m - S*

SN6 - open end Coax 20.0m - S*

305030

305039

305040

304952



TERG-A-ZYME[®]

ENZYME DETERGENT POWDER WT. 20GMS

For manual or ultrasonic cleaning of proteinaceous soils from hard surface materials, Laboratory probes and utensils, Reverse osmosis equipment, Hospital and industrial ware, to sparkling brilliance.

A52002110

TERG-A-ZYME[®] Phosphate analysis:

- Average 7.3% phosphorus by weight as phosphates.
- Phosphorus at the recommended level = 2.1 grams

TERG-A-ZYME[®] contains no TRI-SODIUM phosphate © Alconox inc. 1973



4.8 Electrode Comparison List

Existing Electrode pH Electrodes	Part No.	Description	Length mm	Replacement
PHE 112 SE	305054	pH Electrode, pH 1-12, 0-60° C, glass, PG 13.5 thread, SN6 Cap, pin wick ref, 1X	120	SP100-4330-DH
PHEP 112 SE	150041	pH Electrode, pH 1-12, 0-80° C, glass, PG 13.5 thread, SN6 Cap, pin wick ref, 1X	120	SP200-2330-DH
PHEX 112 SE	305096	pH Electrode, pH 1-12, 0-100° C, glass, PG 13.5 thread, SN6 Cap, peripheral ref, 1X	120	SP200-2330-DH
PHED 112 SE	741036	pH Electrode, pH 1-12, 0-80° C, glass, PG 13.5 thread, SN6 Cap, pin wick ref, 1X	120	SP200-2330-DH
No Longer Available	A41011942	pH Probe polmer (Blue), pH 1-13, PG 13.5 thread, SN6 Cap, pin wick ref, 1X	110	SP100-4330-DH
Not Stocked	A41021850	pH Electrode, pH 1-13, 0-100° C, glass, S/S Cap, pin wick ref, 2X, 3M Cable, pin lugs	80	A41021851
Still Available	A41021851	pH Electrode, pH 1-13, 0-100° C, glass, S/S Cap, pin wick ref, 2X, 10M Cable, pin lugs	80	
Still Available	A41021852	pH Electrode, pH 1-14, -5-100° C, HT4 glass, S/S Cap, peripheral ref, 2X, 3M Cable, pin lugs	80	
No Longer Available	A41021966	pH Electrode, pH 1-13, 0-100° C, glass, PG13.5 thread, SN6 Cap, peripheral ref, 2X	120	SP200-2330-DH
Not Stocked	A41022001	pH Electrode, pH 1-13, 0-100° C, glass, S/S Cap, Calomel, pin wick ref, 2X, 3M Cable, pin lugs	80	Not Stocked can be ordered if required
No Longer Available	A41011685	pH Probe polmer (Blue), pH 1-13, S/S cap, pin wick ref, 1X, 3M cable, SN6 Plug	110	SP100-4330-DH Add Coax cable with SN6 plug
Redox Electrodes	Part No.	Description	Length mm	Replacement
RHE-Pt-SE	305001	Redox Electrode,glass, 0-60° C, PG 13.5 thread, SN6 Cap, pin wick ref	120	SP100-4PB0-DH
RHEP-Pt-SE	150094	Redox Electrode,glass, 0-80° C, PG 13.5 thread, SN6 Cap, pin wick ref	120	SP200-2PB0-DH
RHEX-Pt-SE	305097	Redox Electrode,glass, 0-100° C, PG 13.5 thread, SN6 Cap, peripheral ref	120	SP200-2PB0-DH
No Longer Available	A42011943	Redox Probe polmer (Red), PG 13.5 thread, SN6 Cap, pin wick ref, 1X	110	SP100-4PB0-DH
No Longer Available	A42021991	Redox Probe, glass, PG 13.5 thread, SN6 Cap, pin wick ref, 1X	120	SP200-2PB0-DH
Still Available	A42022002	Redox Electrode, glass, S/S Cap, platinum band, 2X, 10M cable, pin lugs.	80	
No Longer Available	A42011686	Redox Probe polmer (Red), S/S Cap, pin wick ref, 1X, 3M cable, SN6 Plug	110	SP100-4PB0-DH Add Coax cable with SN6 plug
Fermprobe	Part No.	Description	Length mm	Replacement
F-600-B110-A10TE	A41021809	pH Fermprobe, S/S Cap, pin wick ref, 2X, 3M cable, pin lugs	110	use A41021851 Check Temperature Req'd
pH Dynaprobe	Part No.	Description	mm	Replacement
No Longer Available	A41021813	pH Dynaprobe, teflon junction, glass dome bulb, 3M cable, pin lugs		use A41022120
Still Available	A41022120	pH Dynaprobe, teflon junction, glass dome bulb, 10M cable, pin lugs		ST851-T330-A33TE
Still Available	A41021813-TC	pH Dynaprobe, teflon junction, glass dome bulb, 3M cable, pin lugs, temp comp pt100		ST851-T33D-E10T4
Redox Dynaprobe	Part No.	Description		Replacement
Not Stocked	A42022105	Redox Dynaprobe, teflon junction, platinum band, 10m cable, pin lugs		ST851-RPB0-A33TE
ST851-RPB0-A33TE	A42022136	Redox Dynaprobe, teflon junction, platinum band, 10m cable, pin lugs		ST851-RPB0-A33TE
Temperature Electrode				
PT 100 SE	305063	Temperature Electrode, pt 100, 0-80° C, PG 13.5, SN6 cap		



5.1 LogR Sensor Package

ProMinent® LogR Sensor Package

DESCRIPTION AND USE

General corrosion is the evenly distributed thinning of an immersed metal due to the electrochemical reaction between the metal and the process stream. The rate of general corrosion is measured in mils per year, mpy. Weight loss coupons are commonly used to measure general corrosion. The coupon is weighed, immersed for 30, 60 or 90 days, removed, cleaned & re-weighed. The loss of weight & immersion period are converted to a corrosion rate. It's an inexpensive method but it does not measure corrosion rate in real time so it's difficult to identify process conditions, which increase or decrease corrosion.

Linear Polarization Resistance (LPR measures general corrosion rate in real time updated every 2.5 minutes. The method includes conversion approximations which result is a measured that will not be the same as the coupon rate but that will track the coupon rate. LPR is used to measure changes in corrosion rate as process corrosivity varies and as process chemistry is controlled.

LPR METHOD

LPR uses two standardized cylindrical metal coupons, nominally 0.1875" D x 1.25" L of the same metallurgy, typically both steel, copper, admiralty, copper-nickel or zinc.

The coupons are polarized to several mV and the resulting current measured. The polarity is reversed & the current re-measured. The corrosion rate is calculated using the measured currents, the polarization voltage corrected for process resistivity and constants based on the coupon metallurgy.

PITTING INDICATOR

The current measured when the coupon tips are connected together is displayed as a pitting index in mpy. Although LPR cannot measure the actual pitting rate, the pitting index is used as a measure of pitting severity.

ProMinent® LogR offers exchangeable sensor tips with on-board selectable metallurgy (carbon steel, copper & 443 admiralty), data logging with USB compatible down-loading & 4-20mA reporting & alarm contacts.



Part No.

WE TYPICALLY STOCK ONE UNIT WHICH IS OUR P/N:

7760788

This is the LogR monitor, sensor, and tee.

The sensor has two 'tips' on the end, and both tips are the same metallurgy.

The tips on the sensor included with above P/N: 7760788 are Carbon Steel ('CS').

The sensor-tips are replaceable, and inter-changeable as pairs.

Note: This means you must have same metallurgy for both tips on the sensor. They are regarded as consumables.

Sensor-tips are stocked separately:

Part No.

1x pair (i.e. 2 individual tips) of Copper Tips ('Cu')

7760241

1x pair of Carbon Steel Tips ('CS')

7760240

1x pair of Admiralty Tips ('AM')

7760238

Spare - Threaded PVC insertion sleeve

7760445

Spare - "O" Ring for threaded sleeve

7760557

Spare - PVC tee 3/4" NPT - from PAAS [code 805007]

Spare - LogR Sensor [sensor only without tips]

7760792



5.2 LogR Sensor Package - Specifications

SENSOR	SPECIFICATION	EXPLANATION / DETAIL
LPR Sensor (Linear Polarization Resistance)	Non-metallic sensor rated 50C, 125F max, 125 psi max. Immersed components ABT, nylon & epoxy.	Digital, DC isolated 3 wire sensor, Power, Common & Data. Sensor supplied with 1" SCH 80 threaded PVC 'T' fitting with 1" non-metallic sensor entry fitting and 3m, 10ft of 3xAWG 22 PVC jacketed cable.
LPR_CS	1010 Carbon Steel CDA	1L" L x 3/16"D electrode set supplied installed.
LPR_CU	110 Copper CDA 443	Sensor accepts standardized LPR
LPR_AM	Admiralty	electrodes threaded #4-40 UNC

LogR	SPECIFICATION	EXPLANATION / DETAIL
Corrosion Rate Measure & Display	0.01 to 50.0 mpy for steel Updates every 150 seconds.	LogR CE compliant under 89/336/EEC Electrode metallurgy user selectable.
4-20mA Output	Three wire: Power, Ground & 4-20mA out Resolution nominally 1 part in 4000.	User selectable 4-20mA range from 2 to 100 mpy. Adjustable loop Span & Zero.
Data Logging	1 Year @ 5 minute intervals.	Log auto-uploaded via USB thumb drive in CSV format (Comma Separated Variable)
Alarm Contacts	Normally closed Rated 24VDC, 250mA Thermally fused 300mA	User adjustable alarm trip point. Alarm contacts also open on loss of power.
Display & Data Link	2x8 LCD Display. USB Host emulation.	Battery backed clock time & date stamps data log.
UP-DOWN & Mode Switches	UP & DOWN push buttons 8 Selectable display modes, 0 to 7.	0: Corrosion 1: Metallurgy 2: Conductivity 3: Diagnostic 4: 4-20mA Current 5: Date-Time 6: Alarm Contacts 7: Loop Span
Conductivity	50 to 9999 uS	Autoranging. 1uS resolution. Corrects corrosion rate for water resistivity.
Power	9-24VDC, 100mA max. Polarity Protected.	Use included 12VDC, 500mA power cube or site 9-24VDC power. Power 240V AC plug set available.
LogR Enclosure	Non-metallic, Rated IP65 4 3/8" x 4 3/8" x 1 1/2", 110mm x 110mm x 45mm	PG16 cable entry for sensor & current loop cabling included. Wall mount 3-point bracket included.
Wiring Terminal Blocks	Rated AWG16-26 3.5mm spacing.	Power, 4-20mA, sensor and alarm contacts, 2 piece, removable wiring blocks



5.3 ProMcon 500 Series Spare Parts

Spare Parts

Conductivity Probes

Conductivity probe assembly with carbon electrodes in PVC union arrangement.

	Part No.
C/W PVC 3/4" shed 40 Tee & 1m cable K=1.0	PA11922172
Probe only for above	A11002172
SOLENOID VALVE 1/2" BSP	146559C



6.1 Controller Packages

DULCOMETER® Compact transmitters with control functions for pH and ORP measured variables provide basic functions for applications in water treatment. They have a fixed configuration with the following features.

MEASURED VARIABLES PH AND ORP (CAN BE CHANGED ON THE CONTROLLER)

- Operation independent of the operating language (use of abbreviations, such as CAL, PARAM, CONFIG, ERROR)
- Illuminated display
- 3 LED display operating state (relay 1 / 2 active, Error)
- Sensor monitoring for pH
- P and PID control characteristics
- Selectable control direction (raise or lower measured value)
- Pulse frequency relay for control of metering pump
- Power relay can be configured as an alarm, limit value or pulse width modulated control output for metering pumps, (connection function or switch on operating voltage)
- Analogue output 0/4...20 mA can be configured as a writer output or control output
- Digital input to switch off the control or to process a sample water limit contact by remote control
- Temperature sensor input (Pt 1000) for temperature compensation of the pH value



Technical Data

Measurement range:	pH: 0.00 ... 14 ORP: -1000 ... +1000 mV
Resolution:	pH: 0,01 pH ORP: 1 mV
Correction variable:	Temperature for pH via Pt 1000
Correction range:	0 ... 120 °C
Control characteristic:	P/PID
Control:	1-way controller with selectable control direction (raise/lower)
Signal current output:	1 x 0/4-20 mA galvanically isolated max. load 400 Ω Range and assignment (measured or actuating variable) can be set
Control outputs:	1 pulse frequency output for control of the metering pump 1 relay (alarm or limit value relay or pulse length control) 1 x analogue output 0/4 ... 20 mA
Electrical connection:	90 - 253 V ~
Ambient temperature:	-10 ... +60 °C
Enclosure rating:	IP 67
Dimensions:	135 x 125 x 75 mm (H x W x D)
Weight:	0,5 kg

	Part No.
pH/ORP	DCCaW006PR0010EN
Chlorine	DCCaW006C00010EN
Panel Mounting Kit	1037273

Sensor for Chlorine, **ONLY** for use with **Compact Controller**

APPLICATIONS

- Waste water treatment
- Treatment of drinking water
- Swimming pool water treatment

CLB 2-µA

PART NO: 1038902

Measured variable:	free chlorine (hypochlorous acid HOCl)
Measuring range:	0.05 - 5.0 mg/l: linear, can be used for shock chlorination up to 10.0 mg/l
Reference method:	DPD1
pH range:	5.0 ... 9.0
Temperature:	5 ... 45 °C
Max. pressure:	3.0 bar
Intake flow:	30...60 l/h (in DGMA), constant flow needed as flow-dependent signal
Power supply:	16...24 V DC (2-wire)
Output signal:	Non-amplified primary current signal, not temperature-compensated, uncalibrated, not electrically isolated
Temperature compensation:	Pt 1000, integrated, calculation in the compact controller
Typical applications:	Swimming pool, drinking water, can also be used with membrane-free chlorine production electrolysis processes, even with varying media temperatures
Measurement & control equipment:	Compact controller
In-line probe fitting:	DGM, DLG III
Measuring principle:	amperometric, 3 electrodes, no diaphragm
Measuring range:	CLB 2-µA-5 ppm



6.2 Pool Package Accessories

Optional Equipment

Metering Pumps	see 'Yellow Pages' - select from the ProMinent range.
Probes	select from the ProMinent range, see 'Yellow Pages' section 5 and 'Green Pages' section 4.
Probe holders	select from the ProMinent range, see section 6 'Yellow Pages' for DGMa holders and section 4 'Green Pages' for low cost alternatives.

	Part No.
CO ₂ Flow Regulator 25 l/m with Flow Meter and 240v Solenoid (as above) in enclosure with lighted on/off switch.	PA31002458
As above but 10 bar versions	PA31002458-HP
Sample Flow switch (low volt).	PA03022425
CO ₂ Fixed In-line Injection Assy with 1/2' Bspt Male Connection.	PA09751676
CO ₂ Fixed In-line Injection Assy with 3/4' BSPM Connection	PA09761676
CO ₂ Withdrawable Injection Assembly to suit 100mm (4" dia.) pipe & over.	PA31921314
CO ₂ Bottle Regulator with dual gauge - includes regulator & pressure gauge.	PA31001428
Safety Chains & Brackets for single CO ₂ bottle.	A31001935
Safety Chains & Brackets for dual CO ₂ bottles.	A31001936



PA31002458
CO₂ Controller



PA31921314
Withdrawable CO₂ Injection Assembly



PA03022425
Sample Flow Switch



SP100-4330-DH
pH Sensor



SP100-4PBO-DH
ORP Sensor



DGMa in-Line
Probe Holder & Flow Switch



6.3 Pool Packages COMPACT controller pH/ORP

DCC300 pH/ORP POOL CONTROL SYSTEM

Part No.	Description	
DCCaW006PR0010EN	COMPACT Controller	2
SP100-4330-DH	pH probe	1
SP100-4PB0-DH	ORP probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	2
A04001289	cable 2 core	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
	pH 7 buffer & PH4	1

Note: All mounted & with control cables for pumps



DCC300SC SPECIAL FOR SALT CHLORINATOR

DCC400 pH/ORP POOL CONTROL SYSTEM

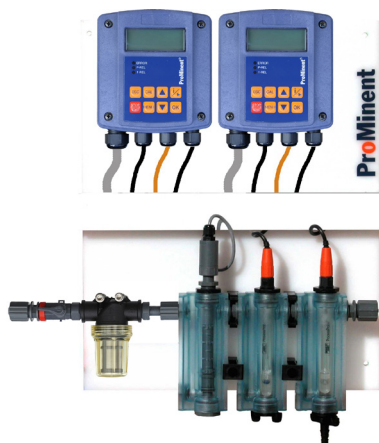
Part No.	Description	
DCCaW006PR0010EN	COMPACT Controller	2
PA31002458	CO ₂ Controller	1
PA09751676	Fixed in-line CO ₂ Injection 1/2" BSPM	1
SP100-4330-DH	pH probe	1
SP100-4PB0-DH	ORP probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	2
A04001289	cable 2 core	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
A35082644	Backboard 600 x 500 & fitting	1
P3240T0235-D	Filter Assembly	1
	pH 7 buffer & PH4	1

Note: All mounted & with control cables for pumps



DCC400SC SPECIAL FOR SALT CHLORINATOR

6.3 Pool Packages COMPACT controller pH/ORP



DCC500 pH/CI POOL CONTROL SYSTEM

Part No.	Description	
DCCaW006PR0010EN	COMPACT Controller pH	1
DCCaW006C00010EN	COMPACT Controller Chlorine	1
SP100-4330-DH	pH probe	1
1038902	CLB 2-μA-5 ppm probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	2
A04001289	cable 2 core	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
	pH 7 buffer & PH4	1

Note: All mounted & with control cables for pumps



DCC600 pH/CI POOL CONTROL SYSTEM

Part No.	Description	
DCCaW006PR0010EN	COMPACT Controller	1
DCCaW006C00010EN	COMPACT Controller Chlorine	1
PA31002458	CO ₂ Flow Regulator Assembly	1
PA09751676	Fixed in-line CO ₂ Injection 1/2"BSPM	1
SP100-4330-DH	pH probe	1
1038902	CLB 2-μA-5 ppm probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	2
A04001289	cable 2 core	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
A35082644	Backboard 600 x 500 & fitting	1
P3240T0235-D	Filter Assembly	1
	pH 7 buffer & PH4	1

Note: All mounted & with control cables for pumps

OPTIONS

Part No.	
PA55003052	Volt Free relays for external stop/start of any Beta, Gamma L, Delta, Sigma via pump control cable. This assembly includes 2 relays in a single enclosure mounted on the backboard & into the instrument.
PA55003540	240 volt relay switched output for control of other equipment. (e.g. hard wired Beta pump). This includes 2 relays in a single enclosure mounted on the backboard and into the instrument.
PA55003541	240 volt relay switched output for control of other equipment. This includes 2 relays with GPO's mounted on the backboard and into the instrument.
PA55003055	Volt Free relays for external stop/start of any Beta, Gamma L, Delta, Sigma via pump control cable. This assembly includes 1 relay in a single enclosure mounted on the backboard & into the instrument.
PA55003542	240 volt relay switched output for control of other equipment. (e.g. hard wired Beta pump). This includes 1 relay in a single enclosure mounted on the backboard and into the instrument.
PA55003543	240 volt relay switched output for control of other equipment. This includes 1 relay with GPO mounted on the backboard and into the instrument.



6.4 Pool Packages QUICK START diaLog

Quick Start Guide

VERSION	PH	ORP	CLE3	CTE	CAA	CO ₂
DIALOG - 300	X	X				
DIALOG - 400	X	X				X
DIALOG - 500	X		X			
DIALOG - 510	X	X	X			
DIALOG - 520	X		X	X		
DIALOG - 540	X		X		X	
DIALOG - 550	X	X			X	
DIALOG - 600	X		X			X
DIALOG - 610	X	X	X			X
DIALOG - 620	X		X	X		X
DIALOG - 640	X		X		X	X
DIALOG - 650	X	X			X	X
DIALOG - 700	X			X		
DIALOG - 710	X	X		X		
DIALOG - 740	X			X	X	
DIALOG - 800	X			X		X
DIALOG - 810	X	X		X		X
DIALOG - 840	X			X	X	X

GOLD System

SALT WATER CHLORINATORS

VERSION	PH	ORP-GOLD	CLE3	CGE-GOLD	CAA	CO ₂
DIALOG - 550G	X	X			X	
DIALOG - 650G	X	X			X	X
DIALOG - 700G	X			X		
DIALOG - 710G	X	X		X		
DIALOG - 740G	X			X	X	
DIALOG - 810G	X	X		X		X
DIALOG - 840G	X			X	X	X



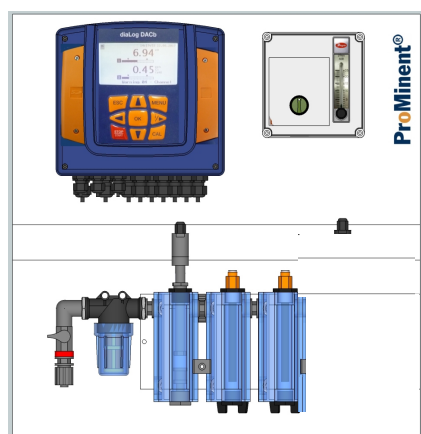
6.5 Pool Packages diaLog pH/Cl₂



diaLog300 pH/ORP POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VV0000010010E	diaLog pH/ORP Controller	1
SP100-4PB0-DH	ORP Probe	1
SP100-4330-DH	pH probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	Flow switch and sensor cables	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1

Note: All mounted on backboard.



diaLog400 pH/ORP POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VV0000010010E	diaLog pH/ORP Controller	1
PA31002458	CO ₂ Controller	1
SP100-4PB0-DH	ORP Probe	1
SP100-4330-DH	pH probe	1
DGMA320T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	Flow switch and sensor cables	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	2
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1

Note: All mounted on backboard.



diaLog500 pH/Cl₂ POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VA0000010010E	DULCOMETER diaLog Controller	1
792919	Chlorine sensor CLE 3-mA-10ppm	1
SP100-4330-DH	pH probe	1
DGMA311T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	cable 2 core	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1

DX adder Adds DULCOnneX to DACb pool packages. Includes LAN, Gateway & 12 month subscription
 - Subscription included @ / month
 - Customer to provide Wi- Fi
 - Contractor subscription discount / month

On request DX Gateway IPC. Provides DULCOnneX to DACb and Device Access to DACb web interface.



6.5 Pool Packages diaLog pH/Cl₂

diaLog600 pH/Cl₂/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VA0000010010E	DULCOMETER diaLog Controller	1
PA31002458	Flow Regulator Assembly	1
792919	Chlorine sensor CLE 3-mA-10ppm	1
SP100-4330-DH	pH probe	1
DGMA311T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	cable 2 core	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1



diaLog700 pH/Cl₂ POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VA0000010010E	DULCOMETER diaLog Controller	1
740684	Chlorine sensor CTE1-mA-10ppm	1
SP100-4330-DH	pH probe	1
DGMA311T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	cable 2 core	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1

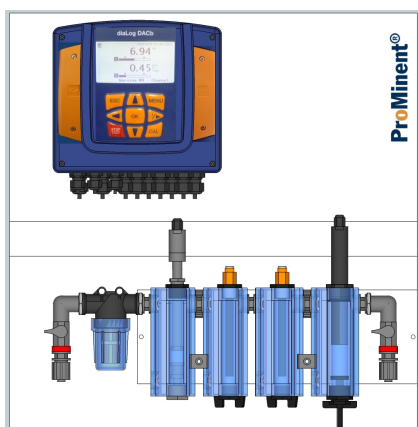


diaLog800 pH/Cl₂/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACbW006VA0000010010E	DULCOMETER diaLog Controller	1
PA31002458	CO2 Flow Regulator Assembly	1
740684	Chlorine sensor CTE1-mA-10ppm	1
SP100-4330-DH	pH probe	1
DGMA311T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	cable 2 core	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1

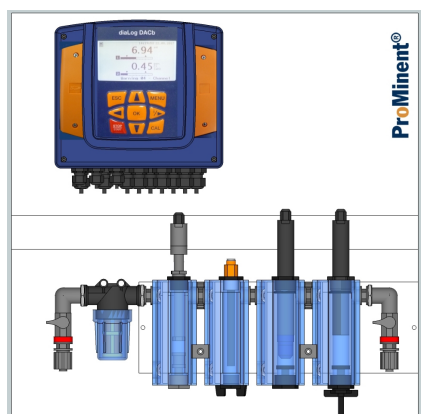


6.5 Pool Packages diaLog pH/Cl₂



diaLog510 pH/ORP/Cl₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
792919	CLE3-10ppm Chlorine sensor	1



diaLog520 pH/Cl₂/Cl₂ POOL CONTROL SYSTEM

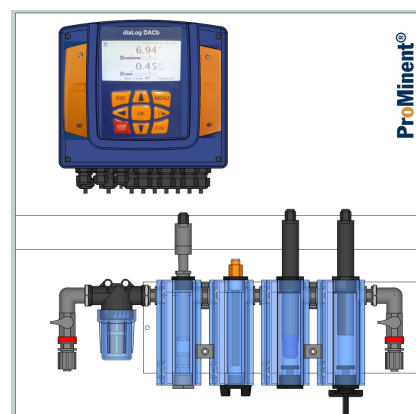
Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	1
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
792919	CLE3-10ppm Chlorine sensor	1
740684	CTE1-10ppm Chlorine sensor	1



6.5 Pool Packages diaLog pH/Cl₂

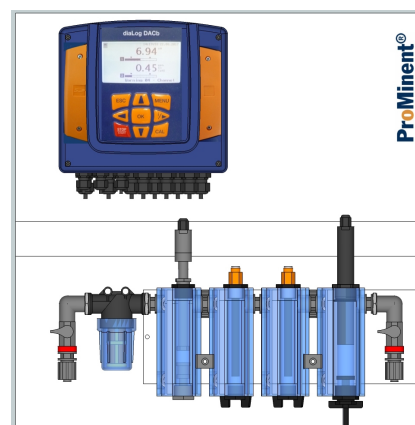
diaLog540 pH /Cl₂/CAA POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	1
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
792919	CLE3-10ppm Chlorine sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1

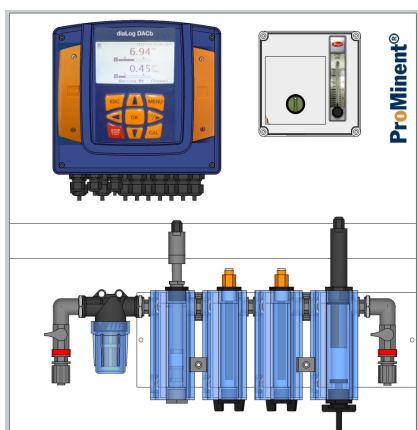


diaLog550 pH /ORP/CAA POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
CAA2690-10	Conductivity sensor 10,000 µS	1

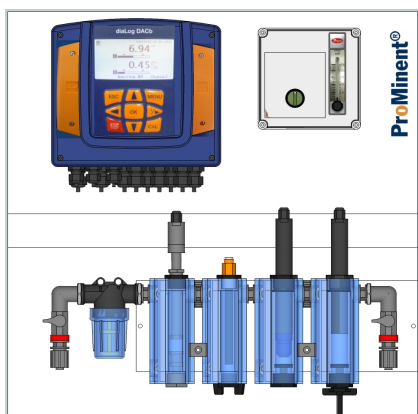


6.5 Pool Packages diaLog pH/Cl₂



diaLog610 pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
792919	CLE3-10ppm Chlorine sensor	1



diaLog620 pH/Cl₂/Cl₂/CO₂ POOL CONTROL SYSTEM

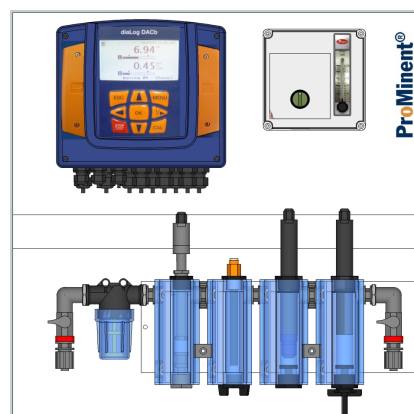
Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	1
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
792919	CLE3-10ppm Chlorine sensor	1
740684	CTE1-10ppm Chlorine sensor	1



6.5 Pool Packages diaLog pH/Cl₂

diaLog640 pH/Cl₂/CAA/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	1
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
792919	CLE3-10ppm Chlorine sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1

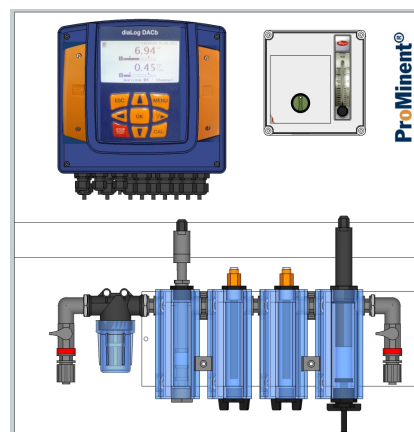


ProMinent®

ProMinent®

diaLog650 pH/ORP/CAA/CO₂ POOL CONTROL SYSTEM

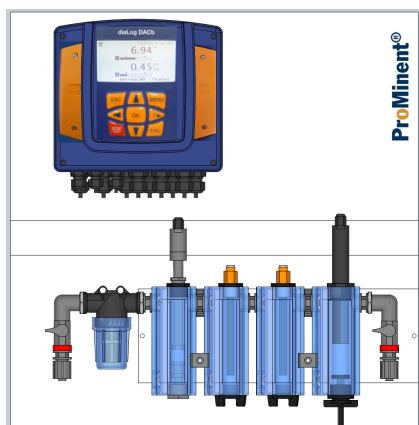
Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
CAA2690-10	Conductivity sensor 10,000 µS	1



ProMinent®

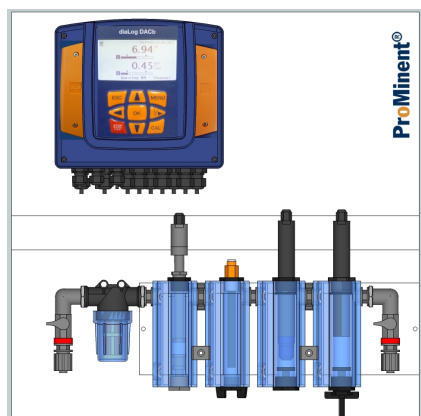


6.5 Pool Packages diaLog pH/Cl₂



diaLog710 pH/ORP/Cl₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
740684	CTE1-10ppm Chlorine sensor	1



diaLog740 pH/Cl₂/CAA POOL CONTROL SYSTEM

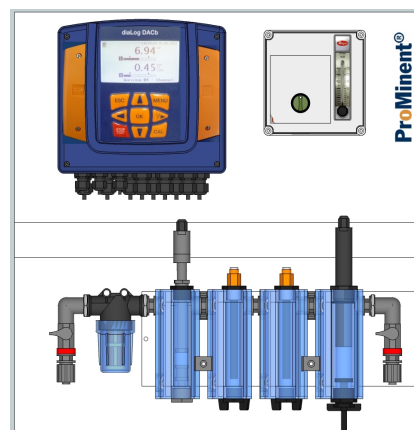
Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
740684	CTE1-10ppm Chlorine sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1



6.5 Pool Packages diaLog pH/Cl₂

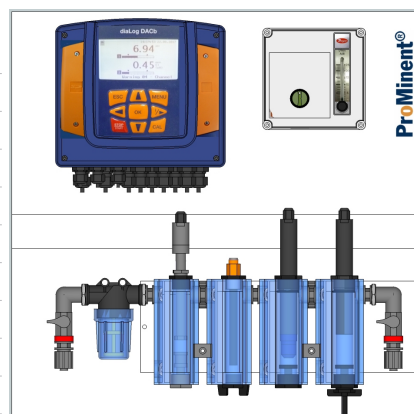
diaLog810 pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	ORP electrode	1
740684	CTE1-10ppm Chlorine sensor	1



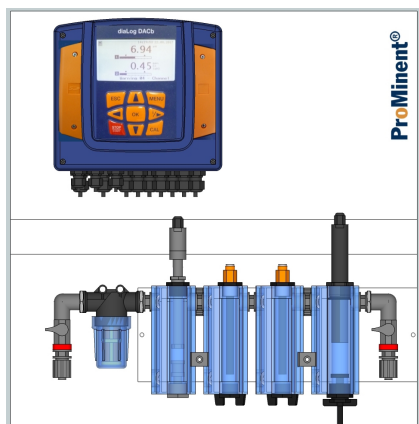
DIALOG840 PH/CL₂/CAA/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
740684	CTE1-10ppm Chlorine sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1



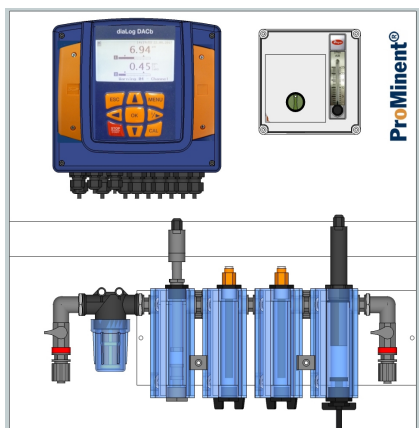
6.5 Pool Packages diaLog pH/Cl₂

GOLD Systems special for Salt Chlorinator



diaLog550G pH/ORP/CAA POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1003875	RHEP-Au-SE pH electrode	1
CAA2690-10	Conductivity sensor 10,000 µS	1



diaLog650G pH/ORP/CAA/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1003875	RHEP-Au-SE pH electrode	1
CAA2690-10	Conductivity sensor 10,000 µS	1

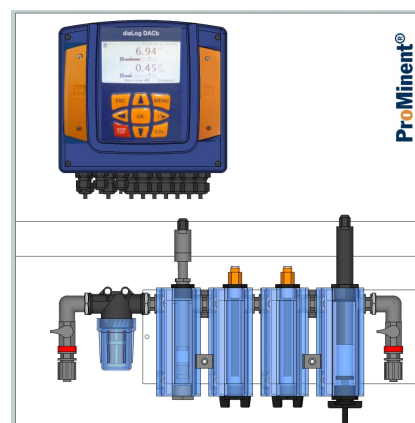


6.5 Pool Packages diaLog pH/Cl₂

GOLD Systems special for Salt Chlorinator

diaLOG700G PH/CL₂ POOL CONTROL SYSTEM

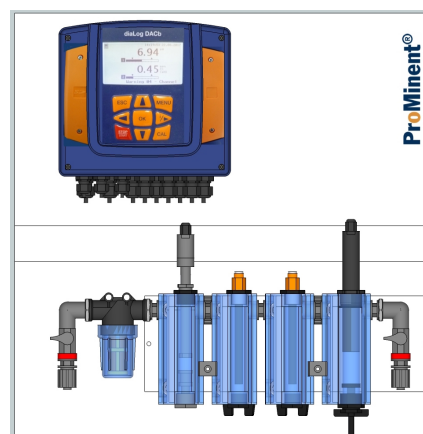
Part No.	Description	
DACA00612000010010EN	DULCOMETER diaLog Controller	1
DGMA311T000	Probe holder & flow switch assembly	1
1024105	Probe cable	1
A04001289	cable 2 core	2
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	PE tube 25m 8 x 5mm	1
P3240T0235-D	Filter Assembly	1
A35082644	Backboard 600 x 500 & fitting	1
A52003308	pH 7 buffer 100 ml	1
A52003310	pH 4 buffer 100 ml	1
SP100-4330-DH	pH probe	1
1047975	CGE3-mA 10ppm Sensor	1



ProMinent®

diaLog710G pH/ORP /Cl₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1003875	RHEP-Au-SE pH electrode	1
1047975	CGE3-mA 10ppm Sensor	1

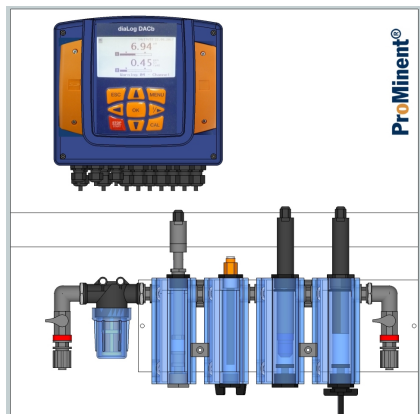


ProMinent®



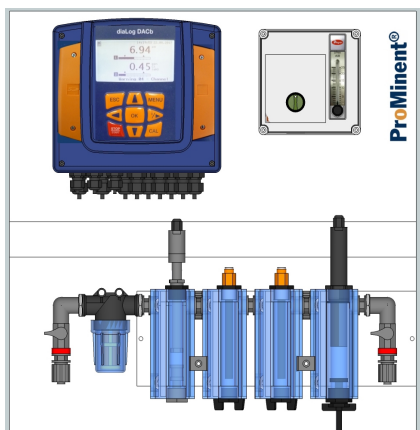
6.5 Pool Packages diaLog pH/Cl₂

GOLD Systems special for Salt Chlorinator



diaLog740G pH/Cl₂/CAA POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1047975	CGE3-mA 10ppm Sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1



diaLog810G pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA321T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	2
A04001289	2 core grey cable	2
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1003878	RHEP-AO-SE PH Electrode	1
1047975	CGE3-mA 10ppm Sensor	1

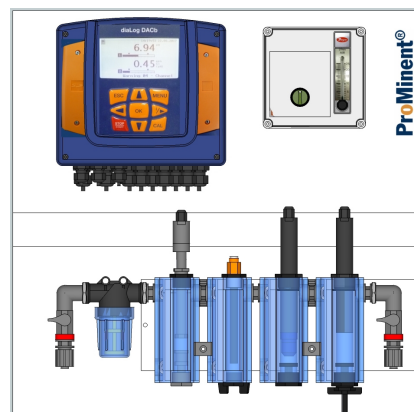


6.5 Pool Packages diaLog pH/Cl₂

GOLD Systems special for Salt Chlorinator

diaLog840G pH/Cl₂/CAA/CO₂ PH POOL CONTROL SYSTEM

Part No.	Description	
DACBW006VA4000010010EN	DULCOMETER diaLog Controller	1
A250D3402	Backboard 600 x 600 x 12 LDPE white	1
DGMA312T000	Probe holder & flow switch assembly	1
324T0235	Filter	1
A27023280	Adaptor 3/8" pipe to 1/4" BSPF	2
721-101-105	90 deg 3/8" PVC elbow	2
A27023399	Adaptor 3/8" spigot to 1/2" BSPM	1
A27023324	Adaptor 1/4" BSPM to 1/2" BSPM	1
A27023400	Adaptor 1/4" BSPM to 3/8" Spigot	1
1024105	Coax cable	1
A04001289	2 core grey cable	3
PromLabel150	ProMinent label	1
A52003305	Buffer pH 7	1
A52003308	Buffer pH4	1
PA07221061	Adaptor PVC 8x5 to 1/2" BSPM	1
A25251004	Tubing Black LDPE 8x5	1
PA31002458	CO ₂ flow regulator assembly	1
	Duct white 60 x 40 x 600	1
	Sundry mounting bolts & screws	1
SP100-4330-DH	pH electrode	1
1047975	CGE3-mA 10ppm Sensor	1
CAA2690-10	Conductivity sensor 10,000 µS	1



6.6 Pool Packages Dulcomarin II Compact



DULCOMARIN-300

Dulcomarin II Compact Pool System pH / Redox / Acid

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa320T000	Probe holder	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	Redox Electrode	1
1024105	Coax Cable 0.8m	2
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
P3240T0235-D	Filter Assembly	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25 m	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-400

Dulcomarin II Compact Pool System pH / Redox / CO₂

Part No	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa320T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax Cable 0.8m	2
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
P3240T0235-D	Filter Assembly	1
PA31002458	CO2 Flow Regulator Assembly	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-500**Dulcomarin II Compact Indoor Pool System pH / CLE 3 / Acid**

Part No	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa311T000	Probe holder	1
SP100-4330-DH	pH electrode	1
1024105	Coax Cable 0.8m	1
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1023425	Chlorine Sensor CLE3-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1

**DULCOMARIN-510****pH / CLE 3 / Redox / ACID COMPACT INDOOR POOL SYSTEM**

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin II	1
DGMa321T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax Cable 0.8m	2
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
506253	pH Buffer 7	1
P3240T0235-D	Filter Assembly	1
506251	pH Buffer 4	1



6.6 Compact Pool Packages Dulcomarin II



DULCOMARIN-520 DULCOMARIN II COMPACT INDOOR POOL SYSTEM PH / CLE 3 / CTE / ACID

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa312T000	Probe holder	1
SP100-4330-DH	pH sensor	1
1024105	Coax Cable 0.8m	1
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
1023427	Chlorine sensor CTE1-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-530 DULCOMARIN II COMPACT INDOOR POOL SYSTEM PH / CLE 3 / CTE / REDOX / ACID

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa322T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax Cable 0.8m	2
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
1023427	Chlorine sensor CTE1-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



6.6 Compact Pool Packages Dulcomarin II

DULCOMARIN-600

DULCOMARIN II COMPACT INDOOR POOL SYSTEM

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa311T000	Probe holder	1
SP100-4330-DH	pH sensor	1
1024105	Coax cable 0.8m	1
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-610

DULCOMARIN II COMPACT INDOOR POOL SYSTEM

pH / CLE 3 / Redox / CO₂

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa321T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax cable 0.8m	2
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



6.6 Compact Pool Packages Dulcomarin II



DULCOMARIN-620 DULCOMARIN II COMPACT INDOOR POOL SYSTEM pH / CLE 3 / CTE / CO₂

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa312T000	Probe holder	1
SP100-4330-DH	pH sensor	1
1024105	Coax cable 0.8m	1
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
1023427	Chlorine sensor CTE1-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-630 DULCOMARIN II COMPACT INDOOR POOL SYSTEM pH / CLE 3 / CTE / Redox / CO₂

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa322T000	Probe holder	1
SP100-4330-DH	pH electrode	1
SP100-4PB0-DH	Redox Electrode	1
1024105	Coax Cable 0.8m	2
A35051307	Mounting Board 750H x 600W	1
724009	Power Cable	1
A04001289	2 Core Cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1023425	Chlorine sensor CLE3-CAN-10ppm	1
1023427	Chlorine sensor CTE1-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m length	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



6.6 Compact Pool Packages Dulcomarin II

DULCOMARIN-700

DULCOMARIN II COMPACT OUTDOOR POOL SYSTEM

pH / CGE / Acid

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa311T000	Probe holder	1
SP100-4330-DH	pH sensor	1
1024105	Coax cable 0.8m	1
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1024420	Chlorine sensor CGE2-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



DULCOMARIN-710

DULCOMARIN II COMPACT OUTDOOR POOL SYSTEM

pH / CGE / Redox / Acid

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa321T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax cable 0.8m	2
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
1024420	Chlorine sensor CGE2-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1



6.6 Compact Pool Packages Dulcomarin II



DULCOMARIN-800

DULCOMARIN II COMPACT OUTDOOR POOL SYSTEM

pH / CGE / CO₂

Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa311T000	Probe holder	1
SP100-4330-DH	pH sensor	1
1024105	Coax cable 0.8m	1
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1024420	Chlorine sensor CGE2-CAN-10ppm	1
PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
A25251004	8 x 5 mm LDPE tubing - 25m	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1

DULCOMARIN-810

DULCOMARIN II COMPACT OUTDOOR POOL SYSTEM

PH / CGE / REDOX / CO₂



Part No.	Description	
DXCaW051M0PSEN	Dulcomarin	1
DGMa321T000	Probe holder	1
SP100-4330-DH	pH sensor	1
SP100-4PB0-DH	Redox sensor	1
1024105	Coax cable 0.8m	2
A35051307	Mounting board 750H x 600W	1
724009	Power cable	1
A04001289	2 Core cable for Flow Switch	1
PROMLABEL150	ProMinent Label 150mm	1
PA31002458	CO2 Flow Regulator Assembly	1
1024420	Chlorine sensor CGE2-CAN-10ppm	1
PA07221061	1/2" to 8 x 5 PVC Adaptor	1
A25251004	Adaptor PVC 1/2" to 8x5 mm	1
P3240T0235-D	Filter Assembly	1
506253	pH Buffer 7	1
506251	pH Buffer 4	1

Extra for OPC Server

Extra for A Module for pump activation or mA output

Extra for G Module for individual alarms

Note: All Dulcomarin controllers include embedded web server and screen recorder which has 512 Mb SD card at N/C



6.7 Dulcomarin II Accessories

	Part No.
Chlorine sensor CLE 3-CAN-10 ppm	1023425
Chlorine sensor CLE 3.1-CAN-10 ppm	1023426
Chlorine sensor CTE 1-CAN-10 ppm	1023427
Chlorine sensor CGE 2-CAN-10 ppm	1024420
Chlorine sensor BRE 3-CAN-10 ppm	1029660
Cable connection-CAN M12 5pol. 0.5m	1022137
Cable connection-CAN M12 5pol. 1m	1022139
Cable connection-CAN M12 5pol. 2m	1022140
Cable connection-CAN M12 5pol. 5m	1022141
T-splitter M12 5pol. CAN	1022155
Terminator M12-female 120R(4-5)	1022154
Terminator M12-male 120R(4-5)	1022592
CAN-BUS-Cable	1022160
Joining Kit CAN-BUS-Cable	1026589
CAN Connection Cable - Green - CSN M12 to RJ45	1026715
Cross Over Cable - Grey - RJ45 to RJ45	1027859
LAN Coupling - Silver - RJ45	1027860
Adaptor 90° PVC 1/2" Male BSPP x 1/4" F BSPP	PA01223349
Adaptor 90° PVC DGMA Male BSPP x 1/4" F BSPP	PA01223350



PA01223349



PA01223350

BUFFERS

	Part No.
Vial of 10 Capsules pH4 Buffer Kit	A12001261
Vial of 10 Capsules pH7 Buffer Kit	A12001262
Vial of 10 Capsules pH10 Buffer Kit	A12001263
Each Capsule makes 100 mls Buffer	A12001263

Note: Above part numbers and prices do not include distilled water.

BUFFER SOLUTION

	Part No.
3-molar KCl solution, 50 ml	505533
3-molar KCl solution, 250 ml	791440
3-molar KCl solution, 1000 ml	791441
Buffer solution 465 mV, 50 ml	506240
Buffer solution 475 mV, 100 ml	A52003313
Buffer solution 475 mV, 250 ml	A52003314
Buffer solution 220 mV, 50 ml	506244
Buffer solution pH 4.0 - red, 50 ml	506251
Buffer solution pH 4.0 - red, 100 ml	A52003308
Buffer solution pH 4.0 - red, 250 ml	A52003309
Buffer solution pH 4.0 - red, 1000 ml	A52003310
Buffer solution pH 7.0 - green, 50 ml	506253
Buffer solution pH 7.0 - green, 100 ml	A52003305
Buffer solution pH 7.0 - green, 250 ml	A52003306
Buffer solution pH 7.0 - green, 1000 ml	A52003307
Buffer solution pH 10.0 - blue, 50 ml	506255
Buffer solution pH 10.0 - blue, 100 ml	A52003311
Buffer solution pH 10.0 - blue, 250 ml	A52003312

6.8 DULCOnneX Package for DACb

DX ADDER - DULCOnneX Add on Kit for DACb

PA51003580

Adds DULCOnneX to DACb pool packages. **Includes LAN & DX Gateway.**
& 12 month subscription

Subscription included @ / month

Customer to provide Wi- Fi

Contractor subscription discount / month

DULCOnneX Annual Subscription

zzDulcoSub

12 month subscription

ProConnect Package for use with DULCOnnex

PA51003593

ProConnect Network Communications Box - LTE & WiFi [excludes SIM]

ProConnect Annual Subscription

zzProSub

12 month data SIM plan [1G per month]



6.9 Identity Code for Industrial Backboard Package

IBP	Industrial Backboard Package									
1	240 volt									
2	24 volt (no lead)									
Backboard size (includes Assembly & Programming)										
DCCA1	600 x 500 for 1 or 2 Compact instrument									
D1CB2	600 x 500 for D1Cb instrument DLG2									
D1CB3	600 x 600 for D1Cb instrument DLG5									
DACB4	600 x 500 for DACb instrument DLG2									
DACB5	600 x 600 for DACb instrument DLG5									
DACB6	750 x 600 for DACB with 3 x DLG 2 25 mm									
1st Probe Holder (includes cables)										
1	1 x DLG2 (1 x 25)									
2	1 x DLG2 (1x 13.5)									
3	1 x DLG2 (2 x 13.5)									
4	1 x DLG2 (1 x 13.5 & 1 x 25)									
5	1 x DLG2 (2 x 13.5 & 1 x 25)									
6	1 x DLG5 (1 x 25)									
7	1 x DLG5 (1 x 13.5 & 1 x 25)									
8	1 x DLG5 (2 x 13.5 & 1 x 25)									
9	1 x DLG5 (2 x 25)									
X	1 x DLG5 (3 x 13.5)									
2nd Probe Holder (includes cables)										
0	none									
1	1 x DLG2 (1 x 25)									
2	1 x DLG5 (1 x 25)									
3rd Probe Holder (includes cables)										
0	none									
1	1 x DLG2 (1 x 25)									
Flow Monitor										
0	none									
1	DGMA for DLG2									
2	GEMU for DLG5									
Filter										
0	none									
F	Inline filter DLG2 only									
Maric Valve										
0	none									
M	Maric valve DLG2 only									

1. Select Backboard Package from dropdown list to suit application

2. Select Instrument from yellow pages

3. Select probes and sensors from yellow and green pages.

For total price add the 3 sub totals above.

Note: Lead time approx 5 working days ex Sydney for above stocked sub assemblies.*

3-4 weeks ex Sydney for all other build combinations

* subject to stock being available at order placement.

IBP
1
DCCA1
1
0
0
1
0
M



6.10 D1Cb Industrial Sub Assemblies

FOR REFERENCE ONLY

D1CB SUB-ASSEMBLIES - INDUSTRIAL BACKBOARD PACKAGE



Identcode
IBP D1Cb / DLG2
Without Filter Assmbly

Item	Part No.		Qty
1	D1CbW00601000VC1011G00EN	Monitor	1
2	A04001289	2 core cable	1
3	PA03022502	By Pass Sensor Holder	1
5	PA07221061	1/2" to 8x5mm Adaptor PVC	1
6	1043271	DGMA300T000 Flow Switch	1
7	A25251004	8x5mm PE tube 25mm Roll	1
8	A35082644	600h x500w Backboard	1
9	PROMLABEL150	ProMinent Label 150mm	1
10	724009	Power Cable	1



Identcode
IBP D1Cb / DLG5

Item	Part No.		Qty
1	D1CbW00601000VC1011G00EN	Monitor	1
2	A04001289	2 core cable	2
3	PA03002885	by-pass sensor holder DLG5	1
4	A07051045	Bracket	1
5	86515T	Gemu Rotameter	1
6	1257000Z	Flowswitch	1
7	PA07221061	Adaptor PVC 1/2" to 8x5 mm	1
8	A25251004	25m, 8x5 PE tube	1
9	A01721802	5m, 16mm braided hose	5m
10	A25D3402	600 x 600 Backboard	1



6.10 diaLog Industrial Sub Assemblies

FOR REFERENCE ONLY

DIALOG SUB-ASSEMBLIES - INDUSTRIAL BACKBOARD PACKAGE

Identcode
IBP DACb 6AA0 - DLG2 240V
1 x Amperometric Sensor

Item	Part No.	Description	Qty
1	DACbW006AA0000010010	Controller	1
2	A04001289	2 core cable	2
3	DGMA300T000	Sensor Holder & Flow Switch	1
5	PA03023238	DLG2 Sensor Holder	1
6	PA07221061	1/2" to 8x5mm Adaptor PVC	1
7	A25251004	8x5mm PE tube 25mm Roll	1
8	A35082644	600h x500w Backboard	1
9	PROMLABEL150	ProMinent Label 150mm	1
10	724009	Power Cable	1


Identcode
IBP DACb 6VA0 - DLG2 240V
e.g. pH correction chlorine (coax cable)
1 x Amperometric sensor
1 x Potentiometric sensor

Item	Part No.	Description	Qty
1	DACbW006VA0000010010	Controller	1
2	1024105	Coax Cable 0.8M Sn6	1
3	A04001289	2 core cable	2
4	DGMA300T000	Sensor Holder & Flow Switch	1
6	PA03023238	DLG2 Sensor Holder	1
7	PA07221061	1/2" to 8x5mm Adaptor PVC	1
8	A25251004	8x5mm PE tube 25mm Roll	1
9	A35082644	600h x500w Backboard	1
10	PROMLABEL150	ProMinent Label 150mm	1
11	724009	Power Cable	1


Identcode
IBP DACb 6AA4 - DLG2 240V
1 x Amperometric Sensors
1 x mA disturbance value and mA Remote Set-Point possible

Item	Part No.	Description	Qty
1	DACbW006AA40000010010	Controller	1
2	1024105	Coax Cable 0.8M Sn6	1
3	A04001289	2 core cable	2
4	PA03023238	DLG2 Sensor Holder	1
5	PA07221061	1/2" to 8x5mm Adaptor PVC	1
6	A25251004	8x5mm PE tube 25mm Roll	1
7	A35082644	600h x500w Backboard	1
8	PROMLABEL150	ProMinent Label 150mm	1
9	724009	Power Cable	1



6.10 diaLog Industrial Sub Assemblies

FOR REFERENCE ONLY



Identcode
IBP DACb 4AA0 - DLG2 24V
1 x Amperometric Sensor

Item	Part No.	Description	Qty
1	DACbW004AA0000010010	Controller	1
2	A04001289	2 core cable	2
3	DGMA300T000	Sensor Holder & Flow Switch	1
5	PA03023238	DLG2 Sensor Holder	1
6	PA07221061	1/2" to 8x5mm Adaptor PVC	1
7	A25251004	8x5mm PE tube 25mm Roll	1
8	A35082644	600h x500w Backboard	1
9	PROMLABEL150	ProMinent Label 150mm	1
10	724009	Power Cable	1



Identcode
IBP DACb 4AA4 - DLG2 24V
1 x Amperometric Sensors
1 x mA disturbance value and mA Remote Set-Point possible

Item	Part No.	Description	Qty
1	DACbW004AA40000010010	Controller	1
2	A04001289	2 core cable	2
3	PA03023238	DLG2 Sensor Holder	1
4	PA07221061	1/2" to 8x5mm Adaptor PVC	1
5	A25251004	8x5mm PE tube 25mm Roll	1
6	A35082644	600h x500w Backboard	1
7	PROMLABEL150	ProMinent Label 150mm	1
8	724009	Power Cable	1



6.10 diaLog Industrial Sub Assemblies

FOR REFERENCE ONLY

Identcode

IBP DACb 6AA0 - DLG5 240V

2 x Amperometric possible

Item	Part No.	Description	Qty
1	DACbW006AA0000010010	DACb 2 x mA inputs	1
2	A4001289	2 core cable	2
3	PA03003388	DLG5 for 2 x mA sensors	1
4	86515T	Gemu Rotameter	1
5	125000Z	Rotameter Switch	1
6	PA07221061	Adaptor PVC 1/2" to M20x1.5mm	1
7	A25251004	25m of 8x5mmBlack PE tubing	1
8	A01721802	16mm Braided Hose	5
9	A250D3402	600mm x 600mm Backboard Mtd	1
10	161-546-212	1/2" PVC Ball Valve GF	2
11	721-101-106	1/2" 90 deg PVC elbow	1
12		1/2" Schdule 80 pipe	1
13	PromLabel150	150mm ProMinent Label	1
14		Mounting Bracket	1



Identcode

IBP DACb 6AA4 - DLG5 240V

1 x Amperometric Sensors

1 x mA disturbance value and mA Remote Set-Point possible

Item	Part No.	Description	Qty
1	DACbW006AA4000010010	DACb 2 x mA inputs	1
2	A4001289	2 core cable	2
3	PA03003388	DLG5 for 2 x mA sensors	1
4	86515T	Gemu Rotameter	1
5	125000Z	Rotameter Switch	1
6	PA07221061	Adaptor PVC 1/2"	
		tp M20x1.5mm	1
7	A25251004	25m of 8x5mm Black	
		PE tubing	1
8	A01721802	16mm Braided Hose	5
9	A250D3402	600mm x 600mm	
		Backboard Mounted	1
10	161-546-212	1/2" PVC Ball Valve GF	2
11	721-101-106	1/2" 90 deg PVC elbow	1
12		1/2" Schdule 80 pipe	1
13	PromLabel150	150mm ProMinent Label	1
14		Mounting Bracket	1



6.11 ProCal Granular Calcium Hypochlorite Feeder

ProCal_3240B Series Granular Calcium Hypochlorite System from ProMinent

The ProMinent ProCal series system generates a dilute Calcium Hypochlorite solution from granulated dry chemical. The granules are stored in a chamber, up to 40kg, where it is held until required.

The granules are transferred into a mixing tank where it is blended with the incoming water. The feeder is operated in manual or pulse duration mode in response to the amount of chlorine in the pool water. Automatic acid clean is incorporated.

- Suitable for pools up to 1,000,000 litres
- Capacity to 4kg/hr, (adjustable).
- Dimensions: 900 L x 500 W x 1170 H mm

FEATURES & BENEFITS

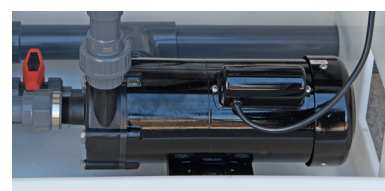
- The ProMinent unique compact design allows the use of granular Calcium Hypochlorite as your pool chlorine source.
- Reduced OH&S requirements.
- The ProCal series comes pre-wired and pre-plumbed for easy installation.
- Interface with ProMinent controllers or other pulse duration controller provides accurate and reliable chlorine control.
- Lower TDS, when compared to liquid chlorine.
- Granular Calcium Hypochlorite is less expensive and more readily available than tablets.
- Less impact on pH.
- Automatic acid clean.



Model	Pool Size
ProCal_3240B	1,000,000 litres

Spare Parts

AQUDW2-500550	Aqua Plus Booster Pump
275PS	Mag Drive Pump
PA55023125	Feeder Assy
PA28003028	Vibrator and Bracket Assy
PA59003409	Replacement kit Wilo/Mag Drive (Note: includes new Mag Drive)
K521-X200-1400	Diaphragm Valve



275PS Pump (no fittings included)



PA28003028



PA55023125



6.12 ProCal mini Granual Hypochloriate Feeder

ProMinent ProCal mini

The ProMinent® ProCal mini Granular Calcium Hypochlorite feeder generates a dilute solution from granulated dry chemical.

APPLICATIONS

- Hotel pools
- Apartment pools
- Hydrotherapy pools
- Retirement Village pools
- Spa pools
- Cold plunge pools

CAPACITY

- Up to 0.5 kg/hr of 70% granular calcium hypochlorite.

PACKAGE DIMENSIONS

- 1020 x 550 x 710mm [H x D x W]

FEATURES & BENEFITS

- The ProMinent® unique compact design allows the use of Granular Calcium Hypochlorite as your pool chlorine source.
- Reduced Occupational Health & Safety requirements.
- The ProCal mini series comes pre-wired and pre-plumbed for easy installation.
- Interface with ProMinent controllers or other pulse duration controllers provides accurate and reliable chlorine control.
- Lower TDS, when compared to liquid chlorine.
- Granular Calcium Hypochlorite is less expensive and more readily available than tablets.
- Less impact on pH when compared to liquid chlorine.
- Includes automatic acid clean system.

Model

ProCal mini



6.13 ProDos Calcium Hypochlorite Dosing Package

ProMinent® ProDos 250

The ProMinent® ProDos 250 Calcium Hypochlorite Feeder System generates a 0.5% chlorine solution from granulated calcium hypochlorite suitable for dosing into water supplies.

The system operates on a continuous batch process and includes the following.

APPLICATION

- Water Treatment Plants
- Waste Water Treatment Plants
- Rechlorination

PACKAGE DIMENSIONS

- Preparation Plant: 1170mm x 500mm x 900mm [H x D x W]
- Storage Tank: 1400mm x 1050mm x 1050mm [H x D x W]

BENEFITS

- The ProMinent ProDos 250 allows the use of granular calcium hypochlorite as your chlorine source.
- Reduced Occupational Health & Safety requirements compared to gas chlorine.
- Calcium hypochlorite does not degrade like liquid chlorine.
- The ProDos 250 system comes pre-wired and pre-plumbed for easy installation.
- Compact design means the system easily fits into most existing plant rooms, occupying far less space than large traditional liquid chlorine tank installations.

PREPARATION PLANT

- 30kg storage hopper
- Vibratory granular feeder
- Mixing chamber
- Transfer pump
- Acid cleaning pump
- Control panel

CAPACITY

- Up to 2.5kg/h Cl_2 as a 0.5% solution

STORAGE TANK

- 250L UV stabilised PE tank
- Chemically resistant Halar coated stirrer
- Manual 3-way valve to initiate acid clean
- All necessary interlocks



7.1 Dry Material Feeders

ProFeed dry material feeders can be used for any dry product in a powder or granular form.

ProFeed dry material feeders are used extensively in the water treatment and food industries, however, its application is limitless to any industry where controlled feed of dry material is required.

ProFeed consists of a 316 stainless steel body within which a feed screw and conditioning auger rotate at the same speed. The diameter of the feed screw and its speed is selected to provide the required feed rate of the product. The pitch of the feed screw varies to minimize bridging and to provide even draw down of material from the feed hopper. The conditioning auger helps condition the product prior to entering the feed screw which improves accuracy and avoids bridging.

Manual capacity adjustment can be achieved simply by turning the feeder on/off or by manual adjustment of a variable speed motor.

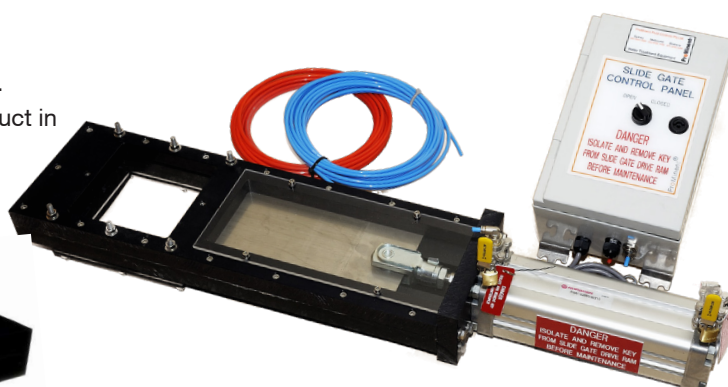
Automation can be achieved in a variety of ways, eg: infinite variable speed control from a process signal. Pulse duration control is also an option. AC, DC or pneumatic motors can be fitted. Hoppers of any size can be installed above the feeder. The entire system can be designed and constructed to suit your specific requirements.

ALSO AVAILABLE:

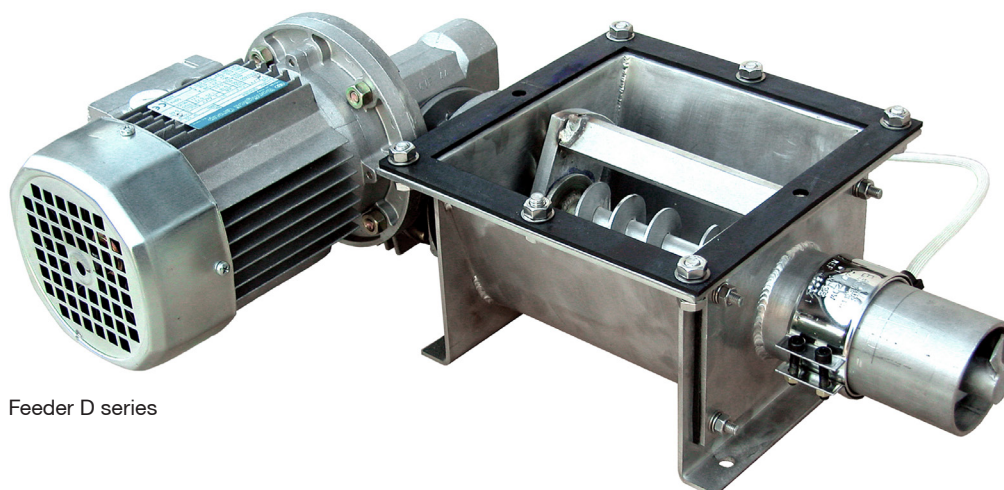
- Manual slidegates, Pneumatic slidegates
- Crumbler
- Solution tanks 304/316 SS with floor mounting stirrers
- Wetting assemblies ie:
 - **Ultra wet** for Polymer, P.A.C. etc.with hydraulic transfer.
 - **Ultra spray** for dust suppression eg: fluoride, lime etc.
- **ProLoad** bag loader (304SS) with internal bag slitter and microswitch for dust collector.
- Loss of weight recording/intergrating packages.
- Promix Polymer preparation systems with 2 or 3 tanks.
- Outlet spout heaters - to help eliminate caking of product in feeder spout.



Manual slidegate



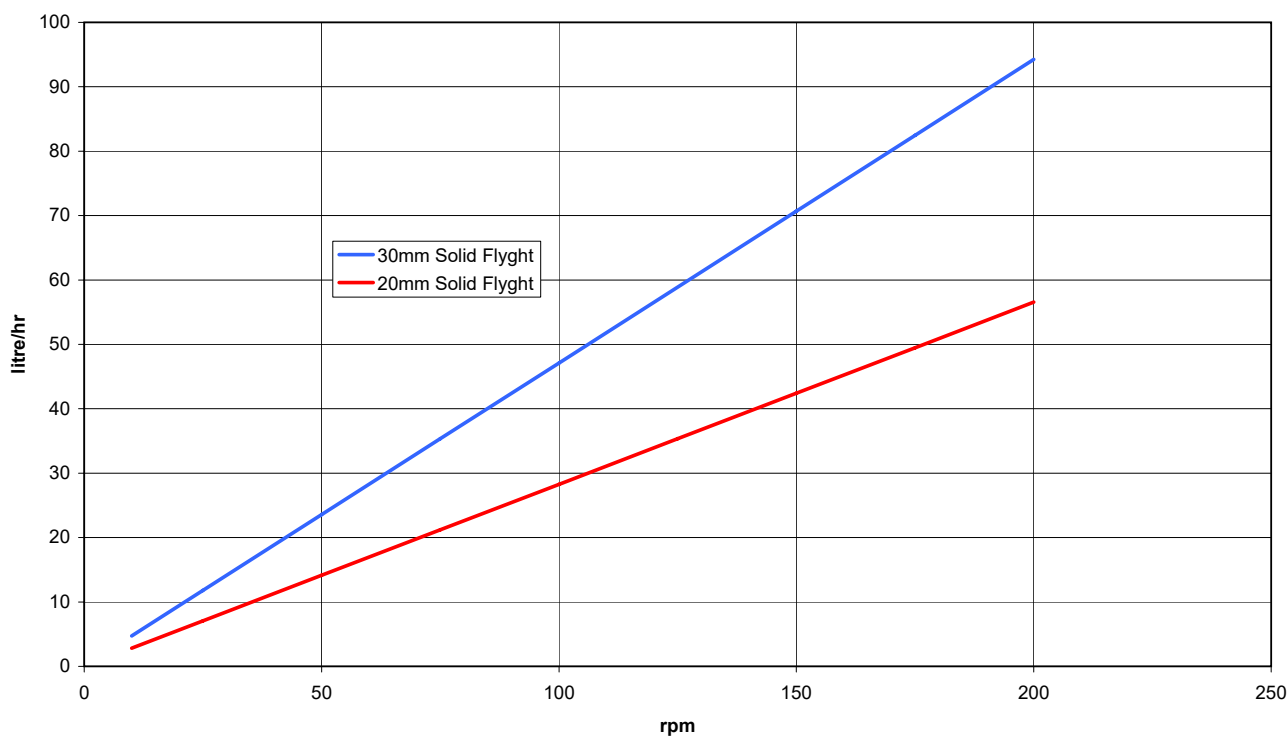
Pneumatic slidegate



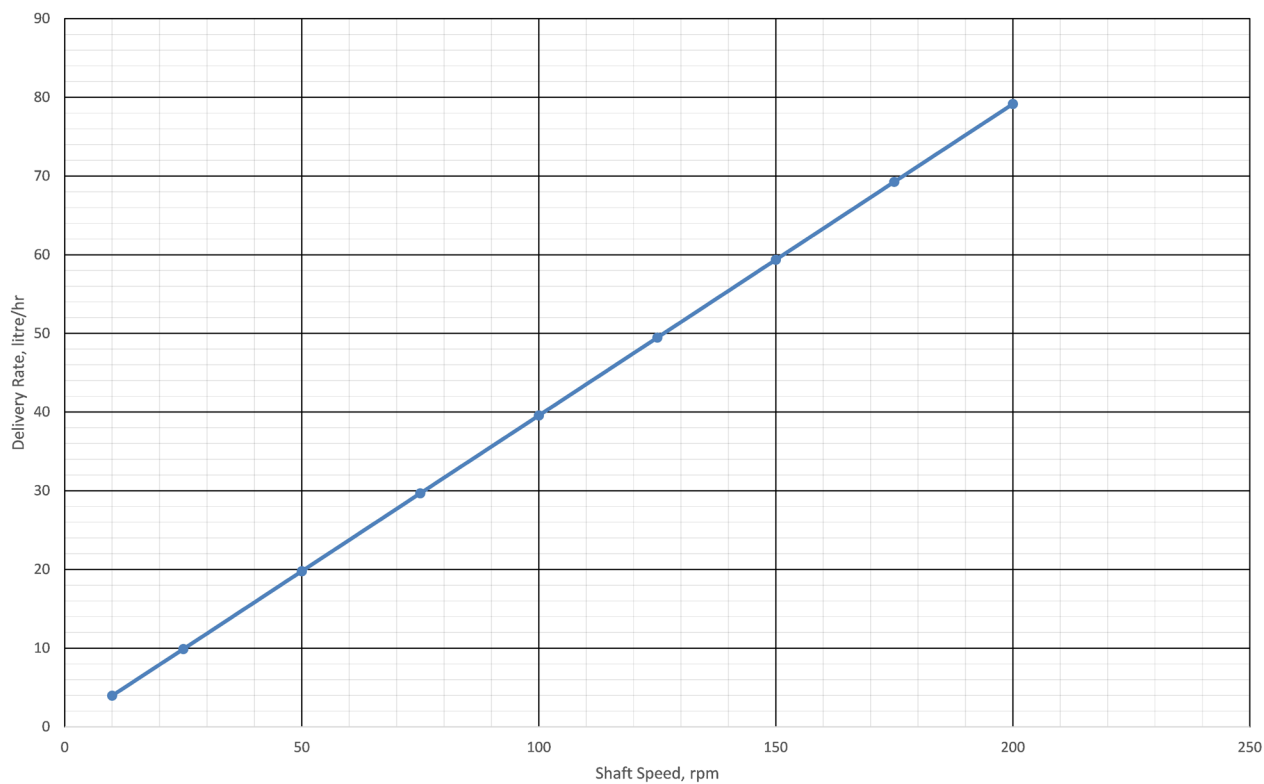
Feeder D series

7.2 Dry Material Feeder Charts

Feeder Delivery Rate vs rpm

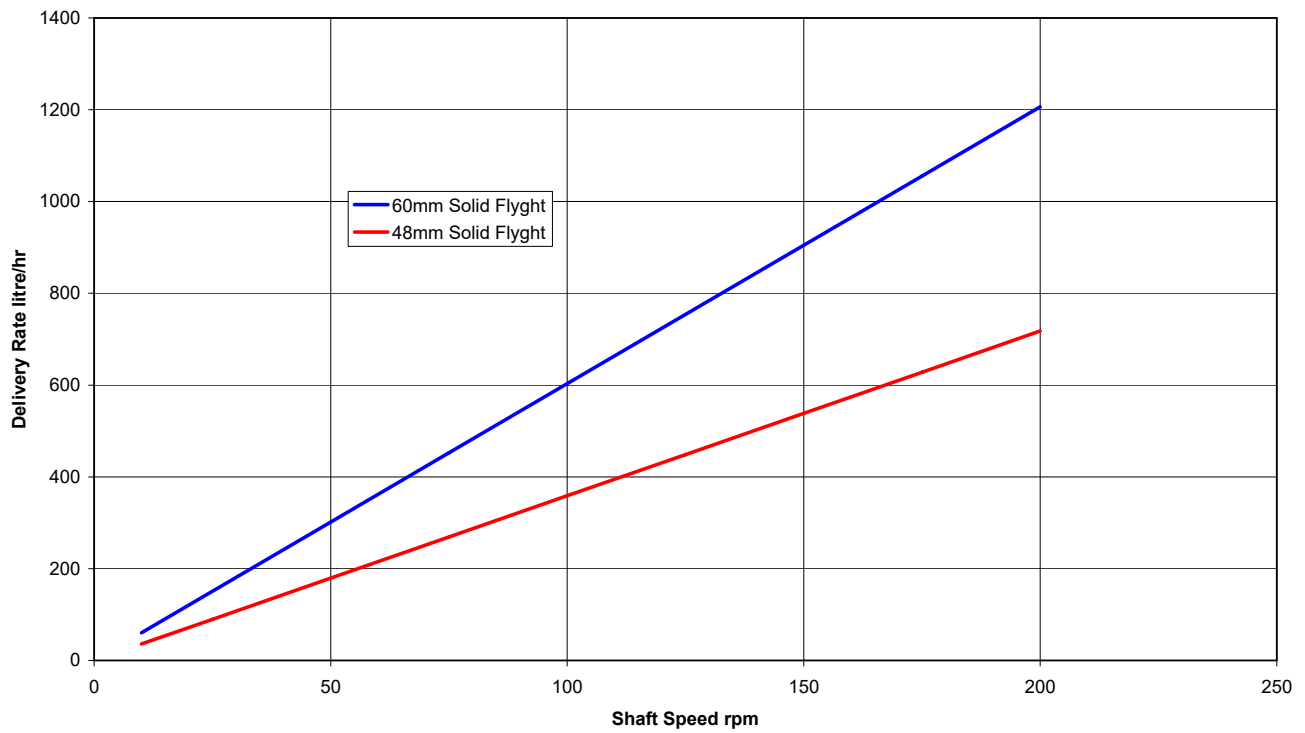


25mm Feeder Screw



7.2 Dry Material Feeder Charts

Feeder Delivery Rate vs RPM



7.3 Dry Material Feeders Identity Code

Series	Type	Feeder	Base Price
PF D	Small Feeder Capacity to 450 l/hr.		
PF B	Large Feeder Capacity to 1600 l/hr.		
Screw Size			
020	20mm	PFD020A	
025	25mm Solid Screw	PFD025S	
030	30mm	PFD030A	
048	48mm	PFD048A	
060	60mm	PFD060A	
048	48mm Solid Screw	PFD048S	
060	60mm Solid Screw	PFD060S	
048	48mm Solid Screw	PFB048S	
100	100mm } Series B only Solid Screw	PFB100S	
150	150mm } Series B only Solid Screw	PFB150S	
Screw			
A	Open	Options	
S	Solid 25, 48 and 60 only for D series		
X	Open Screw with Solid Insert 20 & 30 only for D series	add	
Conditioning Arms not available on B series			
0	Without Arms		
1	With Arms	add	
2	With Arms for Hi-Compaction Material	add	
Heater			
0	Without Heater	Heater add	
1	With Heater for Spout 240V 30W	020	
Gearbox Ratio		030	
		048	
0010	10:1	060	
0015	15:1	100	
0020	20:1	150	
0028	28:1	> Normally determined during manufacture	
0035	35:1		
0046	46:1		
0060	60:1		
0070	70:1		
0100	100:1		
0000	Special i.e. Double Reduction		
Motor			
A	0.18kW Standard on D Type		
B	0.37kW Standard on B up to 100		
C	0.55kW Standard on B 150		
D	0.09kW special for Double Reduction Gearbox		
X	Without Motor		
Y	Special Motor		
Motor IP Rating & Speed			
A	IP55 4 pole Standard on Series D & B		
B	IP55 6 pole Optional	add	
C	IP56 4 pole Optional		
D	IP56 6 pole Optional		
F	DIP rated 4 pole		
Y	No Motor		
Options			
0	None net price		
1	Mech Variator 5:1	Series D add	
2	Mech Variator 48 & 100	Series B add	
3	Mech Variator 100 & 150	Series B add	
4	ACVSD		
5	Cooling Fan for motor		
Hopper Plate Heater 203 X 45 240V 50W			

Example: D series, 48mm, solid screw, with arms, no heater, 20:1 gearbox ratio, standard motor, no options. refer Sydney engineering for replacement for older models.

PF	D	048	S	1	0	0020	A	A	0
----	---	-----	---	---	---	------	---	---	---

Example: D series, 48mm, solid screw, with arms, no heater, 20:1 gearbox ratio, standard motor, no options. refer Sydney engineering for replacement for older models.

PF D 048 S 1 0 0020 A A 0



7.4 Dry Material Feeders Associated Equipment

We can supply complete Dry Feeder packages to order, or supply only the following components to allow you to construct your own systems or replace old with new updated systems.

Part No.

CONVERSION OF A-SERIES FEEDER TO D-SERIES FEEDER

PA28002708

A replacement type A drive shaft (A28041514) may be required, and requires customer to return the OLD feeder tub.

Part No.

HOPPERS, IN 304 STAINLESS STEEL.

60 litre Standard size for D series feeder with flange to take Bag-Loader

A28042534

Hopper Dimensions

	W	x	L	x	H
60 litre	600	x	200	x	810
125 litre	600	x	600	x	700
180 litre	680	x	680	x	754
240 litre	800	x	800	x	904
360 litre	900	x	900	x	960
500 litre	1000	x	1000	x	1250

Note: over 500 litre consult Sydney office

BAG-LOADERS, IN 304 STAINLESS STEEL

800 mm high, stainless steel for D series feeder

A28002282

1000 mm high, stainless steel for D series feeder

A28002283

Front pull bag splitting option for above

(This is for VERY limited applications. See Sydney office for approval)

WETTING CONE, IN 304 SS FOR POLY AND PAC.

PA28002199

Eductors are available in the following sizes (for more information consult Sydney Office)

The eductors below need to be added to the above Wetting Cone Assembly. Select the required flow.

The eductors are suitable for injection against a pressure up to 1 bar, when provided with a motive pressure of 4.5 bar PVC Pipe size 40 mm.

1000 l/hr Note: an additional wash water of 480 l/hr is required for Wetting Cone

P62EJECTOR

2000 l/hr Note: an additional wash water of 660 l/hr is required for Wetting Cone

P63EJECTOR

4000 l/hr Note: an additional wash water of 660 l/hr is required for Wetting Cone

P65EJECTOR

A wetting cone overflow adaptor is available.

SLIDE GATES, to suit D-series Feeder series, with handwheel

PA28003205

SLIDE GATES, to suit D-series Feeder series, with pneumatic cylinder

PA2800XXXX

Note: Slide gates are intended for OCCASIONAL USE ONLY i.e. for maintenance.

For everyday closure we suggest the use of spout closer.

For more information contact Sydney office

Part No.

Bulky-Bag Loading systems (for PAC etc)

Crumblers, in stainless steel

PA28042565

Solution Tanks, in stainless steel and PE

Level switches, for Hoppers and Solution tanks

Dust Extraction Systems

Water Softeners

For other PRICES contact Sydney Office.

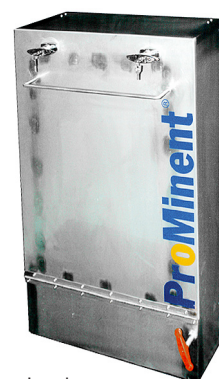


7.4 Dry Material Feeders Associated Equipment



PA28002199 Wetting Cone Assembly

Note: Maric valve A09002681 (4000 l/hr) is NOT included in assy.



Bag-Loader



Fluoride System



7.5 Dry Material Feeders ProFeed-690

Should you find it difficult to source spares for your A-690 feeders then consider replacing with a ProMinent ProFeed-690 replacement.

The ProFeed-690 stainless steel package comes with a hopper and supporting frame built to the same overall dimensions to provide a simple changeover solution. It will be supported by your existing solution tank and will accommodate your existing stirrer mounting.

Feeder comes with conditioning arms designed to provide maximum accuracy whilst minimising the potential for arching and blocking.

CAPACITY

- Up to 200 kg/h for soda ash
- Up to 90 kg/h for hydrated lime
- Equivalent feed rates for similar chemicals
- Should be set to run at 70Hz with VF drives to assist with turndown (*see section 3*)

To assist with turndown the feeder gearbox should be chosen to meet capacity when the VF drive is around 70Hz.. An optional SEW VF drive is available for a turndown of 35:1.



The hopper has an inspection port, and a mounting pad for a vibrator

PROFEED-690 with spout heater

OPTIONS:

VF drive 6:1 turndown 240v to 3 phase

VF drive 35:1 turndown via frequency and pulse duration 240v to 3 phase

VF drive 35:1 turndown via frequency and pulse duration 3 phase to 3 phase

Stirrer (client to use their existing stirrer bracket)

- 415 Volt

- 240 Volt

OPTION

Price to provide panel for VF drive, controls for heater, stirrer & vibrator

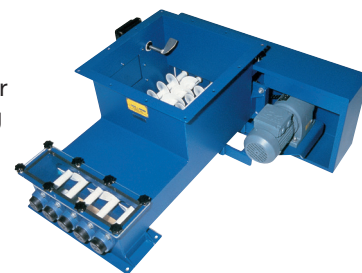
Solution tanks

7.6 Tomal Dry Feeders & Systems

A comprehensive range of products for reliable and accurate discharge and metering of powdered and granular solids.

TOMAL offers everything you need for solids handling – from screw feeders to polymer make-up systems; from containerised storage systems to complete turn-key metering installations.

With over 30 years experience in metering and batching of granular and powdered solids, our installations deliver reliable and economical solutions for a range of materials.



TOMAL Multiscrew Feeders

The heart of all of our systems

- High metering accuracy.
- Forced discharge with self-cleaning capacity.
- Increased live area provides safe silo discharge.
- Robust, low wear & low maintenance design and construction.

TOMAL Polymer Make-up Systems

For dissolving and dosing solid and liquid polymers

POLYREX POWDER & LIQUID SYSTEMS

- Tomal's proven feeder ensures high metering accuracy.
- Batch preparation system eliminates short circuits.
- User friendly control via the touch screen interface.
- Robust, reliable & low maintenance design and construction.



POLYMORE LIQUID POLYMER DILUTION SYSTEMS

- Compact in-line design.
- Multizone mixing chamber delivers a homogenous and fully activated polymer solution.
- No need for a separate dosing pump.

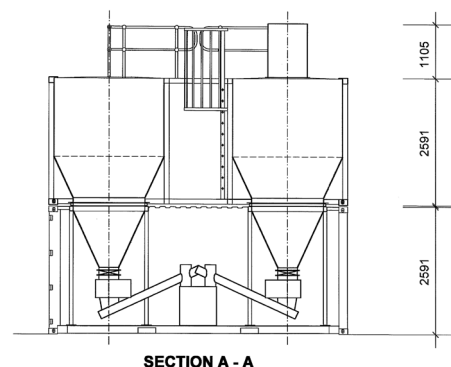


TOMAL T24 Container Systems

For storage & metering of dry solids at remote locations

- Up to 24 m³ storage capacity.
- Complete system is delivered using standard road transport.
- Minimises site preparation & installation costs.

**CONTACT SYDNEY OFFICE FOR FURTHER INFORMATION
ON YOUR SPECIFIC STORAGE & METERING NEEDS**



ProMinent® Concept PLUS Pumps

Concept Plus Dosing Pumps

ProMinent® CONCEPT PLUS

CNPB1000PPE200C01

CNPB1000PPE200CB1 *External Control Fitted*

CNPB1000NPB200C01

CNPB1000NPB200CB1 *External Control Fitted*

CNPB1601PPE200C01

CNPB1601PPE200CB1 *External Control Fitted*

CNPB1601NPB200C01

CNPB1601NPB200CB1 *External Control Fitted*

CNPB1601PVT200C01

CNPB1601PVT200CB1 *External Control Fitted*

CNPB1002PPE200C01

CNPB1002PPE200CB1 *External Control Fitted*

CNPB1002NPB200C01

CNPB1002NPB200CB1 *External Control Fitted*

CNPB1002PVT200C01

CNPB1002PVT200CB1 *External Control Fitted*

CNPB0704NPB200C01

CNPB0704NPB200CB1 *External Control Fitted*

CNPB0704PVT200C01

CNPB0704PVT200CB1 *External Control Fitted*

CNPB0309PPE200C01

CNPB0309PPE200CB1 *External Control Fitted*

CNPB0309NPB200C01

CNPB0309NPB200CB1 *External Control Fitted*

CNPB0309PVT200C01

CNPB0309PVT200CB1 *External Control Fitted*

CNPB0215PPE200C01

CNPB0215PPE200CB1 *External Control Fitted*

CNPB0215NPB200C01

CNPB0215NPB200CB1 *External Control Fitted*

CNPB0215PVT200C01

CNPB0215PVT200CB1 *External Control Fitted*

- Float Switch / External Control Fitted Kit for above (Float switch not included) 1046731

- Recommended 2m float switch is 142062

- Recommended 5m float switch is 142064

NOTE: Each pump is supplied with Foot Valve, Dosing Valve & Tube Pack consisting of 2m suction & 5m dosing tube.

Pump type	Minimum delivery rate at maximum back pressure			Minimum feed rate at medium back pressure			Max. stroke rate	Connection size ext. R x int. R	Suction lift*	Priming lift**	Admissible priming pressure suction side
	bar	l/h	ml/stroke	bar	l/h	ml/stroke	strokes/min	mm	m Wc	m Wc	bar
1000	10	0.74	0.07	5	0.97	0.09	180	6x4	6	6	1.8
1601	16	1.1	0.10	8	1.4	0.13	180	6x4	6	6	2
1002	10	2.1	0.19	5	2.6	0.24	180	6x4	5	5	2.5
0704	7	3.9	0.36	3.5	4.4	0.41	180	6x4	4	4	3
0309	3	9.0	0.83	1.5	13.0	1.2	180	8x5	2	2	2
0215	1.5	16.4	1.45	1.0	18.3	1.7	180	8x5	1.5	1.5	1.5

* Suction lift with filled suction line and liquid end

** Priming lifts with clean and wetted valves, metering fluid, water (20 °C), at 100 % stroke length, 180 strokes/min, atmospheric pressure outlet and/or open venting valve and correctly installed lines.

Materials

Liquid end material specification: see type code Housing: PPE, glass fibre reinforced

Electrical data

Mains frequency: 50 Hz / 60 Hz 100-230 volts ±10%



Meta Dosing Pumps

Meta Dosing Pumps

META PUMP WITH LIQUID END OF POLYPROPYLENE WITH MOTOR

Model		Bar	l/hr	Ratio	L/E	Stroke	ml/ stroke	strokes/ min.	Size SW	BSP	HT
MTMa 10130	PP	10	130	20:1	260	4 mm	30	72	25	3/4"	25
MTMa 10260	PP	10	260	10:1	260	4 mm	30	144	25	3/4"	25
MTMa 05265	PP	5	260	20:1	530	4 mm	61.3	72	25	3/4"	25
MTMa 09395	PP	9	395	10:1	260	6 mm	44.8	147	25	3/4"	25
MTMa 05530	PP	5	530	10:1	530	4 mm	61.3	144	25	3/4"	25
MTMa 03790	PP	3	790	10:1	530	6 mm	89.7	147	25	3/4"	25

META PUMP WITH LIQUID END OF STAINLESS STEEL WITH MOTOR

MTMa 10130	SS	10	130	20:1	260	4 mm	30	72		3/4"	
MTMa 10260	SS	10	260	10:1	260	4 mm	30	144		3/4"	
MTMa 05265	SS	5	260	20:1	530	4 mm	61.3	72		1"	
MTMa 09395	SS	9	395	10:1	260	6 mm	44.8	147		3/4"	
MTMa 05530	SS	5	530	10:1	530	4 mm	61.3	144		1"	
MTMa 03790	SS	3	790	10:1	530	6 mm	89.7	147		1"	

META PUMP WITH LIQUID END OF TEFLON WITH MOTOR

MTMa 10130	T	10	130	20:1	260	4 mm	30	72		1"	
MTMa 10260	T	10	260	10:1	260	4 mm	30	144		1"	
MTMa 05265	T	5	260	20:1	530	4 mm	61.3	72		1-1/4"	
MTMa 09395	T	9	395	10:1	260	6 mm	44.8	147		1"	
MTMa 05530	T	5	530	10:1	530	4 mm	61.3	144		1-1/4"	
MTMa 03790	T	3	790	10:1	530	6 mm	89.7	147		1-1/4"	

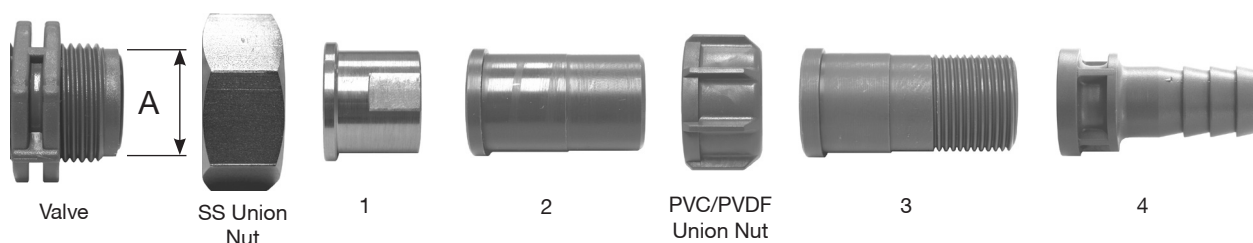
Motor 0.37 kw, 1440 rpm, 3 phase, 415 V, 50 Hz IP55

ACCESSORIES

Please use Yellow Pages for Foot Valve / Injection Valve / Back Pressure / Relief Valves.

(for project quantities only; some accessories may be available from ProMinent Bangalore)

Limited local stok is only available for (PP) Foot & Injection Valve - Please enquire with the Sydney Office.



Standard Sizes & Fittings for Motor Driven Pumps

Size	'A' Actual dia.	'A' BSP	1 SSF Socket	2 SWM PVC	3 BSPM PVC/PVDF	4 Hosetail PVC/ PVDF
DN20	41.6 mm	1-1/4"	3/4" BSP	25 NB	1"	25 mm
DN25	47.5 mm	1-1/2"	1" BSP	25 NB	1"	25 mm



ProMinent® Vario/ D Dosing Pumps

Vario/ D Dosing Pumps

VAMd		Vario Basic Type (VAMd)			
	bar	l/h	ml/stroke	SPM @50Hz	
12017	10 bar	16.6 l/h	3.6	77	PVT
12042	10 bar	42 l/h	3.6	195	
10025	10 bar	24.5 l/h	5.4	77	PVT
09039	8.5 bar	39.4 l/h	5.4	122	
07063	6.5 bar	63 l/h	5.4	195	
Liquid end material:					
PV	PVDF				
Seal material:					
T	PTFE seal				
Liquid end version:					
0	No springs				
1	With 2 valve springs, Hastelloy C 4; 0.1 bar				
Hydraulic connector:					
1	Union nut and PVC Solvent Weld				
3	Union nut and PVDF Male BSP				
5	Union nut and PVC Hosetail				
7	Union nut and PVDF Hosetail				
Version					
0	With ProMinent® logo (standard)				
Power supply:					
S	3 ph, 400 V; 50 Hz		0.07kw	IP55	
M	1 ph. AC, 230 V; 50 Hz		0.06kw	IP55	
Stroke sensor:					
0	No stroke sensor (standard)				
Stroke length adjustment:					
0	Manual				
Prepack Option					
P*	See Options				

Prepack option P*
P0 - 10008 - 10016 - 07026 - 07042
07012 - 07024 - 04039 - 04063
15mm PVC solvent weld male and 4 EPDM flat gaskets
PVDF 1/2" male BSPT adaptor supplied.

240 volt motor supplied with power cord.

Prepack option P*

P0 - 10008 - 10016 - 07026 - 07042

07012 - 07024 - 04039 - 04063

15mm PVC solvent weld male and 4 EPDM flat gaskets

PVDF 1/2" male BSPT adaptor supplied.

240 volt motor supplied with power cord.

The pump capacity is adjusted by varying the stroke length (3 mm) in 1% steps via a self locking adjusting knob.

The reproducible dosing accuracy is better than +- 2% providing installation has been correctly carried out, and in the stroke length range of 30 - 100%. (instructions in the operating instructions manual must be followed).

For safety reasons, all motor driven dosing pumps must be equipped with adequate protection against electrical overload.

Note: for protection use Multifunction valve or in-line relief valve, (for prices check 'Yellow Page' price List).

Liquid end materials in contact with chemicals

Liquid end	Suction/Discharge	Seals	Valve Balls Connector	Valve Seat	Std Connector
PVT	PVT (Polyvinylidene fluoride)	PVDF	Ceramic	PVDF	PVDF

NOTE: If Pump is to be controlled by AC Variable Frequency Controller reduce pressure by 30%.
For alternative pumps with control refer Beta, Gamma, and Sigma pumps in our 'Yellow Page' Price List.



Solenoid Dosing Pumps Back Pressure Valves

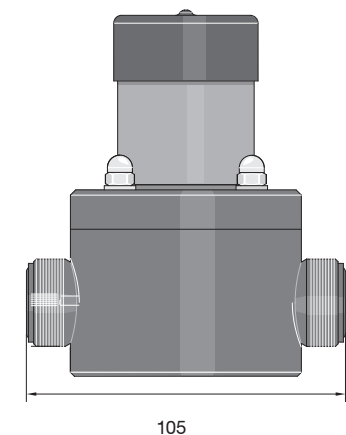
Accessories - Back Pressure Valves or Relief Valves

Back Pressure Valves BPV-DM-E

Adjustable back pressure valve for installation in the discharge line to create a constant back pressure. Also suitable for generating accurate dosing in the case of an open discharge port or where there is priming pressure on the vacuum side.

Warning: Back pressure valves are not fluid-tight stop taps! Installation instructions in the operating manual must be observed!

Applications: Dosing pumps alpha, Beta*, gamma, EXtronic*, Pneumados and Delta.



pk_1_101

						Part No.
DHV-DM-E	1 - 10 bar	6 x 4	PPE	PP/EPDM		P1009884-6
DHV-DM-E	1 - 10 bar	8 x 5	PPE	PP/EPDM		P1009884-8
DHV-DM-E	1 - 10 bar	12 x 9	PPE	PP/EPDM		P1009884-12
DHV-DM-E	1 - 10 bar	6 x 4	PPB	PP/FPMB		P1009886-6
DHV-DM-E	1 - 10 bar	8 x 5	PPB	PP/FPMB		P1009886-8
DHV-DM-E	1 - 10 bar	12 x 9	PPB	PP/FPMB		P1009886-12
DHV-DM-E	1 - 10 bar	6 x 4	PCE	PVC/EPDM		P1009885-6
DHV-DM-E	1 - 10 bar	8 x 5	PCE	PVC/EPDM		P1009885-8
DHV-DM-E	1 - 10 bar	12 x 9	PCE	PVC/EPDM		P1009885-12
DHV-DM-E	1 - 10 bar	6 x 4	PCB	PVC/FPMB		P1026450-6
DHV-DM-E	1 - 10 bar	8 x 5	PCB	PVC/FPMB		P1026450-8
DHV-DM-E	1 - 10 bar	12 x 9	PCB	PVC/FPMB		P1026450-12

Note:

Valves should normally be set to the desired back pressure on site after installation. However if you require them to be pre-set prior to dispatch then there would be a charge of: per valve.

PLEASE CHECK AVAILABILITY



Motor Driven Dosing Pumps Back Pressure Valves

Accessories - Back Pressure Valves or Relief Valves

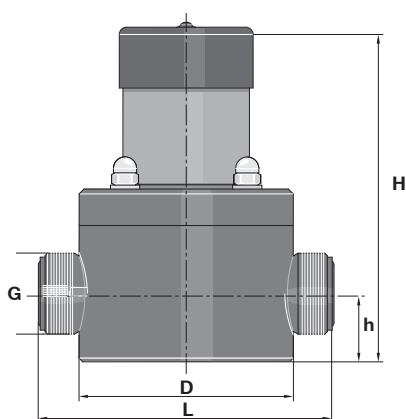
Back Pressure Valves or Relief Valves BPV-DM

Adjustable back pressure valve for installation in the discharge line to create a constant back pressure. Also suitable for generating accurate dosing in the case of an open discharge port or where there is priming pressure on the vacuum side.

Warning: Back pressure valves are not fluid-tight stop taps! Installation instructions in the operating manual must be observed!

Applications: Vario, Sigma/ 1, Sigma/ 2 and Sigma/ 3 metering pumps.

					Part No.
BPV-DM	1 - 10 bar	G 3/4	DN 10	PPE	P1009890
		G 1	DN 15	PPE	P1009896
		G 1 1/2	DN 25	PPE	P1009908
BPV-DM	1 - 10 bar	G 3/4	DN 10	PPB	P1009892
		G 1	DN 15	PPB	P1009898
		G 1 1/2	DN 25	PPB	P1009910
BPV-DM	1 - 10 bar	G 3/4	DN 10	PCE	P1009891
		G 1	DN 15	PCE	P1009897
BPV-DM	1 - 10 bar	G 3/4	DN 10	PCB	P1026451
		G 1	DN 15	PCB	P1026452
		G 1 1/2	DN 25	PCB	P1026453



pk_1_101_2

	G	L Approx.	H Approx.	D	h
	M20	105	120	65	31
DN10	G 3/4	120	120	65	31
DN15	G 1	120	136	88	28
DN25	G 1 1/2	150	145	98	

Material combinations	Housing	Seal
PPE	PP	EPDM
PPB	PP	FPM B
PCE	PVC	EPDM
PCB	PVC	FPM B

Connection Sizes

DN10 valve	=	1/2"	BSP M/M or 15 S/WM	Note: PP only in BSP M/M
DN15 valve	=	3/4"	BSP M/M or 20 S/WM	
DN20 valve	=	1"	BSP M/M or 25 S/WM	
DN25 valve	=	1"	BSP M/M or 25 S/WM	

Note:

Valves should normally be set to the desired back pressure on site after installation. However if you require them to be pre-set prior to dispatch then there would be an additional charge.

PLEASE CHECK AVAILABILITY



hydro Chlorination Systems

ProMinent offer Hydro Vacuum operated gas chlorinators with capacities available from a maximum of 75 gm/h through to a maximum 40 kg/h.

Chlorinators are suitable for direct bottle or drum mounting or alternatively for header mounting. With header mounting systems, we offer our horizontal and vertical headers complete with heating, flexible connections and auxiliary cylinder or drum valves.

Wherever possible, we recommend direct cylinder mounting to eliminate pressure lines and the costly replacement of flexibles and cylinder valves.

Hydro body parts are machined from a solid block of PVC and are not injection moulded. Machining is more expensive, but eliminates the residual stresses from the moulding process that lead to cracking and warping. Hydro chlorinators therefore have thicker and more rigid walls and the bodies will not warp.

The main diaphragm is double O-ring sealed. The rate valve is solid silver an alternative is PVDF.

The Hydro inlet valve assembly is easy to dismantle and clean without special tools.

Hydro use a yoke assembly for mounting the chlorinator which provides positive sealing.

The ejector check valve has a self-centring seal and provides positive shut-off.

Hydro's simple construction permits an operator to repair or replace parts, in most cases with only the need for a screwdriver.

Spare parts are readily available and are not overpriced. In many cases it may be cheaper to buy a new Hydro chlorinator than to repair another brand.

Systems available with Hydro chlorinators include remote ejectors, remote rate control valves, automatic changeover units and 4 - 20 mA servo control systems.

Other accessories such as chlorine gas leak detectors and complete installation of systems are available.

Please do not hesitate to contact one of our offices, should you require pricing or further details on this range of equipment.



hydro Gas Chlorinators

900 Series with ejector, remote meter & accessories

CYLINDER, WALL OR HEADER MOUNTING - 900 SERIES

Up to 2 kg/hr systems (Note: header, heater, auxiliary valves & flexibles extra)

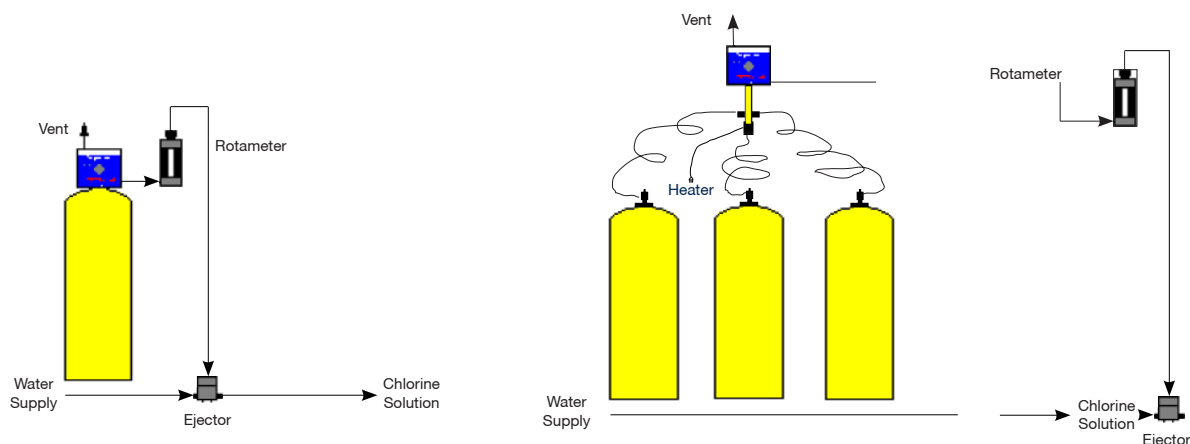
Max Capacity		PFC Part No.
75 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	920C
200 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	921C
500 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	922C
1000 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	923C
2000 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	924C

Up to 5 Kg/Hr Systems

1 x Vacuum Regulator, Remote Meter & Ejector	980C
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Up to 10 Kg/Hr Systems

1 x Vacuum Regulator, Remote Meter & Ejector	990C
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IN-BUILT AUTO CHANGEOVER SYSTEM (MAX 2 VACUUM REGULATORS) - 900 SERIES

Up to 2 kg/hr systems (Note: header, heater, auxiliary valves & flexibles extra)

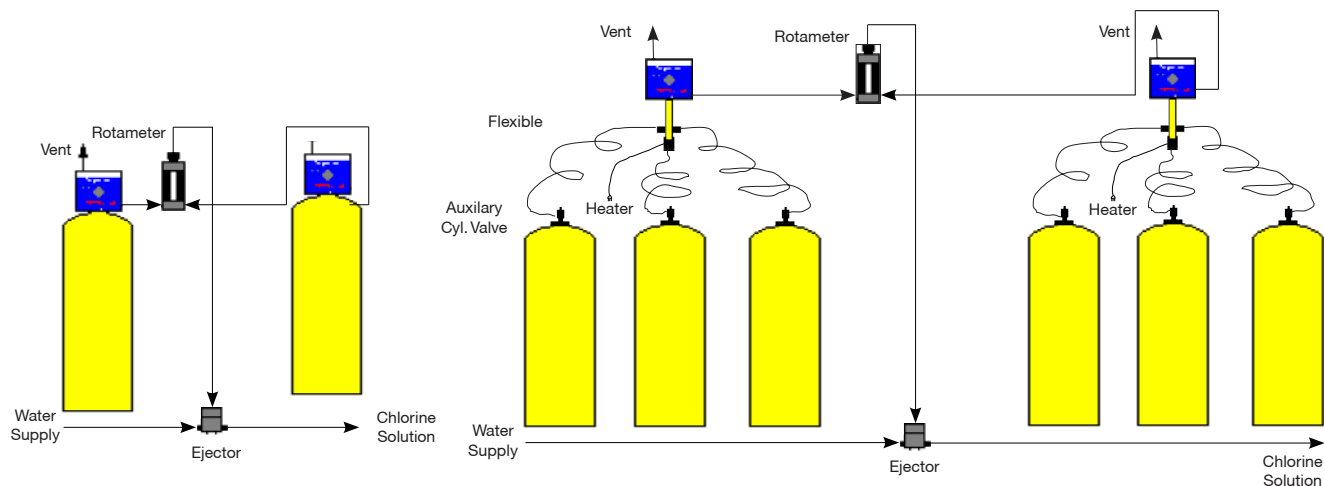
75 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	935C
200 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	945C
500 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	955C
1000 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	965C
2000 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	975C

Up to 5 Kg/Hr Systems

2 x Vacuum Regulator, Remote Meter & Ejector	985C
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Up to 10 Kg/Hr Systems

2 x Vacuum Regulator, Remote Meter & Ejector	995C
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hydro Gas Chlorinators

900 Series with ejector, remote meter & accessories

TON MOUNTING - 900 SERIES

Up to 2 kg/hr systems

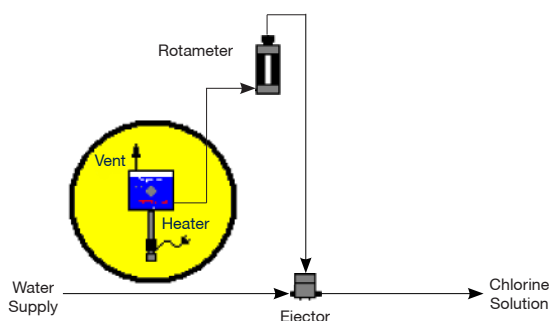
Max Capacity		PFC Part No.
75 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	943C
200 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	944C
500 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	954C
1000 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	964C
2000 g/h	1 x Vacuum Regulator, Remote Meter & Ejector	974C

up to 5 kg/hr systems

5 kg/h	1 x Vacuum Regulator, Remote Meter & Ejector	984C
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up to 10 kg/hr systems

10 kg/h	1 x Vacuum Regulator, Remote Meter & Ejector	994C
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IN-BUILT AUTO CHANGEOVER SYSTEM (MAX 2 VACUUM REGULATORS) - 900 SERIES

Up to 2 kg/hr systems

In-Built Auto Changeover System (1 drum per side)

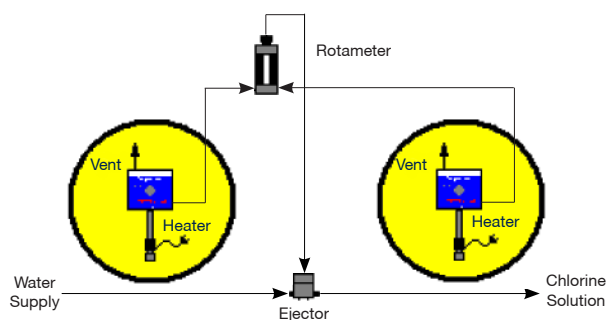
75 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	936C
200 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	946C
500 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	956C
1000 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	966C
2000 g/h	2 x Vacuum Regulator, Remote Meter & Ejector	976C

In-Built Auto Changeover System (1 drum per side)

5 kg/h	2 x Vacuum Regulator, Remote Meter & Ejector	986C
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In-Built Auto Changeover System (1 drum per side)

10 kg/h	2 x Vacuum Regulator, Remote Meter & Ejector	996C
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Note: All Ton mounting regulators, vertical & horizontal headers are fitted with 240V heaters. We suggest connection via a Residual Current Device (RCD) safety switch. As an option 24v heaters can be supplied with 240V/24V transformers in enclosure at an extra cost, (will handle two heaters).

PA55002460

hydro Gas Chlorinators

900 Series with ejector, remote meter & accessories

TON MOUNTING - 900 SERIES

Up to 2 kg/hr systems

Part No.

Auto Changeover System (2 drum per side)

976C-2X2

2 kg/h 4 x Vacuum Regulator, 1 x Remote Meter, 1 x Auto Changeover & 1 x Ejector

Up to 5 kg/hr systems

Auto Changeover System (2 drum per side)

986C-2X2

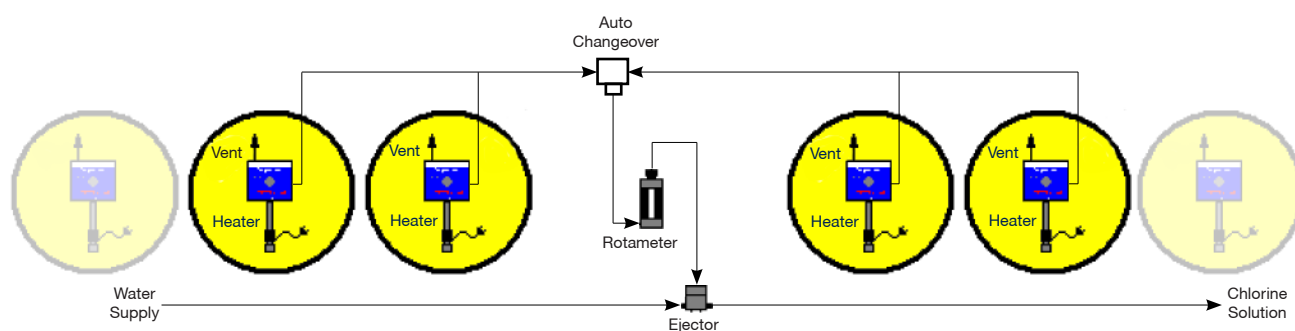
5 kg/h 4 x Vacuum Regulator, 1 x Remote Meter, 1 x Auto Changeover & 1 x Ejector

Up to 10 kg/hr systems (2 drum per side)

Auto Changeover System

996C-2X2

10 kg/h 4 x Vacuum Regulator, 1 x Remote Meter, 1 x Auto Changeover & 1 x Ejector



Note: For systems using more than 2 drums a side add the cost of extra vacuum regulators required.

Note: If more than 12 kg required use 20/40 kg Rotameter, Auto Changeover, Ejector or see High Capacity systems.

Note: Multiple 900 series vacuum regulators can be drum mounted, however when two or more containers or more than 10 kg/hr is required there may be unequal draw down thus leaving some Cl_2 in a drum at time of closedown. In this case use either;

- Header mounted vacuum regulator or
- Sequential change over. (see below and Sydney office for more information on this)

hydro Gas Chlorinators

Flow proportioning Systems 900 Series

NOTE

Each System includes a standard chlorinator unit (vacuum regulator, remote meter, and ejector), an Omni-Valve (automatic flow control valve) complete with standard fitting kit.

NOTE

For backboard ONLY see page 15



		PFC Part No.	
2 kg/hr	Cyl. or wall mounting (0.2, 0.5, 1 or 2 kg/hr capacity) * <u>one 900</u> series vacuum regulator	PA2400-FP920	(920C+OV-110)
2 kg/hr	Cyl. or wall mounting (0.2, 0.5, 1 or 2 kg/hr capacity) & in-built auto changeover <u>two 900</u> series vacuum regulators*	PA2400-FP965	(965C+OV-110)
5 kg/hr	Wall or Manifold mounting <u>one 900</u> series vacuum regulator	PA2400-FP980	(980C+OV-110)
5 kg/hr	Wall mounting & in-built auto changeover. <u>two 900</u> series vacuum regulators	PA2400-FP985	(985C+OV-110)
5 kg/hr	Ton mounting <u>one 900</u> series vacuum regulator	PA2400-FPT981	(981C+OV-110)
5 kg/hr	Ton mounting & in-built auto changeover. <u>two 900</u> series vacuum regulators	PA2400-FPT986	(986C+OV-110)
10 kg/hr	Ton mounting (10 kg/hr capacity) <u>one 900</u> series vacuum regulator	PA2400-FP991	(991C+OV-110)
10 kg/hr	Ton mounting & in-built auto changeover. <u>two 900</u> series vacuum regulators	PA2400-FP996	(996C+OV-110)

hydro Gas Chlorinators

Sequencing System for an all vacuum arrangement

The preferred arrangement for all gas chlorination systems, both cylinders and drums, is full vacuum with a vacuum regulator (vac reg) mounted directly on the cylinder/drum.

A pressure system using auxiliary valves, flexible connections and steel headers is available where an all vacuum system is not practical, i.e. in some 40 or 80 kg/hr systems etc. In these cases the vac reg is mounted on the pressure header.

The normal withdrawal rate with full vacuum systems, is 2 kg/hr from 70 kg cylinders and 10 kg/hr from 920kg drums at a room temperature of 20 deg C.

When there is a requirement for above 2 kg/hr with cylinders and above 10 kg/hr using drums, it has been normal practice to add a vac reg to a second cylinder or drum and to manifold two or more vac regs together via vacuum lines.

The use of full vacuum systems on multiple drums can lead to an uneven draw down. Thus if there were two duty drums with auto changeover to two standby drums, one of the first two drums would empty and as the second drum could not supply more than 10 kg/hr, the changeover valve would select the second set of two drums, thus leaving some chlorine in one of the first set of drums.

Note: in many systems with capacities of more than 10 kg/hr the actual use is less than 10 kg/hr and thus there is no problem with the two plus two system.

This is not a problem when using a pressure header as both drums will empty at the same time. However, a pressure system is not as safe as a full vacuum system.

For full vacuum systems that will run at above 2 kg/hr for cylinders and 10 kg/hr for drums we have a sequencing system.

A 3+ drum/cylinder sequencing system consists of;

3+ x solenoid valves (chlorine under vacuum type) mounted prior to each vacuum regulator.

A control panel which can select the required no of drums to be in service with visual indication for:

3+ Drum In-Service - Standby - Empty. *Note: The empty indicator flashes.*

To initiate the sequencing operation, 300 series Vacuum Regulators are used with an "Out of Gas" switch.

There is no limit to the number of drums that can be added.

Price for a 3 Cylinder System

Control Panel

3 x Solenoid

3 x 300 Series Vacuum Regulator

Each additional Cylinder:

Price for a 3 drum system;

Control panel for 3 x drums including interconnecting cables for Vacuum Regulator "out of gas" switch and solenoids.

3 x solenoid valves are

3 x 300 series, Vacuum Regulators with "empty switch"

Each additional drum:

Note: To complete the system, items such as below need to be considered.

PE tube Ejector Rotameter Installation Omni-Valve etc.

Individual Item costs:

PFC Part No.

300 Series Vacuum Regulator Cylinder Mount

VRH-100-CL2

300 Series Vacuum Regulator Ton Mount

VRH-50T-CL2-MS

Replacement FIP Solenoid Valve

12030909

hydro Gas Chlorinators

900 Series Equipment Components

900 SERIES - BOTTLE, VERTICAL WALL OR HORIZONTAL HEADER MOUNT

Up to 2 kg/hr systems

Max Capacity	PFC Part No.
Vacuum regulator	SVR-100-CL2
Remote meter 75 g/hr (76 mm rotameter)	MPH-100-CL2-0075
Remote meter 200 g/hr	MPH-100-CL2-0200
Remote meter 500 g/hr	MPH-100-CL2-0500
Remote meter 1000 g/hr	MPH-100-CL2-1000
Remote meter 2000 g/hr	MPH-100-CL2-2000
Change Over Valve	SO1000

Up to 5 kg/hr systems

Vacuum regulator	SVR-250-CL2
Remote meter 5 kg/hr (76 mm rotameter)	MPH-250-CL2
Change Over Valve	SO2000

Up to 10 kg/hr systems

Vacuum regulator	SVR-500-CL2
Remote meter 10 kg/hr (152 mm rotameter)	MPH-500-CL2
Change Over Valve	SO5000

900 SERIES - TON MOUNT

Up to 2 kg/hr systems

Vacuum regulator	SVR-10T-CL2
Vacuum regulator with offset for actuator	SVR-10T-CL2-AW
Remote meter 75 g/hr (76 mm rotameter)	MPH-100-CL2-0075
Remote meter 200 g/hr	MPH-100-CL2-0200
Remote meter 500 g/hr	MPH-100-CL2-0500
Remote meter 1000 g/hr	MPH-100-CL2-1000
Remote meter 2000 g/hr	MPH-100-CL2-2000
Change Over Valve	SO1000

Up to 5 kg/hr systems

Vacuum regulator	SVR-25T-CL2
Vacuum regulator with offset for actuator	SVR-25T-CL2-AW
Remote meter 5 kg/hr (76 mm rotameter)	MPH-250-CL2
Change Over Valve	SO2000

Up to 10 kg/hr systems

Vacuum regulator	SVR-50T-CL2
Vacuum regulator with offset for actuator	SVR-50T-CL2-AW
Remote meter 10 kg/hr (152 mm rotameter)	MPH-500-CL2
Change Over Valve	SO5000

Notes

1. The 900 series remote meters from 75 g/hr to 5 kg/hr have 2 inlets with the left one supplied plugged and 1 top inlet.
2. All are 1/4" ports.
3. If ProGuard3800 is fitted to a TON mount vacuum regulator, the actuator offset is required.

hydro Gas Chlorinators

Series Equipment Components - Ejectors 100PPD (2 kg/h)

EJ

Ejector 1000

3/4" ejector, 100 PPD (2000 gr/h) max.

(Up to 140 PSI / 10 bar back pressure)

Gas Type

C	Chlorine (Cl ₂)
S	Sulfur Dioxide (SO ₂)

Nozzle

2	#2, 100 PPD (2000 gr/h) max. STANDARD 1000 g/hr + 2000 g/hr (0.186" orifice)
3	#3, 50 PPD (1000 g/hr) max. STANDARD 200 g/hr (0.126" orifice)
4	#4, 100 PPD (2000 gr/h) max. (0.219" orifice)
5	#5, 100 PPD (2000 gr/h) max. STANDARD 500 g/hr (0.148" orifice)
16	#16, 10 PPD (200 gr/h) max. (0.106" orifice)
99D	#99, 25 PPD (500 gr/h) max. (0.099" orifice)
140F	#140F, 100 PPD (2000 gr/h) max. (0.140" orifice)

Vacuum Fitting

1	3/8" tubing connector [STANDARD]
2	1/2" tubing connector
3	5/8" tubing connector

High Back Pressure

0	None
1	High pressure support plates (up to 300 PSI / 21 bar back pressure)

Mounting Bracket

0	None
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EJ 1000 X X X X X

hydro Gas Chlorinators

Equipment Components - 250PPD (5kg/h)

EJ

Ejector 2000

2000 1-1/4" ejector, 250 PPD (5000 gr/h) max.
(Up to 140 PSI / 10 bar back pressure)

Gas Type

C Chlorine (Cl₂)
S Sulfur Dioxide (SO₂)

Nozzle/Throat

01 .250 nozzle / .380 throat
02 .275 nozzle / .380 throat
03 .296 nozzle / .380 throat
05 .375 nozzle / .380 throat **(STANDARD)**
X3 ENX-290 nozzle / .380 throat

Vacuum Fitting

1 3/8" tubing connector
2 1/2" tubing connector **(STANDARD)**
3 5/8" tubing connector

High Back Pressure

0 None
1 High pressure support plates
(Up to 300 PSI / 21 bar back pressure)

Mounting Bracket

0

EJ 2000 X X X X X

hydro Gas Chlorinators

Equipment Components - Ejector 500PPD (10kg/h)

EJ

Ejector 5000

5000 1-1/4" ejector, 500 PPD (5000 gr/h) max.
(Up to 140 PSI / 10 bar back pressure)

Gas Type

C Chlorine (Cl₂)
S Sulfur Dioxide (SO₂)

Nozzle/Throat

01 .250 nozzle / .380 throat
04 .296 nozzle / .560 throat
05 .375 nozzle / .560 throat **(STANDARD)**
X3 ENX-290 nozzle / .380 throat

Vacuum Fitting

1 3/8" tubing connector
2 1/2" tubing connector
3 5/8" tubing connector **(STANDARD)**

High Back Pressure

0 None
1 High pressure support plates
(Up to 300 PSI / 21 bar back pressure)

Mounting Bracket

0 None

EJ 5000 X X X X X

hydro Gas Chlorinators

High Capacity Manifold Mount Chlorination 20kg & 40kg

SINGLE SYSTEM

Max Capacity	Part No.
up to 20 kg Vacuum Regulator, Remote Meter, Ejector & accessories	3103C
up to 40 kg Vacuum Regulator, Remote Meter Ejector & accessories	3113C

SWITCH-OVER SYSTEM

up to 20 kg 2 x Vacuum Regulator, Remote Meter, Ejector, Switch-over & accessories	3105C
up to 40 kg 2 x Vacuum Regulator, Remote Meter, Ejector, Switch-over & accessories	3115C

COMPONENTS ONLY

Vacuum Regulator - VRH-2000-CL2

up to 40 kg Vacuum Regulator, No meter & No ejector.

VRH Type

Capacity 2000

- 2000** Up to 2000 PPD / 40kg/h Chlorine (Cl₂) or sulfur Dioxide (SO₂)
 Up to 1000 PPD / 20kg/h Ammonia (NH₃)
 Up to 1600 PPD / 32kg/h Carbon Dioxide (CO₂)

Gas Type

- CL2** Chlorine
SO2 Sulfur Dioxide
NH3 Ammonia
CO2 Carbon Dioxide

Inlet Connection Size

- 1** 3/4" NPT gas inlet connection
2 1" NPT gas inlet connection

Inlet Connection Direction

- L** Left - gas inlet connection FACING RIGHT
R Right - gas inlet connection FACING LEFT

Pressure Gauge

- 1** Installed

Y - Strainer

- 0** None included

Drip-leg Heater Power

- 1** 115 VAC
2 240 VAC
3 24 VDC

Flow Indicator

- 0** None included

VRH-2000 - X - X - X - X - X - X - X - X

Note: All Ton mounting regulators, vertical & horizontal headers are fitted with 240V heaters.

We suggest connection via a Residual Current Device (RCD) safety switch. As an option 24v heaters can be supplied with 240V/24V transformers in enclosure at an extra cost, (will handle two heaters).

PA55002460

Note: Header, auxiliary valves & flexibles extra see prices for this or complete header (manifold).

hydro Gas Chlorinators

High Capacity Manifold Mount Chlorination 20kg & 40kg

EJECTORS

Max Capacity	Part No.
20 kg High Capacity 2" Flanged Ejector.	EJH-1000-CL2
40 kg High Capacity 2" Flanged Ejector.	EJH-2000-CL2

REMOTE METERS

20 kg including flow tube and rate valve.	RMH-1000-CL2
40 kg including flow tube and rate valve.	RMH-2000-CL2

SWITCHOVER MODULES

20 kg	SOH-2000-CL2
40 kg	SOH-4000-CL2

hydro Gas Chlorinators

Series 110 Omni-Valve – Gas feed up to (60kg/h)

OV-110

Gas Type

A	Ammonia (NH ₃)
C	Chlorine (Cl ₂)
D	Carbon Dioxide (CO ₂)
S	Sulfur Dioxide (SO ₂)

Valve Body: Size & Maximum Capacity

1	1/4" NPT inlet/outlet w/ 3/8" tube connectors (2 Kg/h)
2	1/4" NPT inlet/outlet w/ 1/2" tube connectors (5 Kg/h)
3	1/2" NPT inlet/outlet w/ 5/8" tube connectors (10 Kg/h)
4	1" NPT Inlet / Outlet (U40 Kg/h)
5	1.5 Socket Inlet / Outlet (60 Kg/h)

Stem Capacity (V-notch)

04	75 gr/h
10	200 gr/h
25	500 gr/h
50	1000 gr/h
100	2000 gr/h
250	5000 gr/h
500	10 Kg/h
1K	20 Kg/h
2K	40 Kg/h
3K	60 Kg/h

NOTES

1. 120-240 VAC or 12 VDC input voltage.

CAPACITY CONVERSIONS:

For gases other than chlorine (Cl₂) apply the corresponding capacity conversion factor:

Ammonia (NH ₃)	=	0.50
Carbon Dioxide (CO ₂)	=	0.80
Sulfur Dioxide (SO ₂)	=	0.95

OV-110 - X - X - X

hydro Gas Chlorinators

Series 110 Omni-Valve – BACKBOARD PACKAGES

OMNI-VALVE BACKBOARD PACKAGES INCLUDING:

- 600 x 750 x 15mm
- Omni-Valve
- Rotameter
- 240v power lead
- Isolation valves
- Inlet/outlet fittings
 - 2kg 3/8 tube
 - 5kg 1/2 tube
 - 10kg 5/8 tube



		Part No.
Chlorination Omni-Valve Backboard Package	75g/hr	PA24003581
Chlorination Omni-Valve Backboard Package	200g/hr	PA24003582
Chlorination Omni-Valve Backboard Package	500g/hr	PA24003583
Chlorination Omni-Valve Backboard Package	1000g/hr	PA24003584
Chlorination Omni-Valve Backboard Package	2000g/hr	PA24003585
Chlorination Omni-Valve Backboard Package	5Kg/hr	PA24003586
Chlorination Omni-Valve Backboard Package	10Kg/hr	PA24003587

hydro Gas Chlorinators

Accessories

EMERGENCY SHUTDOWN - ELECTRIC

ProMinent Electric ProGuard3800 Chlorine gas emergency shut off for cylinders (bottles) or Drum



The “Emergency shut off system” triggers the electrical actuator which mounts directly on the valve of the cylinder or container. An operator can manually close all the valves via the ProGuard 3800 control panel.

UNIT INCLUDES:

- Input for chlorine gas detector alarm signal
- Reset button
- Manual shut down button
- Automatic shut down from chlorine gas leak detector
- Battery backup:
 - a) On load: 4 hours
 - b) On standby: 24 hours
- Automatic shutdown at low UPS battery
- Low Battery signal output
- Control cabinet dimension: 800 x 600 x 300mm
- 12V electric Actuators
- Adjustable torque
- No tools required for Actuator fitment
- Valve closure in less than 4 seconds



PART A CONTROL PANEL: 800 X 600 X 300MM

	PFC Part No.
Max. 2 cylinder/drum	PM3800EPESS-CP/2-A
Max. 6 cylinder/drum	PM3800EPESS-CP/6-A
Max. 10 cylinder/drum	PM3800EPESS-CP/10-A

PART B 12 V ACTUATOR SUPPLIED WITH 10 METRE CABLE

For rapid closure of gas valve. Must supply 1 actuator for each drum/cylinder

Cylinder	PM3800EPSS-EAY
Drum	PM3800EPESS-EA2

Note: Drum regulator must have “-AW” “Actuator off set”.

hydro Gas Chlorinators

Accessories

EMERGENCY SHUTDOWN - PNEUMATIC

ProMinent ProGuard Series 3 Chlorinator Shut Off Control Package for Drums or Cylinders (Bottles)

PART A

Wall mounted Master control cabinet for activation of one or multiple pneumatic auto valve close ratchets. Power required, 240 volt. Bottled air or nitrogen required plus regulator, (by others).

Features:

- Fail safe pneumatic operation with low pressure alarm.
- 240 volt operation with over 8 hours battery back-up.
- Operates from alarm contact on chlorine leak detector, (Separate supply).



		PFC Part No.
For up to 4 cyl/drums	Part A	PA24002937
For more than 4 cyl/drums	Part A	PA24002938

PART B

Bottle Mounting 1 x Pneumatic cylinder and ratchet assembly with special bracket for mounting on each vacuum regulator.	Part B	PA24112715
TON Mounting 1 x Pneumatic cylinder and ratchet assembly with special bracket for mounting on each vacuum regulator.	Part B	PA24122715
Pressure Header 1 x Pneumatic cylinder and ratchet assembly with special bracket for mounting on each auxiliary valve.	Part B	PA24002716

Extras: auxiliary valve Part No: IVH-100-500 plus copper flexibles with 3/4" unions or complete horizontal or vertical header if required.

Quantity required:

For one drum or cylinder add 1 x Part A + 1 x Part B

For up to 8 drums, cylinders or header add 1 x Part A + Part B x number of drums or cylinders required.

Note: Vacuum systems

Both Part B above, Bottle & Ton, are suitable for Hydro 900 series

Vacuum Regulators. (For retro fitting to Hydro 500, 200 and 700 series consult Sydney office).

Note: for 500 series bottle mount, the clamp yoke will have to be changed to P/No: A24072717

Air or Nitrogen Regulator available from BOC Gasses approx \$156

ORICA Both Hydro bottle mount and Ton mount vacuum regulators can be fitted with an extension arm to allow fitting of **ORICA** auto valve closing.

Extra Price per Cylinder

Extra Price per Ton mount

Note: the above will also fit Acromet and W & T (with appropriate adaptor)

hydro Gas Chlorinators

Accessories

CHLORINE LEAK DETECTOR

	PFC Part No.
Chlorine Leak Detector, with single Digital Sensor & Battery Back-up.	GA-180-1-0-0-0-1-2-1-1
Chlorine Leak Detector, with two Digital Sensors & Battery Back-up.	GA-180-2-0-0-0-1-2-1-1
Chlorine Leak Detector, with three Digital Sensors & Battery Back-up.	GA-180-3-0-0-0-1-2-1-1
Chlorine Leak Detector, with four Digital Sensors & Battery Back-up.	GA-180-4-0-0-0-1-2-1-1

4-20MA OUTPUT INCLUDED FOR UP TO 4 SENSORS

Replacement Sensor	Element only 0-10 ppm	GA-SEO-CL2-10
Replacement Sensor	0-10 ppm w/enclosure	GA-CRS-CL2-10
Replacement Battery		GA-BAT

Features

- Visual and audible alarm (integral 90dB horn & danger/warning LED's).
- Individual sensor alarm relays, (user adjustable, latching & non-latching failsafe & non-failsafe).
- Backlit Liquid Crystal Display (LCD) for easy reading, 2 line, 20 spaces.
- 12 Hour Battery Back-Up included
- Isolated 4-20 mA Outputs.
- MODBUS communication
- Password Protectio

NOTE: Gases Cl, O3 and ClO2 all use the same sensors/controllers (gas can be freely selected in menu). However if O3 or ClO2 is required, please clearly indicate gas on order so stickers and configuration can be adjusted accordingly. For other Gases unit will need to be a special order.



hydro Gas Chlorinators

Accessories

VRL-900 CHLORINE DRUM VACUUM REGULATOR LIFTING DEVICE

Prominent can now supply a lifting system for placing Vacuum regulators on to 920kg Chlorine drums.

This floor mounted VRL-900 allows the Vacuum Regulator to be easily removed from the chlorine drum outlet valve and replaced on a new drum outlet valve.

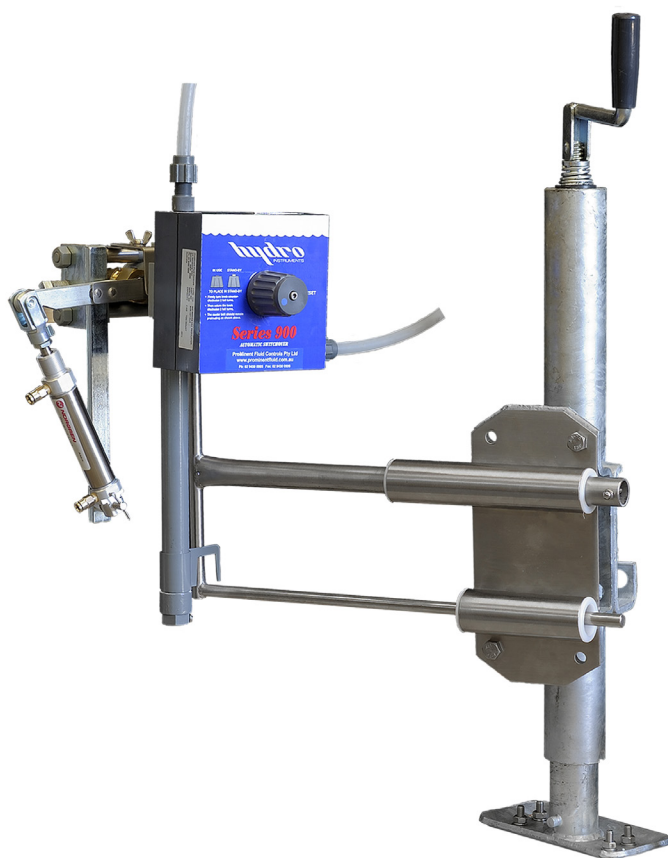
The VRL-900 is adjustable for height as well as horizontal positioning with limited rotation to ensure connection to alternate drums and drum valve position.

The VRL-900 is suitable for drums floor mounted or on scales, and is adaptable to trolley mounted drums.

The VRL-900 is especially useful when a Proguard (automatic valve closing system) is used due to the extra weight.

The VRL-900 provides support for the Vacuum Regulator during the change over from drum to drum. It also reduces possible operator contact with the drip leg heater. It's designed to allow the Vacuum Regulator to be removed vertically at any time without restriction.

	PFC Part No.
Model VRL-900	PA24003194
Additional Bracket for Trolley Mount Systems	A240E3204



Note: Consideration must be given to ensure that the unit does not restrict the designated walkway.

hydro Gas Chlorinators

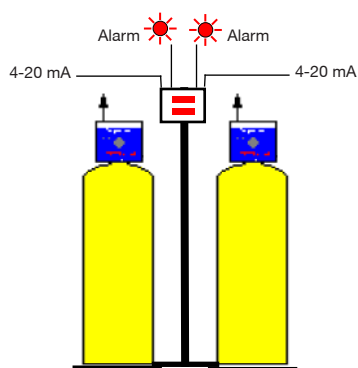
Accessories

BOTTLE & DRUM SCALES

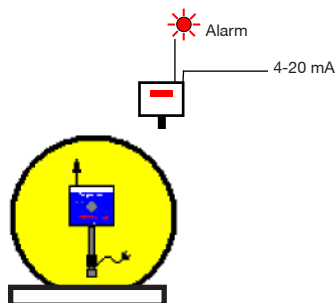
	PFC Part No.
Single Cylinder scales with Digital Alarm and 4-20mA out incl. safety chains	PA24003377
Dual Cylinder scales with Digital Alarm and 4-20mA out incl. safety chains	PA24003360
EI1000 Single Chlorine Drum Scale with Digital Alarm and 4-20mA out	PA24003382
EI2000 Dual Chlorine Drum Scale with Digital Alarm and 4-20mA out	PA24003383
Trolley & Single Drum Scale & EI1000 control unit with Digital Alarm and 4-20mA out	PA24003384
Trolley only for Single Drum (excluding Base - Single Drum only) Note: advise direction of wheels in relation to scale)	

SAFETY CHAINS

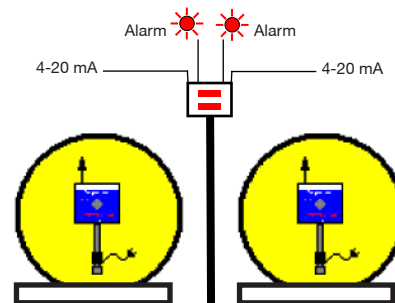
Safety Chains & Brackets Dual Cylinder	PA31001936
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PA24003360
Dual Cylinder Scale &
Control Unit (Digital)
with alarm



PA24003382
Single Drum Scale &
Control Unit (Digital)
with alarm & 4-20 mA



PA24003383
Twin Drum Scale &
Control Unit (Digital)
with alarm & 4-20 mA

Note: For other options contact Sydney Office.

hydro Gas Chlorinators

Accessories

PRESSURE CONNECTIONS:

	PC Part No.
Auxiliary Cylinder Valve, 3/4" inlet and outlet.	IVH-100-500
Flexible Connection cad. plated annealed copper with 3/4" unions, (W & T type drum connection).	
1.8m length ... TON	FX-06
1.0m length ... Bottle	FX-04
Superior Chlorine Valve, for horizontal header mounting.	1214-B1

VERTICAL HEADER:

****Please see page 20 for details****

HORIZONTAL HEADER:

Each header (manifold) comes complete with header valve for vacuum regulator, drip leg & heater, and for EACH connection 1 x header valve, 1 x auxiliary valve & 1 x flexible connection.

	2 x drums	HMT-122
	3 x drums	HMT-123
	4 x drums	HMT-124

Chlorine Manifold Y-Strainer (weight 2 kg)

Carbon Steel Body, Monel Screen, Lead Gasket Sealed Cover	3/4" NPT	RH-6786
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Chlorine Manifold Filter (weight 20 kg)

25,000 lb. tensile strength grey iron casting rated at 560 psi (38 bar), and comes with removable filter cartridge. Acts as a filter and condensate trap.

	C-282
Heater for header mounting, 240V AC, 25W NB: Use RCD Safety Switch	A24002479
<i>This is for all for 200, 500, 700 & 900 series Ton mount vacuum regulators</i>	
Optional heater for header mounting, 24V AC, 25W c/w 240v transformer	PA55052460
Note: for second 24v heater (max. 2 heaters per transformer)	
For extra ton units Power Supply: 2 x 24V60Va 240V Supply	PA55002460
Heater for ton mounting drip leg, 24V AC, 25W, (75 x 50 pad)	84A24V
Universal TON mounting Drip Leg c/w heater	PA-TUY-1
Complete Dripleg assembly for 900 series Ton Mount Vacuum Regulator	VRH-999-500

INJECTION SYSTEMS:

Withdrawable * PVC Injection lance, with 20mm hose tail, inc. SS valve & nipple	PA07621807
Withdrawable * PVC injection lance, with 25mm hose tail, inc. SS valve & nipple	PA07621808

***Note:** Suitable for maximum of 2 kg/h chlorine.

Non Withdrawable PVC Injection/Diffuser tube c/w 1" BSPF	
PVC valve & 25mm Hose Tail. Note: Suitable for maximum of 2 kg/h chlorine.	PA24921972
Non Withdrawable PVC Injection/Diffuser tube c/w 1 1/2" BSPF	
PVC valve & 40mm Hose Tail. Note: Suitable for maximum of 10 kg/h chlorine.	PA24521971

Indicators

Auto vacuum change over Left/Right cylinder bank indicator,	PA24002108
mounted in 175 x 125 PVC enclosure. Note: Requires auto changeover valve or extra remote meter	
High/Low vacuum indicator fitted to remote meter,	PA24002109
mounted in 175 x 125 PVC enclosure. Note: Requires remote meter	
Note: if both PA24002108 and 2109 are used together total price can be reduced	
Special lubricant for O-Rings MOLYKOTE 100gm tube	FS 3452
Twisted Spanner	HTS-1
Vacuum Gauge 2-1/2" dia. Direct Mount with Diaphragm Protection	VGL-30
Carbon Vent Trap ...	PA24002983

hydro Gas Chlorinators

Vertical Pressure Manifolds - For Cl2 upright cylinders

MA

Number of Connections

- 1L** One (1) upright cylinder
(Gas inlet connection facing left. Includes: One (1) 12" drip-leg w/ heater.)
- 1R** One (1) upright cylinder
(Gas inlet connection facing right. Includes: One (1) 12" drip-leg w/ heater.)
- 2** Two (2) upright cylinders
(Includes: One (1) 12" drip-leg w/ heater.)
- 3L** T hree (3) upright cylinders
(Third inlet connection facing left. Includes: One (1) 12" drip-leg w/ heater.)
- 3R** Three (3) upright cylinders
(Third inlet connection facing right. Includes: One (1) 12" drip-leg w/ heater.)
- 4** Four (4) upright cylinders
(Includes: One (1) 12" drip-leg w/ heaters.)

Heater Power

- 1** 115 VAC, 50/60 Hz (25W w/ 70°C max. thermostat)
- 2** 230 VAC, 50/60 Hz (25W w/ 70°C max. thermostat)
- 3** 24 VDC (25W w/ 70°C max. thermostat)

Flexible Connector

- 0** None
- 4** Flexible Connector
One (1) flexible connector is supplied per connection.)

Isolation Valve Assembly

- 0** None
- 2 AUS** Isolation Valve Assembly
One (1) isolation valve assembly is supplied per connection.)

NOTES:

1. Prices in (...) are subtracted from the overall price.
2. Gas inlet connections are CGA #660.
3. For replacement flex connector adaptors, part no. A-345, please see price sheet Manifold Accessories (MTCC).

INSTALLATION:

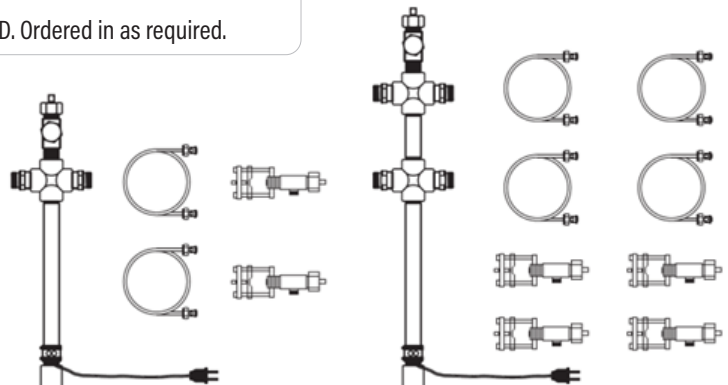
Pressure manifolds include a wall mounting installation kit.

DELIVERY:

Non-stock item. 2-3 week delivery.

NOTE:

Headers are NOT STOCKED. Ordered in as required.



MA - X - X - X - X

hydro Gas Chlorinators

Accessories - Flexible Tubing

PE TUBE

P-138-Y	3/8" OD X 1/4" ID Vacuum Tubing / Meter (2kg/hr)
P-112-Y	1/2" OD X 3/8" ID Vacuum Tubing / Meter (5kg/hr)
P-158/Y	5/8" OD X 1/2" ID Vacuum Tubing / Meter (10kg/hr)

KYNAR® TUBE FITTING

BKF-64	Black Kynar Tube Connection. 1/4" NPT x 3/8" Tube (2kg/hr)
BKF-84	Black Kynar Tube. 1/4" NPT x 1/2" Tube (5kg/hr)
BKF-108	Black Kynar Tube Connection. 1/2" NPT x 5/8" Tube (10kg/hr)
BKT-6	Black Kynar Tube Union Tee 3/8" Tube (2kg/hr)
BKT-8	Black Kynar Tube Union Tee 1/2" Tube (5kg/hr)
BKT-10	Black Kynar Tube Union Tee 5/8" Tube (10kg/hr)

ALTERNATIVE (NO LONGER USED)

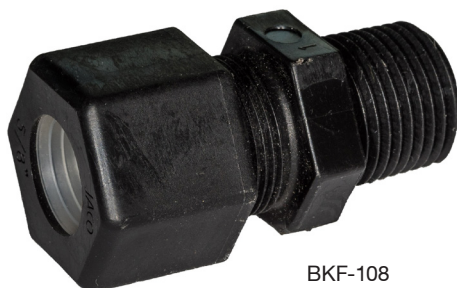
E.V.A. Chlorine vacuum tubing 12 x 8mm (<i>ONLY for older systems</i>)	<i>Note: price is per metre</i>	A24001626
E.V.A. Chlorine vacuum tubing 17 x 12mm (<i>ONLY for older systems</i>)	<i>Note: price is per metre</i>	A24001737



BKF-64



BKT-10



BKF-108

Note: For over 50 years, Kynar® polyvinylidene fluoride (PVDF) resin, a specialty thermoplastic fluoropolymer, has been used in applications that require high strength and purity. Known for its high purity, Kynar® PVDF resins also provide chemical resistance to acids and bases, abrasion resistance, flame retardency, mechanical strength, impact resistance, thermal stability and ease of processing, making it the ideal choice for the development of highly durable and sustainable lightweight materials.

hydro Gas Chlorinators

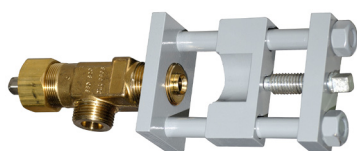
Accessories

ADAPTORS

	PFC Part No.	
15mm PVC Solvent Weld to 12 x 8 Tube	PA24002142	
15mm PVC Solvent Weld to 17 x 12 Tube	PA24001001	
15mm PVC Solvent Weld to 1/2" NPT	PA24022792	
1/4" NPT O-Ring to 12 x 8 Tube	PA24001634	
3/8" NPT O-Ring to 12 x 8 Tube	PA24001635	
3/8" NPT O-Ring to 17 x 12 Tube	PA24001738	
1/2" NPT O-Ring to 17 x 12 Tube	PA24022768	
Adaptor 1/4" NPS M/M with O-Rings	PA24003231	
Adaptor 3/8" NPS M/M with O-Rings	PA24003232	
Adaptor 1/2" NPS M/M with O-Rings	PA24003233	



C-282 Filter



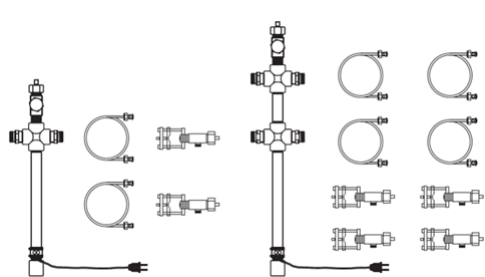
IVH-100-500
Auxiliary Cylinder Valve



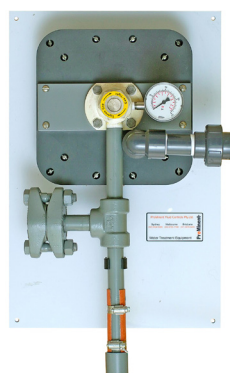
RH-6786
Chlorine manifold
Inline Strainer



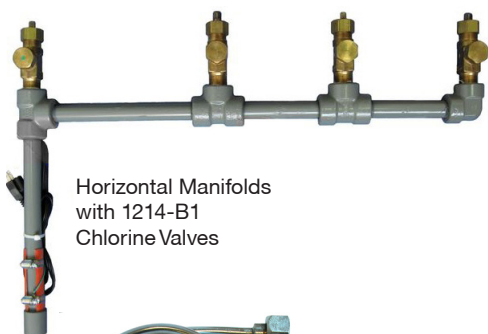
PA-TUY-1
Universal Ton
Drip Leg



Vertical Header



VRH-2000-CL2
20-40 Vacuum Regulator



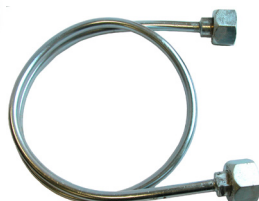
Horizontal Manifolds
with 1214-B1
Chlorine Valves



HTS-1 Twisted Spanner



1214-B1
Chlorine Valve
for Horizontal Header



1.8m FX-06 & 1.2m FX-04
Flexible connections
for Drums & Cylinders, Tested.

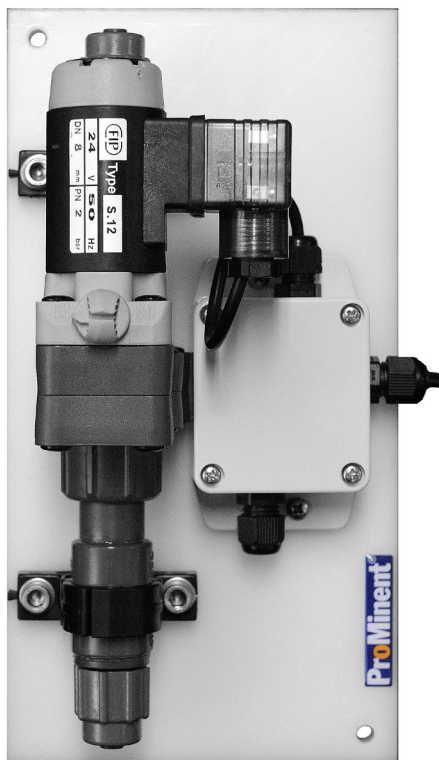


A24002182
Adaptor for use with 1.8m
A24002107 & 1.0m A24002264
Flexible connections



PA24002983
Carbon Trap

hydro Gas Chlorinators



SOLENOID OPERATED CHLORINE GAS VALVE

This can be used in the following gas chlorination areas;

- a) Pulse duration in pools.
- b) Auto change over in combination with hi-low vacuum switch.
- c) Sequencing in combination with either of the following;
 - 1) Weight
 - 2) Pressure
 - or 3) Flow

For more information consult Sydney office.

To suit 12 x 8 tube, 17 x 12 tube or 15 mm (nominal) PVC Pipe 3/8", 1/2" & 5/8" PE tube for use with vacuum regulators up to 10kg/hr.

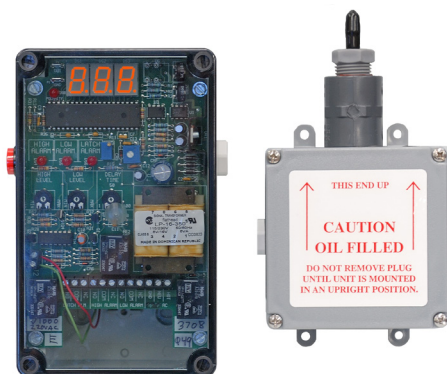
	PFC Part No.
for 12 x 8 EVA tube <i>ONLY for older systems.</i>	P120309091-12
for 17 x 12 EVA tube <i>ONLY for older systems.</i>	P120309091-17
for 3/8" OD PE tube	P120309091-95
for 1/2" OD PE tube	P120309091-127
for 5/8" OD PE tube	P120309091-159

Can be supplied as shown or with 90 degree elbows top and bottom or any combination of these, please specify when ordering.
Includes 24v AC 50 Hz power supply with 3 pin plug.

Replacement valve (including solenoid)	12030909
--	----------

Note: Can be controlled:

- a) By a switched 240 volt GPO.
- b) Through a volt free remote contact.



VACUUM MONITOR

240 VAC 100% electronic, full featured monitoring system with a three digit digital readout. One low alarm, one high alarm and one latch relay.

All relays are general purpose NO/NC type. (See Brochure).

	VM-150
--	--------

OPTIONAL CHECK VALVES FOR GAS CHLORINE EJECTORS

Bodies of PVDF (Kynar) and all wetted parts of PTFE

Check Valve 3/8" Tube 2kg/hr	CVH-100
Check Valve 1/2" Tube 5kg/hr	CVH-250

hydro Gas Chlorinators

Standard Accessories supplied with Series 900 Chlorinators

PA 24002779 BOTTLE / MANIFOLD MOUNT up to 2 kg

Consisting of:

1	x	Cable Tie	CT-200-4C
1	x	Insect Screen	A24001623
2	x	O-Rings - Ejector	OH-BUN-121
10	x	Lead Cylinder Gaskets	LG-100
1	x	Squeeze Bottle for Amonia	A24001622
1	x	Cylinder Spanner	A24001624
1	x	Filter - Teflon	VRH-456-100
1	x	Replacement Filter	VRH-455-500
10	meters	Vacuum Tubing 12 x 8	A24001626

PA24002780 TON MOUNT from 2 to 10 kg

Consisting of:

1	x	Cable Tie	CT-200-4C
1	x	Insect Screen	A24001623
2	x	O-Rings - Ejector	OH-BUN-121
10	x	Lead Cylinder Gaskets	LG-100
3	x	Lead Gasket	G-332
1	x	Squeeze Bottle for Amonia	A24001622
1	x	Cylinder Spanner	A24001624
1	x	Replacement Filter	VRH-455-500
10	meters	Vacuum Tubing 12 x 8	A24001626

Note: 10kg uses 17x12 vacuum tube

hydro Gas Chlorinator

Service Kits

900 SERIES

PFC Part No.

KT9-100-VRC	900 series VAC REG 2 kg/hr Cylinder
KT9-250-VRC	900 series VAC REG 5 kg/hr Cylinder
KT9-500-VRC	900 series VAC REG 10 kg/hr Cylinder

KT9-100-VRT	900 series VAC REG 2 kg/hr TON
KT9-250-VRT	900 series VAC REG 5 kg/hr TON
KT9-500-VRT	900 series VAC REG 10 kg/hr TON
KT9-1000-VRT	900 series VAC REG 20 kg/hr TON

KTH-100-RMP	900 series Remote Meter 75-2000 g/hr
KTH-250-RMP	900 series Remote Meter 5 kg/hr
KTH-500-RMP	900 series Remote Meter 10 kg/hr

KTH-100-EJO	EJO-100-Cl2 900 series ejector 2 kg/hr
KTH-250-EJO	EJO-250-Cl2 900 series ejector 5 kg/hr
KTH-500-EJO	EJO-500-Cl2 900 series ejector 10 kg/hr

500, 200, 700 SERIES

KT7-500-VRC	500, 200, 700 series VAC REG Cylinder
KT7-500-VRT	500, 200, 700 series VAC REG TON Mount

KT1-100-EJS	EJ-1000 Service Kit 2 kg/hr
KT2-250-EJS	EJ-2000 Service Kit 5 kg/hr
KT7-500-EJS	EJ-5000 Service Kit 10 kg/hr

KT1-100-SOM	Switch Over Module 2 kg/hr
KT2-250-SOM	Switch Over Module 5 kg/hr
KT7-500-SOM	Switch Over Module 10 kg/hr

300 SERIES

KTH-500-VRT	300 series VAC REG TON Mount 10 kg/hr
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OMNI-VALVE

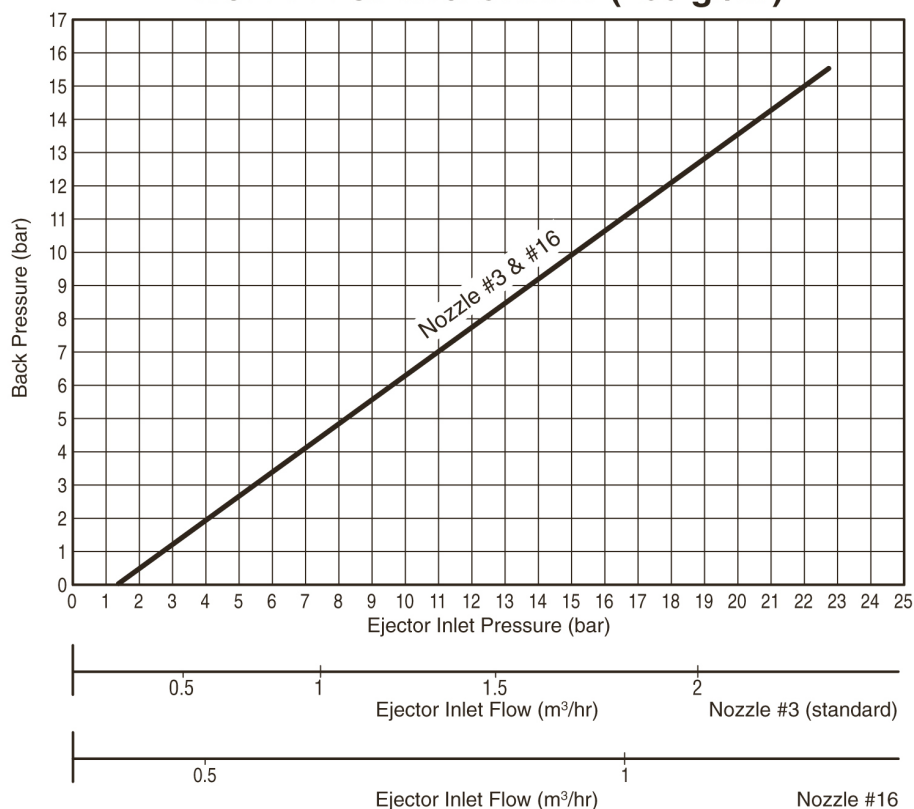
KT1-100-OV	Omni-Valve 2 kg/hr
KT1-250-OV	Omni-Valve 5 kg/hr
KT1-500-OV	Omni-Valve 10 kg/hr
KT1-040-OV	Omni-Valve 20-40 kg/hr

3000 SERIES

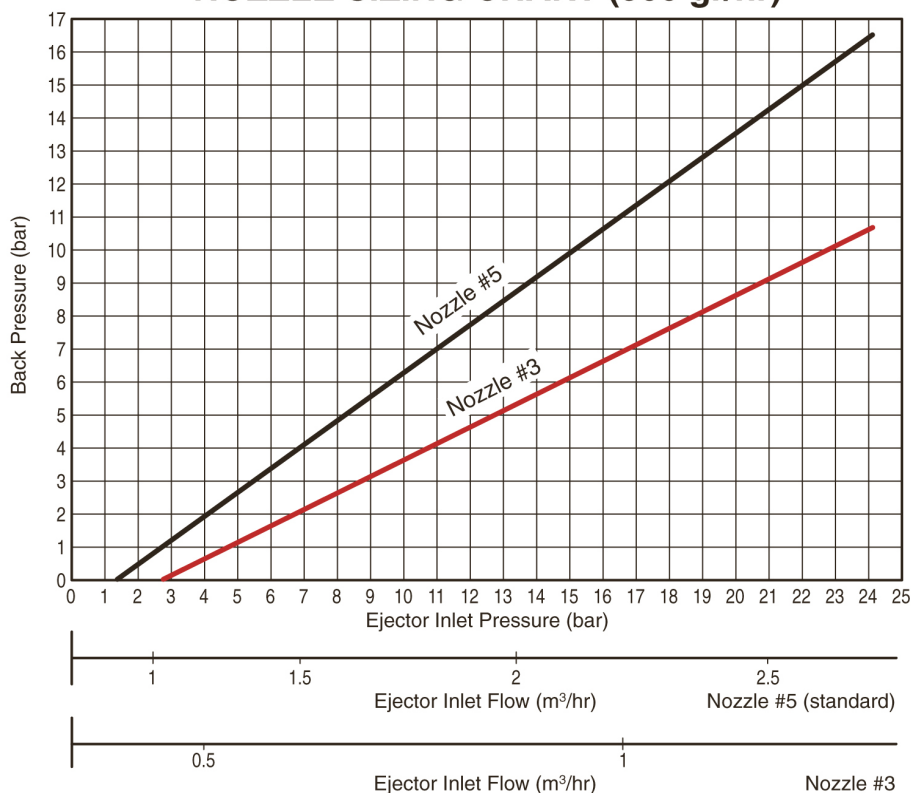
KTH-2000-VRW	20-40 kg/hr VAC REG
KTH-2000-RMS	20-40 kg/hr Rotameter
KTH-2000-EJS	20-40 kg/hr Ejector
KTH-2000-SOM	20-40 kg/hr Switch Over Module

hydro Ejector Selection Chart EJ1000

NOZZLE SIZING CHART (200 gr/hr)



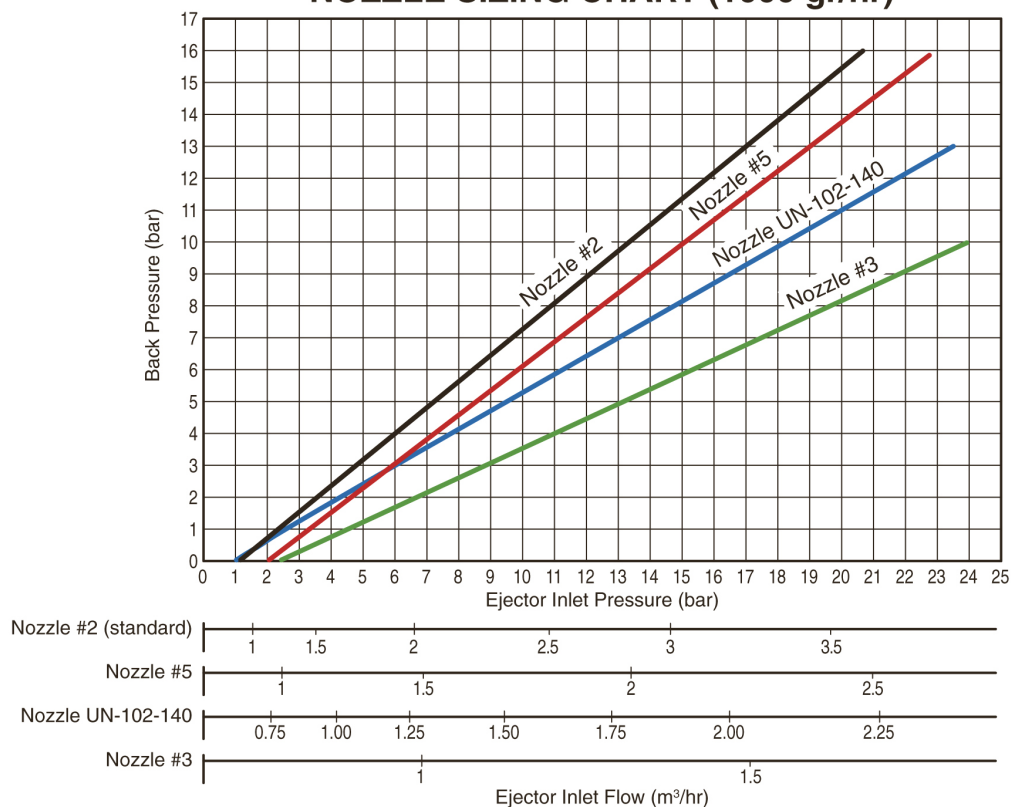
NOZZLE SIZING CHART (500 gr/hr)



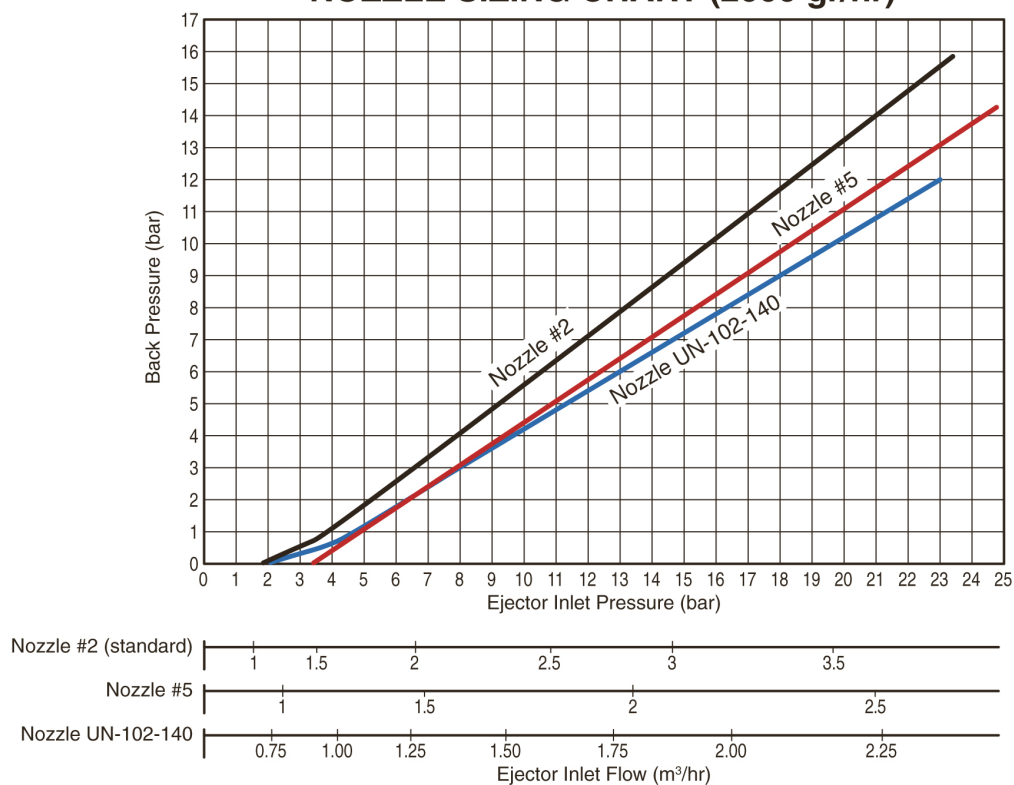
Note: Pressure combinations that plot below the line for any given nozzle are acceptable for operating that nozzle at the stated chemical feed rate for that chart. Pressure combinations that fall above the line for any given nozzle are not acceptable.

hydro Ejector Selection Chart EJ1000

NOZZLE SIZING CHART (1000 gr/hr)



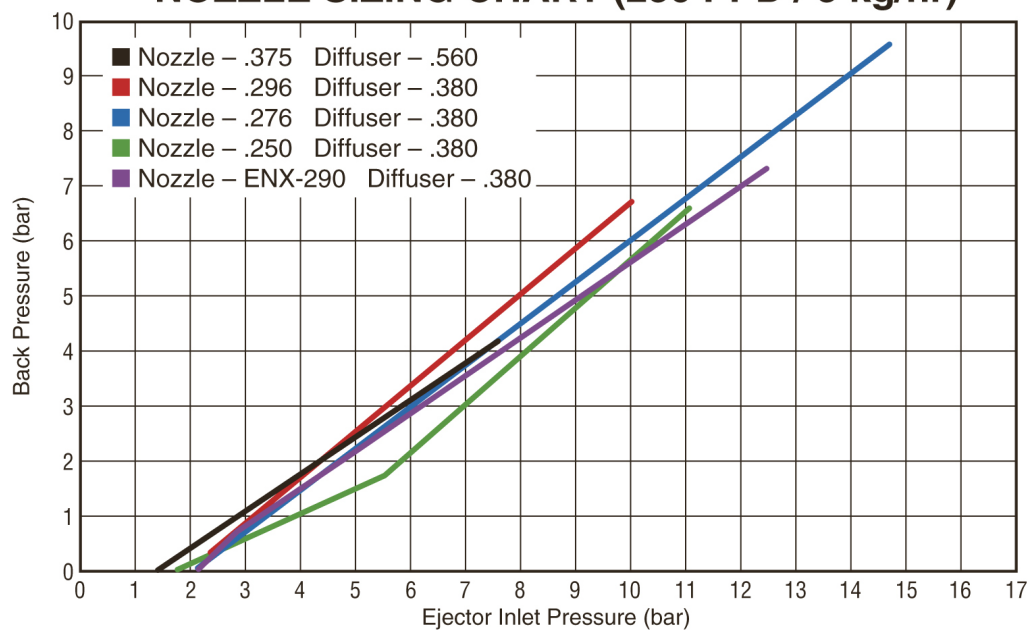
NOZZLE SIZING CHART (2000 gr/hr)



Note: Pressure combinations that plot below the line for any given nozzle are acceptable for operating that nozzle at the stated chemical feed rate for that chart. Pressure combinations that fall above the line for any given nozzle are not acceptable.

hydro Ejector Selection Chart EJ2000

NOZZLE SIZING CHART (250 PPD / 5 kg/hr)



.375 Nozzle

3.5 4 4.5 5 5.5 6 6.5 7 7.5 8 8.5

.296 Nozzle or ENX-290

2.5 3 3.5 4 4.5 5 5.5 6 6.5

.276 Nozzle

2.5 3 3.5 4 4.5 5 5.5 6 6.5 7

.250 Nozzle

2 2.5 3 3.5 4 4.5 5

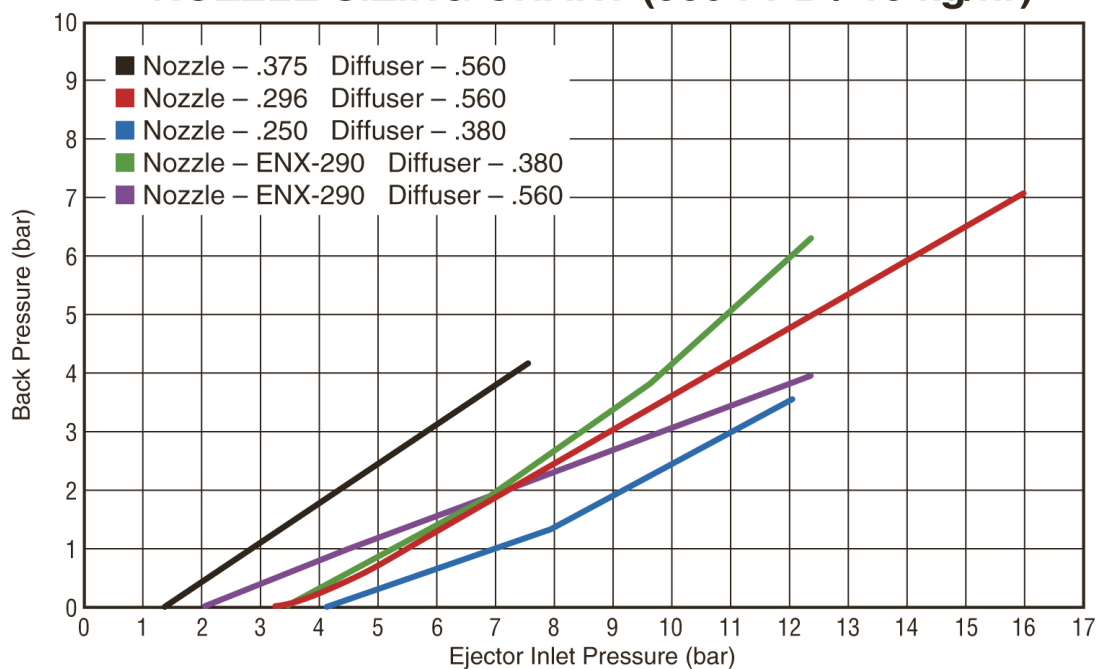
Ejector Inlet Flow (m³/hr)

Conversion: US GPM to LPM x 3.7854

Note: Pressure combinations that plot below the line for any given nozzle are acceptable for operating that nozzle at the stated chemical feed rate for that chart. Pressure combinations that fall above the line for any given nozzle are not acceptable.

hydro Ejector Selection Chart EJ5000

NOZZLE SIZING CHART (500 PPD / 10 kg/hr)



.375 Nozzle

3.5 4 4.5 5 5.5 6 6.5 7 7.5 8 8.5

.296 Nozzle or ENX-290

3 3.5 4 4.5 5 5.5 6 6.5 7

.250 Nozzle or ENX-240

2 2.5 3 3.5 4 4.5 5

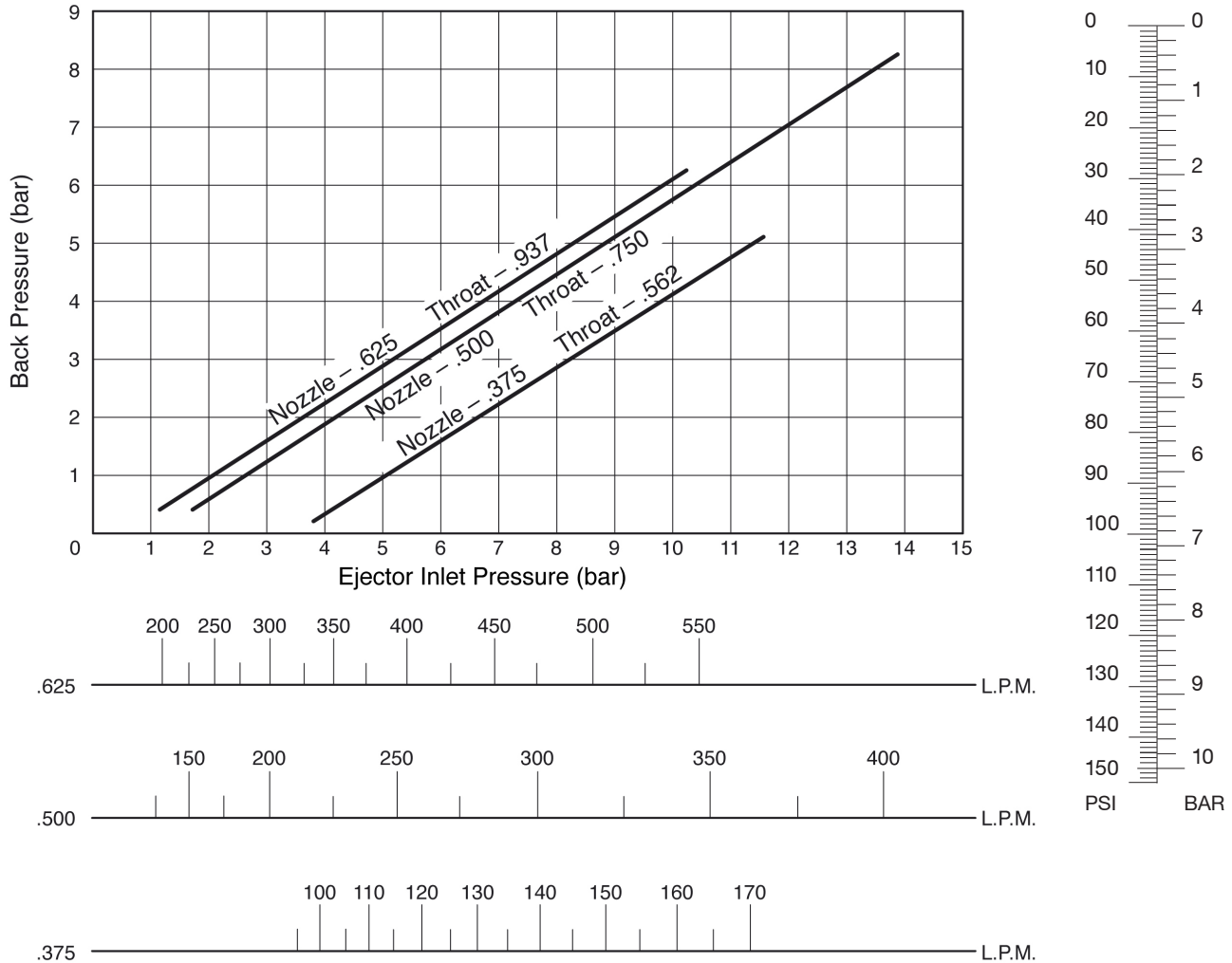
Ejector Inlet Flow (m³/hr)

Conversion: US GPM to LPM x 3.7854

Note: Pressure combinations that plot below the line for any given nozzle are acceptable for operating that nozzle at the stated chemical feed rate for that chart. Pressure combinations that fall above the line for any given nozzle are not acceptable.

hydro Ejector Selection Chart EJH-1000-CL2

NOZZLE SIZING CHART for 20 kg/hr

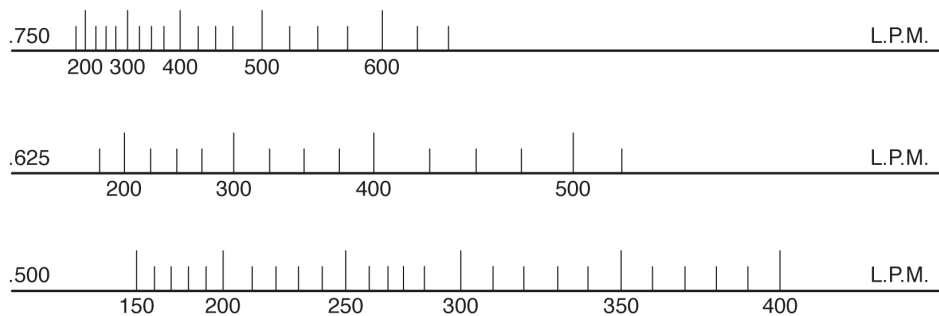
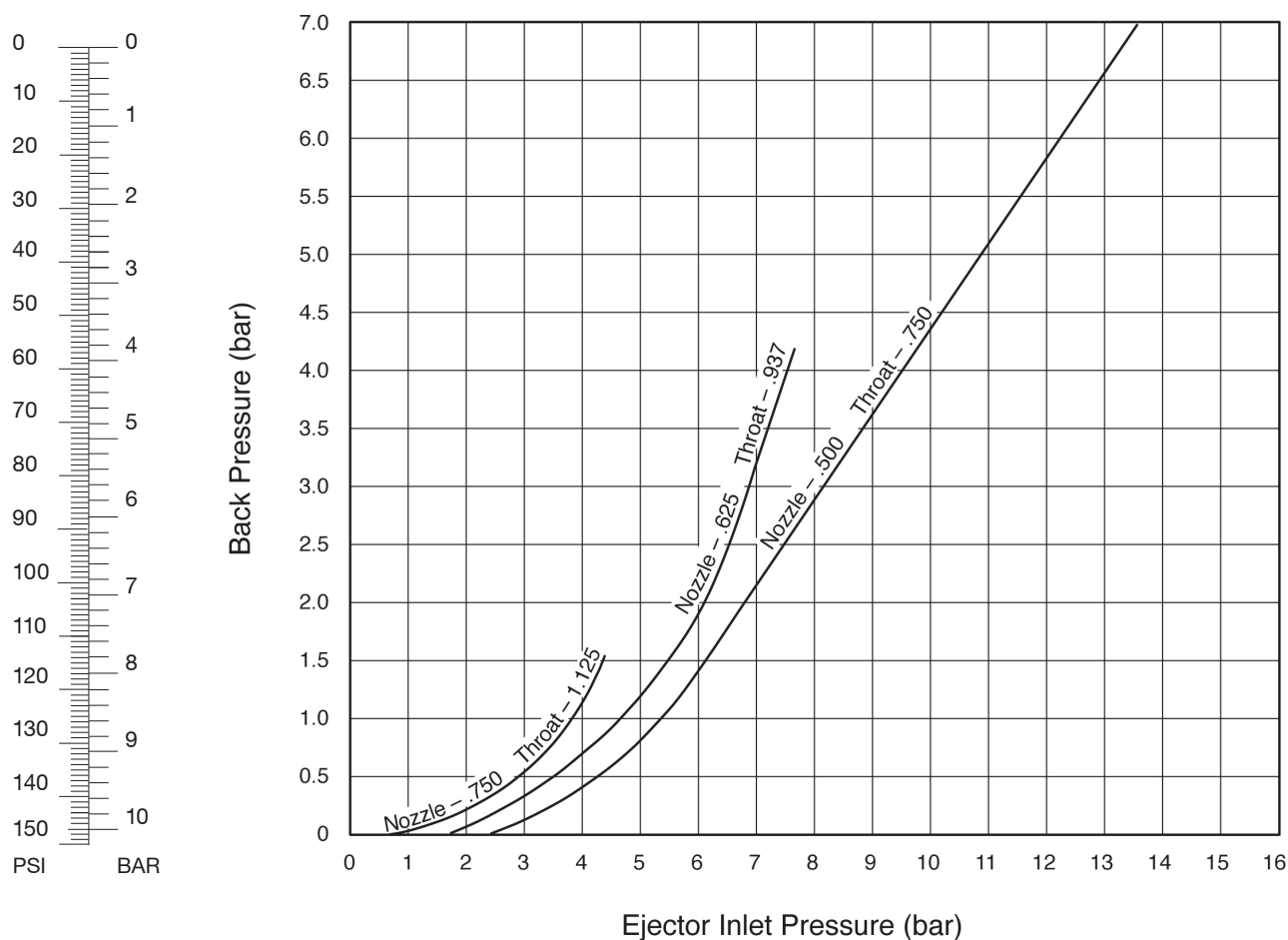


Conversion: US GPM to LPM x 3.7854

1. Ensure maximum case pressure of booster pump is OK.
2. All pressures shown in PSI.
3. For clean water use only.
4. Solution lines longer than 3m, step up to next size to reduce friction loss.
5. Pump suction pressure must be equal to ejector back pressure.
6. For conditions not shown, contact ProMinent office.

hydro Ejector Selection Chart EJH-2000-CL2

NOZZLE SIZING CHART for 40 kg/hr



Conversion: US GPM to LPM x 3.7854

1. Ensure maximum case pressure of booster pump is OK.
2. All pressures shown in PSI.
3. For clean water use only.
4. Solution lines longer than 3m, step up to next size to reduce friction loss.
5. Pump suction pressure must be equal to ejector back pressure.
6. For conditions not shown, contact ProMinent office.

1.0 ProMskid Chemical Dosing



Suitable for 1 – 50 l/hr + 1 – 10 bar pressure

The new ProMskid is a pre-engineered chemical dosing skid suitable for many chemical dosing applications. Utilising our sophisticated Metering Pump range, the ProMskid is a modular metering system that combines process reliability, efficiency and flexibility in single or multiple units.

FEATURES & BENEFITS

- Duty/Standby Dosing Skid utilising our Beta, Gamma X, Delta and Sigma 1 Metering Pump Range
- Chemical dosing skid has been designed for ease of installation and commissioning
- All proprietary cables are terminated into a junction box located inside the chemical dosing skid
- Robust PE Frame with splash guard for ultimate operator safety
- Comprehensive safety features with overpressure electronics in metering pumps, pressure relief and pulsation dampener
- Flexible or rigid pump connections for suction and discharge
- Lead times 1 – 3 weeks from date of order, subject to stock availability
- Easy access to pump liquid end for servicing
- Proven design based on 40 years' experience within the Australian Market

DOSING PUMP

Duty/Standby: Beta, Gamma X, Delta or Sigma 1

PUMP SKID ACCESSORIES

- 15 x Georg Fischer® uPVC Ball Valves (3 Lockable)
- 1 x 500ml PVC Calibration Cylinder
- 1 x Georg Fischer PVC Line Strainer
- 2 x ProMinent® PVC Pressure Relief Valve
- 1 x Pulsation Dampener
- 1 x Pressure Indicator with Diaphragm Gauge Guard
- 1 x ProMinent® PVC Pressure Loading Valves
- 1 x Georg Fischer Non-Return Valve

Note: Maximum discount to Resellers 20%. Pumps sold at list, 25% for End-users & 40% for Resellers.

PIPEWORK COMPRISING

- Georg Fischer Schedule 80 Grey uPVC Pipework
- Solvent weld connections

ELECTRICS COMPRISING

- Polycarbonate Junction Box
- Pump GPO's on skid
- Pump Control wiring connected to junction box

DOSING SKID

- Robust Polyethylene frame with removable splash guard
- Dimensions: 1200mm [w] x 635mm [d] x 1700mm [h]
Spill collection tray

DOCUMENTATION

- Standard GA and P&ID drawing
- Standard Component Manuals
- Hydrostatic Test Certificate



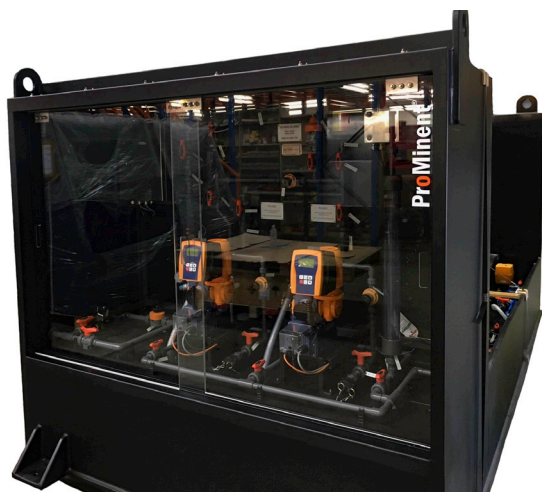
1.1 Single and Double IBC Storage Systems

Single IBC Store c/w Equipment Bay & Slash Shielding Roller Doors

- Systems fitted with flexible IBC connectors. These connectors are fitted with a 2" isolation valve and 1/2" safety/ witness valve.
- Enable IBC connectors to be safely removed. Close 2 x 2" isolation valves and open 1/2" witness valve to prove isolation and relieve pressure prior to removing camlock connector.
- Delivery pipework from the IBC feeds a sight glass assembly fitted inside the equipment bay to which the suction manifold is connected. Connected to this can be either a low level switch or pressure transmitter c/w digital readout and retransmit capability.
- Can be fitted with a bund level switch to indicate liquid / spill within the bund.

Double IBC Store c/w Equipment Bay & Slash Shielding Roller Doors

- Bunds fitted with a 2" drain point – c/w plug or valve.
- Typically the equipment bay is fitted with a standard duty / standby pump arrangement c/w pumps, valves, calibration cylinders, GPOs and control cable termination enclosure, etc.
- Bunded IBC Stores satisfies the requirements of DG standard: AS3780-2008.



1.2 Spectra Progressive Cavity Metering Pumps

Spectra Drives & Motors

- Fixed speed SEW local supply up to 3 kw IP55.
- Nord drives supplied with complete pumps from factory IP66
- Thermistors 0.75 kW [Sensor only, relay not included]
- Motors 415/3/50 IP55 SEW or IP66 Nord enclosure

PUMPS

- Refer construction notes under pump price sheet
- Sludge pump standard construction. Feeding screw available, price on request.

BASE PLATES

- Painted steel / Galvanised

SELL PRICE / DISCOUNT

- General Sale Max 30 %
- Councils up to 20%

SPECTRA PUMP ACCESSORIES - Motor Options add to pump price (SEW)

Motor size	IP66	Motor size	Forced cooling fan 240 v IP55	Forced cooling fan 240 v IP66	Movimot touch pad IP55
0.37 kW		0.37 kW			
0.55 kW		0.55 kW			
0.75 kW		0.75 kW			
1.1 kW		1.1 kW			
1.5 kW		1.5 kW			
2.2 kW		2.2 kW			
3.0 kW		3.0 kW			
4.0 kW		4.0 kW			
5.5 kW		5.5 kW			

Dry Run Protection*

Dry Run Sensor only

Dry Run Sensor + Relay

*not available for FJ06 - 08 - 10



1.2 Spectra Progressive Cavity Metering Pumps

The following pumps are kept in our local stock, fully assembled & available for immediate delivery.

	Part No.
Spectra model: **AF J06B03302FP3M4** Complete with manually adjustable gear-motor, output speed 150-650 rpm at 50Hz. Motor 0.25kW, IP55, 415/3/50, 4 Pole. Nominal rating approx 5-30L/h at 2 Bar (8 Bar maximum) ** Note this is the standard pump supplied in the 'ProMix LS2000' polymer blending unit**	PA0300 3460
Spectra model: AF J10B03302FP3M4 Complete with manually adjustable gear-motor, output speed 150-650 rpm at 50Hz. Motor 0.37kW, IP55, 415/3/50, 4 Pole. Nominal rating approx 20-100L/h at 3 Bar (8 Bar maximum)	PA0300 3462
Spectra model: AF J151B01302FP3M4 p/n Complete with manually adjustable (belt) gear-motor, output speed 150-700 rpm at 50Hz. Motor 0.55kW, IP55, 415/3/50, 4 pole. Nominal rating approx 100-500L/h at 2 Bar (5 Bar maximum)	PA0300 3461

Notes

1. Above pumps feature mounting-feet but are stocked without baseplate – available at extra charge as per Blue Pages.
2. Above pumps are suited for polymer products, but may be chosen for other applications according to material compatibility, reference to pump curves & product data.
3. Above pumps have Viton stator & S/S rotor 1.4571.
4. Please refer customer to GA drawings specific to these pumps, when quoting.
5. Pumps may be discounted according to Blue Page 1.5.
6. O&M manuals are available in electronic form for the above pumps.



1.2 Spectra Progressive Cavity Metering Pumps

FJ / FG Water based POLYMER LIST PRICES For petroleum based polymer use Viton stator

Flow l/hr	Pressure Bar	KW / RPM	Pump Model	Liquid end No drive	Complete pump with Norddrive from Germany	Complete pump with SEW local drive IP55	Viton Stator adder	Additional painted	Additional galvanised base
20	4	0.37 / 300	FJ06B03302FP3M4						
40	4	0.37 / 410	FJ08B03302FP3M4						
80	4	0.37 / 420	FJ10B03302FP3M4						
200	4	0.55 / 240	FG1015B01302NB1M4						
400	4	0.55 / 450	FG1015B01302NB1M4						
600	4	0.55 / 270	FG1021B01302NB1M4						
800	4	0.75 / 330	FG1021B01302NB1M4						
1000	4	0.75 / 400	FG1021B01302NB1M4						
1300	4	1.1 / 500	FG1021B01302NB1M4						
1700	4	1.1 / 270	FG1031B01302NB1M4						
2000	4	1.5 / 300	FG1031B01302NB1M4						
2500	4	1.5 / 350	FG1031B01302NB1M4						
3000	4	1.5 / 400	FG1031B01302NB1M4						
3500	4	2.2 / 460	FG1031B01302NB1M4						
4000	4	1.5 / 225	FG1038B01302NB1M4						
6000	4	2.2 / 300	FG1038B01302NB1M4						
7000	4	2.2 / 340	FG1038B01302NB1M4						
8000	4	2.2 / 380	FG1038B01302NB1M4						
10000	4	3.0 / 270	FG1045B01302NB1M4						
12000	4	3.0 / 310	FG1045B01302NB1M4						
14000	4	4.0 / 350	FG1045B01302NB1M4						
16000	4	5.5 / 290	FG1053B01302NB1M4						
20000	4	5.5 / 350	FG1053B01302NB1M4						
24000	4	7.5 / 245	FG1063B01302NB1M4						
32000	4	7.5 / 310	FG1063B01302NB1M4						
28000	4	7.5 / 180	FG1076B01302NB1M4						
45000	4	11 / 270	FG1076B01302NB1M4						

Pump

Max pressure 6 bar.

See curves for speed and power Material of Construction

Close coupled design

20- 80 l/hr	316 / 316 / FKM / MS (Sic-Sic-FKM)
400- 20000 l/hr	CI / 316 / NBR / MS (Sic-Sic-FKM)



1.2 Spectra Progressive Cavity Metering Pumps

FJ Water based POLYMER LIST PRICES For petroleum based polymer use Viton stator

Flow l/hr	Pressure Bar	KW / RPM	Pump Model	Liquid end/No drive	Complete pump with Nord drive from Germany	Complete pump with SEW local drive IP55	Viton Stator adder	Additional painted	Additional galvanised base
20	4	0.37 / 300	FJ06B03302FP3M4						
40	4	0.37 / 410	FJ08B03302FP3M4						
80	4	0.37 / 420	FJ10B03302FP3M4						
30 - 150	4	0.55 / 60 - 300	FJ151B01302NB1M4						
60 - 280	4	0.55 / 100 - 500	FJ151B01302NB1M4						
80 - 400	4	0.55 / 50 - 260	FJ201B01302NB1M4						
120 - 600	4	0.55 / 76 - 380	FJ201B01302NB1M4						
160 - 800	4	0.75 / 96 - 480	FJ201B01302NB1M4						
200 - 1000	4	0.75 / 52 - 260	FJ301B01302NB1M4						
300 - 1500	4	1.1 / 70 - 350	FJ301B01302NB1M4						
400 - 2000	4	1.1 / 84 - 420	FJ301B01302NB1M4						
480 - 2400	4	1.5 / 100 - 500	FJ301B01302NB1M4						
540 - 2700	4	1.5 / 44 - 220	FJ401B01302NB1M4						
600 - 3000	4	1.5 / 50 - 250	FJ401B01302NB1M4						
800 - 4000	4	2.2 / 64 - 320	FJ401B01302NB1M4						
1000 - 5000	4	2.2 / 80 - 400	FJ401B01302NB1M4						
1200 - 6000	4	3.0 / 56 - 280	FJ501B01302NB1M4						
1600 - 8000	4	4.0 / 68 - 340	FJ501B01302NB1M4						
2000 - 10000	4	4.0 / 84 - 420	FJ501B01302NB1M4						
2400 - 12000	4	5.5 / 60 - 300	FJ601B01302NB1M4						
2800 - 14000	4	5.5 / 68 - 340	FJ601B01302NB1M4						
3600 - 18000	3	7.5 / 46 - 230	FJ701B01302NBM3						
4800 - 24000	4	7.5 / 60 - 300	FJ701B01302NBM4						
5800 - 29000	4	11 / 56 - 280	FJ801B01302NBM4						
6800 - 34000	4	11 / 64 - 320	FJ801B01302NBM4						

Pump

Max pressure 6 bar.

See curves for speed and power

Material of Construction

Close coupled design

20- 80 l/hr

316 / 316 / FKM / MS (Sic-Sic-FKM)

400- 20000 l/hr

CI / 316 / NBR / MS (Sic-Sic-FKM)



1.2 Spectra Progressive Cavity Metering Pumps

FJ / FG CAUSTIC LIST PRICE

Flow l/hr	Pressure Bar	kW / RPM	Pump Model	Liquid end No drive	Complete pump with Nord drive from Germany	Complete pump with SEW local drive IP55	Additional painted	Additional galvanised base
20	4	0.37 / 300	FJ6B03302EP3M5					
40	4	0.37 / 410	FJ08B03302EP3M5					
80	4	0.37 / 420	FJ10B03302EP3M5					
200	4	0.55 / 240	FJ151B01302EP1M5					
400	4	0.55 / 450	FG1015B01302EP1M5					
800	4	0.75 / 330	FG1021B01302EP1M5					
1000	4	0.75 / 400	FG1021B01302EP1M5					
1300	4	1.1 / 500	FG1021B01302EP1M5					
1700	4	1.1 / 270	FG1031B01302EP1M5					
2000	4	1.5 / 300	FG1031B01302EP1M5					
3000	4	1.5 / 400	FG1031B01302EP1M5					
4000	4	1.5 / 225	FG1038B01302EP1M5					
7000	4	2.2 / 340	FG1038B01302EP1M5					
10000	4	3.0 / 270	FG1045B01302EP1M5					
14000	4	4.0 / 350	FG1045B01302EP1M5					
20000	4	5.5 / 350	FG1053B01302EP1M5					

Pump

Max pressure 6 bar.

See curves for speed and power

Material of Construction

Close coupled design

20- 80 l/hr	316 / 316 / FKM / MS (Sic-Sic-FKM)
400- 20000 l/hr	Cl / 316 / NBR / MS (Sic-Sic-FKM)



1.2 Spectra Progressive Cavity Metering Pumps

FG SLUDGE (Solids up to 5%) LIST PRICE

Flow l/hr	Pressure Bar	kW / RPM	Pump Model	Liquid end No drive	Complete pump with Nord drive from Germany	Complete pump with SEW local drive IP55	Additional painted	Additional galvanised base
1000	4	0.75 / 300	FG1021B01502NB1M4					
1300	4	1.1 / 500	FG1021B01502NB1M4					
1700	4	1.1 / 270	FG1031B01502NB1M4					
2000	4	1.1 / 300	FG1031B01502NB1M4					
2500	4	1.5 / 350	FG1031B01502NB1M4					
3000	4	1.5 / 400	FG1031B01502NB1M4					
3500	4	1.5 / 180	FG1038B01502NB1M4					
4000	4	1.5 / 230	FG1038B01502NB1M4					
6000	4	2.2 / 300	FG1038B01502NB1M4					
7000	4	2.2 / 340	FG1038B01502NB1M4					
8000	4	2.2 / 380	FG1038B01502NB1M4					
10000	4	3.0 / 270	FG1045B01502NB1M4					
12000	4	3.0 / 310	FG1045B01502NB1M4					
16000	4	5.5 / 290	FG1053B01502NB1M4					
20000	4	5.5 / 350	FG1053B01502NB1M4					

Pump

Max pressure 6 bar.
See curves for speed
and power.

Close coupled design
Material of Construction CI / 440SS Hardened / NBR / MS (Sic-Sic-FKM)



1.3 Spectra Spare Parts

Replacement STATOR

Pump Model	VITON FKM - P/N		EPDM P/N		Perbunan NBR Std - P/N		NBR Drilled DRP	
FJ06B	SP501-51475		SP501-63286		SP501-57845		N/A for 06, 08 and 10	
FJ08	SP501-27179		SP501-27451		SP501-28185			
FJ10	SP501-28191		SP501-54349		SP501-53707		DRP-dry run protection	
FG1015	SP501-64450		SP501-74771		SP501-68315		SP501-89717	
FG1021	68851		SP501-72184		SP501-66481		SP501-88826	
FG1031	65437		74421		SP501-65107		SP501-73934	
FG1038	79548		SP501-72216		SP501-68829		SP501-84319	
FG1045	57040		SP501-55743		SP501-56487		85432	
FG1053	72217		87609		SP501-56596		94219	
FG1063	65970		69294		SP501-63159		SP501-72735	
FG1076	77854		63407		SP501-59914		SP501-80475	
FJ151	SP501-24783		68210		SP501-50162		101431	
FJ201	SP501-27591		SP501-16815		SP501-14966		72646	
FJ301	SP501-22188		SP501-16466		SP501-14985		72237	
FJ401	SP501-19609		SP501-24727		SP501-16461		72651	
FJ501	19175		SP501-51034		SP501-14853		71518	
FJ601	18095		18365		SP501-18045		71825	
FJ701	24447		23981		SP501-16465		73536	
FJ801	27011		27230		SP501-16462		74640	

Replacement ROTORS

Pump Model	1.4571 SS AISI 316Ti	1.4112 HSS AISI 440B Hard
FG1015	SP500-64438	SP500-68294
FG1021	SP500-68295	SP500-66482
FG1031	SP500-63839	SP500-65109
FG1038	SP500-70192	SP500-68832
FG1045	SP500-58360	SP500-67431
FG1053	SP500-66942	SP500-63320
FG1063	SP500-60380	SP500-64146
FG1076	SP500-75828	SP500-59913
FJ06	SP500-51588	SP500-57723
FJ08	SP500-52247	SP500-60975
FJ10	SP500-51571	SP500-73821
FJ151	SP500-17136	SP500-57746
FJ201	SP500-17281	SP500-67205
FJ301	SP500-12804	SP500-16280
FJ401	SP500-18140	SP500-71205
FJ501	SP500-14719	64390/14864
FJ601	SP500-17926	63198/22635
FJ701	SP500-520323	SP500-64384
FJ801	SP500-14460	SP500-64205

Other Materials Available:

HBNR Food Grade NBR
 NBR
 G069 Perbunan Light
 EPDM Light
 CB Buna
 CSM Hypalon
 CR Neopren

Other Materials Available:

316Ti Hardcoated Cr
 1.4057 AISI 431
 1.2436 Tool steel hardened
 1.4462 AISI S31803 duplex SS



1.4 Boyser Spare Parts

Replacement HOSES

Pump Model	Solva	Silicone	Norprene A-60-G	Norprene A-60-F
DFAa003	SOL-32.24.05	SIL-32.24.05	NORG-32.24.05	NORF-32.24.05
DFAa004	SOL-48.24.05	SIL-48.24.05	NORG-48.24.05	NORF-48.24.05
DFAa006	SOL-64.24.05	SIL-64.24.05	NORG-64.24.05	NORF-64.24.05
DFAa008	SOL-80.24.05	SIL-80.24.05	NORG-80.24.05	NORF-80.24.05

Pump Model	NR Natural Rubber	NBR Perbunan	EPDM
DFBa010	102.00.27	102.00.28	102.00.30
DFBa013	103.00.27	103.00.28	103.00.30
DFBa016	101.00.26	101.00.27	101.00.28
DFBa022	113.00.24	113.00.25	113.00.27

Other Materials for DFBa:

NR-A	Food Grade
NBR-A	Food Grade
Norprene	(2-bar max.)
Hypalon	Tygon

Pump Model	NR Natural Rubber	NBR Perbunan	EPDM
DFCa030	107.00.18	107.00.20	107.00.22
DFCa040	106.00.18	106.00.20	106.00.22
DFCa050	108.00.20	108.00.22	108.00.24
DFCa060	110.00.18	110.00.20	110.00.22
DFCa070	112.00.18	112.00.20	112.00.22

Other Materials for DFCa:

NR-A	Food Grade
NBR-A	Food Grade
Norprene	(2-bar max.)

Pump Model	NR Natural Rubber	NBR Perbunan	EPDM
DFDa025	100.01.08	100.01.09	100.01.10
DFDa032	104.01.08	104.01.09	104.01.10
DFDa040	108.00.20	108.00.22	108.00.24
DFDa060	111.00.18	111.00.20	111.00.22
DFDa070	112.00.18	112.00.20	112.00.22
DFDa080	118.00.12	118.00.13	118.00.14
DFDa100	119.00.19	119.00.20	119.00.21

Suitable for	Hose Lubricant	Litres
DFAa	SILICONA-05	0.50
DFCa	OR	
DFBa	SILICONA-1	1
	LUBR-2	2
	LUBR-5	5
DFDa	LUBR-10	10
	LUBR-25	25
	LUBR-200	200

*Not stocked

DFAa



SOLVA Tube



SILICONE Tube



Norprene A60G



Norprene A60F Tube

DFBa / DFCa / DFDa



NR



NR-A



EPDM



NORPRENE



NBR



NBR-A



HYPALON



TYGON

Glycerin Lubrication Volume Required

DFDa 025	2 litres
DFDa 032	3 litres
DFDa 040	5 litres
DFDa 060	10 litres
DFDa 070	30 litres
DFDa 080	50 litres
DFDa 100	70 litres

- Pumps in the DFCa, DFBa and the small DFAa range only require small lubrication with liquid silicone (SILICONA). Lubrication reduces friction with rollers and helps in replacing the hose.
- The DFDa range of pumps have shoes that are harsh on the hose, for that reason the hose is partially immersed in liquid glycerin (LUBR). The pump cover has mark with minimum and maximum level.



1.5 Barrel Pump DULCO® Trans

Barrel pumps are the ideal solution for moving liquids

Pump capacity according to size 2,800 - 6,600 l/h

The application range of the DULCO® Trans depends on the chemical resistance of the materials used.

DULCO® Trans is used for bottling, draining and transferring liquids from canisters, hobboscks, drums, storage tanks and containers.

Included in the scope of supply: Metering hose with pump nozzle.

Field of application

Barrel pump for bottling, emptying and transferring liquids from canisters, drums and containers.

The following components come into contact with the liquids:

	PP version	PVDF version
External and internal pipe, tap	Polypropylene	PVDF
Drive shaft	Hastelloy C	Hastelloy C
Rotor	PP	PVDF
Mechanical seal	PTFE	PTFE
O-rings	FKM	FKM
Metering hose	PVC	Multi purpose chemical hose

DULCO® Trans, PP version

	Feed rate max.	*Feed lift max. m	Part No.
DULCO® Trans 32/700 PP	2,800 l/h *	10.0	1098490
DULCO® Trans 41/1000 PP	5,400 l/h *	11.0	1098491
DULCO® Trans 41/1200 PP	6,600 l/h *	16.0	1098489

DULCO® Trans, PVDF version

	Feed rate max.	*Feed lift max. m	Part No.
DULCO® Trans 32/700 PVDF	2,800 l/h *	10.0	1098492
DULCO® Trans 41/1000 PVDF	5,400 l/h *	11.0	1098493
DULCO® Trans 41/1200 PVDF	6,600 l/h *	16.0	1098494

*The specified delivery rate includes hose and tap.

Spare parts kit for DULCO® Trans

	Part No.
Spare parts kit for DULCO® Trans 32/700 PP	1098502
Spare parts kit for DULCO® Trans 32/700 PVDF	1098503
Spare parts kit for DULCO® Trans 41/1000 PP	1098500
Spare parts kit for DULCO® Trans 41/1000 PVDF	1098498
Spare parts kit for DULCO® Trans 41/1200 PP	1098501
Spare parts kit for DULCO® Trans 41/1200 PVDF	1098499



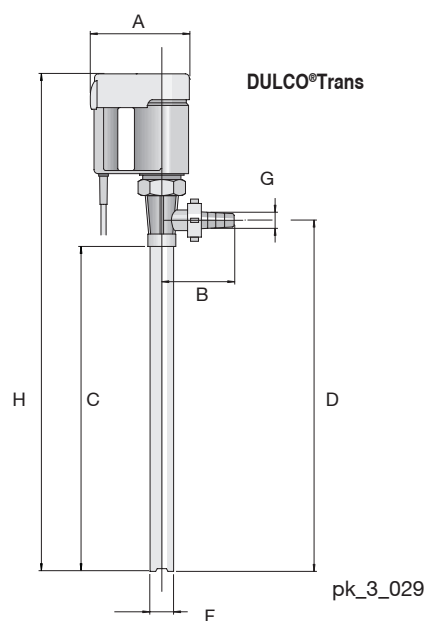
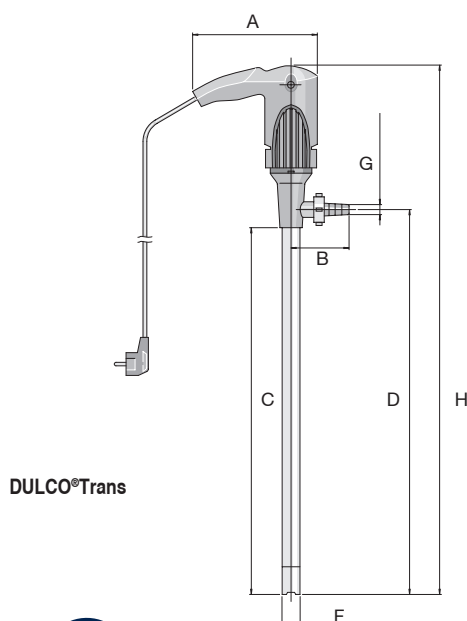
1.5 Barrel Pump DULCO®Trans

Barrel Pump DULCO®Trans Technical Data

Type		DULCO®Trans 32/700	DULCO®Trans 41/1000	DULCO®Trans 41/1200
Max. density	kg/dm³	1.3	1.5	1.9
Max. viscosity	mPas	400	600	1,000
Media temperature PP	°C	50	50	50
Media temperature PVDF	°C	90	90	90
Suction pipe outer diameter	mm	32	41	41
Hose connection	d	19	19	25
Discharge hose		2.0 m, DN 19	2.0 m, DN 19	2.0 m, DN 25
Motor rating	W	450	640	825
Enclosure rating		IP 24	IP 24	IP 24
Voltage/ frequency		230 V/1phase 50/60 Hz	230 V/1phase 50/60 Hz	230 V/1phase 50/60 Hz
Under-voltage cut-out		with	with	with
Overvoltage safety switch		with	with	with
Temperature monitoring		none	none	none
Speed control		none	none	none
Connection cable		5 m	5 m	5 m
Drum adapter		G 2"	G 2"	G 2"
Weight PP/PVDF	kg	5.9/7.9	7.6/9.2	8.3/9.7
Dimensions H x W x D	mm	986x170x90	1,315x220x90	1,515x220x90

Dimensions

Type		DULCO®Trans 25/700	DULCO®Trans 40/1000	DULCO®Trans 50/1200
A	mm	170	220	220
B	mm	90	90	90
C	mm	656	996	1,016
D	mm	700	1,000	1,200
F	mm	32	41	41
G	d	19	25	25
H	mm	986	1,315	1,515



1.6 von TAINÉ® Pumps

von TAINÉ® Magnetically Coupled Centrifugal Pumps

Metering pumps for liquid media

von TAINÉ® pumps are magnetically coupled centrifugal pumps. Thanks to the magnetic coupling, the pumps transport the liquid media leak-free from container to container or from a container into a discharge line.

The von TAINÉ® centrifugal pumps deliver media up to 22,500 l/hr and up to a delivery height of 23.5 metres. Because the capacity heavily depends on the backpressure, the delivery characteristic must be absolutely observed.

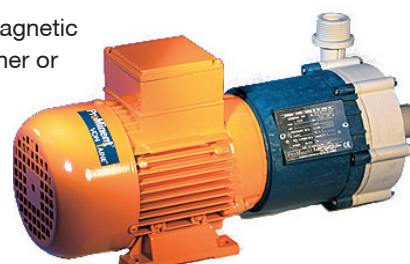
When selecting the pumps, the material compatibility is to be checked and density, viscosity, solid fraction, and temperature of the delivered medium are to be considered. The pump is not self-priming and requires a flooded suction.

The following material types are available:

- Pump head: PP or PVDF
- Seals: FPM or EPDM

The bearings of the pumps are made of "oxide ceramics" and may not run dry.

The pump is to be protected against running dry. The hydraulic connections are equipped with pipe threads according to DIN ISO 228-1 (internal and external thread cylindrical).



ProMinent® vonTAINÉ

Description	l/h	m	Model	kw	Phase	Suction Discharge	Part No
Centrifugal pump von TAINÉ	1,800	4.5	0502PP/FPM	0.06	1	1-1/4" - 1"	P1023089
Centrifugal pump von TAINÉ	6,600	7.9	0807 PP/FMP	0.25	3	1-1/4" - 1-1/4"	P1023090
Centrifugal pump von TAINÉ	9,600	10.0	1010 PP/FPM	0.37	3	2" - 1-1/2"	P1023091
Centrifugal pump von TAINÉ	13,200	13.2	1313 PP/FPM	0.65	3	2" - 1-1/2"	P1023092
Centrifugal pump von TAINÉ	19,500	18.1	1820 PP/FPM	1.10	3	2-1/4" - 2"	P1023093
Centrifugal pump von TAINÉ	22,500	23.5	2323 PP/FPM	1.50	3	2-1/4" - 2"	P1023094
Centrifugal pump von TAINÉ	1,800	4.5	0502 PVDF/FPM	0.06	1	1-1/4" - 1"	P1023095
Centrifugal pump von TAINÉ	6,600	7.9	0807 PVDF/FPM	0.25	3	1-1/4" - 1-1/4"	P1023096
Centrifugal pump von TAINÉ	9,600	10.0	1010 PVDF/FPM	0.37	3	2" - 1-1/2"	P1023097
Centrifugal pump von TAINÉ	13,200	13.2	1313 PVDF/FPM	0.65	3	2" - 1-1/2"	P1023098
Centrifugal pump von TAINÉ	19,500	18.2	1820 PVDF/FPM	1.10	3	2-1/4" - 2"	P1023099
Centrifugal pump von TAINÉ	22,500	23.5	2323 PVDF/FPM	1.50	3	2-1/4" - 2"	P1023100
Centrifugal pump von TAINÉ	1,800	4.5	0502PP/EPDM	0.06	1	1-1/4" - 1"	P1028551
Centrifugal pump von TAINÉ	6,600	7.9	0807 PP/EPDM	0.25	3	1-1/4" - 1-1/4"	P1028552
Centrifugal pump von TAINÉ	9,600	10.0	1010 PP/EPDM	0.37	3	2" - 1-1/2"	P1028553
Centrifugal pump von TAINÉ	13,200	13.2	1313 PP/EPDM	0.65	3	2" - 1-1/2"	P1028564
Centrifugal pump von TAINÉ	19,500	18.1	1820 PP/EPDM	1.10	3	2-1/4" - 2"	P1028565
Centrifugal pump von TAINÉ	22,500	23.5	2323 PP/EPDM	1.50	3	2-1/4" - 2"	P1028566
Centrifugal pump von TAINÉ	1,800	4.5	0502 PVDF/EPDM	0.06	1	1-1/4" - 1"	P1028567
Centrifugal pump von TAINÉ	6,600	7.9	0807 PVDF/EPDM	0.25	3	1-1/4" - 1-1/4"	P1028568
Centrifugal pump von TAINÉ	9,600	10.0	1010 PVDF/EPDM	0.37	3	2" - 1-1/2"	P1028569
Centrifugal pump von TAINÉ	13,200	13.2	1313 PVDF/EPDM	0.65	3	2" - 1-1/2"	P1028570
Centrifugal pump von TAINÉ	19,500	18.2	1820 PVDF/EPDM	1.10	3	2-1/4" - 2"	P1028571
Centrifugal pump von TAINÉ	22,500	23.5	2323 PVDF/EPDM	1.50	3	2-1/4" - 2"	P1028572

Note: l/h is Feed rate at Minimum Pressure
m is Feed Lift Maximum

Electrical details:

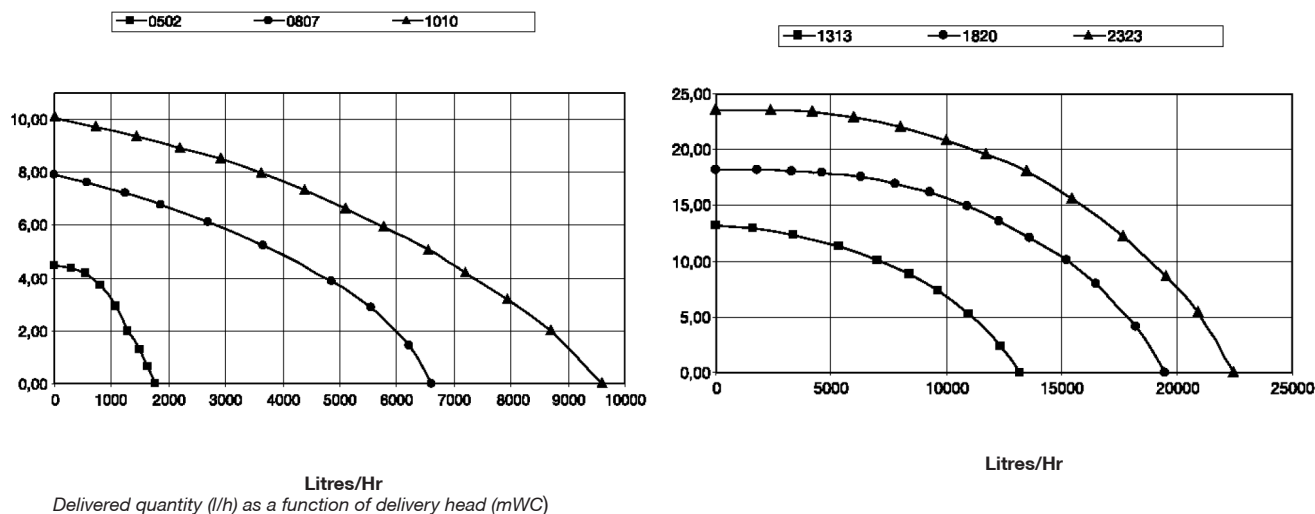
Model 0502 = 50/1/240 all other models 3/50/400

Protection: IP55

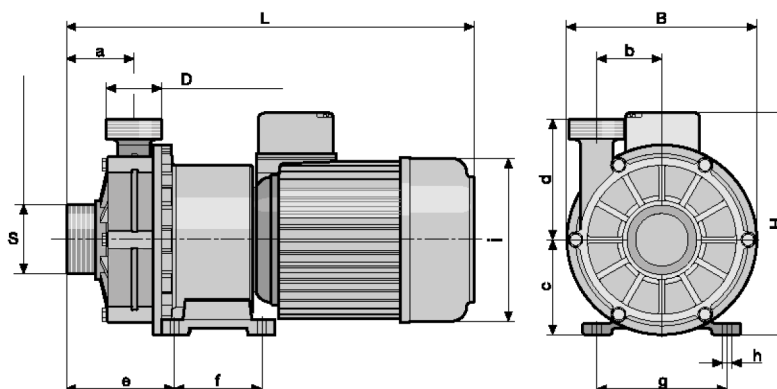


1.6 ProMinent® von TAINÉ® Pumps

von TAINÉ® Magnetically Coupled Centrifugal Pumps



Dimensions



		von Taine® 0502 PVDF	von Taine® 0807 PVDF	von Taine® 1010 PVDF	von Taine® 1313 PVDF	von Taine® 1820 PVDF	von Taine® 2323 PVDF
Discharge connector (D)		G 1"	G 1 1/4"	G 1 1/2"	G 1 1/2"	G 2"	G 2"
Suction connector (S)		G 1 1/4"	G 1 1/4"	G 2"	G 2"	G 2 1/4"	G 2 1/4"
L	mm	240	283	320	350	430	430
B	mm	120	138	163	163	205	205
H	mm	145	185	191	191	227	227
a	mm	37.0	45.0	58.5	58.5	70.0	70.0
b	mm	29.5	29.5	56.0	56.0	70.0	70.0
c	mm	60.0	70.0	82.0	82.0	104.5	104.5
d	mm	65.5	86.0	104.0	104.0	134.5	134.5
e	mm	129	50	106	106	115	115
f	mm	78	71	74	74	100	100
g	mm	91	91	114	114	130	130
h	mm	6.5	8.5	8.5	8.5	10.0	10.0
i	mm	92	135	135	135	155	155
Enclosure rating		IP 55	IP 55	IP 55	IP 55	IP 55	IP 55
Min. flow	l/h	30	60	60	60	90	120



1.7 ProMinent® Duodos Air Operated Diaphragm Pump

Air-Operated Diaphragm Pump Duodos

- Duodos pumps are air-driven double diaphragm transfer pumps. No electrical components are required.
- Capacity range up to 12,000 l/h, discharge lift up to 70 m WC

Air-operated Diaphragm Pump Duodos for pumping liquid media.

The pump capacity of the pump can be controlled by changing the pressure in the air supply. The air control is designed for oil-free operation. Duodos pumps are ideally suited for the transport of liquid chemicals. Duodos pumps transport media at up to 12,000 l/h and up to a discharge lift of 70 m. As the pump capacity is highly dependent on the back pressure, the performance curve must always be observed. At the same time, the differential pressure between the hydraulic and pneumatic sides should not exceed 2 bar. Higher values reduce the service life of the pump. When selecting pumps, check the material compatibility. In addition, consider the density, viscosity and temperature of the transported medium.

YOUR BENEFITS

- No electrical components are required because the pumps are air-operated
- Duodos pumps are run-dry safe and self-priming

TECHNICAL DETAILS

- Maximum air pressure 7 bar
- The air control is designed for oil-free operation
- If the back pressure is greater than the air pressure in the pump, the pump remains stationary

FIELD OF APPLICATION

- Pumping of liquid chemicals

The following materials are available:

- PP pump chambers with Santoprene® diaphragms and valves
- PVDF pump chambers with PTFE diaphragms and valves



Duodos PP

	Housing material	Diaphragms/ valves	Delivery rate (2 bar differential pressure) l/h	Part No.
Duodos 20 PPS	PP	Santoprene®	0...1,200	1103381
Duodos 50 PPS	PP	Santoprene®	0...3,000	1103384
Duodos 100 PPS	PP	Santoprene®	0...6,000	1103383
Duodos 200 PPS	PP	Santoprene®	0...12,000 1	103377

Duodos PVDF

	Housing material	Diaphragms/ valves	Delivery rate (2 bar differential pressure) l/h	Part No.
Duodos 20 PVT	PVDF	PTFE	0...1,200	1103378
Duodos 50 PVT	PVDF	PTFE	0...3,000	1103382
Duodos 100 PVT	PVDF	PTFE	0...6,000	1103379
Duodos 200 PVT	PVDF	PTFE	0...12,000	1103380

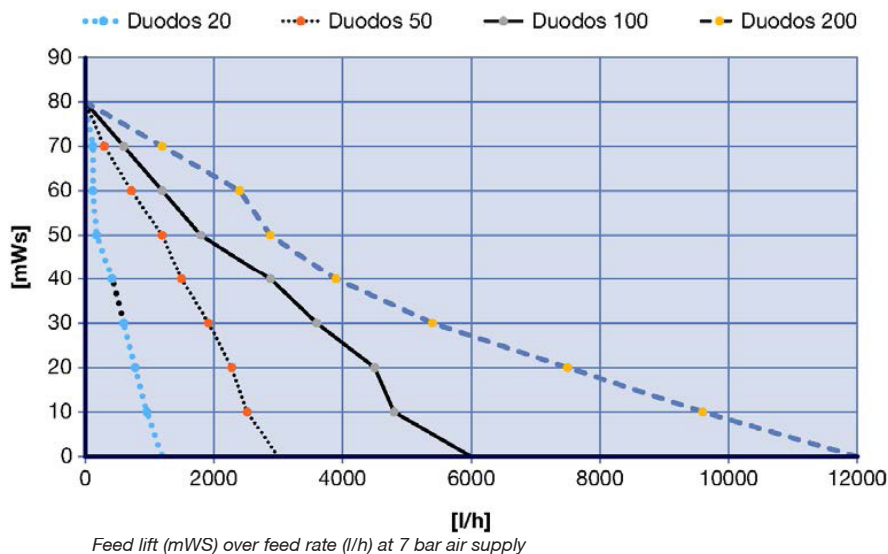
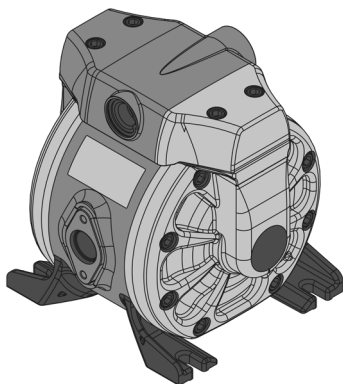
Parameters For Use

	Min. temperature °C	Max. temperature °C	Max. viscosity mPas
Duodos 100 PPS	10	80	200
Duodos 100 PVT	-13	93	200
Duodos 20 PPS	10	80	200
Duodos 20 PVT	-13	93	200
Duodos 200 PPS	10	80	200
Duodos 200 PVT	-13	93	200
Duodos 50 PPS	10	80	200
Duodos 50 PVT	-13	93	200



1.7 ProMinent® Duodos Air Operated Diaphragm Pump

Duodos Spare Parts



Spare part kits for pneumatics comprising

- Seals
- O-rings
- Clamp collars
- Air control valve

	Part No.
Spare parts kit, pneumatics for Duodos 20 PPS	1103386
Spare parts kit, pneumatics for Duodos 50 PPS	1103387
Spare parts kit, pneumatics for Duodos 100 PPS	1103388
Spare parts kit, pneumatics for Duodos 200 PPS	1103389
Spare parts kit, pneumatics for Duodos 20 PVDF	1103398
Spare parts kit, pneumatics for Duodos 50 PVDF	1103399
Spare parts kit, pneumatics for Duodos 100 PVDF	11033400
Spare parts kit, pneumatics for Duodos 200 PVDF	11033401

Spare part kits for the liquid end comprising

- Diaphragms
- Valve balls
- Seals

	Part No.
Spare parts kit, liquid end for Duodos 20 PPS	1103391
Spare parts kit, liquid end for Duodos 50 PPS	1103390
Spare parts kit, liquid end for Duodos 100 PPS	1103393
Spare parts kit, liquid end for Duodos 200 PPS	1103392
Spare parts kit, liquid end for Duodos 20 PVT	1103394
Spare parts kit, liquid end for Duodos 50 PVT	1103396
Spare parts kit, liquid end for Duodos 100 PVT	1103395
Spare parts kit, liquid end for Duodos 200 PVT	1103397



1.8 UV Spare Parts

Dulcodes MP Version

Part No.	Description
1035179	UV Lamp S - 0.65 kW /1 kW
1035057	UV Lamp S - 2 kW
1035180	UV Lamp S - 3 kW
1035166	Lamp protection tube 1x1MP - 1 kW
1035041	Lamp protection tube 1x2MP - 2 kW
1035193	Lamp protection tube 1x3MP - 3 kW
1035193	Lamp protection tube 2x2MP - 4 kW
1035193	Lamp protection tube 2x3MP - 6 kW
1035193	Lamp protection tube 3x3MP - 9 kW
1060734	Spare parts set UV 1x1MP, 1x2MP & 1x3MP
1060737	Spare parts set UV 2x2MP & 2x3MP
1060738	Spare parts set UV S 3x3MP

Dulcodes S Version

Part No.	Description
1035179	UV Lamp S - 0.65 kW /1 kW
1035057	UV Lamp S - 2 kW
1035180	UV Lamp S - 3 kW
1035218	Lamp protection tube S - 0.65 kW
1035166	Lamp protection tube 1x1S - 1 kW
1035041	Lamp protection tube 1x2S - 2 kW
1035193	Lamp protection tube 1x3S - 3 kW
1035193	Lamp protection tube 2x2S - 4 kW
1035193	Lamp protection tube 2x3S - 6 kW
1035193	Lamp protection tube 3x3S - 9 kW
1037735	Spare parts set UV S 1 - 3 kW
1037756	Spare parts set UV S 2x2 kW & 2x3 kW
1037757	Spare parts set UV S 3x3 kW

Dulcodes M Version (Powerline, Old Style)

Part No.	Description
1009385	UV Lamp M 2 kW / 3 kW
1009386	UV Lamp M 4 kW
1009387	UV Lamp M 6 kW
1009388	UV Lamp M 8 kW / 10 kW
1009214	Lamp protection tube M - 2 kW / 3 kW
1009215	Lamp protection tube M - 4 kW / 6 kW
1009216	Lamp protection tube M - 8 kW / 10 kW
1037611	Spare parts set UV M



1.8 UV Spare Parts

UVC Sensor

Part No.	Description
1080715	UVC-U Sensor M/S 1.4539
1035084	Conversion kit including new sensor

UV Ballasts (M Version Powerline)

Part No.	Description
1008947	4 kW Ballast
1008948	6 kW Ballast
1008949	8 kW Ballast
1008950	10 kW Ballast

PLEASE NOTE

No additional discounts permitted.
Prices exclude freight. Freight is F.O.T. ex works Belrose, NSW.
Prices exclude GST.



1.9 Chlorinsitu III Spare Parts

Chlorinsitu III Spare Parts

Part No.	Description	Qty
61500000	Maintenance Pack-1 Chlorinsitu® -III Compact 25 g/hr	1
61510000	Maintenance Pack-3 Chlorinsitu® -III Compact 25 g/hr	1
61500000	Maintenance Pack-1 Chlorinsitu® -III Compact 50 g/hr	1
61610000	Maintenance Pack-3 Chlorinsitu® -III Compact 50 g/hr	1
69500700	Maintenance Pack-1 Chlorinsitu® -III 100-500 g/hr	1
69500800	Maintenance Pack-3 Chlorinsitu® -III 100-500 g/hr	1
69500500	Maintenance Pack-1 Chlorinsitu® -III 600-1,750 g/hr	1
69500600	Maintenance Pack-3 Chlorinsitu® -III 600-1,750 g/hr	1
69500100	Maintenance Pack-1 Chlorinsitu® -III 2,000-3,500 g/hr	1
69500300	Maintenance Pack-3 Chlorinsitu® -III 2,000-3,500 g/hr	1
12030909	Replacement FIP Solenoid Valve	1
40008746	3M Pump T Mag-PV32	1
40000444	3M Pump T Mag-PV52	1
40008747	Blower 400Vac for Chlorinsitu® -III 100-500 g/hr	1
40008680	Blower 400Vac for Chlorinsitu® -III >500 g/hr	1
9120364	Yarn Cartridge 5"/50 Micron Pp80	1
9120365	Yarn Catridge 10"/50 Micron Pp50	1
40001535	Vacuum transmitter with connector	1
40008984	Chlorine Gas Sensor for Chlorinsitu® -III	1



1.10 Tomal Spare Parts

Polymore

No	Description	Part No.
1	Pump tube; 3.2 mm dia. x 1 metre (bulk)	T21080
2	Pump tube; 5.0 mm dia. x 1 metre (bulk)	T48001 - 1M
3	Pump tube; 8.0 mm dia. x 1 metre (bulk)	T48201 - 1M
4	PVC Clear Vinyl tubing CVT - 5 mm x 1 M	00-600-005-100MR-1M
5	PVC Clear Vinyl tubing CVT - 8 mm x 1 M	00-600-008-100MR-1M
6	Straight connector for tube with male G1/4" thread - 5 mm	T1A100MG4214PP
7	Elbow union for tube both ends	T1A200T42PP
8	Straight connector for tube with male G1/2" thread - 8 mm	T1A100MG4612PP
9	Elbow union for tube both ends	T1A200T46PP
10	Potentiometer knob inserted Pos 8	T20605
11	Potentiometer 10 K ohm Pos 8	T20655
12	Agitator motor 230/50-90 W-56 B5 thermal protection	T21538

Polyrex System

No	Description	Part No.
1	Inlet water pressure switch brass 2.0 / 2.6 bar	T212105
2	Complete filter with inner & outer filter & seal	T210282
3	Inner filter 23 A (3)	T212952
4	Outer filter 29 (4)	T210278
5	Seal 23C (2)	T210279

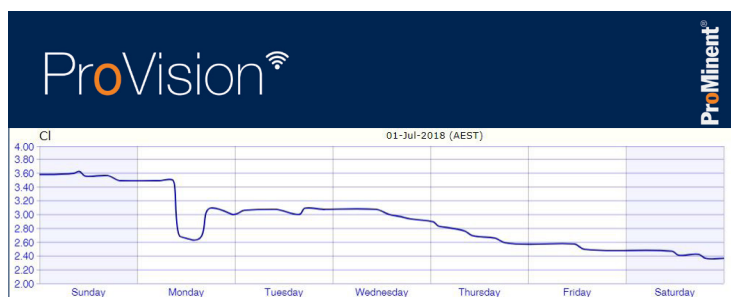


1.12 Communications Modules

ProVision Communications Module with SMS

ProVision is web based remote monitoring and control service which provides continuous, real-time monitoring and control using cost effective hardware and the mobile phone network.

Connect the ProMinent range of controllers, UV systems or any device with an analogue or digital output to the ProVision. It provides asset map location, real-time graphical logging, visual representation via mimic panel and notifications (SMS, email alerts and reports) of conditions for example chemical readings, pumps status and levels. ProMinent will setup the system in accordance with the agreed inputs. Customer can create logins with user level rights.



ProVision	Qty included
AgentG2+ hardware	1
AC/DC power pack	1
SIM fee per AgentG2+ and support. URL. First year ¹	1
Air temperature with TC direct into AgentG2+	1
Remote setup "Location" configuration ²	1 x Location
Remote setup "Site". A location can have multiple sites ³	1 x Site
4-20mA setup. Acid and Chlorine would be two 4-20mA setups	2
I/O per setup. EG General Alarm	1
Mimic Panel 3 elements minimum (2x 4-20mA + General Alarm)	1
Isolation h/w	0
Enclosure	1
ProVision Total list price includes 1st year SIM mobile 3G connection [Excluding GST]	

SIM mobile 3G connection and support for year 2 onwards is / month.

- Does not include on site install wiring 4-20mA measured variables and I/O inputs to Agent2+
- Maximum discount - 20% on initial order. Includes year 1 mobile phone network.
- Maximum discount -5% on year 2 and onwards support and mobile phone network access.

Options

Additional Location

Additional site

Additional 4- 20mA input (max 6 x 4-20mA per Agent2+ hardware)

Additional I/O input (max 6 x I/O per Agent2+ hardware)

Isolation hardware is required on some controllers and equipment which do not have galvanic isolation

Additional AgentG2+ with AC/DC power with 1-year 3G SIM fee per year and support

¹ First year of mobile access and Agent2+ and remote support.

² Location is typically one AgentG2+.

³ A "Site" is a single controller. Two controllers on one Agent2G+ would be two Sites.

