

Catalogue 2025

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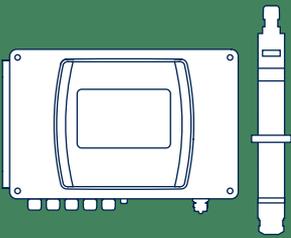


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SOLENOID PUMPS

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1.0 alpha Motor Driven Metering Pump

1.0.1 alpha Motor Driven Metering Pump

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.

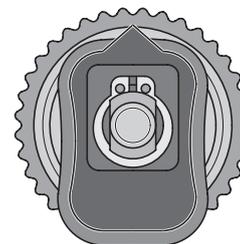
The result is a good suction performance, smooth metering stroke and consistently accurate metering with low mechanical load on the metering diaphragm.

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.



1.0 alpha Motor Driven Metering Pump

1.0.2 Technical Data for alpha

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 | | | | | | |
| 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 alpha Motor Driven Metering Pump

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 |

| Liquid end Material | |
|---------------------|------------------|
| NPE | Acrylic/PVC/EPDM |
| NPB | Acrylic/PVC/FPM |
| PVT | PVDF/PVDF/PTFE |

| Valve springs | |
|---------------|--|
| 2 | No valve springs with bleeding |
| 3 | With 2 valve springs approx. 0.1 bar, stainless steel 1.4571 with bleeding |

| Hydraulic Connectors | |
|----------------------|----------|
| 0 | Standard |

| Version | |
|---------|----------------------|
| 0 | With ProMinent® logo |

| Electrical connectors | |
|-----------------------|---|
| A | 230 V, 50/60 Hz, 2 m, Euro. plug |
| B | 230 V, 50/60 Hz, 2 m, Swiss plug |
| C | 230 V, 50/60 Hz, 2 m, Australian plug (STD) |
| D | 115 V, 50/60 Hz, 2 m, USA plug |

| Ancillary equipment | |
|---------------------|---|
| 0 | No ancillary equipment |
| 1 | With foot and dosing valve, 2 m PVC and 5 m PE hose (STD) |

| | | | | | | | |
|------|------|-----|---|---|---|---|---|
| ALPC | 0707 | PVT | 2 | 0 | 0 | C | 1 |
|------|------|-----|---|---|---|---|---|



1.1 beta Solenoid Driven Metering Pump

1.1.1 beta Solenoid Driven Metering Pump

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 % (recomended 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 x 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 beta Solenoid Driven Metering Pump

1.1.2 Technical Data beta BT4b & BT5b

| 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 |
|---------------|---|------|-----------|--|------|-----------|-------------|-----------------------------------|----------------|-------------------------------|-----|
| | bar | l/h | ml/stroke | bar | l/h | ml/stroke | | | | | |
| 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 beta Solenoid Driven Metering Pump

1.1.3 Identity Code & Pricing for beta BT4b & BT5b

beta BT4b version b

| | | | |
|---|----------------------------|-------------------------------------|----------------------------|
| BT4b 1000,1601, 1602, 1604 also 2001* 1001, 0701, 0401 2002* 1002, 0702, 0402 1004, 0704, 0404 | PP PV NP TT SS | BT5b 1008, 0713, 0420 also 2504* | PP PV NP TT SS |
| BT4b 0708, 0413, 0220 also 0408 | PP PV NP TT SS | BT5b 0232 | PP PV NP TT SS |

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

| | |
|------------|--|
| PPE | Polypropylene/EPDM |
| PPB | Polypropylene/Viton (FPM-B) <i>not stocked FPM-B = Fluorine Rubber</i> |
| NPE | Plexiglass/EPDM <i>not stocked</i> |
| NPB | Plexiglass/Viton |
| PVT | PVDF/PTFE, for L/E type 2 <i>not 0232</i> & type 4 <i>only 1004/1604, 0708/1008, 0413/0713, 0220/420</i> |
| 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, only PVT type 1604, 0708, 1008, 0413, 0713, 0220, 0420 |
| 7 | PVT Self bleed (SER) no bypass NOT 1000, 1601, 0232 |
| ** | Self bleed, (SEK) for PP, NP only all sizes EXCEPT type 1000 and 0232 - CHECK AVAILABILITY |

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 |
|----------|----------|

Aux Frequency - Other available

| | |
|----------|------------------|
| 0 | Standard 180 Spm |
|----------|------------------|

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.

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 0 U C 0 1 0 0 0 0 P



1.1 beta Solenoid Driven Metering Pump

1.1.4 Technical Data for beta BT4a & BT5a – CAN Bus ONLY

| pump type | Max. Pump Capacity at Maximum Back Pressure | | | Max. Pump Capacity at Medium Back Pressure | | | Stroke Freq | Connector Sizes Outer R̄ x Inner R̄ | Suction Lift** | Delivery Weight PP, NP PC, TT | | SS |
|--------------|---|------|-----------|--|------|-----------|-------------|-------------------------------------|----------------|-------------------------------|-----|----|
| | bar | l/h | ml/stroke | bar | l/h | ml/stroke | | | | 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 a 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 beta Solenoid Driven Metering Pump

1.1.5 Identity Code & Pricing for beta BT4a & BT5a – CAN Bus ONLY

| beta BT4a 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 BT5a 0232 |
| BT4a 1005, 0708, 0413, 0220 also 0405, 0705 0408 | PPE PVT NPB TTT SST | | 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 <i>not 0232</i> & type 4 <i>only 1005/1605, 0708/1008, 0413/0713, 0220/420</i> |
| 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 0 P0



1.1 beta Solenoid Driven Metering Pumps

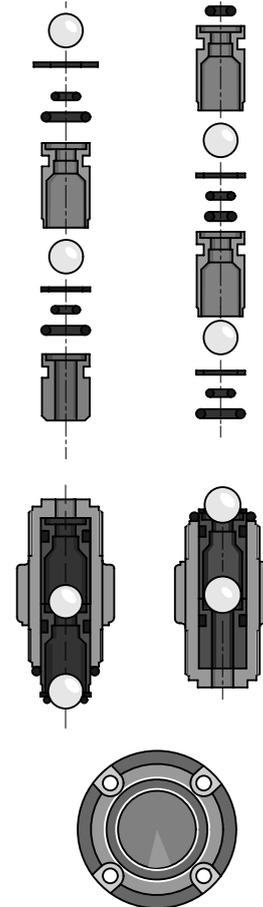
1.1.6 Spare Parts Sets beta BT4b & BT5b

| | | 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



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 beta Solenoid Driven Metering Pumps

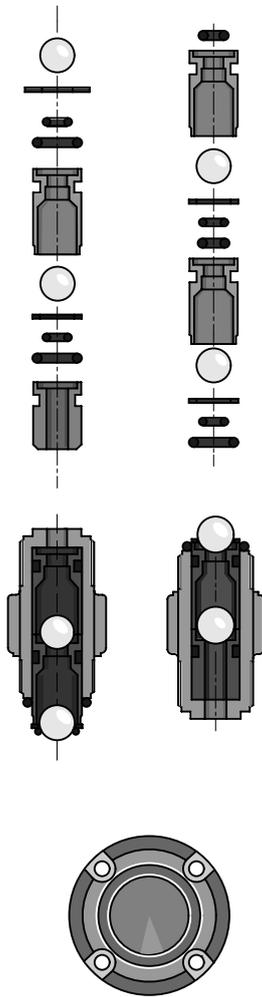
1.1.7 Spare Parts Sets beta BT4a & BT5a

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.



| | | 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 | PPE | 1001645 |
| | also: 2001, 1001, 0701, 0401 | PPB | 1001653 |
| | PCE/NPE | 1001714 | |
| | PCB/NPB | 1001722 | |
| | PVT | 1023108 | |
| | TTT | 1001738 | |
| | SST | 1001730 | |
| | BT4a/b 1602 | PPE | 1001646 |
| also: 2002, 1002, 0702, 0402 | PPB | 1001654 | |
| | PCE/NPE | 1001715 | |
| | PCB/NPB | 1001723 | |
| | PVT | 1023109 | |
| | PVT/HV | 1035342 | |
| | TTT | 1001739 | |
| | SST | 1001731 | |
| | BT4a/b 1604 | PPE | 1039989 |
| | also: 1004, 0704, 0404 | 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 | PPE | 1001648 |
| | also: 0408 | 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 beta Solenoid Driven Metering Pumps

1.1.7 Spare Parts Sets beta 4a/b & 5a/b

Replacement part set: beta with self-deaerating head TYPE 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, 1004 | EPDM | 1001775 |
| 0708, 0413, 1008, 0713, 0220, 0420, 0232 | EPDM | 1001776 |
| NPB2 & PPB2 1000, 1601, 1602, 1005, 1605, 1004 | Viton | 1001773 |
| 0708, 0413, 1008, 0713, 0220, 0420, 0232 | Viton | 1001774 |
| PPE9 1601, 1602, 1005, 1605, 1004 | 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 |
| PVT2 1000, 1601, 1602, 1004 | Teflon | 1023130 |
| 0708, 0413, 1008, 0713, 0220, 0420, 0232 | Teflon | 1023129 |



1.1 beta Solenoid Driven Metering Pumps

1.1.8 PTFE Diaphragm for beta 4a/b & 5a/b

NOTE: To be used ONLY with Chlorine Dioxide

| Type | with the medium | Part No. |
|-------------------------|-----------------|----------|
| Type 1602 | | 1118690 |
| Type 1604 | | 1117351 |
| Type 0708 and Type 1008 | | 1117350 |
| Type 0413 and Type 0713 | | 1117354 |



1.2 CONCEPT CONb

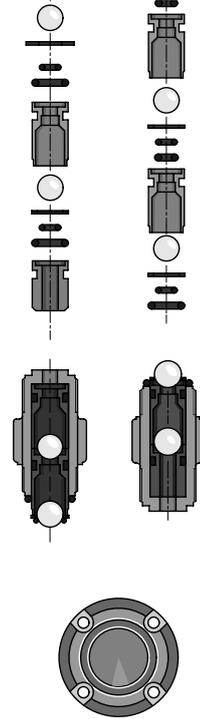
1.2.1 CONCEPT CONb Spare Parts Sets

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



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 |

1.2.10 CONCEPT PLUS Spare Parts Sets CNPa & CNPb

| | Part No. |
|--------------|----------|
| CNPa1000PPE2 | 1001644 |
| CNPa1601PPE2 | 1001645 |
| CNPa1002PPE2 | 1001646 |
| CNPa0308PPE2 | 1001648 |
| CNPa0213PPE2 | 1001649 |
| CNPa1000NPB2 | 1001721 |
| CNPa1601NPB2 | 1001722 |
| CNPa1002NPB2 | 1001723 |
| CNPa0704NPB2 | 1025430 |
| CNPa0308NPB2 | 1001725 |
| CNPa0213NPB2 | 1001726 |
| CNPb1000PVT2 | 1023107 |
| CNPb1601PVT2 | 1023108 |
| CNPb1002PVT | 1023109 |
| CNPb0704PVT2 | 1027732 |
| CNPb0309PVT | 1023111 |
| CNPb0215PVT | 1023112 |

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 |



1.3 gamma/ X Solenoid Driven Metering Pump

1.3.1 gamma/ X Solenoid Driven Metering Pump

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.



Features & 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 100V - 230V, 50/60 Hz
- Optional 230V relay module, can also be easily and reliably retrofitted
- Optional 24V 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.



1.3 gamma/ X Solenoid Driven Metering Pump

1.3.2 Technical Data & Materials for gamma/ X

| pump type gamma/ X | Delivery rate at max. back pressure | | | Number of Strokes | Connection Size OD x ID | Suction Lift | Shipping Weight | |
|-----------------------|-------------------------------------|-------|-----------|-------------------|----------------------------|--------------|-----------------|-----|
| | bar | l/h | ml/stroke | | | | PP, NP | SS |
| 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 | 2.20 | 0.18 | 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



1.3 gamma/ X Solenoid Driven Metering Pump

1.3.3 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 |

Note: Pump prices above in **BOLD** are normally stocked. Prices in *italics*, (and other combinations of materials), are available, however please consult Sydney office.

| Seal/diaphragm material | | PV | SS |
|-------------------------|------------------------------|----|----|
| T | PTFE/PFTE coated | | |
| F | FDA Compliant PV & SS | | |
| M | Full PTFE diaphragm, PV Only | | |

Refer Sydney office if NPB9 is required.

| Liquid end version | |
|--------------------|--|
| 0 | Non-bleed version, no valve spring only with NP, TT and SS and type 0245 |
| 1 | Non-bleed version, with valve spring only with NP, TT and SS and type 0245 |
| 2 | Bleed function, no valve springs only with PP, PV, NP * not for type 0245* |
| 3 | Bleed function, with valve springs only with PP, PV, NP * not for type 0245* |
| 4 | HV version for highly viscous media with valve spring * not for types 1602 and 0245* |
| 7 | self-bleeding without bypass (SER), only with NPT and PVT* not for types 1602, 2504 and 0245* |
| 9 | self-bleeding without bypass (SEK), only with NPB not for types 2504 and 0245* |

| 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, electrical signal not for 0245 |

| Version | |
|---------|----------|
| 0 | Standard |

| Logo | |
|------|---------------------|
| 0 | with ProMinent logo |

| Power supply | |
|--------------|----------------------------|
| 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 – 2 A, fault indicating relay N/C |
| 4 | 2 x N/O 24 V – 100 mA, as 1 + pacing relay |
| C | 1 x N/O 24 V – 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 - NOT for PTFE, SS or HV |

| Control version | |
|-----------------|--|
| 0 | Manual + ext. 1:1 & pulse control |
| 3 | Manual + ext. & pulse control + analogue 0/4 - 20 mA |
| C | such as 3 + CANopen |
| D | such as 3 + CANopen |
| E | 3 + PROFIBUS® |
| M | 3 + ModBus RTU |
| R | as 3 + PROFIBUS DP interface |

| Metering monitor | |
|------------------|--------------------|
| 0 | Pulse signal input |

| Remote Stop | |
|-------------|-------------------|
| 0 | without Bluetooth |
| B | with Bluetooth |

| Language | |
|----------|---------|
| EN | English |

| Prepack Option | |
|----------------|-------------|
| P* | See options |

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.

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

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



1.3 gamma/ X Solenoid Driven Metering Pump

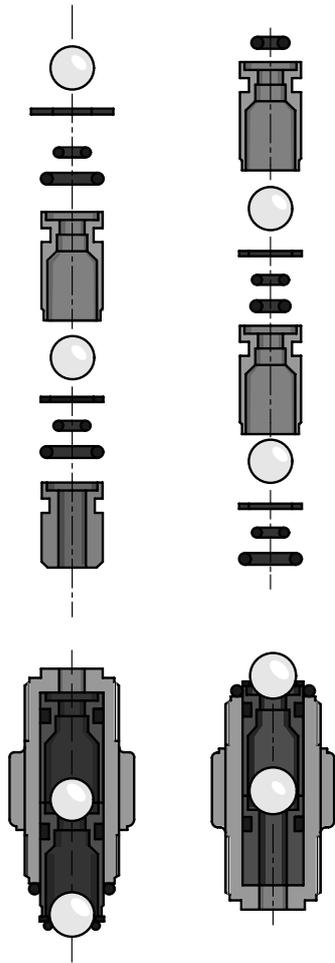
1.3.4 Accessories Spare Part Sets gamma/ X

Spare Parts Kit for 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

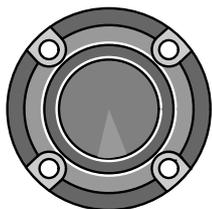
Note: Suction and discharge valve set not included with stainless steel version.



| 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 |
| | | NBP2 | 1001725 |
| | | NBP9 | 1001669 |
| | | PVT4 | 1019067 |
| TTT | | 1001741 | |
| | SST | 1001733 | |
| | Type 0414 and Type 0715 | PVT2, PPT, NPT2 | 1023112 |
| | | NBP2 | 1001726 |
| | | NBP9 | 1001670 |
| | | PVT4 | 1019069 |
| TTT | | 1001742 | |
| | SST | 1001734 | |
| | Type 0220 and Type 0424 | PVT2, PPT, NPT2 | 1051129 |
| | | NBP2 | 1051107 |
| | | NBP9 | 1051113 |
| | | PVT4 | 1051134 |
| TTT | | 1051151 | |
| | SST | 1051139 | |
| | Type 0245 | PVT2, PPT | 1051130 |
| | | NBP2 | 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 |



1.3 gamma/ X Solenoid Driven Metering Pump

1.3.5 gamma/ X Metering Pump with SER

Spare parts kits for gamma/ X 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 |

1.3.6 PTFE Diaphragm for gamma/X Metering Pump

NOTE: To be used ONLY with Chlorine Dioxide

| Type | with the medium | Part No. |
|-------------------------|-----------------|----------|
| Type 1602 | | 1118690 |
| Type 1604 | | 1117351 |
| Type 0708 and Type 1009 | | 1117350 |
| Type 0414 and Type 0715 | | 1117354 |
| Type 0220 and Type 0424 | | 1117352 |
| Type 0245 | | 1117353 |



1.4 gamma/ XL Solenoid Driven Metering Pump

1.4.1 gamma/ XL

gamma/ XL – large output, great features

The 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 DULCOneX 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



1.4 gamma/ XL Solenoid Driven Metering Pump

1.4.2 Technical Data gamma/ XL

| 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 |
|--|-------------------------|-------------------------|--------------------------------------|------------------------------------|---------------------|-------------------------|--|
| GXLa 2508 | 25 | 7.80 | 0.67 | 200 | 8 x 4** mm | 5* | 10/11 |
| GXLa 1608 | 16 | 7.80 | 0.67 | 200 | 8 x 5** mm | 5* | 10/11 |
| GXLa 1612 | 16 | 12 | 1 | 200 | 8 x 5 mm | 6* | 10/11 |
| GXLa 1020 | 10 | 19.6 | 1.7 | 200 | 12 x 9 mm | 5* | 10/11 |
| GXLa 0730 | 7 | 29.4 | 2.5 | 200 | 12 x 9 mm | 5* | 10/11 |
| GXLa 0450 | 4 | 49.0 | 4.2 | 200 | G 3/4 - DN 10 | 3* | 10/11 |
| GXLa 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* | | | | | | | |
| GXLa 1608 | 10 | 7 | 0.6 | 200 | 8 x 5 mm | 1.8 | 10 |
| GXLa 1612 | 10 | 10 | 0.8 | 200 | 8 x 5 mm | 1.8 | 10 |
| GXLa 1020 | 10 | 15 | 1.25 | 200 | 12 x 9 mm | 1.8 | 10 |
| GXLa 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 $-10\text{ }^{\circ}\text{C}$ to $45\text{ }^{\circ}\text{C}$.
- Mean power consumption 78 W.
- Degree of protection IP 66, insulation class F.



1.4 gamma/ XL Solenoid Driven Metering Pump

1.4.3 Identity Code & Pricing for ProMinent® gamma/ XL

GXLa

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 [1612, 1020, 0730 NOT STOCKED ITEM]
- SS** stainless steel/stainless steel

Material of seals/diaphragm

- T** only with PV and SS
- F** FDA-compliant design, only for PV and SS
- B** VITON only with NP Heads
- M** Full PTFE diaphragm and seals, PV only

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
- 5** Connector on discharge side for 12/6 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- 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 – 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, 230V 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
- M** as 3 + ModBus RTU

Communication

- 0** without interface
- B** with Bluetooth

Operating menu language

- EN** English

Prepack

- P** see Options at left

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.

Note: 1608, 1612 & 2508 pumps are supplied with 5.0m PTFE tube, other tube is available on request.

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.

Note: Cable for I/O port see page 3.19 in Yellow Pages.

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



1.4 gamma/ XL Solenoid Driven Metering Pump

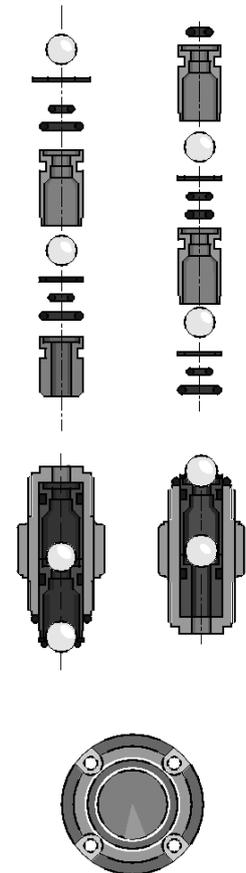
1.4.4 gamma/ XL Spare Parts Kits

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 1612 | SST0 | 1027086 | |
| | NPE | 1030536 | |
| | NPB | 1030525 | |
| | Type 1020 | PVT2/NPT2 | 1027082 |
| PVT4 | | 1019069 | |
| PVT7 | | 1047833 | |
| SST0 | | 1027087 | |
| Type 1020 | NPE | 1030537 | |
| | NPB | 1030526 | |
| | Type 0730 | PVT2/NPT2 | 1095626 |
| | | PVT4 | 1095499 |
| PVT7 | | 1095503 | |
| SST0 | | 1095501 | |
| Type 0730 | NPE | 1095701 | |
| | NPB | 1095700 | |
| | Type 0450 | PVT2 | 1095502 |
| | | SST0 | 1095625 |
| Type 0280 | PVT2 | 1095500 | |
| | 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 |



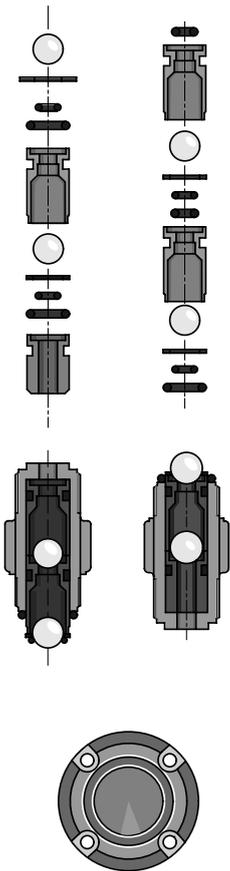
1.5 delta Metering Pump Spare Parts

1.5.1 delta Metering Pump 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 |
| | SST | 1027086 |
| | Type 1020 | PVT |
| | SST | 1027087 |
| | Type 0730 | PVT |
| | SST | 1027088 |
| | Type 0450 | PVT |
| | SST | 1027089 |
| | Type 0280 | PVT |
| | SST | 1027090 |

Replacement Diaphragms for Delta® series pumps

| Type | Material | 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 |

1.5.2 PTFE Diaphragm for delta Metering Pumps

NOTE: To be used ONLY with Chlorine Dioxide

| Type | with the medium | Part No. |
|--------------------------------|-----------------|----------|
| Type 1612 | | 1117433 |
| Type 1020 | | 1117354 |
| Type 0730 | | 1117352 |
| Type 0450 | | 1117353 |
| Type 0280 NOT AVAILABLE | | - |



1.6 EXTRONIC Diaphragm Metering Pump

1.6.1 EXBb G version – gas explosion proof Property class II, property class 2G (Zone 1, group II)

The ProMinent EXTRONIC series approved according to the new EG-EX-directive 94/9/EG (ATEX), for metering fluids in gas explosion endangered 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

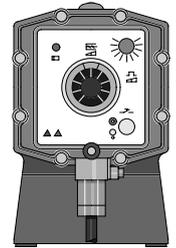
EXBb M for use in firedamp endangered mining operations - NO LONGER AVAILABLE

PROTECTION GRADE EEx D I/II C T6

Key:

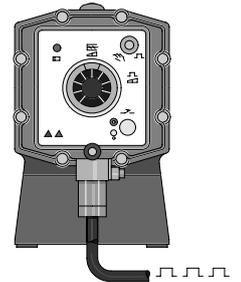
- EEx** - explosion proof equipment conforms to European Standards
- d** - fire proofing, flameproof enclosure
- IC** - explosion group I for firedamp endangered operations
- IIC** - explosion group II for all other hazardous locations, sub group IIC (includes IIA and IIB)
- T6** - temperature class, 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.



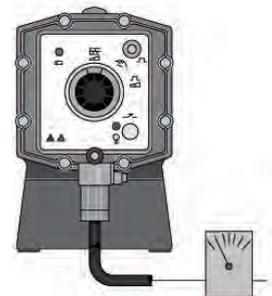
Control type “Internal”

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



Control type: “External Contact”

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



Control type: “Analogue”

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



1.6 EXTRONIC Diaphragm Metering Pump

1.6.2 Technical Data EXTRONIC

| Pump Type EXTRONIC | 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 |
|-----------------------|--|------|---------------|---|------|---------------|------------------|--------------------------------------|-----------------|--------------------------------------|
| | bar | l/h | ml/ stroke | bar | l/h | ml/ stroke | | | | |
| 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.



1.6 EXTRONIC Diaphragm Metering Pump

1.6.3 Identity Code & Pricing EXTRONIC

| EXBb ProMinent EXTRONIC Version b | |
|--|---|
| Protection: | |
| G | Gas-EX-proof |
| M | Fire and explosion protection (firedamp) - NO LONGER AVAILABLE |
| 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 [5m Power Cable open-ended is included]: | |
| A | 230 V, 50/60 Hz |
| B | 115 V, 50/60 Hz |
| E | 500 V, 50/60 Hz NO LONGER AVAILABLE |
| 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 |

Note: May require certificate of conformity for some Australian applications at extra cost.

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.

For any other Pricing: refer Sydney office

Viton® is a registered trademark of DuPont Dow Elastomers FPM = Fluorine Rubber

EXBb G 1000 PP1 0 A 0 0 0



1.6 EXTRONIC Diaphragm Metering Pump

1.6.4 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 $\pm 2\%$ when correctly installed, refer to operating instructions manual.

$\pm 5\%$ for type 1601 with self bleeding liquid end.

Permissible ambient temperature $-10\text{ }^{\circ}\text{C}$ to $+45\text{ }^{\circ}\text{C}$.

Power supply: 230 V $\pm 10\%$, 50/60 Hz
115 V $\pm 10\%$, 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.

1.6.5 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.



| 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 |



1.6 EXTRONIC Diaphragm Metering Pump

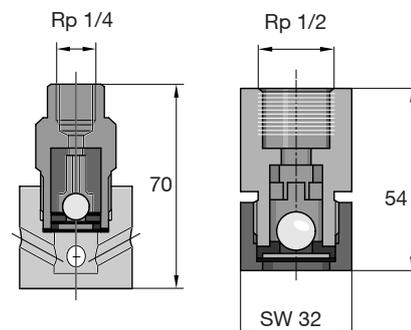
1.6.6 Accessories - Valves

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 |

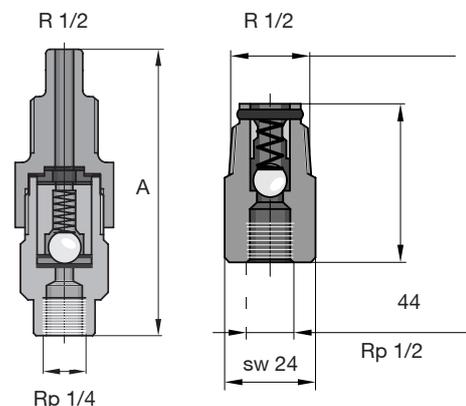


Dosing valve, "SB" 1.4404 stainless steel

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 |



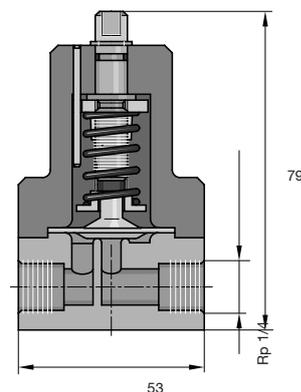
Adjustable "SB" back pressure valve 1.4404 stainless steel

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.



1.7 Pneumados Pneumatic Metering Pump

1.7.1 Pneumados Pneumatic Metering Pump



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.

In all plants with central control (e.g. PLC) and compressed air supply.

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 |



1.7 Pneumados Pneumatic Metering Pump

1.7.2 Technical Data Pneumados

| Pump type | Delivery output at maximum Pressure | | | Connection size OD R̄ x id R̄ | Suction 3) height | corresp. suction pressure 2) | Suction height 1) | corresp. suction pressure 2) | Admissible pre-pressure on suction side |
|-------------|-------------------------------------|-------|------|----------------------------------|-------------------------|---------------------------------------|-------------------------|---------------------------------------|---|
| | bar | l/h | ml/ | | | | | | |
| 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 |



1.7 Pneumados Pneumatic Metering Pump

1.7.3 Identity Code & Pricing for Pneumados

PNDb Pneumados

| Pump Type: | Capacity (simplex) | | PVT | SS | PVT | SS |
|------------|--------------------|-----|----------|---------|--------|--------|
| | | | SIMPLEX | SIMPLEX | DUPLEX | 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 0 01

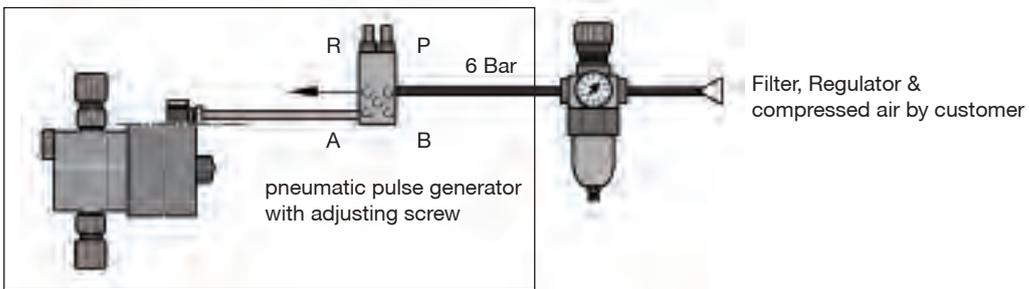


1.7 Pneumados Pneumatic Metering Pump

1.7.4 Electric and Pneumatic Schematic Diagrams

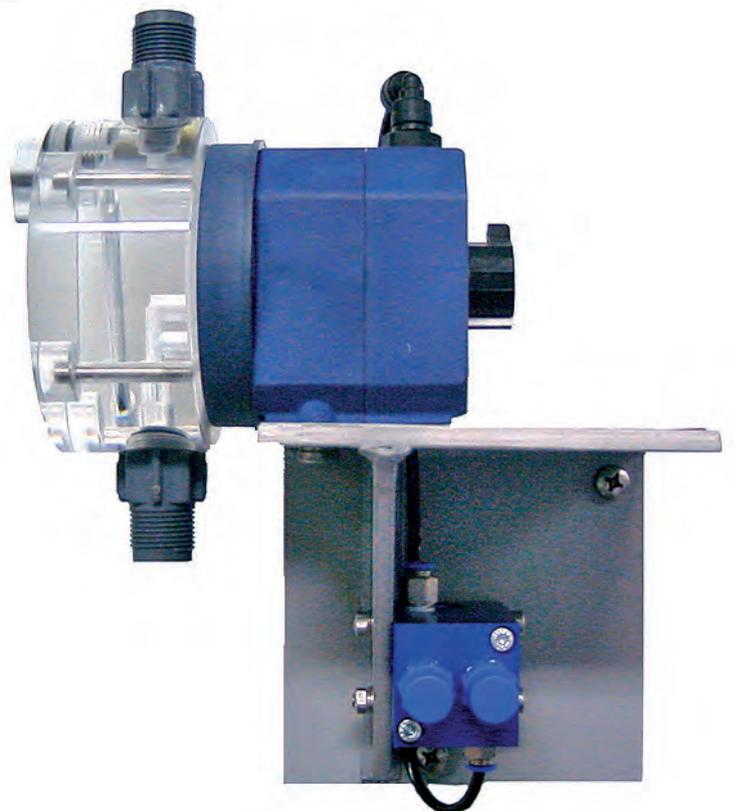
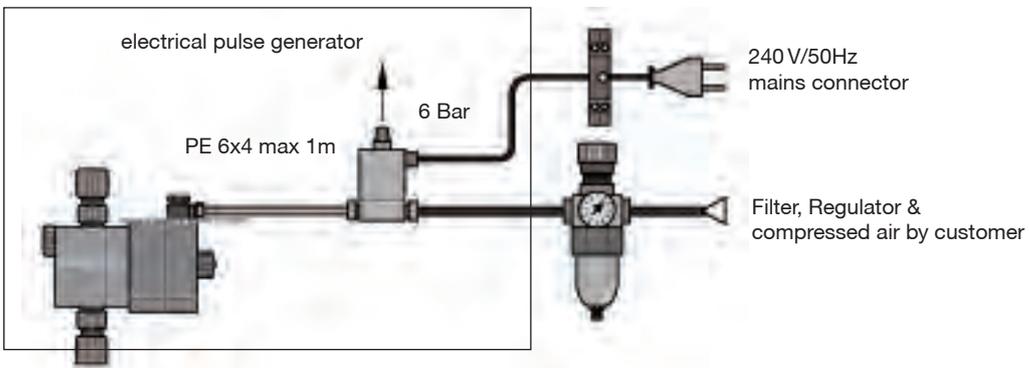
STANDARD

Pneumatic Controller Schematic diagram



OPTIONAL

Electrical/Pneumatic Controller Schematic diagram



1.8 DULCOFLEX DF2a Peristaltic Pump

1.8.1 DULCOFLEX DF2a Peristaltic Pump

The ProMinent DULCOFLEX DF2a 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.



1.8 DULCOFLEX DF2a Peristaltic Pump

1.8.2 Identity Code & Pricing for DULCOFLEX DF2a

| 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 Std | | | | | | | | | |
| Control Type: | | | | | | | | | | |
| 0 | No Control | | | | | | | | | |
| PharMed [®] and Viton [®] are registered trademarks. | | | | | | | | | | |
| DF2a | 0204 | P | 0 | 0 | A | 0 | 0 | W | 0 | 0 |

1.8.3 Technical Data for DULCOFLEX DF2a

| Pump type DULCOFLEX | 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 |



1.9 DULCOFLEX DF4a Peristaltic Pump

1.9.1 DULCOFLEX DF4a Peristaltic Pump

The DULCOFLEX 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.



1.9 DULCOFLEX DF4a Peristaltic Pump

1.9.2 Identity Code & Pricing for DULCOFLEX DF4a

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 / 0-10V

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

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

PharMed® registered trademark.

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.



1.10 DULCOFLEX DFXa Peristaltic Pump

1.10.1 DULCOFLEX DFXa Peristaltic Pump

- A peristaltic pump that brings together the best qualities of ProMinent metering pumps
- Feed rate of 10 ml/h to 60 l/h at up to 7 bar back pressure

The new DULCOFLEX DFXa 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 DULCOFLEX DFXa. 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.



1.10 DULCOFLEX DFXa Peristaltic Pump

1.10.2 Technical Data DULCOFLEX 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 |
| 0565 | 5 | 22 ml/h - 65 l/h | 100 | 12 x 9 | 9 | 9 | 5.5 |
| 0365 | 3 | 22 ml/h - 65 l/h | 100 | 12 x 9 | 9 | 9 | 5.5 |

| | |
|---|--|
| 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 |
| Viscosities | The DFXa0530VPT has successfully metered viscosities of up to 200,000 mPas in testing. If you are working with viscosities of more than 10,000 mPas, please contact our technical consulting department, who will be able to assist you. |
| Permissible ambient temperature: | 0 ... 45 °C |

All data refers to water at 20°C.

1.10.3 Spare Parts DULCOFLEX DFXa

| | Part No. | |
|---|----------|---|
| Spare part set DFXa 0518 VPT | 1114522 | Replacement spare parts kits consisting of: 1 x tube 1 x connection set 1 x silicone grease |
| Spare part set DFXa 0518 VPF (FDA Tube) | 1114521 | |
| Spare part set DFXa 0730 SPT | 1103102 | |
| Spare part set DFXa 0730 SPF (FDA Tube) | 1103099 | |
| Spare part set DFXa 0530 SPT | 1103100 | |
| Spare part set DFXa 0530 SPF (FDA Tube) | 1103101 | |
| Spare part set DFXa 0530 VPT | 1104954 | |
| Spare part set DFXa 0530 VPF (FDA Tube) | 1108859 | |
| Spare part set DFXa 0565 VPT | 1112765 | |
| Spare part set DFXa 0565 VPF (FDA Tube) | 1112764 | |
| Spare part set DFXa 0365 FPT | 1123766 | |
| Spare part set DFXa FPG (FDA Tube) | 1121589 | |
| Spare part set DFXa rotor complete 0518/0565 | 1116468 | |
| Spare part set DFXa rotor complete 0530/0730/0365 | 1103249 | |
| Single Star grip screw DIN 6336 L M5x15xd25 A2 | 1102764 | |
| Replacement cover screw set DFXa | 1104952 | |
| Tube break detector | 1044477 | |
| Dosing head cover (Early version) | 1104727 | |
| Dosing head DFXa Version 2.0 (black plastic part) | 1115677 | |
| Dosing head cover V2 | 1115678 | |
| Countersunk screw DIN 7991 M 5x20 A2 (4 x required) | 1027519 | |
| Spare part set DFXa head & cover V2 | 1115681 | |



1.10 DULCOFLEX DFXa Peristaltic Pump

1.10.4 Identity Code & Pricing for DULCOFLEX DFXa

DFXa

Regional design

EU Europe

| Type | Capacity | bar | l/h |
|------|----------|-----|------------------|
| 0530 | 5 | | 30 l/h [VP & SP] |
| 0730 | 7 | | 30 l/h [SP ONLY] |
| 0565 | 5 | | 65 l/h [VP ONLY] |
| 0365 | 3 | | 65 l/h [FP ONLY] |

Tube material

- SP Thermoplastic vulcanisate (TPV/PVDF) [0503 & 0730 ONLY]
- VP Polyurethane (PUR/PVDF)
- FP Styrol Ethylen Butylen Styrol (SEBS) [0365 ONLY]

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
- 5 1 + Universal control cable 2m

Control version

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

Communication interface

- 0 none - Bluetooth not yet available

Language

- EN English

Certification

- 01 CE [STANDARD]

Documentation

- EN

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.

Note: Cable for I/O port see page 3.20 in Yellow

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



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.1 DULCOFLEX DFYa

The peristaltic pump DULCOFLEX 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 IIOT 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.



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.2 Technical Data DULCOFLEX DFYa Size 200

| Type | Maximum back pressure bar | Pump capacity rpm | Max. speed | Suction lift m WC | Thread Connections |
|-------|------------------------------|----------------------|------------|----------------------|--------------------|
| 08200 | 8 | 207 l/h ± 10 % | 100 rpm | 8 | 3/8" |
| 04200 | 4 | 207 l/h ± 10 % | 100 rpm | 8 | 3/8" |
| 02200 | 2 | 207 l/h ± 10 % | 100 rpm | 8 | 3/8" |

NR, NBR, EPDM, NBR-A, Hypalon

Up to 8 m

Rollers

±2% with retracted hose after 500 revolutions

100 – 230 VAC ± 10 % 50/60 Hz

Max. 250 W

IP 55

25 kg

0 ... 45 °C

All data refers to water at 20 °C

Approximate Life of Hoses

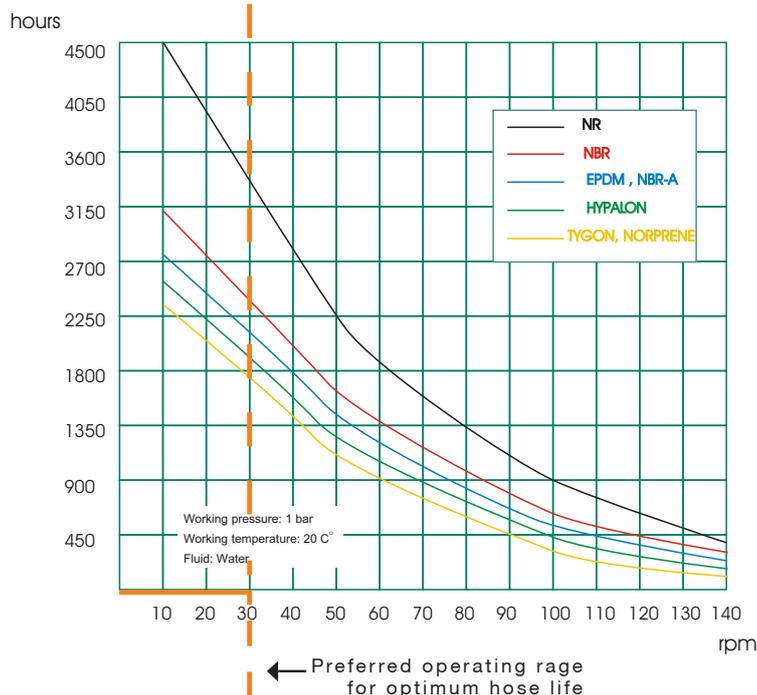
The technical department of ProMinent has prepared a series of curves representing the duration of the peristaltic hoses in function of the pump rotation speed and of the type of installed hose.

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.



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.3 Identity Code & Pricing for DULCOFLEX DFYa Size 200

| DFYa | | PLEASE REFER TO HOSE LIFE VS RPM GRAPH | |
|--------------------------------|--|--|--|
| Type Capacity | | | |
| | bar | I/h | |
| 08200 | 8 | 200 | |
| 04200 | 4 | 200 | |
| 02200 | 2 | 200 | |
| 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 | SS BSP 3/8" | | |
| B | SS NPT 3/8" | | |
| C | PP BPS 3/8" | | |
| D | PVDF BSP 3/8" | | |
| E | PVDF NPT 3/8" | | |
| F | PVC NPT 3/8" | | |
| G | Tri-Clamp, SS 3/4" | | |
| H | DIN 11851, SS NW15 | | |
| Hose Break Detector | | | |
| 0 | Without hose break detector | | |
| 1 | With hose break detector | | |
| Version | | | |
| P | ProMinent | | |
| Special Version | | | |
| 0 | Standard | | |
| H | Chemical version - Halar coated | | |
| Logo | | | |
| 0 | With logo | | |
| 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 | | |

Note: For replacement hoses refer Blue Pages Size DFBa 013

Note: Control Cable is additional.

Note: Cable for I/O port see page 3.20 in Yellow Pages

DFYa 08410 0 R 0 0 0 0 0 0 U C 0 0 0 0 0 0 0 0 EN 01



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.4 Technical Data DULCOFLEX DFYa Size 410

| Type | Maximum back pressure bar | Pump capacity rpm | Max. speed | Suction lift m WC | Thread Connections |
|-------|------------------------------|----------------------|------------|----------------------|--------------------|
| 08410 | 8 | 207 l/h ± 10 % | 80 rpm | 8 | 3/4" |
| 04410 | 4 | 207 l/h ± 10 % | 80 rpm | 8 | 3/4" |
| 02410 | 2 | 207 l/h ± 10 % | 80 rpm | 8 | 3/4" |

NR, NBR, EPDM, NBR-A, Hypalon

Up to 8 m

Rollers

±2% with retracted hose after 500 revolutions

100 – 230 VAC ± 10 % 50/60 Hz

Max. 400 W

IP 55

30 kg

0 ... 45 °C

All data refers to water at 20 °C

Approximate Life of Hoses

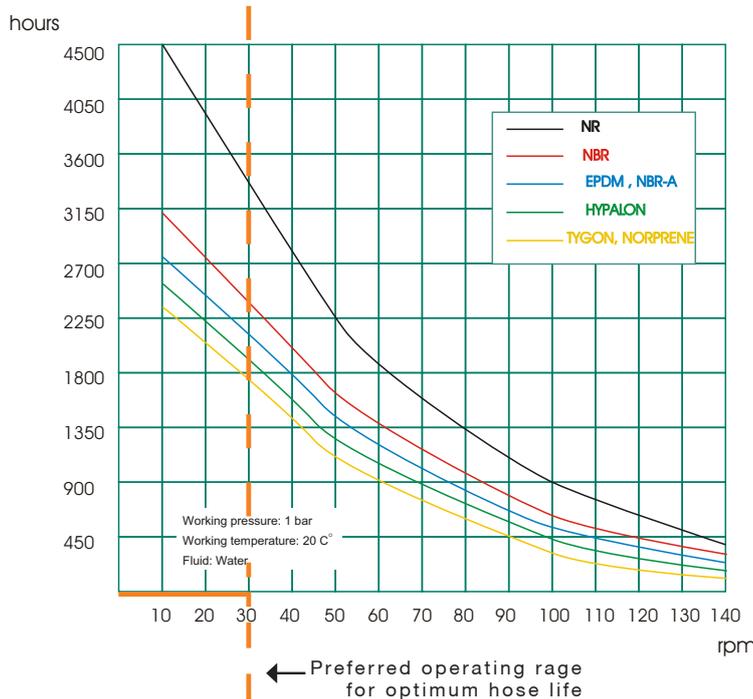
The technical department of ProMinent has prepared a series of curves representing the duration of the peristaltic hoses in function of the pump rotation speed and of the type of installed hose.

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.



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.5 Identity Code & Pricing for DULCOFLEX DFYa Size 410

| DFYa | | PLEASE REFER TO HOSE LIFE VS RPM GRAPH | |
|--------------------------------|--|--|--|
| Type Capacity | | | |
| | bar | I/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 | SS BSP 3/4" | | |
| B | SS 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 | | |
| Special Version | | | |
| 0 | Standard | | |
| H | Chemical version - Halar coated | | |
| Logo | | | |
| 0 | With logo | | |
| 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 | | |

Note: For replacement hoses refer Blue Pages Size DFBa 016

Note: Control Cable is additional.

Note: Cable for I/O port see page 3.20 in Yellow Pages

DFYa 08410 0 R 0 0 0 0 0 0 U C 0 0 0 0 0 0 0 0 EN 01



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.6 Technical Data DULCOFLEX DFYa Size 660

| Type | Maximum back pressure bar | Pump capacity rpm | Max. speed | Suction lift m WC | Thread Connections |
|-------|------------------------------|----------------------|------------|----------------------|--------------------|
| 04660 | 4 | 207 l/h ± 10 % | 50 rpm | 8 | 1" |
| 02660 | 2 | 207 l/h ± 10 % | 50 rpm | 8 | 1" |

NR, NBR, EPDM, NBR-A, Hypalon

Up to 8 m

Rollers

±2% with retracted hose after 500 revolutions

100 – 230 VAC ± 10 % 50/60 Hz

Max. 600 W

IP 55

49 kg

0 ... 45 °C

All data refers to water at 20 °C

Approximate Life of Hoses

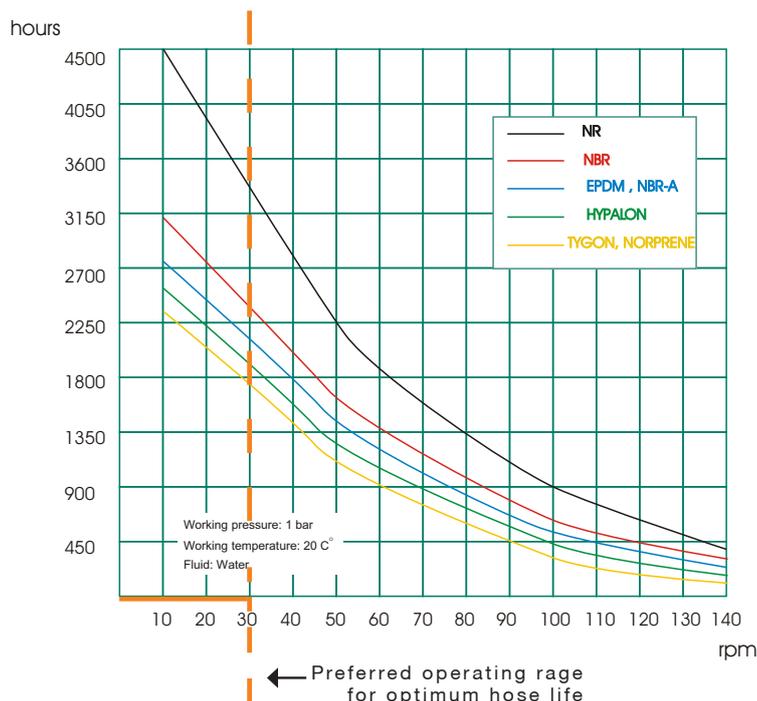
The technical department of ProMinent has prepared a series of curves representing the duration of the peristaltic hoses in function of the pump rotation speed and of the type of installed hose.

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.



1.11 DULCOFLEX DFYa Peristaltic Pump

1.11.7 Identity Code & Pricing for DULCOFLEX DFYa Size 660

| DFYa | | PLEASE REFER TO HOSE LIFE VS RPM GRAPH | |
|--------------------------------|--|--|--|
| Type Capacity | | | |
| | bar | l/h | |
| 04660 | 4 | 660 | |
| 02660 | 2 | 660 | |
| 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 1" | | |
| B | VA NPT 1" | | |
| C | PP BPS 1" | | |
| D | PVDF BSP 1" | | |
| E | PVDF NPT 1" | | |
| F | PVC NPT 1" | | |
| G | Tri-Clamp SS 1" | | |
| H | DIN 11851 SS NW25 | | |
| Hose Break Detector | | | |
| 0 | Without hose break detector | | |
| 1 | With hose break detector | | |
| Version | | | |
| P | ProMinent | | |
| Special Version | | | |
| 0 | Standard | | |
| H | Chemical version - Halar coated | | |
| Logo | | | |
| 0 | With logo | | |
| 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 | | |

Note: For replacement hoses refer Blue Pages Size DFBa 022

Note: Control Cable is additional.

Note: Cable for I/O port see page 3.20 in Yellow Pages

DFYa 08410 0 R 0 0 0 0 0 0 U C 0 0 0 0 0 0 EN 01



2.0 High Viscosity Pumps

2.0.1 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
- Spectra® progressive cavity pumps
- DULCOFLEX 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 sigma/ 1 Diaphragm Metering Pump

2.1.1 sigma/ 1 Diaphragm Metering Pump

sigma/ 1 Diaphragm Metering Pump

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 sigma/ 1 Diaphragm Metering Pump

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 | 90 | 7 | 1 | 10 | 1/2" / 16mm | 9 |
| 12017 SST | 12 | 17 | 3.9 | 73 | 12 | 21 | 90 | 7 | 1 | 10 | 1/2" / 16mm | 12 |
| 12035 PVT | 10 | 35 | 4.0 | 143 | 10 | 42 | 170 | 7 | 1 | 10 | 1/2" / 16mm | 9 |
| 12035 SST | 12 | 35 | 4.0 | 143 | 12 | 42 | 170 | 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 | 90 | 6 | 1 | 10 | 1/2" / 16mm | 9 |
| 10022 SST | 10 | 22 | 5.1 | 73 | 10 | 27 | 90 | 6 | 1 | 10 | 1/2" / 16mm | 12 |
| 10044 PVT | 10 | 44 | 5.1 | 143 | 10 | 53 | 170 | 6 | 1 | 10 | 1/2" / 16mm | 9 |
| 10044 SST | 10 | 44 | 5.1 | 143 | 10 | 53 | 170 | 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 | 90 | 3 | 1 | 15 | 3/4" / 20mm | 9.5 |
| 07042 SST | 7 | 42 | 9.7 | 73 | 7 | 52 | 90 | 3 | 1 | 15 | 3/4" / 20mm | 13.5 |
| 04084 PVT | 4 | 84 | 9.7 | 143 | 4 | 101 | 170 | 3 | 1 | 15 | 3/4" / 20mm | 9.5 |
| 04084 SST | 4 | 84 | 9.7 | 143 | 4 | 101 | 170 | 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® for 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 0.09 kW 60 Hz 0.09 kW |
| T | 3-phase, IP 55 | 220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V | 50 Hz 0.09 kW 60 Hz 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, II2GEEExII T3 | 220 - 240 V/380 - 420 V | 50 Hz 0.12 kW |
| L2 | 3-phase, II2GEEExII 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 0.12 kW |
| P2 | 3-phase, II2GEEExII CT4 | 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 sigma/ 1 Diaphragm Metering Pump

2.1.3 Identity Code & Pricing for sigma/ 1 Basic Type (S1Ba)

S1BaH

sigma/ 1 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: EPDM Seals available

| | 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 connections (maximum 10-bar) Contact Sydney | |

Hydraulic connector: Others available in Green Pages

| | |
|---|--|
| 1 | Union nut and PVC Insert |
| 2 | Union nut and PP insert |
| 3 | Union nut and PVDF insert |
| 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 |
| 8 | Union nut and SS Hosetail |
| 9 | Union nut and SS Welded Sleeve |

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* | See options |
|----|-------------|

- DN10
- DN15

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

240 volt motor supplied with power cord.

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. |

S1BaH 12050 PVT S 0 1 0 S 0 0 0 P



2.1 sigma/ 1 Diaphragm Metering Pump

2.1.4 Identity Code & Pricing for Sigma/ X (S1Cb)

S1CbH

sigma/ X 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 - EPDM Seals Available 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 - Others available in Green Pages
1 Union nut and PVC Insert
2 Union nut and PP Insert
3 Union nut and PVDF Insert
4 Union nut and stainless steel insert *inc. w/ss pump*
5 Union nut and PVC Hosetail
7 Union nut and PVDF Hosetail
8 Union nut and SS Hosetail
9 Union nut and SS Welded Sleeve

- DN10
- DN15

Version
0 With ProMinent® logo (standard)
M Modified
5 Liquid end left ... *Note: only available ex Germany*

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 (CiA 402, M12 plug) pump w/o HMI

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)**

Access Code
0 Without access code - **STANDARD**
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.

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

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.

S1CbH 10050 PVT S 0 1 0 U C 0 1 0 1 0 EN P



2.1 sigma/ 1 Diaphragm Metering Pump

2.1.5 Spare Parts Kits sigma/ 1

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

PVT version

1 x diaphragm (multi-layer safety diaphragm)

2 x valve assemblies

2 x valve balls

2 x ball seats

4 x composite seals

1 x elastomer sealing set (EPDM, FKM-B)

SST version

1 x diaphragm (multi-layer safety diaphragm)

2 x valve balls

4 x complete sealing sets (cover rings, ball seat discs)

4 x composite seals

IN ALL CASES CHECK PUMP MODEL CODE

Spare Parts Kits for versions with multilayer safety diaphragm Type PVTS, PVTA, SSTS, SSTA

| Type | Part No. |
|----------------------------------|----------|
| Type 12017, 12035, 10050 | |
| 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 | |
| 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 | |
| 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 | Part No. |
|----------------------------------|----------|
| Type 12017, 12035, 10050 | |
| Liquid end FM 50 - DN 10 | |
| PVT | 1010541 |
| SST | 1010554 |
| SST (with 2 valve sets) | 1010555 |
| Type 10022, 10044, 07065 | |
| Liquid end FM 65 - DN 10 | |
| PVT | 1010542 |
| SST | 1010556 |
| SST (with 2 valve sets) | 1010557 |
| Type 07042, 04084, 04120 | |
| 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

| Type | Part No. |
|--|----------|
| sigma/ 1 FM 50 Type: 12017, 12035, 10050 | 1030114 |
| sigma/ 1 FM 65 Type: 10022, 10044, 07065 | 1030115 |
| sigma/ 1 FM 120 Type: 07042, 04084, 04120 | 1035828 |

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

| Type | Part No. |
|--|----------|
| sigma/ 1 FM 50 Type: 12017, 12035, 10050 | 1010279 |
| sigma/ 1 FM 65 Type: 10022, 10044, 07065 | 1010282 |
| sigma/ 1 FM 120 Type: 07042, 04084, 04120 | 1010285 |

| Type | Part No. |
|--|----------|
| Suction - Discharge Valves PVT | |
| sigma/ 1 12017, 12035, 10050 DN10 | 1002267 |
| sigma/ 1 10022, 10044, 07065 DN10 | 1002267 |
| sigma/ 1 07042, 04084, 04120 DN15 | 792517 |

| Type | Part No. |
|--|----------|
| PTFE Moulding Gasket | |
| sigma/ 1 12017, 12035, 10050 DN10 | 1019364 |
| sigma/ 1 10022, 10044, 07065 DN10 | 1019364 |
| sigma/ 1 07042, 04084, 04120 DN15 | 1019365 |

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



2.2 sigma/ 2 Diaphragm Metering Pump

2.2.1 Sigma/ 2 Diaphragm Metering Pump

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 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.

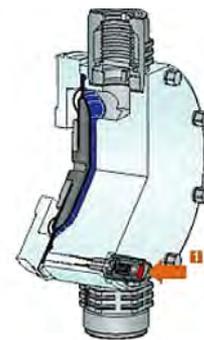
Different flanges are always available so that customers can use their own motor to drive the pump.

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 sigma/ 2 Diaphragm Metering Pump

2.2.2 Technical Data for sigma/ 2

| at 50 Hz | | | | | S2CbH at 60 Hz | | | | | | | | |
|-------------------------------------|-----|-----|-------------------|-------------------------------------|--|--------------|------------------------------------|-----------------------------------|-----------------|----|------------------------|----|---|
| Pump Capacity at Max. Back Pressure | | | Max. Stroke Freq. | Pump Capacity at 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 220 - 280 V/440 - 480 V | 50 Hz 60 Hz | 0.25 kW 0.25 kW | | |
| T | 3-phase, IP 55 | 220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V | 50 Hz 60 Hz | 0.25 kW | with PTC, speed control range 1:5 | |
| 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-ExdIICT4 | 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-ExdIICT4 | 250 - 280 V/440 - 480 V | 60 Hz | 0.21 kW | with PTC, speed control range 1:5 | |

sigma/ 2 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 sigma/ 2 Diaphragm Metering Pump

2.2.3 Identity Code & Pricing for sigma/ 2 Basic Type (S2Ba)

S2Ba sigma Basic Type (S2Ba)

HM Main drive, diaphragm

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

- **16050*** 16 bar; 50 l/h **PVDF**
- **16090*** 16 bar; 88 l/h PVT, 82 l/h SS **SS**
- **16130*** 16 bar; 135 l/h PVT, 124 l/h SS
- **07120** 7 bar; 126 l/h **PVDF**
- **07220** 7 bar; 220 l/h **SS**
- **04350** 4 bar; 350 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 (contact)
- H** Diaphragm for Hygienic head

Liquid end version: EPDM Seals Available

- 0** No springs **PVDF SS**
- 1** 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 2 valve springs
- H** Hygienic head with tri-clamp connection (maximum 10 bar) **CONTACT SYDNEY**

Hydraulic connector: Others available in Green Pages

- 1** Union nut and PVC Insert
- 2** Union nut and PP Insert
- 3** Union nut and PVDF male BSP
- 4** Union nut and stainless steel insert *inc. w/SS pump*
- 5** Union nut and PVC Hosetail
- 7** Union nut and PVDF Hosetail
- 8** Union nut and SS Hosetail
- 9** Union nut and SS Welded Sleeve

Version:

- 0** With ProMinent[®] logo (standard)
- M** Modified

Power supply:

- S** 3 ph, 400V, 50/60 Hz, 0.25 kW
- M** 1 ph. AC, 230 V/50 Hz, 0.18 kW
- N** 1 ph, AC 115V 60 Hz, 0.18 kW
- L** 3 ph, 400V, 50Hz, (EEExe, EEExde) see below
- R** 3ph, variable speed motor 4 pol. 230/400V
- T** 3 ph, 230 V/400 V 50/60 Hz, with PTC
- 1** No Motor with B14 flange (Gr.71(DIN))
- 5** No Motor, B14 flange (Gr.80 (DIN))
- 3** No Motor, B5 Gr. 63 (DN)

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) hazardous locations

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

- DN15
- DN25

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

240 volt motor supplied with power cord.

Prepack option P* for PVDF

P0 - 16050 - 16090 - 16130

4 EPDM flat gaskets
Refer page 2.36 for fitting sizes

07120 - 07220 - 04350

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.

S2Ba HM 12050 PVT S 0 1 0 S 0 0 0 0 P



2.2 sigma/ 2 Diaphragm Metering Pump

2.2.4 Identity Code & Pricing for sigma/ X (S2Cb)

| S2Cb sigma/ X 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: EPDM Seals available | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 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: Others available in Green Pages | | | | | | | | | | | | | | | | |
| 1 | Union nut and PVC Insert | | | | | | | | | | | | | | | |
| 2 | Union nut and PP Insert | | | | | | | | | | | | | | | |
| 3 | Union nut and PVDF male BSP | | | | | | | | | | | | | | | |
| 4 | Union nut & stainless steel insert <i>inc. w/SS pump</i> | | | | | | | | | | | | | | | |
| 5 | Union nut and PVC Hosetail | | | | | | | | | | | | | | | |
| 7 | Union nut and PVDF Hosetail | | | | | | | | | | | | | | | |
| 8 | Union nut and SS Hosetail | | | | | | | | | | | | | | | |
| 9 | Union nut and SS Welded Sleeve | | | | | | | | | | | | | | | |
| Version: | | | | | | | | | | | | | | | | |
| 0 | With ProMinent® logo (standard) | | | | | | | | | | | | | | | |
| *** | Physiologically harmless (FDA) | | | | | | | | | | | | | | | |
| M | Modified | | | | | | | | | | | | | | | |
| Electrical Power supply: | | | | | | | | | | | | | | | | |
| U | 1 ph 100 - 230V ±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 | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | |
| <p>Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.</p> <p>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.</p> <p>** For manual operating HMI Required 1042550</p> <p>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</p> <p><i>Note: for SS pumps as per P2, P5 & P7 but only require control cables ... prices also as above.</i></p> | | | | | | | | | | | | | | | | |
| S2Cb | H | 12050 | PVT | S | 0 | 1 | 0 | U | C | 0 | 1 | 0 | 1 | 0 | EN | P |

- DN15
- DN25



2.2 sigma/ 2 Diaphragm Metering Pump

2.2.5 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 | 1046476 |
| | SST (with 2 valve sets) | 1035959 |

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

PVT version
 1 x diaphragm (multi-layer safety diaphragm)
 2 x valve assemblies
 2 x valve balls
 2 x ball seats
 4 x composite seals
 1 x elastomer sealing set (EPDM, FKM-B)

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 |

SST version
 1 x diaphragm (multi-layer safety diaphragm)
 2 x valve balls
 2 x ball seat discs
 4 x composite seals

IN ALL CASES CHECK PUMP MODEL CODE

| | | |
|---|------|-----------------|
| Diaphragms [ORIGINAL] Types PVT0/1/2, SST0/1/2 | | Part No. |
| FM 130 (Type 16050, 16090, 16130) | | 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 sigma/ 3 Diaphragm Metering Pump

2.3.1 sigma/ 3 Diaphragm Metering Pump

sigma/ 3 Diaphragm Metering Pump

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.

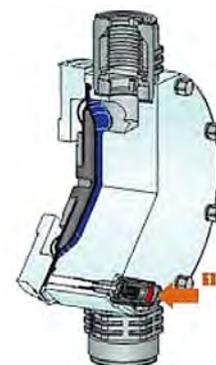
The ProMinent S3Ba has a number of different drive options, including single and 3 ph. motor (standard IP55), or the three phase AC motor for use in hazardous Exe and EXde areas.

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 sigma/ 3 Diaphragm Metering Pump

2.3.2 Technical Data for sigma/ 3

| at 50 Hz | | | | | S3CbH at 60 Hz | | Suction Lift | Adm. Priming Pressure Suction Side | Connector Suction/ Discharge Side | Shipping Weight | | |
|-------------------------------------|-----|------|-------------------|-------------------------------------|----------------|-------------------------------------|--------------|------------------------------------|-----------------------------------|-----------------|------------------------|----|
| Pump Capacity at Max. Back Pressure | | | Max. Stroke Freq. | Pump Capacity at Max. Back Pressure | | Stroking rate 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 |
| SST | stainless steel no. 1.4581 | stainless steel no. 1.4581 | PTFE | stainless steel no. 1.4404 | stainless steel/Viton® |

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

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, II2GEEExIIIT3 | 220 - 240 V/380 - 420 V | 50 Hz 0.37 kW |
| L2 | 3-phase, II2GEEExIIICT4 | 220 - 240 V/380 - 420 V | 50 Hz 0.37 kW with PTC, speed control range 1:5 |
| P1 | 3-phase, II2GEEExIIIT3 | 250 - 280 V/440 - 480 V | 60 Hz 0.37 kW |
| P2 | 3-phase, II2GEEExIIICT4 | 250 - 280 V/440 - 480 V | 60 Hz 0.37 kW with PTC, speed control range 1:5 |
| V2 | 3-phase, II2GEEExIIICT4 | 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/ 3 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 sigma/ 3 Diaphragm Metering Pump

2.3.3 Identity Code & Pricing for sigma/ 3 Basic Type (S3Ba)

S3Ba sigma/ 3 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:

| | | PVT | SS |
|----|--|-----|----|
| 0 | No valve springs (standard) | | |
| 1 | With 2 valve springs, Hastelloy C 4: 0.1 bar <i>No Charge DN32</i> | ● | ● |
| 4 | With relief valve, Viton® seal, no valve springs | ● | ● |
| 5 | With relief valve, Viton® seal and valve springs <i>STD for DN32</i> | | |
| ** | Hygienic head with tri-clamp connection (maximum 10 bar), *CONTACT SYDNEY* | | |

Hydraulic connector: Others available in Green Pages

| | |
|--------|--|
| ● DN25 | ● DN32 |
| 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 PC Hosetail |
| 7 | Union nut and PVDF Hosetail |

Version:

| | |
|---|---------------------------------|
| 0 | With ProMinent® logo (standard) |
| 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, (EExe, EExde) |
| 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, 80 frame, flange B14 |
| 3 | No motor, flange B5, 71 frame |

Enclosure rating:

| | |
|---|-----------------------------|
| 0 | IP 55 |
| 1 | Exe motor version (ATEX-T3) |
| 2 | Exd motor version (ATEX-T4) |
| A | Drive Unit ATEX |

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.

240 volt motor supplied with power cord.

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



2.3 sigma/ 3 Diaphragm Metering Pump

2.3.4 Identity Code & Pricing for sigma/ X (S3Cb)

S3Cb sigma/ X 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: EPDM Seals available

- | | | PVT |
|---|--|-----|
| 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 Insert | | |
| 2 | Union nut and PVC male BSP | ● | ● |
| 3 | Union nut and PVDF Insert | ● | ● |
| 4 | Union nut & stainless steel insert <i>inc. w/SS pump</i> | | |
| 5 | Union nut and PVC Hosetail | | |
| 7 | Union nut and PVDF Hosetail | | |

- DN25
- DN32

Version:

- 0 With ProMinent logo (standard)
- ** Physiologically harmless (FDA)
- M Modified

Electrical Power supply:

- U 1 ph 100 - 230V ±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

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

Prepack Option

- P* See options

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.

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

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.

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



2.3 sigma/ 3 Diaphragm Metering Pump

2.3.5 Spare Parts Kits sigma/ 3

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

PVT version

- 1 x diaphragm (multi-layer safety diaphragm)
- 2 x valve assemblies
- 2 x valve balls and/or valve plate with spring for DN 32
- 1 x elastomer sealing set (EPDM, FKM-B)
- 2 x ball seat housings
- 2 x ball seat discs
- 4 x composite seals

SST version

- 1 x diaphragm (multi-layer safety diaphragm)
- 2 x valve balls and/or valve plate with spring for DN 32
- 2 x ball seat discs
- 4 x composite seals

IN ALL CASES CHECK PUMP MODEL CODE

Spare parts kits sigma/ 3 with multilayer safety diaphragm Types PVTS, PVTA, SSTS, SSTA

| 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 sigma/ 2 Piston Metering Pump

2.4.1 Technical Data sigma Piston HK

| at 50 Hz Pump Capacity at Max. Back Pressure | | | | Max. Stroke Frequency at 50 Hz | Suction Lift | Adm. Priming Pressure Suction Side | Connector Suction/ Discharge Side | Shipping Weight |
|--|-----|------|---------------|-----------------------------------|-----------------|--|--|--------------------|
| Pump type SBKaHK | bar | l/h | ml/ stroke | strokes/ min. | mWG | bar | Rp-DN | kg |
| 32002 SST | 320 | 1.9 | 0.46 | 71 | 5 | approx. 50% of max permissible pressure | 1/4" | 24 |
| 23004 SST | 230 | 4.0 | 0.52 | 125 | 5 | | 1/4" | 24 |
| 10006 SST | 100 | 6.4 | 0.55 | 195 | 5 | | 1/4" | 24 |
| 14006 SST | 140 | 6.1 | 1.42 | 71 | 4 | | 1/4" | 24 |
| 10011 SST | 100 | 11.0 | 1.43 | 125 | 4 | | 1/4" | 24 |
| 05016 SST | 50 | 16.7 | 1.43 | 195 | 4 | | 1/4" | 24 |
| 07012 SST | 70 | 12.4 | 2.90 | 71 | 5 | | 1/4" | 24 |
| 04522 SST | 45 | 22.5 | 2.91 | 125 | 4 | | 1/4" | 24 |
| 02534 SST | 25 | 34.1 | 2.92 | 195 | 4 | | 1/4" | 24 |
| 04022 SST | 40 | 22.4 | 5.26 | 71 | 4 | | 3/8" | 25 |
| 02541 SST | 25 | 41.5 | 5.37 | 125 | 4 | | 3/8" | 25 |
| 01264 SST | 12 | 64.0 | 5.45 | 196 | 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 sigma/ 2 Piston Metering Pump

2.4.3 Identity Code & Pricing for sigma Piston 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/400V 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/400V, 50Hz, (EExe, EExde) } See Enclosure Rating
P 3 ph. 230 V/400V, 60Hz, (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

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



2.5 MAKRO TZ Diaphragm Metering Pump

2.5.1 MAKRO TZ Diaphragm Metering Pump

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.



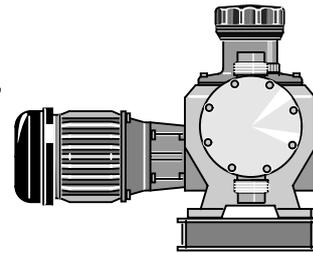
TZMbA Add-On Pumps

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.

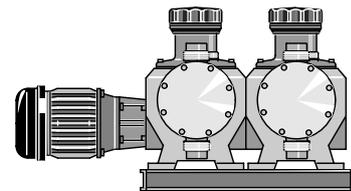


ACTUATION OF MAKRO TZ METERING PUMPS

- **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.

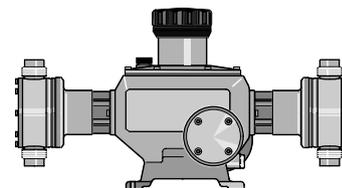


MAKRO TZ STROKE CONTROLLER

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.



2.5 MAKRO TZ Diaphragm Metering Pump

2.5.2 Identity Code & Ordering for Makro TZ

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 (Namur)

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** 115V 4-20 mA stroke controller (servo motors for Ex zones on request)

Applications:

- 0** Standard

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



2.5 MAKRO TZ Diaphragm Metering Pump

2.5.3 Spare Parts MAKRO TZ

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

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 META HM Diaphragm Metering Pump

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 |

| | | 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 |

Pump diaphragm, PTFE

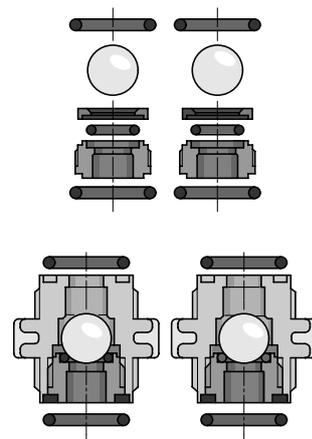
ProMinent DEVELOPAN pump diaphragm of fabric-reinforced EPDM, with large-area vulcanised steel core and PTFE Teflon coating on the media-contacted surface.

| | Part No. |
|--------------|---------------|
| META FM 130 | 811470 |
| META FM 260 | 811471 |
| META FM 530 | 811472 |
| META FM 1500 | 811473 |

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

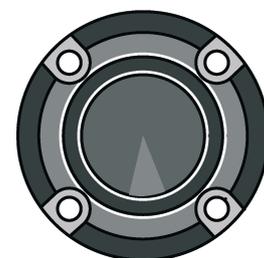
Standard kit for PP/P material version:

- 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)



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 x gaskets
- 2 x O-rings



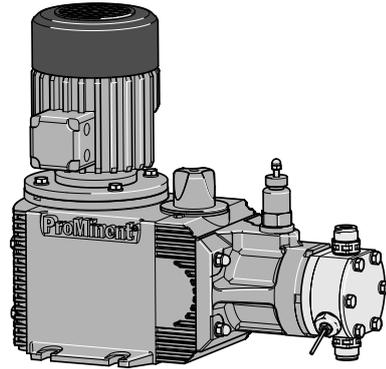
2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.1 HYDRO hydraulic Diaphragm Metering Pump

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, 230/400V, 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.

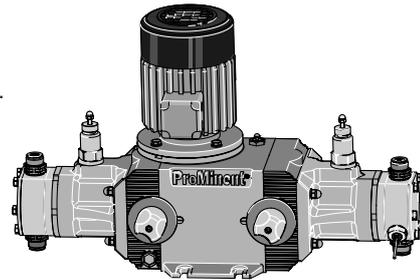
HYDRO add-on pumps

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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.2 Technical Data HYDRO/ 2 HP2a

| Type HP2a | | | | | | | | | | | | | |
|---|-----|-----|------------|--------------|---|-----------|--------------|--------------|-------------------------------------|-----------------------------------|-----------------|-----------|--|
| Capacity at max. back pressure with 1500 rpm motor at 50 Hz Delivery rate at max. back pressure | | | | | Capacity at max. back pressure at 60 Hz | | | Suction lift | Perm. admiss. pressure suction side | Suction/ discharge side connector | Shipping weight | Plunger Ø | |
| Max. stroke rate | | | | | Max. stroke rate | | | | | | | | |
| | l/h | bar | ml/ stroke | Strokes/ min | psi | l/h/gph | Strokes/ min | m WC | bar | G-DN | kg | mm | |
| 100003 * | 3 | 100 | 3.0 | 60 | 1,450 | 3.6/1.0 | 72 | 3.0 | 5 | Rp 1/4 | 31 | 16 | |
| 100006 * | 6 | 100 | 3.0 | 125 | 1,450 | 7.0/1.8 | 150 | 3.0 | 5 | Rp 1/4 | 31 | 16 | |
| 100007 * | 7 | 100 | 3.0 | 150 | 1,450 | 8.0/2.1 | 180 | 3.0 | 5 | Rp 1/4 | 31 | 16 | |
| 100009 * | 9 | 100 | 3.0 | 187 | 1,450 | 11.0/2.9 | 224 | 3.0 | 5 | Rp 1/4 | 31 | 16 | |
| 100010 * | 10 | 100 | 3.0 | 212 | - | - | - | 3.0 | 5 | Rp 1/4 | 31 | 16 | |
| 064007 | 7 | 64 | 3.8 | 60 | 928 | 8.4/2.2 | 72 | 3.0 | 5 | G 3/4-10 | 31 | 18 | |
| 064015 | 15 | 64 | 3.8 | 125 | 928 | 18.0/4.8 | 150 | 3.0 | 5 | G 3/4-10 | 31 | 18 | |
| 064018 | 18 | 64 | 3.8 | 150 | 928 | 21.0/5.5 | 180 | 3.0 | 5 | G 3/4-10 | 31 | 18 | |
| 064022 | 22 | 64 | 3.8 | 187 | 928 | 26.0/6.9 | 224 | 3.0 | 5 | G 3/4-10 | 31 | 18 | |
| 064025 | 25 | 64 | 3.8 | 212 | - | - | - | 3.0 | 5 | G 3/4-10 | 31 | 18 | |
| 040014 | 14 | 40 | 5.7 | 60 | 580 | 16.8/4.4 | 72 | 3.0 | 5 | G 3/4-10 | 31 | 22 | |
| 040029 | 29 | 40 | 5.7 | 125 | 580 | 34.8/9.2 | 150 | 3.0 | 5 | G 3/4-10 | 31 | 22 | |
| 040035 | 35 | 40 | 5.7 | 150 | 580 | 42.0/11.1 | 180 | 3.0 | 5 | G 3/4-10 | 31 2 | 22 | |
| 040044 | 44 | 40 | 5.7 | 187 | 580 | 52.8/13.9 | 224 | 3.0 | 5 | G 3/4-10 | 31 | 22 | |
| 040050 | 50 | 40 | 5.7 | 212 | 580 | - | - | 3.0 | 5 | G 3/4-10 | 31 | 22 | |
| 025019 ** | 19 | 25 | 7.9 | 60 | 362 | 23.0/6.1 | 72 | 3.0 | 5 | G 3/4-10 | 31 | 26 | |
| 025040 ** | 40 | 25 | 7.9 | 125 | 362 | 48.0/12.7 | 150 | 3.0 | 5 | G 3/4-10 | 31 | 26 | |
| 025048 ** | 48 | 25 | 7.9 | 150 | 362 | 58.0/15.3 | 180 | 3.0 | 5 | G 3/4-10 | 31 | 26 | |
| 025060 ** | 60 | 25 | 7.9 | 187 | 362 | 72.0/19.0 | 224 | 3.0 | 5 | G 3/4-10 | 31 | 26 | |
| 025068 ** | 68 | 25 | 7.9 | 212 | - | - | - | 3.0 | 5 | G 3/4-10 | 31 | 26 | |

* SST version with double ball valve, valve connector on the suction-discharge side with female thread Rp 1/4 and male thread G 3/4 - DN 10

** HV design with G1 - DN 15 connector

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

Material in contact with media

| Identity code of material | Dosing head | Connection on suction/ discharge side | Seals/ball seat | Balls |
|---------------------------|-------------------------------|---------------------------------------|-----------------------------|---------|
| PVT * | PVDF | PVDF | PTFE/PTFE + 25 % carbon | Ceramic |
| SST | Stainless steel 1.4571/1.4404 | Stainless steel 1.4581 | PTFE/stainless steel 1.4404 | Ceramic |
| TTT | PTFE + 25% carbon | PVDF (polyvinylidene fluoride) | PTFE/PTFE + 25 % carbon | Ceramic |

* Not for areas at risk of explosion



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.3 Identity Code & Pricing for HYDRO/ 2 - SINGLE HEAD

HYDRO/ 2

H Main power end

| Type | Type | Type |
|---|--|---|
| 100003 100 bar, 3 litre PVT | 064007 64 bar, 7 litre PVT | 025019 25 bar, 19 litre PVT |
| 100006 100 bar, 6 litre SST | 064015 64 bar, 5 litre SST | 025040 25 bar, 40 litre SST |
| 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 |
| 040014 40 bar, 14 litre PVT | | |
| 040029 40 bar, 29 litre SST | | |
| 040035 40 bar, 35 litre | | |
| 040044 40 bar, 44 litre | | |
| 040050 40 bar, 50 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. 230 V/400 V 50/60 Hz, 0.37kW
- L** 3 ph. 230 V/400 V 50 Hz (EEExe, EEExde) } See Enclosure Rating
- P** 3 ph. 230 V/400 V 60 Hz (EEExe, EEExde) } 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
- A** Add-on drive unit ATEXVersion
- 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
- 3** Low Temp. Zone 2 EX

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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.4 Identity Code & Pricing for HYDRO/ 2 - DOUBLE HEAD

HP2a HYDRO/ 2 NOTE: Capacities shown are per Head

| D Main power end, duplexed - TRIPLEX ALSO AVAILABLE ON \$ P.O.A | | | | | | | | | | | |
|---|---|-----------------------|---------------------|--------|--------------------------|--------|----------------------|--------|----------------------|--------|--------------------------|
| Type: | Type: | Type: | Type: | Type: | Type: | Type: | Type: | Type: | Type: | | |
| 100003 | 100 bar, 3 litre PVT | 064007 | 64 bar, 7 litre PVT | 025019 | 25 bar, 19 litre x 2 PVT | 100006 | 100 bar, 6 litre SST | 064015 | 64 bar, 15 litre SST | 025040 | 25 bar, 40 litre x 2 SST |
| 100007 | 100 bar, 7 litre | 064018 | 64 bar, 18 litre | 025048 | 25 bar, 48 litre x 2 | 100009 | 100 bar, 9 litre | 064022 | 64 bar, 22 litre | 025060 | 25 bar, 60 litre x 2 |
| 100010 | 100 bar, 10 litre | 064025 | 64 bar, 25 litre | 025068 | 25 bar, 68 litre x 2 | 040014 | 40 bar, 14 litre PVT | | | | |
| 040029 | 40 bar, 29 litre SST | | | | | 040035 | 40 bar, 35 litre | | | | |
| 040044 | 40 bar, 44 litre | | | | | 040050 | 40 bar, 50 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. 230 V/400 V 50/60 Hz, 0.37kW | | | | | | | | | | |
| L | 3 ph. 230 V/400 V 50 Hz (EEExe, EEExde) | | | | | | | | | | } See Enclosure Rating |
| P | 3 ph. 230 V/400 V 60 Hz (EEExe, EEExde) | | | | | | | | | | } 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 | | | | | | | | | | |
| A | Add-on drive unit ATEX Version | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 3 | Low Temp. to -25 °C Ex Zone II | | | | | | | | | | |

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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.5 Technical Data HYDRO/ 3

| Type HP3a | | | | | | | | | | | | |
|--|--|--|--|--|---|--|--|--------------|-------------------------------------|-----------------------------------|-----------------|-----------|
| Capacity at max. back pressure with 1500 rpm motor at 50 Hz Delivery rate at max. back pressure | | | | | Capacity at max. back pressure at 60 Hz | | | Suction lift | Perm. admiss. pressure suction side | Suction/ discharge side connector | Shipping weight | Plunger Ø |
| Max. stroke rate | | | | | Max. stroke rate | | | | | | | |

| | l/h | bar | ml/ stroke | Strokes/ min | psi | l/h/gph | Strokes/ min | m WC | bar | G-DN | kg | mm |
|------------|-----|-----|------------|--------------|-------|----------|--------------|------|-----|-----------|----|----|
| 100010 | 10 | 100 | 5.7 | 60 | 1,450 | 12/3.2 | 72 | 3.0 | 5 | Rp 3/8-10 | 41 | 22 |
| 100021 * | 21 | 100 | 5.7 | 125 | 1,450 | 25/6.6 | 150 | 3.0 | 5 | Rp 3/8-10 | 41 | 22 |
| 100025 * | 25 | 100 | 5.7 | 150 | 1,450 | 30/7.9 | 180 | 3.0 | 5 | Rp 3/8-10 | 41 | 22 |
| 100031 * | 31 | 100 | 5.7 | 187 | 1,450 | 37/9.8 | 224 | 3.0 | 5 | Rp 3/8-10 | 41 | 22 |
| 100035 * | 35 | 100 | 5.7 | 212 | 1,450 | - | - | 3.0 | 5 | Rp 3/8-10 | 41 | 22 |
| 064019 ** | 19 | 64 | 7.9 | 60 | 928 | 23/6.1 | 72 | 3.0 | 5 | G 3/4-10 | 41 | 26 |
| 064040 ** | 40 | 64 | 7.9 | 125 | 928 | 48/12.7 | 150 | 3.0 | 5 | G 3/4-10 | 41 | 26 |
| 064048 ** | 48 | 64 | 7.9 | 150 | 928 | 58/15.3 | 180 | 3.0 | 5 | G 3/4-10 | 41 | 26 |
| 064060 ** | 60 | 64 | 7.9 | 187 | 928 | 72/19.0 | 224 | 3.0 | 5 | G 3/4-10 | 41 | 26 |
| 064068 ** | 68 | 64 | 7.9 | 212 | 928 | - | - | 3.0 | 5 | G 3/4-10 | 41 | 26 |
| 040029 *** | 29 | 40 | 12.0 | 60 | 580 | 35/9.2 | 72 | 3.0 | 5 | G 1-15 | 41 | 32 |
| 040062 *** | 62 | 40 | 12.0 | 125 | 580 | 74/19.7 | 150 | 3.0 | 5 | G 1-15 | 41 | 32 |
| 040074 *** | 74 | 40 | 12.0 | 150 | 580 | 89/23.5 | 180 | 3.0 | 5 | G 1-15 | 41 | 32 |
| 040092 *** | 92 | 40 | 12.0 | 187 | 580 | 110/29.2 | 224 | 3.0 | 5 | G 1-15 | 41 | 32 |
| 040105 *** | 105 | 40 | 12.0 | 212 | 580 | - | - | 3.0 | 5 | G 1-15 | 41 | 32 |
| 025048 *** | 48 | 25 | 17.0 | 60 | 362 | 58/15.3 | 72 | 3.0 | 5 | G 1-15 | 41 | 38 |
| 025100 *** | 100 | 25 | 17.0 | 125 | 362 | 120/31.7 | 150 | 3.0 | 5 | G 1-15 | 41 | 38 |
| 025120 *** | 120 | 25 | 17.0 | 150 | 362 | 144/38.0 | 180 | 3.0 | 5 | G 1-15 | 41 | 38 |
| 025150 *** | 150 | 25 | 17.0 | 187 | 362 | 180/47.6 | 224 | 3.0 | 5 | G 1-15 | 41 | 38 |
| 025170 *** | 170 | 25 | 17.0 | 212 | 362 | - | - | 3.0 | 5 | G 1-15 | 41 | 38 |

* SST version with double ball valve, valve connector on the suction/discharge side with female thread Rp 3/8, male thread G 3/4-DN 10

** HV design (SST only) with G 1 - DN 15 connector

*** HV design (SST only) with 1 1/4" - DN 20 connector

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

SST version with double ball valve, valve connector on the suction/discharge side with female thread Rp 3/8,male thread G 3/4-DN 10

Material in contact with media

| Identity code of material | Dosing head | Connection on suction/ discharge side | Seals/ball seat | Balls |
|---------------------------|-------------------------------|---------------------------------------|---|---------|
| PVT * | PVDF | PVDF | PTFE/PTFE + 25 % carbon | Ceramic |
| SST | Stainless steel 1.4571/1.4404 | Stainless steel 1.4581 | PTFE/ZrO ₂ (DN 15/DN20 stainless steel 1.4404) | Ceramic |
| TTT | PTFE + 25% carbon | PVDF (polyvinylidene fluoride) | PTFE/PTFE + 25 % carbon | Ceramic |

* Not for areas at risk of explosion



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.6 Identity Code & Pricing for HYDRO/ 3 - SINGLE HEAD

HP3a HYDRO/ 3

H Main power end

| Type: | Type: | Type: |
|--|---|--|
| 100010 100 bar, 10 litre PVT | 064019 64 bar, 19 litre PVT | 025048 25 bar, 48 litre PVT |
| 100021 100 bar, 21 litre SST | 064040 64 bar, 40 litre SST | 025100 25 bar, 100 litre SST |
| 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 |
| 040029 40 bar, 29 litres PVT | | |
| 040062 40 bar, 62 litres SST | | |
| 040074 40 bar, 74 litres | | |
| 040092 40 bar, 92 litres | | |
| 040105 40 bar, 105 litres | | |

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
- A** Add-on drive unit ATEX Version
- 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
- 3** Low Temp. to -25 °C Ex Zone II

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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.7 Identity Code & Pricing for HYDRO/ 3 - DOUBLE HEAD

HP3a HYDRO/ 3 **NOTE: Capacities shown are per Head**

| D Main power end, duplexed - TRIPLEX ALSO AVAILABLE ON \$ P.O.A | | | |
|---|---|-----------------------|------------------------|
| Type: | | Type: | Type: |
| 100010 | 100 bar, 10 litre PVT | 064019 | 64 bar, 19 litre PVT |
| 100021 | 100 bar, 21 litre SST | 064040 | 64 bar, 40 litre SST |
| 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 |
| 040029 | 40 bar, 29 litre PVT | | |
| 040062 | 40 bar, 62 litre SST | | |
| 040074 | 40 bar, 74 litre | | |
| 040092 | 40 bar, 92 litre | | |
| 040105 | 40 bar, 105 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) | | |
| 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 | | |
| A | Add-on drive unit ATEXVersion | | |
| 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 | | |
| 3 | Low Temp. to -25 °C Ex Zone II | | |

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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.8 Technical Data HYDRO/ 4

| Type HP4a | | | | | | | | | | | | | |
|---|-------|-----|------------|--------------|---|-----------|--------------|--------------|-------------------------------------|-----------------------------------|-----------------|-----------|--|
| Capacity at max. back pressure with 1500 rpm motor at 50 Hz Delivery rate at max. back pressure | | | | | Capacity at max. back pressure at 60 Hz | | | Suction lift | Perm. admiss. pressure suction side | Suction/ discharge side connector | Shipping weight | Plunger Ø | |
| Max. stroke rate | | | | | Max. stroke rate | | | | | | | | |
| | l/h | bar | ml/ stroke | Strokes/ min | psi | l/h/gph | Strokes/ min | m WC | bar | G-DN | kg | mm | |
| 400071 | 71 | 40 | 25.1 | 71 | 580 | 85/22 | 86 | 3 | 1 | G 1 1/2-25 | 69 | 40 | |
| 400105 | 105 | 40 | 25.1 | 103 | 580 | 126/33 | 124 | 3 | 1 | G 1 1/2-25 | 69 | 40 | |
| 400140 | 140 | 40 | 25.1 | 136 | 580 | 168/44 | 164 | 3 | 1 | G 1 1/2-25 | 69 | 40 | |
| 400190 | 190 | 40 | 25.1 | 188 | 580 | 188/49 | 225 | 3 | 1 | G 1 1/2-25 | 69 | 40 | |
| 400220 | 220 | 40 | 25.1 | 214 | 580 | - | - | 3 | 1 | G 1 1/2-25 | 69 | 40 | |
| 250130 | 130 | 25 | 42.4 | 71 | 363 | 155/41 | 86 | 3 | 1 | G 1 1/2-25 | 69 | 52 | |
| 250190 | 190 | 25 | 42.4 | 103 | 363 | 230/61 | 124 | 3 | 1 | G 1 1/2-25 | 69 | 52 | |
| 250250 | 250 | 25 | 42.4 | 136 | 363 | 300/79 | 164 | 3 | 1 | G 1 1/2-25 | 69 | 52 | |
| 250350 | 350 | 25 | 42.4 | 188 | 363 | 420/111 | 225 | 3 | 1 | G 1 1/2-25 | 69 | 52 | |
| 250400 | 400 | 25 | 42.4 | 214 | - | - | - | 3 | 1 | G 1 1/2-25 | 69 | 52 | |
| 160210 | 210 | 16 | 62.3 | 71 | 232 | 250/66 | 86 | 3 | 1 | G 1 1/2-25 | 76 | 63 | |
| 160300 | 300 | 16 | 62.3 | 103 | 232 | 360/95 | 124 | 3 | 1 | G 1 1/2-25 | 76 | 63 | |
| 160400 | 400 | 16 | 62.3 | 136 | 232 | 480/127 | 164 | 3 | 1 | G 1 1/2-25 | 76 | 63 | |
| 160550 | 550 | 16 | 62.3 | 188 | 232 | 660/174 | 225 | 3 | 1 | G 1 1/2-25 | 76 | 63 | |
| 160625 | 625 | 16 | 62.3 | 214 | - | - | - | 3 | 1 | G 1 1/2-25 | 76 | 63 | |
| 100330 | 330 | 10 | 100.4 | 71 | 145 | 400/106 | 86 | 3 | 1 | G 2-32 | 87 | 80 | |
| 100480 | 480 | 10 | 100.4 | 103 | 145 | 580/153 | 124 | 3 | 1 | G 2-32 | 87 | 80 | |
| 100635 | 635 | 10 | 100.4 | 136 | 145 | 760/201 | 164 | 3 | 1 | G 2-32 | 87 | 80 | |
| 100880 | 880 | 10 | 100.4 | 188 | 145 | 1,050/277 | 225 | 3 | 1 | G 2-32 | 87 | 80 | |
| 101000 | 1,000 | 10 | 100.4 | 214 | - | - | - | 3 | 1 | G 2-32 | 87 | 80 | |
| 070465 | 465 | 7 | 138.7 | 71 | 102 | 560/148 | 86 | 3 | 1 | G 2 1/4-40 | 96 | 94 | |
| 070670 | 670 | 7 | 138.7 | 103 | 102 | 805/213 | 124 | 3 | 1 | G 2 1/4-40 | 96 | 94 | |
| 070890 | 890 | 7 | 138.7 | 136 | 102 | 1,070/283 | 164 | 3 | 1 | G 2 1/4-40 | 96 | 94 | |
| 071230 | 1,230 | 7 | 138.7 | 188 | 102 | 1,450/383 | 225 | 3 | 1 | G 2 1/4-40 | 96 | 94 | |
| 071400 | 1,400 | 7 | 138.7 | 214 | - | - | - | 3 | 1 | G 2 1/4-40 | 96 | 94 | |

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

Material in contact with media

| Identity code of material | Dosing head | Connection on suction/ discharge side | Seals | Valve seats | Valve balls up to DN 25 | Valve plates/valve springs |
|---------------------------|------------------------|---------------------------------------|-------|-------------------|-------------------------|-------------------------------------|
| PVT * | PVDF | PVDF | PTFE | PTFE + 25% carbon | Glass | Ceramic/E-CTFE |
| SST | Stainless steel 1.4404 | Stainless steel 1.4404 | PTFE | PTFE | Stainless steel 1.4401 | Stainless steel 1.4404/ Hastelloy C |
| TTT | PTFE + 25% carbon | PVDF (polyvinylidene fluoride) | PTFE | PTFE + 25% carbon | Glass | Ceramic/E-CTFE |

* Not for areas at risk of explosion



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.8 Technical Data HYDRO/ 4

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 |
| TTT | PTFE + 20% Carbon | PVDF (Polyvinylidenfluoride) | PTFE/PTFE | glass |

| DN32 and DN40 plate valves | | | | | |
|----------------------------|------------------------------|------------------------------|-------------|------------------------|---------|
| Material | Liquid End | Suction/Discharge connector | Seals/seats | Valve plates | Springs |
| 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 specification | Power supply | | | | Remarks |
|-----------------------------|----------------------|---------------------|----------|--------|--|
| 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 | With PTC, speed control range 1:5 |
| | | 265-280 V/440-480 V | 60 Hz | | |
| 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, II2GEEexIIIT3 | 220-240 V/380-420 V | 50 Hz | 1.1 kW | |
| L2 | 3 ph, II2GEEexdIICT4 | 220-240 V/380-420 V | 50 Hz | 1.1 kW | With PTC, speed control range 1:5 |
| P1 | 3 ph, II2GEEexIIIT3 | 254-277 V/440-480 V | 60 Hz | 1.1 kW | |
| P2 | 3 ph, II2GEEexdIICT4 | 254-277 V/440-480 V | 60 Hz | 1.1 kW | With PTC, speed control range 1:5 |
| V2 | 3 ph, II2GEEexdIICT4 | 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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.9 Identity Code & Pricing for HYDRO/ 4 - SINGLE HEAD

HP4a HYDRO/ 4
H Main power end

| Type: | Type: | Type: |
|--|--|--|
| 040071 40 bar, 71 l/h PVT | 250130 25 bar, 130 l/h PVT | 160210 16 bar, 210 l/h PVT |
| 400105 40 bar, 105 l/h SS | 250190 25 bar, 190 l/h SS | 160300 16 bar, 300 l/h SS |
| 400140 40 bar, 140 l/h | 250250 25 bar, 250 l/h | 160400 16 bar, 400 l/h |
| 400190 40 bar, 190 l/h | 250350 25 bar, 350 l/h | 160550 16 bar, 550 l/h |
| 400220 40 bar, 220 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 | |

PVT Liquid End Maximum 25 Bar

Liquid end material:

- PV** PVDF
- SS** Stainless steel

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
- A** Add-on drive unit ATEX Version
- 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)
- K** Manual Outdoor (SS)
- 1** With stroke positioning motor,
- 2** With stroke positioning motor,
- 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
- 3** Low Temp. to -25 °C Ex

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

HP4a H 025130 SS T 0 0 0 0 S 0 0 0 0



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.10 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 - - TRIPLEX ALSO AVAILABLE ON \$ P.O.A

| 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, 625 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 | |
| 400071 | 40 bar, 71 l/h | PVT | | | |
| 400105 | 40 bar, 105 l/h | SST | | | |
| 400140 | 40 bar, 140 l/h | | | | |
| 400190 | 40 bar, 190 l/h | | | | |
| 400220 | 40 bar, 220 l/h | | | | |

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 DN32 and DN40

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

Version:
0 With ProMinent® logo, with over-pressure signal
1 Without ProMinent® logo, with over-pressure 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
A Add-on drive unit ATEX Version
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
3 Low Temp. to -25 °C Ex Zone II

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

HP4a H 025130 SS T 0 0 0 0 S 0 0 0 0



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.11 Spare Parts Kits HYDRO

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:

Type 100010, 100009, 100007, 100006, 100003,
064025, 064022, 064018, 064015, 064007,

| | | Part No. |
|----------------|------------------------|----------|
| 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:

Type 100035, 100031, 100025, 100021, 100010, 064068,
064060, 064048, 064040, 064019

| | | Part No. |
|----------------|------------------------|----------|
| 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:

Type 100010, 100009, 100007, 100006, 100003,
064025, 064022, 064018, 064015, 064007,

| | |
|--|----------|
| | Part No. |
| | 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:

064025, 064022, 064018, 064015, 064007

| | Part No. |
|--|----------|
| | 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 HYDRO Hydraulic Diaphragm Metering Pump

2.6.11 Spare Parts Kits HYDRO

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

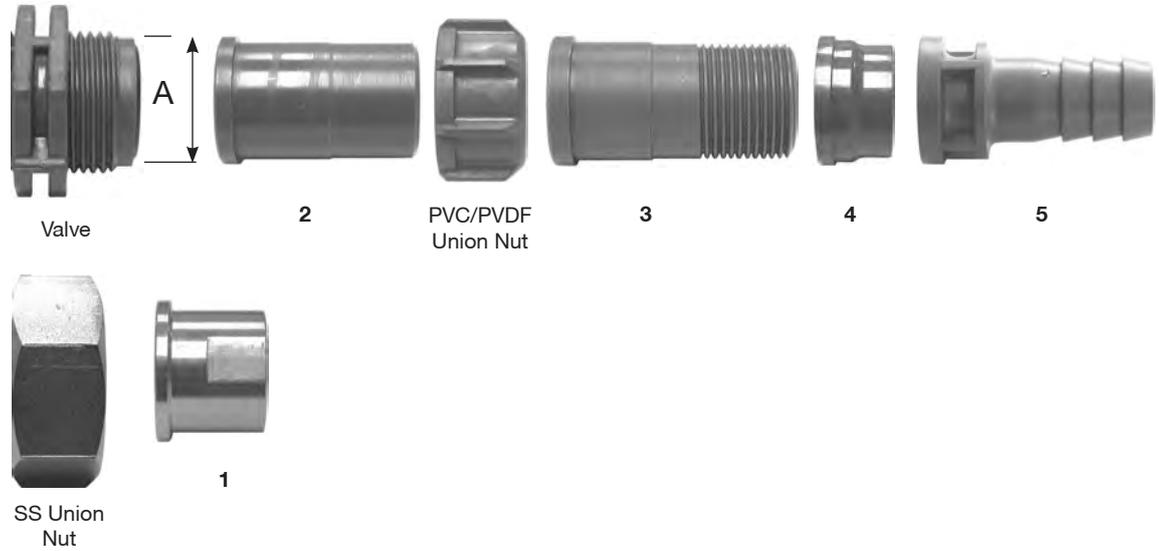
| | Part No. |
|---|----------|
| Type 250130, 250190, 250250, 250350, 250400 | 1040874 |
| Type 160210, 160300, 160400, 160550, 160625 | 1040875 |
| Type 100330, 100480, 100635, 100880, 101000 | 1040876 |
| Type 070465, 070670, 070890, 071230, 071400 | 1040877 |



2.6 HYDRO Hydraulic Diaphragm Metering Pump

2.6.12 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 PTFE 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 |



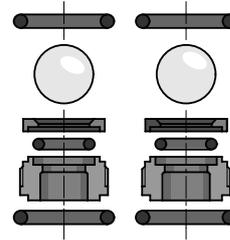
2.7 VARIO VAMb, VAMc & VAMd Spare Parts

2.7.1 Spare Parts Kits

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

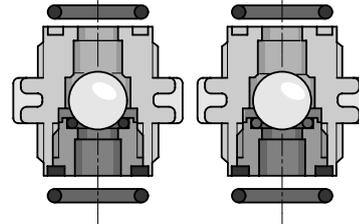
Standard kit for PVT material version:

- 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)

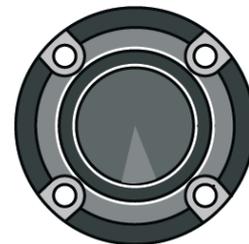


Spare parts kit VARIO

| | | 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 |



2.8 MAKRO/ 5 Piston Metering Pump

2.8.1 Piston Metering Pump MAKRO/ 5

The 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.

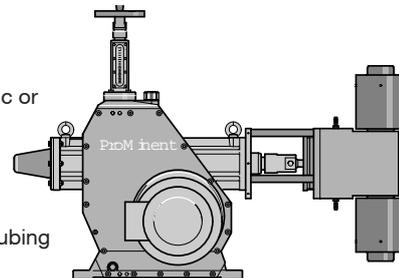
The stroke length is adjustable between 0...50 mm.

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).

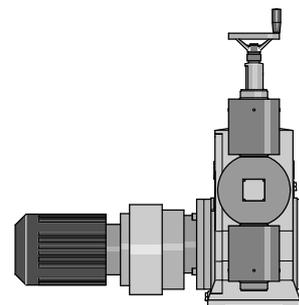
The suction lift varies with the density and viscosity of the dosing chemical, the connection tubing and the pump stroking rate.

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.



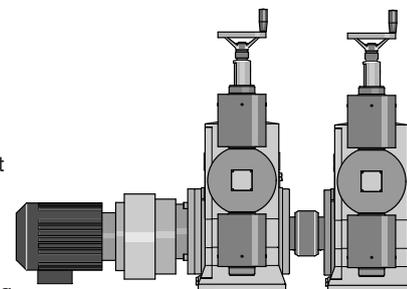
Capacity with 1500 rpm motor and 50Hz M5KaH

| 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 |



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.

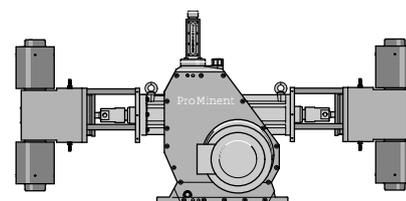


MAKRO/ 5 double head version

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



2.9 ORLITA Metering Pump

2.9.1 ORLITA Metering Pump

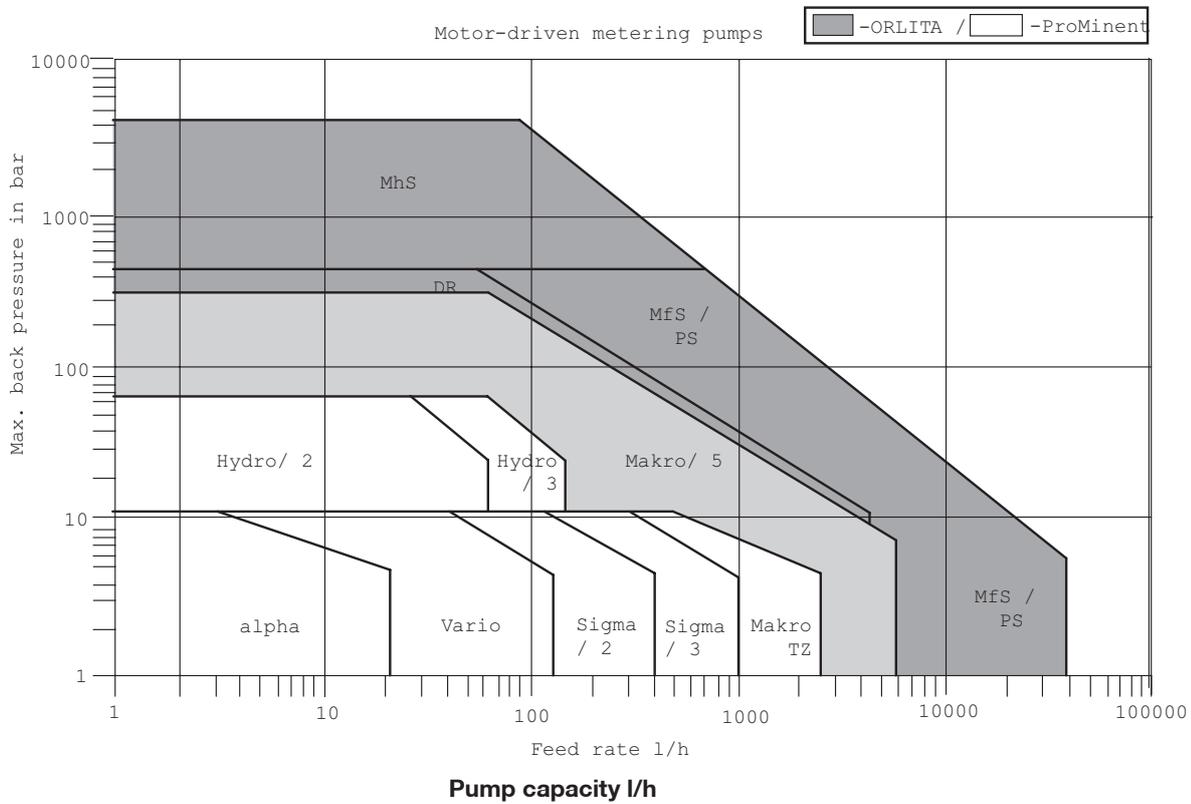
ORLITA Metering Pumps are motor driven, oscillating positive displacement pumps with adjustable stroke volumes.

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 ORLITA Metering Pump

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.

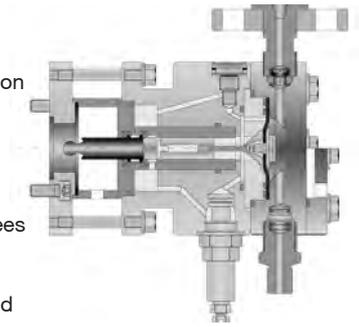
During the discharge stroke the diaphragm is balanced by the hydraulic liquid only. During the suction stroke the diaphragm operation is aided by the mechanical coupling.

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_p) and self-cleaning.

All wetted parts (except for the PTFE-diaphragm) are fabricated from stainless steel.



2.9.3 Diaphragm Head MH

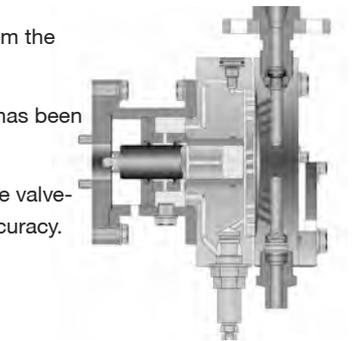
Hydraulic actuated diaphragm head. A metal diaphragm hermetically separates the wetted area from the hydraulic chamber.

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

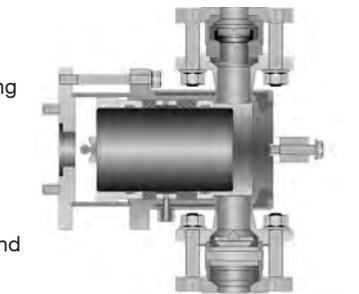
Plunger head with stuff box packing. The plunger oscillates in the cylinder and displaces the liquid.

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 (NPSHR) 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.

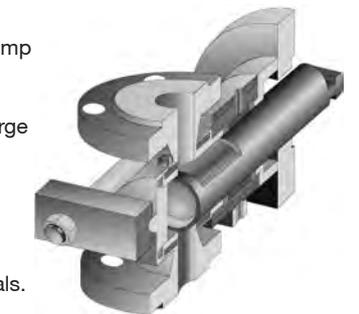
Depending on the application the pump head also is available from other high performance materials.

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

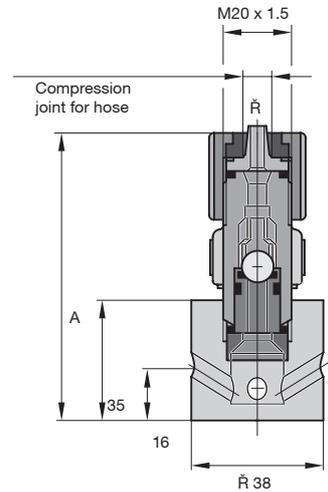
3.0.1 Foot Valves

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

| | | | ∅ | 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

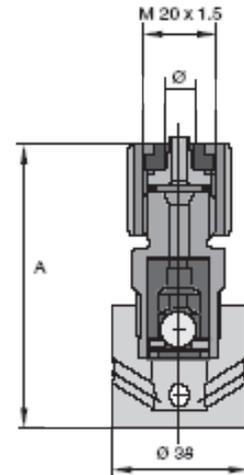
Valve body of PP, seals of Viton

| | | | ∅ | 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

| | | | ∅ | 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

| | | | ∅ | 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 |

p

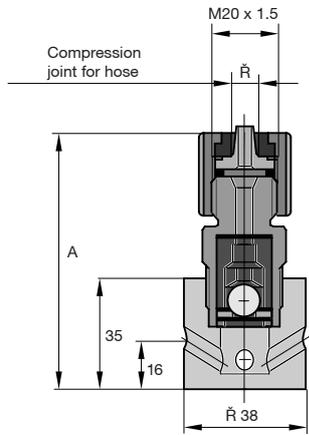


3.0 Accessories beta/gamma/delta/Pneumados

3.0.1 Foot Valves

FOOT VALVE, PTFE

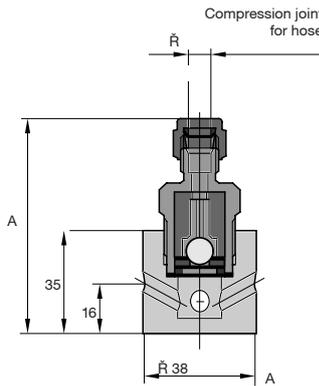
Valve body, ball check and seals of PTFE, for connection diameters 6, 8 and 12 mm with ceramic weight.



| | | 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

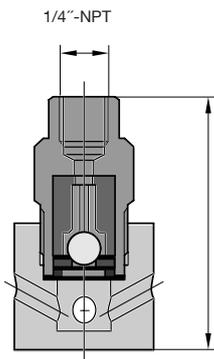
With strainer and ball check, valve body of stainless steel 1.4571, seals of PTFE, For 6x4, 8x5 and 12x 9 mm hose connection a support sleeve is required (see page 3.23).



| | | 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**



3.1 Accessories sigma/VARIO/META/MAKRO TZ

3.1.1 Foot Valves

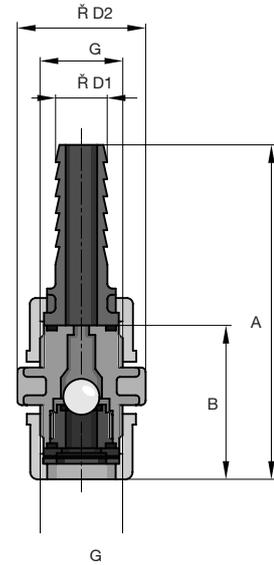
For connection to the end of the suction line to prevent return flow and to protect the pump from contamination, with strainer and ball check valve. The same materials are used as for the liquid ends. The union nut and union end/hose connector are part of the standard delivery package.

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 |

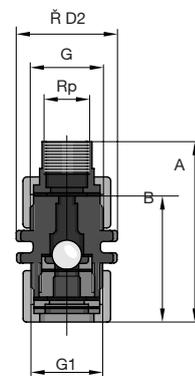


FOOT VALVE, PVDF

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 |

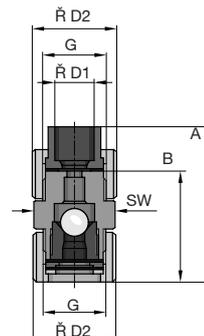
Note: DN32 valve has Hastalloy-C Disc and Spring



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

3.2.1 Foot & Injection Valves

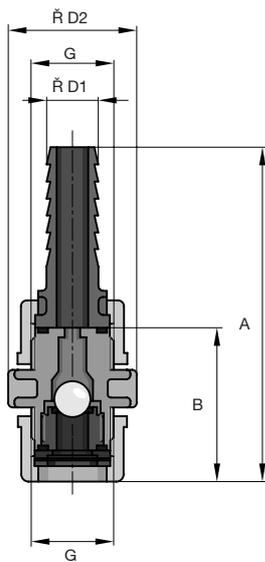
For connection to the end of the suction line to prevent return flow and to protect the pump from contamination, with strainer and ball check valve. The same materials are used as for the liquid ends. The union nut and union end/hose connector are part of the standard delivery package.

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



| G | Solvent weld male | B | Ø D2 | Part No. |
|-------------|---------------------------------|-----|------|-----------|
| ● DN 10 | 15 mm **not stocked** | 51 | 40 | P809465 |
| ● DN 15 | 20 mm **not stocked** | 56 | 47 | P924516 |
| ● DN 20 | 25 mm **not stocked** | 67 | 55 | P803721 |
| ● DN 25 | 25 mm **not stocked** | 73 | 60 | P803722 |
| ● DN 32 PVT | 32 mm Female | 85 | 74 | P1006434 |
| ● DN 40 | 32 mm **not stocked** | 100 | 90 | P1004204 |
| ● DN 10 | 1/2" BSP **not stocked** | 51 | 40 | P809465B |
| ● DN 15 | 3/4" BSP **not stocked** | 56 | 47 | P924516B |
| ● DN 20 | 1" BSP **not stocked** | 67 | 55 | P803721B |
| ● DN 25 | 1" BSP **not stocked** | 73 | 60 | P803722B |
| ● DN 32 PVT | 1-1/2" BSP | 85 | 74 | P1006434B |
| ● DN 40 | 2" BSP **not stocked** | 100 | 90 | P1004204B |
| ● DN 10 | 16 mm HT **not stocked** | 51 | 40 | P809465H |
| ● DN 15 | 20 mm HT **not stocked** | 56 | 47 | P924516H |
| ● DN 20 | 25 mm HT **not stocked** | 67 | 55 | P803721H |
| ● DN 25 | 25 mm HT **not stocked** | 73 | 60 | P803722H |
| ● DN 32 PVT | 40 mm HT | 85 | 74 | P1006434H |
| ● DN 40 | 40 mm HT **not stocked** | 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 **not stocked** | 51 | 40 | P809461 |
| ● DN 15 | 3/4" x 20 mm **not stocked** | 56 | 47 | P924521 |
| ● DN 20 | 1" x 25 mm **not stocked** | 67 | 55 | P803710 |
| ● DN 25 | 1" x 25 mm **not stocked** | 73 | 60 | P803711 |
| ● DN 32 PVT | 1-1/2" x 32 mm female | 73 | 60 | P1002783 |
| ● DN40 | 2" x 32 mm **not stocked** | | | P804761 |
| ● DN 10 | 1/2" x 1/2" BSP **not stocked** | 51 | 40 | P809461B |
| ● DN 15 | 3/4" x 3/4" BSP **not stocked** | 56 | 47 | P924521B |
| ● DN 20 | 1" x 1" BSP **not stocked** | 67 | 55 | P803710B |
| ● DN 25 | 1" x 1" BSP **not stocked** | 73 | 60 | P803711B |
| ● DN 32 PVT | 1-1/2" x 1-1/2" BSP | 73 | 60 | P1002783B |
| ● DN40 | 2" x 32 mm **not stocked** | | | P804761B |
| ● DN 10 | 1/2" x 16 mm HT **not stocked** | 51 | 40 | P809461H |
| ● DN 15 | 3/4" x 20 mm HT **not stocked** | 56 | 47 | P924521H |
| ● DN 20 | 1" x 25 mm HT **not stocked** | 67 | 55 | P803710H |
| ● DN 25 | 1" x 25 mm HT **not stocked** | 73 | 60 | P803711H |
| ● DN 32 PVT | 1-1/2" x 40 mm HT | 73 | 60 | P1002783H |
| ● DN40 | 2" x 40 mm HT **not stocked** | | | 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.

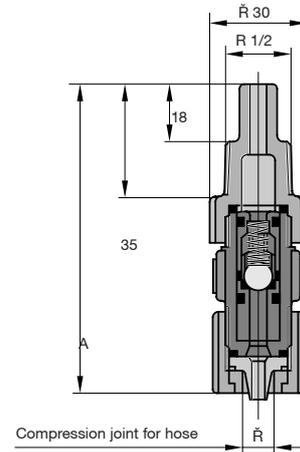
For PTFE version without spring for vertical installation from below. Valve spring can be retrofitted. The same materials are used as for the liquid ends.

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.

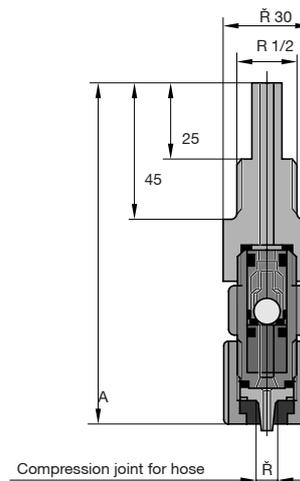
| | | | ∅ | A | Part No. |
|------------|--------------|--------------------|--------|----|----------|
| Connection | 6 mm - 1/2" | for PE/PTFE tubing | 6 x 4 | 96 | 924681 |
| Connection | 8 mm - 1/2" | for PE/PTFE tubing | 8 x 5 | 96 | 809476 |
| Connection | 12 mm - 1/2" | for PE/PTFE tubing | 12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



INJECTION VALVE, PPB

Valve body of PP, seals of Viton.

| | | | ∅ | 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 |



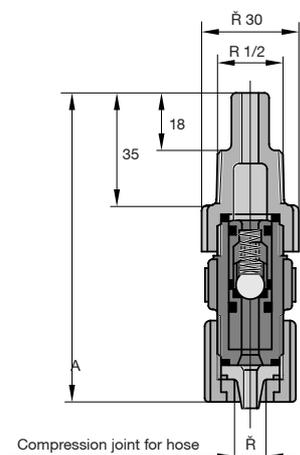
INJECTION VALVE PP/PTFE

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.

| | | | ∅ | 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

| | | | ∅ | 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)

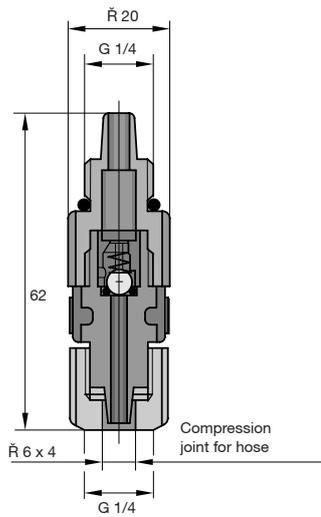
Body of PVC, PTFE with 1/2" BSPT Male tailpiece

| | | | ∅ | 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



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

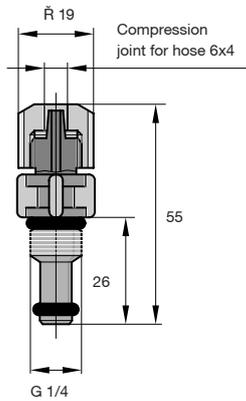
INJECTION VALVE PVC, O-RING LOADED

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)

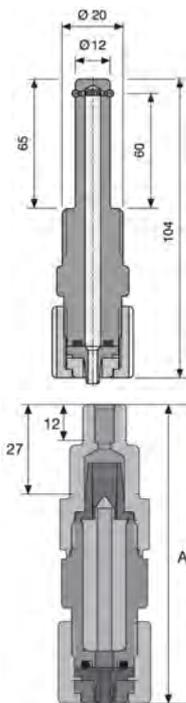
915091



PTFE INJECTION VALVES O-RING, LOADED

PTFE housing, FPM (Viton) seals.

| Connection | oR̄ x iR̄ 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 |



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 | oR̄ x iR̄ 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.

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

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

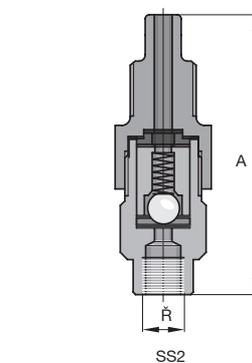
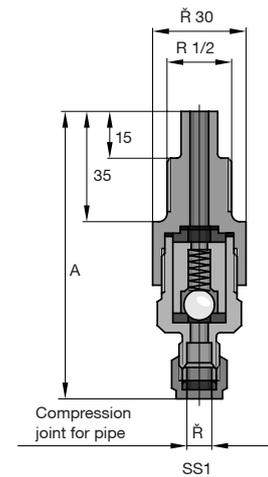
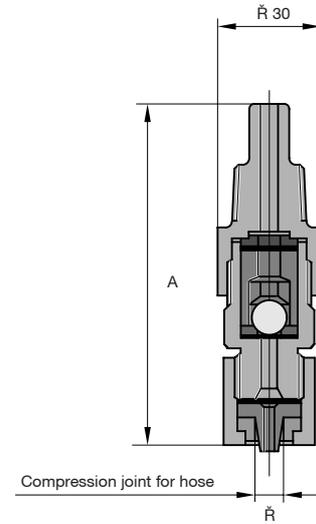
INJECTION VALVE STAINLESS STEEL

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. |
|-----------------------|---------|----|----------|
| 6 mm - 1/2" for pipe | 6 x 5 | 93 | 809489 |
| 8 mm - 1/2" for pipe | 8 x 7 | 93 | 809482 |
| 12 mm - 1/2" for pipe | 12 x 10 | 93 | 809483 |

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

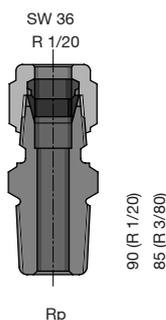
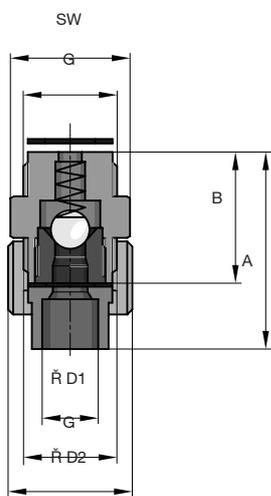
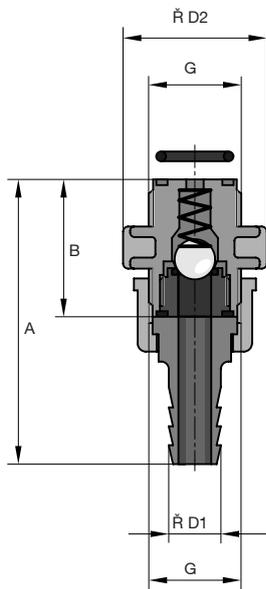


3.4 Accessories sigma/VARIO/META/MAKRO TZ

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.



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. | 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 Hastalloy-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

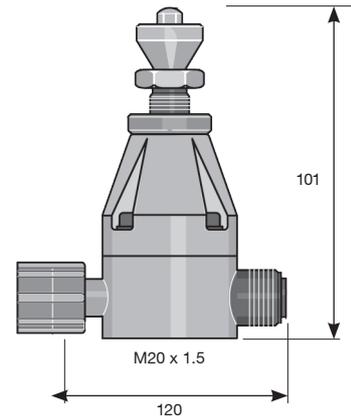
ADJUSTABLE 1-10 BAR, 6-12 MM

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.

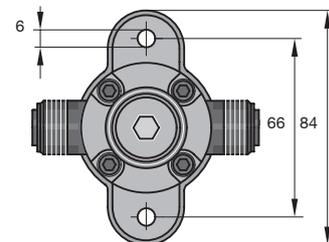
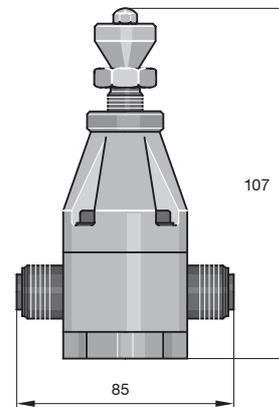


CAUTION: Back pressure valves are not designed for use as completely-sealing, isolating elements!

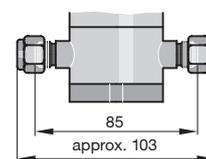
APPLICATION: Beta, Gamma, Concept, Pneumados, Delta, EXtronic, electronic metering pumps.

| | | | | 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 |

PP, PC, TT version



SS version



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 |



3.6 Accessories Adjustable Relief Valves

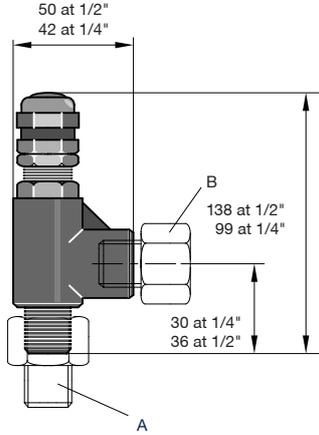
3.6.1 Adjustable Relief Valves

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



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.

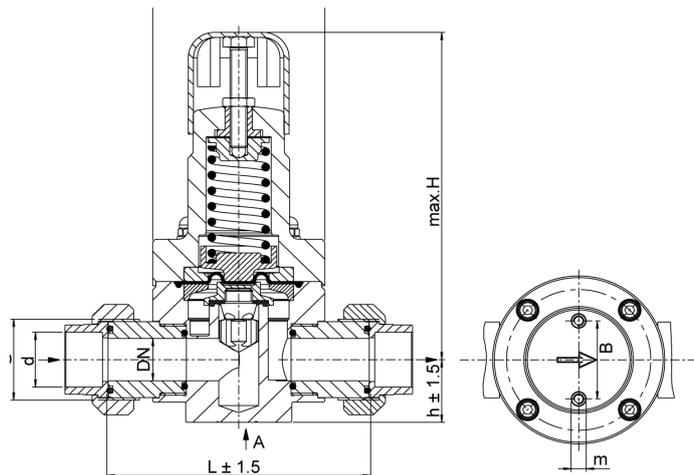
Important: Appropriate safety measures should be implemented when used as relief valves in conjunction with agglutinative media (e. g. milk of lime), (for instance flushing after activation).

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 | FKM |

Back Pressure Valve and Relief valve

Suit sigma/ 1 Dosing Pump

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

Suit 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 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

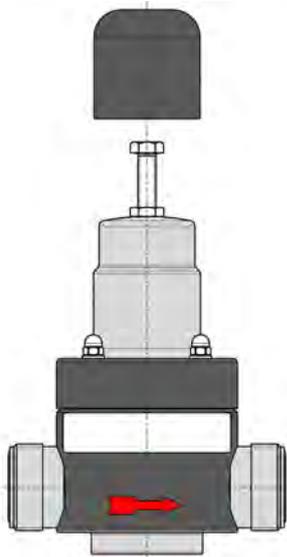
Suit sigma/ 3 & MAKRO Dosing Pump

- 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

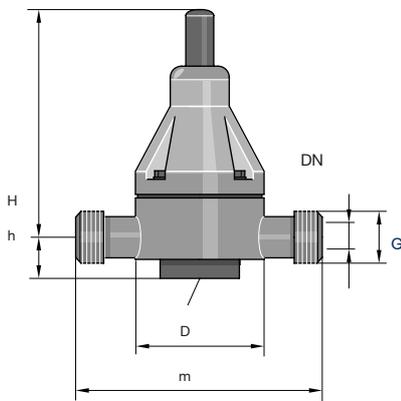


3.7 Accessories Motor Driven Dosing Pumps

3.7.1 Back Pressure Valves or Relief Valves



DHV-U



DHV-712R

| | | | | | | | 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 a 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 release delivery 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.

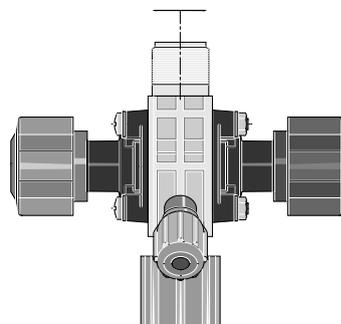
Caution: Back pressure valves are not absolutely leakproof isolating elements!

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 | 792011 |
| Size I* | 10 bar | 6x4 | 6 - 12 mm | 791715 |
| Size I* | 6 bar | 6x4 | 6 - 12 mm | 1005745 |
| Size II* | 10 bar | 12x9 | 6 - 12 mm | 792203 |
| Size II* | 6 bar | 12x9 | 6 - 12 mm | 740427 |
| Size III* | 10 bar | 12x9 | DN10 | 792215 |



ALSO AVAILABLE

| | | | | |
|---------|----------|-----|-----------|---------|
| Size I* | 8-10 bar | 6x4 | 6 - 12 mm | 791715C |
|---------|----------|-----|-----------|---------|

Note: this unit is made by prominent China BUT has German diaphragms

*TUBE PACK TO BE ORDERED SEPARATELY [NO CHARGE]

| | | | |
|---------------|------|-----------|-----------|
| Size I | 6x4 | AO1122243 | No charge |
| Size II & III | 12x9 | AO1322245 | No charge |

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.



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 |



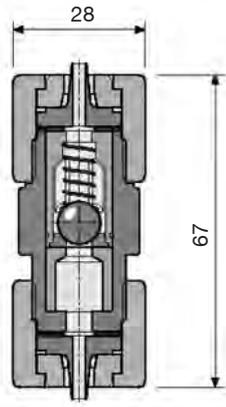
3.9 Accessories beta/gamma/delta/Pneumados

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.

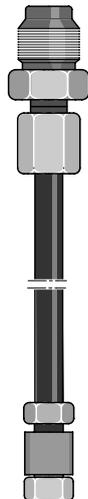


Applications when using appropriate tubing

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 |



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 |



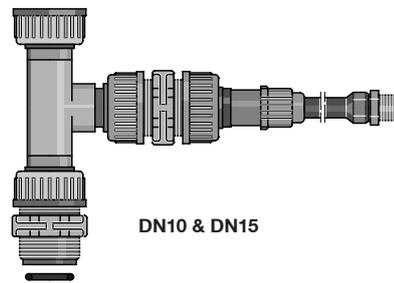
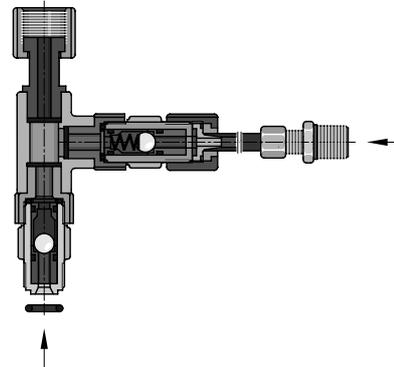
3.10 Accessories Flushing Device & Rigid Suction Assemblies

3.10.1 Flushing Devices

FLUSHING DEVICE, PVC

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

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



Rigid Suction Assemblies

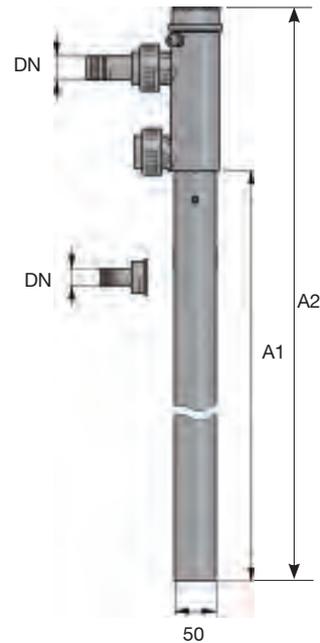
Suction lances for motor-driven metering pumps. Universal PVC suction lances with float switch in protective tube \bar{R} 50 incorporating foot/check valve (not detachable), hydraulic connector with PVC hose nozzles. DN 10/15: fitted with ball check valve (borosilicate glass ball, FPM seals), DN 20/25;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

Body PVDF also available



| | 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 |
| PVDF 5m Cable, No Plug | 142068 |



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

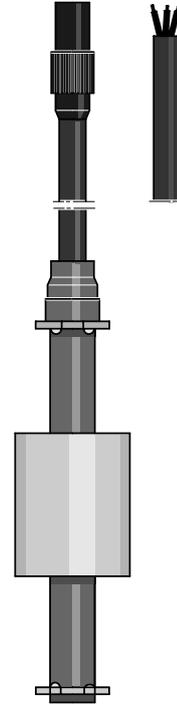
Temperature range -10°C to 65°C, enclosure rating IP 67.

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 |



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

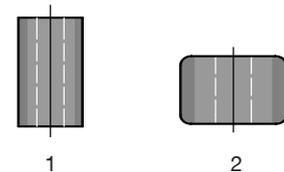
Size 1 Dia 25 x 50, 40g with 10 dia. opening

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.



3.13 Accessories gamma/sigma Metering Monitors

3.13.1 gamma/sigma Metering Monitors

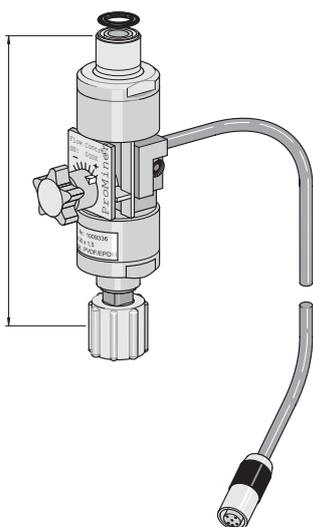
ADJUSTABLE FLOW CONTROL MONITOR

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 | 1021168 |
| ● Size III - DN 10 | PVDF/Viton® B | Sigma/1 12017, 10022, 12035 10044, 10050, 07065 | 1021169 |
| ● Size III - DN 15 | PVDF/EPDM | Sigma/1 07042, 07084, 04120 Sigma/2 12050, 12090, 12130 | 1021170 |
| ● Size III - DN 15 | PVDF/Viton® B | Sigma/1 07042, 07084, 04120 Sigma/2 12050, 12090, 12130 | 1021171 |
| ● Size IV | PVDF/EPDM | Sigma/2 07120, 07220, 04350 Sigma/3 120145, 12190, 12270 | 1021164 |
| ● Size IV | PVDF/Viton® B | Sigma/2 07120, 07220, 04350 Sigma/3 120145, 12190, 12270 | 1021165 |
| ● Size V | PVDF/EPDM | Sigma/3 07410, 07580, 04830 | 1021166 |
| ● Size V | PVDF/Viton® B | Sigma/3 07410, 07580, 04830 | 1021167 |

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, MAKRO 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)



PN: 1040955

GAMMA/ XL I/O CABLE

Cable with round plug for configurable inputs and outputs for the control of the process timer or for additional alarm messages.

| | Lead length | 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 |



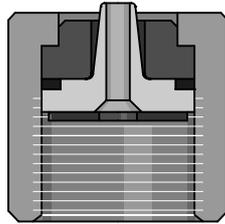
3.15 Accessories Mechanical & Hydraulic Pumps

3.15.1 Connectors & Fittings

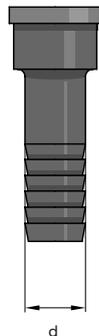
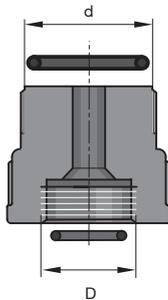
CONNECTOR SET

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.



M20 x 1.5 F



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 |



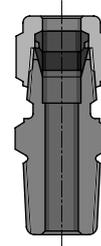
3.15 Accessories Mechanical & Hydraulic Pumps

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.

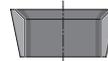
| | Part No. |
|------------------|----------|
| 6 mm - 1/4" ISO | 359526 |
| 8 mm - 1/4" ISO | 359527 |
| 12 mm - 1/4" ISO | 359528 |
| 12 mm - 3/8" ISO | 359520 |
| 16 mm - 3/8" ISO | 359521 |
| 16 mm - 1/2" ISO | 359529 |



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.

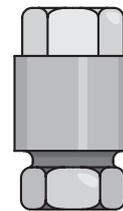
| | Part No. |
|--|----------|
| Ring set 6 dia. for tubing 6 mm o.d. | 104232 |
| Ring set 8 dia. for tubing 8 mm o.d. | 104236 |
| Ring set 12 dia. for tubing 12 mm o.d. | 104244 |



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 |



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 |



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. | 10* | 37428 |
| PTFE | 19 | mm o.d. | x | 16 | mm i.d. | 6* | 37430 |

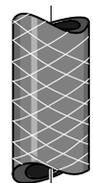
* Maximum working pressure at 20°C in accordance with DIN EN ISO 7751, provided there is media compatibility and the connection is properly made.

| | | | 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. | 160 | 15740 |
| Stainless steel 1.4571 | 12 o.d. x 10 mm i.d. | 200 | 15743 |

| | FV & 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.

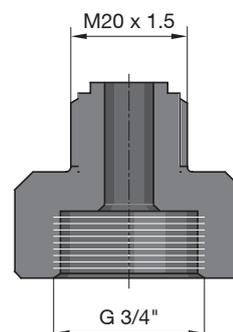
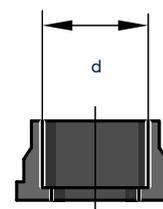
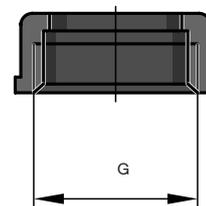
FOR PE AND PVC TUBE SEE 'GREEN PAGE' Price List



3.17 Accessories Motor Driven Pumps General

3.17.1 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 | | 3/4" | - DN 10 | 358813 |
| ● | Union nut | | 1" | - DN 15 | 358814 |
| ○ | Union nut | | 1 1/4" | - DN 20 | 358815 |
| ● | Union nut | | 1 1/2" | - DN 25 | 358816 |
| ● | Union nut | | 2" | - DN 32 | 1003639 |
| | Union nut | | 2 1/4" | - DN 40 | 358818 |
| | Union nut | | 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 |



Note: PVC Solvent Weld fittings are standard with Sigma and optional with Vario.

ADAPTOR

| | |
|---|---------|
| PVC DN 10 - 3/4" F to 20x1.5 M | 800816 |
| PVDF DN 10 - 3/4" valve to 16mm hose tail | 1002288 |
| PVDF DN 15 - 1" valve to 20mm hose tail | 740632 |
| PVDF DN 20 - 1/4" valve to 25mm hose tail | 1006014 |
| PVDF DN 25 - 1 1/2" valve to 32mm hose tail | 1005560 |



3.18 Accessories Contact Water Meters COLD

3.18.1 Contact Water Meter for use in Potable Water Systems

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 | 304434 |
| 12/10/6 | 1" - DN 25* | 260 | 1 | 304445 |
| 20/16/10 | 1 1/2" - DN 40* | 300 | 1 | 304436 |
| 31/25/15 | 2" - DN 50* | 300 | 1 | 304430 |

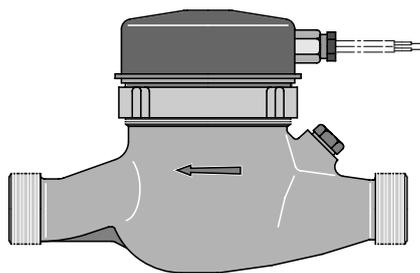
*Brass unions and inserts to be ordered separately [no charge]

| | | |
|-------|--------|-----------|
| DN 20 | 359029 | No charge |
| DN 25 | 801322 | No charge |
| DN 40 | 359037 | No charge |
| DN 50 | 359039 | No charge |

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.



3.19 Accessories Mechanical / Hydraulic

3.19.1 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

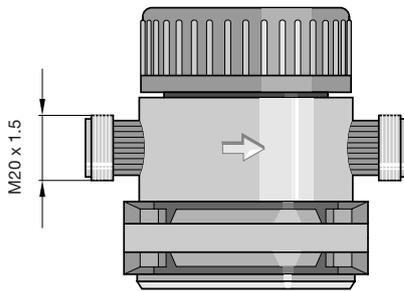
SUCTION PRESSURE REGULATOR

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.



| | 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 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 |
| | | 10 m | 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

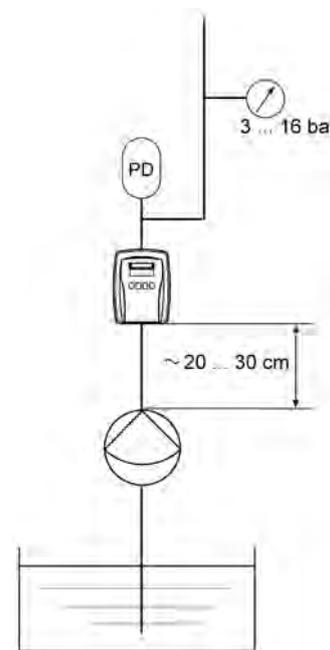
| | | |
|---------------------------------|--|--|
| Measuring range: | 0.1..... 50 l/h | |
| Accuracy: | < 2 % after calibration | |
| Analogue output: | 4...20 mA | |
| Frequency output: | < 10 kHz (optional on special order) | |
| Protection class: | IP 65 | |
| Power supply: | 100...230 V AC/ 50/60 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 DULCOLEVEL

3.23.1 DULCOLEVEL Radar Level Sensor

With the new radar level sensor DULCOLEVEL, your chemical inventory management is child's play.

DULCOLEVEL makes it easier for you to manage your chemical stock levels.

ProMinent's measuring range covers tank volumes of between 30 and 1500 litres (IBCs) or any tanks with a maximum height of 15 metres, with a precision of ± 5 mm.

The sensor can be seamlessly integrated into your existing metering system. This is particularly easy with a tank and metering pump from ProMinent. With the mobile app, you can see the liquid level and all the data you need instantly even when working remotely.

The Bluetooth connection means you don't need any additional cables, making retrofitting in existing applications simple and inexpensive.

DULCOLEVEL also improves your levels of health and safety at work. The measurements and sensor configuration are contactless, there is no contact with harmful media.

- Bluetooth pairing and data transfer from sensor to pump
- Configuration and commissioning via mobile app
- Measuring tanks with volumes between 30 l-1500 l
- Easy clamp on system for tanks - compact radar sensor
- Connectivity to all common PLC standards (Profibus, Profinet, Modbus, CAN open) in combination with the pump
- Integration into IIoT-based fluid management DULCONNEX
- No (level) tank configuration needed in combination with ProMinent tanks
- Over the air update of sensor



3.23 Accessories DULCOLEVEL

3.23.2 Technical Data DULCOLEVEL Radar Level Sensor

Your Benefits

- Seamless integration into ProMinent systems and ProMinent pumps (at present gamma/ X - in the future gamma/ XL, DULCOFLEX DFXa, sigma/ X)
- The Bluetooth connection makes simple retrofitting in existing systems possible
- Pump and tank values can be accessed from anywhere in the world via a secure IIOT platform (DULCONNEX)
- Meet all compliance standards by means of 24/7 reports on media consumed (DULCONNEX)

Technical Details

- Liquid level can be output using 0/4...20 mA standard signal
- Bluetooth connection and data transmission from sensor to pump
- Connectivity with all common PLC standards (PROFIBUS®, Profinet, Modbus, CAN open) in combination with the pump
- Configuration and commissioning using mobile 'DULCONNEX Blue' app, can be downloaded for free from the App Store (iOS) or Play Store (Android)
- Measurement of any tanks up to a height of 15 m, with a precision of ±5 mm
- Simple clamp-on system for tanks
- Integration in IIoT-based DULCONNEX fluid management
- No (liquid level) tank configuration needed in combination with ProMinent tanks of between 30 and 1500 l (IBCs)

| | |
|---|-----------------------------------|
| DULCOLEVEL with 4-wire cable and output signal 4...20mA (for connection to a PLC) | Part No. 1124074 |
| DULCOLEVEL with EU power supply (only works in combination with a pump with Bluetooth interface) | 1124075 |

Accessories

| | |
|-------------------------------|-----------------------------------|
| Mounting plate for DULCOLEVEL | Part No. 1119041 |
|-------------------------------|-----------------------------------|



3.24 Accessories Pulsation Dampeners

3.24.1 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.

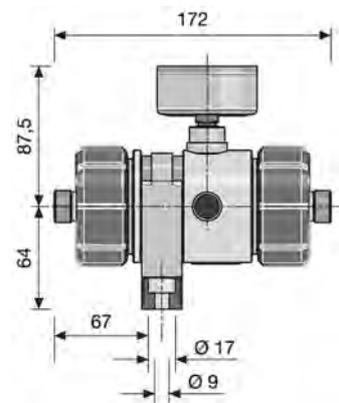
Important notice: The pulsation dampener must be used in conjunction with a relief valve.

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.



| 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 |



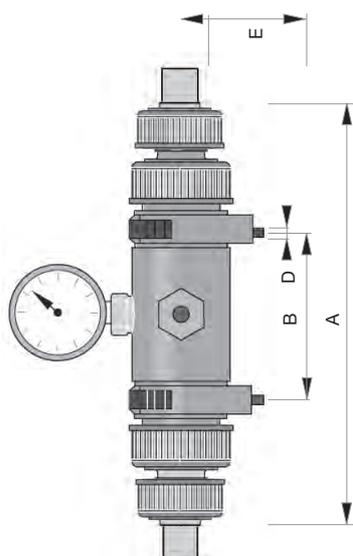
3.24 Accessories Pulsation Dampeners

3.24.1 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.



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) = $[26 \times \text{max. stroke volume (in ml)}] / 1000$

Note:

Refer to maximum permissible pressure rating in tables

Note:

When using Sodium Hypochlorite select PVC & Viton.



3.24 Accessories Pulsation Dampeners

3.24.1 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.

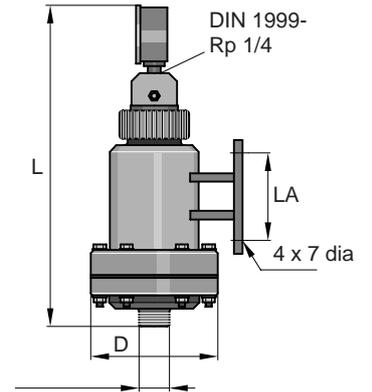
Important: When using a pulsation damper, the pressure relief valve should be fitted with an adjustable back pressure valve.

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 |
| 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.

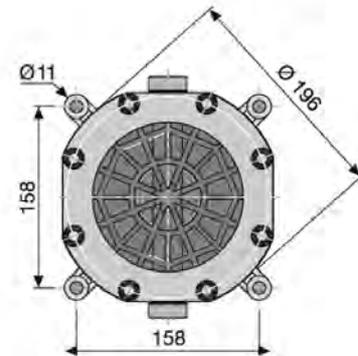
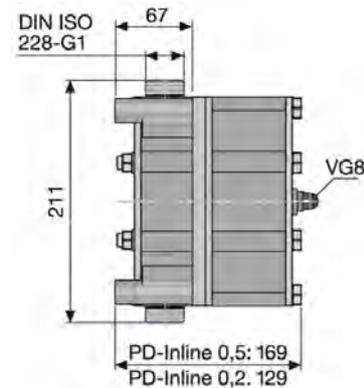
Important: The pulsation dampers must be protected by an overflow valve. Offered with PVDF adaptors included. Please advise if adaptors required.

| Type | Rated volume in l | Max. pressure | Connection in bar | Part no. |
|------------|-------------------|---------------|-------------------|----------|
| PD In-line | 0.2 | 10 | G1 - 3/4 BSPM | P1026252 |
| PD In-line | 0.5 | 10 | G1 - 3/4 BSPM | 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 fit 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 - CONNECTOR SET PAIR [INLET & OUTLET]

Consisting of PTFE-formed composite seal, insert/adaptor and union nut.

| Connection PD In-line | Connection Piping | Materials | Part No. |
|-----------------------|-------------------|-----------|----------|
| G1 - DN15 | 3/4 BSPM | PVDF | P1029426 |

Note: Other PVDF Adaptors available from PMHD. PVC adaptors & union nuts, corresponding gaskets available locally.



4.0 Chemical Tanks and Bunds

4.0.1 Chemical Tanks

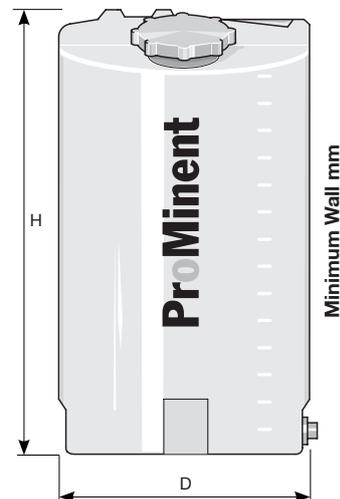
Made of transparent UV-stabilised polyethylene, with scale for litre and US gallons, lockable screw cap, moulded-in threaded sleeves (except 35l) to bolt down a ProMinent electronic metering pump, mounting flange with moulded-in stud bolts for manual or electric stirrer. All tanks of especially rugged design with ProMinent® logo.

All tanks are fitted with 3/4" BSPF plugged outlet

| useful volume (litre) | ∅ 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.

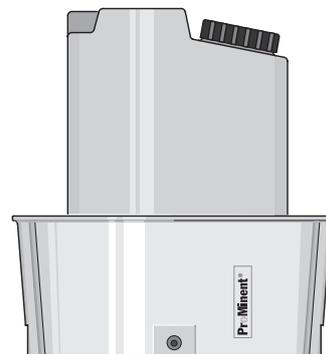
NOTE: FOR LARGER TANKS SEE GREEN PAGES PRICE LIST



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 |



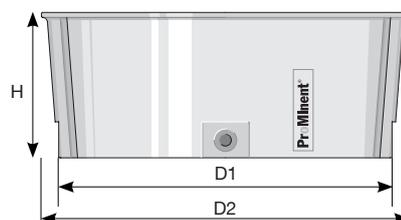
4.0.2 Stackable Bunds For Dosing Tanks PE

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 undercapacity. ProMinent have made their bunds to to comply with their tanks above PLUS 10% reserve.

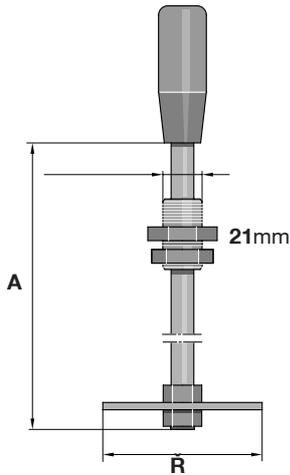
PE COLOURLESS/TRANSPARENT STACKABLE BUNDS

| 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 Dosing Tanks

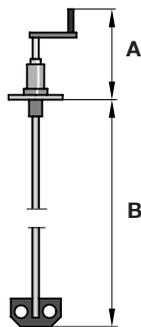
4.1.1 Accessories for Dosing Tanks



PP HAND MIXER
Completely assembled

| | A | R | 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 a 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

Kit to convert Wall mounting D1C & D2C into Panel mount

Part No.

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 H2O2 |
| 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 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, 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 network works 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 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 transmitter): 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 x 10 ¹² Ω) |
| 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 - 230 V 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 solution 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

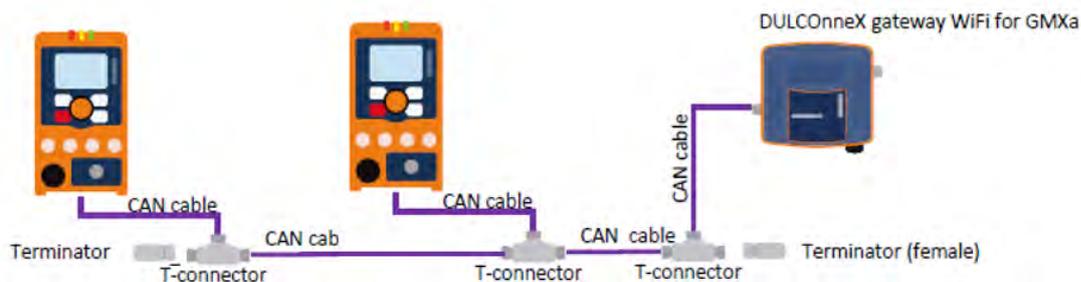
5.3.2 Identity Code & Pricing for DULCONNEX

| 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 | DULCOLEVEL with 4 wire cable and output signal 4-20 Ma (Part No. 112074) |
| 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 CANBus
- 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

DULCONNEX Package for DACb

DX ADDER - DULCONNEX Add on Kit for DACb

PA51003580

Adds DULCONNEX to DACb pool packages. **Includes CANBUS & DX Gateway.**
& 12 month subscription

Subscription included @ \$30 / month

Customer to provide Wi- Fi

Contractor subscription discount \$10 / month

DULCONNEX Annual Subscription

12 month subscription

zzDulcoSub

12 month subscription [CONTRACTOR ONLY]

zzDulcoSubCont

ProConnect Package for DACb

DULCONNEX IPC with LTE

PA51003609

ProConnect Annual Subscription

zzProSub

12 month data SIM plan [1G per month]



5.4 DULCOLEVEL

5.4.1 Pricing for DULCOLEVEL Packages

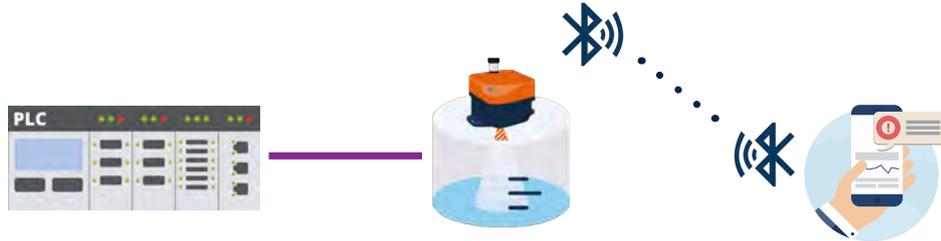
OPTION 1

4-20 mA output

1124074

Includes:

- 1 x DULCOLEVEL
- 1 x Universal Cable



OPTION 2

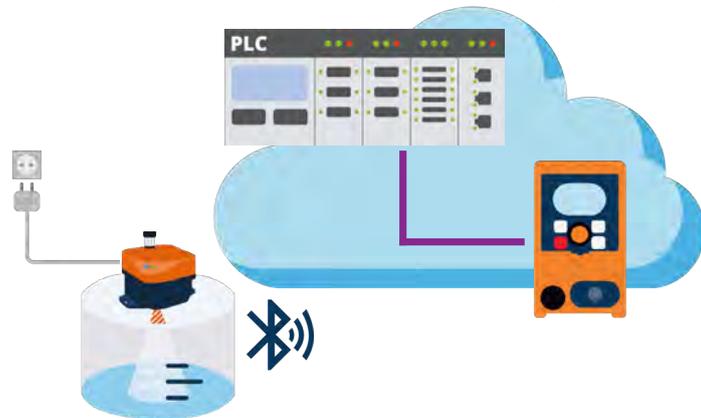
FieldBus Pump

1124075

Includes:

- 1 x DULCOLEVEL
- 1 x Power Pack

Note: Pump must have Bluetooth and FieldBus module.



OPTION 3

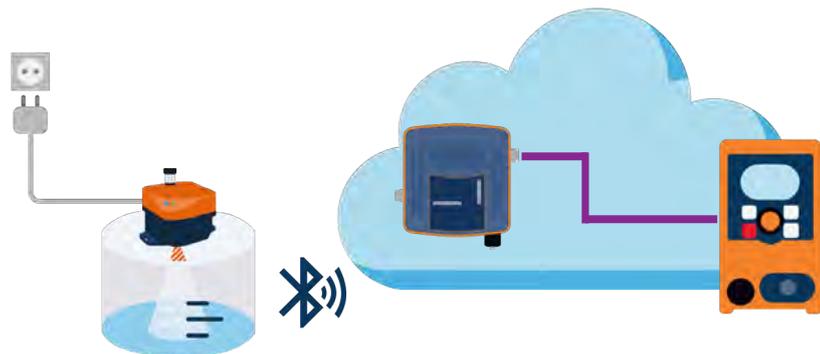
DULCONNEX Cloud with Pump

1124075

Includes:

- 1 x DULCOLEVEL
- 1 x Power Pack

Note: Pump must have Bluetooth and CANbus. DULCONNEX Subscription is required for each pump.



OPTION 3

DULCONNEX Cloud - no pump

1124075

Includes:

- 1 x DULCOLEVEL
- 1 x Power Pack

Note:

IPC Gateway P/N 1136479 required.
DULCONNEX Subscription per DULCOLEVEL
Max. x 4 DULCOLEVELS per IPC Gateway



5.4 DULCONNEX Gateway

5.4.1 Pricing for DULCONNEX Packages

| | Part No. |
|---|----------|
| DULCONNEX Gateway GMX,GXL, DFX, SXCB | 1098754 |
| DULCONNEX Gateway GMX,GXL, DFX, SXCB, DACb, LAN | 1098756 |
| Note: DACb must have LAN card | |
| DULCONNEX Gateway GMX,GXL, DFX, SXCB, DACb, CAN | 1132985 |
| Note: Requires 1133311 CAN Connection Kit & 1133312 Retrofit Kit | |
| DULCONNEX Gateway UVCb, CDLb | 1098757 |



5.5 DULCOMETER Fluoride Monitoring

5.5.1 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 600 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.

| | |
|-----------------------|-------------------|
| 24V DC Version | PA56003478 |
|-----------------------|-------------------|

| | |
|--|-------------------|
| 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.



5.5 DULCOMETER Fluoride Monitoring

5.5.2 Measured Variable, Fluoride in Drinking Water Spare Parts

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 dialog 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 |



5.6 DULCOMARIN 3

5.6.1 Measuring and Control System

The measuring and control system **DULCOMARIN 3** is your digital link to the technology of the future.

It controls the entire range of swimming pools – from adventure pools to private pools.

The system is operated using the large 7" touch display.

The measuring and control system **DULCOMARIN 3** is a reliable system for the treatment of swimming pool water.

The intuitive menu guidance is also supported by videos and shows step-by-step calibration of the sensors.

It is operated using the system's touch display. You can also operate the **DULCOMARIN 3** remotely online.



This connects you to your **DULCOMARIN 3** using your smartphone or any other Internet-compatible end device (VNC app needed). You can therefore also control other features, lighting, circulating pumps and filter backwash. The system can be extended at any time to meet future requirements.

The circulation capacity of the pumps adapts to the water quality in Eco! operating mode. Chemicals are metered precisely depending on demand based on the measured values, reducing ongoing energy costs and saving chemicals.

The **DULCOMARIN 3** Global Unit is the central element of the measuring and control system. All information relating to the individual pools and associated control circuits is collated here. Use the **DULCOMARIN 3** Compact version for one filtration circuit, and the Global Unit, which can display up to 16 Local Units, for multi-pool systems with up to 16 filtration circuits. Networking is provided by the LAN-based cNet.

The **DULCOMARIN 3** can be connected as standard via Modbus RTU and corresponding gateways to a PLC or building bus system.

Your Benefits

- Energy- and cost-efficient control of your swimming pool
- The **DULCOMARIN 3** can be accessed from any Internet-compatible device (VNC app needed)
- Simple calibration of the sensors with video support
- Status messages and alarms issued by e-mail
- View and assess the time-based curve of the measured values of all pools on the integrated screen plotter
- Simple, unrestricted LAN connection – like in your home network
- Scope for upgrading at a later date by means of the ProMinent internal cNet bus system
- Intelligent chlorine sensors: save the sensor data and are always in the optimum measuring range thanks to auto-ranging
- Intelligent metering pumps: provide information on operating parameters, such as chemical level statuses and pump capacity, within the range of 0.7 l/h to 1,000 l/h
- Connection to a PLC or building control system via Modbus RTU and gateways with other fieldbus systems.
- View historical measured data directly on the controller: thanks to the integral screen plotter with data logger via USB

Field of Application

- Regulation and control of the entire swimming pool
- Water parks
- Public swimming pools
- High-end private pool



5.6 DULCOMARIN 3

5.6.2 Identity Code & Pricing for DULCOMARIN 3

| DCPa | | | | | | | | | | | | | | |
|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Regional Design | | | | | | | | | | | | | | |
| EU | Europe (Standard) | | | | | | | | | | | | | |
| Type of mounting | | | | | | | | | | | | | | |
| W | Wall mounting | | | | | | | | | | | | | |
| Version | | | | | | | | | | | | | | |
| PM | ProMinent | | | | | | | | | | | | | |
| Function | | | | | | | | | | | | | | |
| G | Single/Multipool, Global Unit, cNet, there needs to be one global unit in a system | | | | | | | | | | | | | |
| H | Multipool, Local Unit, cNet, there can be up to 16 local units | | | | | | | | | | | | | |
| R | Replacement central unit for DULCOMARIN II, along with: M, A, P, N, R, F, I modules | | | | | | | | | | | | | |
| Application | | | | | | | | | | | | | | |
| A | 7" touch operation | | | | | | | | | | | | | |
| Supply voltage | | | | | | | | | | | | | | |
| 6 | 100... 230 V, 50-60 Hz | | | | | | | | | | | | | |
| Communication | | | | | | | | | | | | | | |
| X | LAN with VNC server (please order LAN cable separately) | | | | | | | | | | | | | |
| W | WLAN with VNC server | | | | | | | | | | | | | |
| Module slot 1 | | | | | | | | | | | | | | |
| 0 | Without Module | | | | | | | | | | | | | |
| 1 | Module 2 x mV/temperature (inputs pH/ORP) | | | | | | | | | | | | | |
| Module slot 2 | | | | | | | | | | | | | | |
| 0 | Without Module | | | | | | | | | | | | | |
| 4 | Module 2 x mA outputs (measured value/control) | | | | | | | | | | | | | |
| Module slot 3 | | | | | | | | | | | | | | |
| 0 | Without Module | | | | | | | | | | | | | |
| 4 | Module 2 x mA outputs (measured value/control) | | | | | | | | | | | | | |
| Expansion level 4 / module slot 4 | | | | | | | | | | | | | | |
| 0 | Without Module | | | | | | | | | | | | | |
| 4 | Module 2 x mA outputs (measured value/control) | | | | | | | | | | | | | |
| Software packages | | | | | | | | | | | | | | |
| 01 | P1 standard with VNC, email, data logger, etc. | | | | | | | | | | | | | |
| Smart Control | | | | | | | | | | | | | | |
| XX | None | | | | | | | | | | | | | |
| Operating Instructions | | | | | | | | | | | | | | |
| EN | English | | | | | | | | | | | | | |
| Approvals | | | | | | | | | | | | | | |
| 01 | CE | | | | | | | | | | | | | |

Note: To add conductivity measurement, please discuss with our Technical Department.
Note: For complete Backboard Packages, please contact our Aquatics Department.

DCPa EU W PM G A 6 X 0 0 0 0 01 XX EN 01



5.7 DULCOMETER Transducers DMT

5.7.1 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:

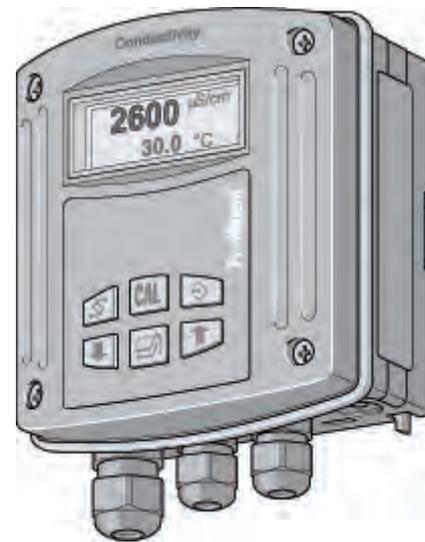
- Reliable measurement due, e.g., to symmetrical input for pH/redox signals
- High level of operating safety, e.g. probe monitoring (pH), electrical isolation
- Simple flexible installation
- Full text user guidance
- Automatic buffer recognition (pH)
- Autoranging (conductivity)
- Compact design
- Switch 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...35V 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 |



Sensors see section 6.
In-line probe housings, signal cables,
see section 6/16



5.7 DULCOMETER Transducers DMT

5.7.2 Identity Code Ordering System For DMT

DMT DULCOMETER Transducers

A Version

Installation:

- S** Control panel mounted¹
- 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 DC² nominal

Communication interface:

- 0** None
- 4** Profibus[®] DP³ (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)
- 1** Temperature Pt 1000/Pt 100

Enclosure rating:

- 0** Standard

Language:

- E** English

The final 4 digits in the identity code give the software presettings, 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 0



5.8 DULCOMETER Test Instruments

5.8.1 KCl Solutions & Buffers



| | 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 220 mV, 50 ml | 506244 |
| Buffer solution pH 4.0 - red, 50 ml | 506251 |
| Buffer solution pH 7.0 - green, 50 ml | 506253 |
| Buffer solution pH 10.0 - blue, 50 ml | 506255 |
| Buffer solution 475 mV, 500 ml | A52003630 |



5.8 DULCOMETER Test Instruments

5.8.2 Portamess Portable Meters, Measured Variable pH

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. |



Part No.

| | |
|----------------------------|---------|
| Portamess® 911 pH (not Ex) | 1008710 |
|----------------------------|---------|

Notice: the PHEKT 013 F pH electrode and the buffer solutions are **NOT INCLUDED** as standard.

| | Part No. |
|-------------------------------------|----------|
| PHEKT 013 F | 1036537 |
| Buffer solution pH 4.0 - red, 50 ml | 506251 |
| Buffer pH 7, 50 ml | 506253 |

See page 6.2 for pH probe data

NOT A STOCK ITEM



5.9 DULCOMETER Photometer DT1

5.9.1 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

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 |
| <i>Included as standard with DPD1 Buffer tablets, DPD1 Buffer reagent and DPD 3 tablets.</i> | |
| Photometer DT3B kit with carrying case | 1039317 |
| <i>Included as standard with DT3 are accessories, cells and reagents for hydrogen peroxide.</i> | |
| Photometer DT4B kit with carrying case | 1022695 |
| <i>Included as standard with DT1 are accessories, cells and reagents for chlorine and chlorine dioxide detection.</i> | |

| Consumable items | Part No. |
|---|----------------|
| DPD 1 buffer, 15 ml (<i>Note: approx 360 drops per 15ml</i>) | 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 |



5.10 DULCOMETER Technology Ancillary Equipment

5.10.1 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.

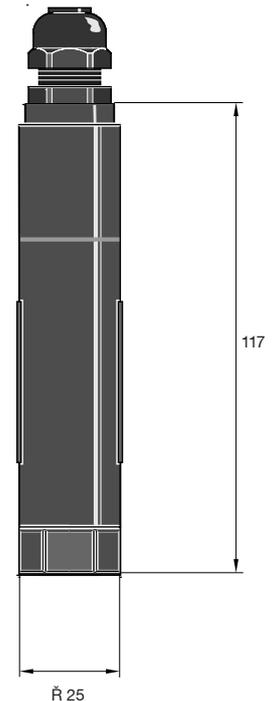
Advantages

- 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 † -500...+500 mV † 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 \bar{R} |

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 † 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 † 0...+100 °C not electrically isolated |
| Power supply: | 18...24 V DC |

Part No.
809128



5.10 DULCOMETER Technology Ancillary Equipment

5.10.2 Electrodeless Conductivity Sensor

Inductive Conductivity

ELECTRODELESS SENSOR LF 654X



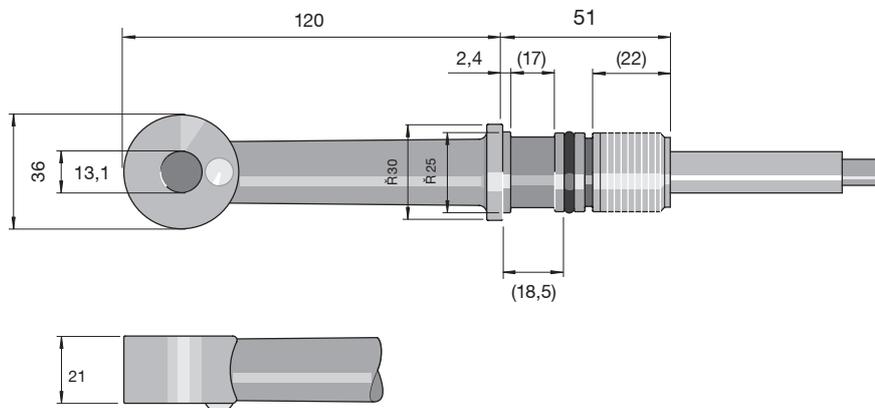
| | |
|------------------------------|-------------------------------------|
| Cell factor: | Nominal value 2.15 cm ⁻¹ |
| Measurement range: | 0.001 mS/cm ... 2000 mS/cm |
| Material: | Cell: PEEK, Seal EPR |
| Temperature probe: | NTC 100 ký |
| Temperature: | -5...+120 °C |
| Pressure: | 0...17.5 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.

Part No.

1024416

Note: See also Section 6 Sensors



5.10 DULCOMETER Technology Ancillary Equipment

5.10.3 Conductivity Sensor

Conductivity sensor

4-ELECTRODE SENSOR LF 204

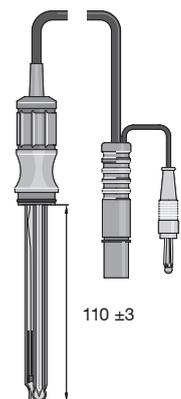
| | |
|---------------------------|--|
| Number of electrodes: | 4 |
| Electrode shaft material: | Black Epoxy |
| Electrode material: | Graphite |
| Shaft length: | 120 mm |
| Shaft diameter: | 15.3 mm |
| Cable length: | 1.5 m |
| Temperature probe: | NTC (30 k Ω) -5...+100 °C |
| Immersion depth: | 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 |



Conductivity sensor LF 204

Part No.
1008723

Note: See also Green Pages Price List



5.11 Turbidity Measuring Points DULCOTEST

5.11.1 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

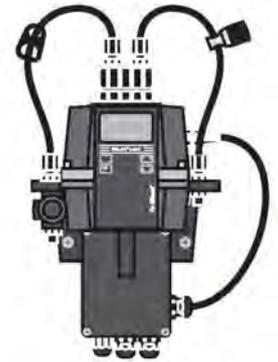
- Potable water treatment, for all treatment steps: from raw water and filter monitoring to measuring fine turbidity in the potable water that is to be discharged
- Monitoring of turbidity in slightly polluted industrial water, waste water and water requiring treatment in the food and beverage industry up to a turbidity value of 1,000 NTU



5.11 Turbidity Measuring Points DULCOTEST

5.11.1 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 - Dessicant | 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 |
| Chemical Turbidity Standard 0.02 Ntu 1 Litre | 53030* |
| Chemical Turbidity Standard 10 Ntu 1 Litre | 53000* |
| Chemical Turbidity Standard 1000 Ntu 1 Litre | 53070* |

Note: Non-stock items. Lead time 2-3 weeks.

| Accessories | Part No. |
|-----------------|----------------|
| Calibration set | 1037699 |
| Flow control | 1037880 |
| Air bubble trap | 1037700 |



6.0 DULCOTEST Sensor Technology

6.0.1 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!

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.

The ageing of electrodes depends greatly on the application conditions.

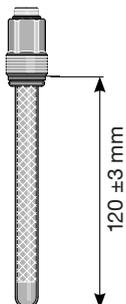
The service life is between one and three years for problem-free applications as well as at room temperature and average pH values. In extreme operating temperatures only two to three months. Every electrode ages even when it is not in operation!

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: | 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 |
| SN6 - Open end cable 5m [for above] | 1003208 |



6.1 DULCOTEST pH Probes

6.1.1 DULCOTEST PHER, PHEN and pH Combination Probes

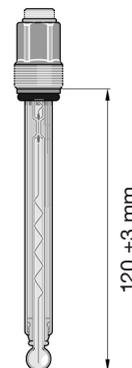
PHER 112 SE

| | |
|---------------------------|-----------|
| 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.



Part No.
1001586

PHEN 112 SE 3D

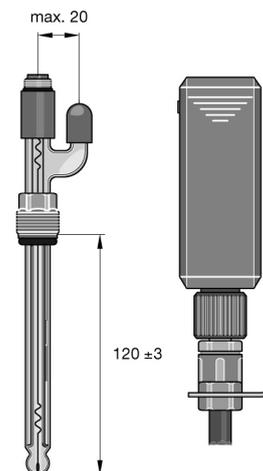
| | |
|---------------------------|----------------------|
| pH range: | 1...12 |
| Temperature: | 0...80 °C |
| Max. pressure: | Atmospheric pressure |
| Min. conductivity: | >50 µS/cm |

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 |

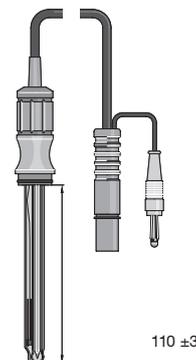
Note: See Green Pages Price List for POOL Probes and industrial probes.

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 |



Part No.
1036537

PHEKT 013 F ex HD works



6.2 DULCOTEST pH Probes

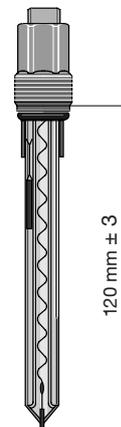
6.2.1 DULCOTEST CLB 2- μ A Chlorine Senso/ RHEP-Au-SE Gold Tipped Sensor

Note: See Green Pages Price List for POOL Probes & alternative Industrial probes.

RHEP-Au-SE

GOLD PIN ELECTRODE

| | |
|-----------------------|---|
| Temperature: | 0...80 μ C |
| Max. pressure: | 6 bar |
| Min. conductivity: | >150 μ S/cm |
| Diaphragm: | ceramic |
| Installation length: | 120 mm \pm 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. |



Part No.

RHEP-Au-SE ex HD works

1003875

Sensor for Chlorine, **ONLY** for use with **Compact Controller**

CLB 2- μ A

| | |
|------------------------------------|---|
| 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 $^{\circ}$ 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- μ A-5 ppm |

Part No.

1038902



6.3 DULCOTEST Amperometric Sensors

6.3.1 Amperometric Sensors for Chlorine, Bromine, Chlorine Dioxide, Chlorite, Ozone, Disolved 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 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 sensors 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 DAC. DMT-type sensors are used for the DMT transducer. CAN-type sensors are used with the DULCOMARIN II and DULCOMARIN 3 swimming pool controllers. |
| Note: | <i>CLE sensors:</i> The CLE type sensors cannot be used in liquids containing isocyanuric acid/chlorine stabilisers. |



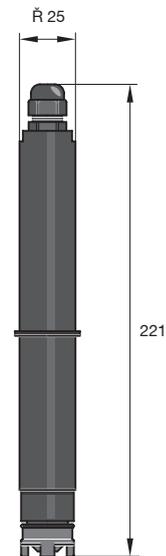
6.3 DULCOTEST Amperometric Sensors

6.3.2 DULCOTEST Sensors for free chlorine - CLE 3-mA & CLE 3.1-mA

Measurement of free chlorine

CLE 3-mA

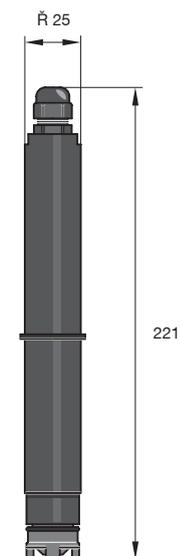
| | |
|----------------------------------|--|
| Measured variable: | Free chlorine (hypochlorous acid HOCl) |
| Analysis: | DPD 1 |
| Measurement range: | 0.01... 50 mg/l |
| pH range: | 5.5...8.0 (up to pH 8.5 for pH correction in the D1C) |
| Temperature range: | 5...45 °C (temperature compensated) |
| 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 † 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, DAC |
| In-line probe housing: | BAM, DLGA |



| | 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. |
| | 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 |
| 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 † 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, DAC |
| In-line probe housing: | BAM, DLGA |

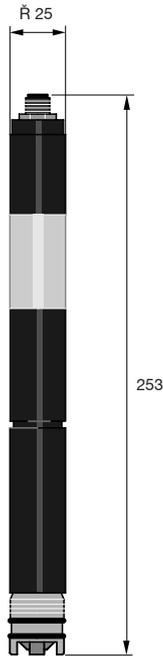


| | Part No. |
|---|----------|
| CLE 3.1-mA-0.5 ppm set, with 100 ml electrolyte | 1020530 |
| CLE 3.1-mA-2 ppm set, with 100 ml electrolyte | 1018369 |
| CLE 3.1-mA-5 ppm set, with 100 ml electrolyte | 1019398 |
| CLE 3.1-mA-10 ppm set, with 100 ml electrolyte | 1018368 |



6.3 DULCOTEST Amperometric Sensors

6.3.3 DULCOTEST Sensors for Free Chlorine - CLE 3-CAN



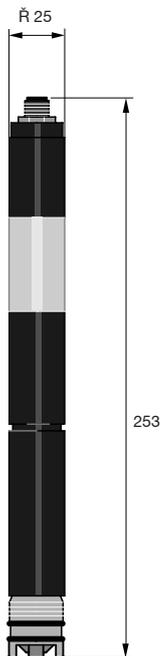
CLE 3-CAN

| | |
|---|---|
| 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: | BAM, DLGA |

Part No.

CLE 3-CAN-10 ppm 0.01 ... 10.0 mg/l
complete with 100 ml electrolyte

1023425



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 |
| 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 |
| In-line probe housing: | BAM, DLGA |

Part No.

CLE 3.1-CAN-10 ppm 0.01 ... 10.0 mg/l
complete with 100 ml electrolyte

1023426



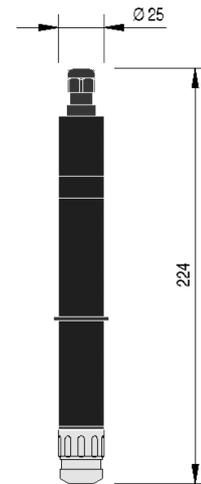
6.3 DULCOTEST Amperometric Sensors

6.3.4 DULCOTEST Sensors for Free Chlorine CL0/CLR

CLO 3-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...24V 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, DAC |
| In-line probe housing: | BAM, DLG III to 60 °C, special fitting for 60 °C-70 °C (on request) |
| Measuring principle: | amperometric, 3 electrodes, no diaphragm |

| | | Part No. |
|-----------------|------------------|-----------------|
| CLO 3-mA-2 ppm | 0,02...2,0 mg/l | 1131658 |
| CLO 3-mA-10 ppm | 0,10...10,0 mg/l | 1131662 |

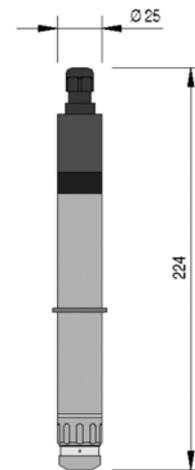


P_DT_0072_SW1

CLO 4-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, DAC |
| In-line probe housing: | BAM, DLG III to 60°C, special fitting for 60°C-70°C (on request) |
| Measuring principle: | amperometric, 3 electrodes, no diaphragm |

| | | Part No. |
|----------------|-----------------|-----------------|
| CLO 4-mA-2 ppm | 0,02...2,0 mg/l | 1131644 |

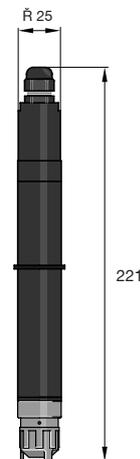


P_DT_0073_SW1

CLR 1-mA-200ppm

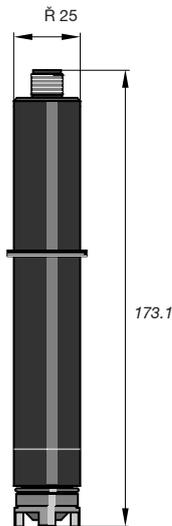
| | |
|---|---|
| Measured variable: | Free chlorine (hypochlorous acid HOCl) |
| Reference method: | DPD1pH range5.5 ... 8.0 |
| Temperature: | 5 ... 45 °C |
| Max. pressure: | 1.0 bar |
| Intake flow: | 30...60 l/h (in DGM, DLG II) |
| Power supply: | 16...24V DC (2-wire) |
| Output signal: | 4...20 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: | BAM, DLG III |
| Measuring principle: | amperometric, 2 electrodes, diaphragm-covered |

| | | Part No. |
|------------------|---------------------|-----------------|
| CLR 1-mA-200 ppm | 20.00 ...200,0 mg/l | 1047978 |



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 (3.3VDC) |
| Output signal: | Un-calibrated, not temperature compensated |
| Temperature: | 5...45 °C |
| Max. pressure: | 1 bar |
| Flow: | 30...60 l/h (in BAM or DLGA) |
| Measurement: | Via integrated Pt 1000: compensation carried out in DMT |
| Measuring cell output: | 5-pin plug |

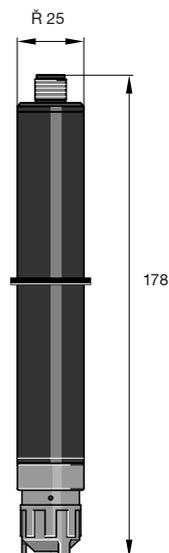
Other data as for CLE-3 mA.

| | |
|--|----------------|
| CLE 3-DMT-5 ppm set with 100 ml electrolyte | 1005511 |
| CLE 3-DMT-50 ppm set with 100 ml electrolyte | 1005512 |

Part No.

1005511

1005512



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 (3.3VDC) |
| Output signal: | Un-calibrated, not temperature compensated |
| Temperature: | 5...45 °C |
| Max. pressure: | 1 bar |
| Flow: | 30...60 l/h (in BAM 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.

| | |
|---|----------------|
| CTE 1-DMT-10 ppm set with 50 ml electrolyte | 1007540 |
|---|----------------|

Part No.

1007540



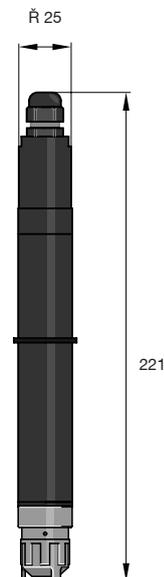
6.3 DULCOTEST Amperometric Sensors

6.3.6 DULCOTEST Sensors for Total Chlorine - CTE

Measured variable of total chlorine

CTE 1-mA

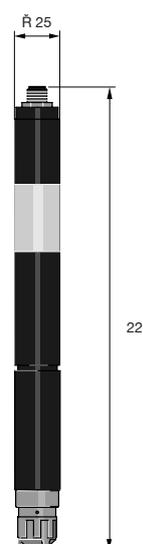
| | |
|--|---|
| Measured variable: | total chlorine |
| Analysis: | DPD 4 |
| Measurement range: | 0.01 ... 0.50 mg/l (CTE 1-mA-0.5 ppm) 0.02 ... 2.00 mg/l (CTE 1-mA-2 ppm) 0.05 ... 5.00 mg/l (CTE 1-mA-5 ppm) 0.1 ... 10.0 mg/l (CTE 1-mA-10 ppm) |
| pH range: | 5.5 ... 9.5 |
| Temperature range: | 5 ... 45 °C |
| Max. pressure: | 3 bar |
| Flow: | 30 ... 60 l/h (in BAM 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, DAC |
| In-line probe housing: | BAM, DLGA |



| | 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 BAM 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 |
| In-line probe housing: | BAM, DLGA |



| | 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 - CTE

Sensor for total available and free chlorine

CTE 2-mA

| | |
|--|---|
| Measured variable: | Total Chlorine |
| Referenced method: | DPD4 |
| pH range: | 5.5...9.5 |
| Temperature: | 5...45 °C |
| Max. pressure: | 3.0 bar |
| Flow: | DGM, DLG III: 30...60 l/h BAM: 5... 100 l/h (depending on design) |
| Supply voltage: | 16...24 V DC (2-wire) |
| Output signal: | Uncalibrated, not temperature-compensated, not electrically isolated |
| Electrical connection: | with 2-wire signal cable via 4-pin connector on the sensor and open ends on the measuring device |
| Selectivity: | Non selective, cross-sensitive towards many oxidation agents |
| Disinfection process: | Chlorine gas, hypochlorite, electrolysis with diaphragm, monochloramine. Not suitable for inline electrolysis (tubular cell electrolysis, use type CTE3 for this) |
| Process integration: | Bypass: open sample water outlet |
| Sensor fitting: | BAM, DLG III |
| Controllers: | D1C, DAC, AEGIS II, diaLog X |
| Typical applications: | Drinking Water, industrial water, process water, waste water. In swimming pools in combination with sensors for free chlorine to determine the combined chlorine |
| Resistance to: | surfactants |
| Measuring principles, technology: | Ampermetric, 2 electrodes, diaphragm-covered |

| | Measuring Range | Part No. |
|------------------|------------------|----------|
| CTE 2-mA-0.5 ppm | 0.01...0.5 mg/l | 1136433 |
| CTE 2-mA-2 ppm | 0.02...2.0 mg/l | 1133340 |
| CTE 2-mA-5 ppm | 0.05...5.0 mg/l | 1136464 |
| CTE 2-mA-10 ppm | 0.10...10.0 mg/l | 1133338 |
| CTE 2-mA-20 ppm | 0.20...20.0 mg/l | 1136465 |

CTE 2-CAN

| | |
|--|---|
| Measured variable: | Total Chlorine |
| Referenced method: | DPD4 |
| pH range: | 5.5...9.5 |
| Temperature: | 5...45 °C |
| Max. pressure: | 3.0 bar |
| Flow: | DGM, DLG III: 30...60 l/h BAM: 5... 100 l/h (depending on design) |
| Supply voltage: | via CAN interface (11-30 V DC) |
| Output signal: | Uncalibrated, temperature-compensated, electrically isolated |
| Electrical connection: | via CAN signalling cable with M12, 5-pin plug on the sensor and M12, 5-pin socket on the measuring device |
| Selectivity: | Non selective, cross-sensitive towards many oxidation agents |
| Disinfection process: | Chlorine gas, hypochlorite, electrolysis with diaphragm, monochloramine. Not suitable for inline electrolysis (tubular cell electrolysis, use type CTE3 for this) |
| Process integration: | Bypass: open sample water outlet |
| Sensor fitting: | BAM, DLG III |
| Controllers: | DULCOMARIN 3, DULCOMARIN II only with hardware after 06.02.2014 from software version 3035 or later |
| Typical applications: | Drinking Water, industrial water, process water, waste water. In swimming pools in combination with sensors for free chlorine to determine the combined chlorine |
| Resistance to: | surfactants |
| Measuring principles, technology: | Ampermetric, 2 electrodes, diaphragm-covered |

| | | |
|-----------------|-------------------|---------|
| CTE 2-CAN-10ppm | 0.01... 10.0 mg/l | 1136030 |
|-----------------|-------------------|---------|



6.3 DULCOTEST Amperometric Sensors

6.3.6 DULCOTEST Sensors for Total Chlorine - CTE

Sensor for total available and free chlorine

CTE 3-mA

| | |
|--|--|
| Measured variable: | Total Chlorine |
| Referenced method: | DPD4 |
| pH range: | 5.5...9.5 |
| Temperature: | 5...45 °C |
| Max. pressure: | 3.0 bar |
| Flow: | DGM, DLG III: 30...60 l/h BAM: 5... 100 l/h (depending on design) |
| Supply voltage: | 16...24V DC (2-wire) |
| Output signal: | Uncalibrated, not temperature-compensated, not electrically isolated |
| Electrical connection: | with 2-wire signal cable via 4-pin connector on the sensor and open ends on the measuring device |
| Selectivity: | Non selective, cross-sensitive towards many oxidation agents |
| Disinfection process: | Chlorine gas, hypochlorite, electrolysis with membrane, inline electrolysis (tubular cell electrolysis), monochloramine |
| Process integration: | Bypass: open sample water outlet |
| Sensor fitting: | BAM, DLG III |
| Controllers: | D1C, DAC, AEGIS II, diaLog X |
| Typical applications: | Determination of combined chlorine in the swimming pool in combination with sensors for free chlorine using the differential method. Also suitable for the disinfection process: inline electrolysis (tubular cell electrolysis) |
| Resistance to: | surfactants |
| Measuring principles, technology: | Amperometric, 2 electrodes, diaphragm-covered |

| | Measuring Range | Part No. |
|-----------------|------------------|----------|
| CTE 3-mA-2 ppm | 0.02...2.0 mg/l | 1133132 |
| CTE 3-mA-5 ppm | 0.05...5.0 mg/l | 1136466 |
| CTE 3-mA-10 ppm | 0.10...10.0 mg/l | 1133337 |
| CTE 3-mA-20 ppm | 0.20...12.0 mg/l | 1136467 |

Note: Sensor cable 4-pin for Amperometric Sensors 2 metre P/N 707702 supplied with sensor

CTE 3-CAN

| | |
|--|--|
| Measured variable: | Total Chlorine |
| Referenced method: | DPD4 |
| pH range: | 5.5...9.5 |
| Temperature: | 5...45 °C |
| Max. pressure: | 3.0 bar |
| Flow: | DGM, DLG III: 30...60 l/h BAM: 5... 100 l/h (depending on design) |
| Supply voltage: | via CAN interface (11-30 V DC) |
| Output signal: | Uncalibrated, temperature-compensated, electrically isolated |
| Electrical connection: | via CAN signalling cable with M12, 5-pin plug on the sensor and M12, 5-pin socket on the measuring device |
| Selectivity: | Non selective, cross-sensitive towards many oxidation agents |
| Disinfection process: | Chlorine gas, hypochlorite, electrolysis with membrane, inline electrolysis (tubular cell electrolysis), monochloramine |
| Process integration: | Bypass: open sample water outlet |
| Sensor fitting: | BAM, DLG III |
| Controllers: | DULCOMARIN 3, DULCOMARIN II only with hardware after 06.02.2014 from software version 3035 or later |
| Typical applications: | Determination of combined chlorine in the swimming pool in combination with sensors for free chlorine using the differential method. Also suitable for the disinfection process: inline electrolysis (tubular cell electrolysis) |
| Resistance to: | surfactants |
| Measuring principles, technology: | Amperometric, 2 electrodes, diaphragm-covered |

| | | |
|-----------------|-------------------|---------|
| CTE 3-CAN-10ppm | 0.01... 10.0 mg/l | 1136031 |
|-----------------|-------------------|---------|

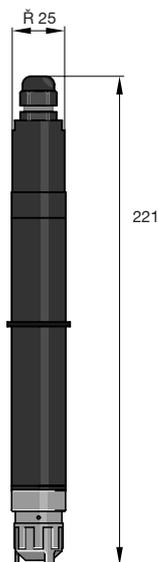


6.3 DULCOTEST Amperometric Sensors

6.3.7 DULCOTEST Sensors for Total Chlorine - CGE

Sensor for total available and free chlorine

CGE 3-mA



| | |
|--|---|
| Measured variable: | Free chlorine and total available chlorine: Total of organically bound chlorine (e.g. bound to cyanuric acid) and free chlorine |
| Analysis: | DPD 1 |
| Measurement range: | 0.02...2.00 mg/l (CGE 3-mA-2 ppm) 0.1...10.0 mg/l (CGE 3-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 BAM 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, DAC |
| In-line probe housing: | BAM, DLGA |

CGE 3-mA-2 ppm set, with 50 ml electrolyte

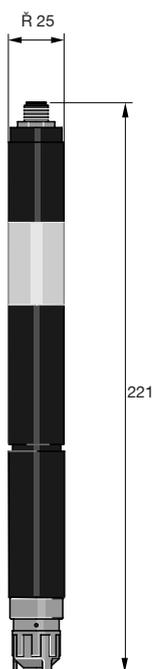
Part No.

1047959

CGE 3-mA-10 ppm set, with 50 ml electrolyte

1047975

CGE 3-CAN



| | |
|---|---|
| Measured variable: | Free chlorine and total available chlorine: Total of organically bound chlorine (e.g. bound to cyanuric acid) and free chlorine |
| 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 BAM 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 |
| In-line probe housing: | BAM, DLGA |

CGE 3-CAN-10 ppm - with 50 ml electrolyte 0.01 ... 10.0 mg/l

Part No.

1083211



6.4 DULCOTEST Bromine Sensors

6.4.1 DULCOTEST Sensors for Bromine - BCR

The following bromating agents are used as disinfectants:

Organic Bromating Agent

- DBDMH (1.3-dibrom-5.5-dimethyl-hydantoin) e. g. sold as Albrom 100®
- 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.

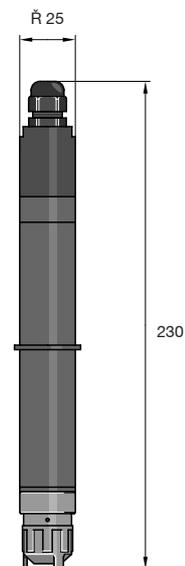
Alternatively, to measure BCDMH in the same measurement range, the BRE 1-mA-10 ppm sensor is recommended along with DPD4-method calibration.

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 BAM 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, wastewater, & water with higher pH values (stable pH) |
| Measurement and control device: | D1C, D2C, DAC |
| In-line probe housing: | BAM, DLGA |



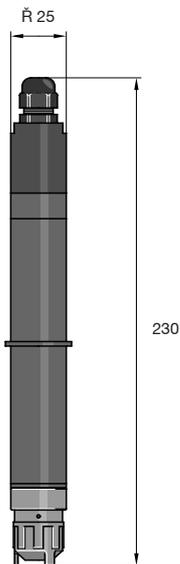
| BCR 1-mA (replaces earlier BRE1) | Part No. |
|---|----------|
| BCR 1-mA-0.5 ppm with 50 ml electrolyte | 1041697 |
| BCR 1-mA-2 ppm with 50 ml electrolyte | 1040115 |
| BCR 1-mA -10 ppm with 50 ml electrolyte | 1041698 |

Measurement range relates to BCDMH



6.4 DULCOTEST Bromine Sensors

6.4.2 DULCOTEST Sensors for Bromine - CBR/BRE

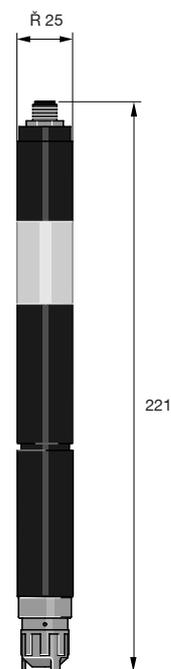


CBR 1-mA (replaces earlier BRE2)

| | |
|---|---|
| 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 BAM 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, wastewater, water with higher pH values (stable pH) |
| Measurement and control equipment: | D1C, DAC |
| In-line probe fitting: | BAM, DLGA |
| Measuring principle: | amperometric, 2 electrodes, diaphragm-covered |

| | | 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-10ppm 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 BAM 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 |
| In-line probe housing: | BAM, DLGA |

| | | Part No. |
|-----------------|--------------------|-----------------|
| BRE 3-CAN-10ppm | 0.02 ... 10.0 mg/l | 1029660 |

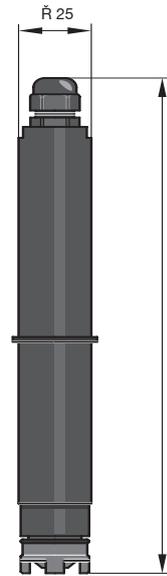


6.5 DULCOTEST Chlorine Dioxide Sensors

6.5.1 DULCOTEST Sensors for Chlorine Dioxide - CDE/CDP

CDE 2-mA

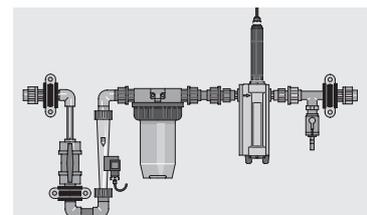
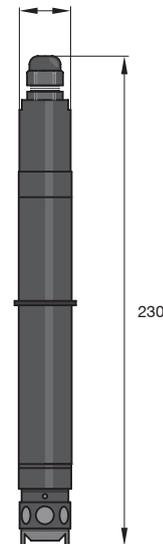
| | |
|---|--|
| Measured variable: | Chlorine dioxide (ClO ₂) |
| Reference method: | DPD1 |
| pH range: | 4.0 ... 11 |
| Cross sensibility: | Ozone, compared with chlorine <2% |
| Temperature range: | 1 ... 45 °C |
| Max. pressure: | 1,0 bar |
| Intake flow: | 30...60 l/h (in BAM or DLG III) |
| Supply 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: | BAM / DLG III |
| Measuring Principle: | amperometric, 2 electrodes, diaphragm-covered |



| | | 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 BAM 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 and DAC with automatic temperature compensation only |
| In line probe housing: | the following is recommended (see fig.) <u>Probe housing quote on request.</u> |

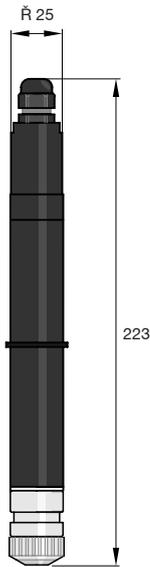


| | Part No. |
|--|----------|
| CDP 1-mA-2 ppm set with 100 ml electrolyte | 1002149 |



6.5 DULCOTEST Chlorine Dioxide Sensors

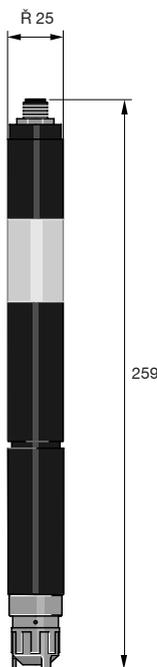
6.5.2 DULCOTEST Sensors for Chlorine Dioxide - CDR



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: | BAM / 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 |



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 |
| In-line probe housing: | BAM / DLG III |
| Measuring Principle: | amperometric, 2 electrodes, diaphragm-covered |

| | | Part No. |
|------------------|------------------|----------|
| CDR 1-can-10 ppm | 0,10...10,0 mg/l | 1041145 |

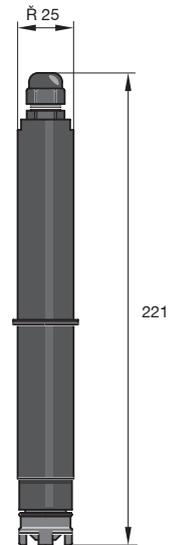


6.6 DULCOTEST Ozone Sensor

6.6.1 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 BAM 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: | BAM, DLGA |



Part No.
792957
792957-5PPM

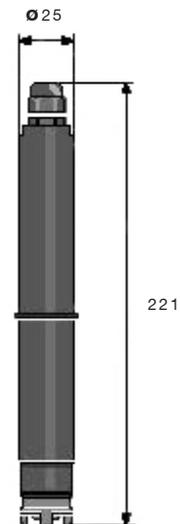
OZE 3-mA-2 ppm set, with 100 ml electrolyte

OZE 3-mA-5 ppm set, with 100 ml electrolyte***

*** **special** *** not carried in stock, 6 week delivery

OZR 1-mA

| | |
|--|---|
| Measured variable: | Ozone (O ₃) |
| Reference method: | DPD4 |
| pH-range: | 4.0...11.0 |
| Cross sensitivity: | chlorine dioxide, peracetic acid, bromine, bromamine |
| Temperature: | 5...40 °C |
| Max. pressure: | 1.0 bar |
| Flow: | DLG III: 30...60 l/h BAMa: 5...100 l/h (depending on design) |
| Supply voltage: | 16...24 V DC (2-wire) |
| Output signal: | 4-20 mA ≈ measuring range, temperature-compensated, uncalibrated, not electrically isolated |
| Response time t ₉₀ after 1 month with 0.00 ppm ozone: | <210 s |
| Selectivity: | Non-selective |
| Process integration: | Bypass: open sample water outlet |
| Sensor fitting: | BAMa, DLG III |
| Controllers: | D1C |
| Typical applications: | Potable water, swimming pool water, process, service or cooling water, monitoring the ozone breakdown of filters. |
| Resistance to: | Salts, acids, alkalis, surfactants, dirt films |
| Measuring principle, technology: | Amperometric, 2 electrodes, diaphragm-covered |

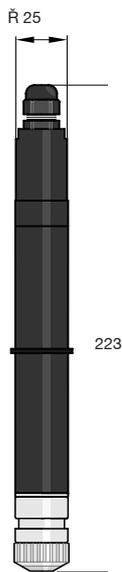


Part No.
1118883
1051647
1118925



6.7 DULCOTEST PAA Sensor

6.7.1 DULCOTEST Sensor for Peracetic Acid - PAA/PER



PAA 1-mA

| | |
|-------------------------------------|---|
| Measured variable: | Peracetic Acid |
| Reference method: | titration |
| Measurement range: | 1...200 mg/l (PAA 1-mA-200 ppm) 10...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, DAC |
| In-line probe housing: | BAM, DLGA |

PAA 1-mA-200ppm

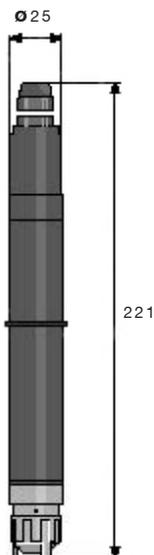
Part No.

1022506

PAA 1-mA-2000ppm

1022507

PAA 2-3E-mA



| | |
|--------------------------------------|---|
| Measured variable | Peracetic acid |
| Calibration | DPD4, titration |
| pH-range | 5.5...8.0 |
| Temperature | 0...40 °C |
| Admissible temperature fluctuation | < 0.3 °C/min |
| Response time sensor t ₉₀ | < 45 s |
| Max. pressure | 3.0 bar |
| Electrolytic conductivity | 0.05...50 mS/cm |
| Flow | DGMa, DLG III: 30...60 l/h BAMa: 5...100 l/h (depending on design) |
| Supply voltage | 16...24 V DC (2-wire) |
| Output signal | 4-20 mA ≈ measuring range, temperature compensated, uncalibrated, not electrically isolated |
| Selectivity | Peracetic acid selective towards hydrogen peroxide |
| Cross sensitivity | Ozone, chlorine dioxide, chlorine, bromine |
| Process integration | Bypass: open outlet or return of the sample water into the process line |
| Sensor fitting | BAMa, DGMa, DLG III |
| Controllers | BAM, D1Cb |
| Typical applications | Disinfecting pre-cleaned waste water, measurement and control of low peracetic acid concentrations in the pharmaceutical industry and medical technology. |
| Resistance to | Salts, acids, alkalis, surfactants, dirt films |
| Measuring principle, technology | Amperometric, 3 electrodes, diaphragm-covered |

PAA 1-mA-200ppm

Part No.

1022506

PAA 1-mA-2000ppm

1022507

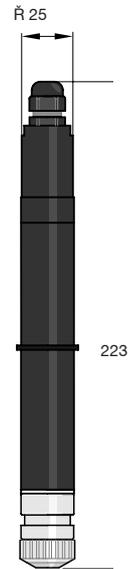


6.7 DULCOTEST PAA Sensor

6.7.1 DULCOTEST Sensor for Peracetic Acid - PAA/PER

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: | BAM, DLGA |



PER 1-mA-200ppm

Part No.

1022509

PER 1-mA-2000ppm

1022510



6.8 DULCOTEST H₂O₂ Sensor

6.8.1 DULCOTEST Sensor for Hydrogen Peroxide

| | |
|--|--|
| 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 t₉₀ | 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: | DACa, DAC |
| 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 for DAC | 1047979 |

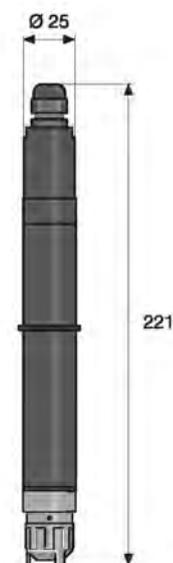
| Accessories | Part No. |
|---|-----------------|
| Photometer DT3B hydrogen peroxide (for calibration) | 1039317 |
| Polishing paste (to electrode cleaning) | 559810 |



6.8 DULCOTEST H₂O₂ Sensor

6.8.2 DULCOTEST Sensor PEROX H 3E-mA

| | |
|--|--|
| Measured variable: | Hydrogen peroxide |
| Calibration: | Photometric with manual DT3B photometer |
| pH range: | 2.5 ... 8.0 |
| Temperature: | 0 ... 45 °C |
| Admissible temperature fluctuation: | < 1 °K/min (with external T measurement) |
| Response time sensor t₉₀ | < 45 s |
| Electrolytic conductivity | 0.05...50 mS/cm |
| Flow | DGMa, DLG III: 30...60 l/h BAMa: 5...100 l/h (depending on design) |
| Supply voltage | 16...24 (two-wire technology) V DC |
| Output signal | 4...20 mA not temperature-compensated, uncalibrated, not electrically isolated |
| Electrical Connection | via a 4-pin plug on the sensor via an open-ended signal cable on the unit |
| Selectivity | Hydrogen peroxide selective to free chlorine, peracetic acid, sulphite |
| Process integration | Bypass: open outlet or return of the sample water into the process line |
| Sensor fitting | BAMa, DLG III |
| Controllers | DAC, D1Cb (without temperature correction) |
| Typical applications | Swimming pool, plant irrigation water, chlorine elimination. Can also be used for moderately contaminated water, controls with the necessary short response times and low H ₂ O ₂ concentrations |
| Resistance to | Salts, acids, alkalis, surfactants, dirt films |
| Measuring principle, technology | Amperometric, 3 pulsing electrodes, diaphragm-covered |



| | Measuring Range | Part No. |
|-------------------|------------------|----------|
| PEROX H-3E-10ppm | 0.20...10.0 mg/l | 1058563 |
| PEROX H-3E-50ppm | 1.0...50.0 mg/l | 1105779 |
| PEROX H-3E-200ppm | 5.0...200 mg/l | 1105778 |
| PEROX H-3E-500ppm | 10...500 mg/l | 1117570 |

Accessories

| | Part No. |
|---|----------|
| Pt 100 SE temperature sensor | 305063 |
| Pt 1000 SE temperature sensor | 1002856 |
| Photometer DT3B hydrogen peroxide (for calibration) | 1039317 |



6.9 DULCOTEST Dissolved Oxygen Sensors

6.9.1 Dissolved Oxygen Sensor 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: | a) Immersion by immersion pipe. CHECK WITH SYDNEY OFFICE. b) Installation into ProMinent bypass fittings, type DGMA with mounting kit |
| 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 |

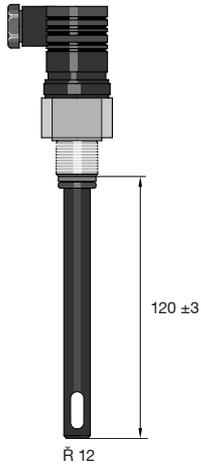


| | |
|----------------|-----------------------------------|
| DO 3-mA-20 ppm | Part No. 1094609 |
|----------------|-----------------------------------|



6.10 DULCOTEST Conductivity Sensors

6.10.1 DULCOTEST Conductivity Sensors - LF1/LFTK



LFT 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. |

LFT1 DE

Part No.

1001376

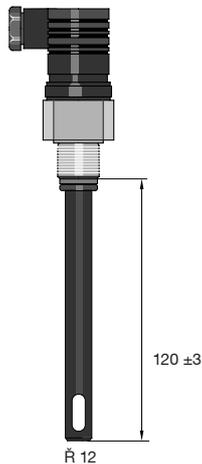
Suitability: Compact Controller, DMTa, DICa

NOTE: if using this with a Compact Controller a Shielded 4 wire cable **MUST** be used.

4-wire shielded cable 100CY 4x0, 25qmm 5.7 grey

Part No.

1045183



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. |

LFTK 1 DE

Part No.

1002822

Suitability: Compact Controller

NOTE: if using this with a Compact Controller a Shielded 4 wire cable **MUST** be used.

4-wire shielded cable 100CY 4x0, 25qmm 5.7 grey

Part No.

1045183

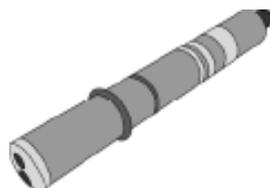


6.10 DULCOTEST Conductivity Sensors

6.10.2 Conductivity Sensors CCT-1

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.



Conductivity Sensor CCT 1-mA

| | |
|---|---|
| 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.

CCT 1-mA-20 mS/cm

Part No.

1081545

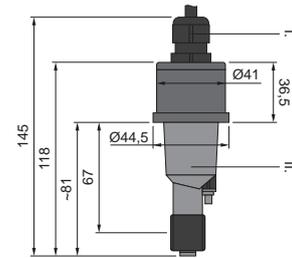


6.10 DULCOTEST Conductivity Sensors

6.10.3 Inductive Conductivity Sensors ICT 5

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 _t 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 |



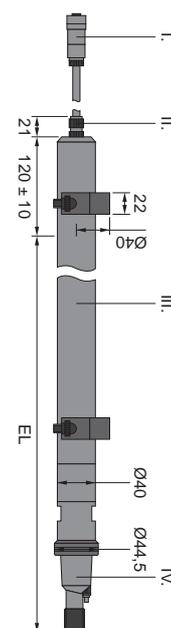
Part No.

ICT 5

1095248

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 _t 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 |



Part No.

ICT 5-IMA

1095249



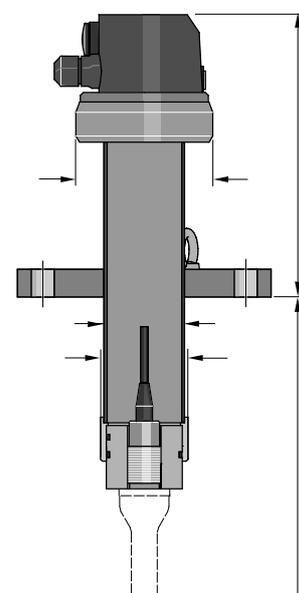
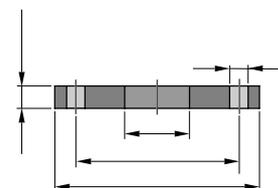
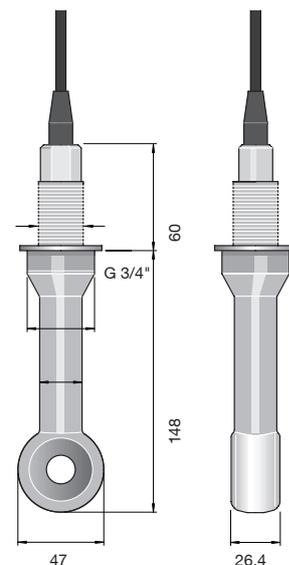
6.10 DULCOTEST Conductivity Sensors

6.10.4 Inductive Conductivity Sensor ICT 2

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: | DCCa |
| 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

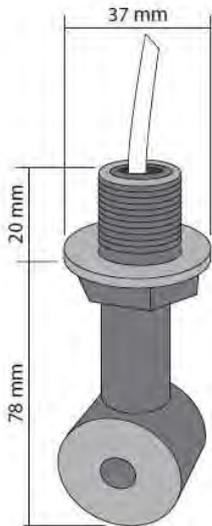
| | |
|------------------|-------------|
| Flange: | DN 80/PN 16 |
| Ø D | 200 |
| Ø K | 160 |
| Ø d ₂ | 8 x 18 |
| b | 20 |
| Ø a | 63.5 |
| Screws | M 16 |



6.10 DULCOTEST Conductivity Sensors

6.10.5 Inductive Conductivity Sensor ICT 8

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: 2m 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 |

ICT 8 -mA-200 mS/cm

Part No.

1098530



6.11 DULCOTEST Accessories

6.11.1 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 CTE 2, CTE 3 type chlorine sensors | 50 | 1133159 |
| 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 | – | 790486 |
| Membrane cap for types: CLE 2.2, CLE 3, CDE 1.2, CDE 2, OZE 2, & OZE 3 | – | 790488 |
| Sensor cap for CLO 1 | – | 1035197 |
| Sensor cap for CLO 2 | – | 1035198 |
| Membrane cap for CGE/CTE 1 (2/5/10 ppm), BRE 1 (10 ppm), and BRE 2 | – | 792862 |
| Membrane cap for CTE 1 (0.5 ppm), CBR 1, BCR 1 | – | 741274 |
| Membrane cap for CTE 2 type chlorine sensors | – | 1133342 |
| Membrane cap for CTE 3 type chlorine sensors | – | 1133130 |
| Membrane cap for CDP 1, BRE 1 (0.5 / 2 ppm), CLT | – | 1002710 |
| Membrane cap for CDE 3 | – | 1026578 |
| Membrane cap for PAA 1, CDR 1, CLR 1, OZR1 | – | 1023895 |
| Membrane cap for PER 1 | – | 1025776 |
| Membrane cap for H2.10 P | – | 792978 |

| 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 CTE 2 type chlorine sensors | | 1133397 |
| Accessory set for CTE 3 type chlorine sensors | | 1133395 |
| 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 | 1020534 |
| Sensor insert for DO 2-mA-10 ppm | | |
| Membrane thickness 50 µm, | 0-10 mg/0.10...10.0 mg/l | 1020535 |
| Sensor cap for DO 3-mA-20ppm | 0.1-20ppm | 1093650 |

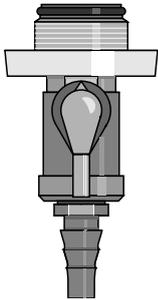


6.13 DULCOTEST Accessories

6.12.1 Accessories

Accessory: Sampling tap for DGM

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

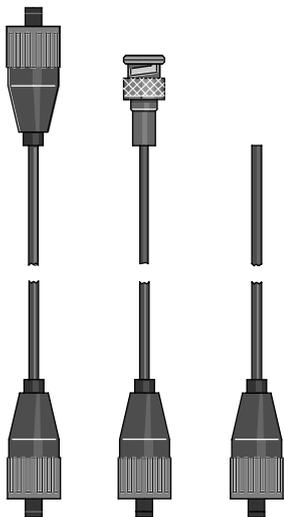


| Cables per meter | Part No. |
|---|-----------|
| Military Grade, 50 ohm, type AM-900, Low Noise | A04001118 |
| Grey HC2049 Cable, (2 core pulse) | A04001289 |
| Grey cable entry gland 1/4" BSPM | 703830 |
| Black cable entry gland 3/8" BSPM | 703885 |
| 4-wire shielded cable 100CY 4x0, 25qmm 5.7 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 |



SS SB S

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 |

Ampermetric Sensor Cable



| | |
|------------------------------------|--------|
| CTE 2 & CTE 3 4-pin cable 2 metres | 707702 |
|------------------------------------|--------|



6.13 Modular Sensor Technology BAMA

6.13.1 Sensor Bypass Armature Modular BAMA

Modular sensor bypass armature BAMA: flexible process connection for all ProMinent sensors for water treatment.

Up to 9 functional modules can be freely configured in a single fitting.

The modular bypass armature BAMA accommodates ProMinent sensors for water treatment. The armature is simply installed in a bypass of the main process line. It is available in various variants, each perfectly designed for special water treatment applications – from drinking water, water for pool & wellness to industrial water.

Depending on the application, the modular bypass armature can be selected in different variants:

For saving sample water: This variant of the BAMA allows all flow-dependent sensors in the 5...25 l/h range to be operated for clear water. This is very beneficial for applications, where sample water cannot or must not be returned to the process, e.g. drinking water monitoring or product water during the manufacture of beverages.

For process water which is clear or has low levels of solids where the sample water is returned to the process: This design can be operated between 20...60 l/h as a result of which self-cleaning of armatures and sensors is improved. Typical applications include water treatment processes in the pool & wellness sector.

For process water which has moderate levels of solids and / or for higher temperatures and / or pressure

requirements: This BAMA configuration is designed for operation with flows of 20...100 l/h and is ideally suited for many applications, e.g. in industrial water treatment.

The modular bypass armature BAMA and its various components can be perfectly combined for individual sample water conditioning. Additionally, a flow controller can be installed as well as can components for taking and treating sample water, such as a filter, flow limiter, metering module, ventilation, potential equalisation and earthing. For amperometric sensors without diaphragm, an integrated hydrodynamic cleaning unit can be ordered.

Your Benefits

- The sensors can be quickly and easily fitted and dismantled thanks to bayonet fittings.
- All parts requiring maintenance can be cleaned very well as they are easy to access without tools.
- Water consumption is minimised to just 5 l/h for flow-dependent sensors under ideal measurement conditions.
- The good particle mobility allows the bypass armature to be used in an even wider range of applications.
- Construction and material permit temperatures of up to 70 °C at a max. pressure of 3 bar, making it even more flexible to use.
- Thanks to higher pressure levels of up to 7 bar at 20 °C, sample water can return to the process, where permitted.
- The BAMA provides numerous options for setting optimum measurement conditions.

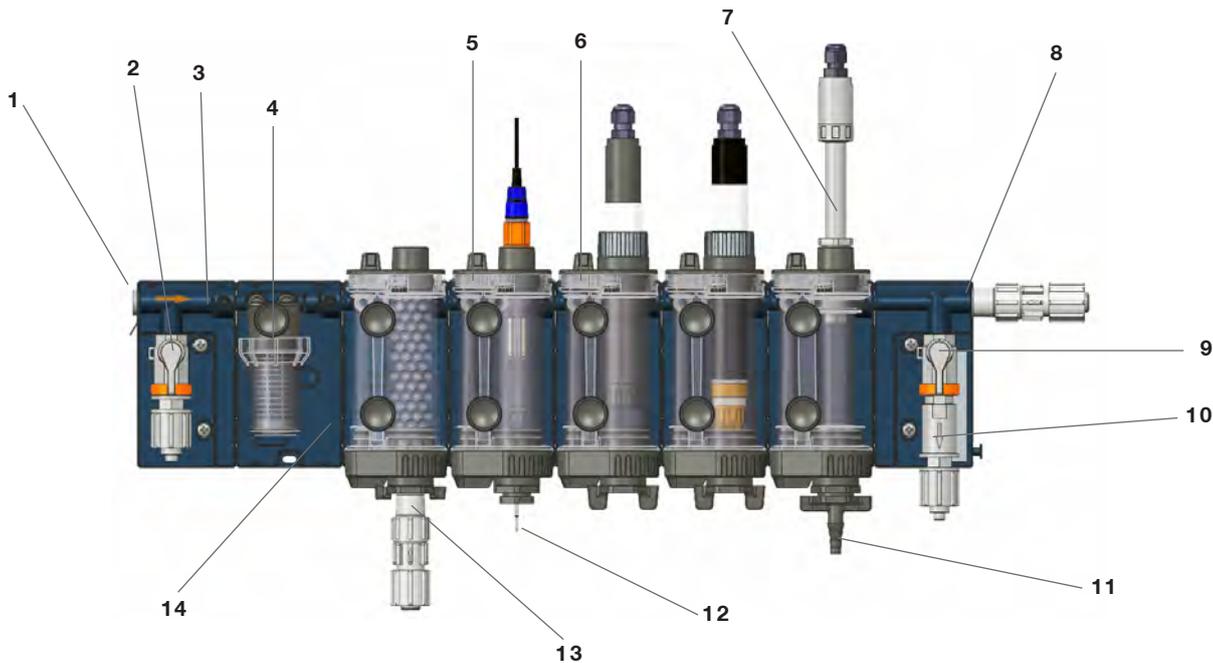


6.13 Modular Sensor Technology BAMA

6.13.1 Sensor Bypass Armature Modular BAMA

Can be ordered using identity code as an option

- Space-saving filter module, fully integrated in the fitting: Length: 65 mm / diameter 28 mm, filter bowl made from PET copolymer, filter insert made from stainless steel 1.4404, 300 µm pore diameter
- The module with float flow control using a reed switch is available in the following designs for use in clear process water: “BAMA_1...” and “BAMA_2...”. Wetted materials: PVC, FKM
- The module with thermal flow control is available in the design “BAMA_3...” and permits operation in media containing solids and at higher pressure levels / temperatures. Wetted material: Stainless steel 1.4404
- The flow limiter for eliminating peaks in flow as hydraulic conditions change over time is always fitted in conjunction with the filter module and is only available in the designs “BAMA_1...”: Limitation to max. 12 l/h and “BAMA_2...”: Limitation to max.54 l/h
- Metering module including injection valve and mixing zone, for metering of chemicals in the sample water flow for the purpose of treating sample water (e.g. adjusting pH or electrolytic conductivity). Sensors, which are not suitable for untreated sample water, can therefore be used. The metering module can also be used to chemically clean the fitting. A suitable metering pump, accessories and the appropriate treatment medium must be ordered separately.
- Hydrodynamic cleaning of the open chlorine sensors without protective diaphragm, types CLO1 / CLO2, is integrated in the sensor module
- Potential equalisation on the sensor module and also an electric earthing connector on the input module ensure faultless operation of pH and ORP sensors in the event of electrical influence



- | | | | |
|---|---|----|---|
| 1 | Earthing connector | 8 | G 1/4 connector for venting |
| 2 | Hydraulic inlet with shut-off valve, horizontal or vertical connector (inlet), factory-fitted as vertical, but may be converted by the operator to horizontal | 9 | Hydraulic outlet with shut-off valve, horizontal or vertical connector (outlet), factory-fitted as vertical, but may be converted by the operator to horizontal |
| 3 | Direction of flow/arrow | 10 | Flow limiter |
| 4 | Particle filter, 300 micrometre (optional) | 11 | Sample valve |
| 5 | Sensor modules for pH and ORP sensors (PG 13.5 connector) | 12 | Potential equalisation connector |
| 6 | Sensor modules for amperometric sensors (G1" connector) | 13 | 13 Injection valve with mixing device |
| 7 | Flow meter / control by means of float and reed switch or thermal flow sensor | 14 | Module carrier |



6.13 Modular Sensor Technology BAMA

6.13.2 BAMA Technical Data

Flow through the sensor bypass armature Modular BAMA

| Application | “BAMA_1...” e.g. drinking water | “BAMA_2...” e.g. pool&wellness sector | “BAMA_3...” industrial water |
|-------------|------------------------------------|--|---------------------------------|
| Flow | 5...25 l/h | 20...60 l/h | 20...100l/h |

Operating pressure / operating temperature / particle mobility

| BAMA design Pressure / temperature | “BAMA_1...” at max. 25 l/h | “BAMA_2...” at max. 60 l/h | “BAMA_3...” at max. 100 l/h |
|--|-------------------------------|-------------------------------|--------------------------------|
| Minimum priming pressure without flow limiter and with clean filter for a total of 9 modules | 0.025 bar | 0.050 bar | 0.500 bar |
| Minimum priming pressure with flow limiter and with clean filter for a total of 9 modules | 1.5 bar | 1.5 bar | 2.0 bar |
| Maximum operating pressure * | 7.0 bar at 20 °C | 7.0 bar at 20 °C | 7.0 bar at 20 °C |
| Maximum operating temperature * | 60 °C at 3.5 bar | 60 °C at 3.5 bar | 70°C at 3.0 bar |
| Particle mobility (specified with non-agglomerating, non-< 300 µm sedimentary model particles) | < 300 µm | < 300 µm | < 1000 µm |

* Maximum operating pressure and maximum operating temperature are limited by the specification of the weakest component fitted.

- Because the flow limiter may only be used in clear water, it is only available as standard for the “BAMA_1...” applications (e.g. potable water, limitation to 12 l/h, order no. 1113408) and “BAMA_2...” (e.g. pool&wellness sector, limitation to 54 l/h, order no. 1112443) applications together with the filter module. Blockages are thereby avoided. The flow limiter is installed on the hydraulic outlet ex factory.
- When using sensors with a maximum operating pressure of ≤ 1.0 bar, the flow limiter can be ordered as an accessory and installed on site at the hydraulic inlet module, provided that the system is handling filtered, clean sample water with no solids content with a particle size $< 300 \mu\text{m}$. Due to the pressure drop of 1.4 bar at the outlet of the pressure limiter, the permitted operating pressure at the inlet of the sensor bypass armature Modular BAMA is increased to max. 2.4 bar for pressure-sensitive sensors.
- Because of the continuous configuration, an additional priming pressure of 0.5 bar is to be expected when using a filter and this must be added to the minimum priming pressure values stated above.

Wetted materials

| | |
|--|--|
| Measurement module, flow module, metering module, flow element of filter housing | SAN, transparent |
| Module carrier, hydraulic inlet / outlet | PPE+PS+GF10% |
| Sensor adapter; flow element bracket | PPE+PS+GF30% |
| Filter insert | Stainless steel 1.4404 |
| Filter bowl | PET copolymer |
| Ball funnel, flow nozzle | PVDF |
| O-rings, seals | FKM |
| Thermal flow sensor | Stainless steel, 1.4404 |
| Calibration beaker | PE |
| Shut-off valve, sample drain valve | a) PVC in applications BAMA_1 (e.g. drinking water) and BAMA_2 (e.g. pool & wellness sector) b) PVDF in the application BAMA_3 (e.g. industrial water) |
| Flow sensor with float | PVC |
| Thermal flow sensor | Stainless steel 1.4404 |
| Flow limiter | PVC |
| Potential equalisation pin | Stainless steel 1.4404 |
| Cleaning balls, balls in the metering module | Glass |



6.13 Modular Sensor Technology BAMA

6.13.2 BAMA Technical Data

Hydraulic connectors

Hose 8x5 and 12x6 mm

Hose 1/2x3/8 and 3/8x1/4 inch

Pipe DN10 horizontal

Pipe 1/2 inch MPT horizontal

Float flow meter

| | |
|---|------------------|
| Flow range for BAMA_1 application (e.g. drinking water) | 5...25 l/h |
| Flow range for BAMA_2 application (e.g. pool & wellness sector) | 20...60l/h |
| Max. operating pressure | 2 bar |
| Max. operating temperature | 30 °C |
| Output signal | Switching signal |
| Max. switching power | 3W |
| Max. switching voltage | 42V |
| Max. switching current | 0.25 A |
| Max. constant current | 1.2 A |
| Max. contact resistance | 150 mOhm |
| Degree of protection of the reed switch | IP 65 |
| Wetted materials | PVC, FKM |

Thermal flow meter

| | |
|---|---|
| Flow range | 20...100 l/h |
| Accuracy at the switching point 30 l/h | Better than +-10% |
| Output signal | Switching signal; analogue signal; frequency signal; IO link; |
| Electrical design | PNP, NPN |
| Max. load | 300 Ohm |
| Continuous current load of the switching output | 200 mA DC |
| Max. voltage drop at switching output | 2.5V DC |
| Degree of protection | IP65 |
| Wetted materials | Stainless steel, 1.4404 |

Flow limiter

| | |
|--|--|
| Minimum pressure drop | 1.4 bar |
| Maximum pressure drop | 10 bar |
| Flow limitation for BAMA_1 application (e.g. drinking water) | max. 12 l/h |
| Flow limitation for BAMA_2 application (e.g. pool & wellness sector) | max. 54 l/h |
| Application | Can only be used for filtered water < 300 µm |

Ambient conditions

| | |
|---------------------|---|
| Ambient temperature | -10...60 °C |
| Storage temperature | 10...70°C |
| Vibration | Complies with IEC 68, Part 2-6 |
| EMC | In accordance with the data for the electrical components |
| UV | Not long-term stable in direct sunlight when used outdoors |
| Air humidity | when using flow sensors and other electrical components: max: 90%, non-condensing |



6.13 Modular Sensor Technology BAMa

6.13.3 Identity Code Ordering System BAMa Sensor

| | | | | | | | | | | | | | | | |
|---|--|---|---|---|---|---|---|---|---|---|---|----|----|----|----|
| BAMa | | | | | | | | | | | | | | | |
| Regional design | | | | | | | | | | | | | | | |
| EU | Europe (Standard) | | | | | | | | | | | | | | |
| Application | | | | | | | | | | | | | | | |
| 1 | 5 ... 25 l/h, max. 60 °C at 3.5 bar (e.g. drinking water or water similar to clear water with sample water consumption saving) | | | | | | | | | | | | | | |
| 2 | 20 ... 60 l/h, max. 60 °C at 3.5 bar (e.g. pool & wellness sector or similarly treated water with sample water return) | | | | | | | | | | | | | | |
| 3 | 20 ... 100 l/h, max. 70 °C at 3.0 bar (e.g. industrial water or similar with a solids content and higher temperature requirements) | | | | | | | | | | | | | | |
| Flow monitor module | | | | | | | | | | | | | | | |
| X | none, (For application 3 only) | | | | | | | | | | | | | | |
| 1 | Float + scale [l/h], [gph] | | | | | | | | | | | | | | |
| 2 | Float + scale + reed switch (max. 2 bar) | | | | | | | | | | | | | | |
| 3 | Thermal flow monitorig, (For application 3 only) | | | | | | | | | | | | | | |
| Number of modules, PG13.5 (sensors for pH, ORP, conductivity: LF(T) line, fluoride FLEP, hydrogen peroxide H2.10P, temperature PT100, PT1000) | | | | | | | | | | | | | | | |
| X | No module | | | | | | | | | | | | | | |
| 1 | One module + sensor adapter PG 13.5 | | | | | | | | | | | | | | |
| 2 | Two modules + sensor adapter PG 13.5 | | | | | | | | | | | | | | |
| 3 | Three modules + sensor adapter PG 13.5 | | | | | | | | | | | | | | |
| 4 | Four modules + sensor adapter PG 13.5 | | | | | | | | | | | | | | |
| Number of modules, G 1" (amperometric sensors, conductivity sensors CCT1, CTFS via adapter G 1" - 3/4" NPT (1113353), sensor for dissolved oxygen DO3) | | | | | | | | | | | | | | | |
| X | No module | | | | | | | | | | | | | | |
| 1 | One module + sensor adapter G 1" | | | | | | | | | | | | | | |
| 2 | Two modules + sensor adapter G 1" | | | | | | | | | | | | | | |
| 3 | Three modules + sensor adapter G 1" | | | | | | | | | | | | | | |
| 4 | Four modules + sensor adapter G 1" | | | | | | | | | | | | | | |
| 5 | Five modules + sensor adapter G 1" | | | | | | | | | | | | | | |
| Number of modules, G 3/4" (conductivity sensors LM(P) line) | | | | | | | | | | | | | | | |
| X | none | | | | | | | | | | | | | | |
| 1 | One module + sensor adapter G 3/4" | | | | | | | | | | | | | | |
| Metering module | | | | | | | | | | | | | | | |
| X | None | | | | | | | | | | | | | | |
| D | With metering module | | | | | | | | | | | | | | |
| Sample water treatment | | | | | | | | | | | | | | | |
| 0 | none | | | | | | | | | | | | | | |
| F | With filter, 300 µm, stainless steel | | | | | | | | | | | | | | |
| D | With filter and flow limiter, (For applications 1 and 2 only) | | | | | | | | | | | | | | |
| Sensor cleaning | | | | | | | | | | | | | | | |
| 0 | None | | | | | | | | | | | | | | |
| C | Hydrodynamic cleaning for CLO 1/2 type chlorine sensor, (For applications 2 and 3 only) | | | | | | | | | | | | | | |
| Hydraulic connections | | | | | | | | | | | | | | | |
| 1 | Hose 8x5 and 12x6 mm, (EU region only) | | | | | | | | | | | | | | |
| 4 | Pipe, DN 10, horizontal, (EU region only) | | | | | | | | | | | | | | |
| Status illuminated indicator | | | | | | | | | | | | | | | |
| X | none | | | | | | | | | | | | | | |
| Version | | | | | | | | | | | | | | | |
| 00 | with ProMinent® logo | | | | | | | | | | | | | | |
| Accessories | | | | | | | | | | | | | | | |
| 00 | none | | | | | | | | | | | | | | |
| 01 | Potential plug + electrical earthing | | | | | | | | | | | | | | |
| Approvals | | | | | | | | | | | | | | | |
| 01 | CE, (Only needed with accessories 01) | | | | | | | | | | | | | | |
| Documentation language | | | | | | | | | | | | | | | |
| EN | English | | | | | | | | | | | | | | |
| BAMa | EU | 2 | 2 | 1 | 1 | X | X | F | 0 | 1 | X | 00 | 00 | 01 | EN |



6.13 Modular Sensor Technology BAMA

6.13.4 Spare Parts & Accessories BAMA Sensor

Retrofit kits

| | Part No. |
|---|----------|
| Sensor module, complete | 1113795 |
| Filter module, complete | 1113798 |
| Cleaning set CLO/BAMA for CLO sensors in conjunction with sensor bypass armature BAMA | 1113881 |
| Metering module, complete | 1113424 |

Accessories

| | Part No. |
|---|----------|
| Reed switch PVC, for flow module | 1118867 |
| Thermal flow control (SA 4300) | 1122791 |
| Potential equalisation / earthing, complete | 1113409 |
| Sample valve for PG 13.5 module | 1004737 |
| Flow limiter, 12 litres, complete, f/f PVC | 1117504 |
| Flow limiter, 54 litres, complete, f/f PVC | 1117493 |
| Hydraulic short circuit, complete | 1117462 |
| Vent valve (lip valve) G 1/4 - 6x4, PVC | 1113427 |

Consumable Items

| | Part No. |
|--|----------|
| Filter insert, 300 µm, stainless steel | 1105632 |
| Cleaning balls (approx. 100) | 1104267 |
| Glass balls for metering module 1 | 122617 |



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| | | |
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1.0 Tube, Hose & Fittings

TUBE PACK 7 METRE, INCLUDES: 5m TRANSLUCENT LDPE DOSING TUBE & 2M SOFT PVC SUCTION TUBE

Part No.

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 |



Note: Soft PVC tubing is only rated to 0.5 bar.

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 |

Note: When "Fabric Reinforced PVC Tube" is used under high pressure the tube may shrink significantly, so allow extra length especially during installation.

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 |



1.1 Tube & Pipe Fittings



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



Valve to Tube

| 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 | ● |

| 3/4" VALVE TO 20MM HOSE TAIL (DN 10) | | |
|--------------------------------------|-----------|---|
| PVC | A07621303 | ● |
| PVDF | A07631303 | ● |
| SS | A07641303 | ● |



3/4" Valve to 1/2" BSPT Adaptor

| 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 16mm Hose Tail

| 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

NOTE: Sigma 1 has 3/4" & 1" Valves
Sigma 2 has 1" & 1-1/2" Valves
Sigma 3 has 1-1/2" & 2" valves

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 | ● |



1.1 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) | | Part No. |
|--|--|-------------|
| PVC | | A07521069 ● |
| PVDF | | A07531069 ● |
| SS | | A07541069 ● |

| 1-1/4" VALVE ADAPTOR TO 1" BSPT MALE (DN 20) | | Part No. |
|--|--|-------------|
| PVC | | A07521070 ● |
| PVDF | | A07531070 ● |
| SS | | A07541070 ● |

| 1-1/2" VALVE ADAPTOR TO 25MM HOSETAIL (DN 25) | | Part No. |
|---|--|-------------|
| PVC | | A07521095 ● |
| PVDF | | A07531095 ● |

| 1-1/2" VALVE ADAPTOR TO 32MM HOSETAIL (DN 25) | | Part No. |
|---|--|-------------|
| PVC | | A07621455 ● |
| PVDF | | 1005560 ● |

| 1-1/2" VALVE ADAPTOR TO 1" BSPT MALE (DN 25) | | Part No. |
|--|--|-------------|
| PVC | | A07521094 ● |
| PVDF | | A07531094 ● |
| SS | | A07541094 ● |

| 2" VALVE ADAPTOR TO 32MM FEMALE SOLVENT WELD ADAPTOR (DN 32) | | Part No. |
|--|--|---------------|
| PVC only | | 721-601-109 ● |

| 2" VALVE ADAPTOR TO BSMT MALE ADAPTOR (DN 32) | | Part No. |
|---|--|-------------|
| PVC only x 1-1/4" | | A07022463 ● |
| PVC only x 1-1/2" | | A07022462 ● |

| 2-1/4" VALVE ADAPTOR TO 38MM HOSETAIL (DN 40) | | Part No. |
|---|--|-----------|
| PVC | | A07621425 |
| PVDF | | A07631425 |

| 2-1/4" VALVE ADAPTOR TO 1-1/4" BSPT MALE (DN 40) | | Part No. |
|--|--|-----------|
| PVC | | A07521799 |
| PVDF | | A07531799 |
| SS | | A07541799 |

| 2-1/4" VALVE ADAPTOR TO 48MM SOLVENT WELD (DN 40) | | Part No. |
|---|--|-----------|
| PVC | | A07021426 |

| ADAPTORS SS DN FEMALE TO BSPT MALE | | Part No. |
|---|--|-------------|
| 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 Male



1.2 BSPM to Hosetail Adaptors



BSPM to Hosetail Adaptors



HEX Nipples



Tube Joiner 8x5 to 8x5

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

| | |
|-------------------------------|-----------|
| 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.

MISCELLANEOUS FITTINGS



1.2 BSPM to Hosetail Adaptors

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 | | |
| PVC | | PA07522276 |



Tube Adaptor 8x5 to BSPT Male



1.3 Tube Adaptors



PVC Tube Adaptor 8x5 to 1/2" Solvent Weld

TUBE TO SOLVENT WELD

PVC Tube 6x4 to 1/2" Solvent Weld

Part No.

PA07121184

PVC Tube 8x5 to 1/2" Solvent Weld

PA07221184

PVC Tube 12x6 to 1/2" Solvent Weld

PA07C21184

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



20x1.5 Female Union to 15mm Solvent Weld

UNION ADAPTORS

20x1.5 Female Union to 15mm Solvent Weld PVC

PA27022382



20x1.5 Female Fixed / Female Union

20x1.5 Female Union to 20x1.5 Female

PA03022627



20x1.5 Female Union / 1/2" BSPT Male

20x1.5 Female Union to 1/2" BSPT Male

PA01722804



PA03422617



PA06022635

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



2.0 Chemical Tanks and Accessories



CHEMICAL TANKS - POLYETHYLENE
ONE PIECE ROTATIONALLY MOULDED MDPE with vented lid.
******* PLEASE NOTE *******

Prices include vented lids and poly BSP F socket up to 2"

| | 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)



2.0 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

Part No.

415 VOLT ELECTRIC STIRRER

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)

0.25 kW 415/3/50 IP 55 Motor, Gearbox, S/S shaft,

250 Litre Tank

PA17K03575

500 Litre Tank

PA17L03576

240 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

SS Impeller 200-260 dia.

250 Litre Tank

PA17K03571

500 Litre Tank

PA17L03572

415 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 1000 litre tanks

PA17M03577

0.25 kW 415/3/50 IP 55 Motor, Gearbox, S/S shaft,
2 x SS Impeller 260 dia.

240 VOLT SLOW SPEED 140 RPM ELECTRIC STIRRER

(other speeds available)

to suit 1000 litre tanks

PA17M03573

0.0.18 kW 240/1/50 IP 55 Motor, Gearbox, S/S shaft,
2 x SS Impeller 260 dia.

Note: Please advise size of tank when ordering. Other sizes available on request.



2.1 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

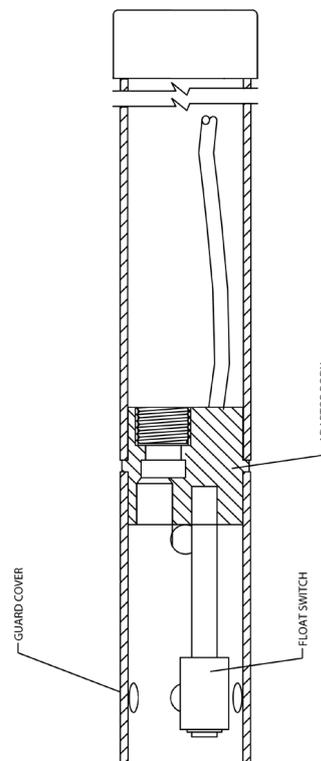
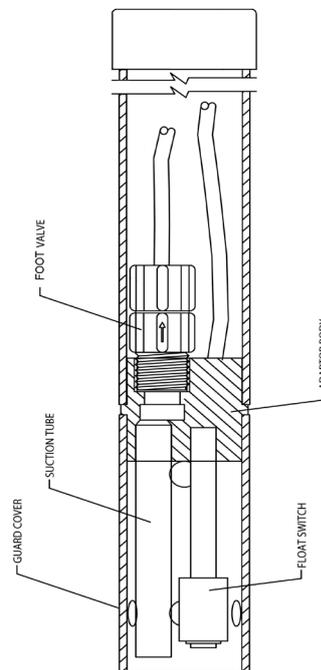
Rigid Level Switch Assembly

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 |
|--|------------|



3.0 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 |



3.0 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



3.0 Miscellaneous Items

Withdrawable Injection Tube Assemblies

LARGER SIZE WITHOUT INJECTION VALVE

| | Part No. |
|---|------------|
| Withdrawable inj assy Mk III 1 inch with 16mm PVC Hose tail | PA07623531 |
| Withdrawable inj assy Mk III 1 inch with 20mm PVC Hose tail | PA07623532 |
| Withdrawable inj assy Mk III 1 inch with 25mm PVC Hose tail | PA07623533 |

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 | | Part No. |
|-------------|---|-----------|
| 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 - L.D.P.E. 12 MM THICK

| | | |
|----------|-----------|-----------|
| A | 600 x 600 | A350D3402 |
| B | 750 x 600 | A350S1307 |
| C | 747 x 747 | A350D3614 |

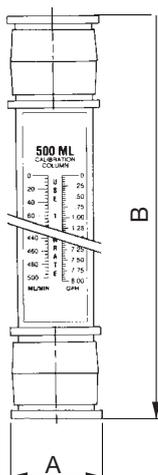
Note: Add mounting time



| Size No. | Typical Use | Assembly Time |
|----------|----------------|---------------|
| Size A | STANDARD BUILD | 3 hours |
| Size B | COMPLEX BUILD | 4 hours |
| Size C | DULCOMARIN 3 | 4 hours |



3.1 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" |



PVC PULSATION DAMPNERS - AIR TO LIQUID

| | | Part No. |
|------|------------------------------------|------------|
| 6x4 | Clear Sight Tube | PA16122466 |
| 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.

PA16121080



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 |



3.2 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

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 |



NON-STOCK ITEMS

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.



3.2 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
 PP = Body & insert material polypropylene
 3/4" standard connection

Note: Maxi Working Pressure ≠ K (@Constant Temp.)
 Inflate gas Pressure

PP = POLYPROPYLENE
 (+) PD = PVDF
 PC = PVC

10 bar-g ALL SIZES
 PRESSURE DESIGN

TOLERANCES:
 EXTERNAL DIMENSIONS: ±2%
 VOLUME: ±1.5% WEIGHT: ±3.5%

| 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 | 3 |
| U003 | 0.35 | 90 | 170 | 3/4" | 1,2 | 0,8 | 3,5 |
| U007 | 0.65 | 100 | 230 | | 3 | 2 | 3 |
| U010 | 0.95 | 130 | 245 | | 3,5 | 2,4 | 3,5 |
| U015 | 1.40 | 160 | 295 | 1" | 5 | 3,5 | 5 |
| U030 | 2.60 | 160 | 325 | | 5,8 | 4 | 4 |
| U040 | 3.70 | 198 | 422 | | 13 | 9 | 5 |
| U060 | 5.60 | 198 | 458 | 1 1/2" | 20,4 | 14 | 4 |
| U100 | 9.50 | 250 | 500 | | 23,3 | 17 | 2,5 |
| U150 | 15 | 250 | 672 | 2" | 27,7 | 21 | 3 |
| U200 | 20 | 880 | | | | | |

6 COVER 1 (+) PP, PD or PC
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 AV.PL.BP.IN.DOC.Rev08
Customer E.Ponsa M.Carcaré
Customer Drg.No AV.PL.BP.IN.DOC.
Rev. 09
Date JUN-12
Scale

Customer HIDRACAR SA
Title PLASTIC PULSATION DAMPERS (standard units)

INFLATING WITH GAS(N2), AND MOUNTING POSITION: VERTICAL, VALVE 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**



3.3 Metering Pump Auto Change Over Controller

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



3.4 ProMinent DULCOFLEX Liquid Polymer Blending System

ProMinent DULCOFLEX PROMIX LD Series 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, ideally for transfer to a dosing tank.

The polyelectrolyte is prepared by the injection of liquid polymer into a mixing chamber by the ProMinent DULCOFLEX Control 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-DFX3000-0560 3000l/h flow @ 0.1-1% solution

Note: solution % will depend on application conditions.

Specification

Each system includes:

- 1 x Polyethylene Stand
- 1 x Water Transfer Pump
- 1 x ProMinent DULCOFLEX DFXa Metering Pump
- 1 x Mixing Chamber
- 1 x Blending Pipe Work
- 1 x Control Panel

Part No.

PROMIX-DFX3000-0560

PROMIX-DFX2000-0560

PROMIX-DFX1000-0530

Options Available POA: Hose Rupture Alarm on dosing
4-20mA control capability.



3.5 Custom Packages



Custom made packages are available on request Please contact head office at sales@prominentfluid.com.au



3.5 Custom Packages



4.0 pH & RH Probes

| | |
|---|---|
| PROBE pH 0-12 pH 0 to 80°C HT3 glass Polymer Body SN6 connector and PG13.5 standard mounting | Part No. 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

| | |
|--|---|
| PROBE RH 0-1000mV 0 to 80°C HT3 glass Polymer Body SN6 connector and PG13.5 standard mounting | Part No. 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

| | |
|---|---|
| PROBE pH 0-12 pH -5 to 110°C HT3 glass Glass Body SN6 connector and PG13.5 standard mounting | Part No. 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



4.0 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



4.1 pH & Redox Industrial Probes

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.

Part No.

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



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.

Part No.

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



4.1 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-A33FF |

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 across flats: | 25.4 mm |
| Thread: | 3/4" NPT - top & bottom |

APPLICATIONS:

- Water & Wastewater
- Industrial Trade Waste
- Cooling Towers



A27022797



PA02032790

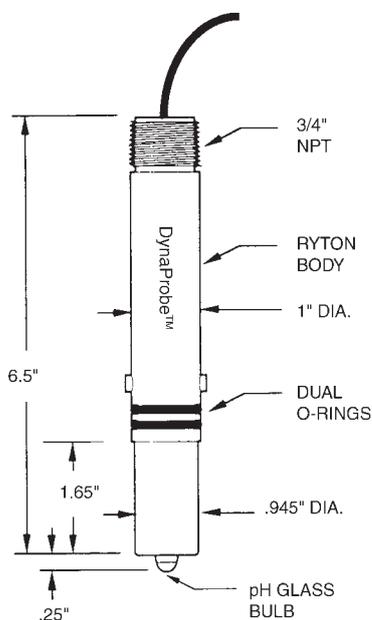
| | Part No. |
|---|------------|
| Pipe Adaptor Bush ... 3/4" Female NPT to 25mm Male Solvent Weld | A27022797 |
| Additional heavy duty PVC protection cap for S400 series | PA03022896 |

For **SUBMERSIBLE** applications See Page 4.5 for PA02032789 or PA02032790



4.2 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.



pH DynaProbe ST851-T330-A33TE Twist lock Ryton body HT3 dome bulb and Teflon Junction, c/w 10m co-axial cable and pin lugs.

Part No.

A41022120

rH 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

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.

PA02032789

Note: DynaProbe not included, must be ordered separately.



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 DynaProbe.

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

ADD Concept CNPA1002PPE200C0100 Pump or other set at 180 SPM

see 'Yellow Pages' or beta/ 4



4.3 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. RIGID submersible connection and J-Box for pH / Redox probes A41021851 & A42022002

PA03021391

Note: for pH our preferred option is A41021851 with 10m cable. Pipe to be supplied by others.

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

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" S/S valve & S/S nipple.

CHEMICAL JET WASH FOR S400 PROBES

3/4" Threaded with 6x4 tube connection

PA03023391



4.4 Electrode Holders

Electrode Holders & Filters

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



ROTAMETER & FLOW SWITCH FOR ABOVE

P86515T

BY-PASS SENSOR HOLDER DLG 9

For use the the sample flow is unfilled with suspended food fragments e.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

PA03003436



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.

- Max.working pressure 10 bar
- Element 316 Stainless Steel 27 dia x 69
- Filter size 80 mesh
- Bowl transparent nylon
- 1/2" BSP threads
- Filtering capacity 55 l/m at .5 bar
- Body fibreglass reinforced polypropylene
- Viton gaskets

Filter only

Part No.

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 BAMA units in **section 6.0 'Yellow Pages'**.



4.5 Probe Holder Accessories

Probe Holder Accessories



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.

Part No.

Low Flow Switch, SW15 connections mounting in any position

PA03022425

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

Not Included

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 - Stainless Steel

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



4.6 Cables & Accessories

Cables & Glands

COAX CABLE, PER METRE

Military Grade, 50 ohm, type AM-900, Low Noise

Grey HC2049 Cable, (2 core pulse)

Part No.

A04001118

A04001289

PROMINENT DULCOTEST COMPLETE SIGNAL CABLES

2 x SN6 Coax 0.8 m - SS ****NOT STOCKED****

305077

2 x SN6 Coax 2.0 m - SS

304955

2 x SN6 Coax 5.0 m - SS ****NOT STOCKED****

304956

2 x SN6 Coax 10.0 m - SS

304957

BELOW CABLES FOR TYPICAL USE WITH PHE / RHE PROBES AND SP100 AND SP200 PROBES

SN6 - open end Coax 2.0m - S*

305030

SN6 - open end Coax 5.0m - S*

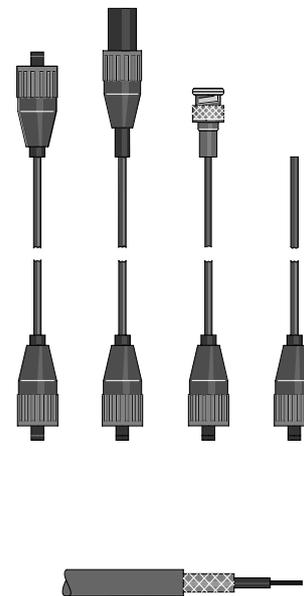
305039

SN6 - open end Coax 10.0m - S*

305040

SN6 - open end Coax 20.0m - S* ****NOT STOCKED****

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



4.7 Electrode Comparison List

| Existing Electrode | 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, 2X | 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 | |
| Not Stocked | 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 |
| Not Stocked | A42022136 | Redox Dynaprobe, teflon junction, platinum band, 10m cable, pin lugs | ST851-RPB0-A33TE |

| Temperature Electrode | Part No. | Description |
|-----------------------|----------|--|
| PT 100 SE | 305063 | Temperature Electrode, pt 100, 0-80° C, PG 13.5, SN6 cap |



5.0 LogR Sensor Package

ProMinent LogR Sensor Package

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.

THIS UNIT HAS BEEN DISCONTINUED

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.

CONSUMABLE ITEMS - PLEASE CHECK AVAILABILITY

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 | 7760577 |
| Spare - PVC tee 3/4" NPT - from PAAS [code 805007] | |
| Spare - LogR Sensor [sensor only without tips] | 7760792 |



5.1 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. | <table border="0"> <tr> <td>0: Corrosion</td> <td>1: Metallurgy</td> </tr> <tr> <td>2: Conductivity</td> <td>3: Diagnostic</td> </tr> <tr> <td>4: 4-20mA Current</td> <td>5: Date-Time</td> </tr> <tr> <td>6: Alarm Contacts</td> <td>7: Loop Span</td> </tr> </table> | 0: Corrosion | 1: Metallurgy | 2: Conductivity | 3: Diagnostic | 4: 4-20mA Current | 5: Date-Time | 6: Alarm Contacts | 7: Loop Span |
| 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 | | | | | | | | |



5.2 Conductivity 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 |



AEGIS Conductivity Sensors & Parts

| | Part No. |
|--|----------|
| CTF Sesnor assembly AEGIS I & Slimflex | 7760021 |
| CTFS Sensor assembly for AEGIS II (AGIB) Serial Sensor | 1127748 |

Note: Individual parts for sensor holder also available POA Sydney



6.0 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 |



6.1 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. | PA31003612 |
| 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. | PA31923627 |
| 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 |
| Diffusers Spares - Diffuser for PA31923627 WHITE | A31EB3628 |
| Diffusers Spares - Diffuser for PA31921314 WHITE MODIFIED | AE1EB3634 |



PA31003612
CO₂ Controller



PA31921314
Withdrawable CO₂ Injection Assembly



PA03022425
Sample Flow Switch



SP100-4330-DH
pH Sensor



SP100-4PBO-DH
ORP Sensor



6.2 Pool Packages COMPACT controller pH/ORP

DCC300 pH/ORP POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---------------------------------------|---|
| DCCAW006PR0010EN | Compact Controller pH/ORP | 2 |
| SP100-4330-DH | Probe pH 0-12 pH 0 to 80°C HT3 glass | 1 |
| SP100-4PB0-DH | Probe Rh 0-1000Mv 0 To 80°C Ht3 Glass | 1 |
| 1024105 | Probe cable | 2 |
| BAMAEU2222XXF01X000101EN | Probe Holder with Flow switch | 1 |
| PA07221061 | PVC 1/2" to 8x5 mm | 1 |
| A25251004 | PE tube 25m 8 x 5mm | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

DCC300SC SPECIAL FOR SALT CHLORINATOR

Note: ORP gold type probe **Part No. 1003875**

DCC400 pH/ORP POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|--|---|
| DCCaW006PR0010EN | Compact Controller pH/ORP | 2 |
| PA31003612 | CO ₂ Flow Regulator Assembly | 1 |
| PA09751676 | CO ₂ Injection Assembly | 1 |
| SP100-4330-DH | Probe pH 0-12 pH 0 to 80°C HT3 glass | 1 |
| SP100-4PB0-DH | Probe Rh 0-1000Mv 0 To 80°C Ht3 Glass Polymer Body | 1 |
| 1024105 | Probe cable | 2 |
| BAMAEU2222XXF01X000101EN | Probe Holder with Flow switch | 1 |
| A25251004 | 8x5 Tubing Black LDPE x 25m | 1 |
| PA07221061 | PVC 1/2" to 8x5 mm | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

DCC400SC SPECIAL FOR SALT CHLORINATOR

Note: ORP gold type probe **Part No. 1003875**



6.2 Pool Packages COMPACT controller pH/ORP

DCC500 pH/CI POOL CONTROL SYSTEM

| Part No. | Description | |
|-------------------------|---------------------------------|---|
| DCCaW006PR0010EN | Compact Controller pH/ORP | 1 |
| DCCAW006C00010EN | Compact Controller Chlorine | 1 |
| 1024105 | Probe cable | 1 |
| SP100-4330-DH | Sensor pH 0-12 pH 0 to 80°C HT3 | 1 |
| 1038902 | Sensor CLB2-uA-5ppm | 1 |
| BAMAEU222XXF01X000101EN | Probe Holder with Flow switch | 1 |
| A04001289 | 2 core cable | 1 |
| PA07221061 | PVC 1/2" to 8x5 mm | 1 |
| A25251004 | PE tube 25m 8 x 5mm | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

DCC600 pH/CI POOL CONTROL SYSTEM

| Part No. | Description | |
|-------------------------|---------------------------------------|---|
| DCCaW006PR0010EN | Compact Controller pH/ORP | 1 |
| DCCAW006C00010EN | Compact Controller Chlorine | 1 |
| PA31003612 | CO2 Flow Regulator Assembly | 1 |
| PA09751676 | CO2 Injection Assembly | 1 |
| 1024105 | Probe cable | 1 |
| SP100-4330-DH | Sensor pH 0-12 pH 0 to 80°C HT3 glass | 1 |
| 1038902 | Sensor CLB2-uA-5ppm | 1 |
| BAMAEU222XXF01X000101EN | Probe Holder with Flow switch | 1 |
| A04001289 | 2 core cable | 1 |
| PA07221061 | PVC 1/2" to 8x5 mm | 1 |
| A25251004 | PE tube 25m 8 x 5mm | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

Options

| | Part No. |
|---|------------|
| 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. | PA55003052 |
| 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. | PA55003540 |
| 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. | PA55003541 |
| 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. | PA55003055 |
| 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. | PA55003542 |
| 240 volt relay switched output for control of other equipment. This includes 1 relay with GPO mounted on the backboard and into the instrument. | PA55003543 |



6.3 Pool Packages QUICK START diaLog

Quick Start Guide

| VERSION | PH | ORP | CLE3 | CGE3 | CTE3 | CAA | CO ₂ |
|-----------|----|-----|------|------|------|-----|-----------------|
| diaLog300 | X | X | | | | | |
| diaLog400 | X | X | | | | | X |
| diaLog500 | X | | X | | | | |
| diaLog510 | X | X | X | | | | |
| diaLog520 | X | | X | | X | | |
| diaLog540 | X | | X | | | X | |
| diaLog550 | X | X | | | | X | |
| diaLog600 | X | | X | | | | X |
| diaLog610 | X | X | X | | | | X |
| diaLog620 | X | | X | | X | | X |
| diaLog640 | X | | X | | | X | X |
| diaLog650 | X | X | | | | X | X |
| diaLog700 | X | | | X | | | |
| diaLog710 | X | X | | X | | | |
| diaLog720 | | | | X | X | | |
| diaLog740 | X | | | X | | X | |
| diaLog800 | X | | | X | | | X |
| diaLog810 | X | X | | X | | | X |
| diaLog820 | | | | X | X | | |
| diaLog840 | X | | | X | | X | X |

GOLD System

Salt Water Chlorinators

| VERSION | PH | ORP-GOLD | CLE3 | CGE-GOLD | CAA | CO ₂ |
|------------|----|----------|------|----------|-----|-----------------|
| diaLog550G | X | X | | | X | |
| diaLog650G | X | X | | | X | X |
| diaLog710G | X | X | | | X | |
| diaLog810G | X | X | | X | | X |



6.4 Pool Packages diaLog pH/Cl₂

diaLog300 pH/ORP POOL CONTROL SYSTEM

| Part No. | Description | |
|-------------------------|---|---|
| DACBW006VV04000010010EN | DiaLog 2 Channel Pool Controller | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU222XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | Buffer Solution pH7 | 1 |
| 506251 | Buffer Solution pH4 | 1 |

Note: All mounted on backboard.

diaLog400 pH/ORP POOL CONTROL SYSTEM

| Part No. | Description | |
|-------------------------|---|---|
| DACBW006VV04000010010EN | DiaLog 2 Channel Pool Controller | 1 |
| PA31003612 | CO2 Flow Regulator 25lt/min | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU222XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 2 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | Buffer Solution pH7 | 1 |
| 506251 | Buffer Solution pH4 | 1 |

Note: All mounted on backboard.

diaLog500 pH/Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA00000010010EN | diaLog pH/Chlorine Controller | 1 |
| 792919 | Chlorine sensor CLE3-mA-10 ppm | 1 |
| SP100-4330-DH | pH probe | 1 |
| BAMAEU2211XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Probe cable | 1 |
| PA07221061 | 1/2"to 8 x 5 PVC adaptor | 1 |
| A25251004 | 8 x 5mm LDPE tubing - 25m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

DX adder Adds DULCONNEX to DACb pool packages. Includes LAN, Gateway & 12 month subscription
 - Subscription included
 - Customer to provide Wi- Fi

On request DX Gateway IPC. Provides DULCOnneX to DACb and Device Access to DACb web interface.



6.4 Pool Packages diaLog pH/Cl₂

diaLog600 pH/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA00000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| PA31003612 | CO2 Flow Regulator 25lt/min | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| BAMAEU2211XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog700 pH/Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA000000010010EN | diaLog pH/Chlorine Controller | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | pH probe | 1 |
| BAMAEU2211XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Probe cable | 1 |
| PA07221061 | 1/2"to 8 x 5 PVC adaptor | 1 |
| A25251004 | 8 x 5mm LDPE tubing - 25m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog800 pH/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA00000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| PA31003612 | CO2 Flow Regulator 25lt/min | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| BAMAEU2211XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.4 Pool Packages diaLog pH/Cl₂

diaLog510 pH/ORP/Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog520 pH/Cl₂/Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| 740684 | Sensor CTE 10 ppm | 1 |
| BAMAEU2212XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25m | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog540 pH /Cl₂/CAA POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 1081545-10 | Conductivity Sensor 0-10000uS | 1 |
| BAMAEU2212XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25m | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.4 Pool Packages diaLog pH/Cl₂

diaLog550 pH /ORP/CAA POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| 1081545-10 | Conductivity Sensor 0-10000uS | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog610 pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog620 pH/Cl₂/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator MkII | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| 740684 | Sensor CTE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.4 Pool Packages diaLog pH/Cl₂

diaLog640 pH/Cl₂/CAA/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 1081545-10 | Conductivity Probe | 1 |
| 792919 | Sensor CLE 10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| BAMAEU2212XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog650 pH/ORP/CAA/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 1081545-10 | Conductivity Sensor 0-10000uS | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog710 pH/ORP/Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA0000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.4 Pool Packages diaLog pH/Cl₂

diaLog740 pH/Cl₂/CAA POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA4000010010EN | diaLog 3 Channel Controller | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | pH probe | 1 |
| 1081545-10 | Conductivity Probe | 1 |
| BAMAEU2212XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Probe cable | 1 |
| A25251004 | 8 x 5mm LDPE tubing - 25m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog810 pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA0000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| SP100-4PB0-DH | Sensor ORP | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog840 PH/CL₂/CAA/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA4000010010EN | diaLog 3 Channel Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 1047975 | Chlorine sensor CGE3 | 1 |
| SP100-4330-DH | pH probe | 1 |
| 1081545-10 | Conductivity Probe | 1 |
| BAMAEU2212XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Probe cable | 1 |
| A25251004 | 8 x 5mm LDPE tubing - 25m | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 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 | DiaLog 3 Channel Pool Controller | 1 |
| 1081545-10 | Conductivity Sensor 0-10000uS | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 1003875 | Sensor ORP RHEP-Au | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog650G pH/ORP/CAA/CO2 POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACBW006VA4000010010EN | DiaLog 3 Channel Pool Controller | 1 |
| PA31003612 | CO2 Flow Regulator 25lt/min | 1 |
| 1081545-10 | Conductivity Sensor 0-10000uS | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 1003875 | Sensor ORP RHEP-Au | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 2 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |

diaLog710G pH/ORP /Cl₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA0000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| 1047975 | Chlorine sensor CGE3-mA-10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 1003875 | Sensor ORP RHEP-Au | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.5 Pool Packages diaLog pH/Cl₂ GOLD Systems special for Salt Chlorinator

diaLog810G pH/ORP/Cl₂/CO₂ POOL CONTROL SYSTEM

| Part No. | Description | |
|--------------------------|---|---|
| DACbW006VA0000010010EN | DiaLog Dual Channel Pool Controller | 1 |
| PA31003612 | CO ₂ Flow Regulator 25lt/min | 1 |
| 1047975 | Chlorine sensor CGE3-mA-10 ppm | 1 |
| SP100-4330-DH | Sensor pH | 1 |
| 1003875 | Sensor ORP RHEP-Au | 1 |
| BAMAEU2221XXF01X000000EN | Probe holder, filter & flow switch assembly | 1 |
| 1024105 | Cable Coax | 1 |
| 724009 | Cable Power 2M | 1 |
| A350D3402 | Backboard 600x600 LDPE | 1 |
| PA07221061 | Adaptor PVC 1/2" - 8x5 | 1 |
| A25251004 | Tubing 8x5 25M | 1 |
| 506253 | pH 7 buffer | 1 |
| 506251 | pH 4 buffer | 1 |



6.6 DULCOMARIN 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 CGE 3-CAN-10 ppm | 1047977 |
| Chlorine sensor CBR 1-CAN-10 ppm | 1122056 |
| Chlorine sensor CTE 2-CAN-10 ppm | 1136030 |
| Chlorine sensor CTE 3-CAN-10 ppm | 1136031 |
| 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 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 220 mV, 50 ml | 506244 |
| Buffer solution pH 4.0 - red, 50 ml | 506251 |
| Buffer solution pH 7.0 - green, 50 ml | 506253 |
| Buffer solution pH 10.0 - blue, 50 ml | 506255 |
| Buffer solution 475 mV, 500 ml | A52003630 |



6.7 DULCONNEX Package for DACb

| | Part No. |
|---|-------------------|
| DX ADDER - DULCONNEX Add on Kit for DACb | PA51003580 |
| Adds DULCONNEX to DACb pool packages. Includes LAN & DX Gateway. & 12 month subscription Subscription included @ \$30 / month Customer to provide Wi- Fi Contractor subscription discount \$10 / 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] | |



6.8 Identity Code for Industrial Backboard Package

IBP Industrial Backboard Package

| Controller Type | |
|-----------------|-----------------------|
| DCC | Compact Controller |
| D1C | D1CB Controller |
| DAC | Dialog 2 or 3 Channel |
| DCP | Dulcomarin 3 |

| | |
|----------|-------------------|
| 1 | 240 volt |
| 2 | 24 volt (no lead) |

| Board Size | |
|------------|-----------------------------|
| 1 | 600 x 500 |
| 2 | 600 x 600 |
| 3 | 600 x 750 |
| 4 | 748 x 748 |
| 5 | 750 x 900 (non Stock Board) |

| 1st Sample Line | |
|-----------------|----------------|
| 1 | BAMA 1 Sensor |
| 2 | BAMA 2 Sensors |
| 3 | BAMA 3 Sensors |
| 4 | BAMA 4 Sensors |
| 5 | DLG5 1 Sensor |
| 6 | DLG5 2 Sensors |
| 7 | DLG5 3 Sensors |

| 2nd Sample Line | |
|-----------------|----------------|
| 0 | None |
| 1 | BAMA 1 Sensor |
| 2 | BAMA 2 Sensors |
| 3 | DLG5 1 Sensor |
| 4 | DLG5 2 Sensors |

| 3rd Sample Line | |
|-----------------|---------------|
| 0 | None |
| 1 | BAMA 1 Sensor |
| 2 | DLG5 1 Sensor |

| Flow Monitor | |
|--------------|---------------|
| 0 | None |
| 1 | BAMA 25l/hr |
| 2 | BAMA 50l/hr |
| 3 | BAMA 100l/hr |
| 4 | GEMU for DLG5 |

| Filter | |
|----------|---------------------------|
| 0 | None (Standard for DLG 5) |
| 1 | BAMA Only |

| Flow Limiter | |
|--------------|--------|
| 0 | None |
| 1 | 12 l/h |
| 2 | 54 l/h |

| | | | | | | | | | |
|------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|
| IBP | DCC | 1 | 2 | 2 | 0 | 0 | 2 | 1 | 0 |
|------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|

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.



6.9 D1Cb Industrial Sub Assemblies FOR REFERENCE ONLY

D1CB SUB-ASSEMBLIES - INDUSTRIAL BACKBOARD PACKAGE

Identcode
IBPDIC11100100
with D1CBW00601000VC1011G00EN

| Item | Part No. | | Qty |
|------|--------------------------|-------------------------|-----|
| 1 | BAMAEU12X1XX001X000000EN | BAMA Sensor Holder | 1 |
| 2 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 3 | A35082644 | 600h x500w Backboard | 1 |
| 4 | PROMLABEL150 | ProMinent Label 150mm | 1 |
| 5 | 724009 | Power Cable | 1 |

Identcode
IBPD1C12500400
with D1CBW00601000VC1011G00EN

| Item | Part No. | | Qty |
|------|------------|----------------------------|-----|
| 1 | PA03002885 | by-pass sensor holder DLG5 | 1 |
| 2 | A07051045 | Bracket | 1 |
| 3 | I257000Z | Flowswitch | 1 |
| 4 | PA07221061 | Adaptor PVC 1/2" to 8x5 mm | 1 |
| 5 | A01721802 | 5m, 16mm braided hose | 5m |
| 6 | A25D3402 | 600 x 600 Backboard | 1 |



6.9 diaLog Industrial Sub Assemblies FOR REFERENCE ONLY

DIALOG SUB-ASSEMBLIES - INDUSTRIAL BACKBOARD PACKAGE

Identcode
IBPDAC12100100
with DACBW006AA0000010010

| Item | Part No. | | Qty |
|------|--------------|---------------------------|-----|
| 1 | PA07221061 | 1/2" to 8x5mm Adaptor PVC | 1 |
| 2 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 3 | PROMLABEL150 | ProMinent Label 150mm | 1 |
| 4 | 724009 | Power Cable | 1 |
| 5 | A25003402 | | 1 |

Identcode
IBPDAC12200200
with DACBW006VA0000010010

| Item | Part No. | | Qty |
|------|--------------------------|---------------------------|-----|
| 1 | BAMAEU2211XXX01X000000EN | Controller | 1 |
| 2 | 1024105 | Coax Cable 0.8M Sn6 | 1 |
| 3 | PA07221061 | 1/2" to 8x5mm Adaptor PVC | 1 |
| 4 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 5 | PROMLABEL150 | ProMinent Label 150mm | 1 |
| 6 | 724009 | Power Cable | 1 |
| 5 | A25003402 | | 1 |

Identcode
IBPDAC12100100
with DACBW006VA0000010010EN

| Item | Part No. | Description | Qty |
|------|--------------------------|---------------------------|-----|
| 1 | BAMAEU12X1XX001X000000EN | Sensor Holder | 1 |
| 2 | PA07221061 | 1/2" to 8x5mm Adaptor PVC | 1 |
| 3 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 4 | PROMLABEL150 | ProMinent Label 150mm | 1 |
| 5 | 724009 | Power Cable | 1 |

Identcode
IBPDAC22100200
with DACBW004AA0000010010

| Item | Part No. | Description | Qty |
|------|--------------------------|---------------------------|-----|
| 1 | BAMAEU2211XXX01X000000EN | Sensor Holder | 1 |
| 2 | PA07221061 | 1/2" to 8x5mm Adaptor PVC | 1 |
| 3 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 4 | PROMLABEL150 | ProMinent Label 150mm | 1 |



6.9 diaLog Industrial Sub Assemblies FOR REFERENCE ONLY

Identcode

IBPDAC22100200

with DACBW004AA4000010010

| Item | Part No. | Description | Qty |
|------|--------------------------|---------------------------|-----|
| 1 | BAMAEU221XXX001X000000EN | Sensor Holder | 1 |
| 2 | PA07221061 | 1/2" to 8x5mm Adaptor PVC | 1 |
| 3 | A25251004 | 8x5mm PE tube 25mm Roll | 1 |
| 4 | PROMLABEL150 | ProMinent Label 150mm | 1 |

Identcode

IBPDAC12600400

with DACBW006AA0000010010

| Item | Part No. | Description | Qty |
|------|--------------|-----------------------------|-----|
| 3 | PA03003388 | DLG5 for 2 x mA sensors | 1 |
| 4 | 86515T | Gemu Rotameter | 1 |
| 5 | 125000Z | Rotameter Switch | 1 |
| 8 | A01721802 | 16mm Braided Hose | 2 |
| 9 | A250D3402 | 600mm x 600mm Backboard Mtd | 1 |
| 10 | 161-546-212 | 1/2" PVC Ball Valve GF | 1 |
| 11 | 721-101-106 | 1/2" 90 deg PVC elbow | 1 |
| 12 | | 1/2" Schdule 80 pipe | 1 |
| 13 | PromLabel150 | 150mm ProMinent Label | 1 |



Identcode

IBPDAC12600400

with DACBW006AA4000010010

| Item | Part No. | Description | Qty |
|------|--------------|-------------------------|-----|
| 3 | PA03003388 | DLG5 for 2 x mA sensors | 1 |
| 4 | 86515T | Gemu Rotameter | 1 |
| 5 | 125000Z | Rotameter Switch | 1 |
| 6 | | tp M20x1.5mm | 1 |
| 7 | | PE tubing | 1 |
| 8 | A01721802 | 16mm Braided Hose | 2 |
| 9 | A250D3402 | 600mm x 600mm | |
| 10 | | Backboard Mounted | 1 |
| 11 | 161-546-212 | 1/2" PVC Ball Valve GF | 1 |
| 12 | 721-101-106 | 1/2" 90 deg PVC elbow | 2 |
| 13 | | 1/2" Schdule 80 pipe | 1 |
| 14 | PromLabel150 | 150mm ProMinent Label | 1 |



6.10 ProCal Granular Calcium Hypochlorite Feeder

ProCal 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 | 1,000,000 litres |

ProCal Spare Parts

Part No.

| | |
|----------------|--|
| 24530750 | Waterco Boost Pump |
| AQUCHL2-5-055D | 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 |
| PA51003509 | Service Kit Minor [12 months] |
| PA51003510 | Service Kit Major [3-5 years] |
| PA59023621 | Suction Manifold/Strainer |



275PS Pump (no fittings included)



PA28003028



PA55023125



6.11 ProCal mini Granual Hypochlorite 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



6.12 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

Capacity

- Up to 2.5kg/h Cl₂ as a 0.5% solution

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

Storage Tank

- 250L UV stabilised PE tank
- Chemically resistant Halar coated stirrer
- Manual 3-way valve to initiate acid clean
- All necessary interlocks



7.0 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 splitter 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



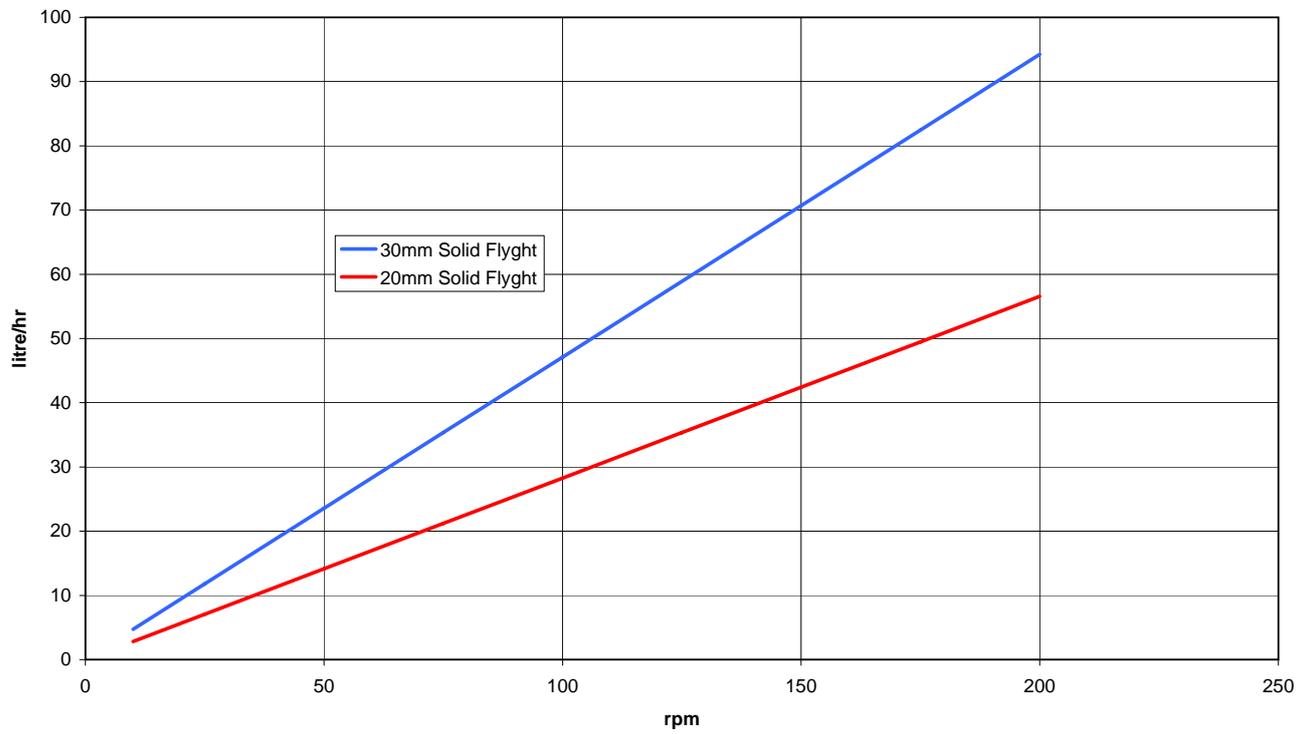
Pneumatic slidegate



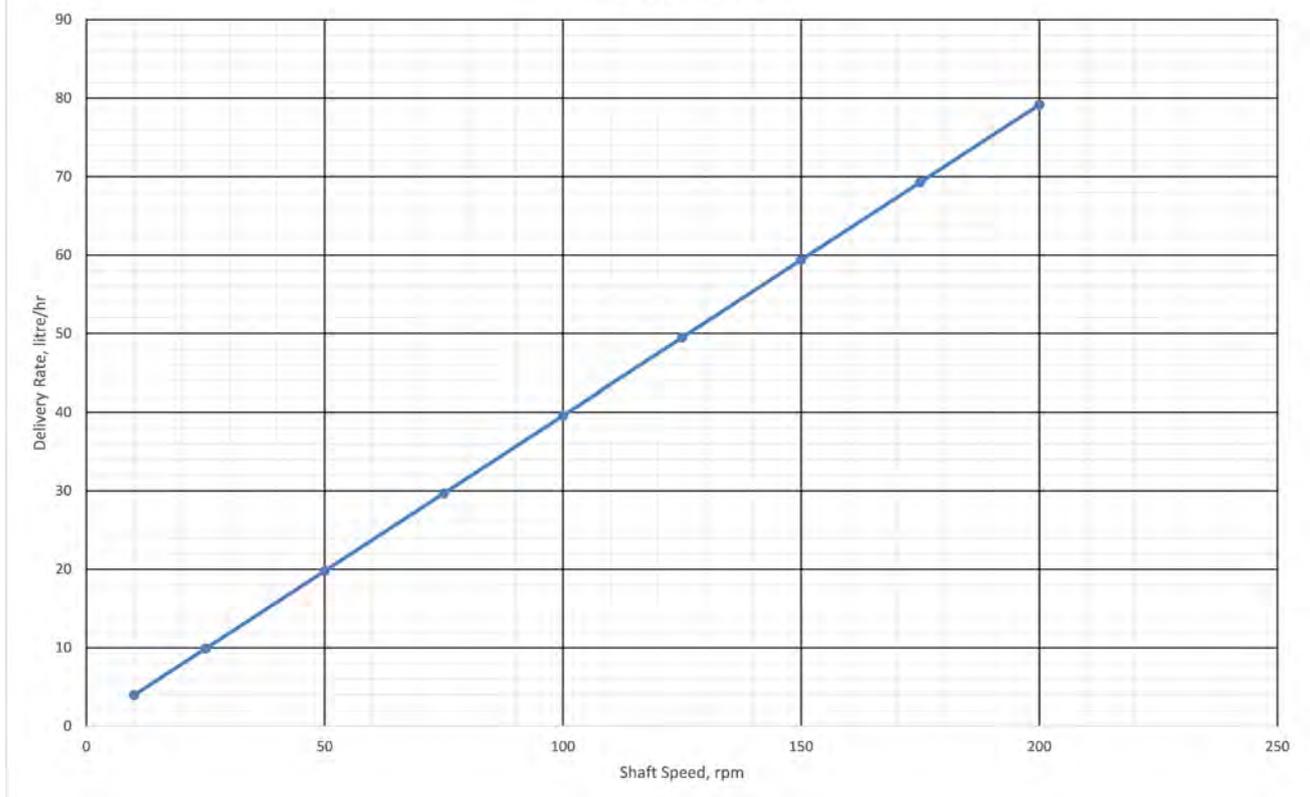
Feeder D series

7.1 Dry Material Feeder Charts

Feeder Delivery Rate vs rpm

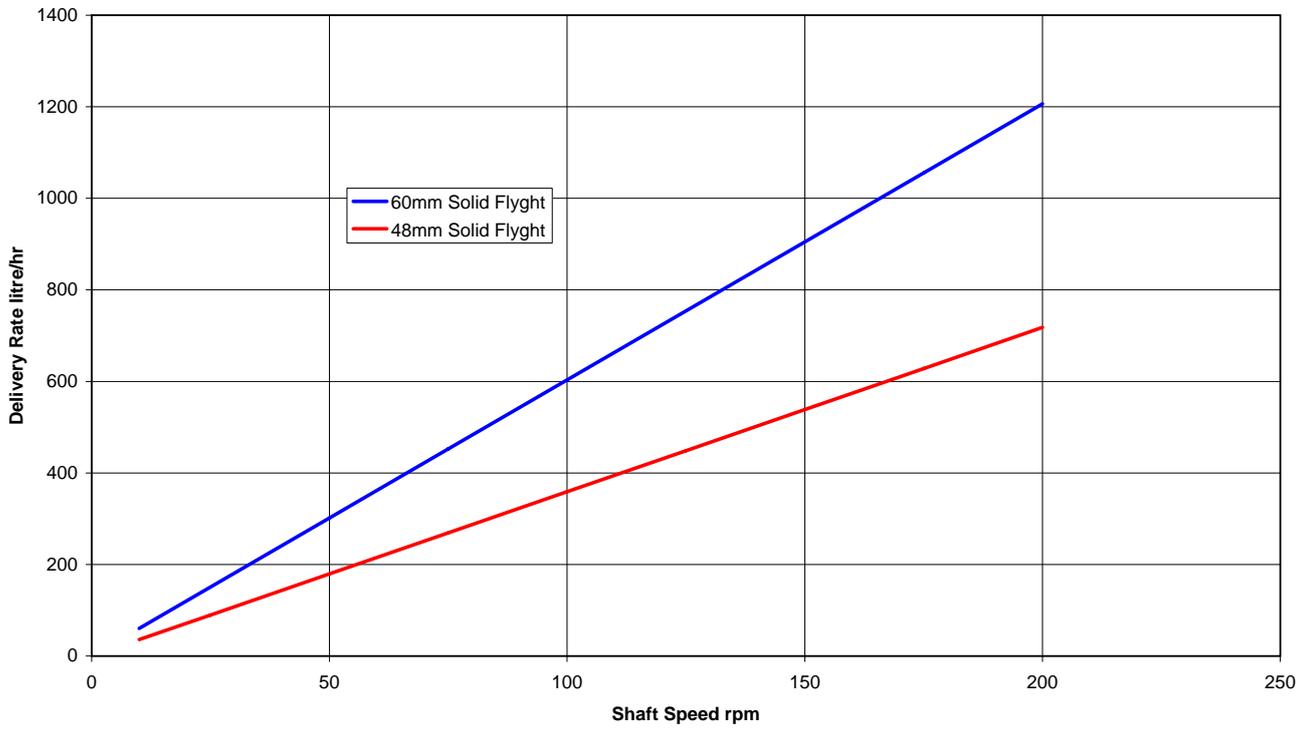


25mm Feeder Screw



7.1 Dry Material Feeder Charts

Feeder Delivery Rate vs RPM



7.2 Dry Material Feeders Identity Code

| Series | | Type | Feeder |
|--------|----|---|----------------|
| PF | PF | D Small Feeder Capacity to 450 l/hr. | |
| | | B Large Feeder Capacity to 1600 l/hr. | |
| | | Screw Size | |
| | | 020 20mm | PFD020A |
| | | 025 25mm <i>Solid Screw</i> | PFD025S |
| | | 030 30mm | PFD030A |
| | | 048 48mm | PFD048A |
| | | 060 60mm | PFD060A |
| | | 048 48mm <i>Solid Screw</i> | PFD048S |
| | | 060 60mm <i>Solid Screw</i> | PFD060S |
| | | 048 48mm <i>Solid Screw</i> | PFB048S |
| | | 100 100mm } <i>Series B only Solid Screw</i> | PFB100S |
| | | 150 150mm } <i>Series B only Solid Screw</i> | PFB150S |
| | | Screw | Options |
| | | A Open | |
| | | 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 <i>not available on B series</i> | |
| | | 0 Without Arms | |
| | | 1 With Arms | add |
| | | 2 With Arms for Hi-Compaction Material | add |
| | | Heater | |
| | | 0 Without Heater | Heater add |
| | | 1 With Heater <i>for Spout 240V 30W</i> | 025 |
| | | Gearbox Ratio | |
| | | 0010 10:1 | 030 |
| | | 0015 15:1 | 048 |
| | | 0020 20:1 | 060 |
| | | 0028 28:1 | 100 |
| | | 0035 35:1 | 150 |
| | | 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 <i>Standard on Series D & B</i> | |
| | | B IP55 6 pole <i>Optional</i> | add |
| | | C IP56 4 pole <i>Optional</i> | add |
| | | D IP56 6 pole <i>Optional</i> | add |
| | | F DIP rated 4 pole | add |
| | | Y No Motor | add |
| | | 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 AC VSD | |
| | | 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



7.3 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.

| | |
|--|-------------------------------|
| CONVERSION OF A-SERIES FEEDER TO D-SERIES FEEDER | Part No. PA28002708 |
| <i>A replacement type A drive shaft (A28041514) may be required, and requires customer to return the OLD feeder tub.</i> | |

| | |
|--|------------------------------|
| HOPPERS, IN 304 STAINLESS STEEL. | Part No. A28042534 |
| 60 litre <i>Standard size for D series feeder with flange to take Bag-Loader</i> | |

| 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 <i>for D series feeder</i> | A28002282 |
| 1000 mm high, stainless steel <i>for D series feeder</i> | A28002283 |
| Front pull bag splitting option for above | |
| <i>(This is for VERY limited applications. See Sydney office for approval)</i> | |

| | |
|--|-------------------|
| 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 <i>Note: an additional wash water of 480 l/hr is required for Wetting Cone</i> | P62EJECTOR |
| 2000 l/hr <i>Note: an additional wash water of 660 l/hr is required for Wetting Cone</i> | P63EJECTOR |
| 4000 l/hr <i>Note: an additional wash water of 660 l/hr is required for Wetting Cone</i> | 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

| | |
|---|-------------------|
| Bulky-Bag Loading systems (for PAC etc) | Part No. |
| 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.



7.3 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



7.4 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.

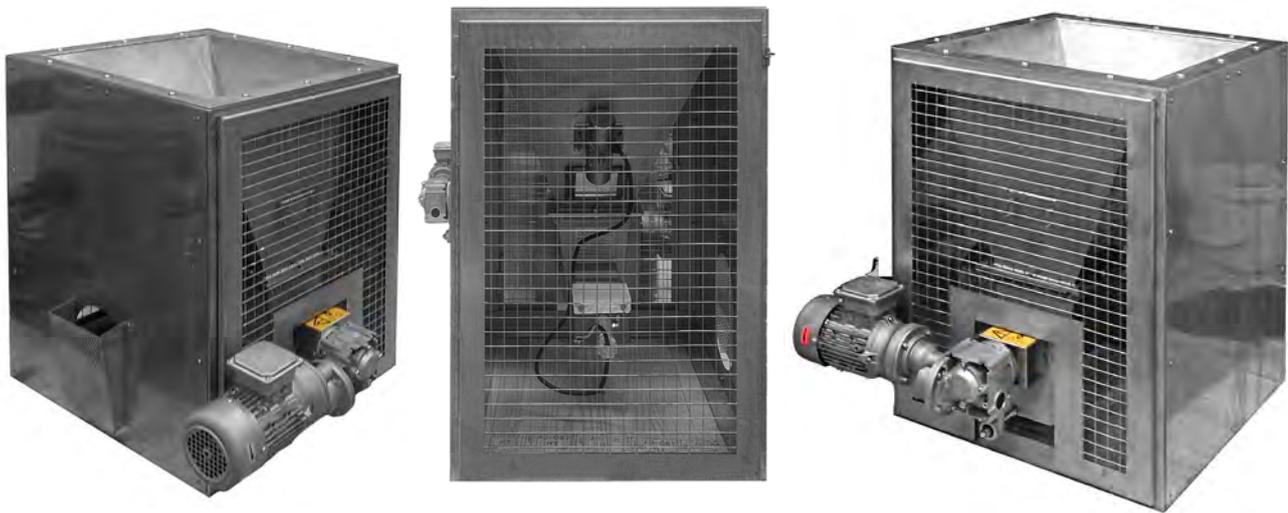
The ProFeed-690 stainless steel package comes with a hopper and supporting frame built to the same overall dimensions to provide a simple changeover solution. It will be supported by your existing solution tank and will accommodate your existing stirrer mounting.

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 SEWVF 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

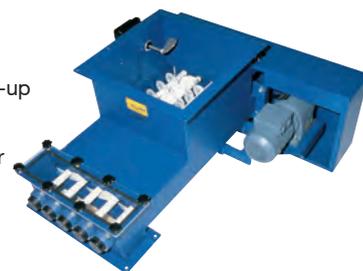
Solution tanks

7.5 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**



hydro Pages 2025

ProMinent®



www.prominentfluid.com.au

Hydro Pages 2025

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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)

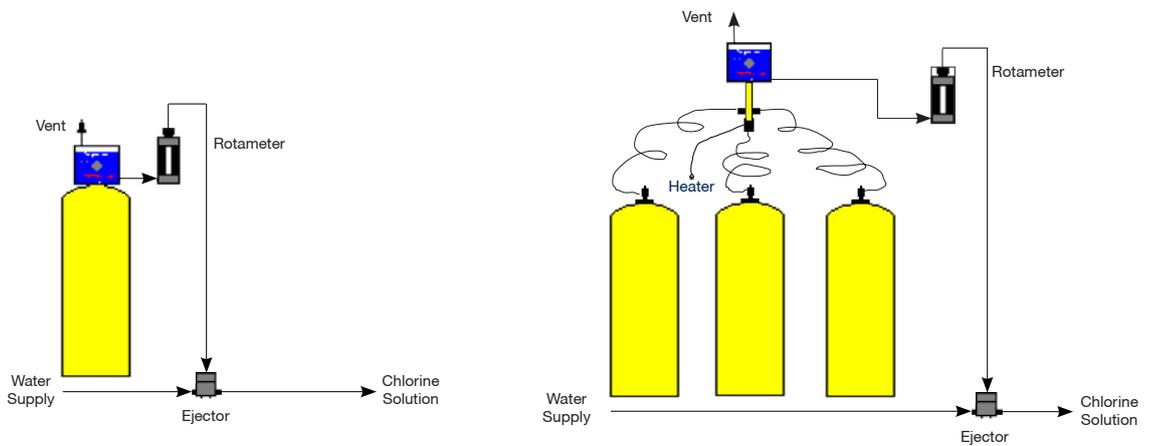
| Max Capacity | | PFC Part No. |
|--------------|--|--------------|
| 75 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 920C |
| 200 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 921C |
| 500 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 922C |
| 1000 g/h | 1 x Vacuum Regulator, 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 |
|--|------|

Up to 10 Kg/Hr Systems

| | |
|--|------|
| 1 x Vacuum Regulator, Remote Meter & Ejector | 990C |
|--|------|



In-Built Auto Changeover System (max 2 Vacuum Regulators) - 900 series

Up to 2 kg/hr systems (Note: header, heater, auxiliary valves & flexibles extra)

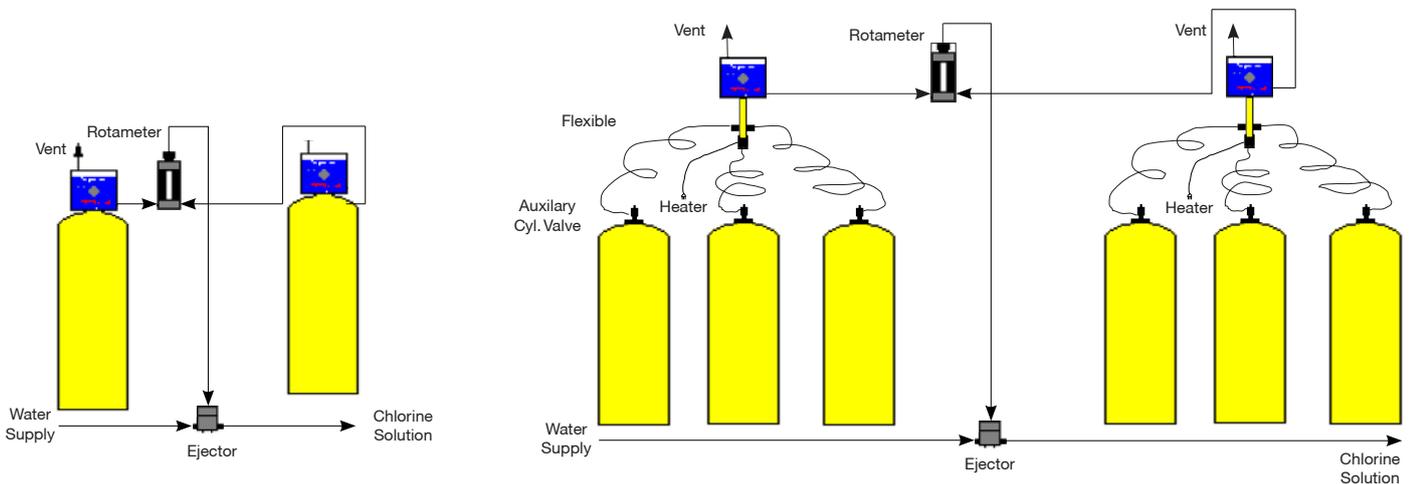
| | | |
|----------|--|------|
| 75 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 935C |
| 200 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 945C |
| 500 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 955C |
| 1000 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 965C |
| 2000 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 975C |

Up to 5 Kg/Hr Systems

| | |
|--|------|
| 2 x Vacuum Regulator, Remote Meter & Ejector | 985C |
|--|------|

Up to 10 Kg/Hr Systems

| | |
|--|------|
| 2 x Vacuum Regulator, Remote Meter & Ejector | 995C |
|--|------|



hydro Gas Chlorinators

900 Series with ejector, remote meter & accessories

TON Mounting - 900 series

Up to 2 kg/hr systems

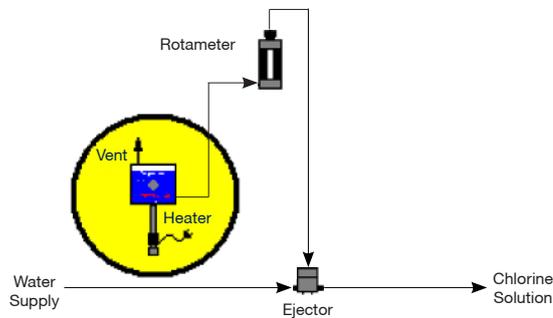
| Max Capacity | | PFC Part No. |
|--------------|--|--------------|
| 75 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 943C |
| 200 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 944C |
| 500 g/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 954C |
| 1000 g/h | 1 x Vacuum Regulator, 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 |
|--------|--|------|

up to 10 kg/hr systems

| | | |
|---------|--|------|
| 10 kg/h | 1 x Vacuum Regulator, Remote Meter & Ejector | 994C |
|---------|--|------|



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)

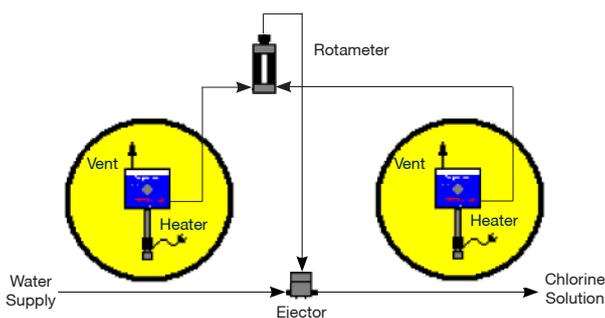
| | | |
|----------|--|------|
| 75 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 936C |
| 200 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 946C |
| 500 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 956C |
| 1000 g/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 966C |
| 2000 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 |
|--------|--|------|

In-Built Auto Changeover System (1 drum per side)

| | | |
|---------|--|------|
| 10 kg/h | 2 x Vacuum Regulator, Remote Meter & Ejector | 996C |
|---------|--|------|



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

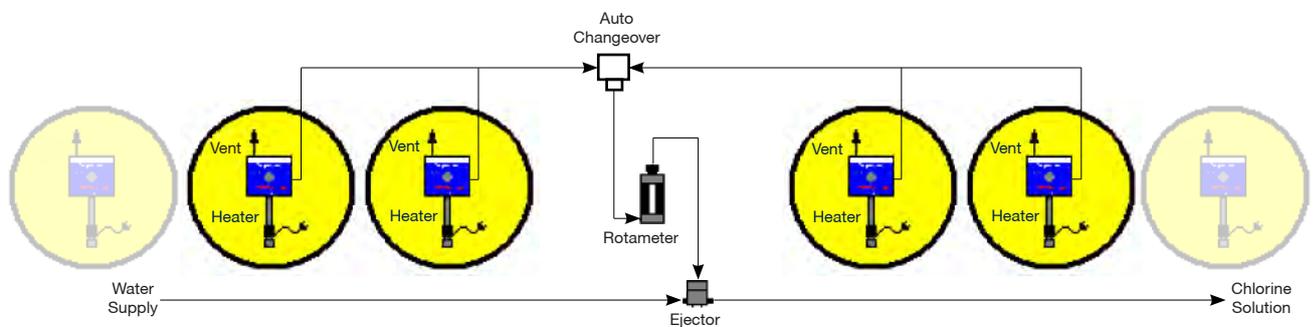
| | Part No. |
|--|-----------------|
| Auto Changeover System (2 drum per side) | 976C-2X2 |
| 2 kg/h 4 x Vacuum Regulator, 1 x Remote Meter, 1 x Auto Changeover & 1 x Ejector | |

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 Cl₂ in a drum at time of closedown. In this case use either;

- a) Header mounted vacuum regulator or
- b) 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 16



| | | PFC Part No. | |
|-----------------|--|----------------------|---------------|
| 2 kg/hr | Cyl. or wall mounting (0.2, 0.5, 1 or 2 kg/hr capacity) * <u>one 900 series</u> 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 series</u> vacuum regulators* | PA2400-FP965 | (965C+OV-110) |
| 5 kg/hr | Wall or Manifold mounting <u>one 900 series</u> vacuum regulator | PA2400-FP980 | (980C+OV-110) |
| 5 kg/hr | Wall mounting & in-built auto changeover. <u>two 900 series</u> vacuum regulators | PA2400-FP985 | (985C+OV-110) |
| 5 kg/hr | Ton mounting <u>one 900 series</u> vacuum regulator | PA2400-FPT981 | (981C+OV-110) |
| 5 kg/hr | Ton mounting & in-built auto changeover. <u>two 900 series</u> vacuum regulators | PA2400-FPT986 | (986C+OV-110) |
| 10 kg/hr | Ton mounting (10 kg/hr capacity) <u>one 900 series</u> vacuum regulator | PA2400-FP991 | (991C+OV-110) |
| 10 kg/hr | Ton mounting & in-built auto changeover. <u>two 900 series</u> 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-MS |
| 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 6" 75 g/hr | MPH-106-CL2-004 |
| Remote meter 6" 200 g/hr | MPH-106-CL2-010 |
| Remote meter 6" 500 g/hr | MPH-106-CL2-025 |
| Remote meter 6" 1000 g/hr | MPH-106-CL2-050 |
| Remote meter 6" 2000 g/hr | MPH-106-CL2-100 |
| Change Over Valve | SO1000 |

Up to 5 kg/hr systems

| | |
|-------------------------|-------------|
| Vacuum regulator | SVR-250-CL2 |
| Remote meter 6" 5 kg/hr | MPH-256-CL2 |
| Change Over Valve | SO2000 |

Up to 10 kg/hr systems

| | |
|--------------------------|-------------|
| Vacuum regulator | SVR-500-CL2 |
| Remote meter 6" 10 kg/hr | 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 6" 75 g/hr | MPH-106-CL2-004 |
| Remote meter 6" 200 g/hr | MPH-106-CL2-010 |
| Remote meter 6" 500 g/hr | MPH-106-CL2-025 |
| Remote meter 6" 1000 g/hr | MPH-106-CL2-050 |
| Remote meter 6" 2000 g/hr | MPH-106-CL2-100 |
| 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 6" 5 kg/hr | MPH-256-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 6" 10 kg/hr | MPH-500-CL2 |
| Change Over Valve | SO5000 |

Note: If ProGuard3800 is fitted to a TON mount vacuum regulator, the actuator offset is required.

Price additional for "-AW" is:

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 (Cl₂)
- S** Sulfur Dioxide (SO₂)

Nozzle

- 2** #2, 100 PPD (2000 gr/h) max. **STANDARD 1000 g/hr + 2000 g/hr** (0.186" orifice)
- 3** #3, 50 PPD (1000 gr/h) 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

EJ 1000 X 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

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 (NH₃)
- C** Chlorine (Cl₂)
- D** Carbon Dioxide (CO₂)
- S** Sulfur Dioxide (SO₂)

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 (NH₃) = 0.50
- Carbon Dioxide (CO₂) = 0.80
- Sulfur Dioxide (SO₂) = 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 | PA24122715 |
| TON Mounting 1 x Pneumatic cylinder and ratchet assembly with special bracket for mounting on each vacuum regulator. | Part B | PA24003538 |
| 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 \$164

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

- Power Supply 240VAC (Standard) - 12 or 24 VDC (Optional)
- 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 Protection

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.

| | |
|--|----------------------------|
| Model VRL-900 | PFC Part No. 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

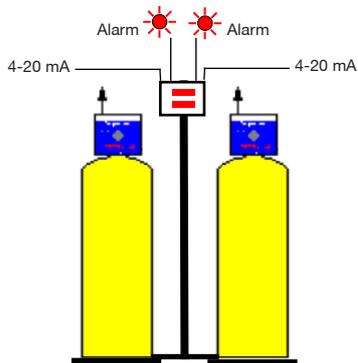
Accessories

Bottle & Drum Scales

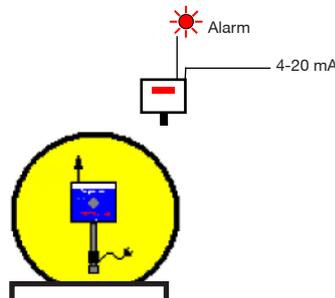
| | PFC Part No. |
|--|--------------|
| Single Cylinder scales with Digital Alarm and 4-20mA out incl. safety chains | PA24003377 |
| Dual Cylinder scales with Digital Alarm and 4-20mA out incl. safety chains | PA24003360 |
| EI1000 Single Chlorine Drum Scale with Digital Alarm and 4-20mA out | PA24003382 |
| 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) <i>Note: advise direction of wheels in relation to scale</i> | |

Safety Chains

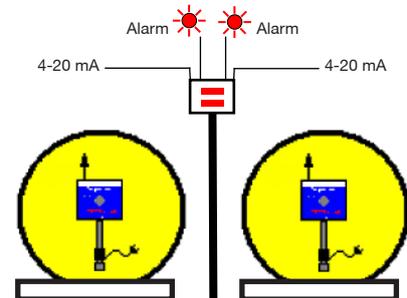
| | |
|--|------------|
| Safety Chains & Brackets Dual Cylinder | PA31001936 |
|--|------------|



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 |
|---|----------|---------|

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 |
|--|--|-----------|

This is for all for 200, 500, 700 & 900 series Ton mount vacuum regulators

Optional heater for header mounting, 24V AC, 25W c/w 240v transformer

| | | |
|--|--|------------|
| | | PA55052460 |
|--|--|------------|

Note: for second 24v heater there will be an additional charge (**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** Three (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:

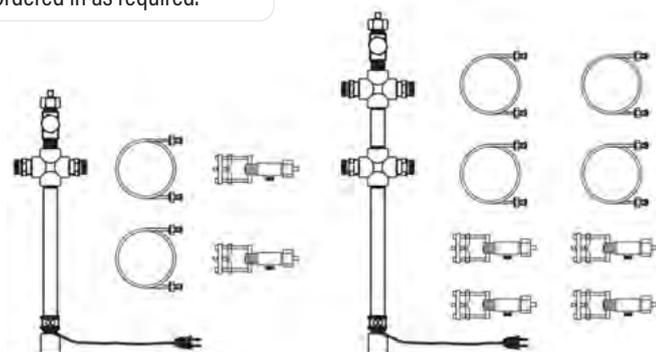
Pressure manifolds include a wall mounting installation kit.

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) |



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



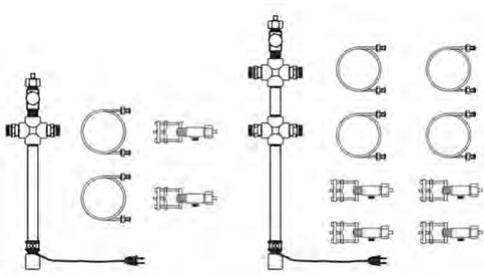
IVH-100-500
Auxillary Cylinder Valve



RH-6786
Chlorine manifold
Inline Strainer



PA-TUY-1
Universal Ton
Drip Leg



Vertical Header



VRH-2000-CL2
20-40 Vacuum Regulator



1214-B1
Chlorine Valve
for Horizontal Header



Horizontal Manifolds
with 1214-B1
Chlorine Valves



HTS-1 Twisted Spanner



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

Vacuum Monitor for Gas Chlorine 0 to -80KPa
24V AC/DC , 2 x Digital alarm outputs, 1 x 4-20mA output

| |
|-------------------|
| PA24003619 |
|-------------------|

***Note: MAXIMUM DISCOUNT 25%**

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 |

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 |

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 |
|-------------|---------------------------------------|

Omni-Valve

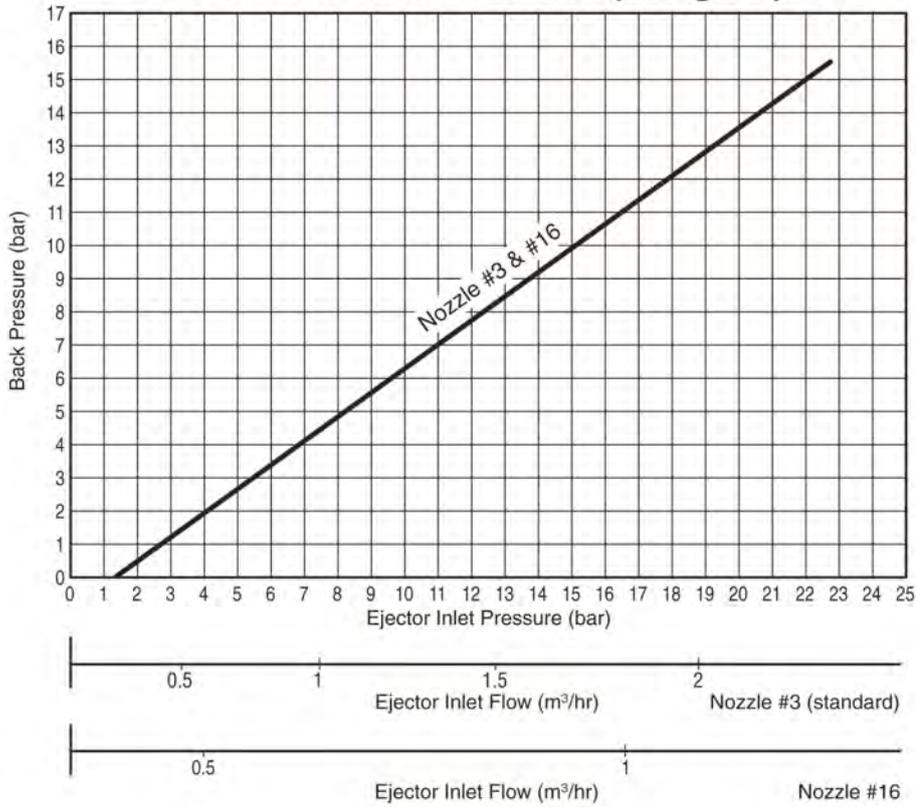
| | |
|------------|------------------------|
| KT1-100-OV | Omni-Valve 2 kg/hr |
| KT1-250-OV | Omni-Valve 5 kg/hr |
| KT1-500-OV | Omni-Valve 10 kg/hr |
| KT1-040-OV | Omni-Valve 20-40 kg/hr |

3000 series

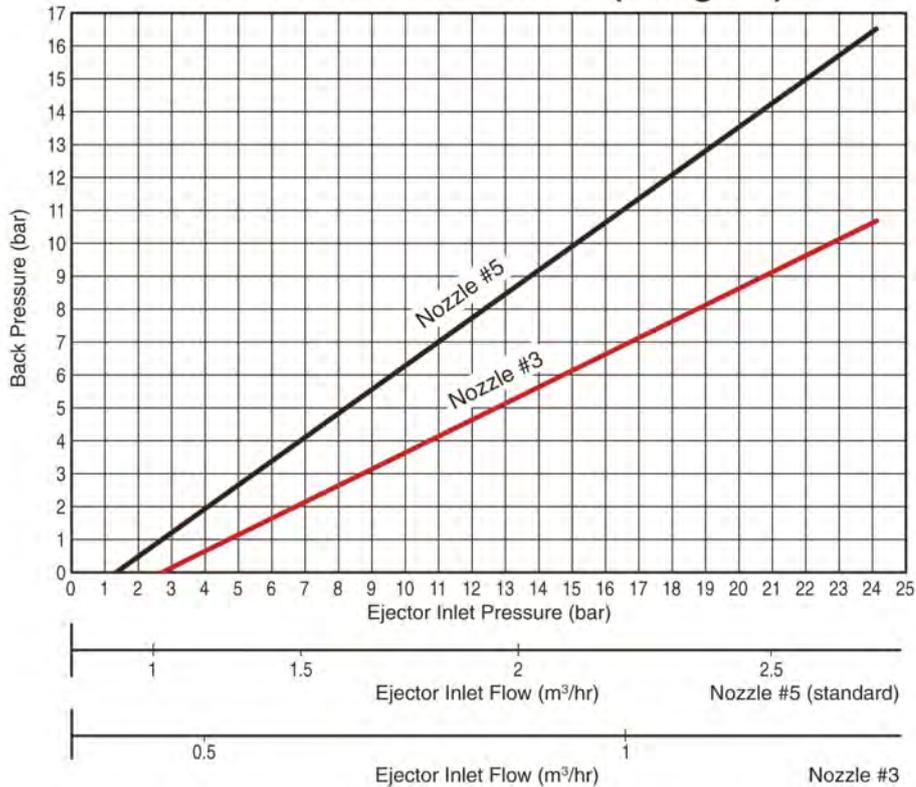
| | |
|--------------|--------------------------------|
| KTH-2000-VRW | 20-40 kg/hr VAC REG |
| KTH-2000-RMS | 20-40 kg/hr Rotameter |
| KTH-2000-EJS | 20-40 kg/hr Ejector |
| KTH-2000-SOM | 20-40 kg/hr Switch Over Module |

hydro Ejector Selection Chart EJ1000

NOZZLE SIZING CHART (200 gr/hr)



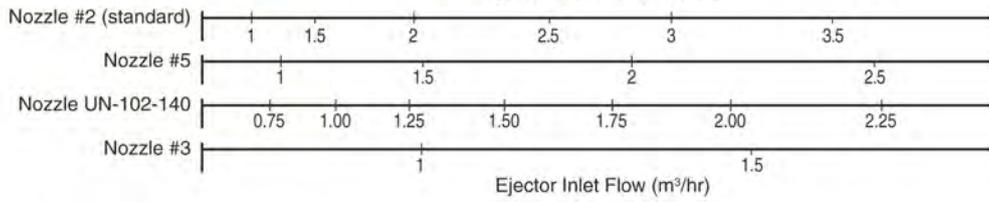
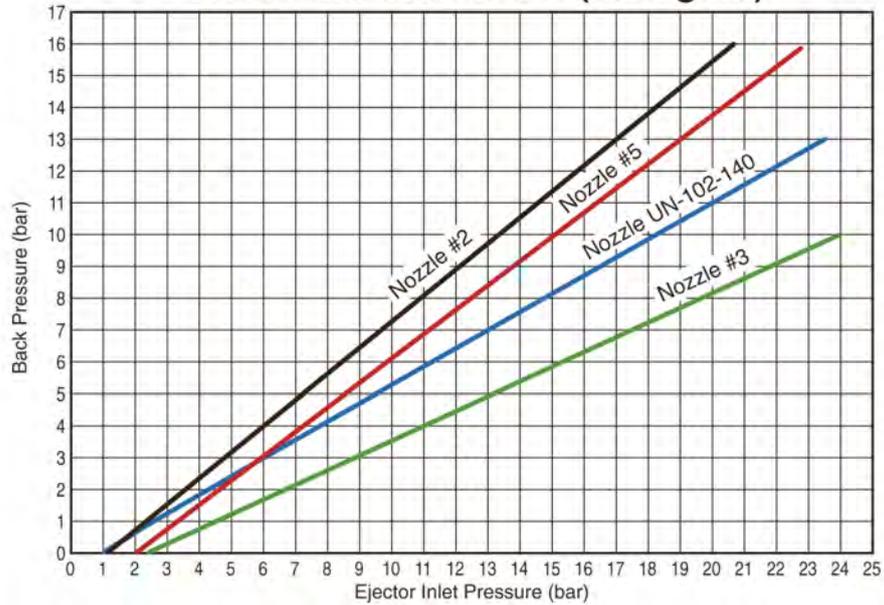
NOZZLE SIZING CHART (500 gr/hr)



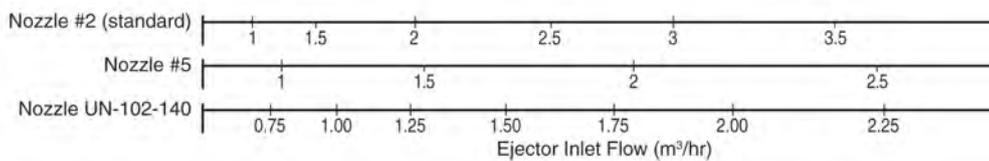
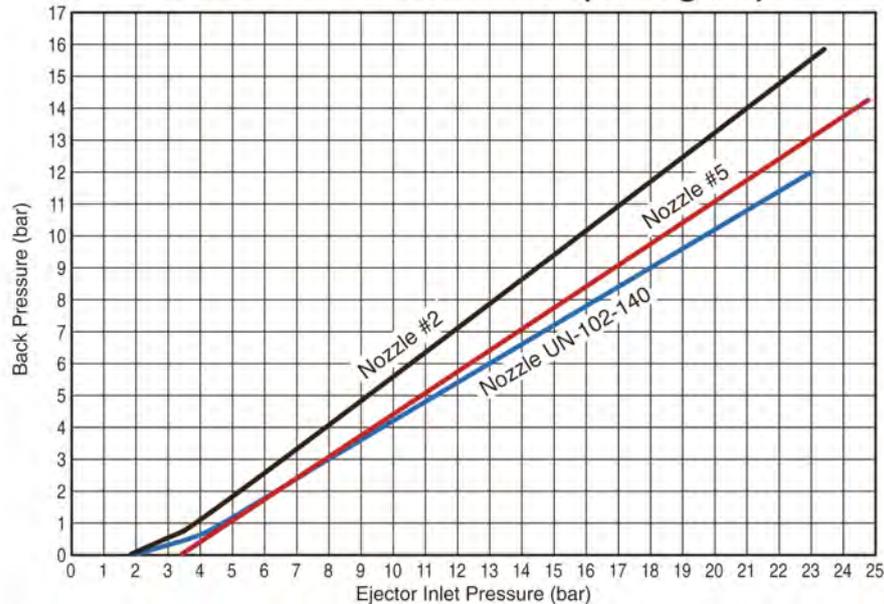
Note: Pressure combinations that plot below the line for any given nozzle are acceptable for operating that nozzle at the stated chemical feed rate for that chart. Pressure combinations that fall above the line for any given nozzle are not acceptable.

hydro Ejector Selection Chart EJ1000

NOZZLE SIZING CHART (1000 gr/hr)



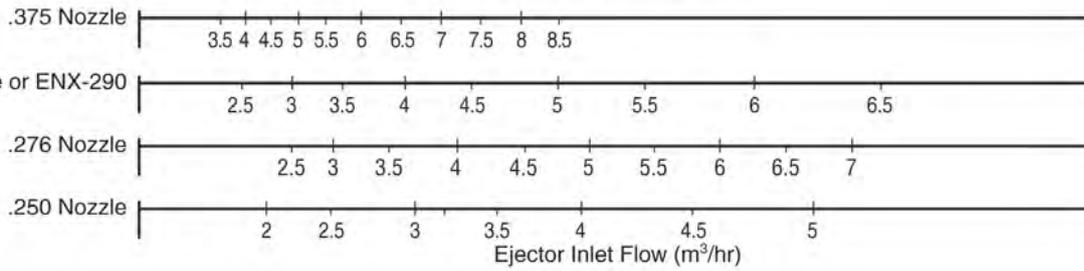
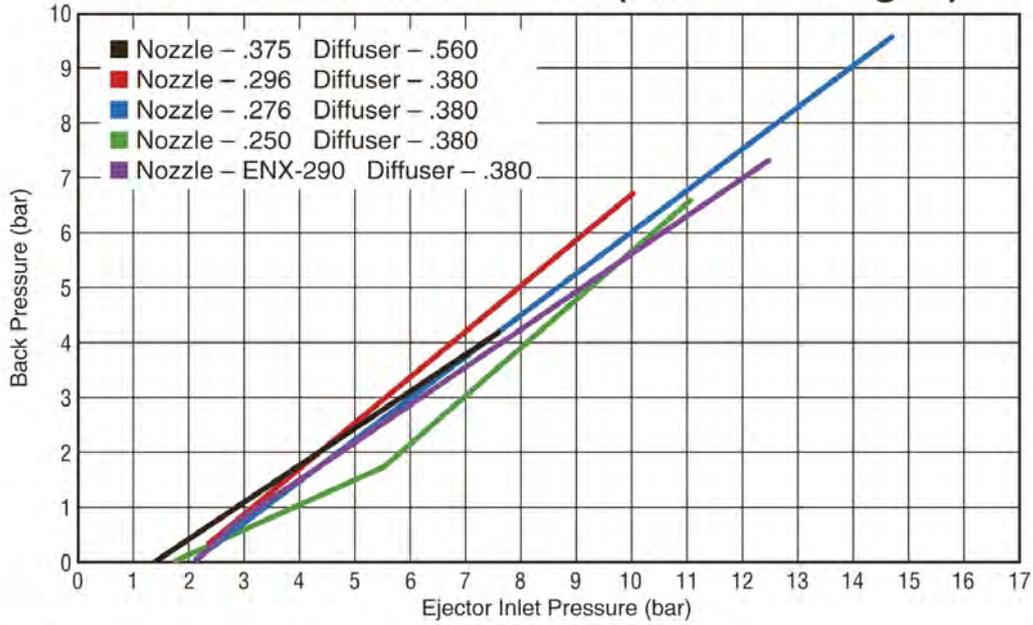
NOZZLE SIZING CHART (2000 gr/hr)



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

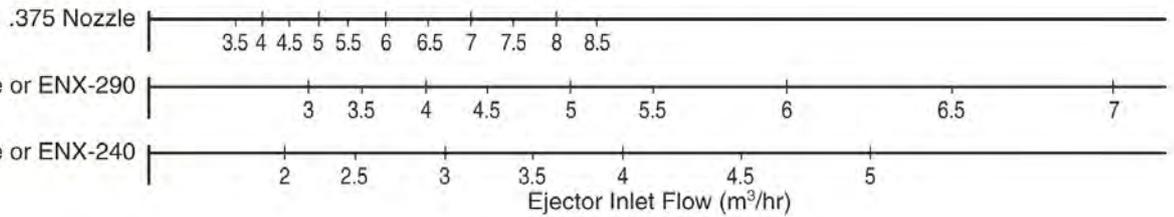
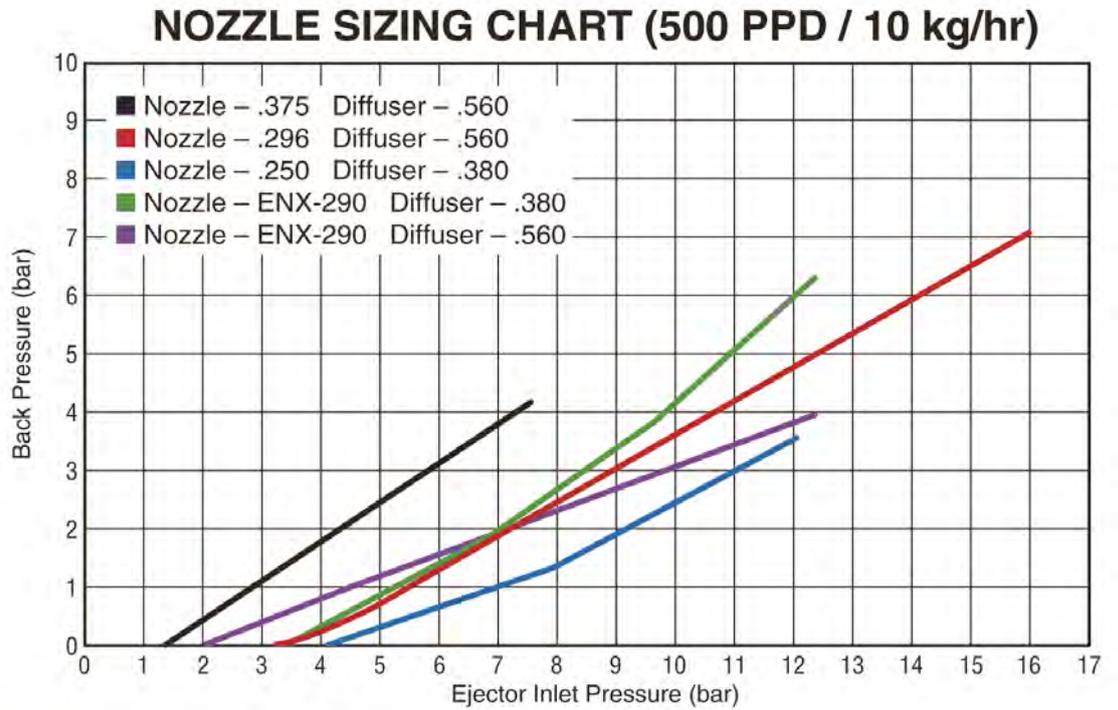
NOZZLE SIZING CHART (250 PPD / 5 kg/hr)



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

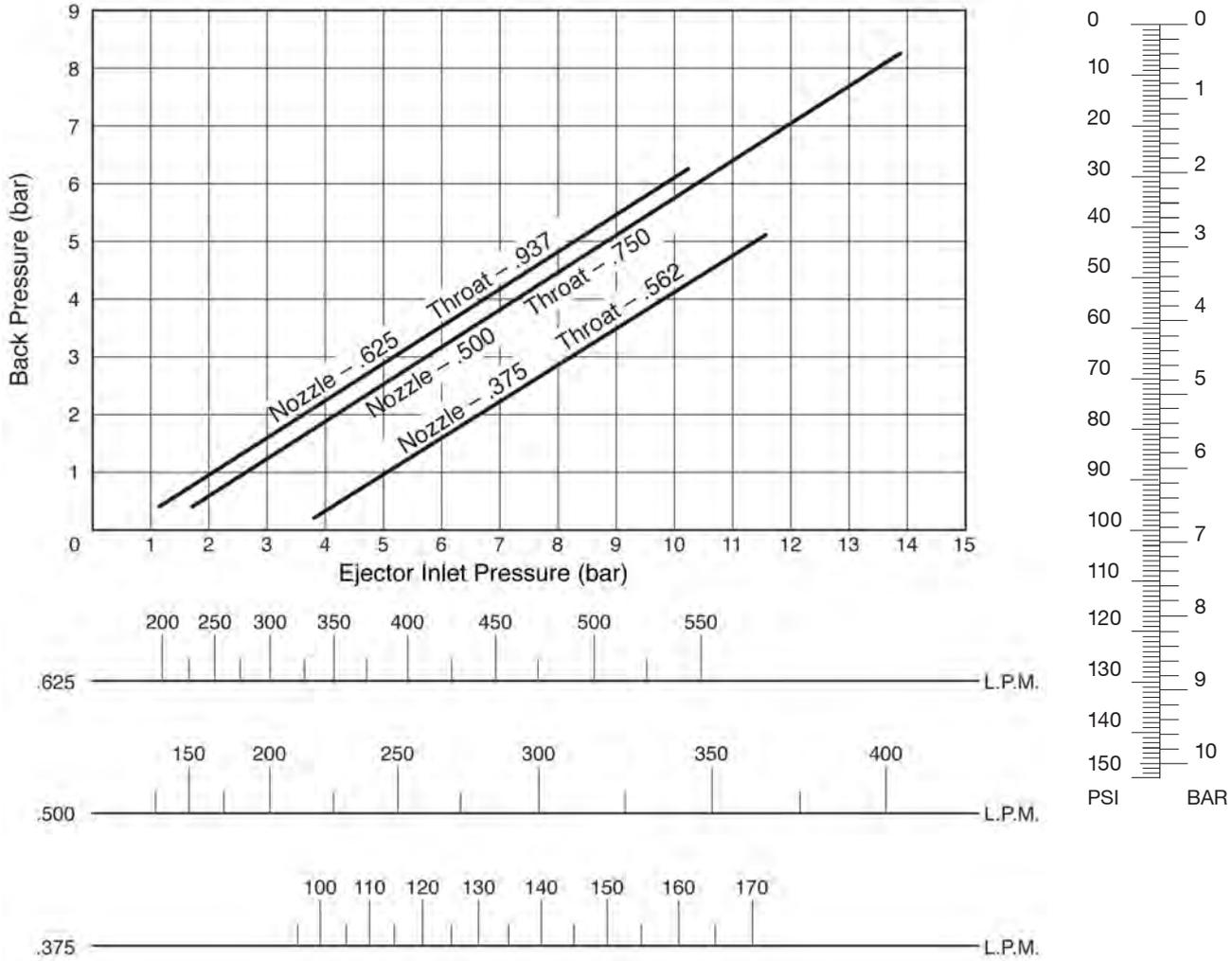


Conversion: US GPM to LPM x 3.7854

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

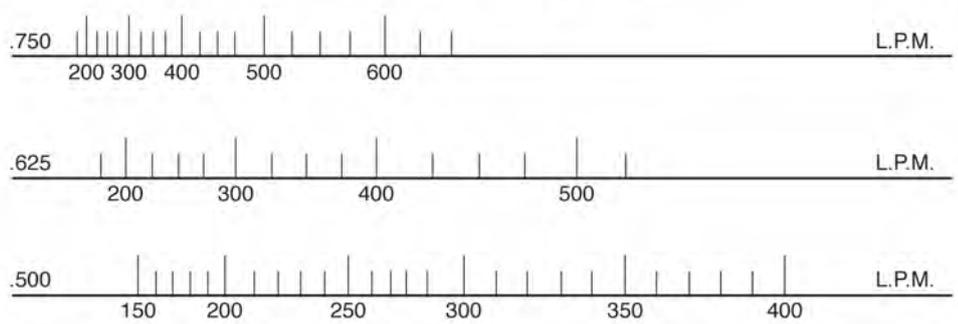
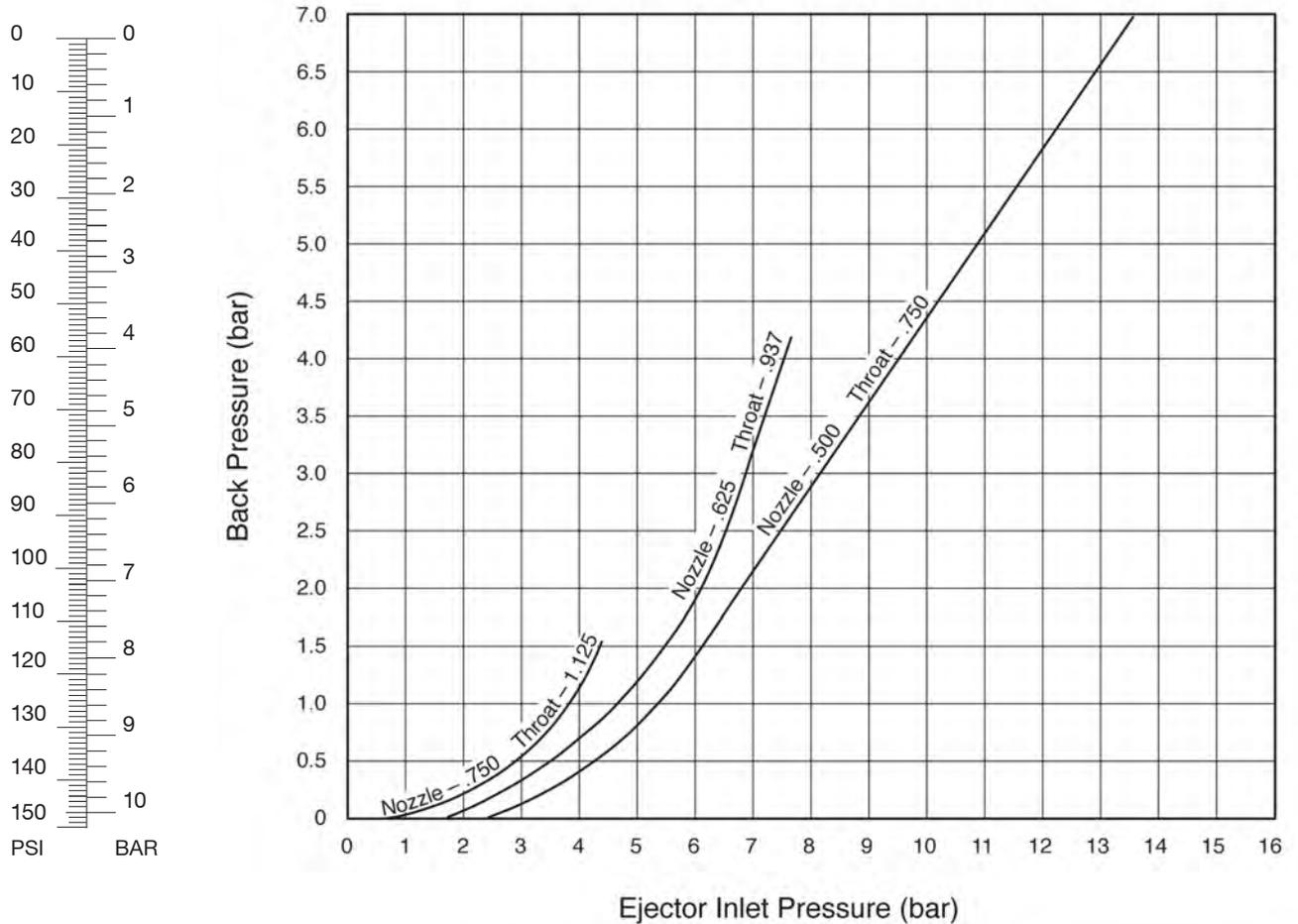


Conversion: US GPM to LPM x 3.7854

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 EJM-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.

Pink Pages 2025

ProMinent[®]



www.prominentfluid.com.au

Pink Pages 2025



| | | |
|------------|---|------------|
| 1.0 | ProMinent Concept PLUS Pumps | 1.2 |
| 1.1 | Meta Dosing Pumps | 1.3 |
| 1.2 | ProMinent Vario/ D Dosing Pumps | 1.4 |
| 1.3 | Meta Plunger Metering Pumps | 1.5 |
| 1.4 | Solenoid Dosing Pumps Back Pressure Valves | |
| | Accessories - Back Pressure Valves | 1.6 |
| 1.5 | Motor Driven Dosing Pumps Back Pressure Valves | |
| | Accessories - Back Pressure Valves | 1.7 |

1.0 ProMinent CONCEPT PLUS Pump

CONCEPT PLUS Dosing Pump

ProMinent CONCEPT PLUS

| | |
|--|--|
| CNPB1000PPE200C01 | CNPB0704PVT200CB1 <i>External Control Fitted</i> |
| CNPB1000PPE200CB1 <i>External Control Fitted</i> | CNPB0309PPE200C01 |
| CNPB1000NPB200C01 | CNPB0309PPE200CB1 <i>External Control Fitted</i> |
| CNPB1000NPB200CB1 <i>External Control Fitted</i> | CNPB0309NPB200C01 |
| CNPB1601PPE200C01 | CNPB0309NPB200CB1 <i>External Control Fitted</i> |
| CNPB1601PPE200CB1 <i>External Control Fitted</i> | CNPB0309PVT200C01 |
| CNPB1601NPB200C01 | CNPB0309PVT200CB1 <i>External Control Fitted</i> |
| CNPB1601NPB200CB1 <i>External Control Fitted</i> | CNPB0215PPE200C01 |
| CNPB1601PVT200C01 | CNPB0215PPE200CB1 <i>External Control Fitted</i> |
| CNPB1601PVT200CB1 <i>External Control Fitted</i> | CNPB0215NPB200C01 |
| CNPB1002PPE200C01 | CNPB0215NPB200CB1 <i>External Control Fitted</i> |
| CNPB1002PPE200CB1 <i>External Control Fitted</i> | CNPB0215PVT200C01 |
| CNPB1002NPB200C01 | CNPB0215PVT200CB1 <i>External Control Fitted</i> |
| CNPB1002NPB200CB1 <i>External Control Fitted</i> | |
| CNPB1002PVT200C01 | |
| CNPB1002PVT200CB1 <i>External Control Fitted</i> | |
| CNPB0704NPB200C01 | |
| CNPB0704NPB200CB1 <i>External Control Fitted</i> | |
| CNPB0704PVT200C01 | |

- 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 | | | | | |
| 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%

FOR SPARE PARTS PLEASE REFER YELLOW PAGES



1.1 META Dosing Pump

META Dosing Pump

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" | |

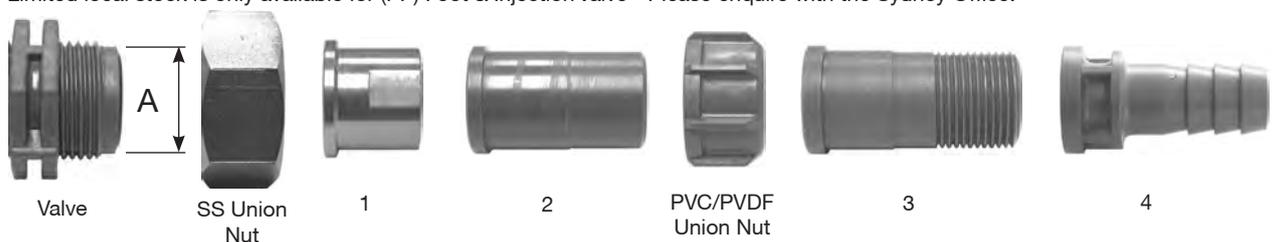
Motor 0.37 kw, 1440 rpm, 3 phase, 415 V, 50 Hz IP55

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 stock 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 |



1.2 ProMinent VARIO D Dosing Pump

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 15mm | | | | |
| 3 | Union nut and PVDF Male BSP 1/2" | | | | |
| 5 | Union nut and PVC Hosetail 16mm | | | | |
| 7 | Union nut and PVDF Hosetail 16mm | | | | |
| Version | | | | | |
| 0 | With ProMinent® logo (standard) | | | | |
| Power supply: | | | | | |
| S | 3 ph, 400 V; 50 Hz | 0.07kw | IP55 | NOT STOCKED | |
| 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 4 EPDM flat gaskets
P1 4 Viton flat gaskets
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.



1.3 META Plunger Metering Pump

Technical Data

| with 1500 rpm motor at 50 Hz | | | | | | | | | |
|------------------------------|-------------------------------------|------|------------|------------------|--------------|--------------------------------------|------------------------------------|--------------------|-----------------|
| Pump type | Pump Capacity at Max. Back Pressure | | | Max Stroke Freq. | Suction Lift | Adm. Priming Pressure , Suction Side | Connection Suction/ Discharge Side | Motor Power Output | Shipping Weight |
| Identity code MTKa | bar | l/h | ml/ stroke | strokes/ min. | mWG | bar | Rp-DN | kW | kg |
| 21606 | 216 | 6.1 | 1.42 | 72 | 4 | | 1/4 | 0.18 | 18 |
| 24006 | 240 | 6.1 | 1.42 | 72 | 4 | | 1/4 | 0.37 | 20 |
| 16208 | 162 | 8.1 | 1.42 | 96 | 4 | | 1/4 | 0.18 | 18 |
| 22508 | 225 | 8.1 | 1.42 | 96 | 4 | | 1/4 | 0.37 | 20 |
| 12910 | 129 | 10.2 | 1.42 | 120 | 4 | | 1/4 | 0.18 | 18 |
| 21610 | 216 | 10.2 | 1.42 | 120 | 4 | | 1/4 | 0.37 | 20 |
| 10812 | 108 | 12.2 | 1.42 | 144 | 4 | | 1/4 | 0.18 | 18 |
| 21012 | 210 | 12.2 | 1.42 | 144 | 4 | | 1/4 | 0.37 | 20 |
| 10213 | 102 | 13.0 | 3.01 | 72 | 4 | | 1/4 | 0.18 | 18 |
| 11313 | 113 | 13.0 | 3.01 | 72 | 4 | | 1/4 | 0.37 | 20 |
| 07617 | 76 | 17.3 | 3.01 | 96 | 4 | | 1/4 | 0.18 | 18 |
| 10617 | 106 | 17.3 | 3.01 | 96 | 4 | | 1/4 | 0.37 | 20 |
| 06122 | 61 | 21.7 | 3.01 | 120 | 4 | | 1/4 | 0.18 | 18 |
| 10222 | 102 | 21.7 | 3.01 | 120 | 4 | | 1/4 | 0.37 | 20 |
| 05126 | 51 | 26.0 | 3.01 | 144 | 4 | | 1/4 | 0.18 | 18 |
| 09926 | 99 | 26.0 | 3.01 | 144 | 4 | | 1/4 | 0.37 | 20 |
| 05425 | 54 | 24.6 | 5.71 | 72 | 4 | | 3/8 | 0.18 | 18 |
| 06025 | 60 | 24.6 | 5.71 | 72 | 4 | | 3/8 | 0.37 | 20 |
| 04033 | 40 | 32.8 | 5.71 | 96 | 4 | | 3/8 | 0.18 | 18 |
| 05633 | 56 | 32.8 | 5.71 | 96 | 4 | | 3/8 | 0.37 | 20 |
| 03241 | 32 | 41.1 | 5.71 | 120 | 4 | | 3/8 | 0.18 | 18 |
| 05441 | 54 | 41.1 | 5.71 | 120 | 4 | | 3/8 | 0.37 | 20 |
| 02749 | 27 | 49.3 | 5.71 | 144 | 4 | | 3/8 | 0.18 | 18 |
| 05249 | 52 | 49.3 | 5.71 | 144 | 4 | | 3/8 | 0.37 | 20 |

approx. 50% of max. permissible pressure

Materials in Contact with Chemicals

| | Metering Head | Suction/ Discharge Connector | Seals | Valve Balls | Valve Seat | Plungers |
|-----|-------------------|------------------------------|--------------------|-------------|-------------------|----------|
| SST | Stainless steel | Stainless steel | PTFE | Ceramic | Stainless steel | Ceramic |
| | no. 1.4571/1.4404 | no. 1.4571/1.4404 | PTFE with graphite | | no. 1.4571/1.4404 | |

Motor Data MTKa

| Identcode characteristic | Power supply | Remarks |
|--------------------------|--|---------|
| S | 3 ph, IP55 220-240V/380-420 V 50 HZ 0.18/0.37 KW | |



1.4 Solenoid Dosing Pumps Back Pressure Valves

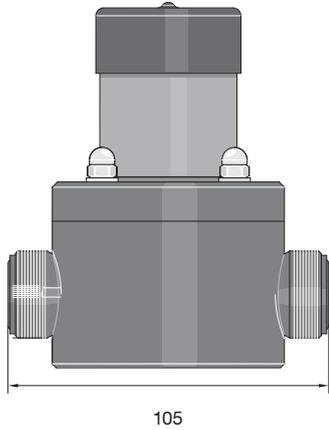
Accessories Back Pressure Valves

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.



| | | | | | | Part No. |
|----------|------------|--------|-----|----------|--|--------------------|
| 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

PLEASE CHECK AVAILABILITY



1.5 Motor Driven Dosing Pumps Back Pressure Valves

Accessories Back Pressure Valves

Back Pressure Valves

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.

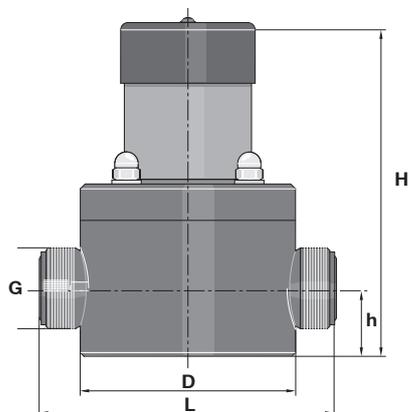
| | | | | | Part No. |
|--------|------------|---------|-------|-----|----------|
| BPV-DM | 1 - 10 bar | G 3/4 | DN 10 | PCE | P1009891 |
| | | G 1 | DN 15 | PCE | P1009897 |
| BPV-DM | 1 - 10 bar | G 3/4 | DN 10 | PCB | P1026451 |
| | | G 1 | DN 15 | PCB | P1026452 |
| | | G 1 1/2 | DN 25 | PCB | P1026453 |

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 a charge.



| Material combinations | Housing | Seal |
|-----------------------|---------|-------|
| PPE | PP | EPDM |
| PPB | PP | FPM B |
| PCE | PVC | EPDM |
| PCB | PVC | FPM B |

| | G | L Approx. | H Approx. | D | h |
|---------|---------|--------------|--------------|----|------|
| M20x1.5 | 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 | 32.5 |

PLEASE CHECK AVAILABILITY

