

2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

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

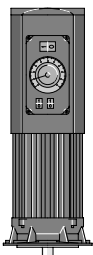
Liquid End Materials in Contact with Dosing Chemical

| 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® |

Viton® is a registered trademark of DuPont Dow Elastomers.

Motor Data S3Ba

| Identity code specifications | Power supply | Δ/Y | | | Remarks |
|------------------------------|------------------------|--|----------------|--------------------|---|
| S | 3-phase, IP 55 | 220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V | 50 Hz 60 Hz | 0.37 kW 0.37 kW | |
| T | 3-phase, IP 55 | 220 - 240 V/380 - 420 V 220 - 280 V/440 - 480 V | 50 Hz 60 Hz | 0.37 kW | with PTC, speed control range 1:5 |
| R | 3-phase, IP 55 | 220 - 240 V/380 - 420 V | 50 Hz | 0.55 kW | with PTC, speed adjustment range 1:20 with external fan (1-phase 230 V; 50/60Hz, 134W) |
| M | 1-phase AC, IP 55 | 230 V ± 5 % | 50 Hz/ 60 Hz | 0.55 kW | |
| L1 | 3-phase, II2GEEexIICT3 | 220 - 240 V/380 - 420 V | 50 Hz | 0.37 kW | |
| L2 | 3-phase, II2GEEexIICT4 | 220 - 240 V/380 - 420 V | 50 Hz | 0.37 kW | with PTC, speed control range 1:5 |
| P1 | 3-phase, II2GEEexIICT3 | 250 - 280 V/440 - 480 V | 60 Hz | 0.37 kW | |
| P2 | 3-phase, II2GEEexIICT4 | 250 - 280 V/440 - 480 V | 60 Hz | 0.37 kW | with PTC, speed control range 1:5 |
| V2 | 3-phase, II2GEEexIICT4 | 400 V ± 10 % | 50 Hz/ 60 Hz | 0.55 kW | Ex-variable speed motor with integrated frequency converter. Mains feed: 3-phase + neutral + earth, adjustment range 1:10 |



Sigma Basic Type Control Functions (S3Ba)

Stroke length actuator/controller

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

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

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

Speed Controllers

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



2.3 ProMinent® Sigma/ 3 Diaphragm Metering Pumps

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

S3Ba Sigma Basic Type (S3Ba) at 50Hz

H Main Drive, diaphragm

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

| | | |
|-----------|--|------|
| ● 120145* | 12 bar; 146 l/h *for PVDF max. 10 bar | PVDF |
| ● 120190* | 12 bar; 208 l/h | SS |
| ● 120270* | 12 bar; 292 l/h | |
| ● 120330* | 12 bar; 365 l/h | |
| ● 070410 | 7 bar; 410 l/h <i>Size 070410, 070580, 040830 & 0410030 are supplied fitted with</i> | PVDF |
| ● 070580 | 7 bar; 580 l/h <i>DN32 Valves. ALL DN32 valves are fitted with Hastalloy springs.</i> | SS |
| ● 040830 | 4 bar; 830 l/h <i>Option 1 & 5 are ONLY available for these sizes.</i> | |
| ● 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:

| | | PVDF | 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> | | ● |
| H | Hygienic head with tri-clamp connection (maximum 10 bar), *CONTACT SYDNEY* | | |

Hydraulic connector:

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

Version:

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

Power supply:

- S 3 ph, 230 V/400 V, 0.37 kW (standard)
- M 1 ph, 230 V 0.55 kW
- L 3 ph, 230 V/400 V, 0.37 kW, 50Hz, (EEExe, 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, flange B5, 80 frame
- 2 No motor, flange B5, 71 frame

Enclosure rating:

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

Stroke sensor:

- 0 No stroke sensor (standard)
- 2 Pacing relay (read relay)
- 3 Stroke sensor (Namur) for explosion-proof appli.

Stroke length adjustment:

- 0 Manual
- 1 With stroke positioning motor, 85-265V AC 50/60Hz
- 4 With stroke control motor, 4...20 mA 85-265V AC 50/60Hz

Prepack Option

- P* See options

● DN25
● DN32

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

Prepack option P* for PVDF

P0 - 120145 - 120190 - 120270 - 120330

4 EPDM flat gaskets

Refer page 2.36 for fitting sizes

070410 - 070580 - 040830 - 041030

4 EPDM flat gaskets

Refer page 2.36 for fitting sizes

P1 as P0 but with Viton® Flat Gaskets

240 volt motor supplied with power cord.

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



2.3

ProMinent® Sigma/ 3 Diaphragm Metering Pumps

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

SST version

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

IN ALL CASES CHECK PUMP MODEL CODE

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 |

