

2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.2 Technical Data for Sigma/ 1

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

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

● DN10

● DN15

Materials in Contact with Chemicals

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

Motor Data for S1Ba

Identity code specifications	Power supply	Δ/Y	Remarks		
S	3-phase, IP 55	220 - 240V/380 - 420 V 220 - 280V/440 - 480 V	50 Hz 60 Hz	0.09 kW 0.09 kW	
T	3-phase, IP 55	220 - 240V/380 - 420 V 220 - 280V/440 - 480 V	50 Hz 60 Hz	0.09 kW 0.09 kW	with PTC, speed control range 1:5
R	3-phase, IP 55	220 - 240V/380 - 420 V	50 Hz	0.09 kW	with PTC, speed adjustment range 1:20 with external fan (1-phase 230V; 50/60Hz, 20W)
M	1-phase AC, IP 55	230 V ± 5 %	50 Hz/ 60 Hz	0.12 kW	
L1	3-phase, II2GEEexIIIT3	220 - 240V/380 - 420 V	50 Hz	0.12 kW	
L2	3-phase, II2GEEExIIICT4	220 - 240V/380 - 420 V	50 Hz	0.18 kW	with PTC, speed control range 1:5
P1	3-phase, II2GEEexIIIT3	250 - 280V/440 - 480 V	60 Hz	0.12 kW	
P2	3-phase, II2GEEExIIICT4	250 - 280V/440 - 480 V	60 Hz	0.18 kW	with PTC, speed control range 1:5

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

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

Information for use in areas at risk from explosion: Only use pumps with the appropriate labelling in line with the ATEX Directive 94/9/EC in premises at risk from explosion. Ensure that the explosion group, category and degree of protection specified on the label corresponds to or is better than the conditions prevalent in the intended field of application.



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.4 Identity Code Ordering System for Sigma (S1Cb)

S1CbH

Sigma Control Type (S1Cb) Pump type (Figures 1 + 2 = back pressure [bar], figures 3 - 5 = feed rate [l/h]):

● 12017*	12 bar;	21 l/h	PVDF
● 12035*	12 bar;	42 l/h	SS
● 10050	10 bar;	49 l/h	
● 10022	10 bar;	27 l/h	PVDF
● 10044	10 bar;	53 l/h	SS
● 07065	7 bar;	63 l/h	
● 07042	7 bar;	52 l/h	PVDF
● 04084	4 bar;	101 l/h	SS
● 04120	4 bar;	117 l/h	*for PVDF max. 10 bar

Liquid end material with PTFE Seal

PVT	PVDF (max 10 bar)
SST	Stainless steel

Diaphragm

S	Multi-layer safety diaphragm with optical rupture display
A	Multi-layer safety diaphragm with electrical rupture signal "Pump stops"

Liquid end version

PVDF

0	No bleed valve and springs
1	No bleed valve, with 2 valve springs, Hastelloy C 4; 0.1 bar
4	With relief valve, Viton® seal, no valve spring
5	With relief valve, Viton® seal and valve spring

Hydraulic connector

1	Union nut and PVC Solvent Weld
2	Union nut and PVC Male BSP
3	Union nut and PVDF Male BSP
4	Union nut and stainless steel insert <i>inc. w/ss pump</i>
5	Union nut and PVC Hosetail
7	Union nut and PVDF Hosetail

Version

0	With ProMinent® logo (standard)
F	Physiologically harmless (FDA)
M	Modified
5	Liquid end left ... <i>Note: only available ex Germany</i>

Electrical Power supply

U	1 ph, 100 - 240 V; 50 Hz
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Power Cable and Plug

C	2m Australia
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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	Dulcomarin A Module

Overload switch-off

0	Without overload switch-off
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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
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Note: PRV/Bleed valve available on request. The preferred option is relief valve in-line.

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

Prepack option P* for PVDF

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

4 EPDM flat gaskets & CANBUS cable if required.

Refer page 2.36 for fitting sizes

07042 - 04084 - 04120

4 EPDM flat gaskets & CANBUS cable if required.

Refer page 2.36 for fitting sizes

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

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

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

● DN10
● DN15

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



2.1 ProMinent® Sigma/ 1 Diaphragm Metering Pumps

2.1.5 Spare Parts Kits Sigma/ 1

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

PVT version

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

SST version

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

IN ALL CASES CHECK PUMP MODEL CODE

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

Type	Part No.
Type 12017, 120035, 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, 120035, 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, 120035, 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, SST0/1/2

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

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

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

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

