



THREEFOLD SIMPLICITY: THE SIGMA SERIES FROM PROMINENT.
THE SUCCESSFUL TRIO IN THE LOWER AND MID
PERFORMANCE RANGE.

SUCCESSFUL TRIO



**THE SIGMA CONCEPT: OPTIMUM PERFECTION.
SIMPLICITY ITSELF TO USE.**



Three performance ranges –
one unified technical concept
based on the economical modular
principle: Sigma/ 1 from 17 to 120 l/h,
Sigma/ 2 from 50 to 350 l/h,
Sigma/ 3 from 145 to 1,030 l/h.

Proven precision: microprocessor
control with optimum combination of
speed control and digital stroking frequency.
Metering is controlled via the easy-to-use
operating menu and functions can be
monitored at a glance via the back-lit LCD
display.

Standard PVDF liquid ends with
integrated safety bypass valve –
always the right choice in practical
applications. Stainless steel liquid ends
are also available for special applications.

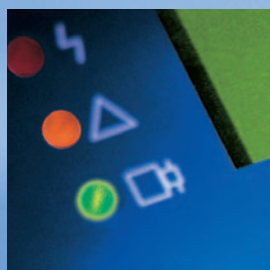
Maximum safety: the dual DEVELOPAN®
diaphragm with sensor in the inter-dia-
phragm cavity guarantees effective protection -
even in the event of a diaphragm rupture.

All functions are simple to monitor with the new user guide



Sigma has become the byword for the robust, reliable mechanical design of ProMinent's motor-driven metering pumps. The new microprocessor controller makes it possible to combine speed control and digital stroking frequency optimally for precise control of the metering performance. Totally new and another argument in its favour: Sigma now stands for a whole pump series consisting of three models with a wide performance range covering 17 to 1,030 l/h. The microprocessor controller is the outstanding feature of the Sigma series. Used in all three models it makes operation and control of all the pumps identical. There is no

The "traffic lights" show the current pump status at a glance



relearning process. The electronics and the easy-to-view display provide clear, convenient user guidance and easy-to-monitor pump functions.

The feed rate can be displayed in l/h or US gal/h. The electronics significantly improve and enhance the internal control options. They also create the ideal conditions for external control. This is either via a standard 0/4-20 mA analogue signal with free allocation of pump frequency to the control signal or by means of contact control via increased/decreased pulse rate.

The PROFIBUS® technology sets the standard for intelligent system links, monitoring and control of complex systems through connection to a central control system. The Sigma's PROFIBUS® interface enables full integration of metering technology into a PROFIBUS® processor control system. Safety is a key feature of the Sigma series. All pumps can be supplied with a dual diaphragm. The cavity between the two diaphragms is monitored by a sensor which signals

diaphragm ruptures immediately. You could barely wish for better safety...



Minimum installation costs – maximum operating safety: Sigma with professional PROFIBUS®-DP functionality

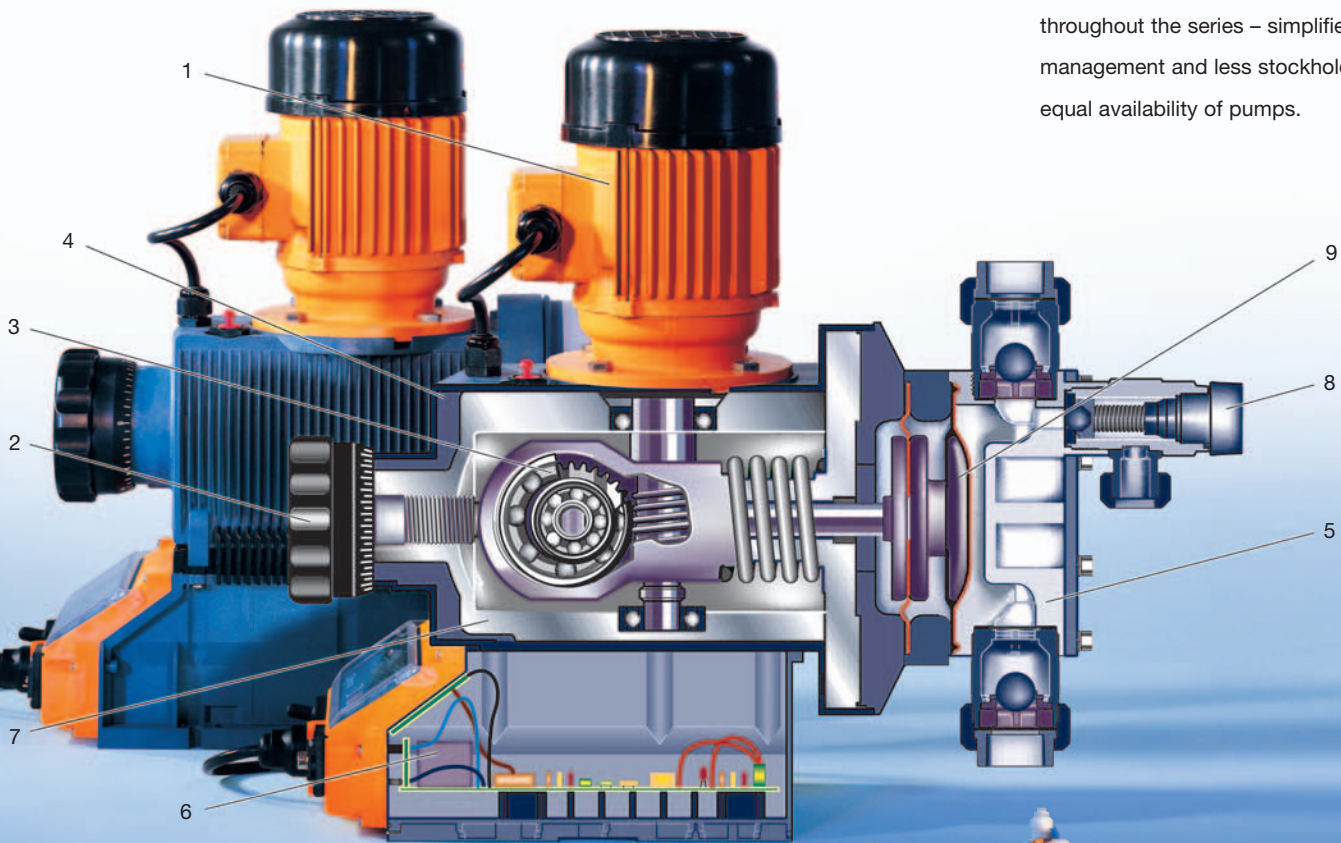
**ROBUST MECHANISM AND PRECISION ELECTRONICS:
GUARANTEED SAFE FUNCTION IN THE LONG TERM.**



The Sigma series is designed to cope with real conditions: the pump performance ranges overlap and together they cover an extraordinarily wide spectrum. There is a safe and economical metering pump available for every application requirement.



Economical in use thanks to committed implementation of the modular principle. Many of the components employed in the Sigma range are identical and can be used throughout the series – simplified spare parts management and less stockholding thanks to equal availability of pumps.



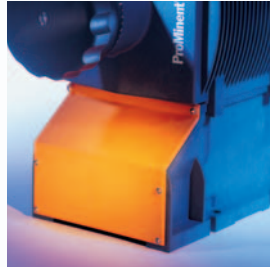
Identical operating systems for all three pumps in the Sigma series. That means less training of operatives, less danger of misuse and more effective and safer function monitoring.



Three pumps – one concept: identical control technology simplifies the integration of the pumps into external control systems.

- 1 Motor
- 2 Stroke length adjuster
- 3 Gearbox
- 4 Plastic housing
- 5 Liquid end
- 6 Microprocessor controller
- 7 Metal inner casing
- 8 Integrated bypass/vent valve
- 9 Dual diaphragm system

The Sigma series also offers an economical base model without microprocessor controller



The working principle of the Sigma series means in practice maximum reliability and precision. The motor output is transferred to the metering diaphragm via a worm gear pair, eccentric cam and push rod. The proven spring cam principle guarantees play-free and accurately reproduced mechanical running and precise metering, even after long service. Safety is key to the Sigma concept. The dual DEVELOPAN® diaphragm is fitted with a sensor in the cavity between the two diaphragms.

This diaphragm rupture signalling ensures that the feed chamber itself remains hermetically sealed even if one diaphragm becomes damaged. The integrated bypass valve in the liquid end effectively protects the pump from overload. The valve also allows problem-free venting during the priming phase. There are two different liquid end materials available to cope with the widest possible range of media, even problematic and aggressive chemicals. PVDF and stainless steel. These two materials mean that the Sigma series is suitable in practically any use. A piston version is also available for high-pressure applications up to 320 bar.

The piston is made of polished aluminium oxide ceramic. The piston



The PVDF liquid end - the choice for most applications

packing of the Sigma/ 2 piston metering pumps is made of Teflon. This design feature, in conjunction with the durable low maintenance drive, makes the pumps ideal for numerous process applications.

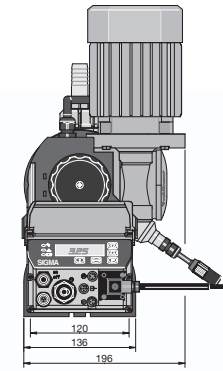


The hydraulically optimised diaphragm technology guarantees a long service life

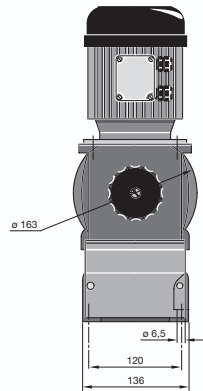
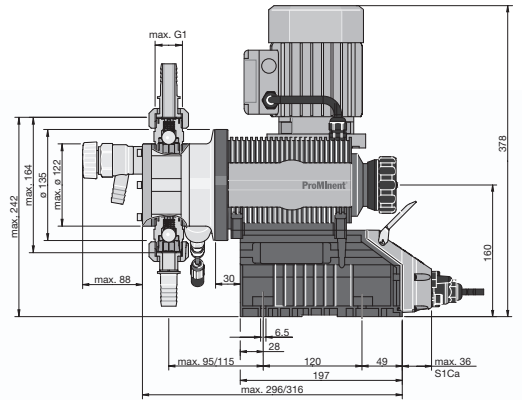
**THE RIGHT SIGMA FOR ALL OCCASIONS:
PRECISELY ADAPTED TO INDIVIDUAL REQUIREMENTS.**

With their in-built “intelligence” and overlapping, mutually compatible metering capacities the Sigma series can be integrated into practically any control environment. Modular construction with two different liquid end materials guarantees that they can be used with a variety of different media. Their chief area of application is in water treatment. However, the flexible Sigma concept meets the requirements of numerous applications – including in the chemical industry and in production plants.

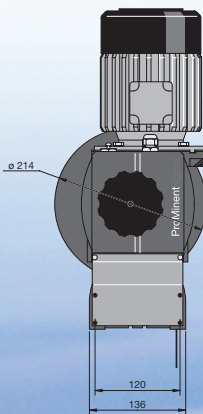
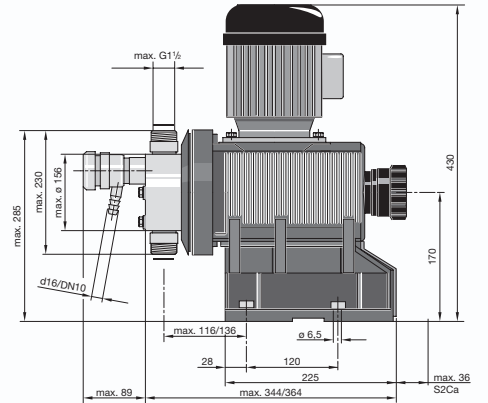
High standards of safety ensure protection for processes, persons and the environment. All in all – with precise microprocessor control, comprehensive process monitoring and diaphragm rupture signaling – Sigma sets new standards.



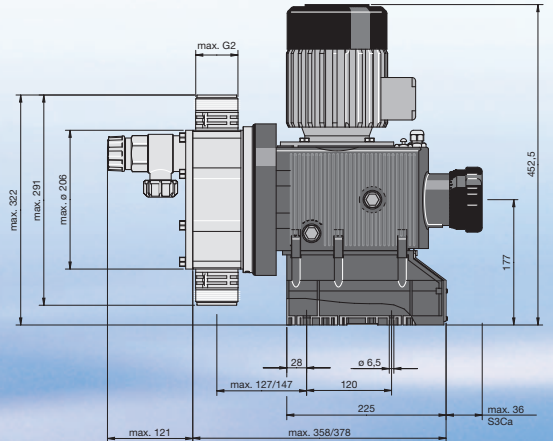
Sigma/ 1



Sigma/ 2



Sigma/ 3



Detailed dimension sheets on request

Pump type Sigma	at 50 Hz operation				at 60 Hz operation				Suction lift mWc	Max. priming pressure bar	Suction/discharge connector G – DN	Shipping weight kg
	Feed rate at max. back pressure		Max. stroke rate ml/stroke	Max. stroke rate strokes/min	Feed rate at max. back pressure		Max. stroke rate strokes/min					
	bar	l/h			psi	l/h/gph						
Sigma/ 1												
12017 PVT	12	17	4.0	73	174	20/5	88	7	1	¾ – DN 10	9.0	
12017 SST	12	17	4.0	73	174	20/5	88	7	1	¾ – DN 10	12.0	
12035 PVT	12	35	4.0	143	174	42/11	172	7	1	¾ – DN 10	9.0	
12035 SST	12	35	4.0	143	174	42/11	172	7	1	¾ – DN 10	12.0	
10050 PVT	10	50	4.0	200	145	60/16	240	7	1	¾ – DN 10	9.0	
10050 SST	10	50	4.0	200	145	60/16	240	7	1	¾ – DN 10	12.0	
10022 PVT	10	22	5.1	73	145	26/7	88	6	1	¾ – DN 10	9.0	
10022 SST	10	22	5.1	73	145	26/7	88	6	1	¾ – DN 10	12.0	
10044 PVT	10	44	5.1	143	145	53/14	172	6	1	¾ – DN 10	9.0	
10044 SST	10	44	5.1	143	145	53/14	172	6	1	¾ – DN 10	12.0	
07065 PVT	7	65	5.1	200	102	78/21	240	6	1	¾ – DN 10	9.0	
07065 SST	7	65	5.1	200	102	78/21	240	6	1	¾ – DN 10	12.0	
07042 PVT	7	42	9.7	73	102	50/13	88	3	1	1 – DN 15	9.5	
07042 SST	7	42	9.7	73	102	50/13	88	3	1	1 – DN 15	13.5	
04084 PVT	4	84	9.7	143	58	101/27	172	3	1	1 – DN 15	9.5	
04084 SST	4	84	9.7	143	58	101/27	172	3	1	1 – DN 15	13.5	
04120 PVT	4	120	9.7	200	58	144/38	240	3	1	1 – DN 15	9.5	
04120 SST	4	120	9.7	200	58	144/38	240	3	1	1 – DN 15	13.5	
Sigma/ 2												
12050 PVT	10	50	11.4	73	145	60/15.9	87	7	3	1 – DN 15	15	
12050 SST	12	48	11.4	73	174	57/15.2	87	7	3	1 – DN 15	20	
12090 PVT	10	90	11.4	132	145	108/28.5	156	7	3	1 – DN 15	15	
12090 SST	12	86	11.4	132	174	103/27	156	7	3	1 – DN 15	20	
12130 PVT	10	130	10.9	198	145	156/41	232	7	3	1 – DN 15	15	
12130 SST	12	125	10.9	198	174	150/39.6	232	7	3	1 – DN 15	20	
07120 PVT	7	120	27.4	73	100	144/38	87	5	1	1½ – DN 25	16	
07120 SST	7	120	27.4	73	100	144/38	87	5	1	1½ – DN 25	24	
07220 PVT	7	220	27.7	132	100	264/69.7	156	5	1	1½ – DN 25	16	
07220 SST	7	220	27.7	132	100	264/69.7	156	5	1	1½ – DN 25	24	
04350 PVT	4	350	29.4	198	58	420/111	232	5	1	1½ – DN 25	16	
04350 SST	4	350	29.4	198	58	420/111	232	5	1	1½ – DN 25	24	
Sigma/ 3												
120145 PVT	10	145	31.5	72	145	174/46	86	5	2	1½ – DN 25	22	
120145 SST	12	145	31.5	72	174	174/46	86	5	2	1½ – DN 25	26	
120190 PVT	10	190	31.5	103	145	228/60.2	124	5	2	1½ – DN 25	22	
120190 SST	12	190	31.5	103	174	228/60.2	124	5	2	1½ – DN 25	26	
120270 PVT	10	270	31.5	144	145	324/85.6	173	5	2	1½ – DN 25	22	
120270 SST	12	270	31.5	144	174	324/85.6	173	5	2	1½ – DN 25	26	
120330 PVT	10	330	31.5	180	145	–	–	5	2	1½ – DN 25	22	
120330 SST	12	330	31.5	180	174	–	–	5	2	1½ – DN 25	26	
070410 PVT	7	410	95.1	72	100	492/130	86	4	1	2 – DN 32	24	
070410 SST	7	410	95.1	72	100	492/130	86	4	1	2 – DN 32	29	
070580 PVT	7	580	95.1	103	100	696/183.9	124	4	1	2 – DN 32	24	
070580 SST	7	580	95.1	103	100	696/183.9	124	4	1	2 – DN 32	29	
040830 PVT	4	830	95.1	144	58	1000/264	173	3	1	2 – DN 32	24	
040830 SST	4	830	95.1	144	58	1000/264	173	3	1	2 – DN 32	29	
041030 PVT	4	1030	95.1	180	58	–	–	3	1	2 – DN 32	24	
041030 SST	4	1030	95.1	180	58	–	–	3	1	2 – DN 32	29	

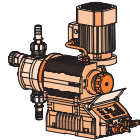
Detailed information see product catalogue or operating instructions manual

**SERIAL SUCCESS: PROMINENT®
MOTOR-DRIVEN DIAPHRAGM
METERING PUMPS**

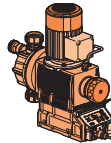


**ProMinent®
alpha**
Capacity range:
Up to 10 bar
Up to 21 l/h

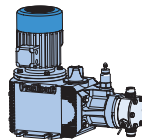
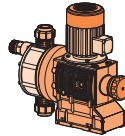
**ProMinent®
Sigma/ 1**
Capacity range:
Up to 12 bar
Up to 120 l/h



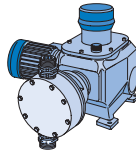
**ProMinent®
Sigma/ 2**
Capacity range:
Up to 12 bar
Up to 350 l/h



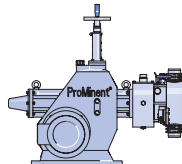
**ProMinent®
Sigma/ 3**
Capacity range:
Up to 12 bar
Up to 1030 l/h



**ProMinent®
Hydro**
Capacity range:
Up to 64 bar
Up to 150 l/h



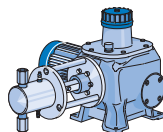
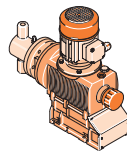
**ProMinent®
Makro TZ HM/HMH**
Capacity range:
Up to 16 bar
Up to 2500 l/h



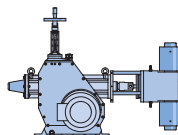
**ProMinent®
Makro/ 5 HM/HMH**
Capacity range:
Up to 25 bar
Up to 6000 l/h

**PROMINENT®
MOTOR-DRIVEN PISTON METERING
PUMPS**

**ProMinent®
Sigma/ 2 HK**
Capacity range:
Up to 320 bar
Up to 76 l/h



**ProMinent®
Makro TZ HK**
Capacity range:
Up to 320 bar
Up to 1141 l/h



**ProMinent®
Makro/ 5 HK**
Capacity range:
Up to 320 bar
Up to 6000 l/h

Materials in contact with chemicals	Liquid end version	
	PVT	SST
Liquid end	PVDF*	Stainless steel no. 1.4571
Suction/discharge valve	PVDF*	Stainless steel no. 1.4581
Seals	PTFE**	PTFE**
Valve balls	Ceramic/glass	Stainless steel no. 1.4401
Valve seat	PTFE**	PTFE**
Connector	See identcode option in product catalogue	
Liquid end	PVDF*	Stainless steel no. 1.4571
Suction/discharge valve	PVDF*	Stainless steel no. 1.4581
Seals	PTFE**	PTFE**
Valve balls	Ceramic/glass	Stainless steel no. 1.4401
Valve seat	PTFE**	PTFE**
Connector	See identcode option in product catalogue	
Liquid end	PVDF*	Stainless steel no. 1.4571
Suction/discharge valve	PVDF*	Stainless steel no. 1.4581
Seals	PTFE**	PTFE**
Valve balls	Ceramic/glass	Stainless steel no. 1.4401
Valve plates	Hast. C	Hast. C
Valve seat	PTFE**	PTFE**
Connector	See identcode option in product catalogue	

* Polyvinylidene fluoride

** Polytetrafluorethylene

PROGRESS WITH PROMINENT KNOW-HOW.

Metering pumps from the Sigma series – "at home" in practically any environment



To achieve commercial success, technical products that you can rely on, like Sigma, are just one side of the coin. The other side is our expert customer care before and during installation, advice on new applications and being there when you need us, worldwide.

ProMinent is an international company. We have consultants and engineers in all industrial centres.

Wherever you are, you can call on our experience in the field of fluid controls.

We are happy to follow your project through and advise you from the initial idea to the final system, from the first production run through regular maintenance up to any necessary refitting or retrofitting.

You can count on specialists who have your success in mind and for whom customer proximity is important.

We invite you to use this experience. Sigma is backed by the ProMinent name, which stands worldwide for sound advice, rapid service and reliable products.



In good hands, worldwide, with service from ProMinent



Subject to technical changes.
Printed in Germany/PT SI 015 10/03 GB

Addresses and delivery information from the manufacturer:

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5-11
69123 Heidelberg · Germany
Postfach 10 17 60
69007 Heidelberg · Germany
Tel.: +49 6221 842-0
Fax: +49 6221 842-419
info@prominent.de · www.prominent.de

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