

Motor-Driven Metering Pump Sigma/ 2 (Basic Type)

The robust pump for safe and reliable use.



Capacity range 50 – 420 l/h, 16 – 4 bar

The Sigma/ 2 diaphragm metering pump, together with pumps of type Sigma/ 1 and Sigma/ 3, represents an integrated product range. They cover the capacity range from 17 to 1,030 l/h, with a consistent operating concept, control

concept and spare parts management. A wide range of power end versions is available, including some for use in ATEX areas.

Your benefits

Excellent process reliability:

- In the event of an accident, the feed chemical does not escape to the outside nor into the pump's power end, thanks to the patented multi-layer safety diaphragm with optical (optionally electric) signalling
- Integrated relief valve protects the pump against overloading
- Reliable operation by bleed option during the suction process

Flexible adaptation to the process:

- The Sigma product range is available as standard in the "Physiologically safe in respect of wetted materials" "F" design.
- Metering pumps with electro-polished stainless steel metering head enable them to be used in hygienically challenging applications
- Wide range of power end versions, also for use in areas at risk from explosion, and different flange designs for the use of customised motors

Field of application

- Volume-proportional addition of chemicals in water treatment, e.g. sodium-calcium hypochlorite for the disinfection of potable water
- Addition of chemicals depending on the measured value, e.g. metering of acid and alkali for pH neutralisation in waste water treatment
- Time-controlled addition of chemicals in the cooling water circuit
- Pulse-controlled metering in the bottling of different volumes e.g. glycerin filling of manometers

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Technical Data

Sigma Basic Type Control Functions (S2Ba)

Stroke length actuator/controller

Actuator: Electronically regulated actuator with contactless position detection for automatic stroke length adjustment, actuating period approx. 1 second for 1% stroke length, return potentiometer 1 k Ω , degree of protection IP 65.

Control drive: Electronically regulated actuator with position detection, with no contact with the media, consisting of an actuator and integral servo controller for stroke length adjustment via a standard signal. Standard current input 0/4-20 mA corresponds to stroke length 0 – 100%, switch-over for manual /automatic operation, stroke adjustment in manual mode, electronic stroke length position display, wide-range voltage power unit 85 - 265 V 50/60 Hz, degree of protection Ip65, actual value output 0/4-20 mA for remote display.

Speed controllers with frequency converter (identity code specification Z)

The speed controller assembly consists of a frequency converter and a variable speed motor of 0.37 kW.

"Physiologically safe" designs in respect to wetted sealing material

FDA

Wetted materials in the "FDA" (F) version comply with the FDA Guidelines.

FDA Guidelines: Material PTFE: FDA No. 21 CFR § 177.1550, material PVDF: FDA No. 21 CFR § 177.2510

Available for pump design plastic (PV) and stainless steel (SS)

Identity code example: S2BaHM07220PV F S000S000

EU Regulation 1935/2004

Sealing materials in accordance with Regulation (EC) 1935/2004 are available in the stainless steel material version "Physiologically safe for wetted material in accordance with Regulation (EC) 1935/2004".

Available for stainless steel (SS) pump design.

Dosing heads with a hygienic design are available on request for hygienically demanding applications.

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	Type S2Ba With 1500 rpm motor at 50 Hz			With 1800 rpm motor at 60 Hz			Suction lift	Perm. pre-pressure suction side	Connection suction/discharge side	Shipping weight	
	Delivery rate at max. back pressure			Delivery rate at max. back pressure							
	bar	l/h	ml/stroke	Max. stroke rate	psi	l/h/gph (US)	Max. stroke rate	m WC	bar	G-DN	kg
16050 PVT	10	50	11.4	73	145	60.0/15.8	87	7	3	1-15	15
16050 SST	16	47	11.4	73	232	56.0/14.7	87	7	3	1-15	20
16090 PVT	10	88	11.4	132	145	106.0/28.0	158	7	3	1-15	15
16090 SST	16	82	11.4	132	232	98.4/25.9	158	7	3	1-15	20
16130 PVT	10	135	10.9	198	145	156.0/41.2	238	7	3	1-15	15
16130 SST	16	124	10.9	198	232	148.0/39.0	238	7	3	1-15	20
07120 PVT	7	126	27.4	73	102	150.0/39.6	87	5	1	1 1/2-25*	16
07120 SST	7	126	27.4	73	102	150.0/39.6	87	5	1	1 1/2-25*	24
07220 PVT	7	220	27.7	132	102	264.0/69.7	158	5	1	1 1/2-25*	16
07220 SST	7	220	27.7	132	102	264.0/69.7	158	5	1	1 1/2-25*	24
04350 PVT	4	350	29.4	198	58	420.0/110.9	238	5	1	1 1/2-25*	16
04350 SST	4	350	29.4	198	58	420.0/110.9	238	5	1	1 1/2-25*	24

Performance data for TTT, see type PVT

* With Sigma types 07120, 07220 and 04350, the dosing head is fitted with DN 25 (G 1 1/2) valves. As DN 20 is generally sufficient for these types of pipes (see technical data, suction/discharge side connector), the connector parts that can be ordered under the identity code (e.g. inserts) are already reduced to DN 20, i.e. piping and accessories can be installed in DN 20.

Materials in Contact With the Medium

Material	Dosing head	Suction/pressure connector	Seals/ball seat	Balls	Integral relief valve
PVT	PVDF	PVDF	PTFE/PTFE	Ceramic/glass*	PVDF/FKM or EPDM
SST	Stainless steel 1.4404	Stainless steel 1.4581	PTFE/PTFE	Stainless steel 1.4404	Stainless steel/FKM or EPDM
TTT**	PTFE + 25% carbon	PTFE + 25% carbon	PTFE/PTFE	Ceramic/glass*	-

* with 07120, 07220, 04350

** specifically for areas at risk from explosion

Sealing material "F" - "FDA" ball seat version: PVDF

Sealing material "G" - (EC) Regulation 1935/2004" ball seat version: 1.4404

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Motor Data

Identity code specification	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, 134 W)
M	1-phase AC, IP 55	230 V \pm 5 %	50/60 Hz	0.18 kW	
N	1-phase AC, IP 55	115 V \pm 5 %	60 Hz	0.18 kW	
L1	3-phase, II2GExellT3	220 – 240 V/380 – 420 V	50 Hz	0.18 kW	
L2	3-phase, II2GExdllCT4	220 – 240 V/380 – 420 V	50 Hz	0.18 kW	with PTC, speed control range 1:5
P1	3-phase, II2GExellT3	250 – 280 V/440 – 480 V	60 Hz	0.18 kW	
P2	3-phase, II2GExdllCT4	250 – 280 V/440 – 480 V	60 Hz	0.21 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 for Sigma basic pumps are available on request.

Motors less than 0.75 kW and motors designed for speed-controllable operation are not subject to the IE3 standard in compliance with the Ecodesign Directive 2009/125/EC.

Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 2014/34/EU 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.