

Motor-Driven Metering Pump Sigma/ 3 (Basic Type)

The robust pump for safe and reliable use



Capacity range 146 – 1,030 l/h, 12 – 4 bar

The Sigma/ 3 diaphragm metering pump together with pumps of type Sigma/ 1 and Sigma/ 2 represent 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 areas at risk from explosion.

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 entire Sigma product range is available as standard in a "Physiologically safe in respect of wetted materials" 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 (S3Ba)

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 kOhm, degree of protection IP 65.

Control drive: Electronically regulated actuated 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 signal current input 0/4-20 mA corresponds to stroke length 0 - 100 %. Switch-over for manual /automatic operation, stroke adjustment in manual mode, electronic position display of stroke length, 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 in metal housing (identity code characteristic Z)

The speed controller assembly consists of a speed controller and a 0.55 kW variable speed motor.

"Physiologically safe" designs in respect to wetted sealing material for pump type: DN25 - 120145, 120190, 120270

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) and DN 25 ball valve.

Identity code example: S3BaH120330PV 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 pump design stainless steel (SS) and DN 25 ball valves.

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

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Type S3Ba	With 1500 rpm motor at 50 Hz				With 1800 rpm motor at 60 Hz				Suction lift m WC	Perm. pre-pressuredischarge suction side bar	Connection, suction/ discharge side G-DN	Shipping weight kg
	Delivery rate at max. back pressure		Max. stroke rate	Delivery rate at max. back pressure		Max. stroke rate						
	bar	l/h	ml/stroke	Strokes/min	psi	l/h/gph (US)	Strokes/min					
120145 PVT	10	146	33.7	72	145	174/45.9	86	5	2	1 1/2-25	22	
120145 SST	12	146	33.7	72	174	174/45.9	86	5	2	1 1/2-25	26	
120190 PVT	10	208	33.7	103	145	251/66.3	124	5	2	1 1/2-25	22	
120190 SST	12	208	33.7	103	174	251/66.3	124	5	2	1 1/2-25	26	
120270 PVT	10	292	33.8	144	145	351/92.7	173	5	2	1 1/2-25	22	
120270 SST	12	292	33.8	144	174	351/92.7	173	5	2	1 1/2-25	26	
120330 PVT*	10	365	33.8	180	-	-	-	5	2	1 1/2-25	22	
120330 SST*	12	365	33.8	180	-	-	-	5	2	1 1/2-25	26	
070410 PVT	7	410	95.1	72	102	492/129.9	86	4	1	2-32-**	24	
070410 SST	7	410	95.1	72	102	492/129.9	86	4	1	2-32-**	29	
070580 PVT	7	580	95.1	103	102	696/183.8	124	4	1	2-32-**	24	
070580 SST	7	580	95.1	103	102	696/183.8	124	4	1	2-32-**	29	
040830 PVT	4	830	95.1	144	58	1,000/264.1	173	3	1	2-32-**	24	
040830 SST	4	830	95.1	144	58	1,000/264.1	173	3	1	2-32-**	29	
041030 PVT*	4	1,030	95.1	180	-	-	-	3	1	2-32-**	24	
041030 SST*	4	1,030	95.1	180	-	-	-	3	1	2-32-**	29	

Performance data for TTT, see type PVT

* only available for 50 Hz.

** DN32 plate valves with valve spring

Materials in Contact With the Medium

Material	DN 25 ball valves				DN 32 plate valves			
	Seals	Suction/pressure connector on dosing head	Valve balls	Valve seats	Suction/pressure connector on dosing head	Valve plates/ valve springs	Valve seats	Integral relief valve
PVT	PTFE	PVDF	Glass	PTFE**	PVDF	Ceramic/ Hast C. + CTFE*	PTFE	PVDF/FKM or EPDM
SST	PTFE	Stainless steel 1.4581	Stainless steel 1.4404	PTFE**	Stainless steel 1.4581	Stainless steel 1.4404/ Hast. C	PTFE	Stainless steel/ FKM or EPDM
TTT***	PTFE	PTFE + 25% carbon	Ceramic	PTFE**	PVDF	Ceramic/ Hast C. + CTFE*	PTFE	-

* The valve spring is coated with CTFE (resistance similar to PTFE)

** On design "F", the ball seat is made of PVDF, only for DN 25 ball valves

*** Specifically for areas at risk from explosion DN25: PTFE + 25% carbon; DN32 plate valves: PVDF

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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 250 – 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 250 – 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, 134 W)
M	1-phase AC, IP 55	230 V \pm 5 %	50/60 Hz	0.55 kW	
N	1-phase AC, IP 55	115 V \pm 5 %	60 Hz	0.55 kW	
L1	3-phase, II2GExellT3	220 – 240 V/380 – 420 V	50 Hz	0.37 kW	
L2	3-phase, II2GExdllCT4	220 – 240 V/380 – 420 V	50 Hz	0.37 kW	with PTC, speed control range 1:5
P1	3-phase, II2GExellT3	250 – 280 V/440 – 480 V	60 Hz	0.37 kW	
P2	3-phase, II2GExdllCT4	250 – 280 V/440 – 480 V	60 Hz	0.37 kW	with PTC, speed control range 1:5
V2	3-phase, II2GExdllCT4	400 V \pm 10 %	50/60 Hz	0.55 kW	Ex-variable speed motor with integrated frequency converter. Mains feed: 3-phase + neutral + earth, adjustment range 1:10

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.