

Plunger Metering Pump Sigma/ 2 (Basic Type)

Sigma plunger pump – durable and high-performance



Capacity range 2 – 76 l/h, 320 – 12 bar

The plunger metering pump Sigma/ 2 (Basic Type) (SBKa) is a metering pump, the pump capacity of which can be precisely adjusted in 0.2% increments, either manually or

optionally with an electric actuator or control drive. A wide range of power end versions is available for use in areas at risk from explosion with ATEX certification.

Your benefits

Excellent process safety and reliability:

- Metering reproducibility is better than $\pm 1\%$ within the 10 – 100% stroke length range under defined conditions and with correct installation

Flexible adaptation to the process:

- Wide range of power end versions, also for use in Exe and Exde areas and different flange designs for the use of customised motors
- Customised designs are available on request

Field of application

- Volume-proportional metering of chemicals in the treatment of boiler feed water
- Metering of reactants and catalysts in the chemical industry
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

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Technical Data

Sigma Basic Type Control Functions

Stroke length actuator/controller

Actuator for automatic stroke length adjustment, actuating period approx. 1 sec for 1% stroke length, 1 k Ω 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 (identity code specification V)

Power supply 1 ph 230 V, 50/60 Hz, 0.37 kW.

External control with 0/4-20 mA (see pk_2_103)

Speed controllers in metal housing (identity code specification Z)

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

Type SBKa	With 1500 rpm motor at 50 Hz			With 1800 rpm motor at 60 Hz			Suction lift	Perm. pre-pressure suction side	Connector Suction/ Discharge Side	Shipping weight	Plunger \varnothing		
	Delivery rate at max. back pressure	Max. stroke rate	Max. stroke rate	Delivery rate at max. back pressure	Max. stroke rate	Max. stroke rate							
	bar	l/h	ml/stroke	Strokes/min	psi	l/h	gph (US)	Strokes/min	m WC	bar	Rp-DN	kg	mm
32002	320	1.9	0.46	71	4,641	2.3	0.61	84	5.0	160	1/4	24	8
23004	230	4.0	0.52	129	3,336	4.8	1.27	154	5.0	115	1/4	24	8
10006	100	6.4	0.55	195	1,450	7.6	2.01	233	5.0	50	1/4	24	8
14006	140	6.1	1.42	71	2,031	7.1	1.88	84	4.0	70	1/4	24	12
10011	100	11.0	1.43	129	1,450	13.1	3.46	153	4.0	50	1/4	24	12
05016	50	16.7	1.43	195	725	20.0	5.28	233	4.0	25	1/4	24	12
07012	70	12.4	2.90	71	1,015	14.8	3.91	85	4.0	35	1/4	24	17
04522	45	22.5	2.91	129	653	26.7	7.05	153	4.0	22.5	1/4	24	17
02534	25	34.1	2.92	195	363	40.8	10.78	233	4.0	12.5	1/4	24	17
04022	40	22.4	5.26	71	580	26.5	7.00	84	4.0	20	3/8	25	23
02541	25	41.5	5.37	129	363	49.2	13.00	153	4.0	12.5	3/8	25	23
01264	12	64.0	5.45	195	174	76.0	20.08	233	4.0	6	3/8	25	23

Materials in Contact With the Medium

Material	Dosing head	Suction/pressure connector	Seals/ball seat	Balls	Ball seat
SST	Stainless steel 1.4404	Stainless steel 1.4404	PTFE or PTFE +25% carbon	Ceramic	Stainless steel 1.4404

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Motor Data

Identity code specification		Power supply			Remarks
S	3-phase, IP 55	220 – 240 V/380 – 420 V 250 – 280 V/440 – 480 V	50 Hz 60 Hz	0.25 kW	
R	3-phase, IP 55	230 V/400 V	50/60 Hz	0.37 kW	with PTC, speed control range 1:20 with external fan 1-phase 230 V; 50/60 Hz
V0	1-phase, IP 55	230 V ± 5 %	50/60 Hz	0.37 kW	Variable speed motor with integrated frequency converter
M	1-phase AC, IP 55	230 V ± 5 %	50/60 Hz	0.18 kW	
N	1-phase AC, IP 55	115 V ± 5 %	60 Hz	0.18 kW	
L1	3-phase, II 2G Ex e II T3	220 – 240 V/380 – 420 V	50 Hz	0.18 kW	
L2	3-phase, II 2G Ex de IIC T4	220 – 240 V/380 – 420 V	50 Hz	0.18 kW	with PTC, speed control range 1:5
P1	3-phase, II 2G Ex e II T3	250 – 280 V/440 – 480 V	60 Hz	0.18 kW	
P2	3-phase, II 2G Ex de IIC T4	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.

The motors are designed 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.