

# Self ventilating Controllable diaphragm pumps

CS 409.2



**sera**

Seybert & Rahier

## The new 4 CS-designs

intelligent, multifunctional, versatile, economic...

### sera - controllable diaphragm pumps

of serie CS 409.2 are electronically controlled dosing pumps which can be used for many applications. They are designed for industrial use and guarantee highest operational reliability. Performance range between 0,8 l/h and 25 l/h, pressures up to max. 10 bar.

### Application

Liquid chemicals with aggressive, odorous, abrasive, radioactive, flammable, viscous or toxic properties.

### ...further features of performance

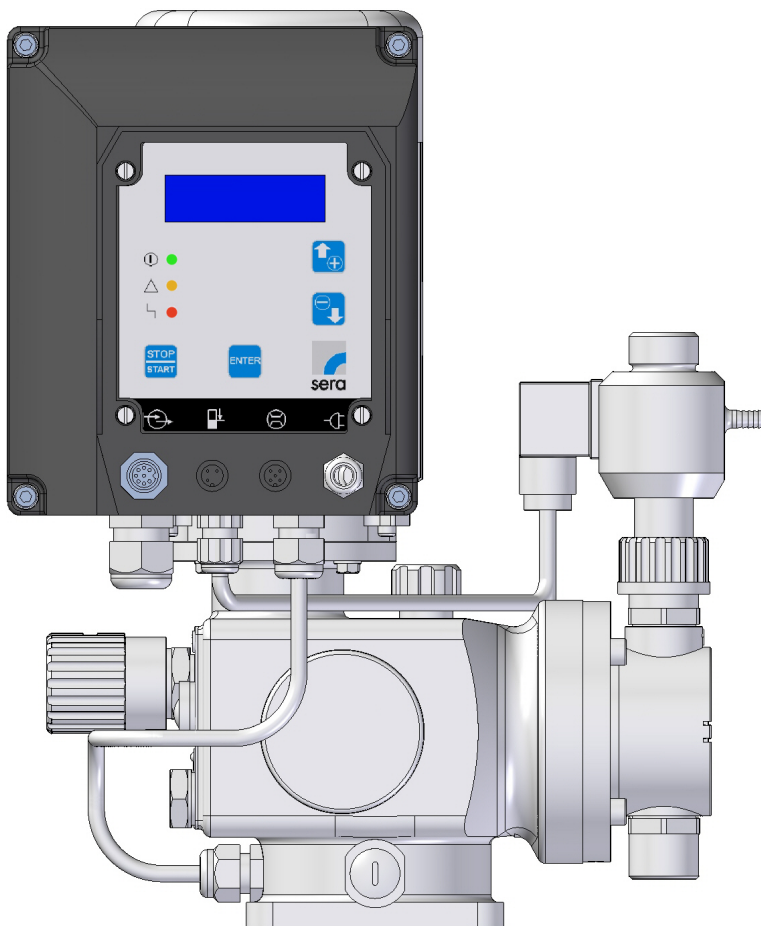
- self ventilating
- directly controllable
- PROFIBUS DP - Interface
- high dosing accuracy
- long service life of diaphragms\*
- high-quality materials
- linear control characteristic
- low maintenance
- low operating expenses
- leakagefree
- unlimitedly safe to run dry
- easy to operate
- low weight

\* compared to common conventional diaphragms



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## Functions of the control electronics

Function
Manual operation
Manual stroke frequency adjustment
Profibus DP – Interface
External START
External STOP
Pulse operation
Fractionation
Cycle delay
Analogue operation 0 – 20 mA <sup>1)</sup>
Analogue operation 4 – 20 mA <sup>1)</sup>
Analogue operation standardization <sup>1)</sup>
Charge manual <sup>1)</sup>
External charge START
Charge with timer <sup>1)</sup>
Speed control / Slow mode
3 LEDs for status indication
Multiline illuminated text display
Operating messages in plain text
Fault indication in plain text
Menu - driven parameterization
Flow indication
Calibration
Working hour meter
Password protection
4 – key operation
2 digital outputs (SPS) <sup>1)</sup>
1 digital input (SPS or contact signal) <sup>1)</sup>
2 analogue / digital inputs (optionally reversible) <sup>1)</sup>
Programmable input-/output functions <sup>1)</sup>
Connection / evaluation 2-stage level monitoring
Connection / evaluation diaphragm rupture monitoring
Connection / evaluation flow monitoring
Connection / evaluation flow metering

<sup>1)</sup> inapplicable when supplied with PROFIBUS DP-interface

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## Technical Data

Pumpentyp	Nominal capacity		max. counter- pressure	max. suction height	Usable stroke length range with self-ventilation	Inlet size	Outlet size	Driving power (motor)	Nominal stroke- frequency
	50/60Hz	$Q_{stroke}$	$p_2$ max.			DN	DN	$P_M$	$n_N$ 50/60 Hz
	[l/h]	[ml/Stroke]	[bar]	[mWC]	%	[mm]	[mm]	[kW]	[min <sup>-1</sup> ]
CS 409.2 – 0,8e	0 – 0,8	0 – 0,13	10	2	80 – 100	4	5	0,18	100
				1	40 – 100				
CS 409.2 – 1,6e	0 – 1,6	0 – 0,27	10	3	50 – 100	4	5	0,18	100
CS 409.2 – 2,4e	0 – 2,4	0 – 0,27	10	3	50 – 100	4	5	0,18	150
CS 409.2 – 4,0e	0 – 4,0	0 – 0,67	10	2	40 – 100	5	5	0,18	100
				3	60 – 100				
CS 409.2 – 7,0e	0 – 7,0	0 – 0,78	10	3	45 – 100	5	5	0,18	150
CS 409.2 – 12e	0 – 12	0 – 3,0	10	3	30 – 100	5	10	0,18	67
CS 409.2 – 18e	0 – 18	0 – 3,0	10	3	30 – 100	5	10	0,18	100
CS 409.2 – 25e	0 – 25	0 – 2,8	10	3	30 – 100	5	10	0,18	150

## Electrical data

- Operating voltage: 115 – 230 V (50/60 Hz)
- Inlet voltage control input <sup>2)</sup>: 5...30 V DC
- Minimale contact signal time <sup>2)</sup>: 55 ms
- Analogue input resistance <sup>2)</sup>: 100 Ω
- Digital Output <sup>2)</sup>: PNP,  
internal supply:  
max. 15V DC, 50 mA  
external supply:  
max. 30V DC, 350 mA
- Pump protection type: IP 55
- Insulation class: F
- Permitted ambient temperature: +2°C to +40°C
- Permitted humidity: approx. 90%

## Option PROFIBUS

- PROFIBUS DP-V0 Slave interface
- Transmission rate: 9,6 kbit/s ... 12 Mbit/s
- Connection socket M12x1, 5-pole, B-coded

<sup>2)</sup> inapplicable when supplied with PROFIBUS DP-interface

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## Materials

The high quality of the materials ensures continuous and reliable operation. We have the optimum material\* for each requirement.

### Vent valve:

PVC, PP, PVDF

### Pump body and valves:

PVC, PP, PVDF,  
PP-FRP, PVDF-FRP

### Valve balls:

Glass, PTFE, 1.4401

### Valve seals:

EPDM, FPM, FEP-covered

### Working diaphragm:

EPDM, FPM, PTFE-faced

### Intermediate diaphragm:

CSM, PTFE, PTFE-faced

\* please ask us for any material required but not mentioned here

## Drive

Each drive unit consists of a proven motor coupled to a stroke mechanism in a robust aluminium housing.

sera - aluminium housings can cope with even extreme operating conditions due to the thickness of the material and the surface treatment.

## Automatic ventilation

The vent valve is approached directly by the pump electronics. Both venting time and venting period can be programmed according to the application. An additional feature is to operate the venting automatic in a "manual" mode.

The automatic vent valve is mounted on the pump pressure joint and makes sure that gas volumes - accumulated during downtimes also in the pump head - can be discharged fast and without difficulty thus allowing a steadily accurate dosing process.

## Accessories

- Control cable
- Diaphragm rupture monitoring
- Flow controller
- Flow meter



- PROFIBUS Y – connector
- PROFIBUS T – connector
- PROFIBUS termination resistor

For the optimum installation of a dosing pump we can supply all the necessary accessories such as valves, pulsation dampers, injection fittings, dosing tanks. etc. against your order.



**sera**

Dosing  
Feeding  
Compressing

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