

# Self ventilating Solenoid diaphragm pumps



## The new 2 series

intelligent, precise, compact, good value...

### sera - Solenoid diaphragm pumps

of serie RS- and CS 204.1 are electronically controlled, self ventilating dosing pumps which can be used for many applications. They are designed for industrial use and guarantee highest operational reliability.

Performance range between 0,4 l/h and 35 l/h, pressures up to max. 10 bar.

### Application

Designed for the exact dosing of liquid media in all industrial fields. The dosing control is performed process-bound for the most part.

### ...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
- leakage-free
- unlimitedly safe to run dry
- easy to operate
- low weight

\* compared to common conventional diaphragms



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RS 204.1



CS 204.1

## Functions of the control electronics

Function	RS 204.1	CS 204.1
Manual operation	●	●
Manual stroke frequency adjustment	●	●
PROFIBUS DP - Interface		●
External ON		●
External STOP	●	●
Pulse operation	●	●
Fractionation		●
Cycle delay		●
Analogue operation (PROFIBUS)		●
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>		●
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 – key operation	●	
2 digital outputs (PLC)		●
1 digital input (PLC or contact signal) <sup>1)</sup>		●
2 digital inputs (PLC or contact signal)	●	
1 analogue input (0/4 – 20 mA)	●	
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		●
Connection / evaluation vent valve	●	●

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

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## Technical data

### Serie 204.1

Pump type	Nominal capacity		max. counter-pressure	max. suction <sup>2)</sup> height	Inlet-size	Outlet-size	Driving power (solenoid)	Nominal stroke frequency
	Q <sub>N</sub> 50/60 Hz	Q <sub>stroke</sub>	p <sub>2</sub> max.		DN	DN	P <sub>M</sub>	Q <sub>N</sub> 50/60 Hz
	[l/h]	[ml/Stroke]	[bar]	[mWC]	[mm]	[mm]	[W]	[l/h]
RS/CS 204.1 – 0,4e	0 – 0,4	0,04	10	1	4	4	20	150
RS/CS 204.1 – 1,2e	0 – 1,2	0,13	10	1,5	4	5	20	150
RS/CS 204.1 – 2,4e	0 – 2,4	0,22	10	2	4	5	26	150
RS/CS 204.1 – 6,0e	0 – 6,0	0,66	6	3	4	5	26	150
RS/CS 204.1 – 7,0e	0 – 7,0	0,77	10	3	4	5	33	150
RS/CS 204.1 – 10e	0 – 10	1,1	6	3	4	5	33	150
RS/CS 204.1 – 14e	0 – 14	1,5	3	3	4	5	26	150
RS/CS 204.1 – 25e	0 – 25	2,7	3	3	5	10	33	150
RS/CS 204.1 – 30e	0 – 30	3,3	2,5	3	5	10	33	150
RS/CS 204.1 – 35e	0 – 35	3,8	1,5	3	5	10	33	150

<sup>2)</sup> with filled suction line

## Electrical data

- Operating voltage: 100 – 240 V (50/60 Hz)
- Inlet voltage control input <sup>3)</sup>: 5...30 V DC
- Middle power draw with 150 strokes/min: 30 W
- Current consumption during stroke (230 V): max. 1,5 A
- Minimale contact signal time <sup>3)</sup>: 55 ms
- Analogue input resistance <sup>3)</sup>: 100 Ω
- Digital Output <sup>3)</sup>: PNP, internal supply: max. 15V DC, 50 mA external supply: max. 30V DC, 350 mA
- Pump protection type: IP 65
- 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>3)</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<sup>4)</sup> for each requirement.

### Pump body and Valves:

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

### Valve balls:

Glass, PTFE, 1.4401, Al<sub>2</sub>O<sub>3</sub>

### Valve seals:

EPDM, FPM, FEP-covered, FFKM<sup>5)</sup>

### Working diaphragm:

PTFE-faced

### Manual vent valve<sup>5)</sup>:

PP-FRP, PVDF-FRP

<sup>4)</sup> please ask us for any material required but not mentioned here

<sup>5)</sup> only with pumps in FRP-execution, 6 l/h bis 14 l/h

## Drive

The drive unit consists of a strong stroke solenoid in a robust housing made of plastic. The rotation-safe stroke solenoid is equipped with a thermal overload protection.

## 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 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.

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