

Controllable multi-layer diaphragm pumps

C 409.2-...ML / C 410.2-...ML



Controllable multi-layer diaphragm pumps generation 4

- Future-orientated pump concept by integral multi-functional control electronics
- High operational safety by multi-layer diaphragm technology
- Checking of the diaphragm by permanent and automatic diaphragm rupture monitoring
- Easy commissioning with "Plug & Dose" standard configuration
- High application security for viscous media due to slow-mode technology



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Controllable multi-layer diaphragm pump type C 409.2



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Functions of the control electronics

Function

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 ¹⁾
Analogue operation 4 – 20 mA ¹⁾
Analogue operation standardization ¹⁾
Charge manual ¹⁾
External charge START
Charge with timer ¹⁾
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 (PLC) ¹⁾
1 digital input (PLC or contact signal) ¹⁾
2 analogue / digital inputs (optionally reversible) ¹⁾
Programmable input/output functions ¹⁾
Connection / evaluation 2-stage level monitoring
Connection / evaluation diaphragm rupture monitoring
Connection / evaluation flow monitoring
Connection / evaluation flow metering
Operating panel for wall mounting (option)

¹⁾ inapplicable when supplied with PROFIBUS DP-interface

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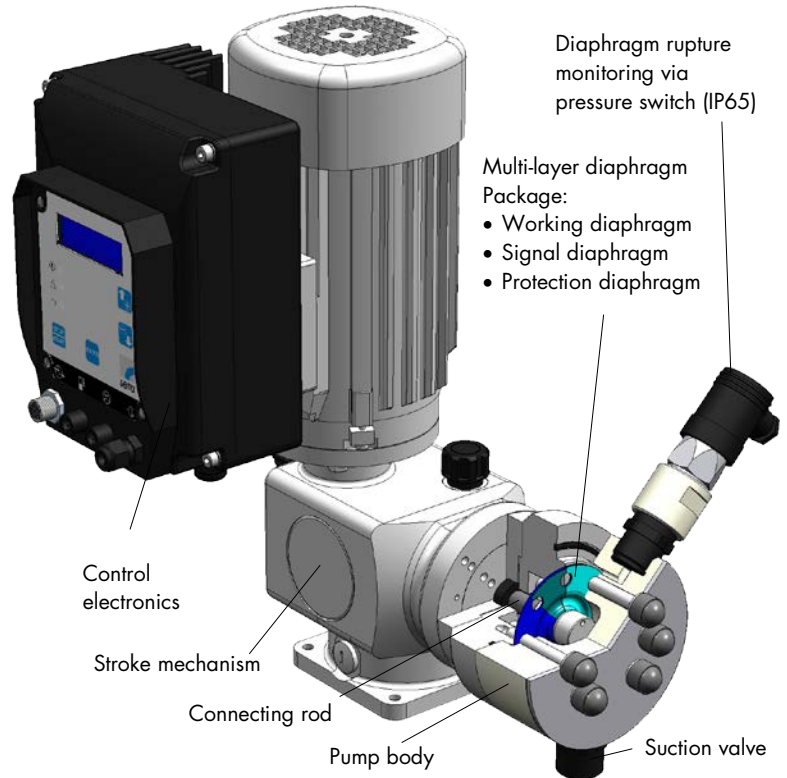
Multi-layer diaphragm pumps

The operating principle of the multi-layer diaphragm pump is the same as that of the common diaphragm pump.

The diaphragm is coupled mechanically and oscillating via a connecting rod – this way feeding the dosing medium.

By using the multi-layer diaphragm these pumps can now handle dosing tasks with higher requirements regarding safety.

Such demands will be fulfilled by the higher lifetime of the multi-layer diaphragm in comparison to single layer diaphragms and thanks to the integrated diaphragm rupture signalization (manometer as standard plus optional



Technical data

Pump type	Nominal capacity		max. counter-pressure	max. suction height	Inlet-/Outlet-size	Driving power (motor)	Nominal stroke-frequency
	50/60Hz	Q _{stroke}	p ₂ max.		DN	P _M	50/60Hz
C 409.2	[l/h]	[ml/Stroke]	[bar]	[mWC]	[mm]	[kW]	[l/h]
C 409.2 – 11ML	0 – 11	0 – 1,8	20	3	10	0,37	100
C 409.2 – 17ML	0 – 17	0 – 1,8	20	3	10	0,37	150
C 409.2 – 30ML	0 – 30	0 – 5	16	3	10	0,37	100
C 409.2 – 45ML	0 – 45	0 – 5	16	3	10	0,37	150
C 409.2 – 72ML	0 – 72	0 – 12	10	3	15	0,37	100
C 409.2 – 110ML	0 – 110	0 – 12,2	8	3	15	0,37	150
C 409.2 – 150ML	0 – 150	0 – 25	4	3	15	0,37	100
C 409.2 – 220ML	0 – 220	0 – 24	3	3	15	0,37	150

Pump type	Nominal capacity		max. counter-pressure	max. suction height	Inlet-/Outlet-size	Driving power (motor)	Nominal stroke-frequency
	50/60Hz	Q _{stroke}	p ₂ max.		DN	P _M	50/60Hz
C 410.2	[l/h]	[ml/Stroke]	[bar]	[mWC]	[mm]	[kW]	[l/h]
C 410.2 – 70ML	0 – 70	0 – 12	16	3	10	0,75	97
C 410.2 – 135ML	0 – 135	0 – 23	15	3	15	0,75	97
C 410.2 – 500ML	0 – 500	0 – 85	10	3	15	0,75	97
C 410.2 – 1200ML	0 – 1200	0 – 206	5	3	20	1,5	97

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Electrical data (electronics)

- Operating voltage (50/60 Hz): 1~115 V ²⁾;
1~230 V;
3~400 V/N/PE ³⁾
- Inlet voltage control input: 5...30 V DC
- Minimum contact signal time ⁴⁾: 55 ms
- Analogue input resistance ⁴⁾: 100 Ω
- Digital Output ⁴⁾: 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

²⁾ Series C 410.2 is not available for 115V-voltage

³⁾ For series C 410.2 with driving power 0,75 and 1,5 kW

⁴⁾ Inapplicable when supplied with PROFIBUS DP-interface

Materials

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

Pump body and valves:

PVC, PP, PVDF, 1.4571, Titan,
PP-FRP, PVDF-FRP

Valve balls:

Glass, PTFE, 1.4401

Valve seals:

EPDM, FPM, FEP-covered

Working diaphragm:

PTFE (3-ply)

* 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.

Accessories

- Control cable
- 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.

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