Controllable piston pumps

C-Series C 409.1-...K.1/...



sera - Controllable piston pumps

Are oscillating displacement pumps for volumetric dosing up to 48 l/h and up to max. 140 bar - depending on the flow capacity. Highest operating safety due to a protective diaphragm between pump head and stroke mechanism.



Application

Pure liquids which are non-abrasive or non-hazardous.

Advantages

- Optimum dosing accuracy
- Wide pressure range
- Little wear and tear
- Trouble-free continuous operation
- High quality materials
- High operational reliability

Electronics

Modern integral electronics and proven quality are combined in a unit of optimal function.

The pumps are controlled via standard analogue or digital signals – depending on process – mainly for automatic proportional dosing.

The C-pump electronics is intelligent and user-oriented.

The new controllable piston pump series C 409.1-...K.1/... extends the range of **sera** - dosing pumps which has been successful for decades.

Controllable piston pumps

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Piston pumps

The stroke movement of the mechanically coupled piston is transferred directly to the medium. With this construction the piston is sealed by a spring-elastic sealing element (V-packing ring).

Highest performance owing to high-quality materials. Highest dosing accuracy owing to exactly closing valves.

Design options

The single pump has one pump head - technical data according to the performance chart. Multi-headed or combination pumps with only one drive are reasonably priced - twin head or multi-headed pumps with each pump head sized individually according to the requirements in respect of material, size and control.



Controllable piston pumps C-Series

C 409.1-...K.1/...



Pump type	Nominal capacity adjustable by changing stroke length and stroke frequency	Maximum permissible pressure at outlet of pump	Maximum suction height	Inlet- / Outlet nominal size	Nominal stroke frequency	Maximum stroke length
	Q _N [l/h]	p ₂ max. [bar]	[mWC]	DN [mm]	n _N [1/min]	h ₁₀₀ [mm]
C 409.1-6,5 K. 1 / 14	0 – 6,5	140	3	10	80	10
C 409.1-13 K. 1 / 20	0 – 13	70	3	10	80	10
C 409.1-24 K. 1 / 20	0 – 24	50	3	10	150	10
C 409.1-27 K. 1 / 28	0 – 27	35	3	10	80	10
C 409.1-48 K. 1 / 28	0 – 48	25	3	10	150	10



- 1. Equipment-on indicator and stroke monitor
- 2. Indicator "Empty", series and limit stop contact
- 3. Without function
- 4. Collective fault indicator
- 5. Manual/automatic switch
- 6. LCD-display
- 7. Mode selection switch
- 8. ON / OFF switch
- 9. Potential-free output (collective fault)
- 10. Analogue input 0/4 20 mA and pulse input
- 11. Input for series and limit stop contact
- 12. Input for flow monitoring
- 13. 2 meters Cable with Euro-plug

Electronics:

 Contact load of the potential-free inputs 	: 5 V, 0,5 mA
• Minimum contact signal time	: 5 ms
 Input resistance for analogue input 	: 200 Ohm
 Contact load for collective fault 	: 250 V, 1 A

Further technical data:

Pump protection type	: IP 55
Paint	: RAL 5015
Noise level (Noise measurement DIN 45635-01-KL3)	: 58 + 5 db (B)
Permitted ambient temperature	: +2°C to +40°C
Permitted storage temp.	: +5°C to +30°C

: approx. 90 %

Permitted air humidity

Motor details C 409.1:

- Single phase motor:
 230 V, 50/60 Hz, IP55 / F, 0.25 KW
- Current consumption:
 230 V, 50 Hz, 1.07 A
 230 V, 60 Hz, 0.94 A
- Nominal voltage tolerances: 220 - 240 V +5 %

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Technics

The C-series is equipped with the following connections in standard execution:

- Current input 0 / 4...20 mA: The capacity changes proportionally to the control signal which is primarily used for flow proportional dosing.
- Contact input (for example, from contact water meter): The pump performs a dosing stroke at every input contact. To adjust the stroke frequency to the number of switching actuations of the contact transmitter the assessment factors for fractionation can be set.
- Level monitor:

Connection possibility for a two-position level switch for pre-alarm and empty warning.

Flow monitor:

Connection possibility for NAMUR - input of a downstream flow monitor. If a number of dosing strokes fail, an alarm is set.

 Fault indication output: Every malfunction is indicated by a change-over contact.

Displays

A four-digit LCD display on the operating panel of the pump shows information about the operating status and the current stroke frequency in %.

Four LEDs enable an overview of the operating status at a glance:

- Pump in operation
- Chemical reserve is low.
- Chemical reserve is used up.
- (One LED without function)

This results in the possibility to take immediate action to remedy an operation fault, which guarantees a safe process.

Drive

The drive unit consists of a proven motor coupled to a stroke mechanism in a robust, grey cast iron housing. **sera** - grey cast iron housings are durable in the most extreme conditions; the material thickness, as well as the surface treatment are able to resist even chemicals.

CE

sera

Dosing Feeding Compressing



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Operation

All C-series pumps have an identical operating panel, connection technique, signal interchange, and are controlled in the same manner so that the user can quickly become acquainted with the technique.

Selection criteria

Apart from flow capacity, suction height and counterpressure, factors such as medium characteristics, pipe geometry and dosing accuracy etc. also play a role when choosing the right pump.

Materials

The high quality of the materials ensures continuous and reliable operation.

We have the optimum material for each requirement (please ask us for any material not mentioned here).

- Pump body:
- 1.4122 V Valve balls:
- 1.4571, 1.4571/1.4581
- Valve balls (Ventilkugeln): 1.4401
- Valve seals: EPDM, FPM (Viton), FEP-covered
- Protective diaphragm: CR
- Piston:
- 1.4571
- Piston seal: PTFE / PE

Accessories

We can supply all the necessary accessories for the optimum installation of dosing pumps such as valves, pulsation dampers, injection fittings, dosing tanks, flow controllers, etc. against your order.

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