

Diaphragm pumps

Flow capacity 0,4 l/h ... 12 l/h

Admiss. counterpressure up to 10 bar



R409.2



R409.2 in survey

- Safe if run dry
- Leakage free
- Low maintenance
- Easy to use
- High dosing accuracy
- Integrable into automatic processes
- Manual stroke length adjustment
- Robust metallic stroke-mechanism housing

Infobox

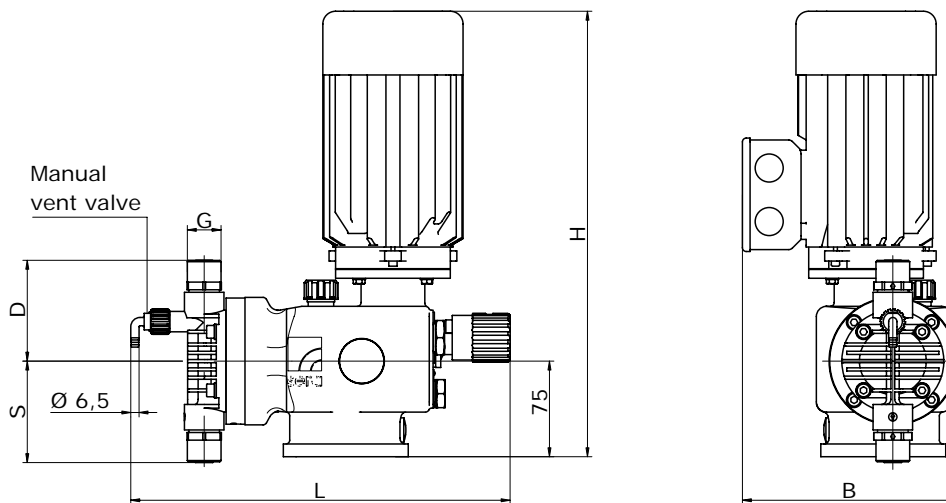
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Technical data

| Type | Nominal capacity l/h | | Nominal stroke frequency 1/min | | Capacity per stroke ml/Stroke | Admiss. counterpressure bar | Admiss. pressure at pump inlet bar | Max. suction height mWC | Inlet/Outlet nominal width DN | Max. stroke length mm | rated motor power kW |
|-------------|----------------------|----------|--------------------------------|-------|-------------------------------|-----------------------------|------------------------------------|-------------------------|-------------------------------|-----------------------|----------------------|
| | 50 Hz | 60 Hz | 50 Hz | 60 Hz | | | | | | | |
| R409.2-0,4e | 0 - 0,4 | 0 - 0,48 | 50 | 60 | 0,13 | 10 | -0,2 / 0 | 2 | 4 | 1,6 | 0,18 |
| R409.2-0,8e | 0 - 0,8 | 0 - 0,96 | 100 | 120 | 0,13 | 10 | -0,2 / 0 | 2 | 5 | 1,6 | 0,18 |
| R409.2-1,6e | 0 - 1,6 | 0 - 1,9 | 100 | 120 | 0,27 | 10 | -0,3 / 0 | 3 | 5 | 1,6 | 0,18 |
| R409.2-2,4e | 0 - 2,4 | 0 - 2,9 | 150 | 180 | 0,27 | 10 | -0,3 / 0 | 3 | 5 | 1,6 | 0,18 |
| R409.2-4,0e | 0 - 4 | 0 - 4,8 | 100 | 120 | 0,67 | 10 | -0,3 / 0 | 3 | 5 | 4 | 0,18 |
| R409.2-7,0e | 0 - 7 | 0 - 8,4 | 150 | 180 | 0,78 | 10 | -0,3 / 0 | 3 | 5 | 4 | 0,18 |
| R409.2-12e | 0 - 12 | 0 - 14,4 | 67 | 80 | 3 | 10 | -0,3 / 0 | 3 | 10 | 6 | 0,18 |

e in type designation means: pump with single diaphragm

Dimensional drawing



Dimensional chart

All indications in mm

| Type | G | S | D | L | B | H | Weight kg |
|-------------|-------|----|----|-----|-----|-----|-----------|
| R409.2-0,4e | G 3/4 | 70 | 70 | 270 | 190 | 380 | 8,6 |
| R409.2-0,8e | G 3/4 | 80 | 80 | 310 | 190 | 380 | 8,6 |
| R409.2-1,6e | G 3/4 | 80 | 80 | 310 | 190 | 380 | 8,6 |
| R409.2-2,4e | G 3/4 | 80 | 80 | 310 | 190 | 380 | 8,6 |
| R409.2-4,0e | G 3/4 | 56 | 64 | 270 | 190 | 380 | 8,6 |
| R409.2-7,0e | G 3/4 | 56 | 64 | 270 | 190 | 380 | 8,6 |
| R409.2-12e | G 3/4 | 56 | 64 | 270 | 190 | 380 | 8,6 |

- Manual vent valve only with PP-FRP and PVDF-FRP design at pumps with a nominal capacity from 0,8 l/h up to 2,4 l/h
- Indication of weight acc. to order information

Order information

Basic design

R409.2-0,4e

- Pump body PP
- Chamber valves PP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

R409.2-0,8e up to R409.2-2,4e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced
- Manual vent valve with hose nozzle (only with pump body made of PP-FRP/PVDF-FRP)

R409.2-4,0e up to R409.2-12e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced


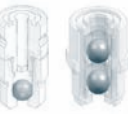
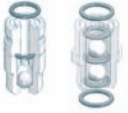

Motor:

- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

More options and accessories

- Connection pieces see chapter 4
- Product documentation see chapter 5

| Type | Basic design | x |
|-------------|--------------|---|
| R409.2-0,4e | 16005292 | |
| R409.2-0,8e | 16008571 | |
| R409.2-1,6e | 16008572 | |
| R409.2-2,4e | 16008573 | |
| R409.2-4,0e | 16008574 | |
| R409.2-7,0e | 16008575 | |
| R409.2-12e | 16008576 | |

| Options/Accessories | | | R409.2-0,4e | | R409.2-0,8e up to R409.2-2,4e | | R409.2-4,0e R409.2-7,0e | | R409.2-12e | |
|---|--|-------------------------------------|-------------|---|-------------------------------|---|-------------------------|---|------------|---|
| | | | x | | x | | x | | x | |
| Pump body and valves  | PP | double valve PP-FRP | - | | ● | | ● | | ● | |
| | PP | chamber valve (double valve) PP | ● | | - | | - | | - | |
| | PVC-U | single valve PVC-U | ▲ | | - | | - | | - | |
| | | chamber valve (double valve) PVC-U | - | | - | | ▲ | | ▲ | |
| | PVDF | chamber valve (double valve) PVDF | ▲ | | ▲ | | - | | - | |
| | PVDF | double valve PVDF-FRP | - | | ▲ | | ▲ | | ▲ | |
| | 1.4571 | chamber valve (double valve) 1.4571 | ▲ | | ▲ | | - | | - | |
| double valve 1.4571/1.4581 | | - | | - | | ▲ | | ▲ | | |
| Valve balls  | Glass | single valve | - | | - | | ○ | | ○ | |
| | | double valve | ● | | ● | | ● | | ● | |
| | 1.4401 | single valve | - | | - | | ○ | | ○ | |
| | | double valve | ○ | | ○ | | ○ | | ○ | |
| PTFE | single valve | - | | - | | ▲ | | ▲ | | |
| | double valve | ▲ | | ▲ | | ▲ | | ▲ | | |
| Valve sealings  | FPM | single valve | - | | - | | ○ | | ○ | |
| | | double valve | ● | | ● | | ● | | ● | |
| | EPDM | single valve | - | | - | | ○ | | ○ | |
| | | double valve | ○ | | ○ | | ○ | | ○ | |
| | FEP-covered | single valve | - | | - | | ▲ | | ▲ | |
| | | double valve | ▲ | | ▲ | | ▲ | | ▲ | |
| Integrated relief valve  | with PTFE-faced diaphragm, connection seal FPM or EPDM at pump body made of: | | | | | | | | | |
| | PP | | - | | - | | ▲ | | ▲ | |
| | PVC-U | | - | | - | | ▲ | | ▲ | |
| | PVDF | | - | | - | | ⊗ | | ⊗ | |
| | 1.4571 | | - | | - | | ▲ | | ▲ | |
| | Connection seals FEP-covered | | | - | | - | | ▲ | | ▲ |

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R409.2

Order information

Basic design

R409.2-0,4e

- Pump body PP
- Chamber valves PP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

R409.2-0,8e up to R409.2-2,4e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced
- Manual vent valve with hose nozzle (only with pump body made of PP-FRP/PVDF-FRP)

R409.2-4,0e up to R409.2-12e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

Motor:

- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

More options and accessories

- Connection pieces see chapter 4
- Product documentation see chapter 5

| Type | Basic design | x |
|-------------|--------------|---|
| R409.2-0,4e | 16005292 | |
| R409.2-0,8e | 16008571 | |
| R409.2-1,6e | 16008572 | |
| R409.2-2,4e | 16008573 | |
| R409.2-4,0e | 16008574 | |
| R409.2-7,0e | 16008575 | |
| R409.2-12e | 16008576 | |

Options/Accessories

| | | R409.2-0,4e | R409.2-0,8e up to R409.2-2,4e | R409.2-4,0e R409.2-7,0e | R409.2-12e |
|--|---|-------------|-------------------------------|-------------------------|------------|
| <p>Diaphragm rupture monitoring</p> | Diaphragm rupture electrode conductive, mounted to pump | | | | |
| | <p>MBE-02 for single diaphragm pump</p> | ▲ | ▲ | ▲ | ▲ |
| <p>Diaphragm rupture monitoring</p> | ATEX-Design (Type examination, only for Double diaphragm design) Diaphragm rupture monitoring, conductive, mounted on the pump | | | | |
| | <p>MBE-02 incl. Connection cable for Diaphragm rupture monitoring blue for EExia-circuit (5m)</p> | ▲ | ▲ | ▲ | ▲ |
| <p>Diaphragm rupture monitoring</p> | Electrode relay, control cabinet assembly | | | | |
| | <p>ER-104/C aux. energy 230 V AC</p> | 90022944 | 90022944 | 90022944 | 90022944 |
| | <p>ER-142 aux. energy 24 V DC</p> | 90022945 | 90022945 | 90022945 | 90022945 |
| <p>Diaphragm rupture monitoring</p> | ER-142 | 90200363 | 90200363 | 90200363 | 90200363 |
| | <p>aux. energy 230 V AC II(1)G [EExia] IIC acc. to ATEX 95</p> | | | | |
| <p>Stroke length adjustment</p> | with position indicator | ▲ | ▲ | ▲ | ▲ |
| | | | | | |
| <p>Stroke frequency monitoring</p> | Inductive contact | | | | |
| | 10-60 V DC, three-wire, PNP | ▲ | ▲ | ▲ | ▲ |
| | Namur execution, II2G EExia IICT6 acc. to ATEX95 | ▲ | ▲ | ▲ | ▲ |
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Order information

Basic design

R409.2-0,4e

- Pump body PP
- Chamber valves PP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

R409.2-0,8e up to R409.2-2,4e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced
- Manual vent valve with hose nozzle (only with pump body made of PP-FRP/PVDF-FRP)

R409.2-4,0e up to R409.2-12e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced


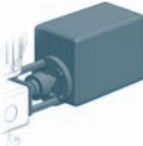
Motor:

- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

More options and accessories

- Connection pieces see chapter 4
- Product documentation see chapter 5

| Type | Basic design | x |
|-------------|--------------|---|
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| R409.2-0,8e | 16008571 | |
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| R409.2-2,4e | 16008573 | |
| R409.2-4,0e | 16008574 | |
| R409.2-7,0e | 16008575 | |
| R409.2-12e | 16008576 | |

| Options/Accessories | | R409.2-0,4e | | R409.2-0,8e up to R409.2-2,4e | | R409.2-4,0e R409.2-7,0e | | R409.2-12e | |
|---|---|-------------|---|-------------------------------|---|-------------------------|---|------------|--|
| | | x | | x | | x | | x | |
|  | Special voltage | ▲ | | ▲ | | ▲ | | ▲ | |
| | Enclosure IP 65 | ▲ | | ▲ | | ▲ | | ▲ | |
| | Protective roof for the fan of the drive | ▲ | | ▲ | | ▲ | | ▲ | |
| | integrated posistor (3 pcs.) insul. cl. F | ▲ | | ▲ | | ▲ | | ▲ | |
| | VIK-design | ▲ | | ▲ | | ▲ | | ▲ | |
| | II2G EExe IIT4 (acc. to ATEX95) | ▲ | | ▲ | | ▲ | | ▲ | |
| | II2G EExde ICT4 (acc. to ATEX95) | ▲ | | ▲ | | ▲ | | ▲ | |
| | Single phase AC 230V with capacitor | ▲ | | ▲ | | ▲ | | ▲ | |
| | Driver for converter operation incl. integrated posistor, 5-50/60Hz | ▲ | | ▲ | | ▲ | | ▲ | |
| Driver for converter operation II2G EExde ICT4, 5-50/60 Hz acc. ATEX 95, incl. integrated posistor | ▲ | | ▲ | | ▲ | | ▲ | | |
|  | Actuator N-AS10 230V, +/- 10%, 50/60 Hz, 51,2s/4U, 2 Nm incl. mounting plate for actuator | ▲ | | ▲ | | - | | - | |
| | Electronic positioning controller PMR3 input signal 0/4-20 mA incl. feedback signal 0/4-20 mA (only in N-AS 10 integrated) | ⊙ | | ⊙ | | - | | - | |
| | Actuator D30D-10-Ex (II2G EExde ICT4) acc. to ATEX 95, 400 V, 50 Hz, 4 U/min, incl. mounting-kit for actuator and base plate | ▲ | | ▲ | | - | | - | |
| | Actuator N C1-BA 230 V, +/- 10%, 50/60 Hz, 128s/10 U, 1,5 Nm incl. mounting plate for actuator | - | | - | | ▲ | | ▲ | |
| | Electronic positioning controller PMR3 input signal 0/4-20 mA incl. feedback signal 0/4-20 mA (only in N C1-BA integrated) | - | | - | | ▲ | | ▲ | |
| | Actuator D30D-10-Ex (II2G EExde ICT4) acc. to ATEX 95, 400 V, 50 Hz, 4 U/min, incl. mounting-kit for actuator and base plate | - | | - | | ▲ | | ▲ | |
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R409.2

Order information

Basic design

R409.2-0,4e

- Pump body PP
- Chamber valves PP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

R409.2-0,8e up to R409.2-2,4e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced
- Manual vent valve with hose nozzle (only with pump body made of PP-FRP/PVDF-FRP)

R409.2-4,0e up to R409.2-12e

- Pump body PP-FRP
- Double valves PP-FRP
- Valve balls Glass
- Valve sealings FPM
- Working diaphragm PTFE-faced

Motor:



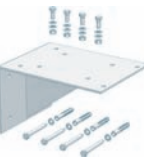
- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

More options and accessories

- Connection pieces see chapter 4
- Product documentation see chapter 5

| Type | Basic design | x |
|-------------|--------------|---|
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| R409.2-0,8e | 16008571 | |
| R409.2-1,6e | 16008572 | |
| R409.2-2,4e | 16008573 | |
| R409.2-4,0e | 16008574 | |
| R409.2-7,0e | 16008575 | |
| R409.2-12e | 16008576 | |

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| Options/Accessories | | R409.2-0,4e x | R409.2-0,8e up to R409.2-2,4e x | R409.2-4,0e R409.2-7,0e x | R409.2-12e x |
|---|---|---------------|---------------------------------|---------------------------|--------------|
| Stroke frequency adjustment electrical  | Frequency converter series 8200 Motec mounted-on, input 4-20mA | | | | |
| | Single-phase 230 V, 50/60 Hz 0,25 kW | ▲ | ▲ | ▲ | ▲ |
| | Three-phase 320-550 V, +/- 0%, 50/60 Hz 0,55 kW | ▲ | ▲ | ▲ | ▲ |
| | Switch-potentiometer for manuell stroke frequency adjustment and to switch on the pump motor (External control of the frequency converter with mounted switch potentiometer unit is not possible) | ▲ | ▲ | ▲ | ▲ |
| | Service module hand terminal and keypad incl. 2,5m connection cable | ▲ | ▲ | ▲ | ▲ |
| Stroke frequency adjustment electrical  | Frequency converter series 8200 Vector input 4-20mA, incl. Keypad (for integration into control cabinet) | | | | |
| | Single-phase 230 V, 50/60 Hz 0,25 kW | 90017521 | 90017521 | 90017521 | 90017521 |
| | Three-phase 320-550 V, +/- 0%, 50/60 Hz 0,55 kW | 90017526 | 90017526 | 90017526 | 90017526 |
| Console  | 1.4301 for wall mounting incl. fixing screws | 90023875 | 90023875 | 90023875 | 90023875 |
| | PP | 90023848 | 90023848 | 90023848 | 90023848 |
| ● = basic design ▲ = with add. price ○ = without add. price ⊕ = on request -- = not available Art.-No. = available in basic design/accessories | | | | | |

| Fittings for suction side of dosing pumps | | R409.2-0,4e up to R409.2-2,4e | | R409.2-4,0e R409.2-7,0e | | R409.2-12e | |
|---|---------------------------|-------------------------------|------|-------------------------|------|----------------|------|
| | | Typ | S. | Typ | S. | Typ | S. |
| Suction lance | with level switch 1-stage | SL-11.1 | 3.34 | SL-11.1 | 3.34 | SL-11.1 | 3.34 |
| | with level switch 2-stage | SL-12.1 | 3.34 | SL-12.1 | 3.34 | SL-12.1 | 3.34 |
| | without level switch | SH-04.1 | 3.44 | SH-05.1 | 3.44 | SH-05.1 | 3.44 |
| Priming aid | transparent PVC-U | 769.1 | 3.74 | 769.1 | 3.74 | 769.1 | 3.74 |
| Calibration Pot | PVC-U | 791.1 | 3.78 | 791.1 | 3.78 | 792.1 | 3.78 |
| Foot valve | PVC-U | 731 | 3.82 | 731 | 3.82 | 731 | 3.82 |
| | 1.4571 | 781.1 | 3.86 | 781.1 | 3.86 | 781.1 | 3.86 |
| | PP-FRP / PVDF-FRP | 731 | 3.82 | 731 | 3.82 | 731 | 3.82 |
| Line strainer | PVC-U | 751.1 | 3.88 | 751.1 | 3.88 | 751.1 | 3.88 |
| | PVC-U / PP / PVDF | 752.1 | 3.88 | 752.1 | 3.88 | 752.1 | 3.88 |
| | 1.4408 | 752 | 3.90 | 752 | 3.90 | 752 | 3.90 |
| Float valve | PVC-U | 871 | 3.92 | 871 | 3.92 | 871 | 3.92 |
| Pulsation damper without separating diaphragm | PVC-U / PP | 702.1 | 3.14 | 702.1 | 3.14 | 702.1 | 3.14 |
| | 1.4571 | ⊗ | | ⊗ | | ⊗ | |
| Fittings for pressure side of dosing pumps | | R409.2-0,4e up to R409.2-2,4e | | R409.2-4,0e R409.2-7,0e | | R409.2-12e | |
| | | Typ | S. | Typ | S. | Typ | S. |
| Diaphragm-type relief valve | | 620.10 | 3.4 | 620.10 | 3.4 | 620.10 | 3.4 |
| Diaphragm-type pressure keeping valve | | 620.D | 3.8 | 620.D | 3.8 | 620.D | 3.8 |
| Multi-function valve | 4 bar opening pressure | MFV 05004 | 3.10 | MFV 05004 | 3.10 | MFV 05004 | 3.10 |
| | 6 bar opening pressure | MFV 05006 | 3.10 | MFV 05006 | 3.10 | MFV 05006 | 3.10 |
| | 10 bar opening pressure | MFV 05010 | 3.10 | MFV 05010 | 3.10 | MFV 05010 | 3.10 |
| Pulsation damper without separating diaphragm | PVC-U / PP | 702.1 | 3.14 | 702.1 | 3.14 | 702.1 | 3.14 |
| | 1.4571 | ⊗ | | ⊗ | | ⊗ | |
| Diaphragm-pulsation damper with PTFE/PTFE-faced diaphragm | PVC-U / PP / PVDF | 720.1 | 3.22 | 720.1 | 3.22 | 720.1 | 3.22 |
| | 1.4571 | 721.1 | 3.26 | 721.1 | 3.26 | 721.1 | 3.26 |
| Diaphragm-pulsation damper with Elastomer-diaphragm | 1.4571 | 810.1-0,16/180 | 3.28 | 810.1-0,16/180 | 3.28 | 810.1-0,16/180 | 3.28 |
| Check valve | PVC-U | 661.2 | 3.50 | 661.2 | 3.50 | 661.2 | 3.50 |
| | PP-FRP / PVDF-FRP | 661.2 | 3.50 | 661.2 | 3.50 | 661.2 | 3.50 |
| | 1.4571 | 661.2 | 3.50 | 661.2 | 3.50 | 661.2 | 3.50 |
| Dosing valve | PVC-U | 691.1 | 3.54 | 691.1 | 3.54 | 691.1 | 3.54 |
| | PP-FRP / PVDF-FRP | 681.1 | 3.58 | 681.1 | 3.58 | 681.1 | 3.58 |
| | 1.4571 | 691.1 | 3.54 | 691.1 | 3.54 | 691.1 | 3.54 |
| | PVC-U / PP / PVDF | 691.1 | 3.54 | 691.1 | 3.54 | 691.1 | 3.54 |
| Injection fitting | PVC-U / PP / PVDF | 8061.1 | 3.60 | 8061.1 | 3.60 | 8061.1 | 3.60 |

⊗ = on request

– = not available

The above allocation considers the fittings which have to be used at least regarding their nominal width in order to ensure the safe and trouble-free operation of the respective pumps when feeding liquids which are similar to water.

Absolutely note the max. admissible operating pressure of the fittings.

The use of fittings of a bigger nominal width is unproblematically possible in most cases.

When choosing the fittings note the installation instructions for dosing pumps or confer with **sera**.