

# Diaphragm pumps

Flow capacity 18 l/h ... 350 l/h

Admiss. counterpressure up to 10 bar



R409.2



## R409.2 in survey

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

## Infobox

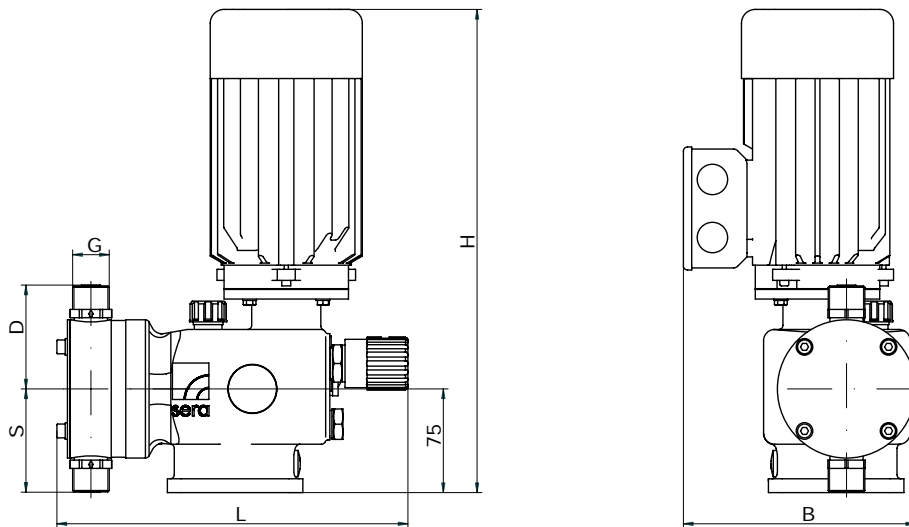
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## Technical data

Type	Nominal capacity l/h		Nominal stroke frequency 1/min		Capacity per stroke ml/Stroke	Admiss. counter-pressure 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							
R409.2-18e	0 - 18	0 - 21,5	100	120	3	10	-0,3 / 0	3	10	6	0,18
R409.2-25e	0 - 25	0 - 30	150	180	3	10	-0,3 / 0	3	10	6	0,18
R409.2-50e	0 - 50	0 - 60	100	120	8,3	10	-0,3 / 0	3	10	8	0,18
R409.2-75e	0 - 75	0 - 90	150	180	8,3	10	-0,3 / 0	3	15	8	0,18
R409.2-90e	0 - 90	0 - 108	100	120	15	8	-0,3 / 0	3	15	10	0,37
R409.2-115e	0 - 115	0 - 138	100	120	19,8	4	-0,3 / 0	3	15	10	0,18
R409.2-140e	0 - 140	0 - 168	150	180	15	8	-0,3 / 0	3	15	10	0,37
R409.2-180e	0 - 180	0 - 216	150	180	19,8	4	-0,3 / 0	3	15	10	0,18
R409.2-250e	0 - 250	0 - 300	100	120	38,8	3	-0,3 / 0	3	15	10	0,37
R409.2-350e	0 - 350	-	150	-	38,8	3	-0,3 / 0	3	15	10	0,37

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
R409.2-18e	G 3/4	56	64	270	190	380	8,6
R409.2-25e	G 3/4	56	64	270	190	380	8,6
R409.2-50e	G 3/4	69	69	270	190	380	8,4
R409.2-75e	G 3/4	69	69	270	190	380	8,4
R409.2-90e	G 3/4	76	76	275	192	380	10,5
R409.2-115e	G 3/4	76	76	275	192	380	9
R409.2-140e	G 3/4	76	76	275	192	380	10,5
R409.2-180e	G 3/4	76	76	275	192	380	9
R409.2-250e	G 1 1/4	122	122	330	225	380	13
R409.2-350e	G 1 1/4	122	122	330	225	380	13

■ Indication of weight for basic design acc. to order information

## Order information

### Basic design

#### R409.2-18e to R409.2-25

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

#### R409.2-50e to R409.2-90e and R409.2-140

- Pump body PP-FRP
- Single valves PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### R409.2-115e and R409.2-180e

- Pump body PP-FRP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm EPDM

#### R409.2-250e and R409.2-350e

- Pump body PP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced



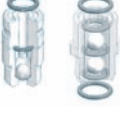

#### Motor:

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

#### Further options and accessories

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

Type	Basic design	x
R409.2-18e	16005264	
R409.2-25e	16005265	
R409.2-50e	16005266	
R409.2-75e	16005267	
R409.2-90e	16005268	
R409.2-115e	16005269	
R409.2-140e	16005270	
R409.2-180e	16005271	
R409.2-250e	16005280	
R409.2-350e	16005281	

Options/Accessories			R409.2-18e R409.2-25e x	R409.2-50e R409.2-75e x	R409.2-90e R409.2-140e x	R409.2-115e R409.2-180e x	R409.2-250e R409.2-350e x
 <b>Pumpenkörper und Ventile</b>	PP	single valve PP-FRP	—	●	●	●	—
		double valve PP-FRP	●	○	○	○	—
	PVC-U	single valve PVC-U	▲	▲	▲	▲	▲
		single valve PVDF-FRP	—	▲	▲	▲	—
	PVDF	double valve PVDF-FRP	▲	▲	▲	▲	—
		single valve PVDF-FRP	—	—	—	—	▲
	PVDF	double valve PVDF-FRP	—	—	—	—	▲
		1.4571	single valve 1.4571/1.4581	—	—	—	—
		double valve 1.4571/1.4581	▲	▲	▲	▲	
 <b>Valve balls</b>	Glass	single valve	○	●	●	●	●
		double valve	●	○	○	○	○
	1.4401	single valve	○	○	○	○	▲
		double valve	○	○	○	○	▲
PTFE	single valve	▲	▲	▲	▲	▲	
	double valve	▲	▲	▲	▲	▲	
 <b>Valve sealings</b>	FPM	single valve	○	●	●	●	●
		double valve	●	○	○	○	○
	EPDM	single-/double valve	○	○	○	○	○
		FEP-covered	single-/double valve	▲	▲	▲	▲
 <b>Integrated relief valve</b>	with PTFE-faced diaphragm, connection seal FPM or EPDM at pump body made of:						
	PP		▲	▲	▲	▲	▲
	PVC-U		▲	▲	▲	▲	▲
	PVDF		⊗	⊗	⊗	⊗	⊗
	1.4571		▲	▲	▲	▲	▲
		Connection seals FEP-covered		▲	▲	▲	▲

● = basic design    ▲ = with add. price    ○ = without add. price    ⊗ = on request    — = not available    Art.No. = available in basic design/accessories

R409.2

## Order information

### Basic design

#### R409.2-18e up to R409.2-25

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

#### R409.2-50e to R409.2-90e and R409.2-140

- Pump body PP-FRP
- Single valves PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### R409.2-115e and R409.2-180e

- Pump body PP-FRP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm EPDM

#### R409.2-250e and R409.2-350e

- Pump body PP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### Motor:

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

#### Further options and accessories

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

Type	Basic design	x
R409.2-18e	16005264	
R409.2-25e	16005265	
R409.2-50e	16005266	
R409.2-75e	16005267	
R409.2-90e	16005268	
R409.2-115e	16005269	
R409.2-140e	16005270	
R409.2-180e	16005271	
R409.2-250e	16005280	
R409.2-350e	16005281	

## Options/Accessories

		R409.2-18e R409.2-25e x	R409.2-50e R409.2-75e x	R409.2-90e R409.2-140e x	R409.2-115e R409.2-180e x	R409.2-250e R409.2-350e x
	PTFE-faced	●	●	●	–	●
	EPDM	–	–	–	●	–
	FPM	–	–	–	▲	–
	Diaphragm rupture electrode conductive, mounted to pump					
	MBE-02 for single diaphragm pump	▲	▲	▲	▲	▲
	Electrode relay, control cabinet assembly					
	ER-104/C aux. energy 230 V AC	90022994	90022994	90022994	90022994	90022994
	ER-104/C aux. energy 24 V DC	90022945	90022945	90022945	90022945	90022945
ER-142 aux. energy 230 V AC II(1)G [EEExia] IIC acc. to ATEX 95	90200363	90200363	90200363	90200363	90200363	
	Stroke length adjustment					
	with position indicator	▲	▲	▲	▲	▲
	Stroke frequency monitoring					
	Inductive-contact					
	10-60 V DC, three-wire, PNP	▲	▲	▲	▲	▲
Namur execution, II2G EEExia IIC T6 acc. to ATEX95	▲	▲	▲	▲	▲	
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## Order information

### Basic design

#### R409.2-18e up to R409.2-25

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

#### R409.2-50e to R409.2-90e and R409.2-140

- Pump body PP-FRP
- Single valves PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### R409.2-115e and R409.2-180e

- Pump body PP-FRP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm EPDM

#### R409.2-250e and R409.2-350e

- Pump body PP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced



#### Motor:

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

#### Further options and accessories

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

Type	Basic design	x
R409.2-18e	16005264	
R409.2-25e	16005265	
R409.2-50e	16005266	
R409.2-75e	16005267	
R409.2-90e	16005268	
R409.2-115e	16005269	
R409.2-140e	16005270	
R409.2-180e	16005271	
R409.2-250e	16005280	
R409.2-350e	16005281	

Options/Accessories		R409.2-18e	R409.2-50e	R409.2-90e	R409.2-115e	R409.2-250e
		R409.2-25e x	R409.2-75e x	R409.2-140e x	R409.2-180e x	R409.2-350e x
<b>Drive motor</b> 	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	▲	▲	▲	▲	▲
<b>Stroke length adjustment electrical</b> 	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, 10 U/min, incl. mounting-kit for actuator and base plate	▲	▲	▲	▲	▲
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R409.2

## Order information

### Basic design

#### R409.2-18e up to R409.2-25

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

#### R409.2-50e to R409.2-90e and R409.2-140

- Pump body PP-FRP
- Single valves PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### R409.2-115e and R409.2-180e

- Pump body PP-FRP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm EPDM

#### R409.2-250e and R409.2-350e

- Pump body PP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE-faced

#### Motor:

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

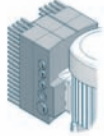
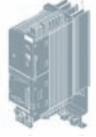
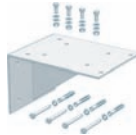
#### Further options and accessories

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

Type	Basic design	x
R409.2-18e	16005264	
R409.2-25e	16005265	
R409.2-50e	16005266	
R409.2-75e	16005267	
R409.2-90e	16005268	
R409.2-115e	16005269	
R409.2-140e	16005270	
R409.2-180e	16005271	
R409.2-250e	16005280	
R409.2-350e	16005281	

## Options/Accessories

	R409.2-18e R409.2-25e x	R409.2-50e R409.2-75e x	R409.2-90e R409.2-140e x	R409.2-115e R409.2-180e x	R409.2-250e R409.2-350e x
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	<b>Stroke frequency adjustment electrical</b> Frequency converter series 8200 Motec mounted-on, input 4-20mA								
	Single-phase 230 V, 50/60 Hz	0,25 kW	▲	–	–	–	–	–	–
		0,37 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		▲	▲	▲	▲	▲	▲	▲	
	<b>Stroke frequency adjustment electrical</b> 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	–	–	–	–	–	–
		0,37 kW	–	90017522	90017522	90017522	90017522	90017522	90017522
	Three-phase 320-550 V, +/- 0%, 50/60 Hz	0,55 kW	90017526	90017526	90017526	90017526	90017526	90017526	90017526
	<b>Console</b> for wall mounting incl. fixing screws	1.4301	90023875	90023875	90023875	90023875	90023875	90023875	
	PP		90023848	90023848	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		R409.2-18e R409.2-25e		R409.2-50e		R409.2-75e R409.2-90e		R409.2-115e up to R409.2-180e		R409.2-250e R409.2-350e	
		Typ	S.	Typ	S.	Typ	S.	Typ	S.	Typ	S.
Suction lance	with level switch 1-stage	SL-11.1	3.34	SL-02	3.36	SL-02	3.36	SL-02	3.36	S-04	3.40
		–		S-03	3.38	S-03	3.38	S-03	3.38	⊙	
	with level switch 2-stage	SL-12.1	3.34	SL-02	3.36	SL-02	3.36	SL-02	3.36	⊙	
	without level switch	S-01	3.46	S-01	3.46	S-01	3.46	S-01	3.46	S-01	3.46
Suction aid / Siphon Vessel	PVC-U-transparent	770.2	3.76	770.2	3.76	770.2	3.76	770.2	3.76	770.2	3.76
Calibration Pot	PVC-U	792.1	3.78	792.1	3.78	793.1	3.78	794.1	3.78	795.1	3.78
Foot valve	PVC-U	731	3.82	731	3.82	731	3.82	731	3.82	732.2	3.80
	PP / PVDF	⊙		⊙		⊙		⊙		732	3.82
	PP-FRP / PVDF-FRP	781.1	3.86	781.1	3.86	781.1	3.86	781.1	3.86	783.1	3.86
	1.4571	731	3.82	731	3.82	731	3.82	731	3.82	732	3.82
Line strainer	PVC-U / PP / PVDF	752.1	3.88	752.1	3.88	752.1	3.88	752.1	3.88	752.1	3.88
	PVC-U	751.1	3.88	751.1	3.88	751.1	3.88	751.1	3.88	⊙	
	1.4408	752	3.90	752	3.90	752	3.90	752	3.90	752	3.90
Float valve	PVC-U	871	3.92	871	3.92	871	3.92	871	3.92	872	3.92
Pulsation damper without separating diaphragm	PVC-U / PP	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14
	1.4571	⊙		⊙		⊙		⊙		⊙	
Fittings for pressure side of dosing pumps		R409.2-18e R409.2-25e		R409.2-50e		R409.2-75e R409.2-90e		R409.2-115e up to R409.2-180e		R409.2-250e R409.2-350e	
		Typ	S.	Typ	S.	Typ	S.	Typ	S.	Typ	S.
Diaphragm-type relief valve		620.10	3.4	620.10	3.4	622.10	3.4	622.10	3.4	622.10	3.4
	for suspension	⊙		⊙		622.S	3.6	622.S	3.6	622.S	3.6
Diaphragm-type pressure keeping valve		620.D	3.8	620.D	3.8	622.D	3.8	622.D	3.8	622.D	3.8
Multi-function valve	4 bar opening pressure	MFV 05004	3.10	MFV 05004	3.10	–		–		–	
	6 bar opening pressure	MFV 05006	3.10	MFV 05006	3.10	–		–		–	
	10 bar opening pressure	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	702.1	3.14	702.1	3.14
	1.4571	⊙	-	⊙	-	⊙	-	⊙	-	⊙	-
Pulsation damper without separating diaphragm	PVC-U / PP / PVDF	720.1	3.22	721.2	3.22	722.1	3.22	722.1	3.22	723.1	3.22
	1.4571	721.1	3.26	721.1	3.26	722.1	3.26	722.1	3.26	723.1	3.26
Diaphragm-pulsation damper with Elastomer diaphragm	PVC-U / PP / PVDF	⊙		⊙		⊙		⊙		713.1	3.18
	1.4571	810.1-0,16/180	3.28	810.1-0,16/180	3.28	810.1-0,32/160	3.28	810.1-0,32/160	3.28	810.1-0,75/140	3.28
Check valve	PVC-U	661.2	3.50	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	661.2	3.50	663.2	3.50
	1.4571	661.2	3.50	661.2	3.50	661.2	3.50	661.2	3.50	662.2	3.50
Dosing valve	PVC-U	691.1	3.54	691.1	3.54	691.1	3.54	691.1	3.54	⊙	
	PVC-U / PP / PVDF	681.1	3.58	681.1	3.58	681.1	3.58	681.1	3.58	682.1	3.58
	PP-FRP / PVDF-FRP	691.1	3.54	691.1	3.54	691.1	3.54	691.1	3.54	693.1	3.54
	1.4571	691.1	3.54	691.1	3.54	691.1	3.54	691.1	3.54	692.1	3.54
Injection fitting	PVC-U / PP / PVDF	8061.1	3.60	8061.1	3.60	8061.1	3.60	8061.1	3.60	8062.1	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**.