

DIAPHRAGM PUMPS

CONTROLLABLE



OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- PROFIBUS DP-Interface
- Digital and analogue control options
- Manual stroke length- and stroke frequency adjustment
- Robust, metallic housing



TECHNICAL DATA

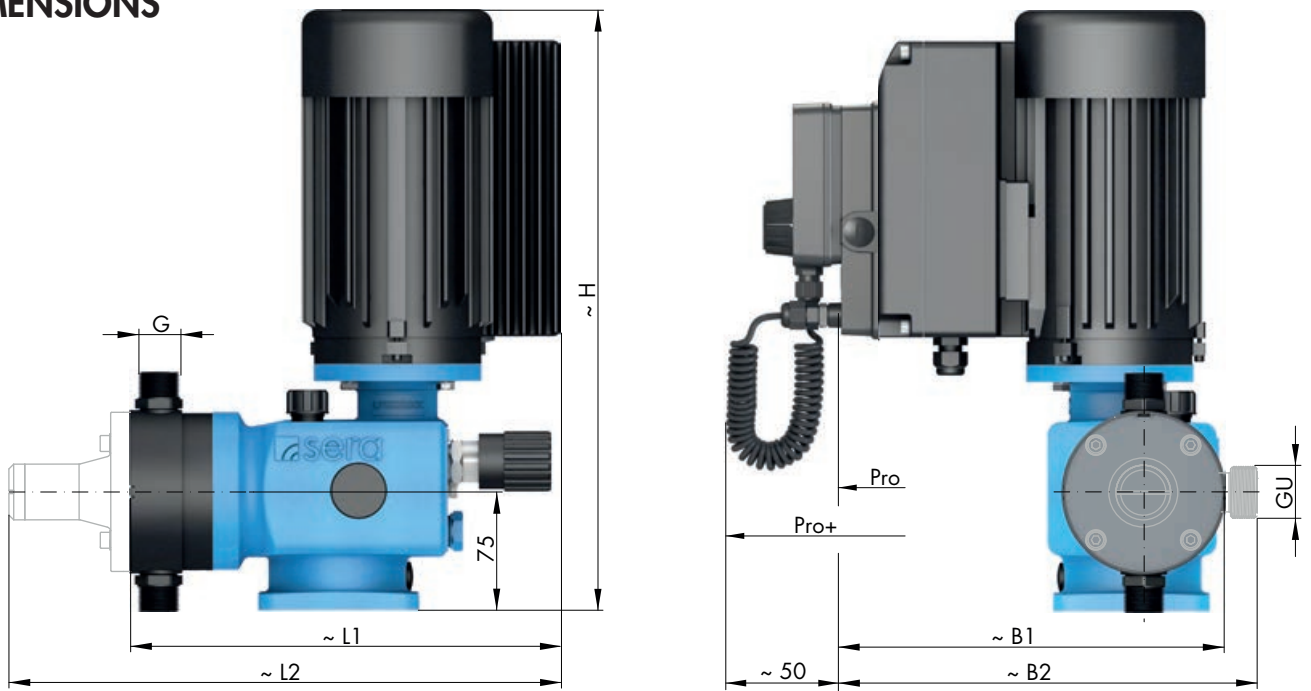
PUMP DATA		C 409.2-... Pro/Pro+						
		1,6e	2,4e	7,0e	12e	18e	25e	
Permissible pressure p_{2max} at the pump outlet	bar	10	10	10	10	10	10	
Nominal capacity QN at p_{2max}	l/h	50/60 Hz	0-1,6	0-2,4	0-7	0-12	0-18	0-25
Quantity per stroke	ml/stroke (100%)		0,27	0,27	0,78	2,0	3,0	3,0
Max. suction height	mWC		3					
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0					
Recomm. nominal diameter DN of the connecting pipes	mm		10	10	10	10	10	10
Nominal stroke frequency	1/min	50/60 Hz	100	150	150	100	100	150
Weight approx.	kg	plastic	11	11	11	11	11	12,5
		stainless st.	13,5	13,5	13	13	13	13

ELECTRICAL DATA		C 409.2-1,6e Pro/Pro+ ... C 409.2-25e Pro/Pro+	
		230 V, 50/60 Hz	115 V, 50/60 Hz
Power consumption	kW	0,18	
Voltage	V	210 - 250	100 - 125
Frequency	Hz	50/60	
Inlet voltage, control input	V DC	5...30	
Minimum contact signal time	ms	55	
Analogue input resistance	Ω	39	
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA	
Recommended fuse (circuit breaker)		C6A	C10A
Insulation class	ISO	F	
Enclosure	IP	55	

Flow capacity 1,6 l/h ... 25 l/h
 Admissible counterpressure up to 10 bar

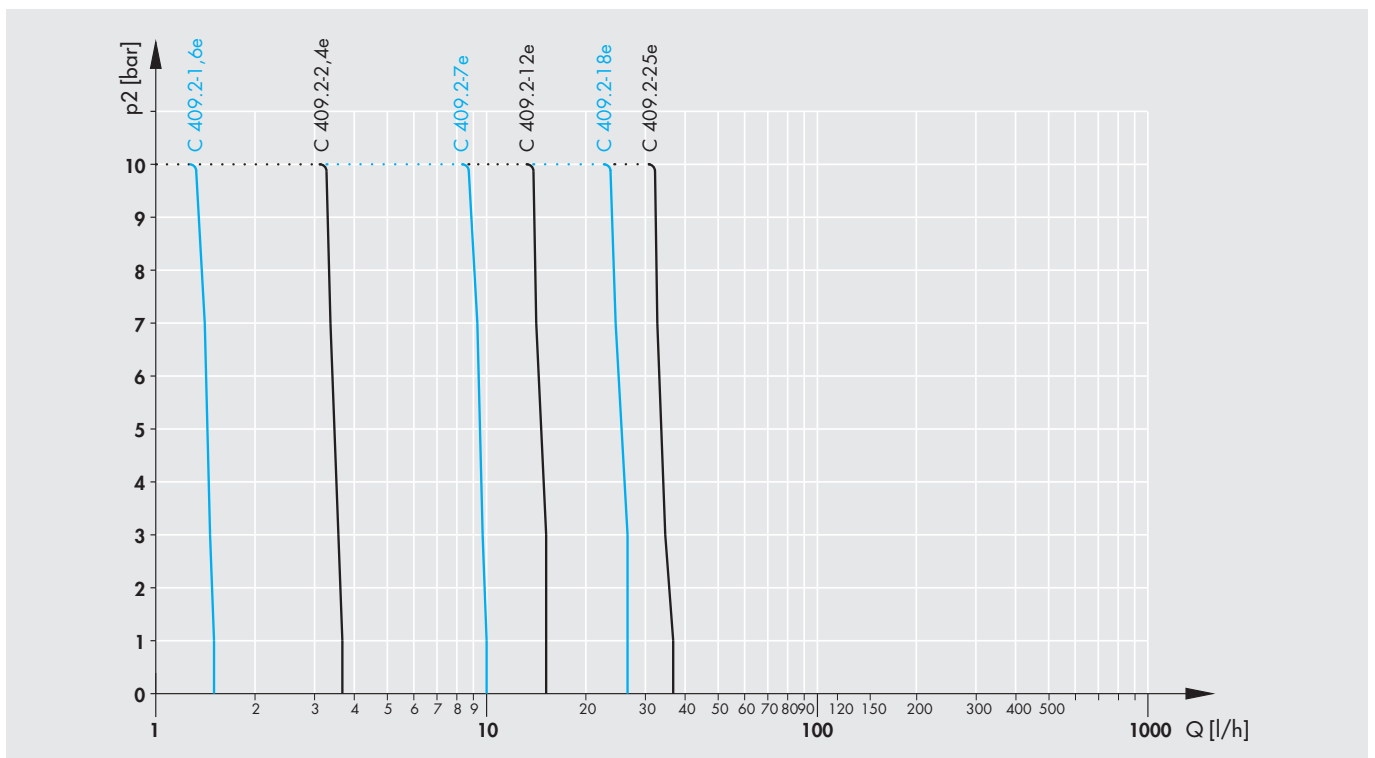
C 409.2

DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
C 409.2-1,6e	G 3/4	G 3/4	PVC, PP, PVDF	250	×	310	×	355	1.4571	250	×	310	×	355
C 409.2-2,4e	G 3/4	G 3/4		250	×	310	×	355		250	×	310	×	355
C 409.2-7,0e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-12e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-18e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-25e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355

CHARACTERISTIC CURVES



DIAPHRAGM PUMPS

CONTROLLABLE

FUNCTIONS AND OPERATING MODES

Manual operation
 Manual stroke frequency adjustment
 PROFIBUS DP-VO Slave interface (option)
 External START/STOP
 Pulse operation / fractinator
 Pulse memory
 Analogue operation (0/4 ... 20 mA)
 Analogue operation standardization
 Batch dosing (manual / with timer)
 3 LEDs for status indication

Multiline, illuminated display
 Menu-driven parameterization
 Flow indication
 Calibration function
 4-key operation
 2 digital outputs (PLC)
 1 analogue output
 (PLC or contact signal)
 2 analogue/digital inputs
 (reversible)
 1 digital input

Programmable
 input-/output functions
 Diaphragm monitoring
 Connection/evaluation:
 2-stage level monitoring
 Connection/evaluation:
 Flow monitoring
 Connection/evaluation:
 Flow metering
 Voltage 210-250V, 50/60Hz
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control Multilingual display 4-color status indicator	Removeable handheld with two buttons and clickwheel Display with 8 languages (de, en, es, fr, nl, cs, fi, tr) 4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

DIAPHRAGM PUMPS

CONTROLLABLE



OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- PROFIBUS DP-Interface
- Digital and analogue control options
- Manual stroke length- and stroke frequency adjustment
- Robust, metallic housing



TECHNICAL DATA

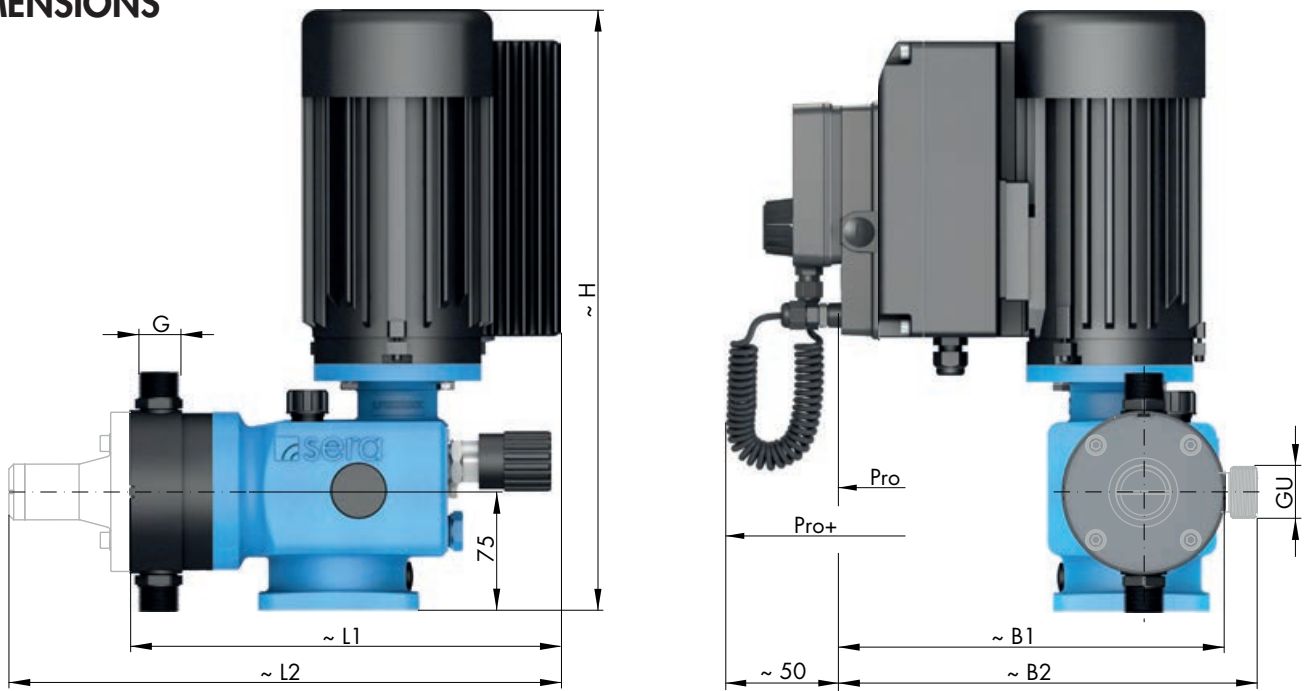
PUMP DATA			C 409.2-... Pro/Pro+							
(* 8mWS = performance losses of nominal capacity QN of 20-25%)			50e	75e	90e	115e	140e	180e	250e	350e
Permissible pressure $p_{2max.}$ at the pump outlet	bar		10	10	8	4	8	4	3	3
Nominal capacity QN at $p_{2max.}$	l/h	50/60 Hz	0-50	0-75	0-90	0-115	0-140	0-180	0-250	0-350
Quantity per stroke	ml/stroke (100%)		8,3	8,3	15,0	19,2	15,6	20,0	41,7	38,9
Max. suction height	mWC		3 (8*)						3	
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0 (-0,8/0*)						-0,3/0	
Recomm. nominal diameter DN of the connecting pipes	mm		15	15	15	15	15	15	15	15
Nominal stroke frequency	1/min	50/60 Hz	150	150	100	100	150	150	100	150
Weight approx.	kg	plastic	8,5	8,5	10,5	9,0	10,5	9,0	13,0	13,0
		stainless st.	14	16	16	16	16	16	24	24

ELECTRICAL DATA		C 409.2-50e Pro/Pro+ ... C 409.2-350e Pro/Pro+
		230 V, 50/60 Hz 115 V, 50/60 Hz
Power consumption	kW	(...50e = 0,18 kW) 0,37
Voltage	V	210 - 250 100 - 125
Frequency	Hz	50/60
Inlet voltage, control input	V DC	5...30
Minimum contact signal time	ms	55
Analogue input resistance	Ω	39
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA
Recommended fuse (circuit breaker)		C6A C10A
Insulation class	ISO	F
Enclosure	IP	55

Flow capacity 50 l/h ... 350 l/h
 Admissible counterpressure up to 10 bar

C 409.2

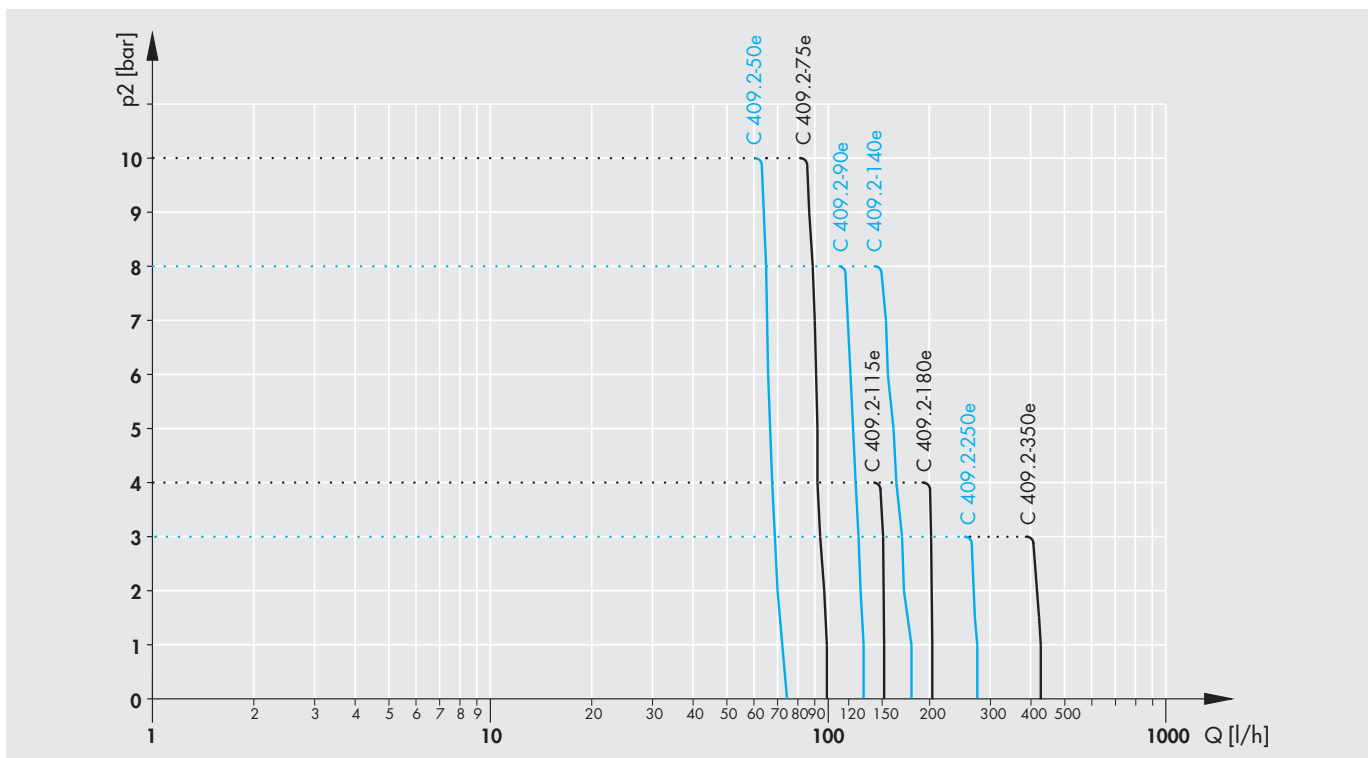
DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
C 409.2-50e, ...-75e	G 3/4	G 3/4	PVC, PP, PVDF	260	270	273	335	365	1.4571	260	270	271	335	365
C 409.2-90e, -115e, -140e, -180e	G 3/4	G1		260	285	276	346	365		260	285	274	346	365
C 409.2-250e, ...-350e	G1 1/4*	G1 1/4*		295	310	327	408	365		295	310	324	408	365

* PVC = G1

CHARACTERISTIC CURVES



DIAPHRAGM PUMPS

CONTROLLABLE

FUNCTIONS AND OPERATING MODES

Manual operation
 Manual stroke frequency adjustment
 PROFIBUS DP-VO Slave interface (option)
 External START/STOP
 Pulse operation / fractinator
 Pulse memory
 Analogue operation (0/4 ... 20 mA)
 Analogue operation standardization
 Batch dosing (manual / with timer)
 3 LEDs for status indication

Multiline, illuminated display
 Menu-driven parameterization
 Flow indication
 Calibration function
 4-key operation
 2 digital outputs (PLC)
 1 analogue output
 (PLC or contact signal)
 2 analogue/digital inputs
 (reversible)
 1 digital input

Programmable
 input-/output functions
 Diaphragm monitoring
 Connection/evaluation:
 2-stage level monitoring
 Connection/evaluation:
 Flow monitoring
 Connection/evaluation:
 Flow metering
 Voltage 210-250V, 50/60Hz
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control Multilingual display 4-color status indicator	Removeable handheld with two buttons and clickwheel Display with 8 languages (de, en, es, fr, nl, cs, fi, tr) 4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)