

SOLENOID DIAPHRAGM PUMPS

CONTROLLABLE



OVERVIEW

- Compact design
- Low weight
- Safe to run dry
- Leakage-free
- Low-maintenance
- User-friendly
- High dosing accuracy
- Integrable into automatic processes
- Manual stroke length and stroke frequency adjustment
- Robust, corrosion-resistant housing



TECHNICAL DATA

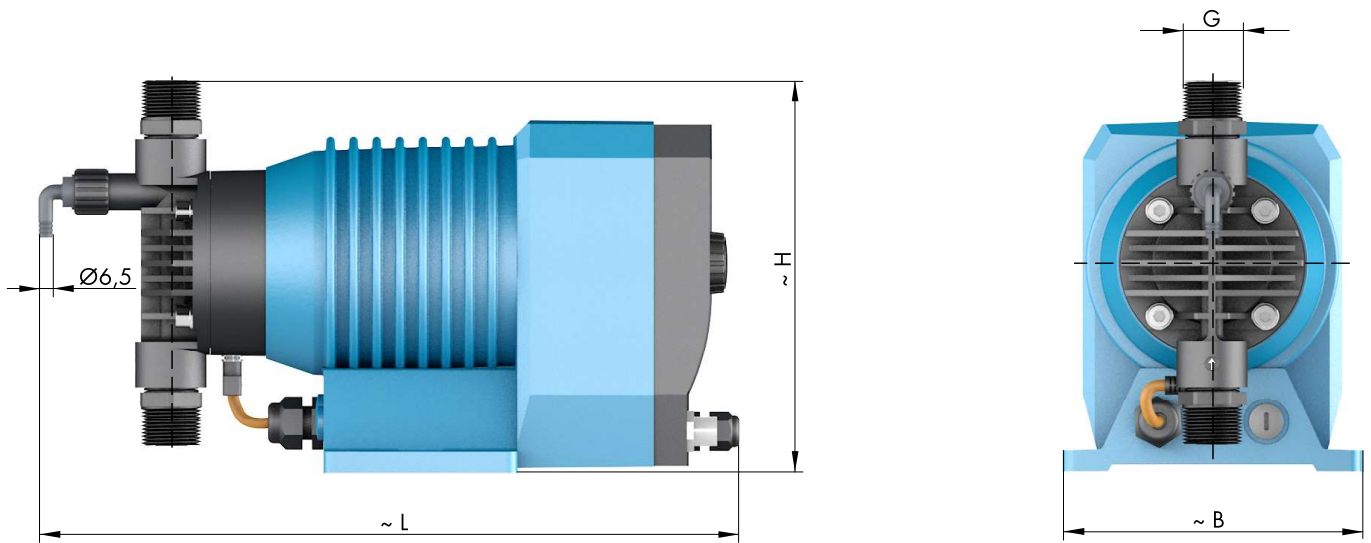
PUMP DATA			R 204.1-...				
			1,2e	2,4e	7,0e	10e	35e
Permissible pressure p_{2max} at the pump outlet	bar		10	10	10	6	1,5
Nominal capacity QN at p_{2max}	l/h	50/60 Hz	0-1,2	0-2,4	0-7	0-10	0-35
Quantity per stroke	ml/stroke (100%)		0,13	0,27	0,78	1,11	3,89
Max. suction height	mWC		2	2	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		5	5	5	5	10
Nominal stroke frequency	1/min	50/60 Hz	150	150	150	150	150
Weight approx.	kg		4,1	4,1	4,8	4,8	5,1

ELECTRICAL DATA			R 204.1-...e
Middle power draw	W		20
Nominal voltage	V		100 - 240
Frequency	Hz		50/60
Inlet voltage, control input	V DC		5...30
Minimum contact signal time	ms		55
Analogue input resistance	Ω		100
Current Consumption during stroke	A (at 230V)		max. 1,0
Recommended fuse (circuit breaker)			C2A
Insulation class	ISO		F
Enclosure	IP		65

Flow capacity 1,2 l/h ... 35 l/h
 Admissible counterpressure up to 10 bar

R 204.1

DIMENSIONS



	G		B	L	H		B	L	H		B	L	H
R 204.1-1,2e	G 3/4	PP-/PVDF-GFK	130	305	171	PVC, PP, PVDF	130	275	161	1.4571	130	275	161
R 204.1-2,4e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-7,0e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-10e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-35e	G 3/4		130	275	166		130	275	171		130	275	167

CHARACTERISTIC CURVES

COMING SOON

SOLENOID DIAPHRAGM PUMPS

CONTROLLABLE

FUNCTIONS AND OPERATING MODES

- Manual operation
- Manual stroke frequency adjustment (10%, 25%, 50%, 100%)
- External STOP
- Pulse operation 1:1
- Analogue operation (4 ... 20 mA)
- 3 LEDs for status indication
- 2-key operation
- 2 digital inputs (PLC or contact signal)
- 1 analogue input (4 ... 20 mA)
- 2-stage level monitoring
- Voltage 100 - 240 V, 50/60Hz
- 2m connection cable with Euro-plug

BASIC DESIGNS

PP-FRP



Pump body **PP-FRP**

Valves **PP-FRP**

Valve balls **PTFE**

Diaphragm **PTFE-faced**

* with manual venting valve
(Seal: **EPDM** or **FPM**)

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
R204.1-1,2e*	16009762	🕒	16007649	🕒
R204.1-2,4e*	16007838	🕒	16008838	🕒
R204.1-7,0e*	16008283	🕒	16008006	🕒
R204.1-10e*	16007836	🕒	16007816	🕒
R204.1-35e	16017102	🕒	16015365	🕒

PVC-U



Pump body **PVC-U**

Valves **PVC-U**

Valve balls **PTFE**

Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
R204.1-1,2e	16010444	🕒	16007312	🕒
R204.1-2,4e	16010445	🕒	16012485	🕒
R204.1-7,0e	16014415	🕒	16012464	🕒
R204.1-10e	16013522	🕒	16008722	🕒
R204.1-35e	15006246	🕒	15006247	🕒

STAINLESS STEEL

Pump body **1.4571**

Valves **1.4571**

Valve balls **1.4401**

Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
R204.1-1,2e	15002348	🕒
R204.1-2,4e	15003031	🕒
R204.1-7,0e	15003384	🕒
R204.1-10e	16024904	🕒
R204.1-35e	15005382	🕒

OPTIONS



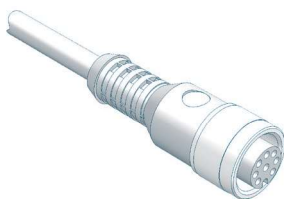
Special connection

	Surcharge (EUR)
Special connection (plug) for power supply	Ⓞ
in combination with cTÜVus	✗

Control electronics (version: cTÜVus)

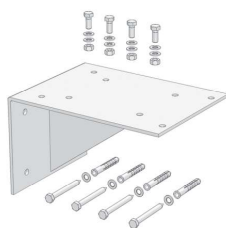
	Surcharge (EUR)
Connection voltage: 100V - 120V +/-5% Frequency: 60Hz Connection cable: 2m incl. US/CAN plug	▲

ACCESSORIES



Control cable

	Article-No.	Price (EUR)
for controlling the pump		
Cable socket M12, 5-pole fully assembled, incl. 5m cable	90031246	▲
Cable socket M12, 5-pole individually convertible (without cable)	90022878	▲
for level input (level monitoring not included)		
Cable socket M12, 3-pole fully assembled, inkl. 5m cable	90031245	▲
Cable socket M12, 3-pole individually convertible (without cable)	90022877	▲



Bracket

	Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)		
PP	90023844	▲
1.4301	90023872	▲



Connection pieces

Extensive range of connection / transition pieces and dosing hoses

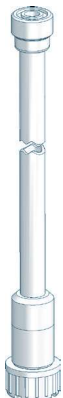
Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 4** of this catalog, from **page 442**

SOLENOID DIAPHRAGM PUMPS

CONTROLLABLE

FITTINGS FOR THE SUCTION SIDE



Suction lance S-01 (without level switch)

Properties

- Compact, robust design
- Maintenance-free
- Easy handling
- High-quality materials
- individual special lengths up to max. 1.500mm possible

Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVC-U**
- Seals: **EPDM** or **FPM**
- Valve ball: **PTFE**
- max. flow rate: **200 l/h**
- Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

Properties

- Compact design
- Height-adjustable
- 2-stage level monitoring
- Flexible connection
- Easy handling
- High-quality materials
- Maintenance-free
- incl. hose connections 4/6, 6/8, 6/12

Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVC-U**
- Valve ball: **PTFE**
- Hose (inboard): **PE**
- Level switch: **PP**
2-stage, normally closed (NC)
5m cable (from foot valve) with plug, M12, 3-pole
- max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

FITTINGS FOR THE SUCTION SIDE



Foot valve (Plastic)

Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



Foot valve (plastic)

Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	PVC-U	EPDM	37601636	▲



Foot valve (Stainless steel)

Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

Basic version

- Ball: **1.4401**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	1.4571	FEP	37601149	▲



Multi-function device

Properties

- Can be used as an priming aid and/or an calibration pot
- Compact design
- Flexible Connection
- Maintenance-free
- incl. glue joint (PVC-U) and welding joint (PP)

Basic version

- Housing: **PVC-U / PVC-transparent**
- Seals: **FPM or EPDM**
- max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
MFD 60	8	G3/4	0,5 Ltr.	EPDM	37606311	▲
MFD 60	8	G3/4	0,5 Ltr.	FPM	37605864	▲

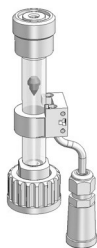
ACCESSORIES

37605682 ▲

SOLENOID DIAPHRAGM PUMPS

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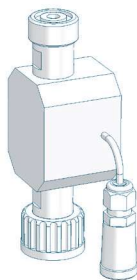
FITTINGS FOR THE PRESSURE SIDE



Flow controller

- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
R204.1-1,2e, ...-2,4e				
×			×	×
R204.1-7,0e, ...-10e				
8191.1		PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
R204.1-35e				
8192.1		PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲

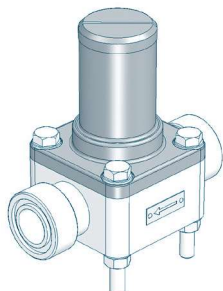


Flow meter

- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **8 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
R204.1-1,2e, ...-2,4e				
×			×	×
R204.1-7,0e, ...-10e				
8010.1		ECTFE/PP/FPM	37602337	▲
		ECTFE/PVC-U/FPM	37602339	▲
		ECTFE/PVDF/FPM	37602341	▲
R204.1-35e				
8011.1		ECTFE/PP/FPM	37602343	▲
		ECTFE/PVC-U/FPM	37602345	▲
		ECTFE/PVDF/FPM	37602348	▲

FITTINGS FOR THE PRESSURE SIDE



Diaphragm relief valve

for overpressure protection

Properties

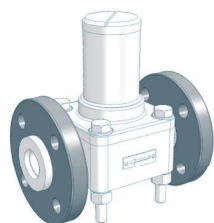
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

Basic version

- Valve body: **PVC-U, 1.4581, PP** or **PVDF**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

OPTIONS

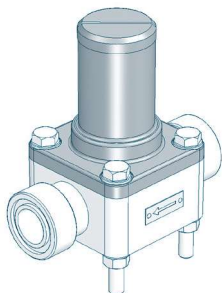


Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	Ⓢ
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	×
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

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FITTINGS FOR THE PRESSURE SIDE



Diaphragm pressure keeping valve

to prevent over-conveyance

Properties

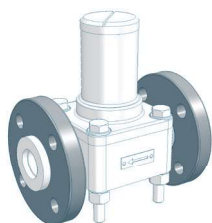
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

Basic version

- Valve body: **PVC-U, 1.4581, PP or PVDF**
- Diaphragm: **PTFE-faced**

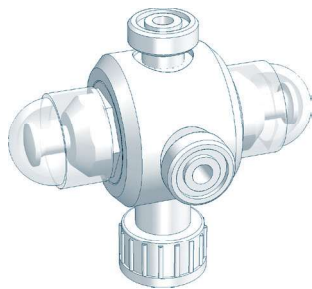
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓞ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	×
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲

FITTINGS FOR THE PRESSURE SIDE



Multi function valve

Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G^{3/4}**
- **Relief valve side**
Opening pressure: **2 up to 10 bar** (adjustable)
- **Pressure keeping valve side**
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PVC-U	FEP	37600975	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲
MFV 050	PP	FEP	37600984	▲



Injection fitting

Properties

- incl. injection lance for better mixing
- Easy installation
- Any mounting position
- Maintenance-free
- High-quality materials

Basic version

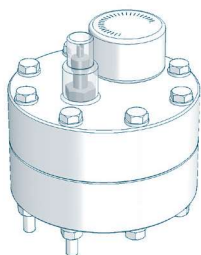
- Cone-type check valve (spring loaded)
- Shut-off ball valve
- Injection lance (L=150mm)
- max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲

SOLENOID DIAPHRAGM PUMPS

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FITTINGS FOR THE PRESSURE SIDE



Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

ACCESSORIES



Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90021733	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90025079	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	Ⓞ	Ⓞ



Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90010649	▲
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Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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FITTINGS FOR THE PRESSURE SIDE



Diaphragm pulsation damper (Stainless steel, max. 10 bar)

Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	×	×

ACCESSORIES



Filling- and pressure measuring device

(mounted on pulsation damper)

Design: Plastic	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: Stainless steel	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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SOLENOID DIAPHRAGM PUMPS

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FITTINGS FOR THE PRESSURE SIDE



Dosing valve (Plastic)

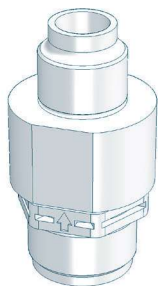
Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

Basic version

- integrated injection lance
- Valve ball: **PTFE**
- Seals: **EPDM** or **FPM**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



Dosing valve (Plastic)

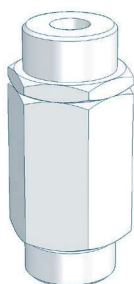
Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

Basic version

- Valve ball: **PTFE**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



Dosing valve (Stainless steel)

Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

Basic version

- Valve ball: **1.4401**
- Seals: **FEP-covered**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲