

## Contents:

1. Pneumatic metering pump II 3 – 12 l/h
2. Diaphragm metering pump Tubopump
3. Diaphragm piston pump ELADOS® EMP KKS 0,2 – 1,4 l/h
4. Diaphragm metering pump ELADOS® EMP II 1,4 – 11,2 l/h and 24 l/h  
ELADOS® EMP II HP (High Pressure) 1,4 - 4,3 l/h
5. Diaphragm metering pump ELADOS® EMP III 16 – 54 l/h  
ELADOS® EMP III HP (High Pressure) 16 – 25 l/h
6. Diaphragm metering pump ELADOS® EMP III 80 – 120 l/h
7. Diaphragm metering pump ELADOS® EMP IV 140 – 210 l/h  
ELADOS® EMP IV HP (High Pressure) 140 - 210 l/h
8. Diaphragm metering pump ELADOS® EMP IV 450 – 750 l/h
9. Compact metering unit ELADOS® EMP for water treatment



Measuring



Metering



Systems

- **Works without electrical current**
- **Mechanical stroke adjustment**
- **Space-saving design**
- **Separate air bleeding**
- **High reliability due to teflon compound diaphragm**
- **Optional with integrated solenoid valve**



**Pneumatic metering pump incl. control by external 3/2-port directional control valve**  
 optional

**Pneumatic metering pump incl. control by integrated 3/2-port solenoid valve**

Due to its very compact construction the pneumatic metering pump is recommended especially for the use in very cramped circumstances. All operational components are arranged at the front side of the pump.

The diaphragms are controlled by pressurized air of a driving piston. When the pressurized air or turn-over to the 3/2-port directional control valves get switched-off the diaphragms turn back to the initial position by a spring. The repressed volume is

delivered to the diaphragm chamber over a double ball suction and pressure valve. The delivery performance can be controlled exactly by stroke frequency and a lock-type stroke adjustment. The pump can be synchronized manually for start-up or venting during an upcoming air pressure.

A continuous metering demands a synchronized control by an external or internal 3/2-port directional control valve.

**Technical Data:****Mechanical Data:**

Pump capacity [l/h]:	3.0	6.0	12.0
Metering back-pressure [bar]:	6	6	6
Delivery capacity per stroke [cm <sup>3</sup> ]:	0.45	0.83	1.67
Suction height:	1.5 mWs		
Metering frequency max:	120 1/min		
Air consumption [l/min]:	approx. 35		
Air control pressure [bar]:	6		
Suction valve :	without spring 2 balls		
Pressure valve :	each ball spring loaded		
Weight [kg]:	approx. 0.5		

**Material:**

Control block:	polyamide
Pump head:	polypropylene
Diaphragm:	PTFE - EPDM compound diaphragm
Valve body:	polypropylene
Seals:	FPM 602 (Viton B) * <b>either</b> EPDM
Valve balls:	stainless steel 1.4401 * <b>either</b> Duran glass
Return spring:	stainless steel (1.4310)
Colour:	blue RAL 5007 / black

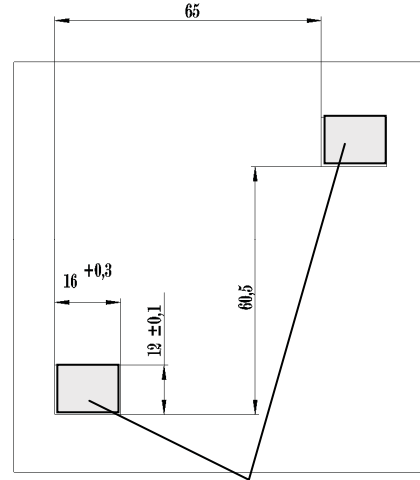
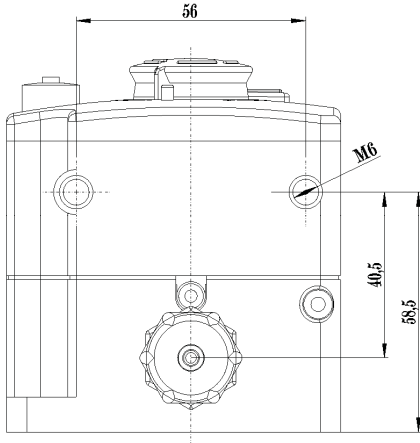
\* Standard

**Electrical Data:**

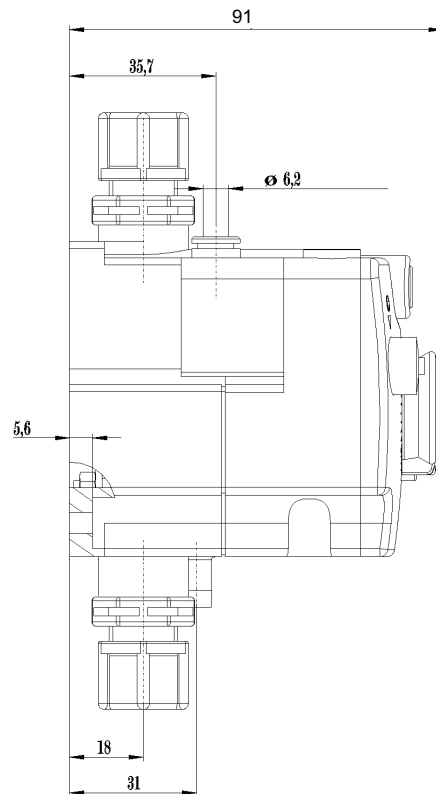
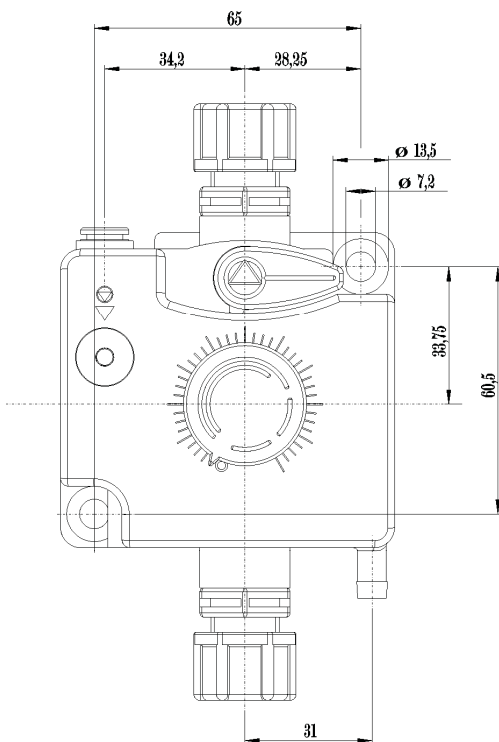
(integrated solenoid valve)

Power supply:	24 V DC other voltage on request
Power:	7 W
Protection class:	IP 65 when using wiring outlet
Operating factor:	100 %
Clocking:	T <sub>on</sub> / T <sub>off min</sub> 240/240 msec

**Dimensions:**  
 (pneumatic metering pump with external 3/2-port directional control valve)



Cut-out for bayonet locking unit  
 (see also spare parts Pos. 15 - 17)

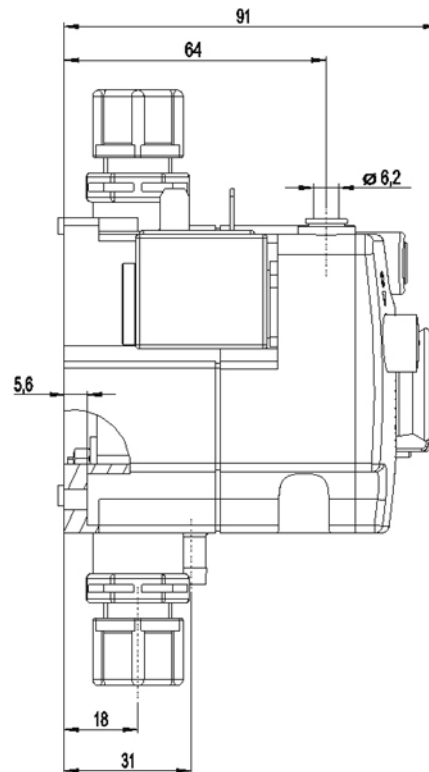
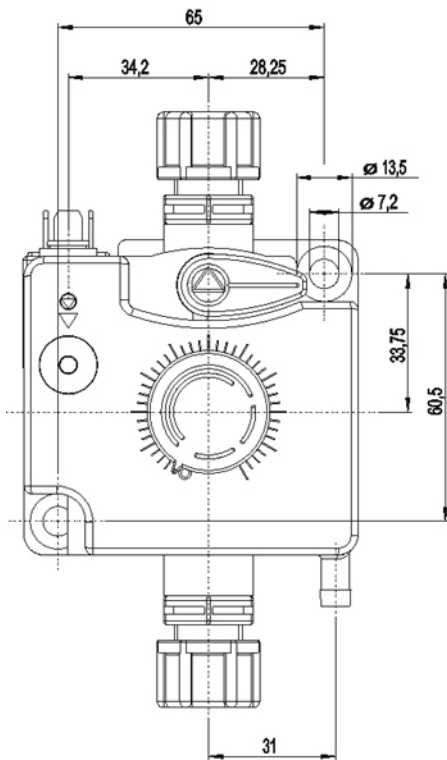
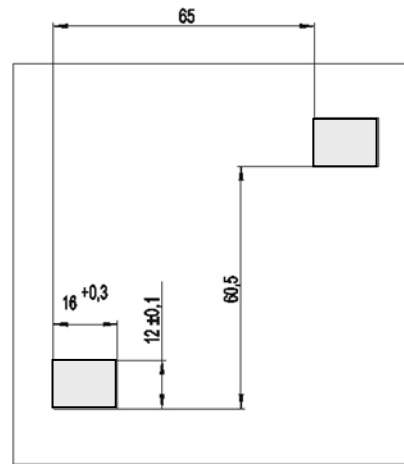
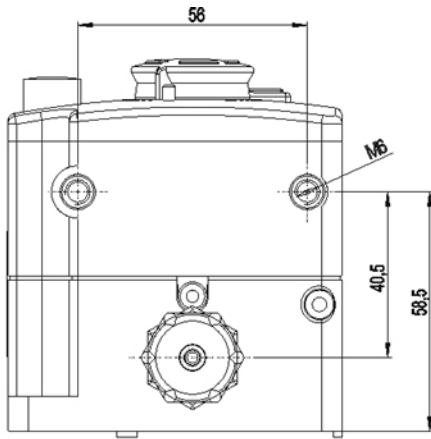


**Hose connections**

- Suction connection (int.Ø/ext.Ø): 4/6, 6/8, 6/12 mm
- Pressure connection (int.Ø/ext.Ø): 4/6, 6/8, 6/12 mm
- Venting: for hose PVC-soft ID6
- Compressed-air supply: for pipe PE/PA AD6

**Dimensions:**

(pneumatic metering pump with integrated 3/2-port solenoid valve)



**Hose connections**

Suction connection (int.Ø/ext.Ø):	4/6, 6/8, 6/12 mm
Pressure connection (int.Ø/ext.Ø):	4/6, 6/8, 6/12 mm
Venting:	for hose PVC-soft ID6
Compressed-air supply:	for pipe PE/PA AD6



### Ordering Data:

#### Article

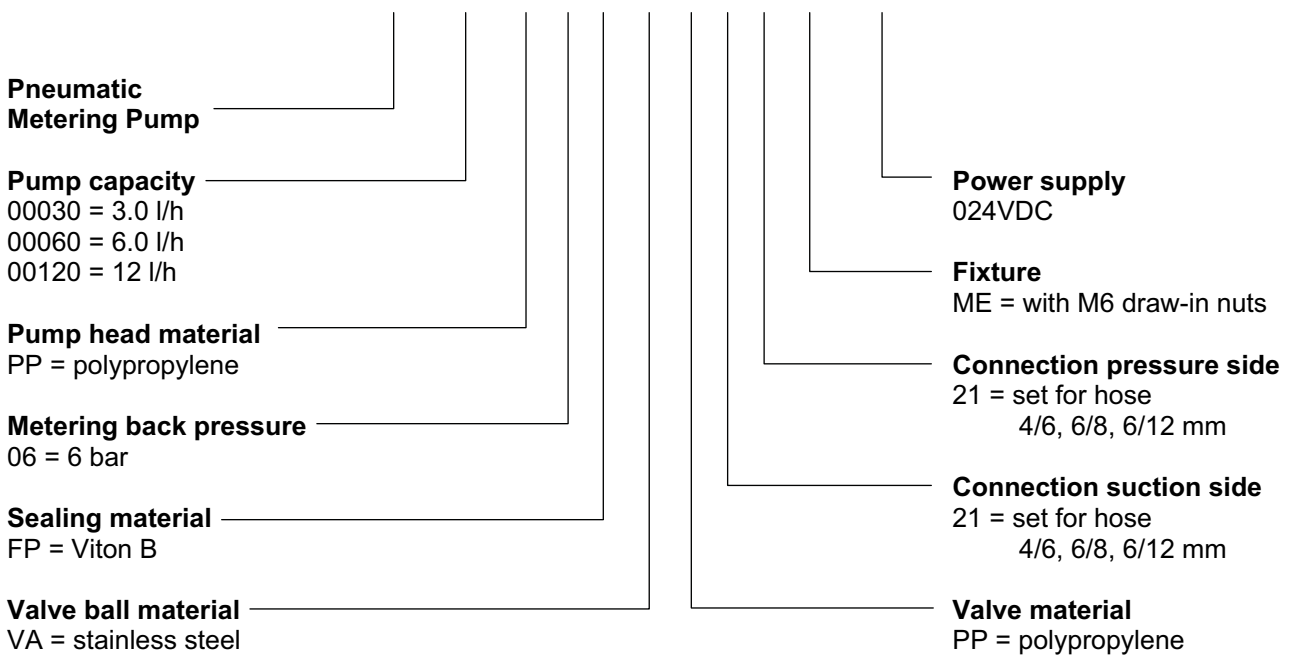
#### Material No.

Version with external 3/2-port directional control valve:

PDP 00030 PP 06 FP VA PP 21 21ME	141048
PDP 00060 PP 06 FP VA PP 21 21 ME	on request
PDP 00120 PP 06 FP VA PP 21 21ME	141049

Version with integrated 3/2-port solenoid valve:

PDP 00030 PP 06 FP VA PP 21 21ME 024VDC	141046
PDP 00060 PP 06 FP VA PP 21 21 ME 024VDC	141050
PDP 00120 PP 06 FP VA PP 21 21ME 024VDC	141047



**Extent of supply:** hose connection material 4/6, 6/8 and 6/12 mm.

**Accessories:**



**Article**

**Material No.**

**Pneumatic Control**

(only for version with external 3/2-port directional control valve)

**Pneumatic Clock Generator**

to produce continuously adjustable signals, suitable for application in **areas with danger of explosion**

241001

Pressure range [bar]: 4 – 10  
Connection thread: G 1/8"

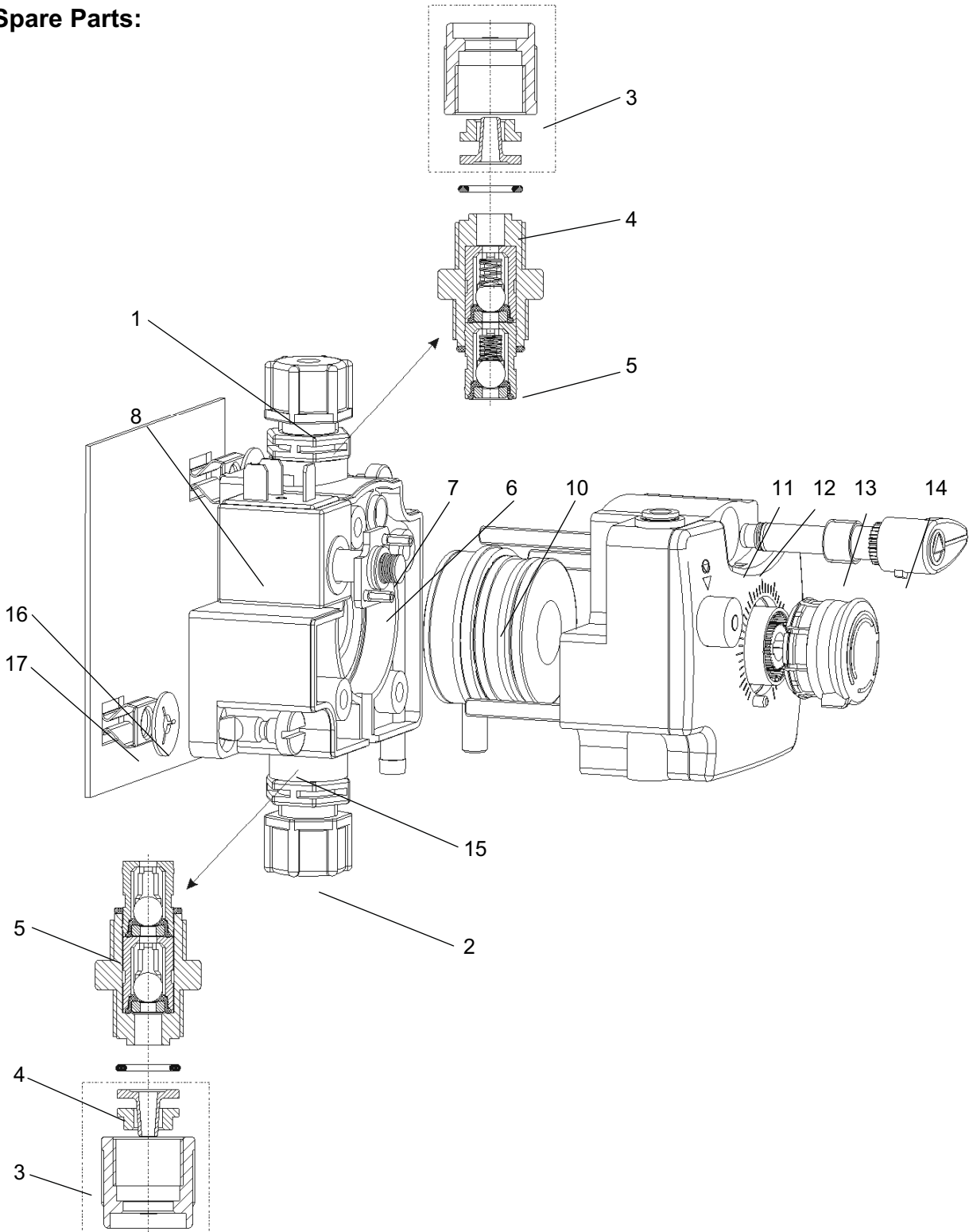
**Connection plan for pneumatic clock generator**

417101166

Further accessories, as e.g. suction lances and metering valves, please gather from chapter EMP II.

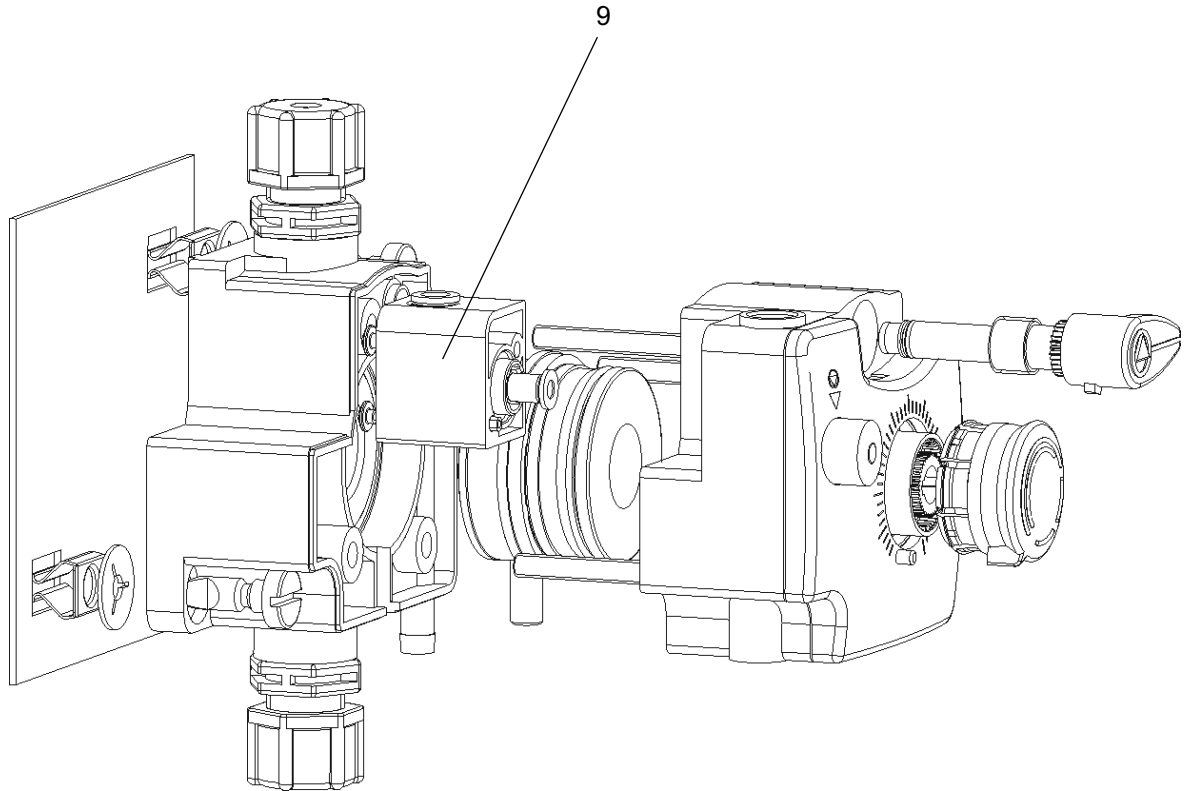


**Spare Parts:**



Pos. 6 and Pos. 8 only for version with integrated 3/2-port solenoid valve





Pos. 9 only for version with external 3/2-port directional control valve



Pos.-no.	Article	Material No.
1	Pressure valve DRV PP FP VA 002 M18x1.5-G3/8-99	241033
	Pressure valve DRV PP EP VA 002 M18x1.5-G3/8-99	241035
2	Suction valve SAV PP FP VA 000 M18x1.5-G3/8-99	241032
	Suction valve SAV PP EP VA 000 M18x1.5-G3/8-99	241034
3	Connection set PVDF for G3/8 hose (ID/AD) 4/6, 6/8, 6/12 mm	248491
4	O-ring Viton B 10x2.5	417003327
	O-ring EPDM 10x2.5	417001080
5	O-ring Viton B 12x2	417003309
	O-ring EPDM 12x2	417001101
6*	Armature system 1.7 CU F FL KPL to be ordered with 2x Pos. 7 (EJOT-PT-screw)	417704075
7	EJOT-PT-screw KB 30 X 10 WN1423 V2A	413071239
8*	Magnet coil CK024C 24 V AC	417704076
	Magnet coil CK048C 48 V AC	417704077
	Magnet coil CK024D 24 V DC (standard)	417704078
	Magnet coil 230 V AC	417704079
9**	Compressed-air inlet complete	241016
10	Diaphragm cartridge 3.0 l/h	241013
	Diaphragm cartridge 12.0 l/h	241015
11	O-ring Viton B 3.5x1.5	417003313
	O-ring EPDM 3.5x1.5	417001012
12	O-ring Viton B 5.28x1.78	417003596
	O-ring EPDM 5.28x1.78	417001030
13	Venting screw PP PDP	34103016
14	Venting lever	34103018
15	Bayonet screw S60	413229080
16	Retaining washer S60	413229081
17	Locking unit S60	413229082
without figure	<b>Wiring outlet</b> 2-pole straight (only for version with integrated 3/2-port solenoid valve)	418468061

\* Pos. 6 and Pos. 8 only for version with integrated 3/2-port solenoid valve

\*\* Pos. 9 only for version with external 3/2-port directional control valve

- **Precise metering by the powerful diaphragm metering principle**
- **Low maintenance and abrasion**
- **Available in 2 different materials**
- **Economical, simple and reliable**
- **Cost-effective alternative to peristaltic pump**
- **Simple assembly by „Click & Fix“**
- **Batch assembly of several Turbopumps is possible**



The metering pump series TurboPUMP is a range of electric motor-driven membrane metering pumps mounted in a free discharge point, suitable for use with uncontaminated, non-abrasive dosing media.

An asynchronous motor acts as a drive which has an integrated fan for better cooling. An additionally

installed thermal protection switch switches the pump off in the case of overheating and switches it back on again after a certain cooling phase.

A built-in spring actuator ensures a low noise level and extends the working life of the pump.

## Technical data:

### General data:

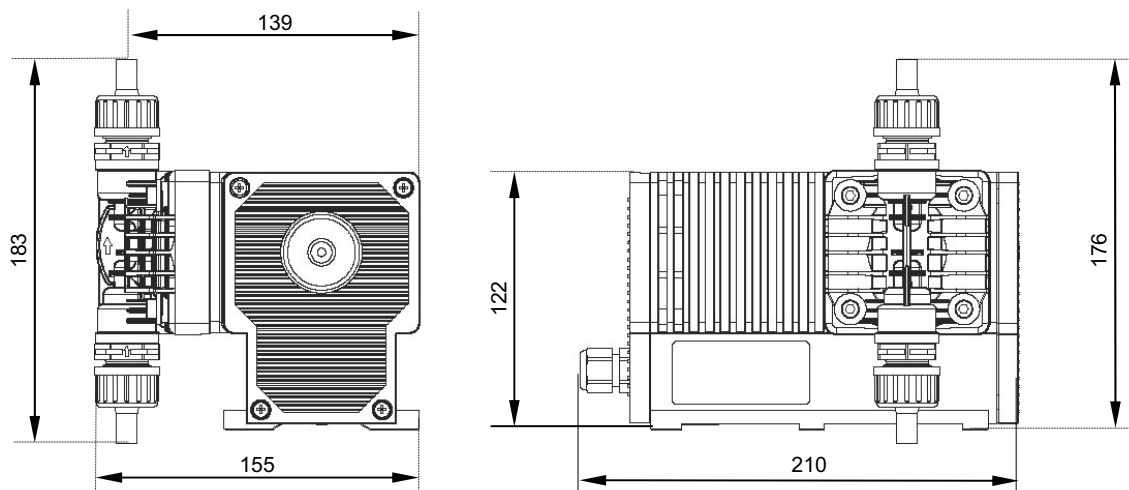
Pump capacity:	approx. 50 l/h
Metering back pressure:	max. 2 bar (0.2 MPa)
Suction height:	2 m (Ws)
Rotational speed max:	125 1/min
Ambient temperature max:	40° C
Duty cycle:	25 % ED
Connections:	Ø 10 / 16 mm
Power supply:	230 V / 50 Hz
Current consumption:	2 A

### Material:

Type	1070	107010
Housing:	Thermoplastic polyester	
Pump head:	PP	PVDF
Diaphragm:	PTFE – EPDM compound diaphragm	
Valve body:	PP	PVDF
Valve balls:	Ceramics	
Valve spring:	Hastelloy C4	
Seals:	EPDM	FPM 602 (Viton B)
Weight:	2.4 kg	
Color:	blue RAL 5007	

All values at 50 Hz. All data refer to water temperature of 20° C according to the instructions of the technical manual, subject to!

### Dimensions:

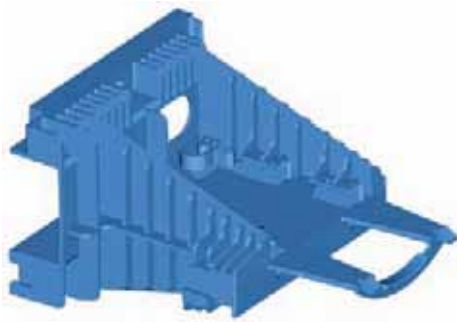


**Ordering data:**

Article	Version	Material No.
Turbopump	PP / EPDM	1070
	PVDF / FPM 602	107010

**Extent of supply:** Connector cable (2.40 m)  
Hose connection material 10/16 mm  
Operating instructions

**Accessories:**



Article	Material No.
<p><b>Wall bracket</b> including fastening screws and dowels</p> <p>A number of consoles can be connected together for mounting in a row.</p>	207002

- **Metering with smallest possible rate capability**
- **High reproducibility**
- **High metering accuracy even with degassing products**
- **Self-priming and self-venting with smallest metering volumes**
- **Mechanical stroke adjustment**
- **Stroke frequency regulation**
- **Pulse control**
- **Pulse multiplication and division**
- **Pulse storage**
- **Standard signal drive**
- **Empty signal report and level pre-warning**
- **External metering lock**
- **Empty signal and stroke signal output**



All metering pumps of the series ELADOS® EMP-KKS operate on the piston-diaphragm principle. The diaphragm serves to feed the product whereas the piston handles the metering. Because of the continuous surplus return this metering pump operates self-venting. Therefore, the pump is appropriate for the conveying of degassing products. The cylindrical piston system without seal

is made of ceramic material and offers maximum resistance to chemicals. 1:10 reproducibility is fully guaranteed. Different electronic control variants allow the pump to be adapted to any process for quantity or proportional metering. The reasonable choice of accessories completes the extent of supply and represents a complete program for the metering application.



**Technical Data:**

**Mechanical Data:**

Pump capacity [l/h]:	0.2	0.5	0.9	1.4
Metering back pressure [bar]:	10	10	10	10
Piston diameter [mm]:	3	4.76	6.34	8
Delivery capacity per stroke [cm <sup>3</sup> ]:	0.027	0.068	0.12	0.19
Metering accuracy:	± 2%			
Suction height:	2 mWs, suction height with clean, slightly wet valves			
Metering frequency max:	122 1/min			
Pressure of pre-delivery max. [bar]:	0.3			
Suction and pressure valve (pre-delivery):	without spring			
Pressure valve (metering):	with 1 spring			
Ambient temperature max:	40° C			

**Material:**

Housing:	thermoplastic polyester
Pump head:	PVDF
Metering piston and cylinder:	ceramic
Diaphragm:	PTFE - EPDM compound diaphragm
Valve body:	PVDF
Seals:	FPM 602 (Viton B) <b>optional:</b> EPDM or Kalrez
Valve balls:	ceramic
Valve spring:	Hastelloy C22 PTFE-coated
Weight [kg]:	2.4
Colour:	blue RAL 5007

Special versions on request

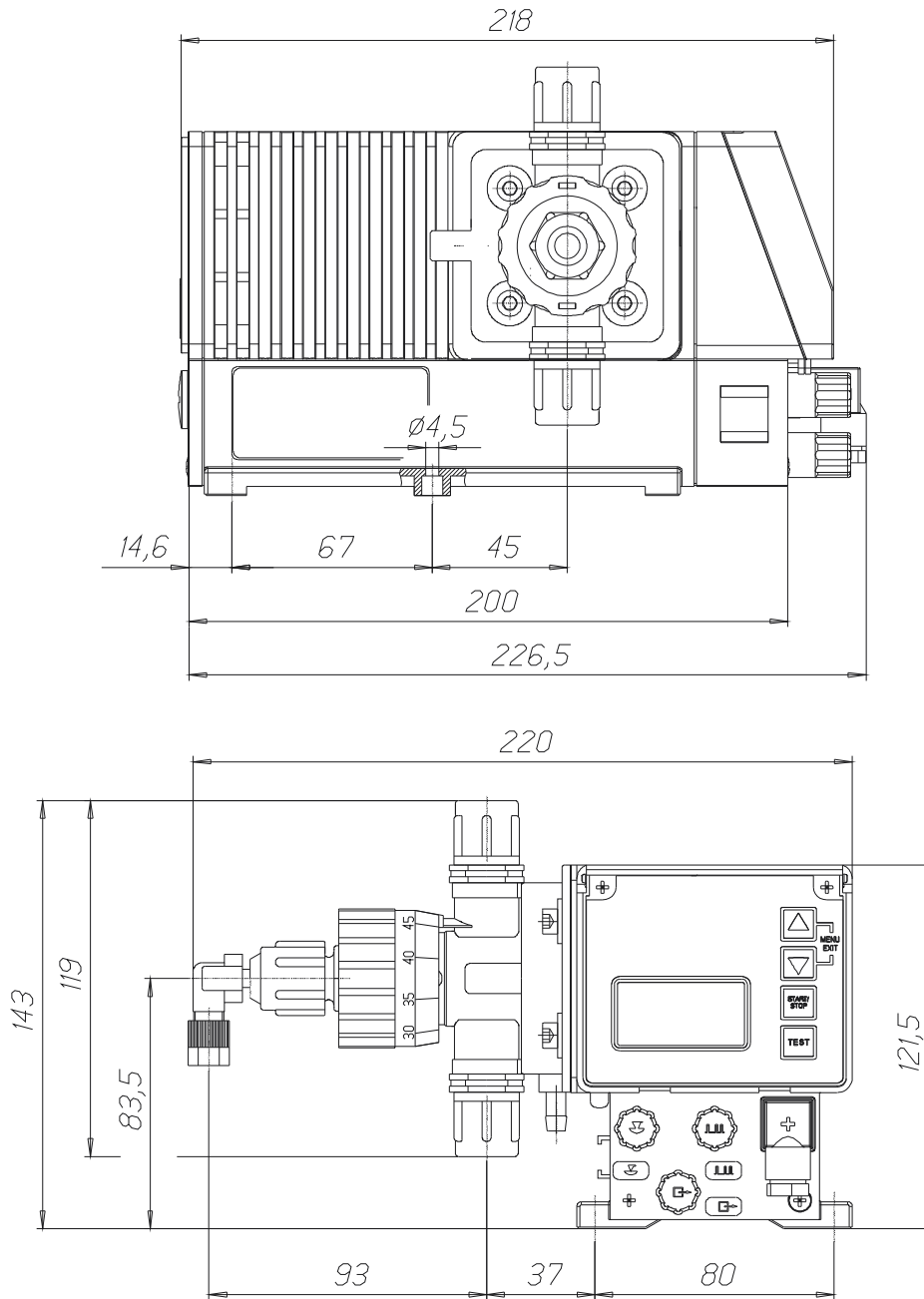
All values at 50 Hz. All data refer to water temperature of 20 °C according to the instructions of the technical manual, subject to!

**Electrical Data:**

Connection:	230 V / 50/60 Hz At a mains frequency of 60 Hz the delivery capacity increases by 20%, the metering back pressure decreases by 20% Special voltage on request
Power input [mA]	
at 50 Hz:	81
at 60 Hz:	86
Current consumption [W]	
at 50 Hz:	18.7
at 60 Hz:	19.8
Safety type:	IP 65
Insulation class:	B
Protective class:	I

**ATTENTION:** Due to its principle, this appliance may only be used with a protective device against the pump running dry = empty signal device and suction lance. In the case of control variant E10 this function has to be guaranteed on the appliance side.

**Dimensions:**



Hose connections	0.2 l/h	0.5 l/h*	0.5–1.4 l/h
Suction connection (int.Ø/ext.Ø):	6/10 mm	6/10 mm	6/10 mm
Return connection (int.Ø/ext.Ø):	6/10 mm	6/10 mm	6/10 mm
Pressure connection (int.Ø/ext.Ø):	2/4 mm	2/4 mm	4/6 mm

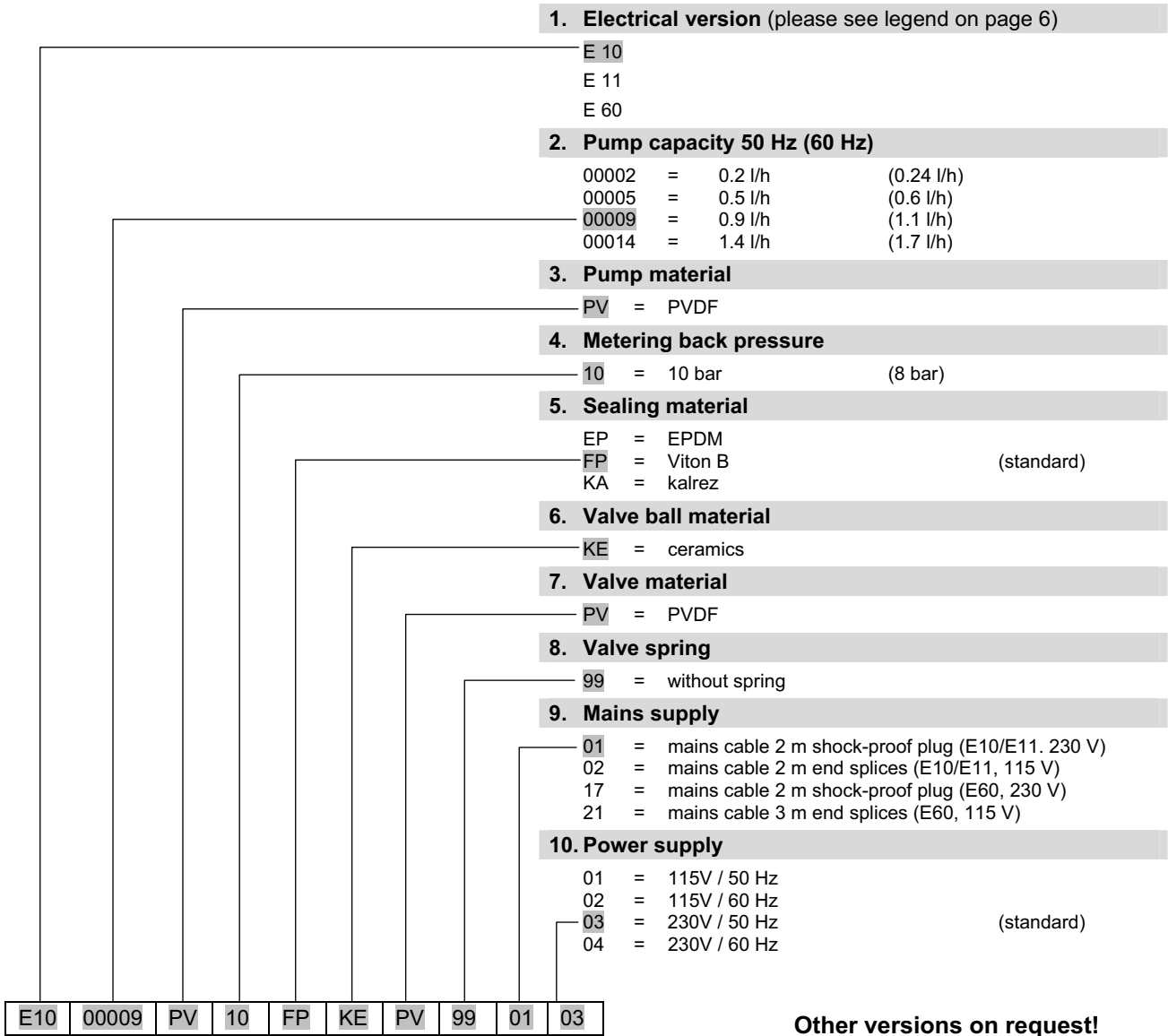
\* For the connection of PE or PTFE hoses (2/4 mm) with the 0.5 l/h version is optional an angled connection ([247613](#)) available.

If metering units with EMP KKS pumps 0.2 and 0.5 l/h are operated with a very low metering rate or in combination with the monitoring system **micro flow**, the metering line should be carried out with 2/4 mm hoses.





**Pump code – part 1**



**Other versions on request!**



**Pump code - part 2**

**11. Connection pre-delivery**

- 04 = set for PE hose 6/8
- 05 = set for PVC hose 6/10
- 06 = set for PE-fabric 6/12
- 33** = set for hose 6/8, 6/10, 6/12 (standard)

**12. Connection pressure side**

- 31 = set bent for PE/PTFE hose 2/4 (standard for 0.2 l/h)
- 32** = set bent for PE/PTFE hose 4/6 (standard for 0.5 - 1.4 l/h)
- 34 = set bent for hose 2/4, 4/6

**13. Connection material**

- PV** = PVDF

**14. Electrical stroke adjustment**

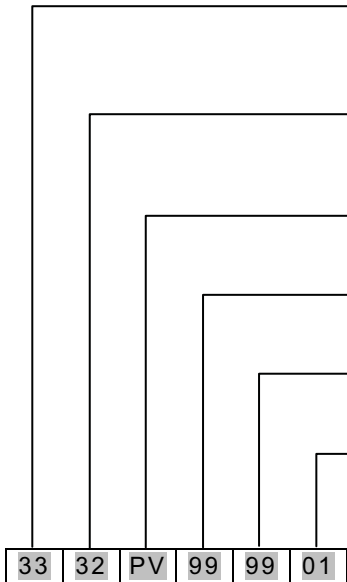
- 99** = without electrical stroke adjustment

**15. Diaphragm failure detection**

- 99** = without diaphragm failure detection

**16. Housing version**

- 01** = standard housing



**Other versions on request!**

Example of a complete pump code of a standard pump:

E10	00009	PV	10	FP	KE	PV	99	01	03	-	33	32	PV	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code 1)

(Pump code 2)



## Electrical versions

- E 10** On / off switch, mechanical stroke adjustment
- E 11** As E 10, additional empty signal input with level pre-warning, empty signal output
- E 60**
- Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20mA or 20-0/4mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal



**Ordering data – standard pumps:**

Article	Pump code	Material-No.
ELADOS® EMP KKS	E10 00002 PV 10 FP KE PV 99 01 03 – 33 31 PV 99 99 01	147610
	E10 00005 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147710
	E10 00009 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147810
	E10 00014 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147910

**Extent of supply:** 2 m connector cable with shock-proof plug, operating instructions, material of hose connection 2/4 mm (0.2 l/h) resp. 4/6 mm (0.5 – 1.4 l/h) for pressure connection; 6/8 mm, 6/10 mm and 6/12 mm for pre-delivery, 2 m duo-hose,

ELADOS® EMP KKS	E11 00002 PV 10 FP KE PV 99 01 03 – 33 31 PV 99 99 01	147611
	E11 00005 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147711
	E11 00009 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147811
	E11 00014 PV 10 FP KE PV 99 01 03 – 33 32 PV 99 99 01	147911

**Extent of supply:** 2 m connector cable with shock-proof plug, dummy plug for empty signal input, dummy cap for empty signal and stroke signal output, operating instructions, material of hose connection 2/4 mm (0.2 l/h) resp. 4/6 mm (0.5 – 1.4 l/h) for pressure connection; 6/8 mm, 6/10 mm and 6/12 mm for pre-delivery, 2 m duo-hose

ELADOS® EMP KKS	E60 00002 PV 10 FP KE PV 99 17 03 – 33 31 PV 99 99 01	147660
	E60 00005 PV 10 FP KE PV 99 17 03 – 33 32 PV 99 99 01	147760
	E60 00009 PV 10 FP KE PV 99 17 03 – 33 32 PV 99 99 01	147860
	E60 00014 PV 10 FP KE PV 99 17 03 – 33 32 PV 99 99 01	147960

**Extent of supply:** 2 m connector cable with shock-proof plug, dummy plug for empty signal input, dummy plug for pulse input, dummy cap for empty signal and stroke signal output, 5-pin connection plug for pulse and standard signal input, plug allocation plan, operating instructions, material of hose connection 2/4 mm (0.2 l/h) resp. 4/6 mm (0.5 – 1.4 l/h) for pressure connection; 6/8 mm, 6/10 mm and 6/12 mm for pre-delivery, 2 m duo-hose

**ELADOS® EMP KKS E 60<sup>PLUS</sup>**

With the add-on unit (Dongle Box) for connection of an OGM<sup>PLUS</sup> oval gear meter the version E 60 turns to version E 60<sup>PLUS</sup>.

**Dongle Box**

248606

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter



**Article**

**Material-No.**



**Suction lances D 16 with reserve and empty signal report**

incl. ball non-return valve, suction strainer, level pre-warning contact, empty signal contact (when dropping below the level = contact interrupted), hose connection material (4/6 mm, 6/8 mm, 6/10 mm and 6/12 mm)

Tube diameter: 16 mm  
 Suction line: PE  
 Connection cable: circular connector incl. 5 m cable  
 Turn-on voltage: max.48 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 8 W / 8 VA

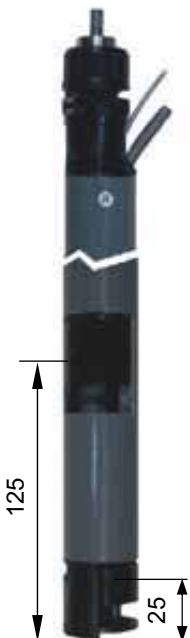
SGL VCPVFP99GL000 G3/8-06-2SS-0540-9951 (for container 20 l)	249020
SGL VCPVFP99GL000 G3/8-06-2SS-0750-9951 (for container 30/60 l)	249021
SGL VCPVFP99GL000 G3/8-06-2SS-0970-9951 (for container 100/200 l)	249022
SGL VCPVFP99GL000 G3/8-06-2SS-1125-9951 (for container 200 l)	249023

**Note:** When using these suction lances combined EMP KKS please order [suction pipe adapter \(247627\)](#) with return hole

**Suction lances D 32 with reserve and empty signal report and return connection**

incl. ball non-return valve, suction strainer, level pre-warning contact, empty signal contact (when dropping below the level = contact interrupted) and return connection from PVC

Tube diameter: 32 mm  
 Return connection: DN 6  
 Connection cable: 3-pin plug incl. 5 m cable  
 Turn-on voltage: max.48 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 8 W / 8 VA

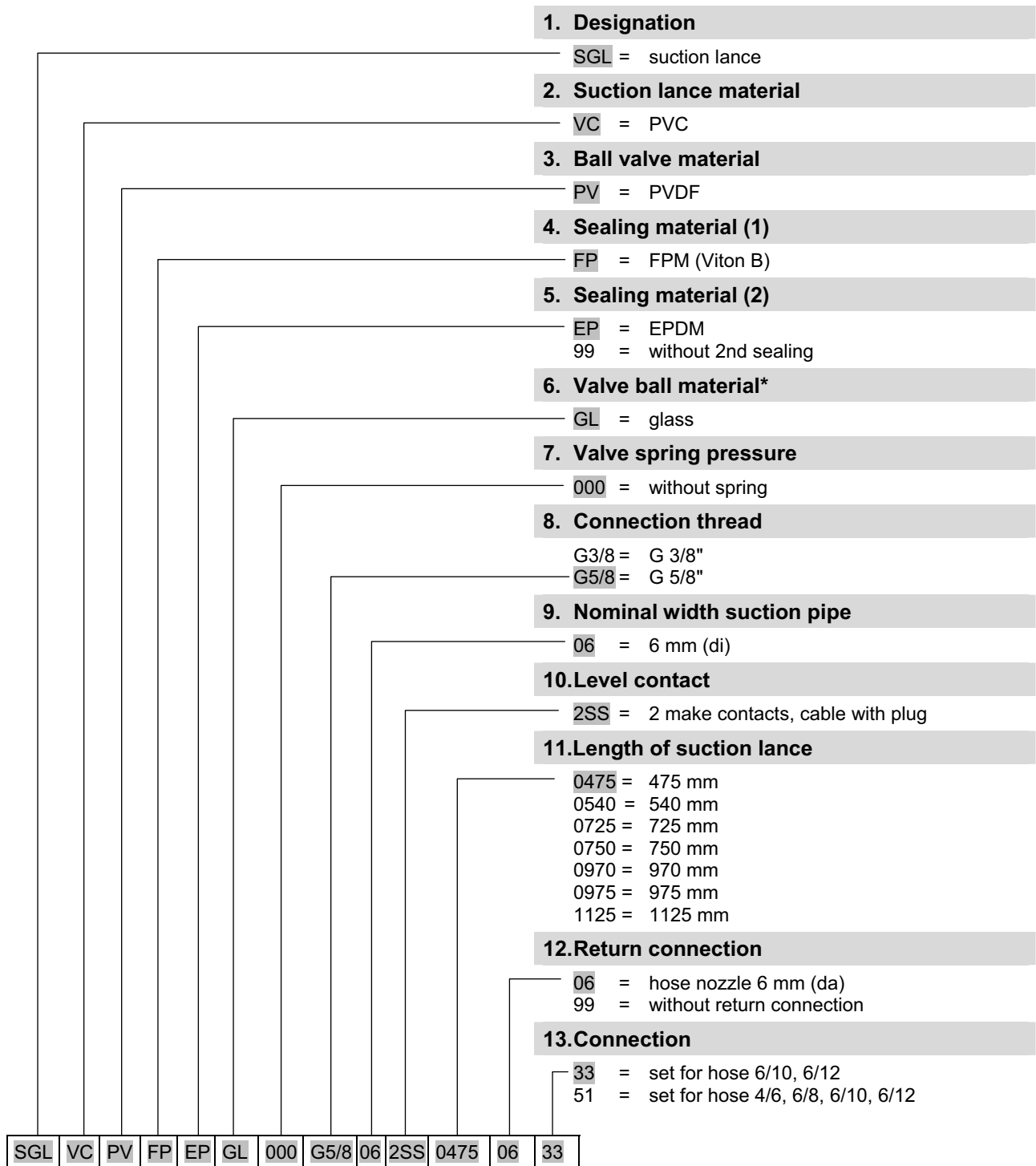


SGL VCPVFPEPGL000 G5/8-06-2SS-0475-0633 (for container 20 l)	247614
SGL VCPVFPEPGL000 G5/8-06-2SS-0725-0633 (f. container 30/60 l)	247615
SGL VCPVFPEPGL000 G5/8-06-2SS-0975-0633 (f. container 100/200 l)	247616
SGL VCPVFPEPGL000 G5/8-06-2SS-1125-0633 (for container 200 l)	247617

*Please see next page for suction lance legend.*



**Suction lance code**



\* standard valve ball material will soon be changed to ceramics



	<b>Article</b>	<b>Material-No.</b>
	<p><b>Suction pipe adapter with return hole</b></p> <p>thread pitch: 5 mm                      thread dimension inside: 56 mm                      thread dimension outside: 61 mm                      to screw on: canister 30 l <b>or</b>                      vessel 60 – 200 l</p>	247627
	<p><b>Adapter insert cap</b></p> <p>for suction lance Ø 32 mm                      PVC soft                      to attach on: canister 10 l and 20 l</p>	286198
	<p><b>Adapter insert cap</b></p> <p>for suction lance Ø 32 mm                      PVC – hard / Viton B                      suitable for degassing products                      Return connection: 4/6, 6/8 or 6/12 mm (int./ext.Ø)                      Vent connection: 6/12 mm (int./ext.Ø)                      to attach on: canister 30 l <b>or</b>                      container 60 – 200 l</p>	288534
	<p><b>Adapter screw connection</b></p> <p>for suction lance Ø 32 mm                      PVC hard                      Thread pitch: 5 mm                      Threaded internal diameter: 56 mm                      Threaded external diameter: 61 mm                      can be screwed on: canister 30 l <b>or</b>                      container 60 – 200 l</p>	286197
	<p><b>Adapter screw connection</b></p> <p>for suction lance Ø 32 mm                      PVC – hard / Viton B / Silicon                      suitable for degassing products                      Return connection: 4/6, 6/8 or 6/12 mm (int./ext.Ø)                      Vent connection: 6/12 mm (int./ext.Ø)                      Thread pitch: 5 mm                      Threaded int. diameter: 63 mm                      Threaded ext. diameter: 69 mm                      for barrel with internal thread (L–ring plus barrel 220 l)</p>	288535





**Article**

**Material-No.**

**Adapter screw connection**

288570

for suction lance Ø 32 mm  
 PVC – hard / Viton B / Silicon  
 suitable for degassing products  
 Return connection: 4/6, 6/8 or 6/12 mm (int./ext.Ø)  
 Vent connection: 6/12 mm (int./ext.Ø)  
 Thread pitch: 2.31 mm  
 Threaded int. diameter: 56.66 mm  
 Threaded ext. diameter: 59.61 mm  
 for container screw cap with 2" internal thread



**Adapter**

41980026

2" internal thread for adapter screw connection **288570**  
 Tri-Sure external thread for container screw cap



**Protection tubes for suction lances Ø 32 mm**

for prevention of mechanical damage of the suction valve  
 and the float respectively, incl. fastening screw

Protection tube, **PVDF**

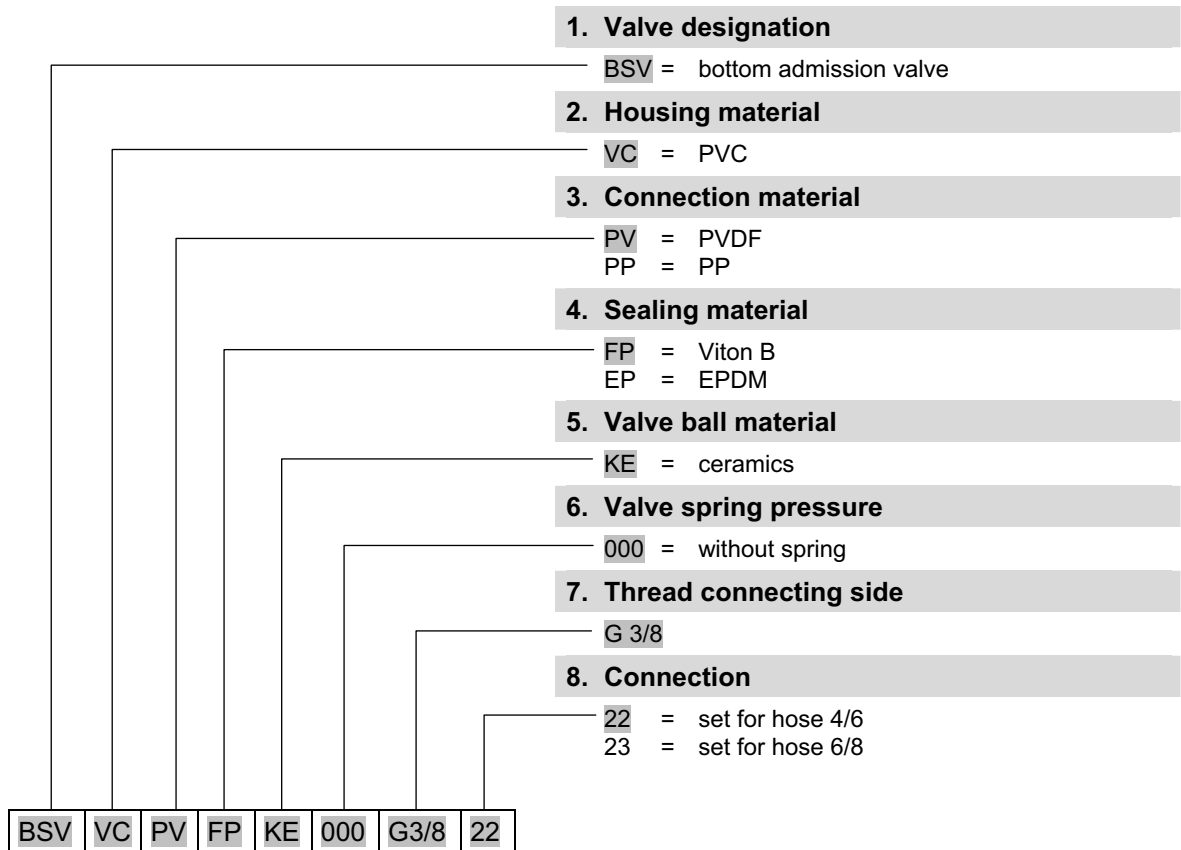
286191

Protection tube, **stainless steel (1.4035)**

286153










**Bottom admission valve**



**Article**

**Material-No.**

BSV VC PV FP KE 000 G 3/8 - 22	243129
BSV VC PV FP KE 000 G 3/8 - 23	243130
BSV VC PV EP KE 000 G 3/8 - 22	243131
BSV VC PV EP KE 000 G 3/8 - 23	243132
BSV VC PP FP KE 000 G 3/8 - 22	243125
BSV VC PP FP KE 000 G 3/8 - 23	243126
BSV VC PP EP KE 000 G 3/8 - 22	243127
BSV VC PP EP KE 000 G 3/8 - 23	243128

	<b>Article</b>	<b>Material-No.</b>
<b>Suction and pressure lines</b>		
available by the metre		
	ID/AD [bar]	max. working pressure  at 20° C
	PVC-fabric 4/10 mm	16
	PVC-fabric 6/12 mm	16
		417400121 417400123
<b>Note: We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.</b>		
	PVC-duo-hose (6/10) mm	8
		417400701
	PE hose 2/4 mm	20
	PE hose 4/6 mm	8
	PE hose 6/8 mm	8
		417400291 417400301 417400310
	PTFE hose 2/4 mm	18
	PTFE hose 4/6 mm	12
	PTFE hose 6/8 mm	14
		417400209 417400215 417400224
	<b>Signal horn with integrated red flash light</b> 230 V / 50 Hz / IP 33 RO	418271053
	<b>Wall bracket</b> made of stainless steel 1.4301 incl. attachment parts (dowels and screws)	240606
	<b>Wall bracket</b> made of thermoplastic polyester incl. fastening screws and dowels	207002



**Metering monitoring system MicroFlow<sup>PLUS</sup>**

MicroFlow<sup>PLUS</sup> is only applicable in conjunction with an EMP KKS / EMP II E60 series metering pump. The system consists of:

MicroFlow<sup>PLUS</sup>, measuring sensor and connection cable

The measuring sensor can also be used as a metering valve.

Flow capacity: 0.2 to 13 l/h

Minimum conductivity of product: 100 µS/cm

**Article**

**Material-No.**



**MicroFlow<sup>PLUS</sup>**

248611

Extension box with „Plug and Play“ function for evaluation of flow pulses



**Measuring sensor MicroFlow VC PV FP PT HC TI - 3/8 - 21**

288413

Housing:	PVC	_____	_____	_____	_____	_____	_____	_____	_____
Valve seat/Connection:	PVDF	_____	_____	_____	_____	_____	_____	_____	_____
Sealing:	Viton B	_____	_____	_____	_____	_____	_____	_____	_____
Ball:	Teflon	_____	_____	_____	_____	_____	_____	_____	_____
Spring:	Hastelloy C	_____	_____	_____	_____	_____	_____	_____	_____
Connector pin:	Titan	_____	_____	_____	_____	_____	_____	_____	_____
Connection thread:	3/8"	_____	_____	_____	_____	_____	_____	_____	_____
Connection:	Set for hose 4/6 mm, 6/8 mm and 6/12 mm	_____	_____	_____	_____	_____	_____	_____	_____

**Attention:** The measuring sensor has to be installed vertically (arrow faces upwards).



**Connection cable MicroFlow**

248612

for connection of measuring sensor 288413 at MicroFlow<sup>PLUS</sup> 248611

Length: 5 m



<b>Article</b>	<b>Material-No.</b>
----------------	---------------------



**Metering pipe G 1/4" for measuring sensor**  
Material: PVC

34800189

**Metering pipe G 1/2" for measuring sensor**  
Material: PVC

34800190

The MicroFlow measuring sensor in combination with the metering pipe (**34800189** or **34800190**) can be used as a metering valve.

Illustration left: MicroFlow measuring sensor with metering pipe 1/4" in optimal fitting position.



**Screw-on connection PVDF**

Connection 3/8" straight for hose 2/4 mm (int.Ø/ext.Ø)  
For connection of PE- or PTFE hose on "micro flow"

415101999

**Note:**

**In case of pump type 00002 (0.2 l/h) the metering line has to be carried out with 2/4 mm hoses.. For accessories on pressure side (e.g. metering valve) the screw-on connection 415101999 is required.**



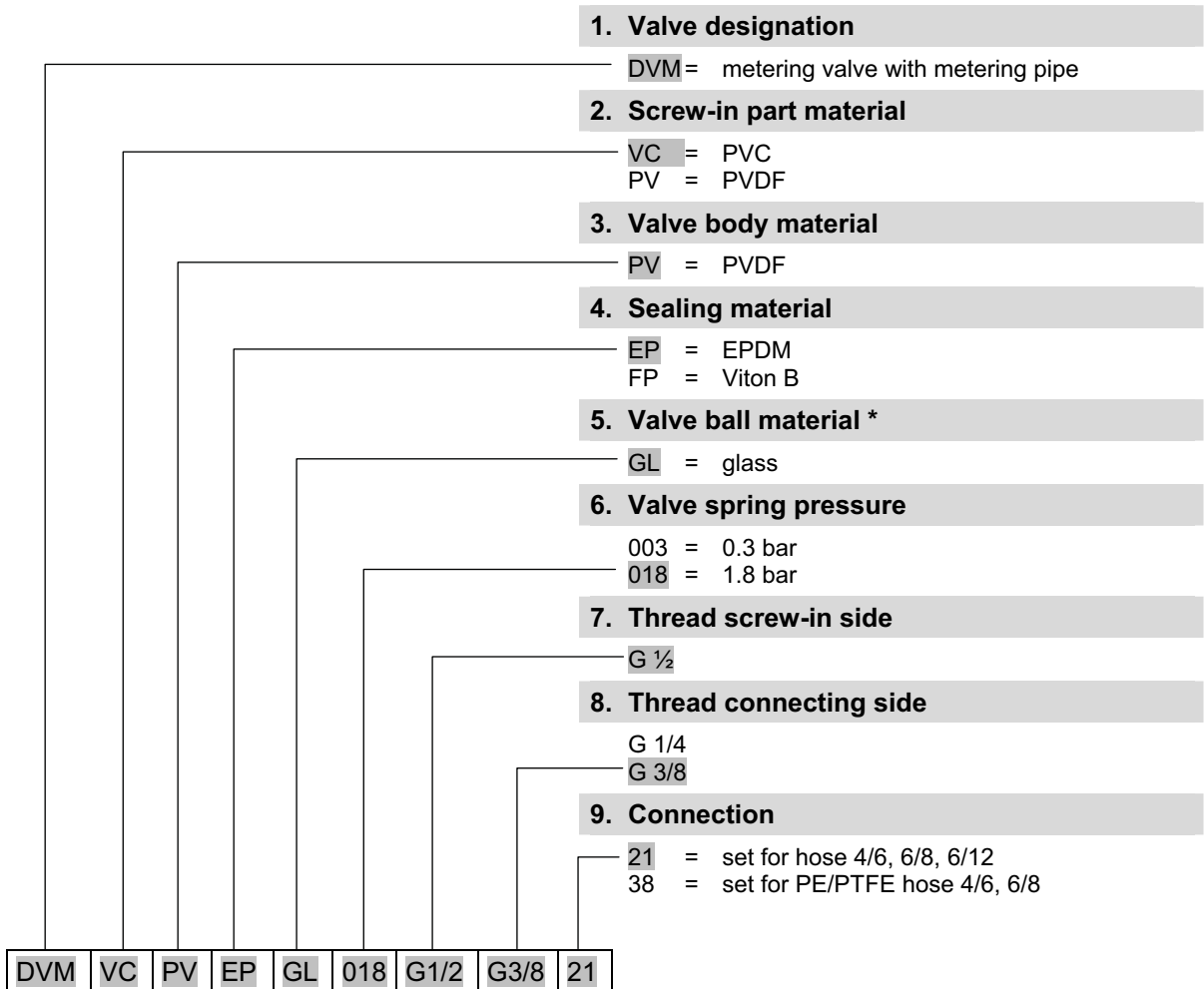
**Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 5 of "Measuring and Controlling".**



**Metering valves**



**Article**

DVM VC PV FP GL 003 G 1/2 – G 3/8 – 21  
DVM VC PV EP GL 003 G 1/2 – G 3/8 – 21

**Material-No.**

248059  
248060

\* standard valve ball material will soon be changed to ceramics



**Article**

**Material-No.**

**Metering valves with hose valve for chloric products**

Metering pipe length L [mm]: 40

DVM VC PV FP GL 018 G 1/2 – G 3/8 – 21

248022

DVM VC PV EP GL 018 G 1/2 – G 3/8 – 21

248020

DVM PV PV FP GL 018 G 1/2 – G 3/8 – 38

248023

DVM PV PV EP GL 018 G 1/2 – G 3/8 – 38

248021

**Connection cables**

Length of 5 m each,  
ready made up with connectors



for empty signal input with straight 4-pin plug

418439001

for pulse or current input with straight 5-pin plug

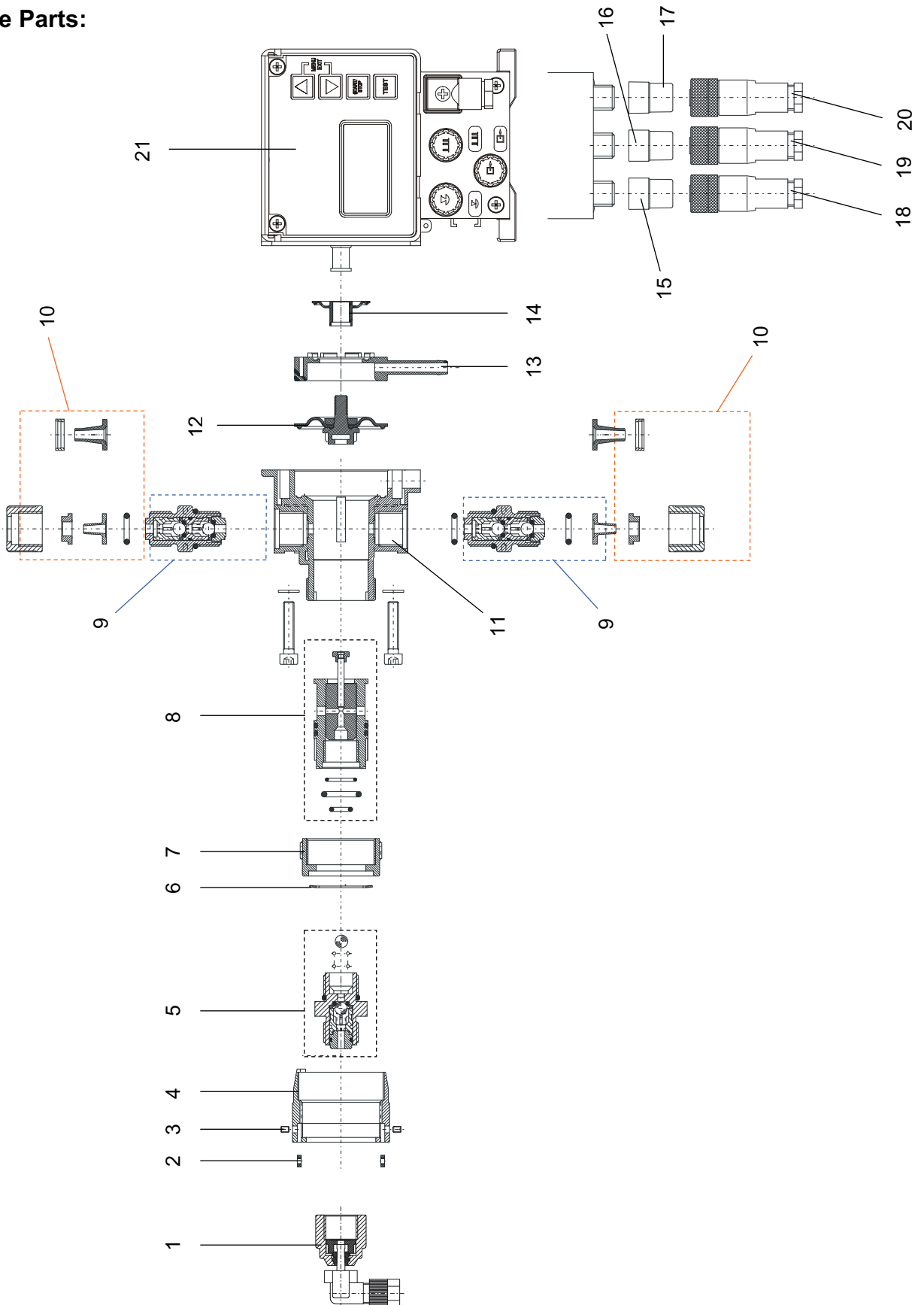
418439007

for empty signal or stroke signal output  
with straight 4-pin plug

418439022



**Spare Parts:**





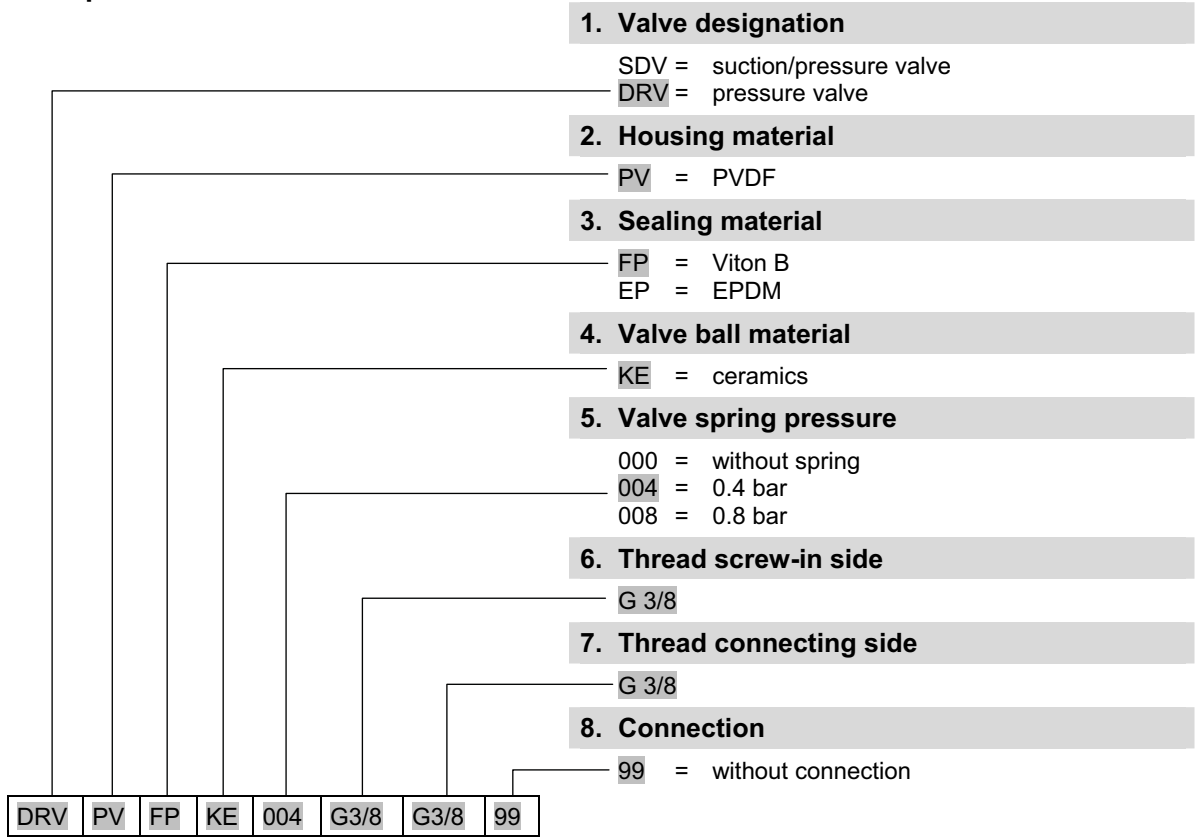


Item-No.	Description	Material-No.
1	Connection set straight G 3/8"-2/4 (for type 00002)	415101999
	Connection set angled G 3/8"-2/4 (for type 00002)	247613
	Connection set straight G 3/8"-4/6 (for type 00005-00014)	247619
	Connection set angled G 3/8"-4/6 (for type 00005-00014)	247620
2	Square nut	413226005
3	Headless screw	413401178
4	Stroke adjustment knob	34070193
5	Pressure valve DRV PVFPKE004 G3/8-G3/8-99 00002*	247623
	Pressure valve DRV PVFPKE008 G3/8-G3/8-99 00005/00009*	247624
	Pressure valve DRV PVFPKE008 G3/8-G3/8-99 00014*	247630
6	Washer	34070186
7	Regulating nut	34070185
8	Cylinder piston unit complete (for type 00002)	247607
	Cylinder piston unit complete (for type 00005)	247609
	Cylinder piston unit complete (for type 00009)	247605
	Cylinder piston unit complete (for type 00014)	247604
9	Suction and return valve SDV PV FP KE 000 G3/8-G3/8-99*	248405
	Suction and return valve SDV PV EP KE 000 G3/8-G3/8-99*	248406
10	Connection set 3/8" PVDF, for hose (int.Ø/ext.Ø) 6/8, 6/10, 6/12 mm	247629
	Connection set 3/8" PVDF, for duo-hose (int.Ø/ext.Ø) 6/10 mm	247610
11	Pump head, PVDF	34070192
12	Coupling/diaphragm unit, complete (for type 00002 / 00014)	247601
	Coupling/diaphragm unit, complete (for type 00005)	247608
	Coupling/diaphragm unit, complete (for type 00009)	247602
13	Intermediate plate	34070173
14	Protection diaphragm (only to change in connection with Pos. 26)	34800132
15	Dummy plug for empty signal report and pre-warning	248186
16	Dummy plug pulse input	248187
17	Cover cap	34800117
18	4-pin plug (3-pin) empty signal and pulse input	418463115
19	5-pin plug current and pulse input	418463118
20	4-pin plug empty signal and pulse output	418463117
21	Transparent enclosure cover	34800120

\* Please see next page for code declaration.



**Suction and pressure valves**



**Other versions on request!**



**Set of wearing parts (complete)**

consisting of 1 piece each:

- Suction valve (pre-transport) with hose connection – complete (1).
- Pressure valve (return flow) with hose connection – complete (2).
- Metering valve (3, pressure side)
- Diaphragm (4)
- Intermediate plate (5)
- Protection diaphragm (6)

**Article**

**Material-No.**

**Set of wearing parts**

EMP KKS <b>00002</b> PV FP KE	247676
EMP KKS <b>00005</b> PV FP KE	247677
EMP KKS <b>00009</b> PV FP KE	247678
EMP KKS <b>00014</b> PV FP KE	247679
EMP KKS <b>00002</b> PV EP KE	247686
EMP KKS <b>00005</b> PV EP KE	247687
EMP KKS <b>00009</b> PV EP KE	247688
EMP KKS <b>00014</b> PV EP KE	247689

Valve ball material	<b>KE</b>	= ceramics
Sealing material	<b>FP</b>	= Viton B
	<b>EP</b>	= EPDM
Housing material	<b>PV</b>	= PVDF
Pump type	<b>00002</b>	= 0.2 l/h
	<b>00005</b>	= 0.5 l/h
	<b>00009</b>	= 0.9 l/h
	<b>00014</b>	= 1.4 l/h



- Mechanical stroke adjustment
- Stroke frequency regulation
- Pulse control
- Pulse multiplication and division
- Pulse storage
- Standard signal drive
- Empty signal report and level pre-warning
- External metering stop
- Empty signal and stroke signal output



The ELADOS® EMP II series of metering pumps is based on the building block principle. Devices of this series comprise the drive unit, the gear, the metering pump head and the electronics. Different electronic control variants guarantee that the pump

may be adapted to any processing sequence for quantity or proportional metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering uses.

### Technical Data (standard version):

Pump type	V3014	V3025	00048	00043	00072	00072	00112	00240	
Pump capacity [l/h]	1.4	2.5	4.8	4.3	7.2	7.2	11.2	24	
Metering back-pressure* [bar]	10	10	4	10	6	10	5	2	
Delivering capacity/stroke [cm <sup>3</sup> ]	0.19	0.34	0.65	0.57	0.98	0.98	1.51	3.28	
Metering accuracy	<± 3 %								
Suction height	2 mWs, suction height with clean, slightly wet valves								
Metering frequency max.	122 1/min								
Ambient temperature max.	40° C								
Weight [kg]	2.1	2.1	2.1	2.4	2.4	3.1	3.1	3.3	
Power supply**	230 V / 50 Hz								
Current consumption	at 50 Hz [mA]		45	45	45	81	81	130	130
	at 60 Hz [mA]		50	50	50	86	86	150	150
Power input at 50 Hz [W]	10.4	10.4	10.4	18.7	18.7	30	30	30	
Power input at 60 Hz [W]	11.5	11.5	11.5	19.8	19.8	34.5	34.5	34.5	
Protective class	I								
Safety type	IP 65								
Insulation class	B								

\*\* At a mains frequency of 60 Hz delivery capacity increases by 20%, metering back-pressure decreases by 20%

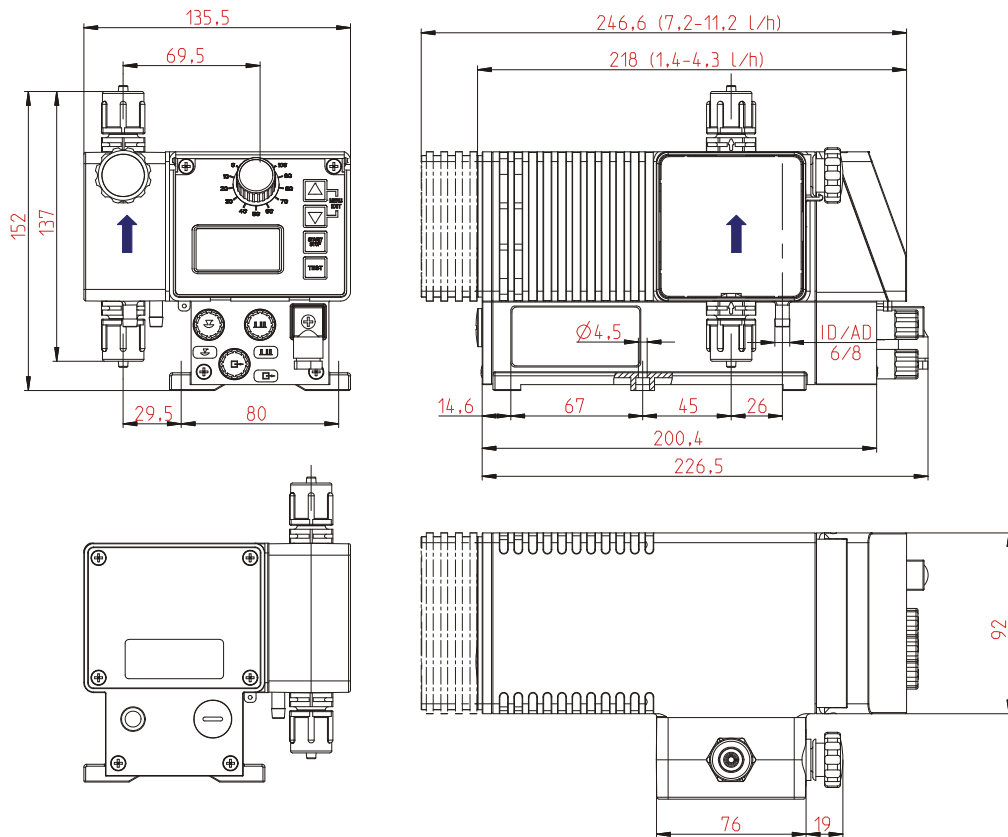
All values at 50 Hz. All data refer to water temperature of 20° C according to the instructions of the technical manual, subject to!

\*For **EMP II HP (High Pressure)** version see page 33.  
Other special versions on request.

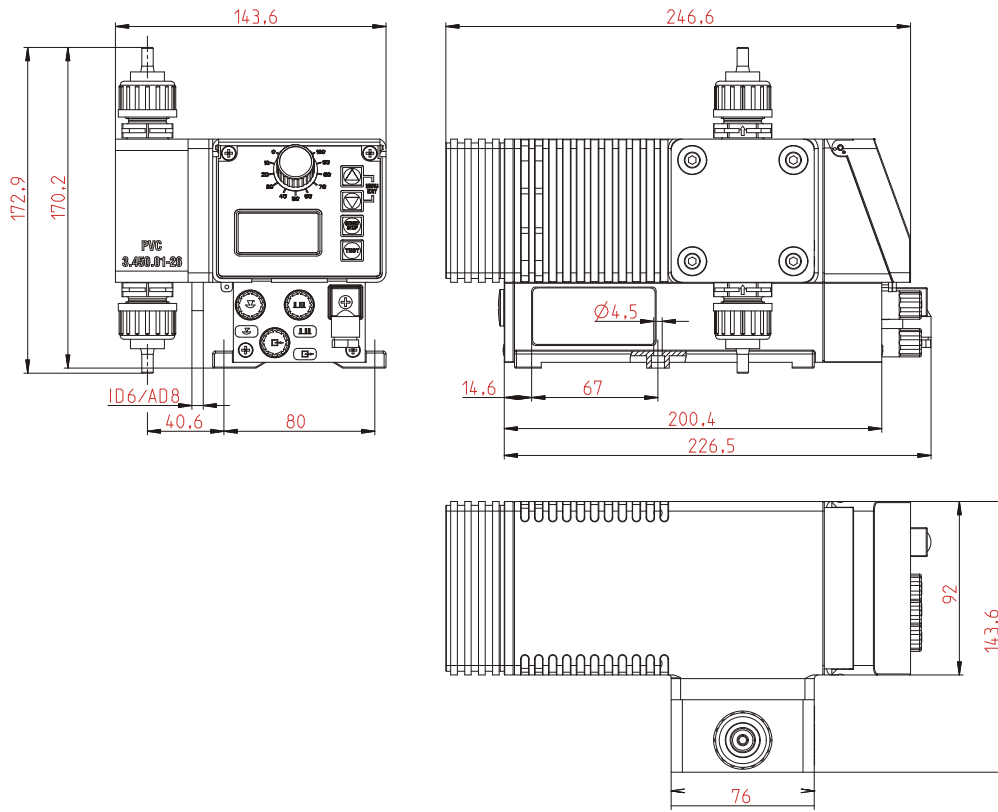
**Materials:**

- Housing: thermoplastic polyester
- Pump head: PVDF  
**optional:** polypropylene or stainless steel 1.4436
- Diaphragm: PTFE – EPDM compound diaphragm
- Seals: FPM 602 (Viton B)  
**optional:** EPDM or Kalrez
- Valve balls: ceramics  
**optional:** PTFE or stainless steel 1.4401
- Colour: blue RAL 5007

**Dimensions (type V3014 – 00112):**



**Dimensions (type 00240):**





### Pump code – part 1

	<b>1. Electrical version</b> (please see legend on page 6)
E 10	E 10
E 11	E 11
E 60	E 60
	<b>2. Pump capacity 50 Hz</b>
	<b>[60 Hz]</b>
	V3014 = 1.4 l/h [1.7 l/h]
	V3025 = 2.5 l/h [3.0 l/h]
	00048 = 4.8 l/h [5.7 l/h]
	00043 = 4.3 l/h [5.1 l/h]
	00072 = 7.2 l/h [8.6 l/h]
	00112 = 11.2 l/h [13 l/h]
	00240 = 24 l/h [29 l/h]
	(special version)
	<b>3. Pump material</b>
	PP = PP
	PV = PVDF (standard)
	VA = stainless steel
	<b>4. Metering back pressure</b> (depends on pump capacity)
	02 = 2 bar (for 24 l/h) [1.6 bar]
	04 = 4 bar (for 4.8 l/h) [3.2 bar]
	05 = 5 bar (for 11.2 l/h) [4 bar]
	06 = 6 bar (for 7.2 l/h) [4.8 bar]
	10 = 10 bar (for 1.4 / 2.5 / 4.3 / 7.2 l/h) [8 bar]
	<b>5. Sealing material</b>
	EP = EPDM
	FP = Viton B (standard)
	KA = kalrez
	<b>6. Valve ball material</b>
	VA = stainless steel
	KE = ceramics (standard)
	PT = teflon
	<b>7. Valve material</b>
	PP = PP
	PV = PVDF (standard)
	VA = stainless steel
	<b>8. Valve spring</b>
	99 = without spring (standard)
	<b>9. Mains supply</b>
	01 = mains cable 2 m shock-proof plug (E10/E11, 230 V)
	02 = mains cable 2 m end splices (E10/E11, 115 V)
	17 = mains cable 2 m shock-proof plug (E60, 230 V)
	21 = mains cable 3 m end splices (E60, 115 V)
	<b>10. Power supply</b>
	01 = 115V / 50 Hz
	02 = 115V / 60 Hz
	03 = 230V / 50 Hz
	04 = 230V / 60 Hz
	08 = 230V / 50/60 Hz
	09 = 115V / 50/60 Hz

E10	V3025	PV	10	FP	KE	PV	99	01	03
-----	-------	----	----	----	----	----	----	----	----

**Other versions on request!**



**Pump code – part 2**

	<b>11. Connection suction side</b>	
	21	= set for hose 4/6, 6/8, 6/12 (standard)
	25	= set with insertion part for pipe AD 10 (in PP, PVC)
	40	= connection for stainless steel pipe AD 6 (only for stainless steel valve)
	41	= connection for stainless steel pipe AD 8 (only for stainless steel valve)
	99	= without connection
<b>12. Connection pressure side</b>		
21	= set for hose 4/6, 6/8, 6/12 (standard)	
25	= set with insertion part for pipe AD 10 (in PP, PVC)	
40	= connection for stainless steel pipe AD 6 (only for stainless steel valve)	
41	= connection for stainless steel pipe AD 8 (only for stainless steel valve)	
99	= without connection	
<b>13. Connection material</b>		
PP	= PP	
PV	= PVDF (standard)	
VC	= PVC (only for connection 25)	
VA	= stainless steel (only for connection 40, 41)	
99	= without connection	
<b>14. Electrical stroke adjustment</b>		
99	= without electrical stroke adjustment	
<b>15. Diaphragm failure detection</b>		
99	= without diaphragm failure detection	
<b>16. Housing version</b>		
01	= standard housing	

**Other versions on request!**

21	21	PV	99	99	01
----	----	----	----	----	----

Example of a complete pump code of a standard pump:

E10	V3025	PV	10	FP	KE	PV	99	01	03	-	21	21	PV	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code part 1)
(Pump code part 2)





## Electrical versions

- E 10** On / off switch, mechanical stroke adjustment
- E 11** As E 10, additional empty signal input with level pre-warning, empty signal output
- E 60**
- Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20mA or 20-0/4mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal



**Ordering data – standard pumps:**

Article	Pump code	Material-No.
ELADOS® EMP II	E10 V3014 PV 10 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148010
	E10 V3025 PV 10 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148110
	E10 00048 PV 04 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148210
	E10 00043 PV 10 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148310
	E10 00072 PV 06 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148410
	E10 00072 PV 10 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148510
	E10 00112 PV 05 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148610
	E10 00240 PV 02 FP KE PV 99 01 03 – 21 21 PV 99 99 01*	148710
<b>Extent of supply:</b> 2 m connector cable with shock-proof plug, material of hose connection 4/6 mm, 6/8 mm and 6/12 mm, operating instructions		
ELADOS® EMP II	E11 V3014 PV 10 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148011
	E11 V3025 PV 10 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148111
	E11 00048 PV 04 FP KE PV 99 01 08 – 21 21 PV 99 99 01	148211
	E11 00043 PV 10 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148311
	E11 00072 PV 06 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148411
	E11 00072 PV 10 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148511
	E11 00112 PV 05 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148611
	E11 00240 PV 02 FP KE PV 99 01 03 – 21 21 PV 99 99 01*	148711
<b>Extent of supply:</b> 2 m connector cable with shock-proof plug, material of hose connection 4/6 mm, 6/8 mm and 6/12 mm, dummy plug for empty signal input, dummy cap for empty signal or stroke signal output, operating instructions		
ELADOS® EMP II	E60 V3014 PV 10 FP KE PV 99 17 08 – 21 21 PV 99 99 01	148060
	E60 V3025 PV 10 FP KE PV 99 17 08 – 21 21 PV 99 99 01	148160
	E60 00048 PV 04 FP KE PV 99 17 08 – 21 21 PV 99 99 01	148260
	E60 00043 PV 10 FP KE PV 99 17 03 – 21 21 PV 99 99 01	148360
	E60 00072 PV 06 FP KE PV 99 17 03 – 21 21 PV 99 99 01	148460
	E60 00072 PV 10 FP KE PV 99 17 03 – 21 21 PV 99 99 01	148560
	E60 00112 PV 05 FP KE PV 99 17 03 – 21 21 PV 99 99 01	148660
	E60 00240 PV 02 FP KE PV 99 17 03 – 21 21 PV 99 99 01*	148760
<b>Extent of supply:</b> 2 m connector cable with shock-proof plug, material of hose connection 4/6 mm, 6/8 mm and 6/12 mm, dummy plug for empty signal input, dummy cap for empty signal or stroke signal output, 5-pin connection plug for pulse and standard signal input, plug allocation plan, operating instructions		

\* In case of pump type 00240, pay attention to the chapters about accessories (page 22) and spare parts (page 30) for pressure side!

**ELADOS® EMP II E 60<sup>PLUS</sup>**

With the add-on unit (Dongle Box) for connection of an OGM<sup>PLUS</sup> oval gear meter the version E 60 turns to version E 60<sup>PLUS</sup>.

**Article****Material-No.****Dongle Box**

248606

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter

**Accessories:**



**Article**

**Material No.**

**Suction lances D 16 with reserve and empty signal report**

incl. ball non-return valve, suction strainer, level pre-warning contact, empty signal contact (when dropping below the level = contact interrupted), hose connection material (4/6 mm, 6/8 mm, 6/10 mm and 6/12 mm)

Tube diameter: 16 mm  
 Suction line: PE  
 Connection cable: circular connector incl. 5 m cable  
 Turn-on voltage: max.48 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 8 W / 8 VA

SGL VCPVFP99GL000 G3/8-06-2SS-0540-9951 (for container 20 l)	249020
SGL VCPVFP99GL000 G3/8-06-2SS-0750-9951 (for container 30/60 l)	249021
SGL VCPVFP99GL000 G3/8-06-2SS-0970-9951 (for container 100/200 l)	249022
SGL VCPVFP99GL000 G3/8-06-2SS-1125-9951 (for container 200 l)	249023



**Suction lances D32 with reserve and empty signal report**

incl. of ball non-return valve, suction strainer and zero-potential empty signal contact (empty = contact interrupted), hose connection material (4/6 mm, 6/8 mm and 6/12 mm)

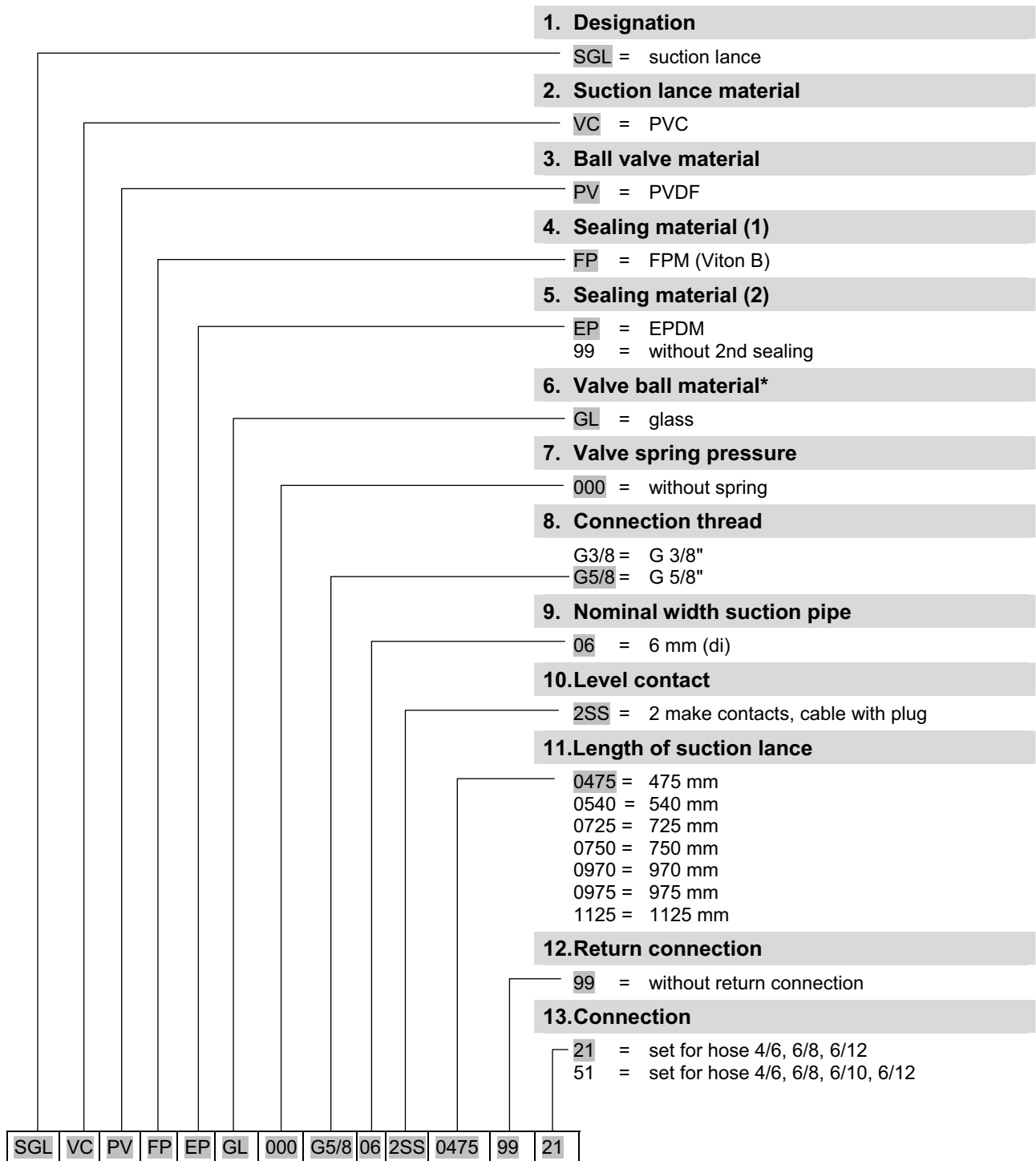
Pipe diameter: 32 mm  
 Connection cable: circular connector incl. 5 m cable  
 Turn-on voltage: max. 50 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 10 W / 10 VA

SGL VCPVFPEPGL000 G5/8-06-2SS-0475-9921 (for container 20 l)	186140
SGL VCPVFPEPGL000 G5/8-06-2SS-0725-9921 (for container 30/60 l)	186141
SGL VCPVFPEPGL000 G5/8-06-2SS-0975-9921 (for container 100/200 l)	186142
SGL VCPVFPEPGL000 G5/8-06-2SS-1125-9921 (for container 200 l)	186143

*Please see next page for pump code declaration.*



**Suction lance code**



\* standard valve ball material will soon be changed to ceramics





**Article**  
**Adapter screw connection**  
 for suction lance Ø 32 mm  
 PVC – hard / Viton B / Silicon  
 suitable for degassing products  
 Return connection: 4/6, 6/8 or 6/12 mm (int./ext.Ø)  
 Vent connection: 6/12 mm (int./ext.Ø)  
 Thread pitch: 2.31 mm  
 Threaded int. diameter: 56.66 mm  
 Threaded ext. diameter: 59.61 mm  
 for container screw cap with 2" internal thread

**Material No.**  
 288570



**Adapter**  
 2" internal thread for adapter screw connection **288570**  
 Tri-Sure external thread for container screw cap

419800026



**Suction lance adapter, rigid PVC/Viton B**  
 for canister or barrel

288549



**Suction lance adapter, rigid PVC/Viton B**  
 for barrels (I-ring plus – barrel 220)

288547



**Suction lance adapter, rigid PVC/Viton B**  
 for container (ECOBULK-container with skid pallet)  
 for screw in in screw cap with 2"  
 Tri-Sure-Stuffing

288548



**Terminal box for connection cable of the suction pipe**  
 for connection cable with round plug  
 incl. cable union PG 7 (max. 2 x 1 m<sup>2</sup>)

288419



**Article**

**Material No.**

**Protection tubes for suction lances, D32**

for prevention of mechanical damage of the suction valve and the float respectively;  
suitable for all suction lances Ø 32 mm

**Protection tube, PVDF, 32,5/40 (int.Ø /ext.Ø)**

286191

incl. fastening screw

**Protection tube, stainless steel (1.4035),**

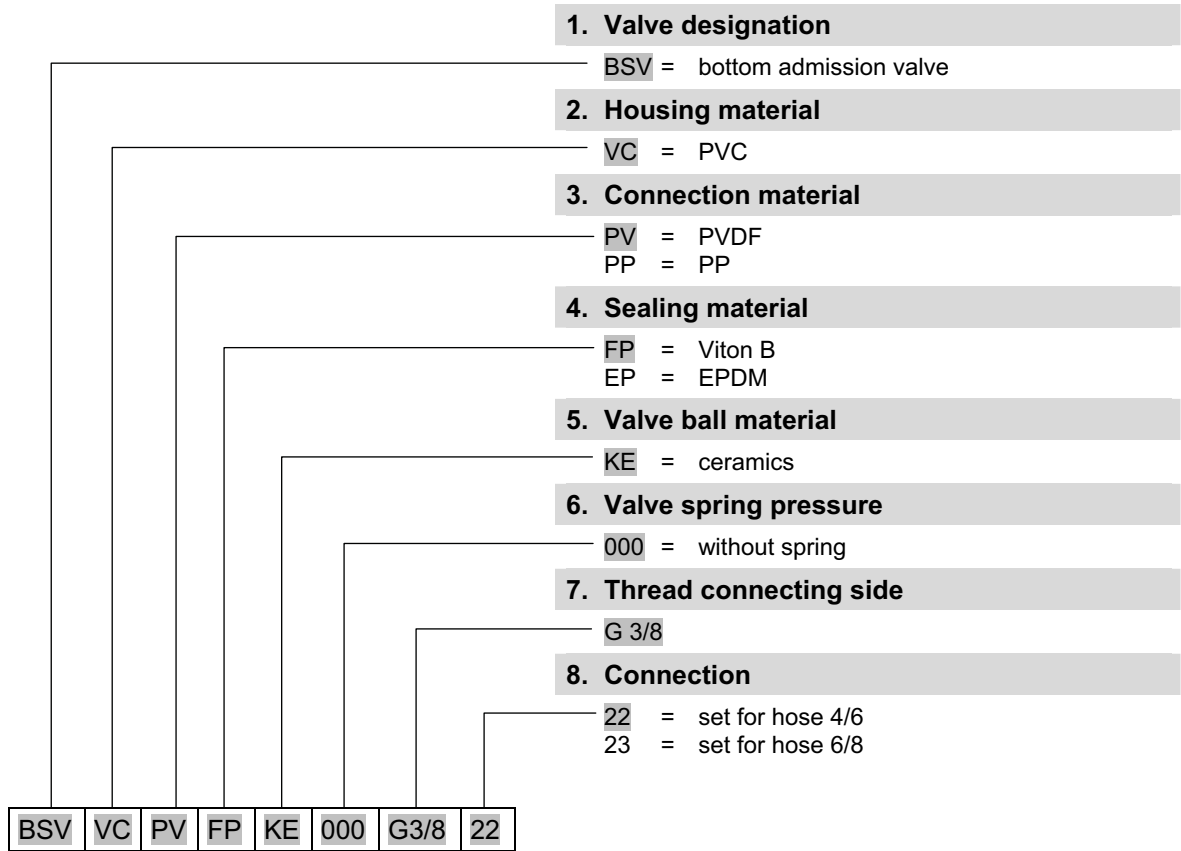
286153

**32,5/40 (int.Ø /ext.Ø)** incl. fastening screw





**Bottom admission valve for type V3014 – 00112**



**Article**

**Material-No.**

BSV VC PV FP KE 000 G 3/8 - 22	243129
BSV VC PV FP KE 000 G 3/8 - 23	243130
BSV VC PV EP KE 000 G 3/8 - 22	243131
BSV VC PV EP KE 000 G 3/8 - 23	243132
BSV VC PP FP KE 000 G 3/8 - 22	243125
BSV VC PP FP KE 000 G 3/8 - 23	243126
BSV VC PP EP KE 000 G 3/8 - 22	243127
BSV VC PP EP KE 000 G 3/8 - 23	243128

**Metering monitoring system MicroFlow<sup>PLUS</sup>**

MicroFlow<sup>PLUS</sup> is only applicable in conjunction with an EMP KKS / EMP II E60 series metering pump. The system consists of: MicroFlow<sup>PLUS</sup>, measuring sensor and connection cable  
The measuring sensor can also be used as a metering valve.

Flow capacity: 0.2 to 13 l/h  
Minimum conductivity of product: 100 µS/cm

**Article**

**Material-No.**



**MicroFlow<sup>PLUS</sup>**

248611

Extension box with „Plug and Play“ function for evaluation of flow pulses



**Measuring sensor MicroFlow VC PV FP PT HC TI - 3/8 - 21**

288413

Housing:	PVC	_____	_____	_____	_____	_____	_____	_____	_____	_____
Valve seat/Connection:	PVDF	_____	_____	_____	_____	_____	_____	_____	_____	_____
Sealing:	Viton B	_____	_____	_____	_____	_____	_____	_____	_____	_____
Ball:	Teflon	_____	_____	_____	_____	_____	_____	_____	_____	_____
Spring:	Hastelloy C	_____	_____	_____	_____	_____	_____	_____	_____	_____
Connector pin:	Titan	_____	_____	_____	_____	_____	_____	_____	_____	_____
Connection thread:	3/8"	_____	_____	_____	_____	_____	_____	_____	_____	_____
Connection:	Set for hose 4/6 mm, 6/8 mm and 6/12 mm	_____	_____	_____	_____	_____	_____	_____	_____	_____

**Attention:** The measuring sensor has to be installed vertically (arrow faces upwards).



**Connection cable MicroFlow**

248612

for connection of measuring sensor **288413** at MicroFlow<sup>PLUS</sup> **248611**

Length: 5 m



**Article**

**Material-No.**



**Metering pipe G 1/4" for measuring sensor**

34800189

Material: PVC

**Metering pipe G 1/2" for measuring sensor**

34800190

Material: PVC

The MicroFlow measuring sensor in combination with the metering pipe (**34800189** or **34800190**) can be used as a metering valve.

Illustration left: MicroFlow measuring sensor with metering pipe 1/4" in optimal fitting position.



**Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 5 of "Measuring and Controlling".**



**Article**

**Material-No.**

**Pulsation damper**

To reduce pressure peaks and pulsation at oscillating rotary pumps at the pressure side and to prevent cavitating at the suction side.

Stroke volume: 15 cm<sup>3</sup>/stroke  
 Admissible nominal pressure: 10 bar  
 Thread connection: G ¾

**PDS 080 D16 PP/Hypalon**

415503009

Housing material: PP  
 Sealing/diaphragms: Hypalon

**PDS 080 D16 PP/Viton**

415503010

Housing material: PP  
 Sealing/diaphragms: Viton



**Manometer**

415502560

0-10 bar, connection G ¼

**Attention:**

When adjusting the initial pressure the pulsation damper has to be relieved on the metering media side.



**Reduction G ½ a – G ¼ i**

415202771

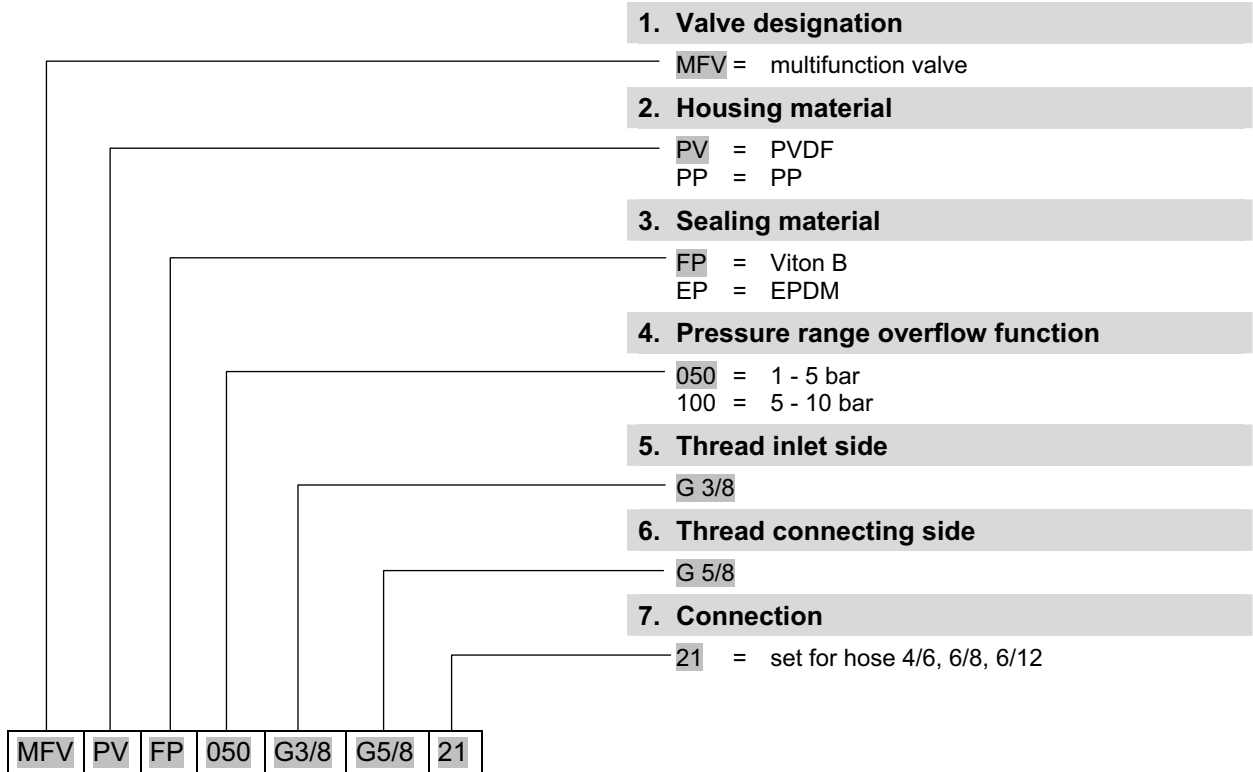


**Optical metering control**

288524

The optical metering control is executed by the operation of a ball in the transparent window of the metering display during metering of the product.

**Multifunction valve**



This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**



Article	Material-No.
MFV PV FP 050 G 3/8 – G 5/8 – 21	249240
MFV PV EP 050 G 3/8 – G 5/8 – 21	249260
MFV PV FP 100 G 3/8 – G 5/8 – 21	249241
MFV PV EP 100 G 3/8 – G 5/8 – 21	249261
MFV PP FP 050 G 3/8 – G 5/8 – 21	249246
MFV PP EP 050 G 3/8 – G 5/8 – 21	249266
MFV PP FP 100 G 3/8 – G 5/8 – 21	249247
MFV PP EP 100 G 3/8 – G 5/8 – 21	249267

**Further material combinations on request!**



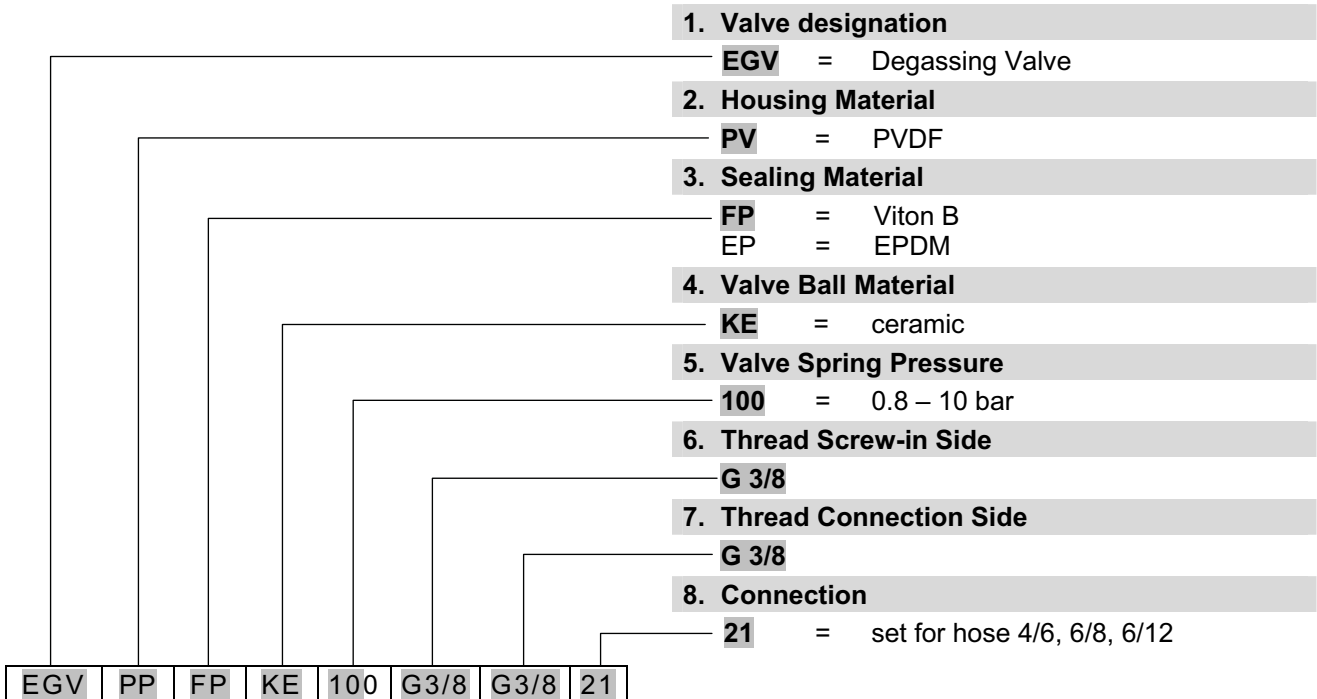
**Degassing Control „Degas<sup>PLUS</sup>“**

The Degas<sup>PLUS</sup> exists of degassing valve (EGV) and connection cable with plug. It ensures together with the metering pumps of the type series EMP II E60 an automatic degassing with the metering of aerogenic medium. The degassing valve can be mounted directly on the metering valve of the metering pump. It is controlled by the software integrated in the pump.



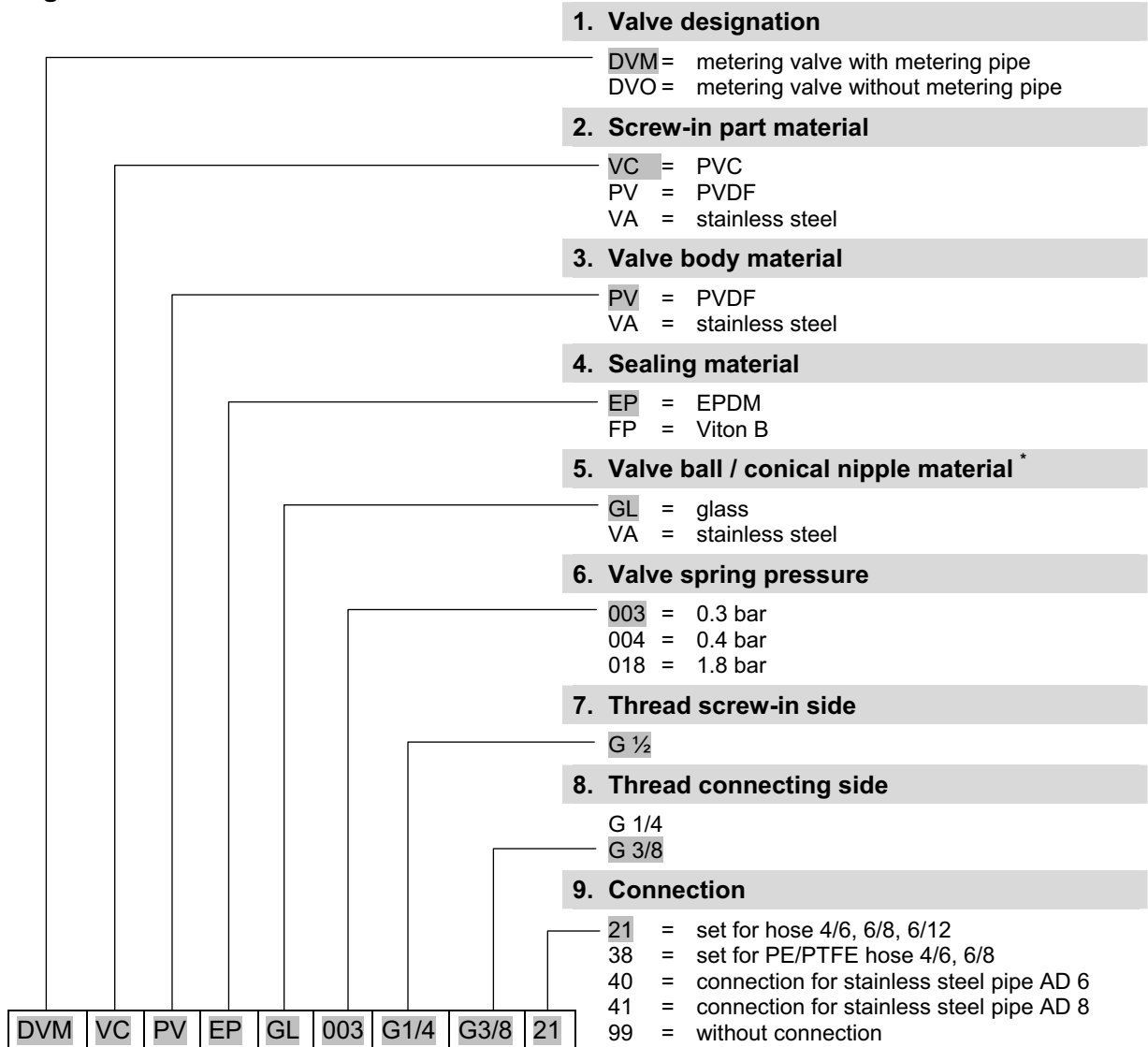
Degassing Valve (1)  
Connection cable (2)

Article	Material No.
EGV PVFPKE100 G 3/8-G 3/8-21 230V50/60Hz	248638
EGV PVEPKE100 G 3/8-G 3/8-21 230V50/60Hz	248639
EGV PVFPKE100 G 3/8-G 3/8-21 115V50/60Hz	248642
EGV PVEPKE100 G 3/8-G 3/8-21 115V50/60Hz	248643
Connection cable Degas <sup>PLUS</sup> with shock-proof plug	248623
Connection cable Degas <sup>PLUS</sup> with US plug	248624





**Metering valves**



**Article**

**Material-No.**

DVM VC PV FP GL 003 G 1/2 – G 3/8 – 21	248059
DVM VC PV EP GL 003 G 1/2 – G 3/8 – 21	248060
DVM VA VA FP VA 004 G 1/2 – G 1/4 – 40	240150
DVM VA VA EP VA 004 G 1/2 – G 1/4 – 41	on request

\* standard valve ball material will soon be changed to ceramics



**Article**

**Material-No.**

**Metering valves with hose valve for chloric products**

Metering pipe length L [mm]: 40

DVM VC PV FP GL 018 G 1/2 – G 3/8 – 21 248022

DVM VC PV EP GL 018 G 1/2 – G 3/8 – 21 248020

DVM PV PV FP GL 018 G 1/2 – G 3/8 – 38 248023

DVM PV PV EP GL 018 G 1/2 – G 3/8 – 38 248021



**Hot-water metering area**

consisting of:

**Metering valve with metering pipe**

DVM VA VA FP GL 004 G1/2 – G1/4 – 41 240153

and

**Cooling stretch**

248411

stainless steel spiral-pipe da 8 mm  
with adapter and connection material for hose 4/6, 6/8  
and 6/12 mm (ID/AD)

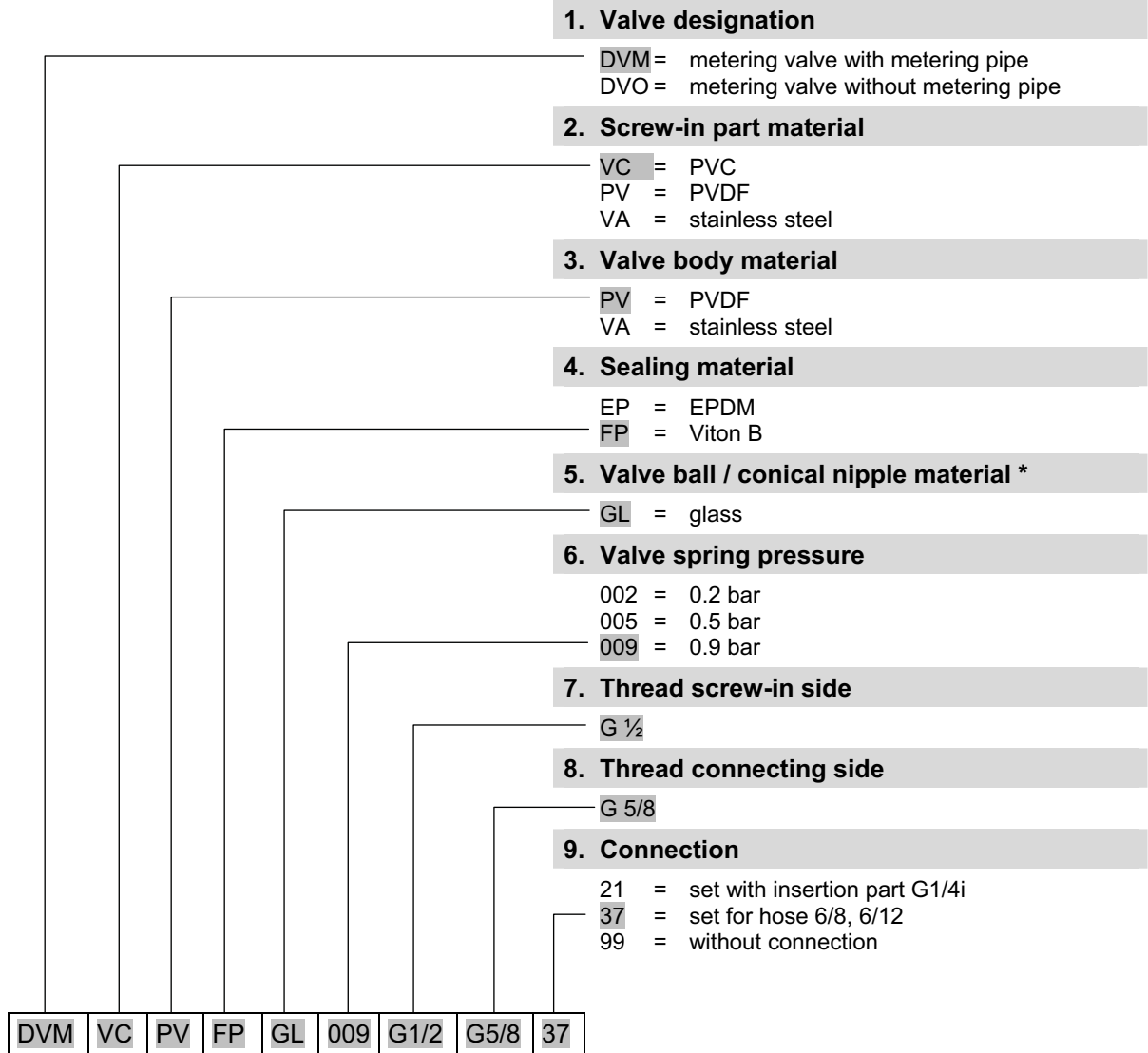
**Temperature resistance: max. 130° C**





**Accessories for type 00240:**

**Metering valves**



**Article**

**Material-No.**

DVM VC PV FP GL 009 G 1/2 – G 5/8 – 37	245037
DVM VC PV EP GL 009 G 1/2 – G 5/8 – 37	245034
DVM VA VA FP VA 009 G 1/2 – G 5/8 – 16	245039
DVM VA VA EP VA 009 G 1/2 – G 5/8 – 16	245036

\* standard valve ball material will soon be changed to ceramics



Article	Material-No.
DVO VC PV FP GL 005 G 1/2 – G 5/8 – 37	249028
DVO VC PV EP GL 005 G 1/2 – G 5/8 – 37	249029
DVO PV PV FP GL 005 G 1/2 – G 5/8 – 99	249084
DVO PV PV EP GL 005 G 1/2 – G 5/8 – 99	249085
DVO VA VA FP VA 002 G 1/2 – G 5/8 – 99	249060
DVO VA VA EP VA 002 G 1/2 – G 5/8 – 99	on request



<b>Threaded connection</b> stainless steel G1/4 – pipe Ø 6	415101874
<b>Threaded connection</b> stainless steel G1/4 – pipe Ø 8 for DVO VA VA FP VA 002 G 1/2 – G 5/8 – 99	415101878

**Article** **Material No.**

**Suction and pressure lines**

available by the metre  
(int.Ø / ext.Ø)

max. operating pressure [bar]  
at 20° C



PVC-fabric 4/10 mm	16	417400121
PVC-fabric 6/12 mm	16	417400123

**Note: We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.**



PVC hose transparent 4/6 mm	0.5	417400006
PVC hose transparent 4/7 mm	0.5	417400007
PVC hose transparent 6/8 mm	0.5	417400015
PVC hose transparent 6/10 mm	0.5	417400017



PE hose 4/6 mm	8	417400301
PE hose 6/8 mm	8	417400310



PTFE hose 4/6 mm	12	417400215
PTFE hose 6/8 mm	14	417400224

**Article**

**Material No.**



**Signal horn with integrated red flash light**

418271053

230 V / 50 Hz / IP 33 RO



**Wall bracket**

240606

made of stainless steel 1.4301  
incl. of fastening material (dowels and screws)



**Wall bracket** (for type V3014 – 00043)

207002

made of thermoplastic polyester  
incl. fastening screws and dowels

A number of consoles can be connected together  
for mounting in a row.



**Connection cable, 5 m length**

for empty signal input with straight 4-pin plug

418439001

for pulse or current input with straight 5-pin plug

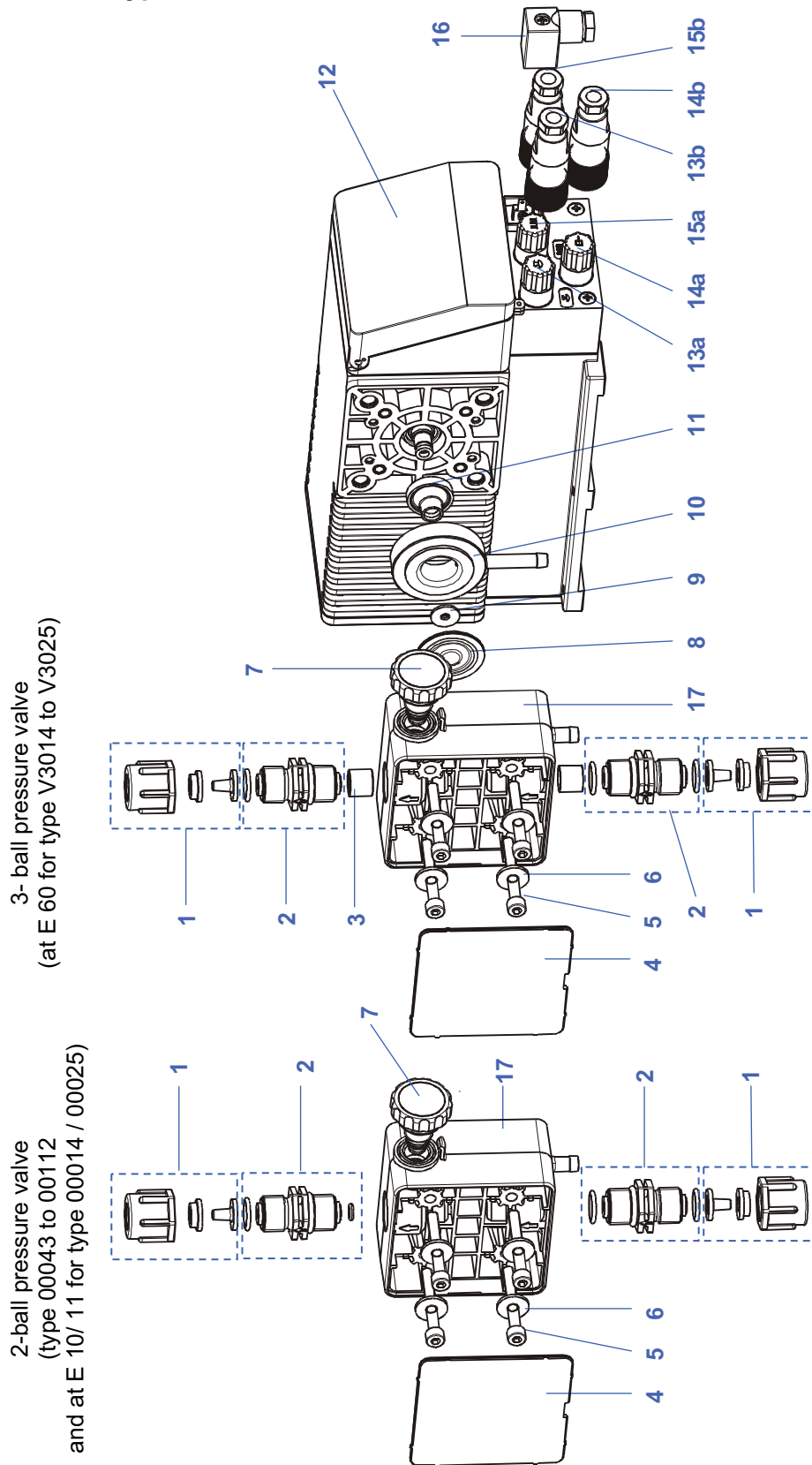
418439007

for empty signal or stroke signal output  
with straight 4-pin plug

418439022



**Spare parts for type V3014 – 00112:**





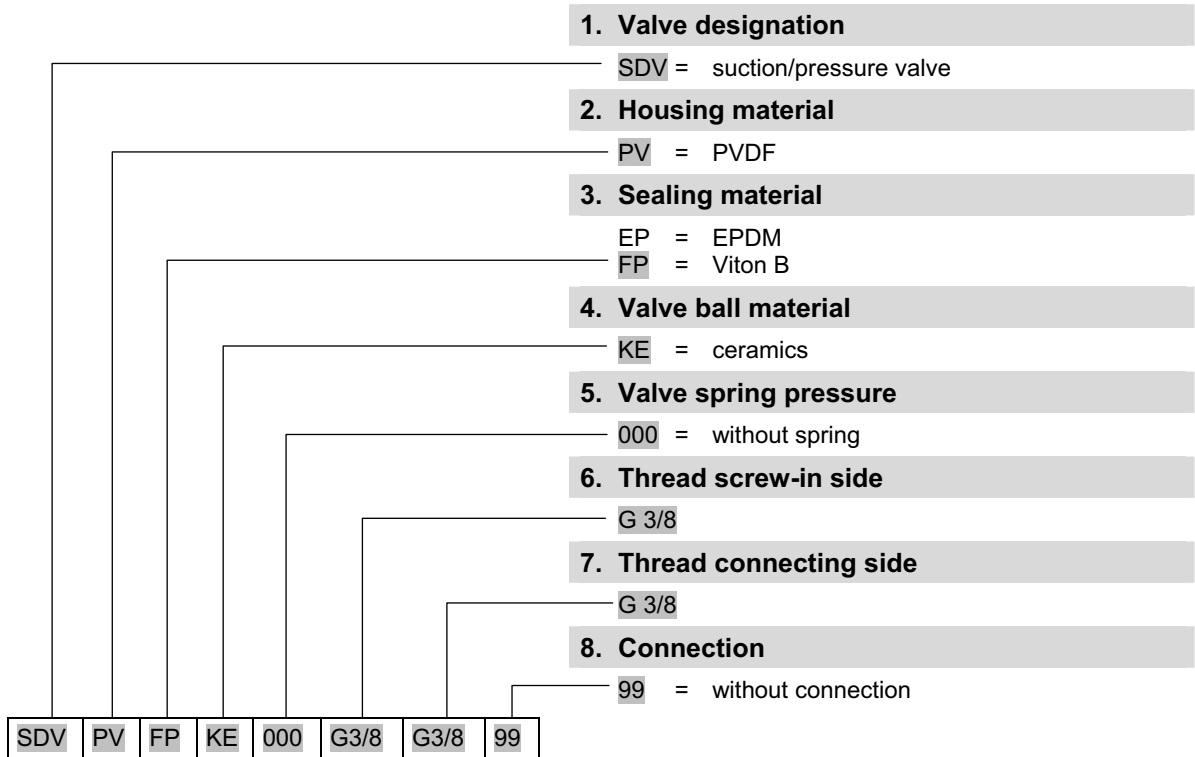
Pos	Article	Material-No.
1	Connection set PVDF for hose 3/8" - 4/6, 6/8, 6/12 mm (consisting of union nut, clamping pieces and tapered parts)	248491
2	Suction/pressure valve SDV PV <b>FP</b> KE 000 G3/8-G3/8-99* SDV PV <b>EP</b> KE 000 G3/8-G3/8-99*	248405 248406
3	Valve cartridge, V3 EMP II <b>FP</b> KE PV (for type V3014 and V3025) Valve cartridge, V3 EMP II <b>EP</b> KE PV (for type V3014 and V3025)	248432 248433
4	Cover plate	54000188
5	Hexagon socket screw, M 5 x 40, DIN 912, V2A	41303102 6
6	Washer, B15 x 5.3 x 1.6, DIN9021, ISO7093, V2A	41350172 0
7	Venting screw, PVDF/ <b>VITON B</b> Venting screw, PVDF/ <b>EPDM</b>	243077 243091
11	Bellow	34800132
12	Transparent enclosure cover	34800120
13a	Dummy plug, empty signal input	248186
14a	Cover cap, control output	34800117
15a	Dummy plug, control input	248187
13b	Plug 4-poles, empty signal input	41846311 5
14b	Plug 4-poles, control output	41846311 7
15b	Plug 5-poles, control input	41846311 8
16	Wiring outlet 3-poles	41846806 2

		type V3014	type V3025	type 00043 / 00048	type 00072	type 00112
8	Diaphragm	34800134	34800155	34800156	34800157	34800157
9	Supporting disk	34000158	--	34024302	34040110	34000145
10	Intermediate plate	34800133	34800150	34800151	34800152	34800152
17	Pump head PVDF	34800324	34800325	34020106	34020107	34020107

\* Please see next page for code declaration.



**Valve code**

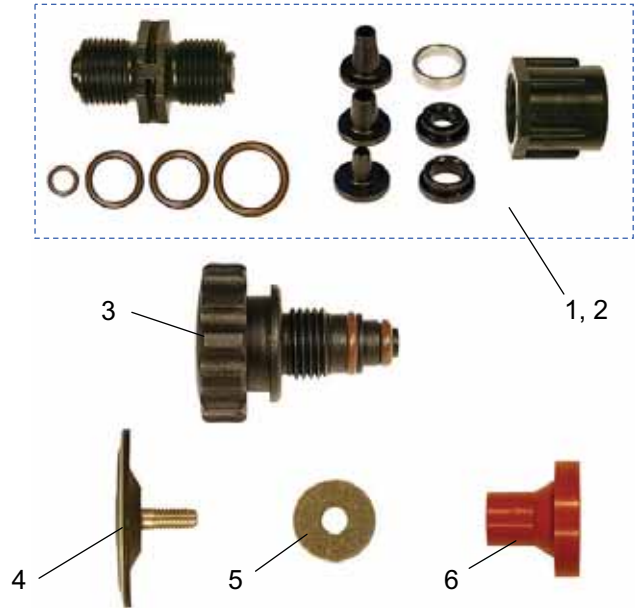




**Set of wearing parts (complete)**

consisting of 1 piece each:

- Suction valve with hose connection material (1)
- Pressure valve with hose connection material (2)
- Venting screw (3)
- Diaphragms (4)
- Supporting ring (5, excl. pump type V3025)
- Bellow (6)



Article	Code	Material-No.
<b>Wearing part set</b>	EMP II V3014 PV FP KE	248452
	EMP II V3025 PV FP KE	248453
	EMP II 00043/48 PV FP KE	248478
	EMP II 00072 PV FP KE	248479
	EMP II 00112 PV FP KE	248480
	EMP II V3014 PV EP KE	248458
	EMP II V3025 PV EP KE	248459
	EMP II 00043/48 PV EP KE	248488
	EMP II 00072 PV EP KE	248489
	EMP II 00112 PV EP KE	248490

**1. Pump type (pump capacity)**

- V3014 = 1.4 l/h
- V3025 = 2.5 l/h
- 00043/48 = 4.3 / 4.8 l/h
- 00072 = 7.2 l/h
- 00112 = 11.2 l/h

**2. Valve material**

- PV = PVDF

**3. Sealing material**

- FP = Viton B
- EP = EPDM

**4. Valve ball material**

- KE = ceramics

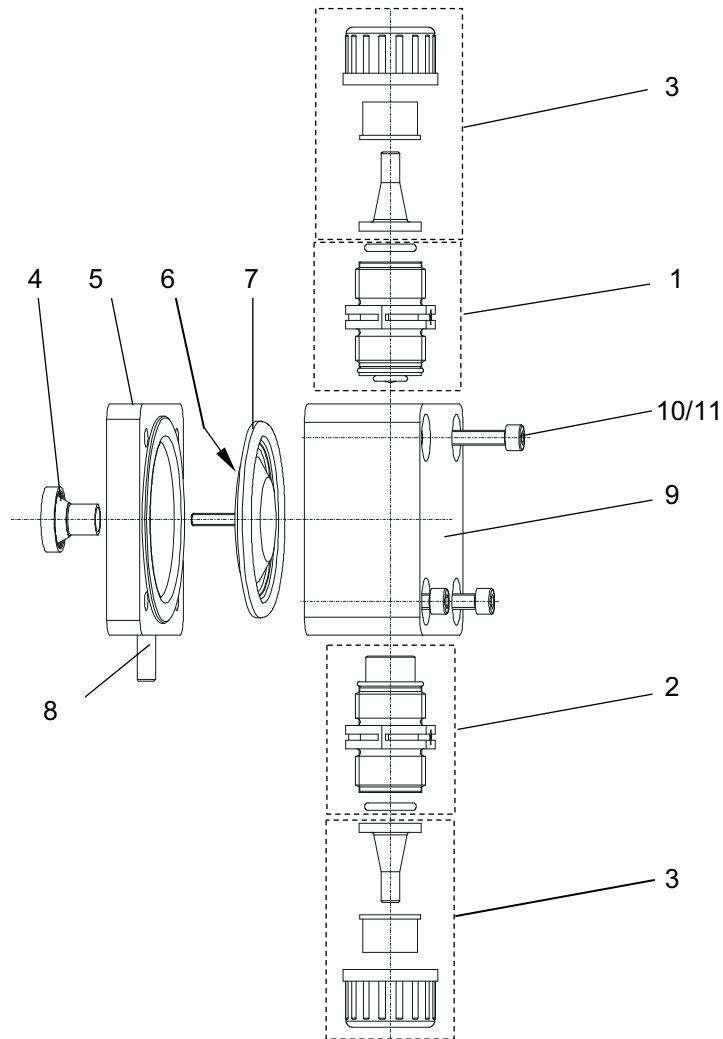
Wearing part set EMP II 

V3014	PV	FP	KE
-------	----	----	----





**Spare parts for type 00240**

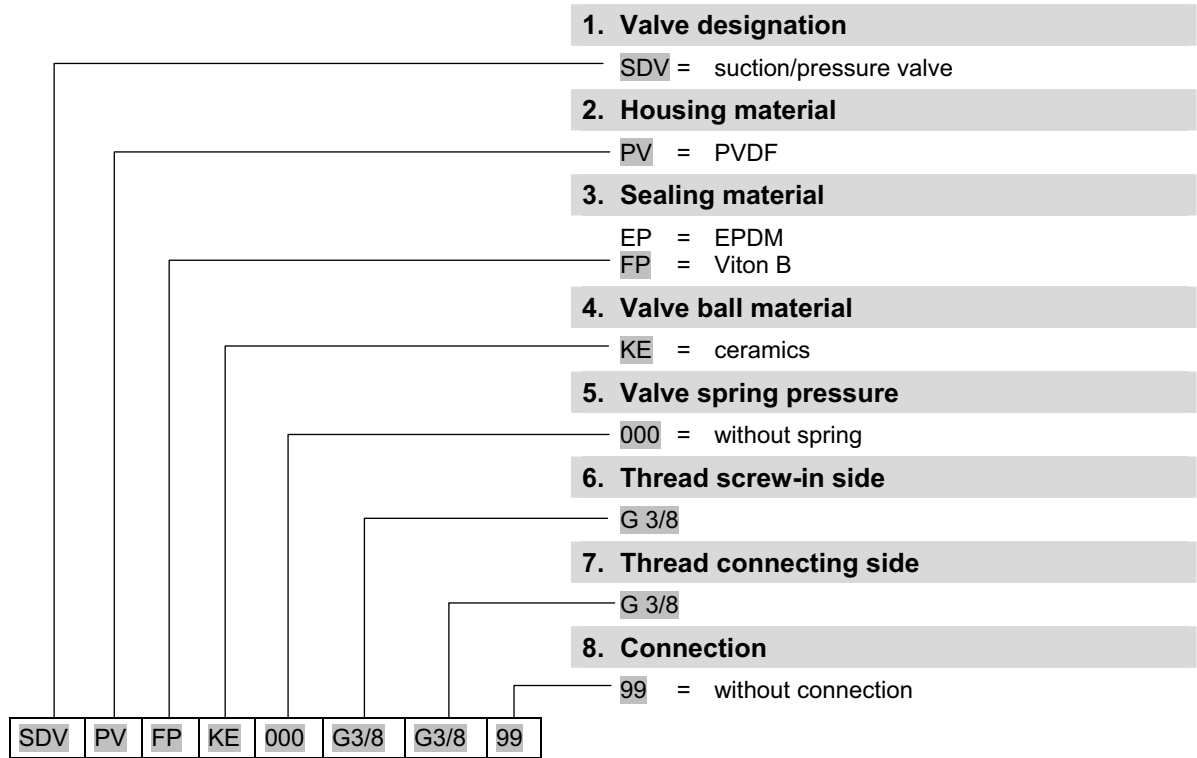


Item-No.	Description	Article-No.
1	Pressure valve, DRV PV <b>FP</b> KE 000 G 5/8-G 5/8-99* Pressure valve, DRV PV <b>EP</b> KE 000 G 5/8-G 5/8-99*	249494 249495
2	Suction valve, SAV PV <b>FP</b> KE 000 G 5/8-G 5/8-99* Suction valve, SAV PV <b>EP</b> KE 000 G 5/8-G 5/8-99*	249474 249475
3	Connection set PVDF G 5/8i for hose 6/12, 10/16	249216
4	Expansion bellows	34800132
5	Distance plate	34500207
6	Pressing plate	34500145
7	Diaphragm	34500209
8	Pipe section	34004207
9	PVDF pump head	34500129
10	Screw M5 x 20 (stainless steel)	413031027
11	Washer 5.3 (stainless steel)	413501720

\* Please see next page for code declaration.



**Valve code**



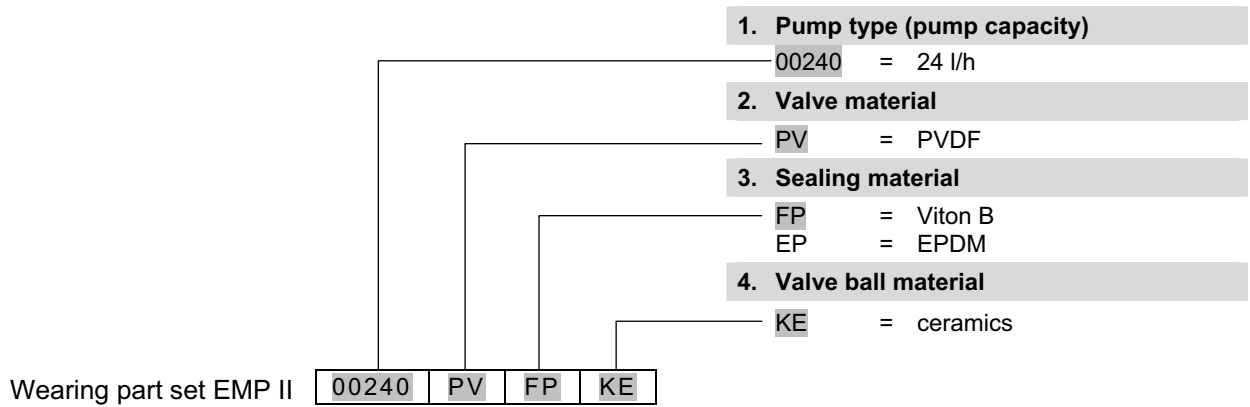


### Set of wearing parts (complete)

consisting of 1 piece each:

- Suction valve with hose connection material
- Pressure valve with hose connection material
- Diaphragms
- Supporting ring

Article	Code	Material-No.
<b>Wearing part set</b>	EMP II 00240 PV FP KE	248454
	EMP II 00240 PV EP KE	248460



- Mechanical stroke adjustment
- Stroke frequency regulation
- Pulse control
- Pulse multiplication and division
- Pulse storage
- Standard signal drive
- Empty signal report and level pre-warning
- External metering stop
- Empty signal and stroke signal output



The ELADOS® EMP II series of metering pumps is based on the building block principle. Devices of this series comprise the drive unit, the gear, the metering pump head and the electronics. Different electronic control variants guarantee that the pump

may be adapted to any processing sequence for quantity or proportional metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering uses.

**Note:** The pump versions EMP II HP (High Pressure) V3014, V3025 and 00043 can be operated until a metering back pressure of 16 bar.

### Technical Data:

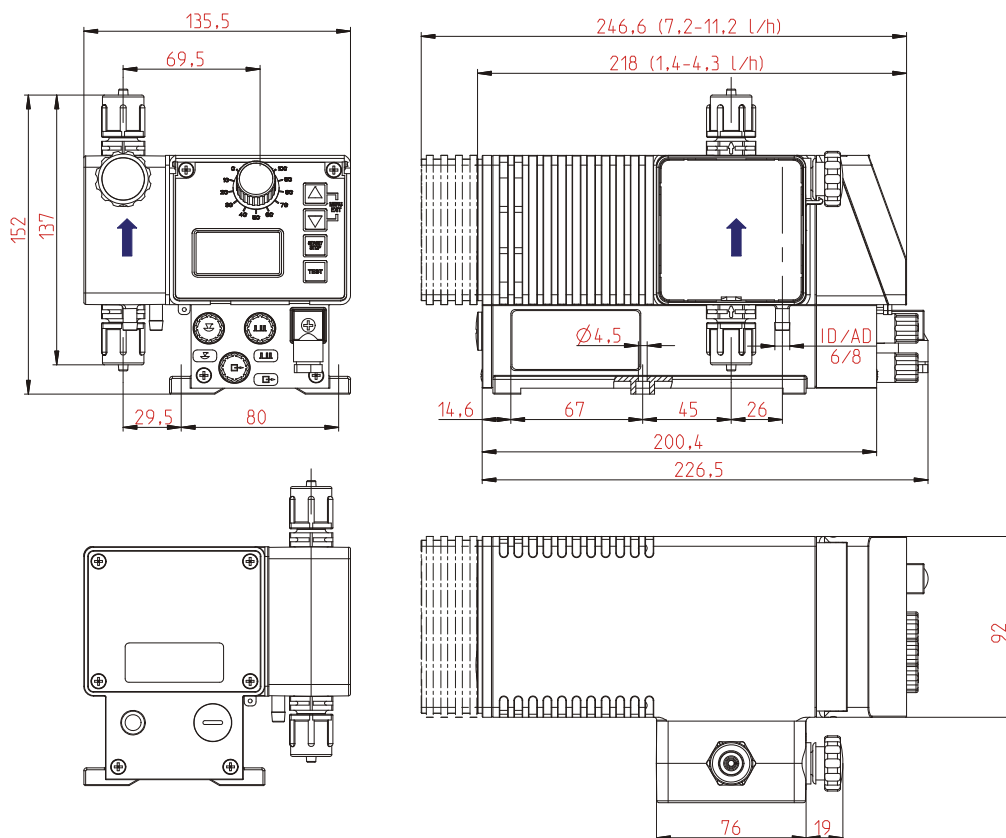
Pump type		V3014	V3025	00043
Pump capacity [l/h]		1.2	2.1	3.8
Metering back-pressure [bar]		16	16	16
Metering frequency max. [1/min]		122	122	122
Delivering capacity/stroke [cm <sup>3</sup> ]		0.16	0.29	0.52
Metering accuracy		< ± 3%		
Suction height		2 mWs, suction height with clean, slightly wet valves		
Power supply*		230 V / 50 Hz		
Current input max. [mA]	50 Hz 60 Hz	55/ 58	81/ 86	130/ 150
Power input max. [W]	50 Hz 60 Hz	12.5/ 13.2	18.7/ 19.8	30/ 34.5
Protective class		I		
Safety type		IP 65		
Ambient temperature max.		40° C		
Insulation class		B		

\* At a mains frequency of 60 Hz delivery capacity increases by 20%, metering back-pressure decreases by 20%

**Materials:**

- Housing: thermoplastic polyester
- Pump head: PVDF  
**optional:** polypropylene or stainless steel 1.4436
- Diaphragm: PTFE – EPDM compound diaphragm
- Seals: FPM 602 (Viton B)  
**optional:** EPDM or Kalrez
- Valve balls: ceramics  
**optional:** PTFE or stainless steel 1.4401
- Colour: blue RAL 5007

**Dimensions:**





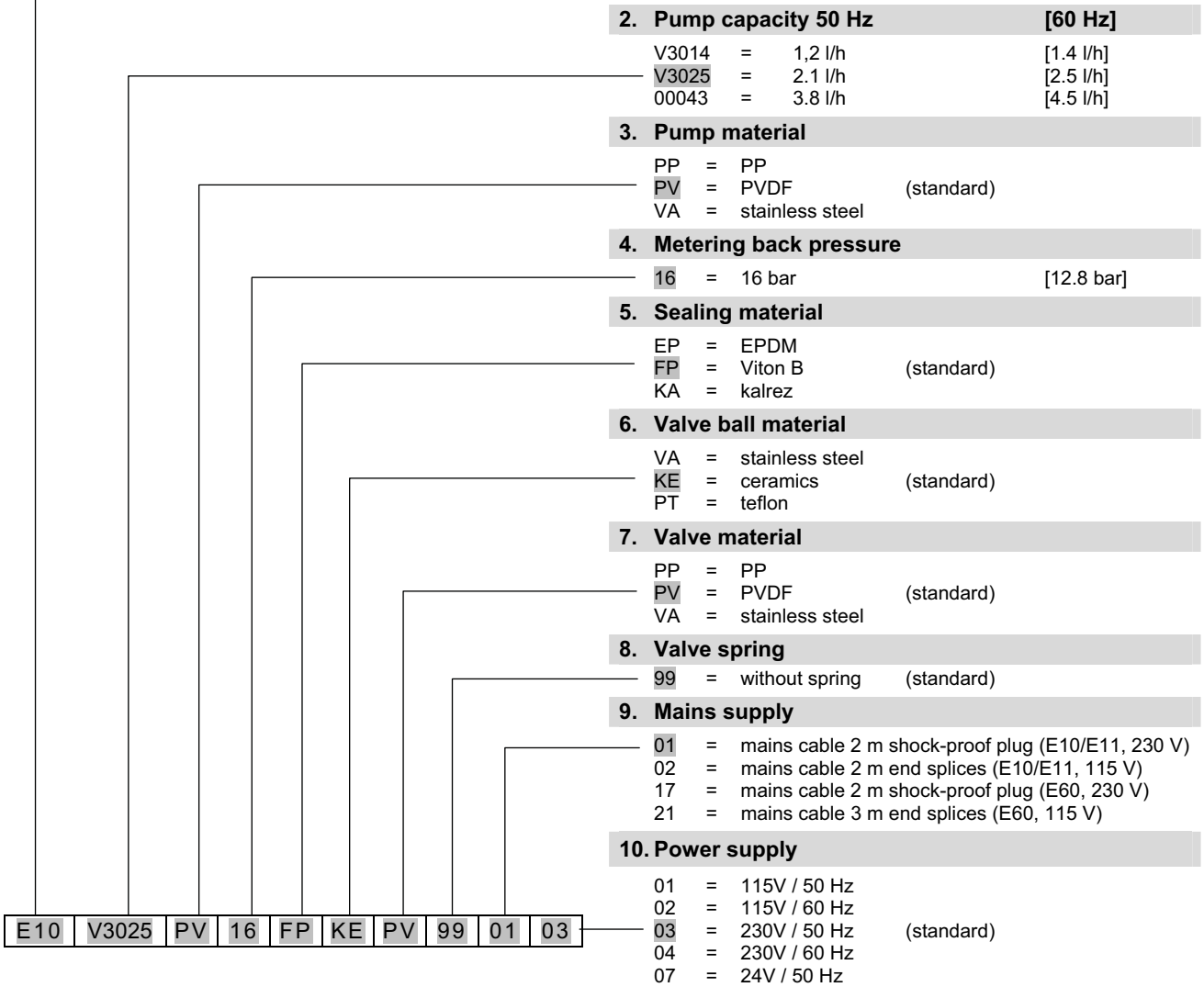
**Pump code – part 1 (EMP II HP)**

**1. Electrical version (please see legend on page 6)**

**E 10** On / off switch, mechanical stroke adjustment

**E 11...**

**E 60...**



**2. Pump capacity 50 Hz [60 Hz]**

V3014	=	1,2 l/h	[1.4 l/h]
V3025	=	2.1 l/h	[2.5 l/h]
00043	=	3.8 l/h	[4.5 l/h]

**3. Pump material**

PP	=	PP	
PV	=	PVDF	(standard)
VA	=	stainless steel	

**4. Metering back pressure**

16	=	16 bar	[12.8 bar]
----	---	--------	------------

**5. Sealing material**

EP	=	EPDM	
FP	=	Viton B	(standard)
KA	=	kalrez	

**6. Valve ball material**

VA	=	stainless steel	
KE	=	ceramics	(standard)
PT	=	teflon	

**7. Valve material**

PP	=	PP	
PV	=	PVDF	(standard)
VA	=	stainless steel	

**8. Valve spring**

99	=	without spring	(standard)
----	---	----------------	------------

**9. Mains supply**

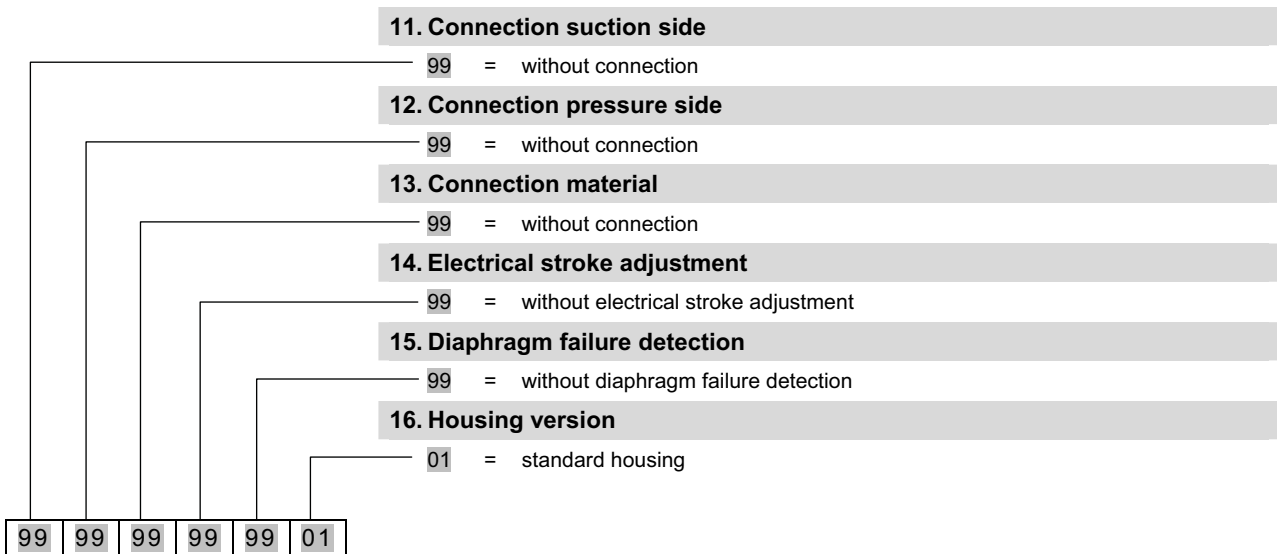
01	=	mains cable 2 m shock-proof plug (E10/E11, 230 V)
02	=	mains cable 2 m end splices (E10/E11, 115 V)
17	=	mains cable 2 m shock-proof plug (E60, 230 V)
21	=	mains cable 3 m end splices (E60, 115 V)

**10. Power supply**

01	=	115V / 50 Hz	
02	=	115V / 60 Hz	
03	=	230V / 50 Hz	(standard)
04	=	230V / 60 Hz	
07	=	24V / 50 Hz	



**Pump code – part 2 (EMP II HP)**



Example of a complete pump code of a EMP II HP pump:

E10	V3025	PV	16	FP	KE	PV	99	01	03	-	99	99	99	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code part 1)

(Pump code part 2)

**Note:** For pump versions EMP II HP the hose connection material has to be ordered separately (see page 38).



**Accessories:**

**Note:** Accessories selection should be carried out in the following way:

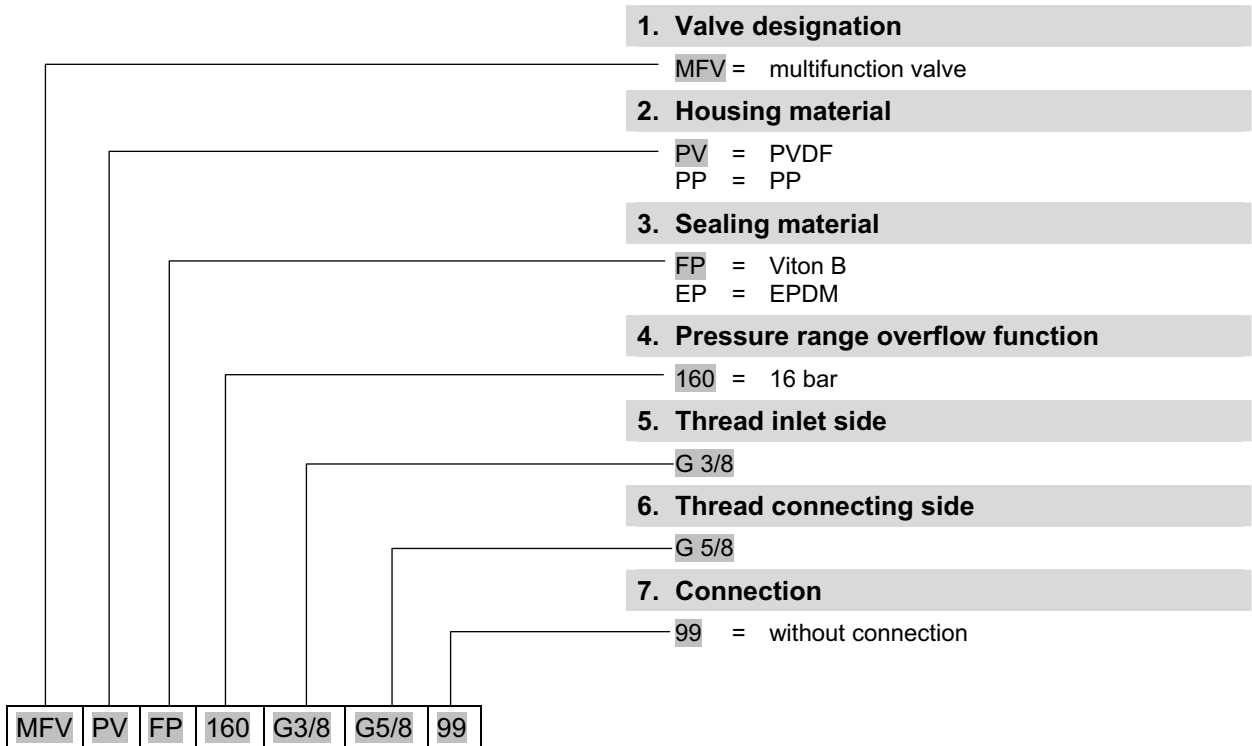
Accessories for the **suction side** can be selected from the standard versions (see page 9 – 14).

**General** accessories can be selected from the standard versions (see page 24/25)

Accessories for the **pressure side** have to be equipped with hose connection material which is suitable for high pressure. **This has to be ordered separately (see page 38).**

In case of multifunction valves and pressure hoses the accessories suitable for high pressure have to be used (see below).

**Multifunction valve**






This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**



Article	Material-No.
MFV PV FP 160 G 3/8 – G 5/8 – 99	249292
MFV PV EP 160 G 3/8 – G 5/8 – 99	249294
MFV PP FP 160 G 3/8 – G 5/8 – 99	249293
MFV PP EP 160 G 3/8 – G 5/8 – 99	249295



	<b>Article</b>		<b>Material-No.</b>
	<b>Suction and pressure lines</b> (available by the metre)		
	(int.Ø / ext.Ø)	max. operating pressure [bar] at 20° C	
	PTFE hose 6/10 mm	16	417400216
	HD-PE hose 6/10 mm	16	417400302
	<b>Connection material (pressure side)</b>		
	<b>Straight screw on connection PVDF G3/8"i</b>		
	Connection 5/8		415102351

**Spare parts / wearing parts:**

**Note:** Spare parts for EMP II HP can be selected from the standard versions (see p. 26) with the exception of diaphragms.



**Diaphragm**

PTFE coated

for pump type V3014

34800313

for pump type V3025

34800314

for pump type 00043

34800315

Wearing parts set EMP II V3014 PV FP KE (16 bar)\*

248455

Wearing parts set EMP II V3025 PV FP KE (16 bar)\*

248456

Wearing parts set EMP II 00043/48 PV FP KE (16 bar)\*

248457

\*see legend on page [29](#)



- **Mechanical stroke adjustment**
- **Stroke frequency regulation**
- **Pulse control**
- **Pulse multiplication and division**
- **Pulse memory**
- **Standard signal control**
- **Empty signal and low level warning**
- **External metering lock**
- **Empty signal and stroke signal output**



The ELADOS® EMP III series of metering pumps is constructed on the building block principle. It comprises the drive unit, the gear box unit, the metering pump head and the electronics. Different designs of drive option allow the pump to be

adapted to any processing sequence for quantity or proportional metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering uses.



**Technical Data:**

**Mechanical Data:**

Pump capacity [l/h]:	16	25	54
Metering back-pressure* [bar]:	10	10	10
Delivery per stroke [cm <sup>3</sup> ]:	2.1	3.4	7.3
Metering accuracy:	< ± 3 %		
Suction height:	2 mWs, suction height with clean, slightly wet valves		
Max. metering frequency:	122 1/min		
Pressure valve:	without spring		
Suction valve:	without spring		
Ambient temperature:	max. 40°C		

**Materials:**

Housing:	thermoplastic polyester
Pump head:	polypropylene <b>optional</b> PVDF, PVC or stainless steel 1.4571
Diaphragm:	PTFE - EPDM compound diaphragm
Seals:	FPM 602 (Viton B) <b>optional</b> EPDM or Kalrez
Valve balls:	ceramics <b>optional</b> PTFE or stainless steel 1.4401
Weight:	7.4 kg
Colour:	blue RAL 5007

**Electrical Data:**

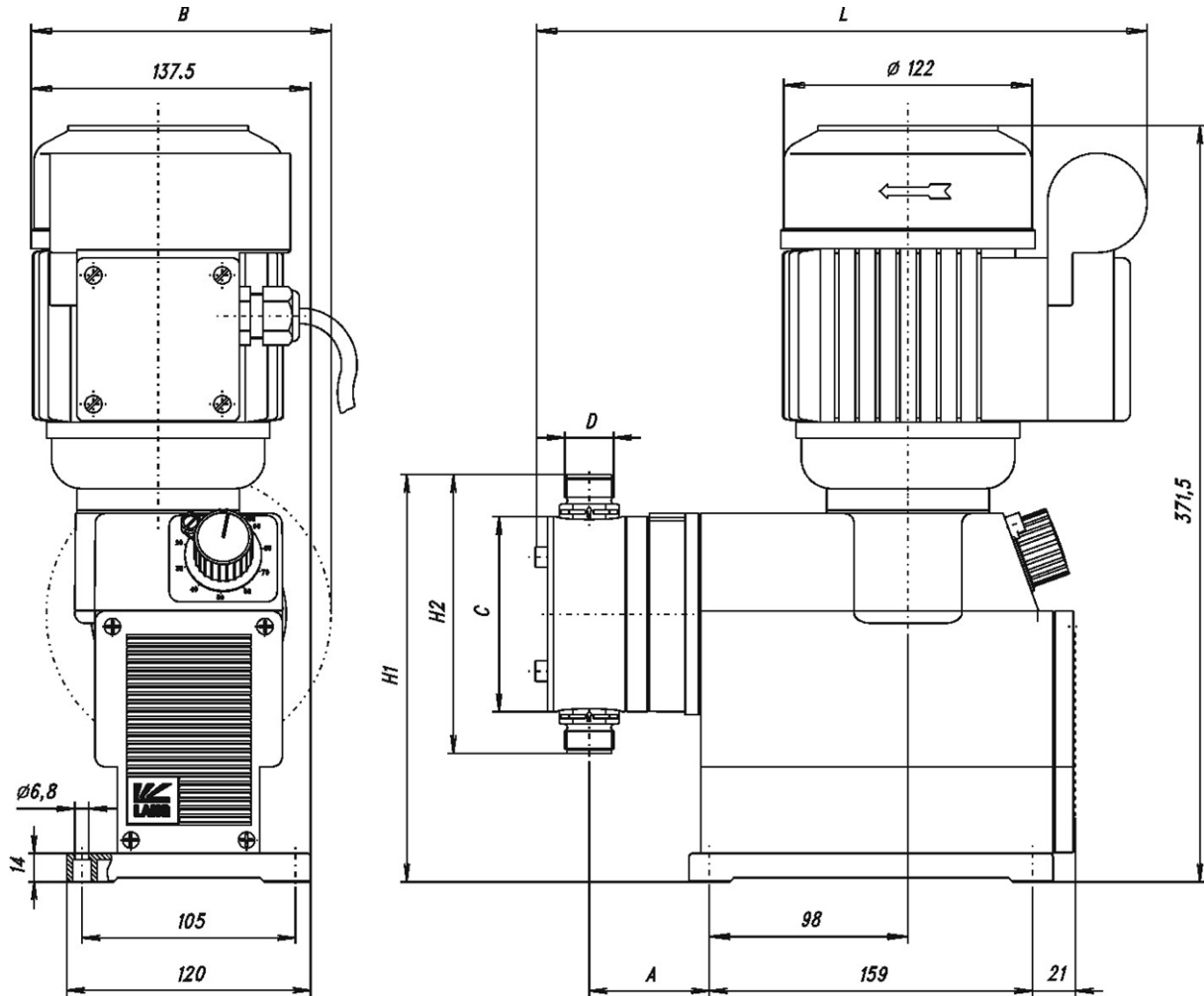
Connection:	230 V / 50/60 Hz At a mains frequency of 60 Hz, delivery capacity increases by 20%, whereas metering back-pressure decreases by 20%.
Current consumption:	950 mA (50 Hz)
Power output:	90 W (50 Hz)
Safety type:	IP 55
Insulation class:	F

All values at 50 Hz. All data refer to water temperature of 20 °C according to the instructions of the technical manual, subject to!

\*For **EMP III HP (High Pressure)** version see page 25.  
 Other special versions on request.

**Dimensions :**

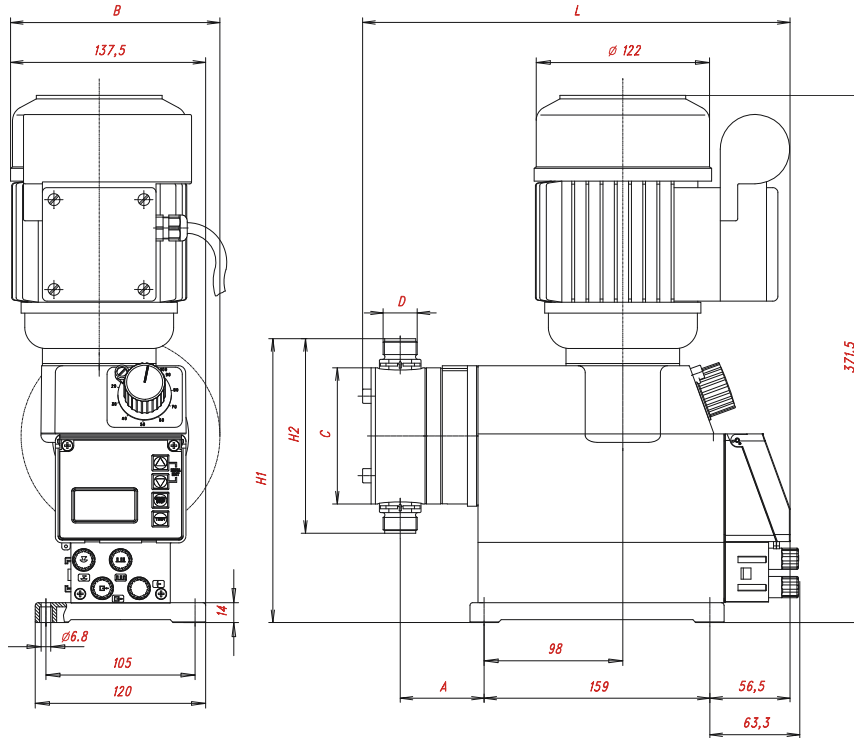
Version E00



Capacity l/h	Dimensions [mm]					
	A	C	L	H1	H2	D
16	59	$\phi 96$	301	200	137	5/8"
25	59	$\phi 96$	301	200	137	5/8"
54	63	$\phi 96$	303	200	137	5/8"

**Dimensions:**

Version E10 – E 60



Capacity l/h	Dimensions [mm]					
	A	C	L	H1	H2	D
16	59	$\varnothing 96$	301	200	137	5/8"
25	59	$\varnothing 96$	301	200	137	5/8"
54	63	$\varnothing 96$	303	200	137	5/8"



### Pump code – part 1

	<b>1. Electrical version</b> (please see legend on page 7)
	E 00
	E 10
	E 11
	<b>E 60</b>
	<b>2. Pump capacity 50 Hz [60 Hz]</b>
	00160 = 16 l/h [19 l/h]
	<b>00250</b> = 25 l/h [30 l/h]
	00540 = 54 l/h [64 l/h]
	<b>3. Pump material</b>
	PP = PP (standard)
	PV = PVDF
	VA = stainless steel
	<b>4. Metering back pressure</b>
	<b>10</b> = 10 bar [8 bar]
	<b>5. Sealing material</b>
	EP = EPDM
	<b>FP</b> = Viton B (standard)
	KA = kalrez
	<b>6. Valve ball material</b>
	<b>KE</b> = ceramics (standard)
	VA = stainless steel
	PT = teflon
	<b>7. Valve material</b>
	PP = PP (standard)
	PV = PVDF
	VA = stainless steel
	<b>8. Valve spring</b>
	<b>99</b> = without spring (standard)
	<b>9. Mains supply</b>
	<b>01</b> = mains cable 2 m shock-proof plug (230 V)
	02 = mains cable 2 m end splices (115 V)
	99 = without cable
	<b>10. Power supply</b>
	<b>08</b> = 230V / 50/60 Hz
	09 = 115V / 50/60 Hz
	10 = 3PE 400/230 V 50/60 Hz (only for version E00)

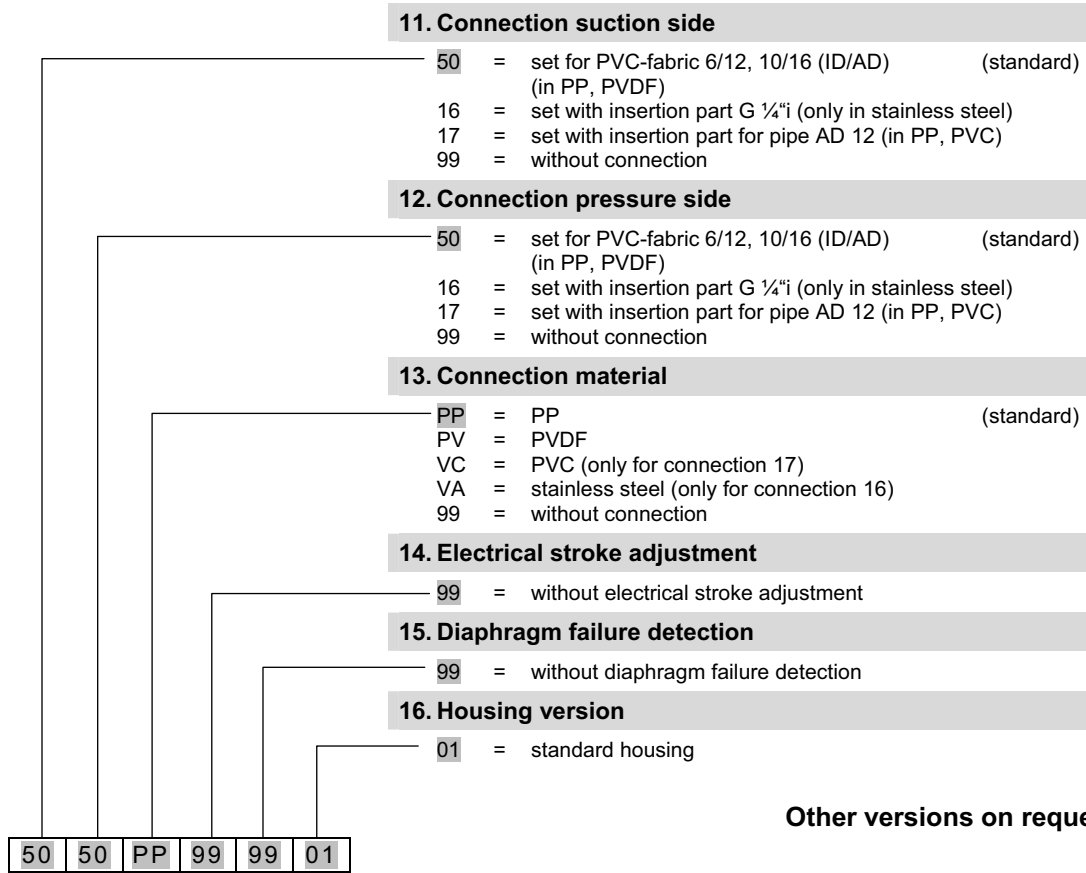
  

E60	00250	PP	10	FP	KE	PP	99	01	08
-----	-------	----	----	----	----	----	----	----	----

**Other versions on request!**



**Pump code – part 2**



Example of a complete pump code of a standard pump:

E60	00250	PP	10	FP	KE	PP	99	01	08	-	50	50	PP	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code 1)

(Pump code 2)



## Electrical versions

- E 00** Mechanical stroke adjustment
- E 10** On / off switch, mechanical stroke adjustment
- E 11** As E 10, additional empty signal input with level pre-warning, empty signal output
- E 60**
  - Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20 mA or 20-0/4 mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal

## Ordering data – standard pumps:

Article	Pump code	Material-No.
ELADOS® EMP III	E00 00160 PP 10 FP KE PP 99 99 08 – 50 50 PP 99 99 01	149001
	E00 00250 PP 10 FP KE PP 99 99 08 – 50 50 PP 99 99 01	149101
	E00 00540 PP 10 FP KE PP 99 99 08 – 50 50 PP 99 99 01	149201

**Extent of supply:** hose connection material 6/12 and 10/16 mm, operating instructions, **without** connection cable

ELADOS® EMP III	E10 00160 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149010
-----------------	---	--------





E10 00250 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149110
E10 00540 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149210

**Extent of supply:** 2.0 m connection cable with shock-proof plug, hose connection material 6/12 and 10/16 mm, operating instructions

ELADOS® EMP III	E11 00160 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149011
	E11 00250 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149111
	E11 00540 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149211

**Extent of supply:** 2.0 m connection cable with shock-proof plug, hose connection material 6/12 and 10/16 mm, dummy plug for empty signal input, dummy cap for empty signal or stroke signal output, operating instructions

ELADOS® EMP III	E60 00160 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149560
	E60 00250 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149660
	E60 00540 PP 10 FP KE PP 99 01 08 – 50 50 PP 99 99 01	149760

**Extent of supply:** 2.0 m connection cable with shock-proof plug, hose connection material 6/12 and 10/16 mm, dummy plug for empty signal input, dummy plug for pulse input, dummy cap for empty signal or stroke signal output, 5-pin connection plug for pulse or standard signal input, plug allocation plan, operating instructions

**ELADOS® EMP II E 60<sup>PLUS</sup>**

With the add-on unit (Dongle Box) for connection of an OGM<sup>PLUS</sup> oval gear meter the version E 60 turns to version E 60<sup>PLUS</sup>.

**Article****Material-No.****Dongle Box**

248606

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter

**Accessories:****Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 5 of “Measuring and Controlling”.**



**Accessories:**



**Article**

**Material No.**

**Suction lances D32 with reserve and empty signal report**

incl. of ball non-return valve, suction strainer and zero-potential empty signal contact (empty = contact interrupted), hose connection material (4/6 mm, 6/8 mm, 6/12 mm)

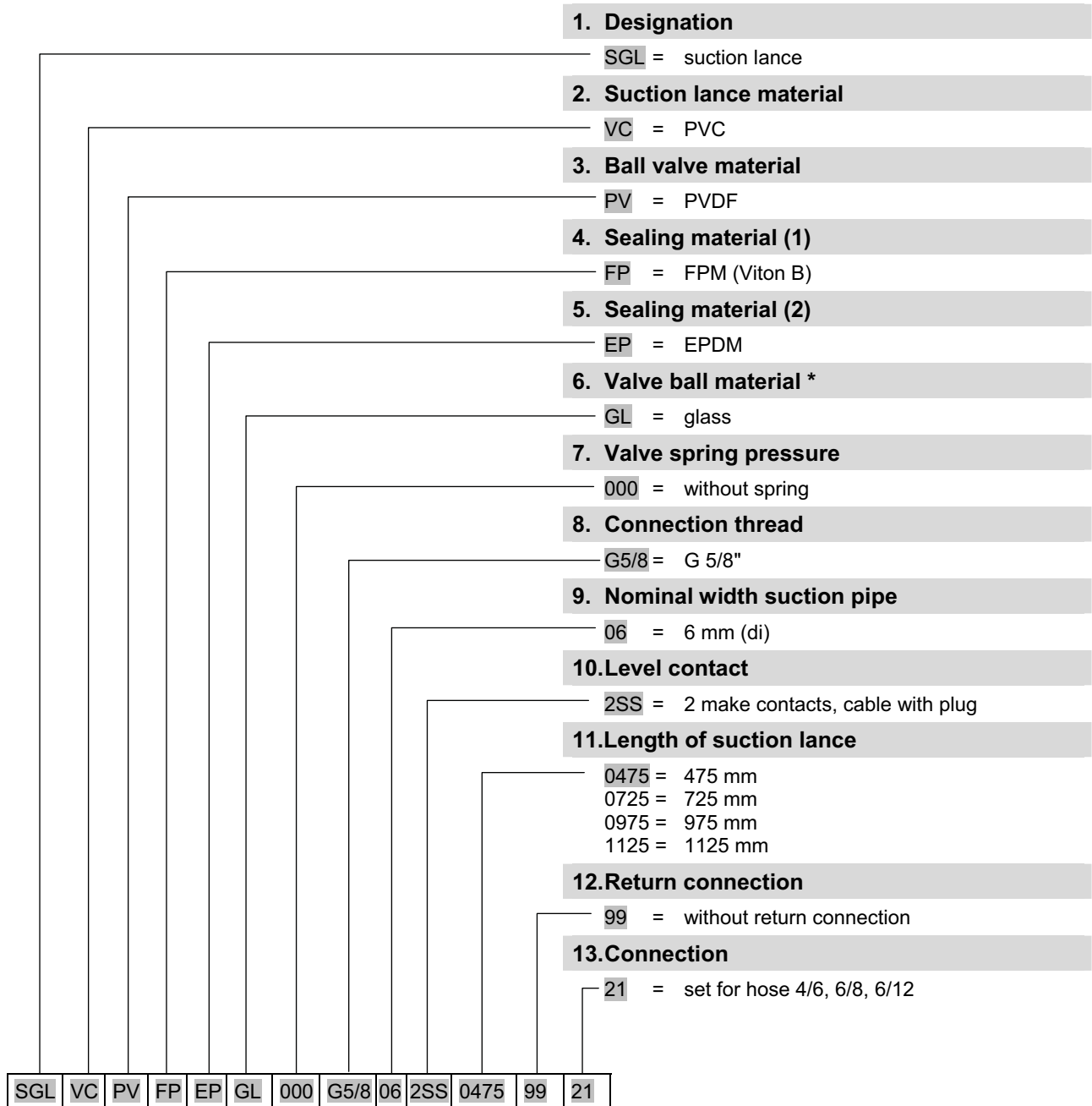
Pipe diameter: 32 mm  
 Connection cable: circular connector incl. 5 m cable  
 Turn-on voltage: max. 50 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 10 W / 10 VA

SGL VCPVFPEPGL000 G5/8-06-2SS-0475-9921 (for container 20 l)	186140
SGL VCPVFPEPGL000 G5/8-06-2SS-0725-9921 (for container 30/60 l)	186141
SGL VCPVFPEPGL000 G5/8-06-2SS-0975-9921 (for container 100/200 l)	186142
SGL VCPVFPEPGL000 G5/8-06-2SS-1125-9921 (for container 200 l)	186143

*Please see next page for pump code declaration.*



**Suction lance code**



\* standard valve ball material will soon be changed to ceramics

	<b>Article</b>	<b>Material-No.</b>
	<p><b>Adapter – insert cap</b>                      for suction lance Ø 32 mm                      PVC soft                      to attach on: canister 10 l and 20 l</p>	286198
	<p><b>Adapter – screw joint</b>                      for suction lance Ø 32 mm                      PVC hard                      Thread pitch: 5 mm                      Threaded int. diameter: 56 mm                      Threaded ext. diameter: 61 mm                      can be screwed on: canister 30 l or                      container 60 – 200 l</p>	286197
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for canister and barrel</p>	288549
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for barrels (I-ring plus – barrel 220)</p>	288547
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for container (ECOBULK-container with skid pallet)                      for screw in in screw cap with 2" Tri-Sure-Stuffing</p>	288548



**Article**

**Material-No.**

**Adapter – insert cap**

288534

for suction lance Ø 32 mm  
PVC – hard / Viton B  
appropriate for **degassing products**  
Return connection: 4/6, 6/8 or 6/12 mm (int.Ø /ext.Ø)  
Vent connection: 6/12 mm (int.Ø /ext.Ø)  
to attach on: canister 30 l or  
container 60 – 200 l



**Adapter – screw joint**

288535

for suction lance Ø 32 mm  
PVC – hard / Viton B / silicone  
appropriate for **degassing products**  
Return connection: 4/6, 6/8 or 6/12 mm (int.Ø /ext.Ø)  
Vent connection: 6/12 mm (int.Ø /ext.Ø)  
Thread pitch: 5 mm  
Threaded int. diameter: 63 mm  
Threaded ext. diameter: 69 mm  
for barrel with internal thread (L–ring plus barrel 220 l)



**Terminal box for connection cable of the suction pipe**

288419

for connection cable with round plug  
incl. cable union PG 7 (max. 2 x 1 m<sup>2</sup>)



**Protection tubes for suction lances, D32**

for prevention of mechanical damage of the suction valve  
and the float respectively;  
suitable for all suction lances Ø 32 mm

**Protection tube, PVDF, 32,5/40 (int.Ø /ext.Ø)**

286191

incl. fastening screw

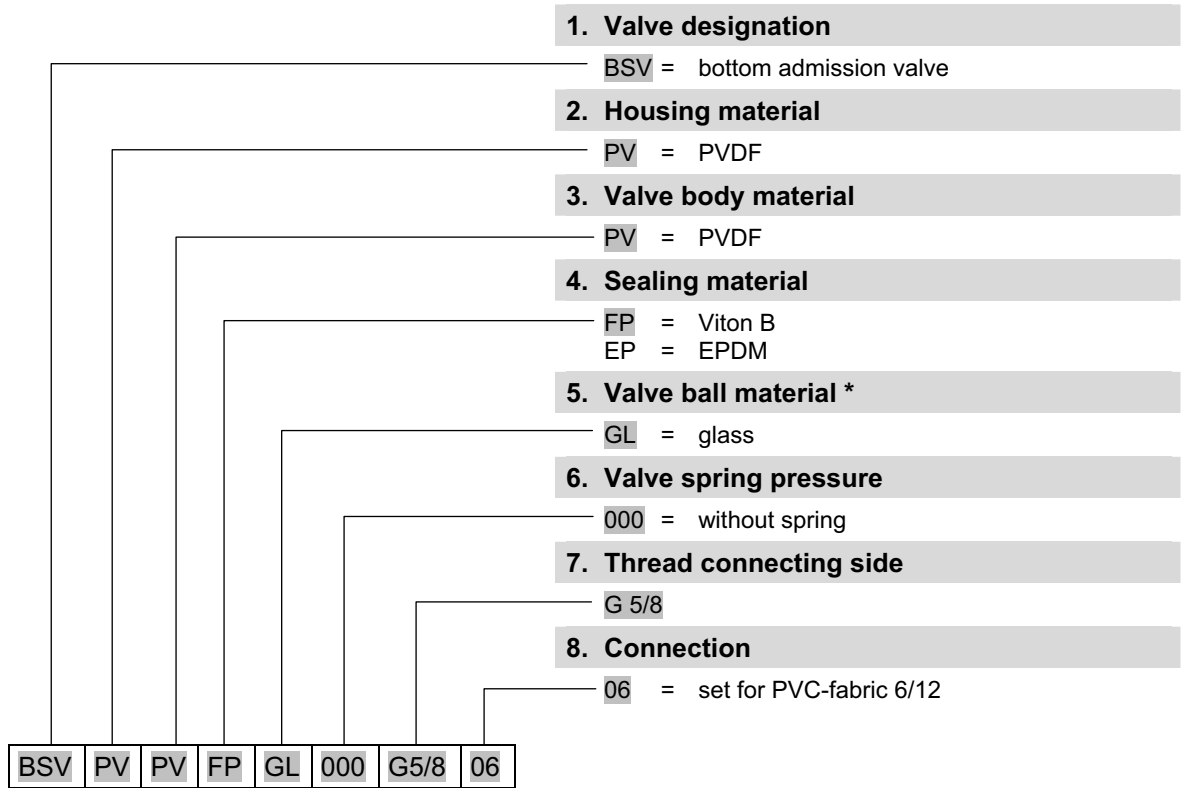
**Protection tube, VA (1.4035), 32,5/40 (int.Ø /ext.Ø)**

286153

incl. fastening screw



**Bottom admission valve**



**Article**

**Material-No.**

BSV PV PV FP GL 000 G 5/8 – 06

249018

BSV PV PV EP GL 000 G 5/8 – 06

249024

\* standard valve ball material will soon be changed to ceramics



**Pulsation damper**

To reduce pressure peaks and pulsation at oscillating rotary pumps at the pressure side and to prevent cavitating at the suction side.

Stroke volume: 15 cm<sup>3</sup>/stroke  
 Admissible nominal pressure: 10 bar  
 Thread connection: G ¾

**Material-No.**

**PDS 080 D16 PP/Hypalon**

415503009

Housing material: PP  
 Sealing/diaphragms: Hypalon

**PDS 080 D16 PP/Viton**

415503010

Housing material: PP  
 Sealing/diaphragms: Viton



**Manometer**

415502560

0-10 bar, connection G ¼

**Attention:**

When adjusting the initial pressure the pulsation damper has to be relieved on the metering media side.

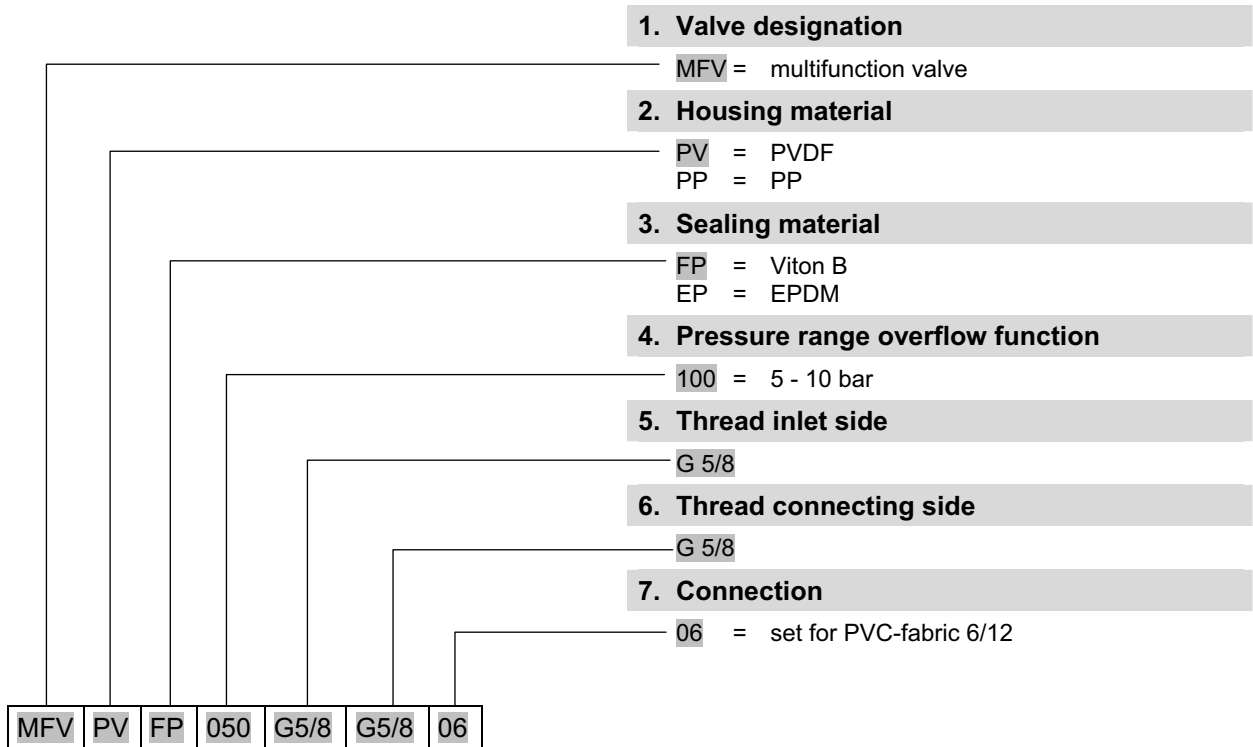


**Reduction G ½ a – G ¼ i**

415202771



**Multifunction valve**



This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**



**Article**

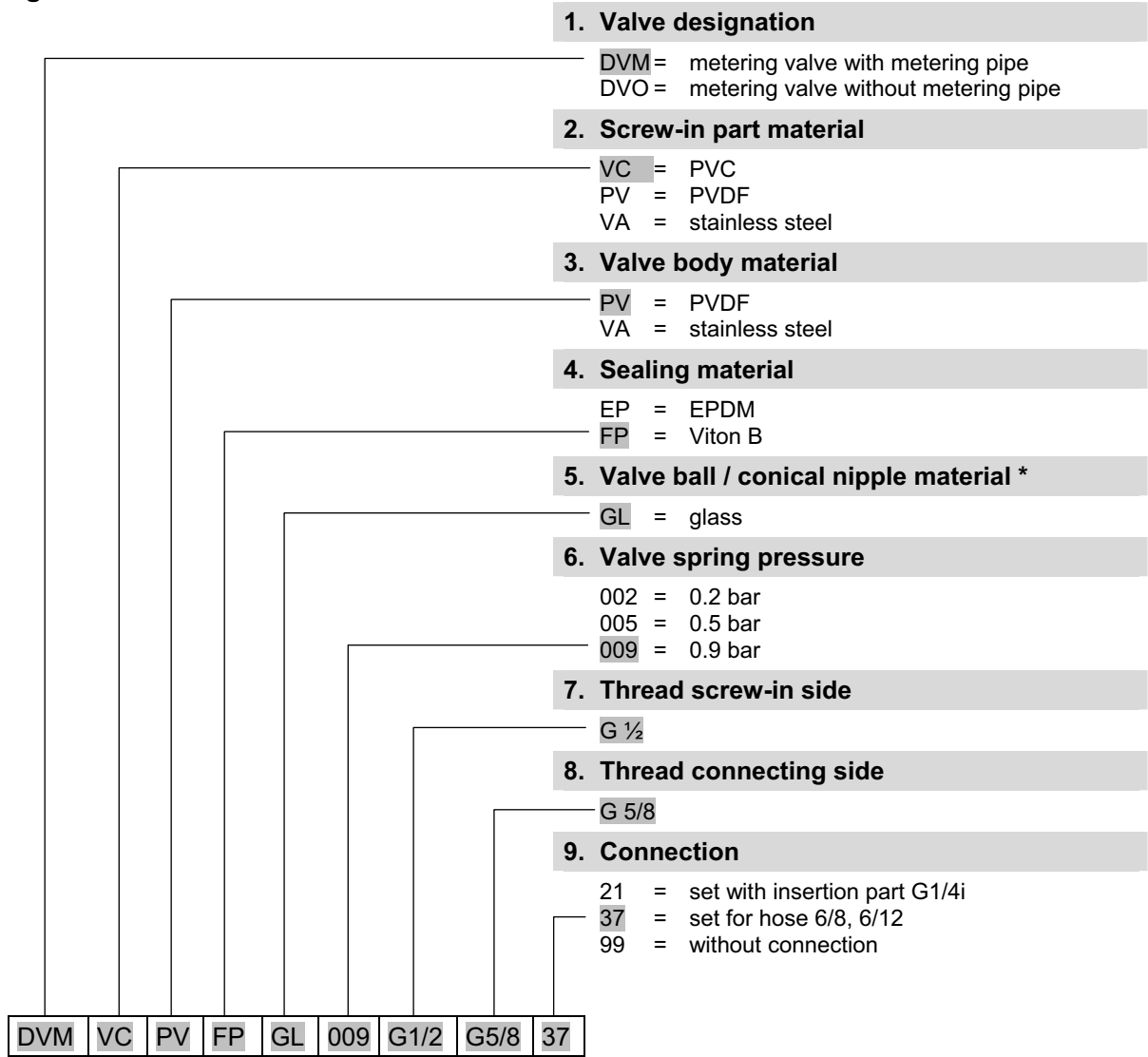
**Material-No.**

MFV PP FP 100 G 5/8 – G 5/8 – 06	249249
MFV PP EP 100 G 5/8 – G 5/8 – 06	249269
MFV PV FP 100 G 5/8 – G 5/8 – 06	249243
MFV PV EP 100 G 5/8 – G 5/8 – 06	249263

**Further material combinations on request!**



**Metering valves**



**Article**

**Material-No.**

DVM VC PV FP GL 009 G 1/2 – G 5/8 – 37	245037
DVM VC PV EP GL 009 G 1/2 – G 5/8 – 37	245034
DVM VA VA FP VA 009 G 1/2 – G 5/8 – 16	245039
DVM VA VA EP VA 009 G 1/2 – G 5/8 – 16	245036

\* standard valve ball material will soon be changed to ceramics



Article	Material-No.
DVO VC PV FP GL 005 G 1/2 – G 5/8 – 37	249028
DVO VC PV EP GL 005 G 1/2 – G 5/8 – 37	249029
DVO PV PV FP GL 005 G 1/2 – G 5/8 – 99	249084
DVO PV PV EP GL 005 G 1/2 – G 5/8 – 99	249085
DVO VA VA FP VA 002 G 1/2 – G 5/8 – 99	249060
DVO VA VA EP VA 002 G 1/2 – G 5/8 – 99	on request

**Article** **Material-No.**

**Suction and pressure lines**

available by the meter  
(int.Ø/ext.Ø) max. operating pressure (bar)  
at 20° C



PVC-fabric 6/12 mm 16 bar 417400123

**Note: We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.**



PVC hose fully transparent 6/8 mm 0.5 bar 417400015



PVC hose fully transparent 6/10 mm 0.5 bar 417400017



PE hose 6/8 mm 8 bar 417400310



PTFE hose 6/8 mm 14 bar 417400224



PE-X tube 8/12 mm, coiled bundle 50 m 417400361

PE-X tube 8/12 mm, coiled bundle 200 m 417400363

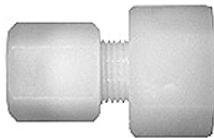
**Screw connection for PE-X tube**



Screw fitting G1/4"a - PEX 8/12 **PP** **PVDF**  
207726 207716



Screw fitting G3/8"a - PEX 8/12 207727 207717

Screw fitting G1/2"a - PEX 8/12 207722 207712



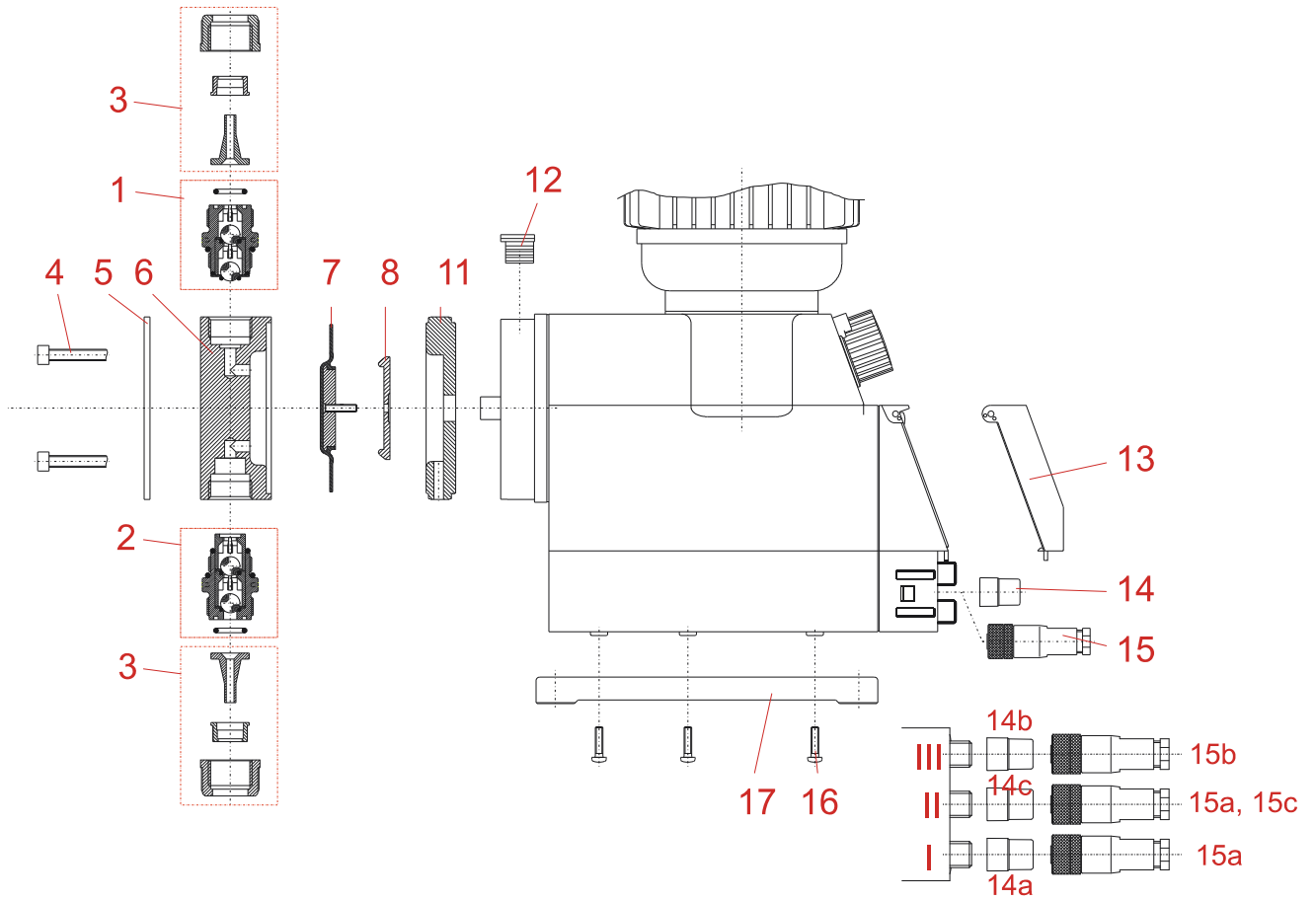
Screw on connection G5/8"i - PEX 8/12 **PP** **PVDF**  
207724 207714

Screw on connection G5/8"i - PEX 12/16 207728 207729

	Article	Material No.	
	<b>T-Union</b> for PE-X tube 8/12	<b>PP</b> 415102307	<b>PVDF</b> 415102302
	<b>Straight union</b> for PE-X tube 8/12	415102065	
	<b>Signal horn with integrated red flash light</b> 230 V / 50 Hz / IP 33 RO	418271053	
	<b>Wall bracket</b> made of stainless steel 1.4301 incl. of attachment parts (dowels and screws)	286013	
	<b>Connection cable, 5 m length</b> for empty signal input with straight 4-pin plug for pulse or current input with straight 5-pin plug for empty signal or stroke signal output with straight 4-pin plug	418439001	418439007
		418439022	



**Spare parts:**





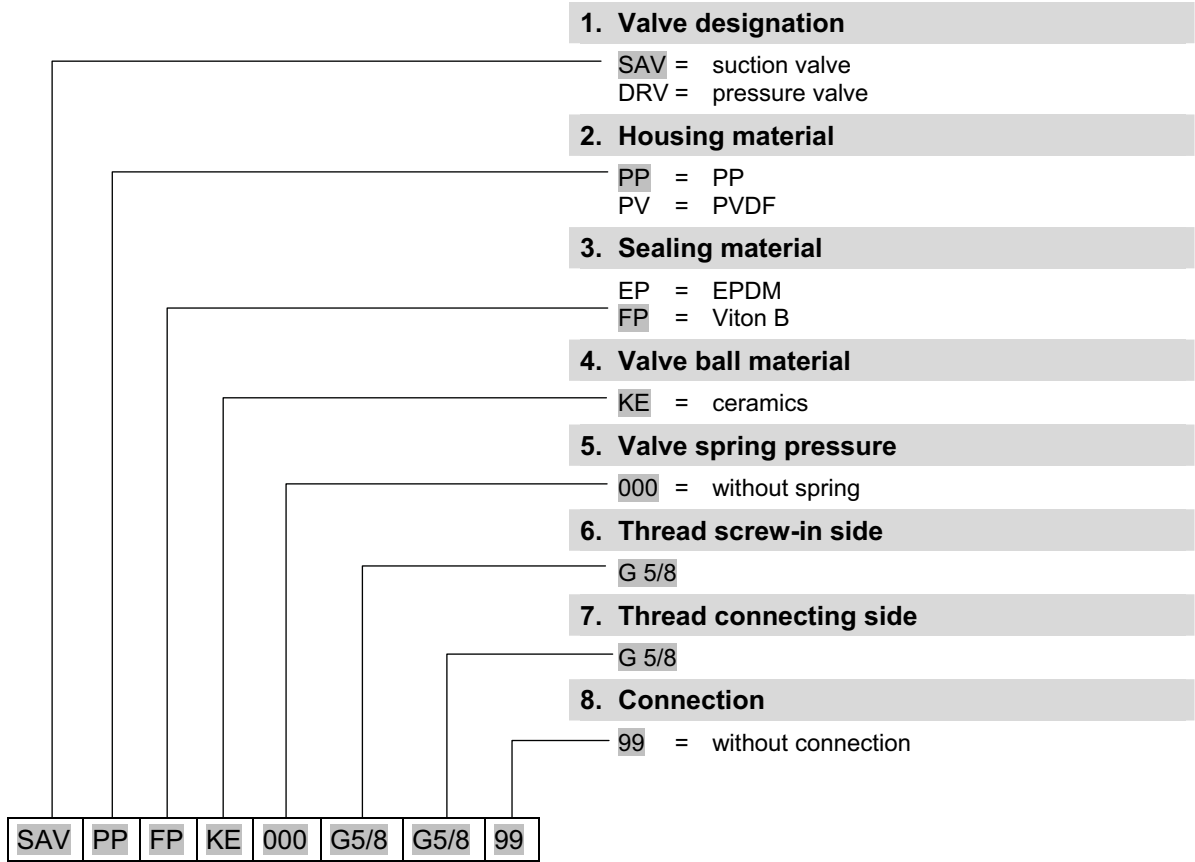
Item-No.	Article	Material-No.
1	Pressure valve DRV <b>PP FP</b> KE 000 G 5/8 – G 5/8 – 99*	249491
	DRV <b>PP EP</b> KE 000 G 5/8 – G 5/8 – 99*	249493
	DRV <b>PV FP</b> KE 000 G 5/8 – G 5/8 – 99*	249494
	DRV <b>PV EP</b> KE 000 G 5/8 – G 5/8 – 99*	249495
2	Suction valve SAV <b>PP FP</b> KE 000 G 5/8 – G 5/8 – 99*	249471
	SAV <b>PP EP</b> KE 000 G 5/8 – G 5/8 – 99*	249473
	SAV <b>PV FP</b> KE 000 G 5/8 – G 5/8 – 99*	249474
	SAV <b>PV EP</b> KE 000 G 5/8 – G 5/8 – 99*	249475
3	Connection set <b>PP</b> G 5/8 – 6/12, 10/16 mm	249237
	Connection set <b>PVDF</b> G 5/8 – 6/12, 10/16 mm (consisting of union nut, clamping piece and tapered parts)	249216
4	Pump head screw M6 x 90	413031048
5	Pressing plate	34900138
12	Covering stopper	34900168
13	Transparent enclosure cover	34800120
14a	Dummy plug empty signal input	248186
14b	Dummy plug control input	248187
14c	Cover cap control output	34800117
15a	4-pin plug, empty signal input	418463115
15b	4-pin plug, control output	418463117
15c	5-pin plug, control input	418463118
16	Screw KB 40 x 16	413071167
17	Mounting plate	34900120

Item-No.	Article	16 l/h	25 l/h	54 l/h
6	Pump head <b>PP</b>	34900102	34900103	34900104
	Pump head <b>PVDF</b>	34900175	34900176	34900177
7	Diaphragm	34900108	34900109	34900110
8	Supporting disk	34900131	34900113	34900145
11	Intermediate plate	34900132	34900115	34900133

\* Please see next page for code declaration.



**Valve code**





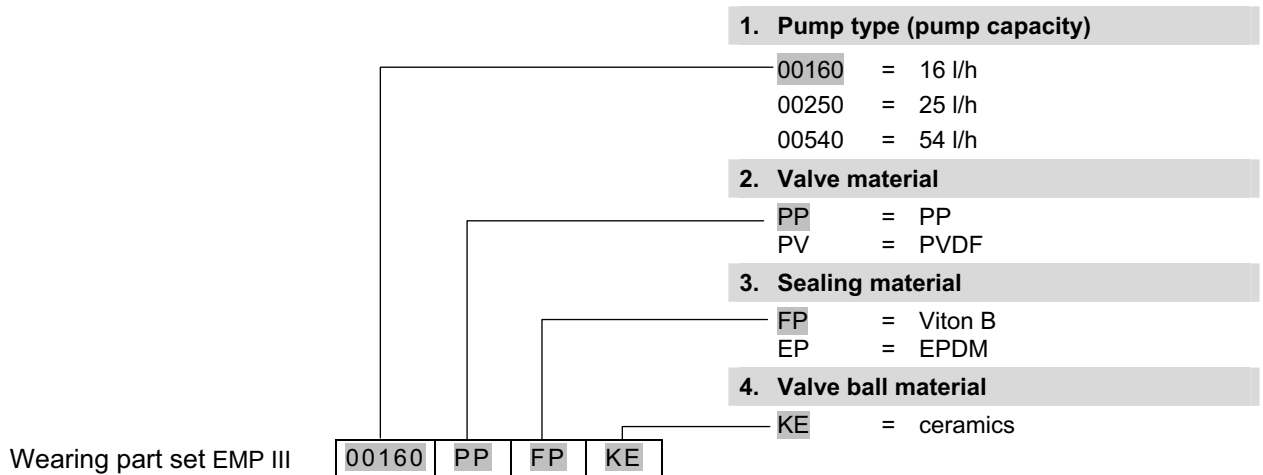


**Set of wearing parts (complete)**

consisting of 1 piece each:

- Suction valve with hose connection material
- Pressure valve with hose connection material
- Diaphragms
- Supporting ring

Article	Code	Material-No.
Wearing part set	EMP III 00160 PP FP KE	249106
	EMP III 00250 PP FP KE	249111
	EMP III 00540 PP FP KE	249112
	EMP III 00160 PP EP KE	249113
	EMP III 00250 PP EP KE	249114
	EMP III 00540 PP EP KE	249115
	EMP III 00160 PV FP KE	249116
	EMP III 00250 PV FP KE	249117
	EMP III 00540 PV FP KE	249118
	EMP III 00160 PV EP KE	249119
	EMP III 00250 PV EP KE	249120
	EMP III 00540 PV EP KE	249123



- **Mechanical stroke adjustment**
- **Stroke frequency regulation**
- **Pulse control**
- **Pulse multiplication and division**
- **Pulse memory**
- **Standard signal control**
- **Empty signal and low level warning**
- **External metering lock**
- **Empty signal and stroke signal output**



The ELADOS® EMP III series of metering pumps is constructed on the building block principle. It comprises the drive unit, the gear box unit, the metering pump head and the electronics. Different designs of drive option allow the pump to be

adapted to any processing sequence for quantity or proportional metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering uses.

**Note:** The pump versions **EMP III HP (High Pressure) 00160 and 00250** can be operated with a higher metering back pressure.



**Technical Data:**

**Mechanical Data:**

<b>Pump type:</b>	<b>00160</b>	<b>00250</b>
<b>Pump capacity [l/h]:</b>	<b>14.7</b>	<b>23.5</b>
<b>Metering back-pressure [bar]:</b>	<b>16</b>	<b>12</b>
<b>Delivery per stroke [cm<sup>3</sup>]:</b>	<b>1.98</b>	<b>3.15</b>
Metering accuracy:	< ± 3 %	
Suction height:	2 mWs, suction height	
wet	with clean, slightly valves	
Max. metering frequency:	124 1/min	
Pressure valve:	without spring	
Suction valve:	without spring	
Ambient temperature:	max. 40° C	

**Materials:**

Housing:	thermoplastic polyester
Pump head:	polypropylene <b>optional</b> PVDF, PVC or stainless steel 1.4571
Diaphragm:	PTFE - EPDM compound diaphragm
Seals:	FPM 602 (Viton B) <b>optional</b> EPDM or Kalrez
Valve balls:	Duran glass <b>optional</b> PTFE or stainless steel 1.4401
Weight:	7.4 kg
Colour:	blue RAL 5007

Special versions on request

**Electrical Data:**

Connection:	230 V / 50/60 Hz At a mains frequency of 60 Hz, delivery capacity increases by 20 %, whereas metering back-pressure decreases by 20 %. Special voltages on request
Current consumption [mA]:	950 (50 Hz)
Power output [W]:	90 (50 Hz)
Safety type:	IP 55
Insulation class:	F

All values at 50 Hz. All data refer to water temperature of 20° C according to the instructions of the technical manual, subject to!



### Pump code – part 1

#### 1. Electrical version (please see legend on page 7)

E 00 mechanical stroke adjustment

E 10 ...

E 11 ...

**E 60** ...

#### 2. Pump capacity 50 Hz [60 Hz]

00160	=	14.7 l/h	[17.6 l/h]
00250	=	23.5 l/h	[28.2 l/h]

#### 3. Pump material

PP	=	PP	(standard)
PV	=	PVDF	
VA	=	stainless steel	

#### 4. Metering back pressure (depends on pump capacity)

12	=	12 bar (für 23.5 l/h)	[9.6 bar]
16	=	16 bar (für 14.7 l/h)	[12.8 bar]

#### 5. Sealing material

EP	=	EPDM	
FP	=	Viton B	(standard)
KA	=	kalrez	

#### 6. Valve ball material

KE	=	ceramics	(standard)
VA	=	stainless steel	
PT	=	teflon	

#### 7. Valve material

PP	=	PP	(standard)
PV	=	PVDF	
VA	=	stainless steel	

#### 8. Valve spring

99	=	without spring	(standard)
----	---	----------------	------------

#### 9. Mains supply

01	=	mains cable 2m shock-proof plug
02	=	mains cable 3-wired 2.4 m end sleeves
03	=	mains cable 3-wired 3 m end sleeves
09	=	mains cable USA version
13	=	mains cable Italy version
99	=	without cable

#### 10. Power supply

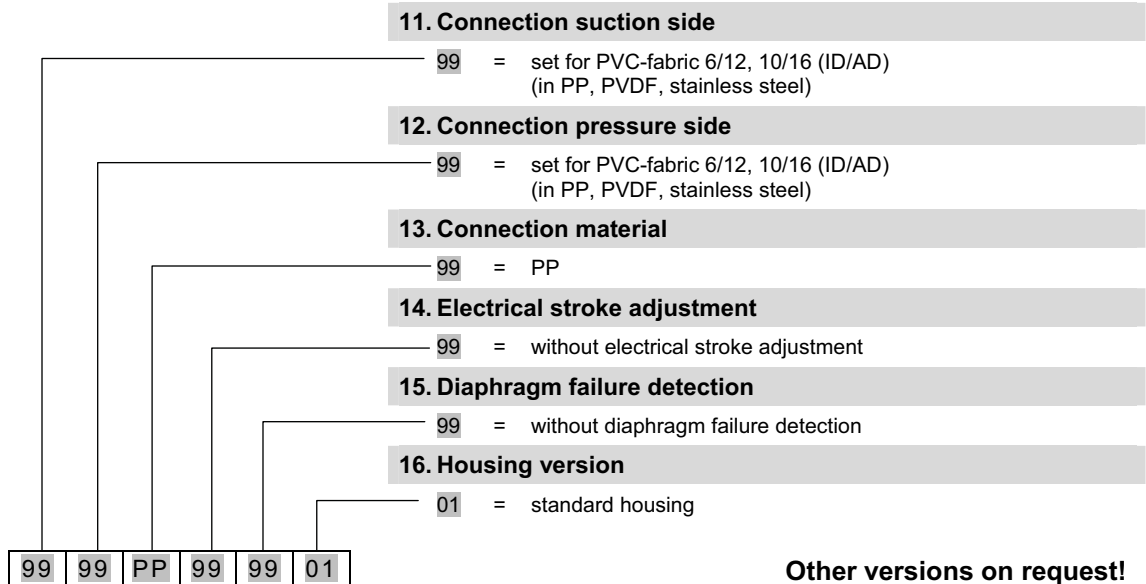
01	=	115V / 50 Hz	
02	=	115V / 60 Hz	
03	=	230V / 50 Hz	(standard)
04	=	230V / 60 Hz	
10	=	3PE 400/230 V 50/60 Hz (only for version E00)	

E60	00250	PP	12	FP	KE	PP	99	01	03
-----	-------	----	----	----	----	----	----	----	----

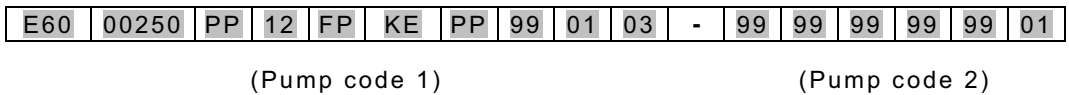
**Other versions on request!**



**Pump code – part 2**



Example of a complete pump code of a EMP III HP pump:



**Note:** For pump versions EMP II HP the hose connection material has to be ordered separately (see page 30).



## Accessories:

**Note:** Accessories selection should be carried out in the following way:

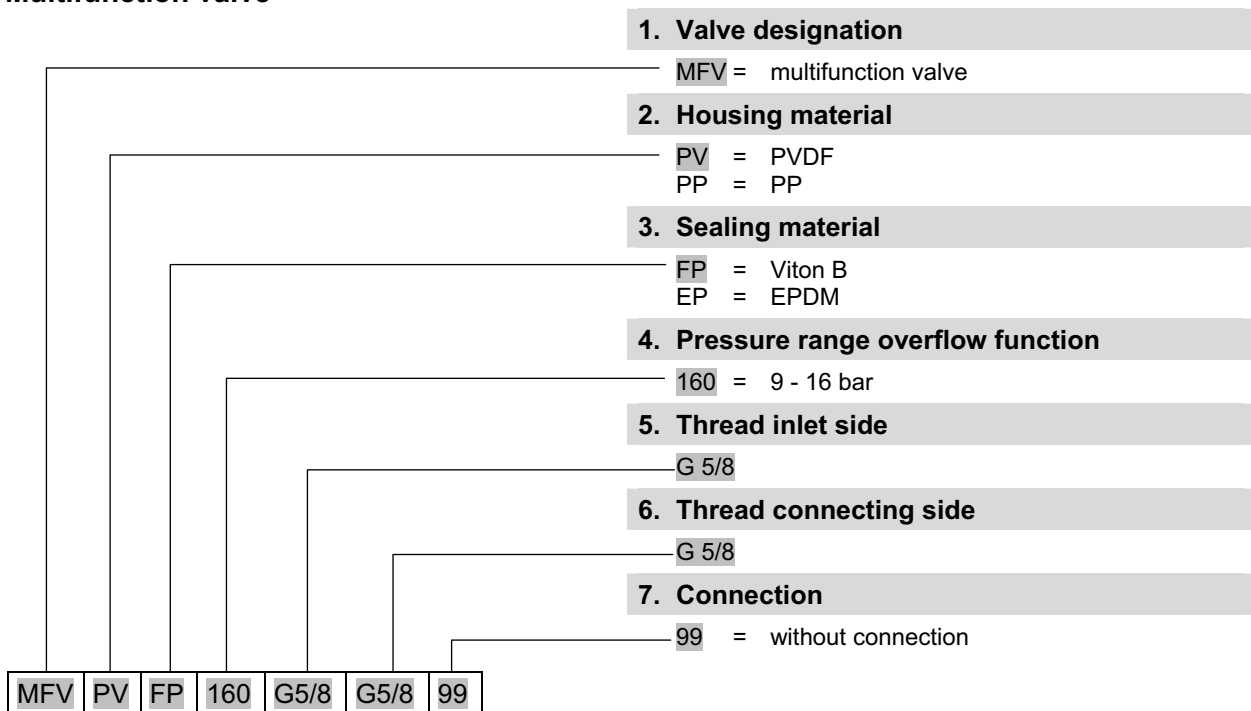
Accessories for the **suction side** can be selected from the standard versions (see page 10 – 14).

**General** accessories can be selected from the standard versions (see page 19/20)

Accessories for the **pressure side** have to be equipped with hose connection material which is suitable for high pressure. **This has to be ordered separately (see page 30).**

In case of multifunction valves and pressure hoses the accessories suitable for high pressure have to be used (see below).

### Multifunction valve



This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**



Article	Material-No.
MFV PP FP 160 G 5/8 – G 5/8 – 99	249297
MFV PP EP 160 G 5/8 – G 5/8 – 99	249299
MFV PV FP 160 G 5/8 – G 5/8 – 99	249296
MFV PV EP 160 G 5/8 – G 5/8 – 99	249298



**Article**

**Material-No.**



**Connection material (pressure side)**  
**Straight screw on connection PVDF**  
 Connection G5/8"i for hose 6/10

415102353

**Suction and pressure lines (available by the metre)**

(int.Ø/ext.Ø)

max. operating pressure [bar]  
 at 20° C



PTFE hose 6/10 mm

16

417400216



HD-PE hose 6/10 mm

16

417400302

**Note:**

**Spare parts for EMP III HP can be selected from the standard versions (see p. 21) with the exception of diaphragms.**



**Diaphragme**

PTFE coated

for pump type 00160

34900288

for pump type 00250

34900289

- **Mechanical stroke adjustment**
- **Stroke frequency regulation**
- **Pulse control**
- **Pulse multiplication and division**
- **Pulse memory**
- **Standard signal control**
- **Empty signal and low level warning**
- **External metering lock**
- **Empty signal and stroke signal output**



The ELADOS® EMP III series of metering pumps is constructed on the building block principle. It comprises the drive unit, the gear box unit, the metering pump head and the electronics. Different designs of drive option allow the pump to be

adapted to any processing sequence for quantity or proportional metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering uses.





**Technical Data:**

**Mechanical Data:**

Pump capacity [l/h]:	80	120
Metering back-pressure [bar]:	4	3
Delivery capacity per stroke [cm <sup>3</sup> ]:	10.8	16.1
Metering accuracy:	<± 3 %	
Suction height:	2 mWs, suction height with clean, slightly wet valves	
Metering frequency max.:	122 1/min	
Pressure valve:	without spring	
Suction valve:	without spring	
Ambient temperature max.:	40° C	

**Electrical Data:**

Connection:	230 V / 50/60 Hz
	At a mains frequency of 60 Hz, delivery capacity increases by 20 %, whereas metering back-pressure decreases by 20 %.
	Special voltages on request
Current consumption [mA]:	950 (50 Hz)
Power output [W]:	90 (50 Hz)
Safety type:	IP 55
Insulation class:	F

All values at 50 Hz. All data refer to water temperature of 20 °C according to the instructions of the technical manual, subject to!

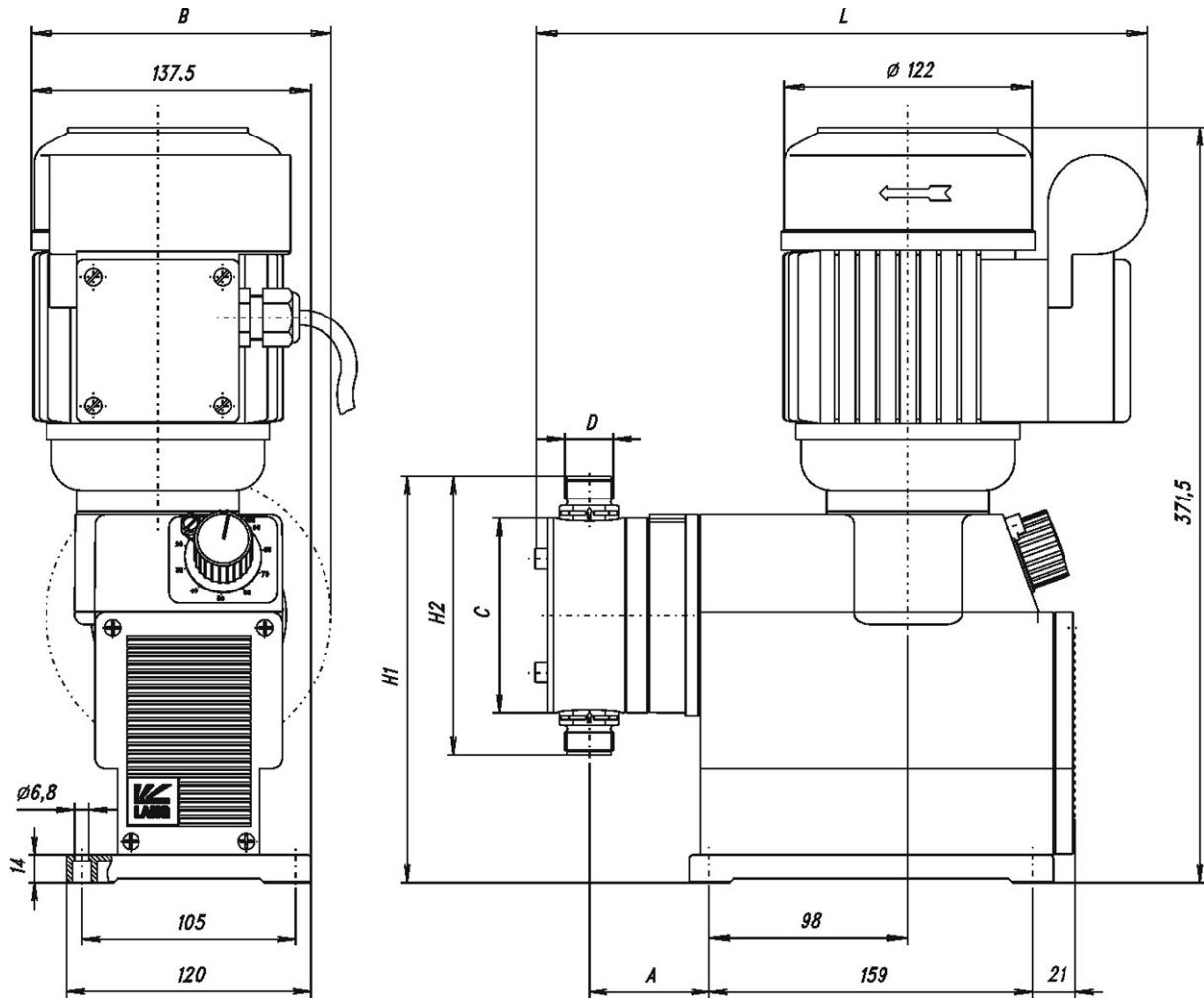
**Material:**

Housing:	thermoplastic polyester
Pump head:	polypropylene <b>optional</b> PVDF, PVC or stainless steel 1.4571
Diaphragm:	PTFE – EPDM compound diaphragm
Seals:	FPM 602 (Viton B) <b>optional</b> EPDM or Kalrez
Valve balls:	ceramics <b>optional</b> PTFE or stainless steel 1.4401
Weight [kg]:	8.6            8.8
Colour:	blue RAL 5007
Special versions on request	



**Dimensions:**

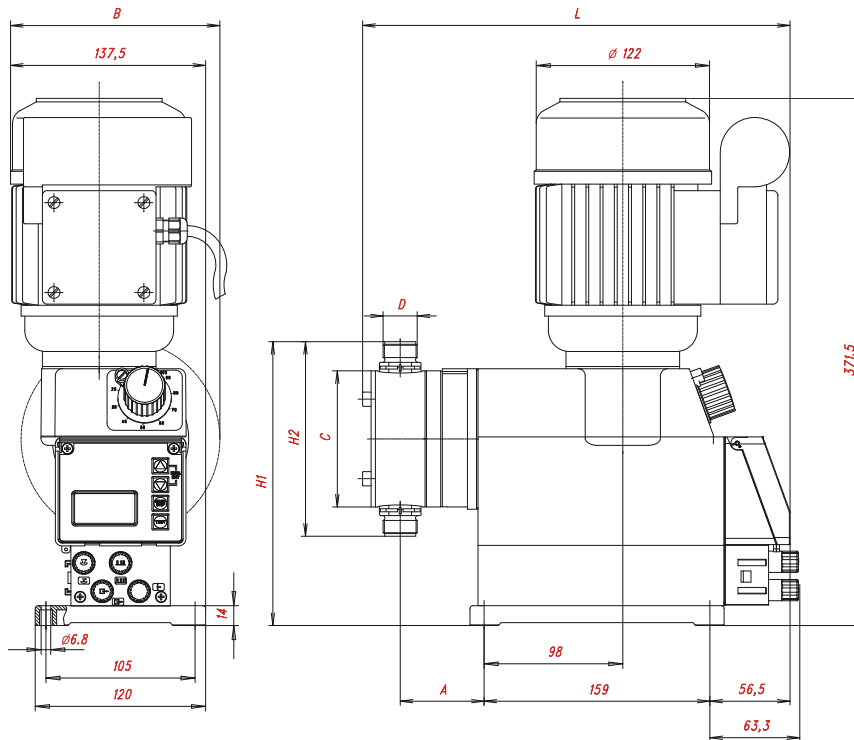
Version E 00



Capacity l/h	Dimensions [mm]					
	A	C	L	H1	H2	D
80	74.5	∅ 130	328	219.3	175.5	1 ¼"
120	74.5	∅ 140	330	224.3	185.5	1 ¼"

**Dimensions:**

**Version E 10 – E 60**



Capacity l / h	Dimensions [mm]						
	A	B	C	L	H1	H2	D
80	74.5	140	$\varnothing 130$	328	219.3	175.5	1 1/4"
120	74.5	145	$\varnothing 140$	330	224.3	185.5	1 1/4"



### Pump code – part 1

	<b>1. Electrical version</b> (please see legend on page 7)
	E 00
	E 10
	E 11
	<b>E 60</b>
	<b>2. Pump capacity 50 Hz [60 Hz]</b>
	00800 = 80 l/h [96 l/h]
	01200 = 120 l/h [144 l/h]
	<b>3. Pump material</b>
	PP = PP (standard)
	PV = PVDF
	VA = stainless steel
	<b>4. Metering back pressure</b> (depends on pump capacity)
	03 = 3 bar (for 120 l/h) [2.4 bar]
	04 = 4 bar (for 80 l/h) [3.2 bar]
	<b>5. Sealing material</b>
	EP = EPDM
	FP = Viton B (standard)
	KA = kalrez
	<b>6. Valve ball material</b>
	KE = ceramics (standard)
	VA = V4A
	PT = teflon
	<b>7. Valve material</b>
	PP = PP (standard)
	PV = PVDF
	VA = stainless steel
	<b>8. Valve spring</b>
	99 = without spring (standard)
	<b>9. Mains supply</b>
	01 = mains cable 2m shock-proof plug (standard)
	02 = mains cable 3-wired 2.4m end sleeves
	99 = without cable
	<b>10. Power supply</b>
	08 = 230V / 50/60 Hz
	09 = 115V / 50/60 Hz
	10 = 3PE 400/230 V 50/60 Hz (only for version E00)

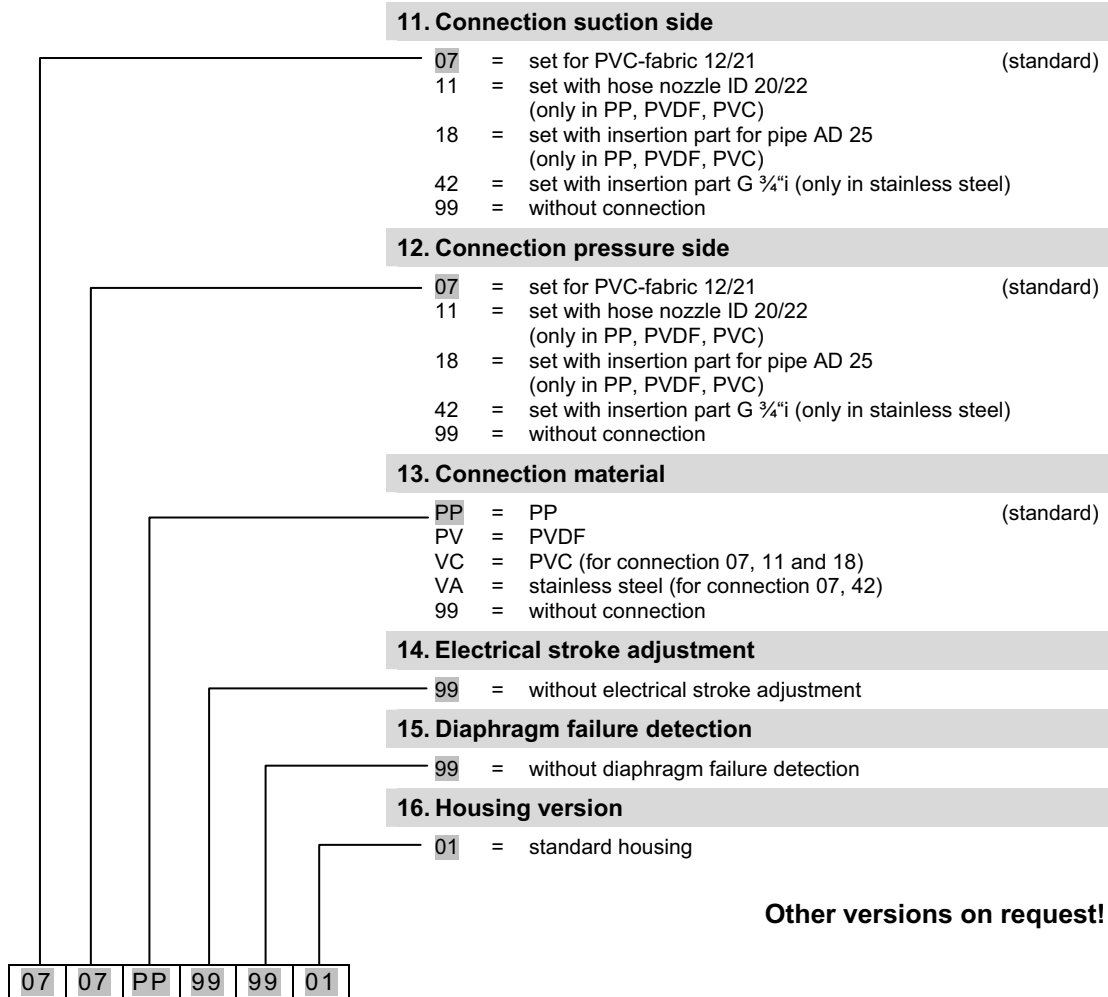
  

E60	01200	PP	03	FP	KE	PP	99	01	08
-----	-------	----	----	----	----	----	----	----	----

**Other versions on request!**



**Pump code – part 2**



Example of a complete pump code of a standard pump:

E60	01200	PP	03	FP	KE	PP	99	01	08	-	07	07	PP	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code 1)

(Pump code 2)



## Electrical versions

- E 00** Mechanical stroke adjustment
- E 10** On / off switch, mechanical stroke adjustment
- E 11** As E 10, additional empty signal input with level pre-warning, empty signal output
- E 60**
- Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20 mA or 20-0/4 mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal



**Ordering data – standard pumps:**

Article	Pump code	Material-No.
ELADOS® EMP III	E00 00800 PP 04 FP KE PP 99 99 08 – 07 07 PP 99 99 01	149301
	E00 01200 PP 03 FP KE PP 99 99 08 – 07 07 PP 99 99 01	149401
	<b>Extent of supply:</b> hose connection material 12/21 mm, operating instructions, <b>without</b> connection cable	
ELADOS® EMP III	E10 00800 PP 04 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149310
	E10 01200 PP 03 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149410
	<b>Extent of supply:</b> 2.0 m connection cable with shock-proof plug, hose connection material 12/21 mm, operating instructions	
ELADOS® EMP III	E11 00800 PP 04 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149311
	E11 01200 PP 03 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149411
	<b>Extent of supply:</b> 2.0 m connection cable with shock-proof plug, hose connection material 12/21 mm, dummy plug for empty signal input, dummy cap for empty signal or stroke signal output, operating instructions	
ELADOS® EMP III	E60 00800 PP 04 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149860
	E60 01200 PP 03 FP KE PP 99 01 08 – 07 07 PP 99 99 01	149960
	<b>Extent of supply:</b> 2.0 m connection cable with shock-proof plug, hose connection material 12/21 mm, dummy plug for empty signal input, dummy cap for empty signal or stroke signal output, 5-pin connection plug for pulse or standard signal input, plug allocation plan, operating instructions	

**ELADOS® EMP III E 60<sup>PLUS</sup>**

with the add-on unit (Dongle Box) for connection of an OGM<sup>PLUS</sup> oval gear meter the version E 60 turns to version E 60<sup>PLUS</sup>



**Article**

**Material-No.**

**Dongle Box**

248606

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter

**Accessories:**



**Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 5 of “Measuring and Controlling”.**





**Accessories:**



**Article**

**Material  
No.**

**Suction lances D32 with reserve and empty signal report**

incl. of ball non-return valve, suction strainer, zero-potential empty signal contact (empty = contact interrupted)

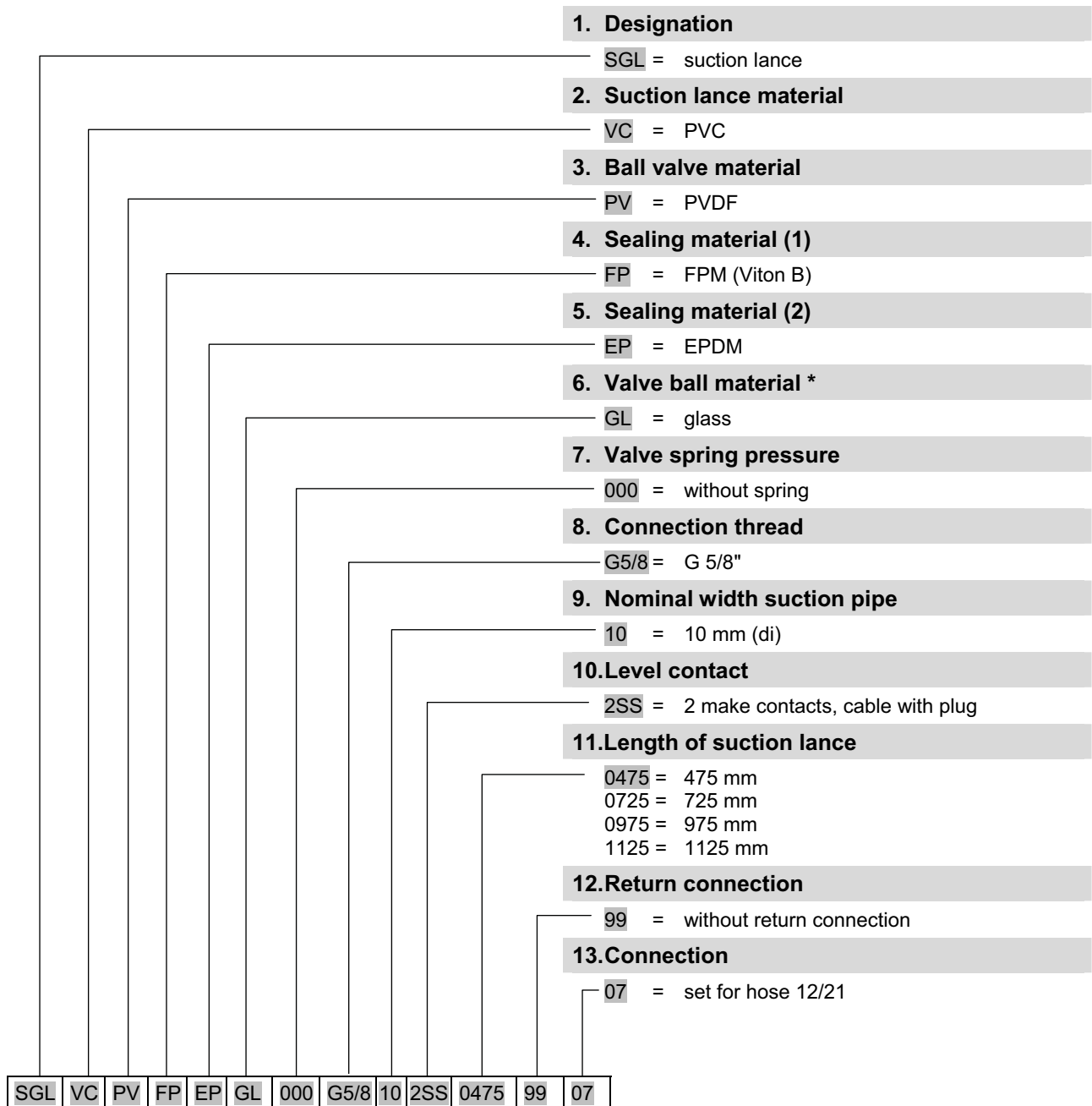
Tube diameter: 32 mm  
 Hose connection: 12/21 mm  
 Connection cable: circular connector  
 Turn-on voltage: max.50 V AC/DC  
 Switching current: 0.5 A  
 Rupturing capacity: 10 W / 10 VA

SGL VCPVFPEPGL000 G5/8-10-2SS-0475-99-07 (for container 20 l)	186157
SGL VCPVFPEPGL000 G5/8-10-2SS-0725-99-07 (for container 30/60 l)	186158
SGL VCPVFPEPGL000 G5/8-10-2SS-0975-99-07 (for container 100/200 l)	186159
SGL VCPVFPEPGL000 G5/8-10-2SS-1125-99-07 (for container 200 l)	186160

*Please see next page for pump code declaration.*



**Suction lance code**



\* standard valve ball material will soon be changed to ceramics

	<b>Article</b>	<b>Material No.</b>
	<p><b>Adapter – insert cap</b>                      for suction lance Ø 32 mm                      PVC soft                      to attach on: canister 10 l and 20 l</p>	286198
	<p><b>Adapter – screw joint</b>                      for suction lance Ø 32 mm                      PVC hard                      Thread pitch: 5 mm                      Threaded int. diameter: 56 mm                      Threaded ext. diameter: 61 mm                      can be screwed on: canister 30 l or                      container 60 – 200 l</p>	286197
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for canister and barrel</p>	288549
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for barrels (I-ring plus – barrel 220)</p>	288547
	<p><b>Suction lance adapter, rigid PVC/Viton B</b>                      for container (ECOBULK-container with skid pallet)                      for screw in in screw cap with 2”                      Tri-Sure-Stuffing</p>	288548



**Article**

**Material No.**

**Adapter – insert cap**

288534

for suction lance Ø 32 mm  
PVC – hard / Viton B  
appropriate for **degassing products**  
Return connection: 4/6, 6/8 or 6/12 mm (int.Ø/ext.Ø)  
Vent connection: 6/12 mm (int.Ø/ext.Ø)  
to attach on: canister 30 l or  
container 60 – 200 l



**Adapter – screw joint**

288535

for suction lance Ø 32 mm  
PVC – hard / Viton B / silicone  
appropriate for **degassing products**  
Return connection: 4/6, 6/8 or 6/12 mm (int.Ø/ext.Ø)  
Vent connection: 6/12 mm (int.Ø/ext.Ø)  
Thread pitch: 5 mm  
Threaded int. diameter: 63 mm  
Threaded ext. diameter: 69 mm  
for barrel with internal thread (L–ring plus barrel 220 l)



**Terminal box for connection cable of the suction pipe**

288419

for connection cable with round plug  
incl. cable union PG 7 (max. 2 x 1 m<sup>2</sup>)



**Protection tubes for suction lances, D32**

for prevention of mechanical damage of the suction valve  
and the float respectively;  
suitable for all suction lances Ø 32 mm

**Protection tube, PVDF, 32.5/40 (int.Ø/ext.Ø)**

286191

incl. fastening screw

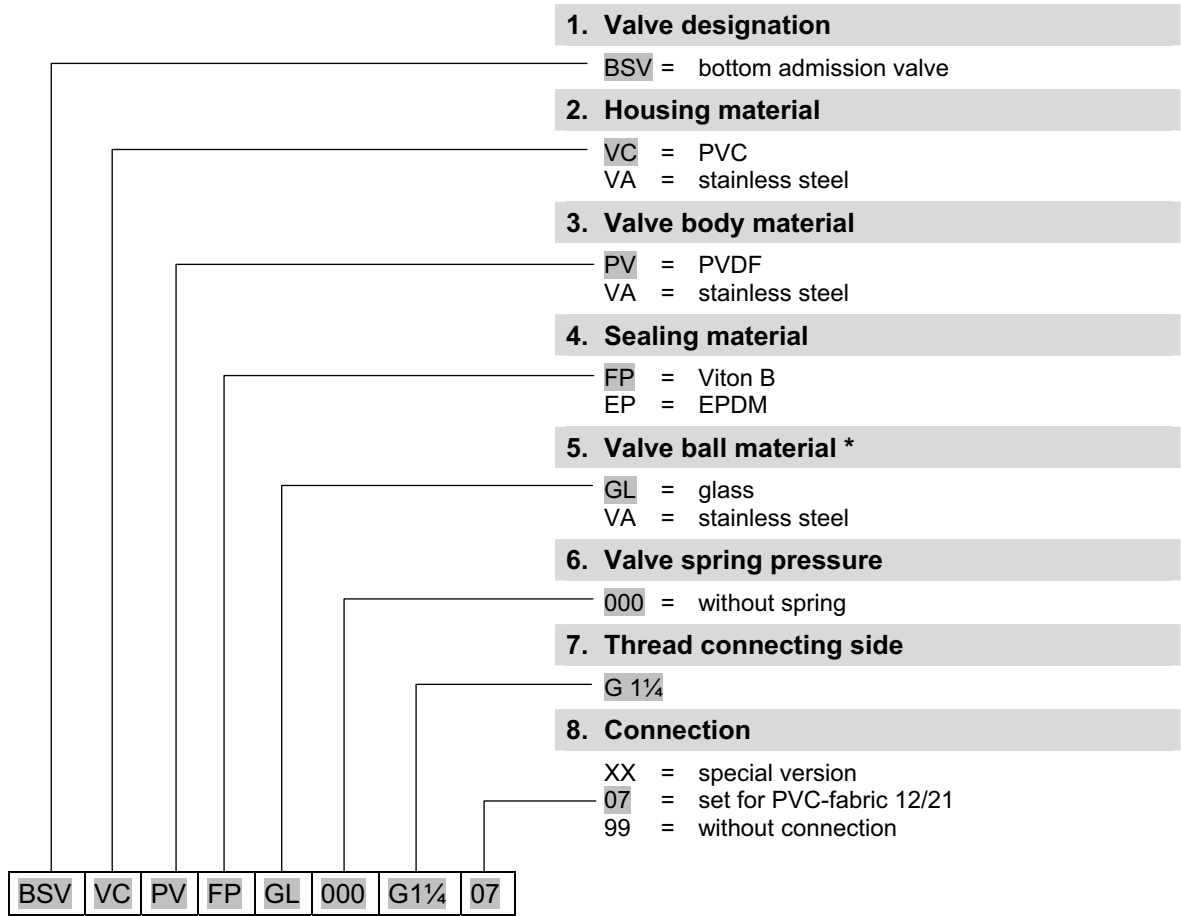
**Protection tube, VA (1.4035), 32.5/40 (int.Ø/ext.Ø)**

286153

incl. fastening screw



**Bottom admission valve**



**Article**

**Material-No.**

BSV VC PV FP GL 000 G 1¼ – 07	249019
BSV VC PV EP GL 000 G 1¼ – 07	249025
BSV VA VA FP VA 000 G 1¼ – 99	249036
BSV VA VA EP VA 000 G 1¼ – 99	on request

**Hose connection: bush for hose NW 16 mm and NW 19 mm**

BSV VC PV FP GL 000 G 1¼ – XX	249017
BSV VC PV EP GL 000 G 1¼ – XX	249030

\* standard valve ball material will soon be changed to ceramics

**Article****Material No.****Multiple function valve**

on request

This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting** and **drainage**.

**Article**

**Material No.**



**Pulsation damper**

To reduce pressure peaks and pulsation at oscillating rotary pumps at the pressure side and to prevent cavitating at the suction side.

Stroke volume: 40 cm<sup>3</sup>/stroke  
 Admissible nominal pressure: 10 bar  
 Thread connection: G 1 ¼

**PDS 250 D25 PP/Hypalon**

415503005

Housing material: PP  
 Sealing/diaphragms: Hypalon

**PDS 250 D25 PP/Viton**

415503006

Housing material: PP  
 Sealing/diaphragms: Viton



**Manometer**

415502560

0-10 bar, connection G ¼

**Attention:**

When adjusting the initial pressure the pulsation damper has to be relieved on the metering media side.



**Reduction G ½ a – G ¼ a**

415202771



**Pressure maintenance valve**

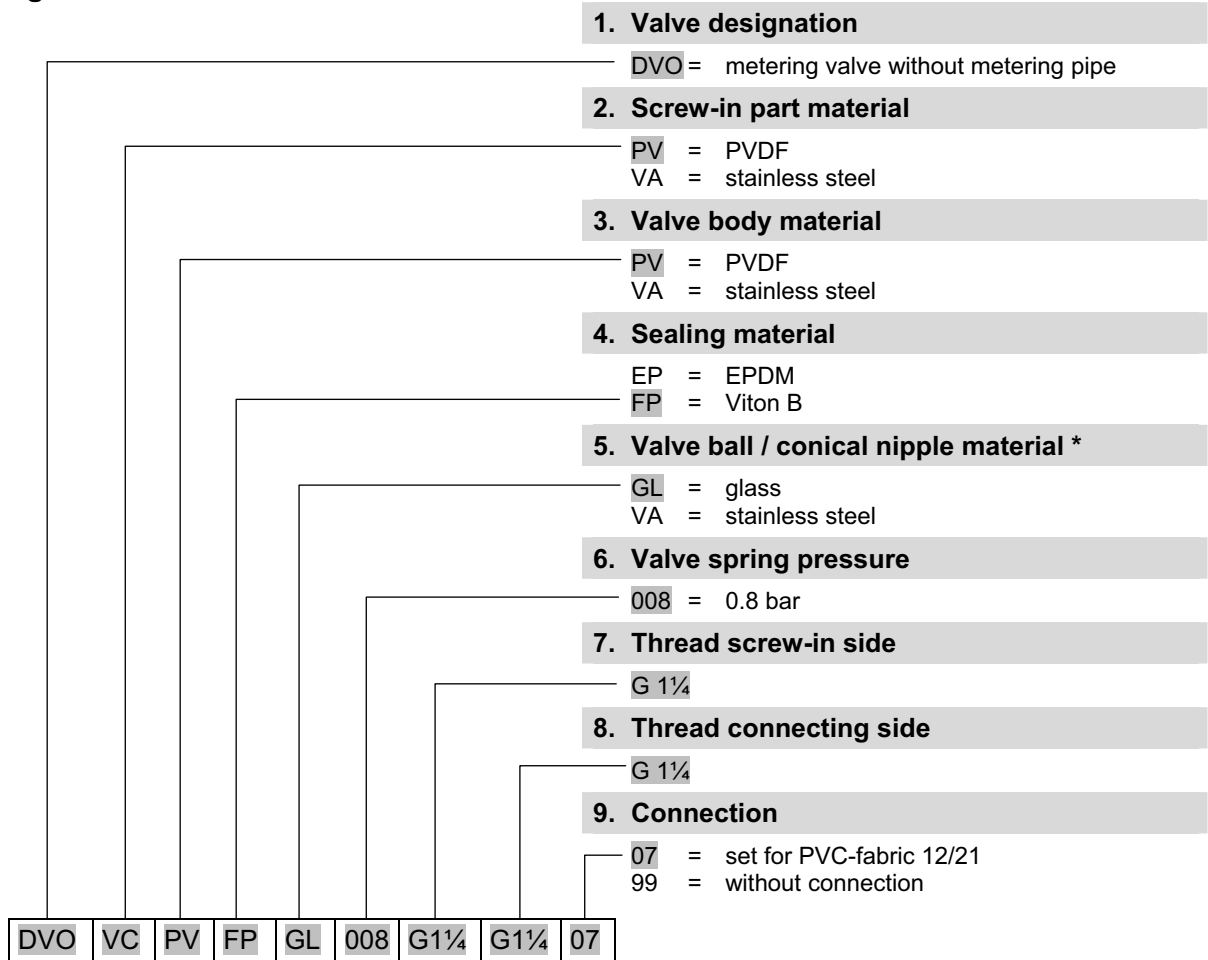
415708711

Housing material: PVC  
 Diaphragm: EPDM/PTFE  
 Seals: Viton B  
 Connections: adhesive muffs 25  
 Response pressure: 0.2-10 bar (adjustable)

**Overflow unit on request**



**Metering valves**



\* standard valve ball material will soon be changed to ceramics



Article	Material-No.
DVO PV PV FP GL 008 G 1¼ – G 1¼ – 07	249026
DVO PV PV EP GL 008 G 1¼ – G 1¼ – 07	249027
DVO PV PV FP GL 008 G 1¼ – G 1¼ – 99	249086
DVO PV PV EP GL 008 G 1¼ – G 1¼ – 99	on request
DVO VA VA FP VA 008 G 1¼ – G 1¼ – 99	249468
DVO VA VA EP VA 008 G 1¼ – G 1¼ – 99	249059
Metering pipe PP G ¾ for DVO G 1¼	249235
Metering pipe PV G ¾ for DVO G 1¼	249236



Article	Material No.
<b>Suction and pressure lines</b>	
available by the metre max. operating pressure: 15 bar (at 20° C)	
	PVC-fabric, 12/21 mm (int.Ø/ext.Ø) <span style="float: right;">417400127</span> PVC-fabric, 19/27 mm (int.Ø/ext.Ø) <span style="float: right;">417400131</span>
<b>Note:</b>	<b>We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.</b>
	PE-X tube 12/16 mm, coiled bundle 50 m <span style="float: right;">417400362</span>
	<b>Threaded connection G1½"a – PEX 12/16</b> <span style="float: right;"><b>PP</b> 415102357 <b>PVDF</b> 415101970</span>
	<b>Screw on connection G1¼"i - PEX 8/12</b> <span style="float: right;"><b>PP</b> 250093 <b>PVDF</b> 250075</span> <b>Screw on connection G1¼"i - PEX 12/16</b> <span style="float: right;">250099 250076</span>
	<b>T-Union PVDF - PEX 12/16</b> <span style="float: right;"><b>PVDF</b> 415102303</span>

**Article**

**Material No.**



**Signal horn with integrated red flash light**

230 V / 50 Hz / IP 33 RO

418271053



**Wall bracket**

made of stainless steel 1.4301  
incl. of attachment parts (dowels and screws)

286013



**Connection cable, 5 m length**

for empty signal input with straight 4-pin plug

418439001

for pulse or current input with straight 5-pin plug

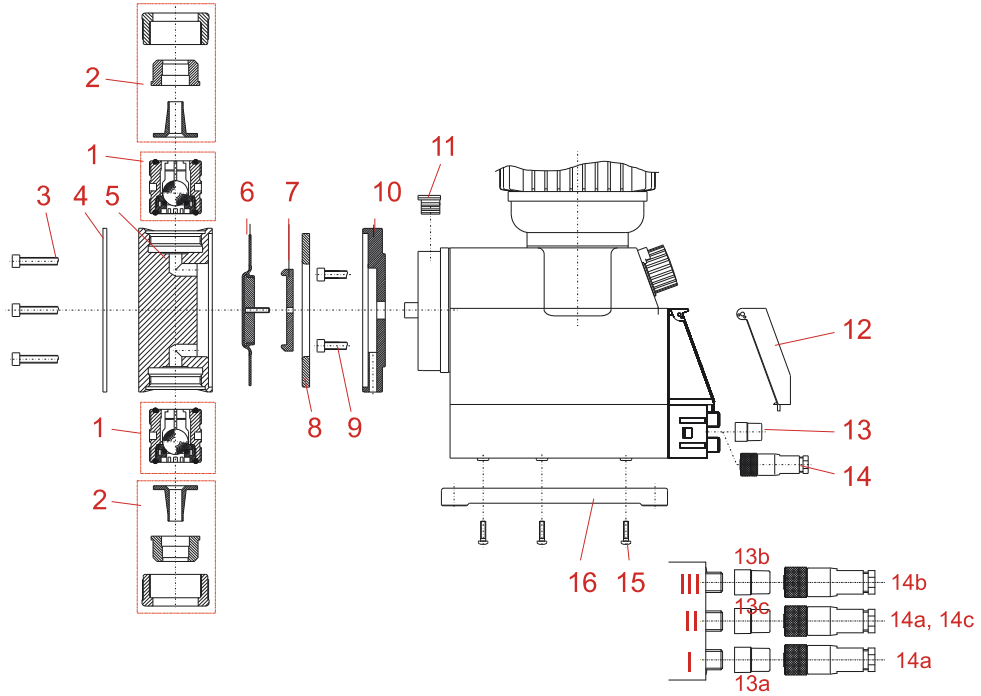
418439007

for empty signal or stroke signal output  
with straight 4-pin plug

418439022



**Spare parts:**





**Spare parts:**

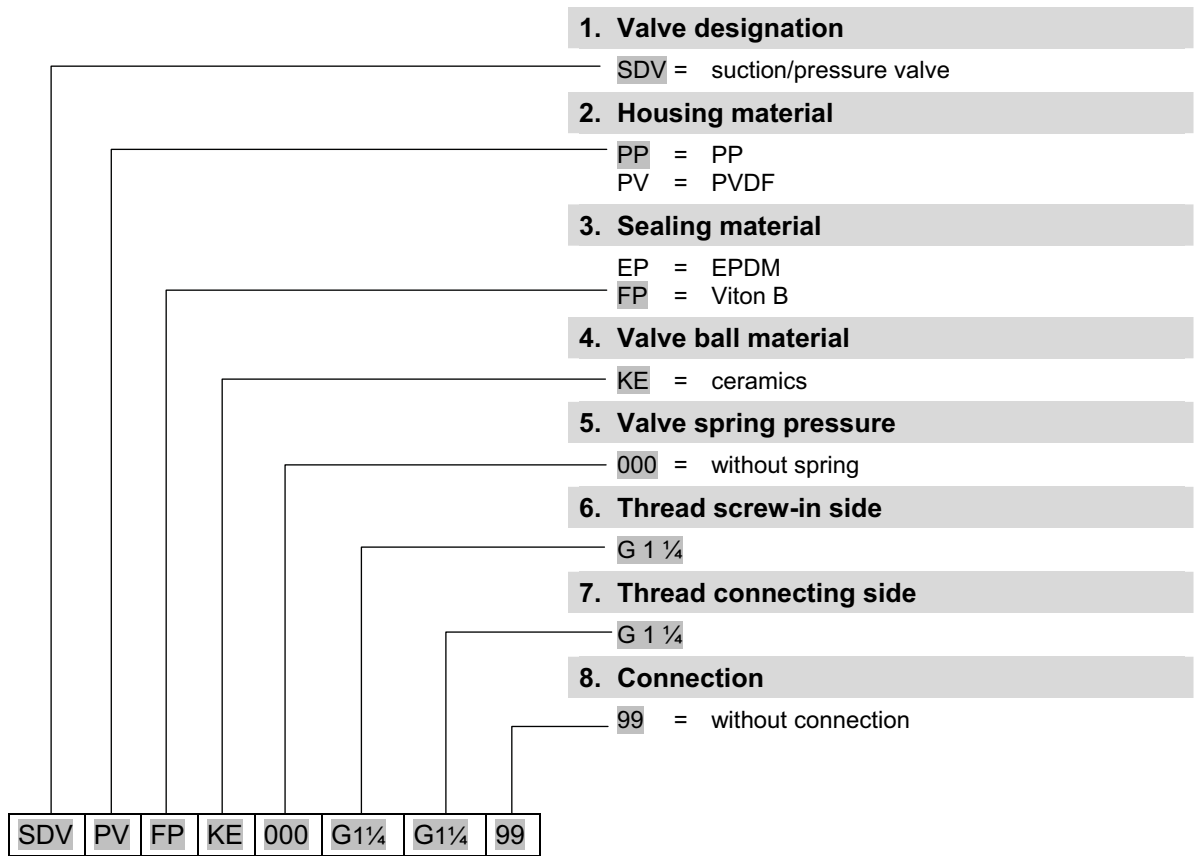
Item.-No.	Article	Material No.
1	Suction/pressure valve, SDV <b>PP FP</b> KE 000 G1¼ - G1¼ - 99*	249075
	Suction/pressure valve, SDV <b>PP EP</b> KE 000 G1¼ - G1¼ - 99*	249055
	Suction/pressure valve, SDV <b>PV FP</b> KE 000 G1¼ - G1¼ - 99*	249074
	Suction/pressure valve, SDV <b>PV EP</b> KE 000 G1¼ - G1¼ - 99*	249041
2	Connection set <b>PP</b> G1¼ - 12/21 mm	249238
	Connection set <b>PVDF</b> G1¼ - 12/21 mm (consisting of union nut, clamping piece and tapered part)	249258
9	Screw	413031042
11	Covering stopper	34900168
12	Transparent enclosure cover	34800120
13a	Dummy plug empty signal input	248186
13b	Cover cap control output	34800117
13c	Dummy plug control input	248187
14a	4-pin plug, empty signal input	418463115
14b	4-pin plug, control output	418463117
14c	5-pin plug, control input	418463118
15	Screw B40x16	413071167
16	Mounting plate	34900120

Pos.	Article	80 l/h	120 l/h
3	Pump head screw	413031047	413031064
4	Pressing plate	34900139	34900140
5	Pump head <b>PP</b>	34900105	349001064
	Pump head <b>PVDF</b>	34900178	34900179
6	Diaphragm	34900111	34900112
7	Supporting disk	34900149	34900151
8	Intermediate ring	34900136	34900137
10	Intermediate plate	34900134	34900135

\* Please see next page for code declaration.



**Suction and pressure valve code**



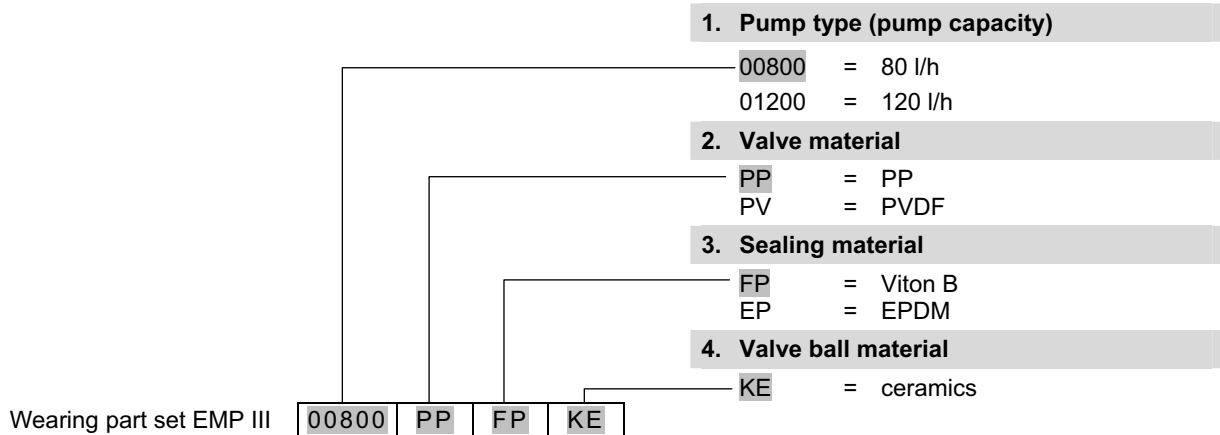


### Set of wearing parts (complete)

consisting of 1 piece each:

- Suction valve with hose connection material
- Pressure valve with hose connection material
- Diaphragm
- Supporting ring

Article	Code	Material-No.
<b>Wearing part set</b>	EMP III 00800 PP FP KE	249560
	EMP III 01200 PP FP KE	249561
	EMP III 00800 PP EP KE	249562
	EMP III 01200 PP EP KE	249563
	EMP III 00800 PV FP KE	249564
	EMP III 01200 PV FP KE	249565
	EMP III 00800 PV EP KE	249566
	EMP III 01200 PV EP KE	249567





- Single phase motor with winding protection, standard
- PP plastic material for pump head and valves, standard
- Plastic external housing, metal internal housing
- High delivery capacity at low number of strokes
- Electronics with display and mode switch for simple pre-selection of menu
- Safety diaphragm as a standard feature, signalling of fractures in diaphragm as a standard feature of electronic version
- Evaluation unit for signalling of fractures in diaphragm, standard feature of electronic version
- Selectable error signal relay, standard feature of electronic version
- Mechanical stroke adjustment
- Empty signal report and level pre-warning
- Empty signal and stroke signal output
- Pulse control
- Pulse multiplication and division
- Pulse storage
- Stroke frequency regulation
- Standard signal drive
- External metering stop
- Single stroke control



The ELADOS® EMP IV series of metering pumps is based on the building block principle. Devices of this series comprise the drive unit, the gear, the metering pump head and the electronics. Different electronic control variants guarantee that the pump

may be adapted to any processing sequence for proportional or quantity metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering applications.



**Technical Data:**

**Mechanical Data:**

Pump capacity [l/h]:	140	210
Metering back-pressure* [bar]:	10	8
Delivering capacity per stroke [cm <sup>3</sup> ]:	19.4	29.2
Metering accuracy:	<± 3 %	
Suction height:	2 mWs, suction height with clean, slightly wet valves	
Metering frequency max:	122 1/min	
Pressure valve:	without spring	
Suction valve:	without spring	
Ambient temp. max.:	40° C	

**Materials:**

Housing:	thermoplastic polyester
Pump head:	polypropylene ( <b>PP</b> ) <b>optional:</b> PVDF or stainless steel 1.4571
Diaphragm:	PTFE - EPDM compound diaphragm
Seals:	FPM 602 (Viton B) <b>optional:</b> EPDM or Kalrez
Valve balls:	ceramics <b>optional:</b> PTFE or stainless steel 1.4401
Weight:	approx. 25 kg
Colour:	blue RAL 5007

**Electrical Data:**

Connection:	230 V / 50 Hz 400 V / 50/60 Hz (only with E 00)
Note:	At a mains frequency of 60 Hz delivery capacity increases by 20 % and back-pressure decreases by 20 %.
Current consumption:	2.3 A (50 Hz)
Power output:	0.37 kW (50 Hz)
Safety type:	IP 55
Insulation class:	F

All values at 50 Hz. All data refer to water temperature of 20° C according to the instructions of the technical manual, subject to!

**Notice:** To guarantee the newest state of our products, we reserve the rights for single technical changes.

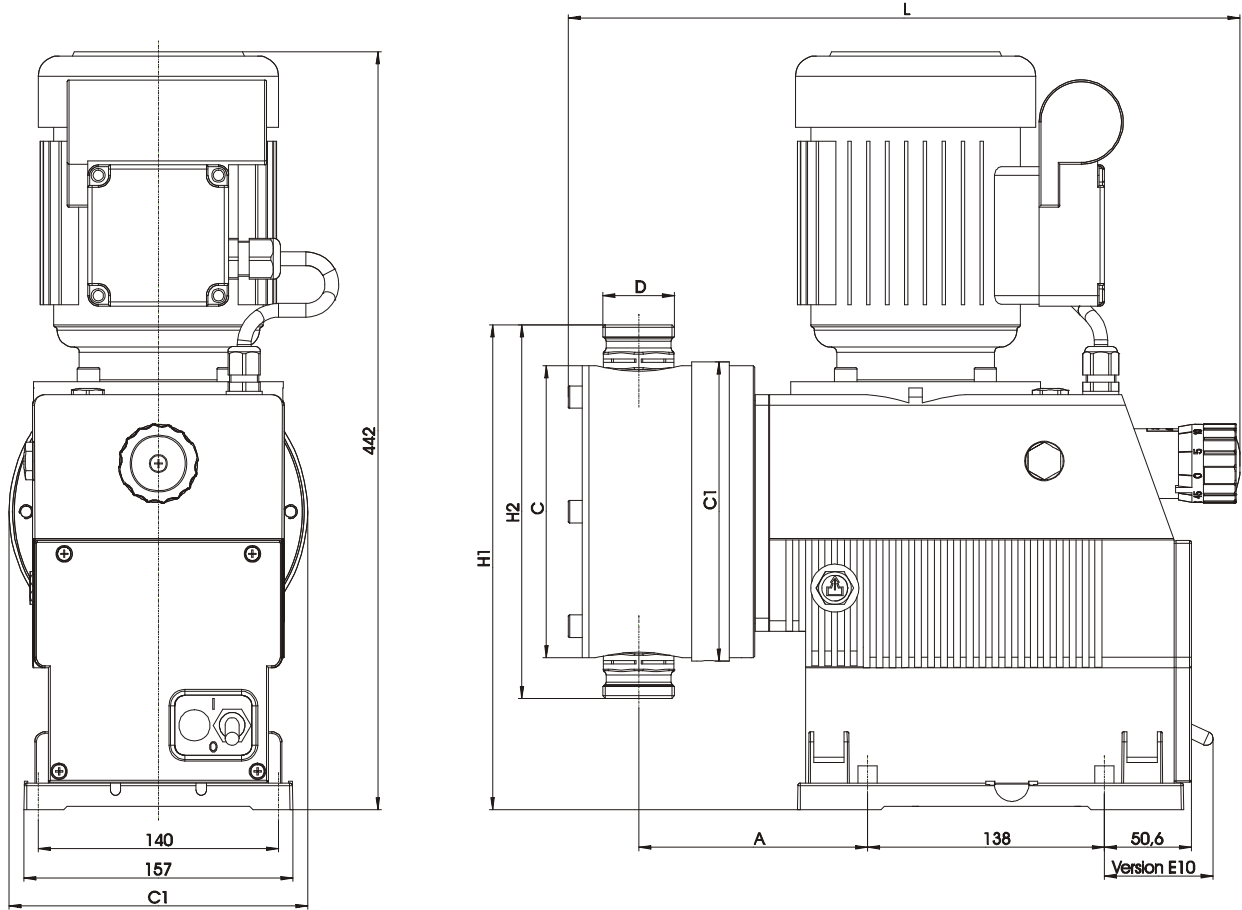
\*For **EMP III HP (High Pressure)** version see page 22.

Other special versions on request.



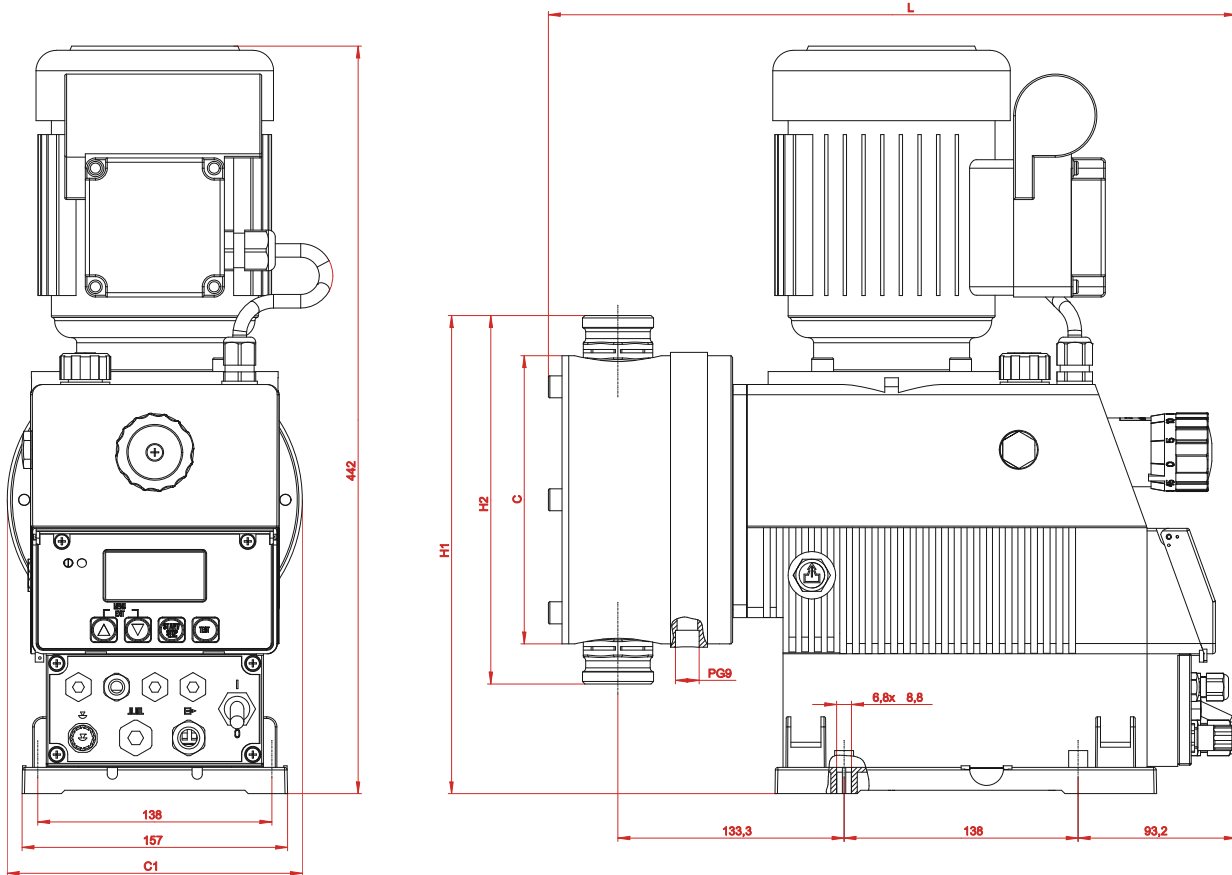
**Dimensions:**

Version E 00 / E 10



Capacity l / h	Dimensions in mm						
	A	C	C1	L	H1	H2	D
140	133.5	170	174	392	280	216	1¼"
210	133.5	170	174	392	280	216	1¼"

Version E 60



Capacity l / h	Dimensions in mm				
	C	C1	L	H1	H2
140	170	174	392	280	216
210	170	174	392	280	216



### Pump code – part 1

**1. Electrical version** (please see legend on page 7)

E 00  
E 10  
E 60

**2. Pump capacity 50 Hz [60 Hz]**

01400 = 140 l/h [168 l/h]  
02100 = 210 l/h [252 l/h]

**3. Pump material**

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

**4. Metering back pressure** (depends on pump capacity)

08 = 8 bar (for 210 l/h) [6.4 bar]  
10 = 10 bar (for 140 l/h) [8 bar]

**5. Sealing material**

EP = EPDM  
FP = Viton B (standard)  
KA = kalrez  
PT = teflon

**6. Valve ball material**

KE = ceramics (standard)  
VA = stainless steel  
PT = teflon

**7. Valve material**

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

**8. Valve spring**

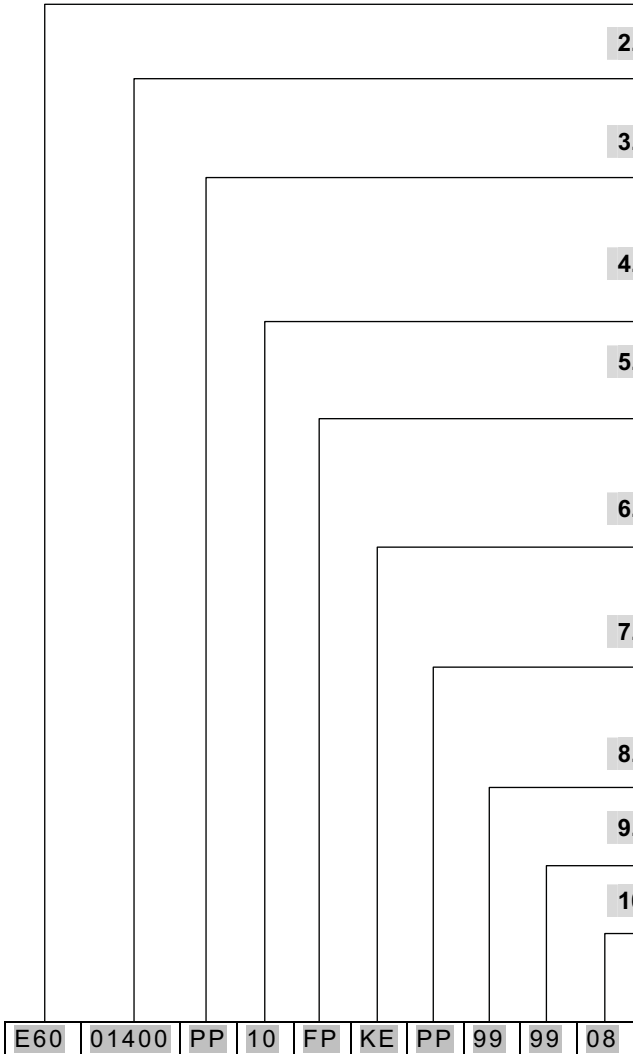
99 = without spring (standard)

**9. Mains supply**

99 = without cable (standard)

**10. Power supply**

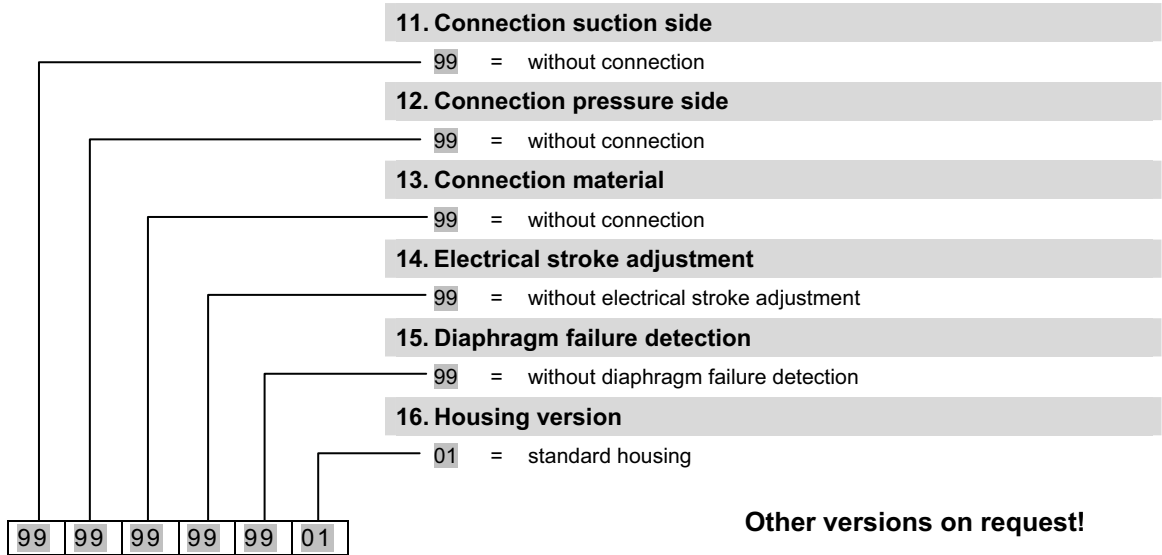
08 = 230 V / 50/60 Hz  
09 = 115 V / 50/60 Hz  
10 = 3PE 400/230 V 50/60 Hz (only for version E00)



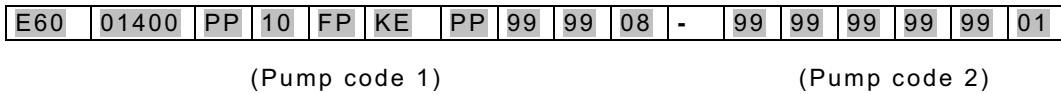
**Other versions on request!**



**Pump code – part 2**



Example of a complete pump code of a standard pump:





## Electrical versions

**E 00** Mechanical stroke adjustment

**E 10** On / off switch, mechanical stroke adjustment

- E 60**
- On / off switch
  - Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function
  - Diaphragm failure detection

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20 mA or 20-0/4 mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal



**Ordering data – standard pumps:**

<b>Article</b>	<b>Pump code</b>	<b>Material-No.</b>
ELADOS® EMP IV	E00 01400 PP 10 FP KE PP 99 99 08 - 99 99 99 99 99 01	150001
	E00 01400 PP 10 FP KE PP 99 99 10 - 99 99 99 99 99 01	150041
	E00 02100 PP 08 FP KE PP 99 99 08 - 99 99 99 99 99 01	150101
	E00 02100 PP 08 FP KE PP 99 99 10 - 99 99 99 99 99 01	150141
	<b>Extent of supply:</b> Terminal box on motor, operating instructions <b>without</b> hose connection material <b>without</b> connector cable	
ELADOS® EMP IV	E10 01400 PP 10 FP KE PP 99 99 08 - 99 99 99 99 99 01	150010
	E10 02100 PP 08 FP KE PP 99 99 08 - 99 99 99 99 99 01	150110
	<b>Extent of supply:</b> Terminal box on motor, operating instructions <b>without</b> hose connection material <b>without</b> connector cable	
ELADOS® EMP IV	E60 01400 PP 10 FP KE PP 99 99 08 - 99 99 99 99 99 01	150060
	E60 02100 PP 08 FP KE PP 99 99 08 - 99 99 99 99 99 01	150160
	<b>Extent of supply:</b> Terminal box on motor, operating instructions <b>without</b> hose connection material <b>without</b> connector cable	

**Connection material see page 16**

**ELADOS® EMP IV E 60<sup>PLUS</sup>**

with the add-on unit for the capture of operating data (dongle plate) the version E 60 turns to version E 60<sup>PLUS</sup>. For installation of the dongle plate the front panel has to be removed. Then the dongle plate can be plugged on the allocated terminal.



**Article**

**Material-No.**

**Dongle plate**

249629

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter

**Accessories:**



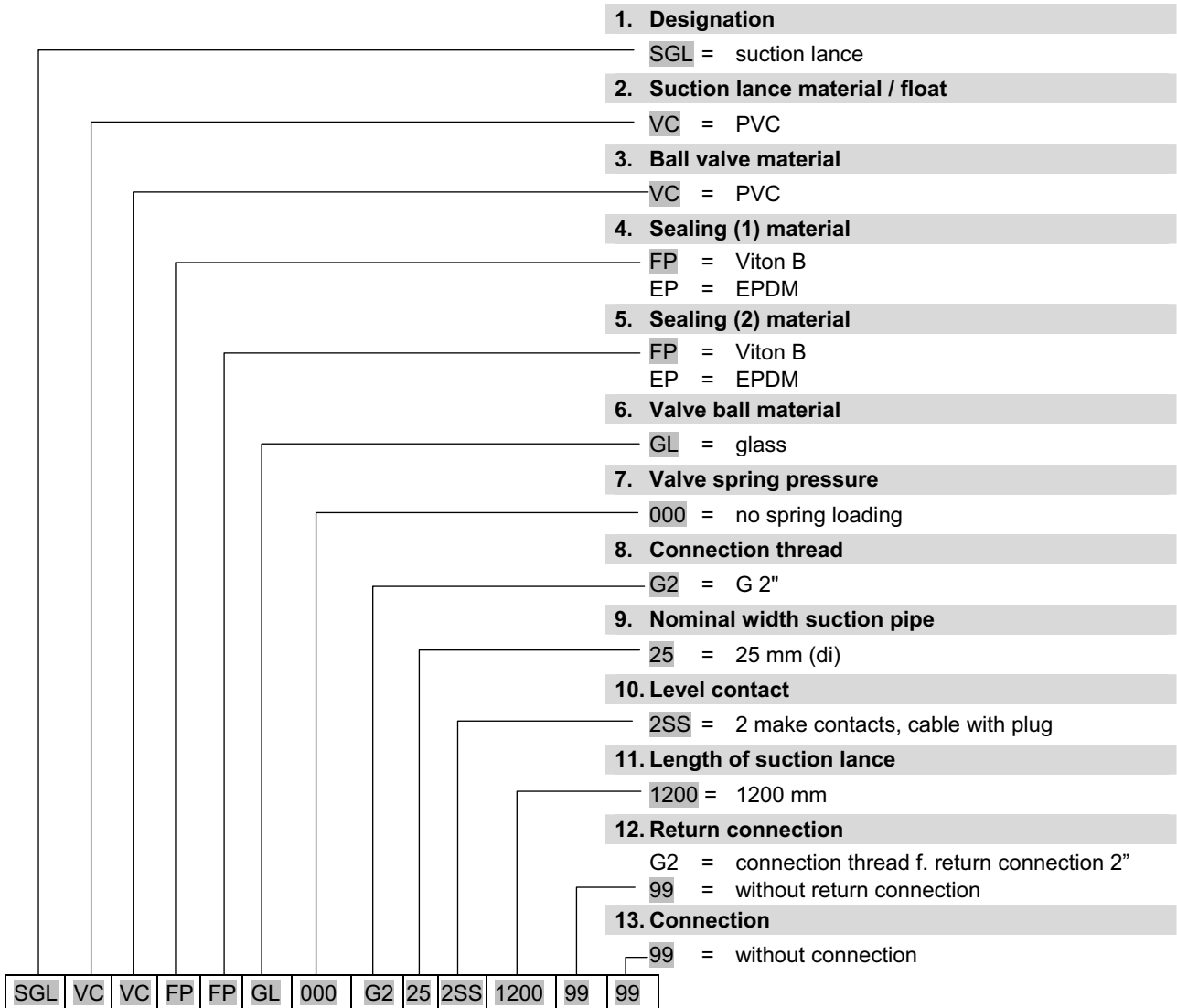
**Oval gear meter**

for volumetric measurement of the rate of flow

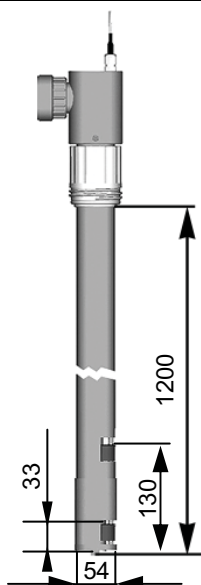
**Ordering data are to be found in chapter 5 of “Measuring and Controlling”.**



**Suction lances**



SGL	VC	VC	FP	FP	GL	000	G2	25	2SS	1200	99	99
-----	----	----	----	----	----	-----	----	----	-----	------	----	----



**Article**

**Material-No.**

SGL VC VC FP FP GL 000 G2 25 2SS 1200 99 99	250052
SGL VC VC EP EP GL 000 G2 25 2SS 1200 99 99	250054
SGL VC VC FP FP GL 000 G2 25 2SS 1200 G2 99	250055
SGL VC VC EP EP GL 000 G2 25 2SS 1200 G2 99	250056

**Extent of supply:** Connecting seal EPDM (black) or Viton (brown), connection cable 5 m, container screw connection, **without** hose connection

**Connection material see page 16 (chapter EMP IV 450-750 l/h)**





**Article**

**Material-No.**

**Suction lance adapter**

417401588

Screw cap DN 150 for container with bung plug

**Suction and pressure lines**

available by the metre

max. operating pressure: 15 bar (at 20° C)



PVC- fabric, 12/21 mm (int.Ø/ext.Ø)

417400127

PVC- fabric, 19/27 mm (int.Ø/ext.Ø)

417400131

PVC- fabric, 25/34 mm (int.Ø/ext.Ø)

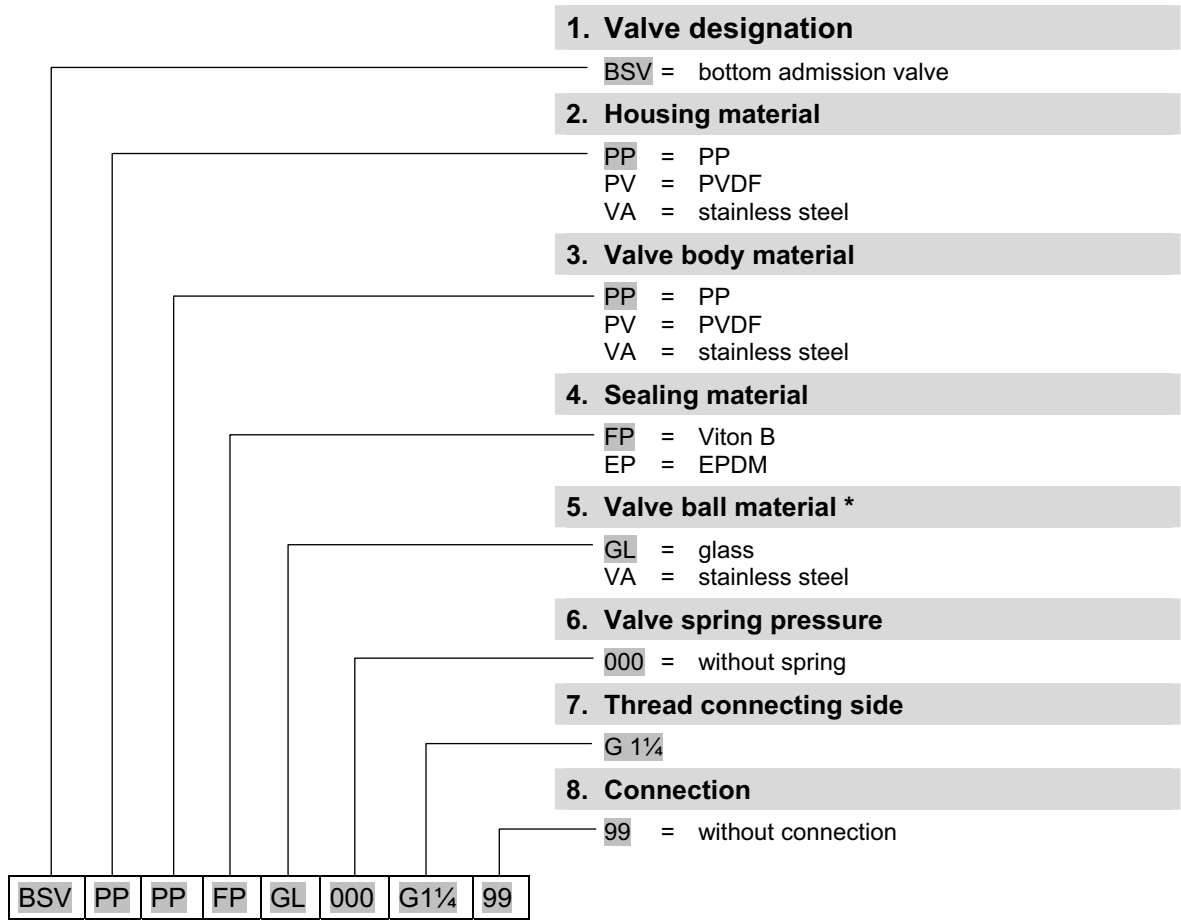
417400139

**Note:**

**We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.**



**Bottom admission valve**



Article	Material-No.
BSV PP PP FP GL 000 G 1¼ – 99	250011
BSV PP PP EP GL 000 G 1¼ – 99	250012
BSV PV PV FP GL 000 G 1¼ – 99	249082
BSV PV PV FP GL 000 G 1¼ – 99	249083
BSV VA VA FP VA 000 G 1¼ – 99	249036
BSV VA VA EP VA 000 G 1¼ – 99	on request

**Connection material see page 16**

\* standard valve ball material will soon be changed to ceramics



**Article**

**Material No.**

**Pulsation damper**

To reduce pressure peaks and pulsation at oscillating rotary pumps at the pressure side and to prevent cavitating at the suction side.

Stroke volume: 40 cm<sup>3</sup>/stroke  
 Admissible nominal pressure: 10 bar  
 Thread connection: G 1 ¼

**PDS 250 D25 PP/Hypalon**

415503005

Housing material: PP  
 Sealing/diaphragms: Hypalon

**PDS 250 D25 PP/Viton**

415503006

Housing material: PP  
 Sealing/diaphragms: Viton



**Manometer**

415502560

0-10 bar, connection G ¼

**Attention:**

When adjusting the initial pressure the pulsation damper has to be relieved on the metering media side.



**Reduction G ½ a – G ¼ i**

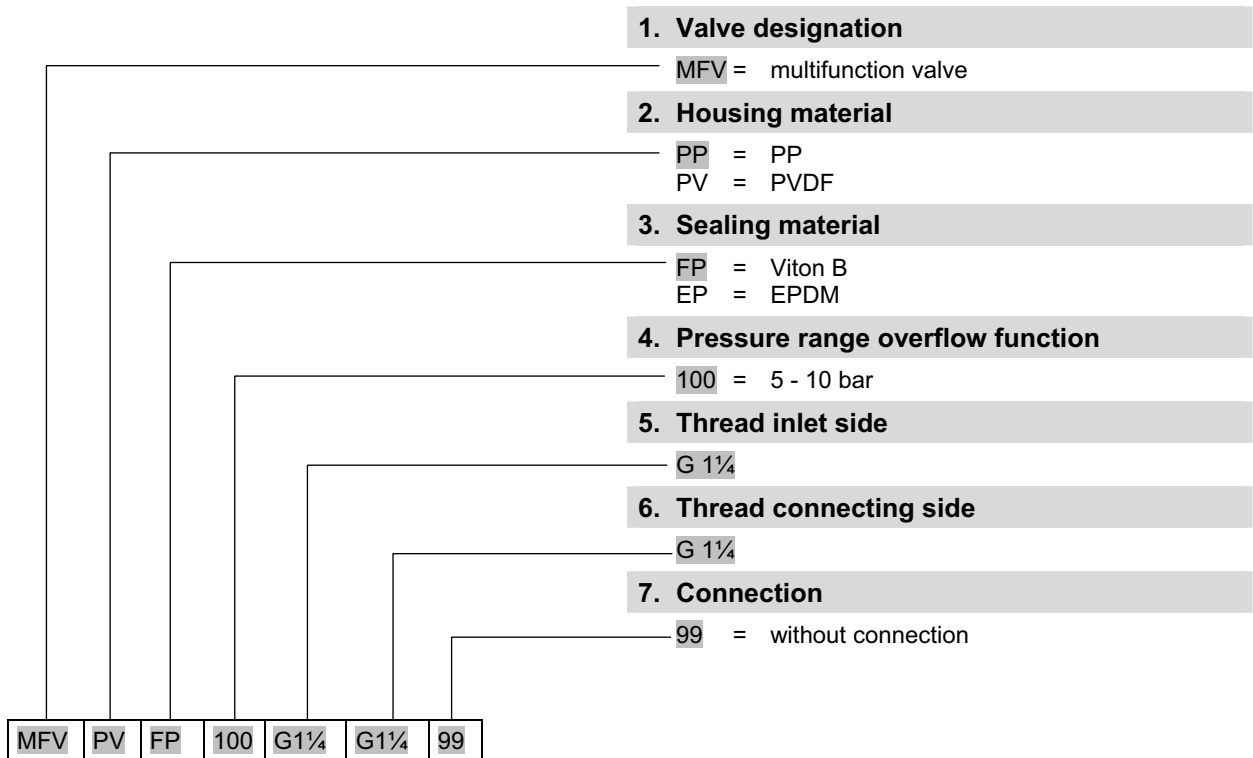
415202771



**Pump bracket VA** , incl. mounting accessories  
 bracket with holder out 4 edge hollow profile  
 with movable fixing plate

250047

**Multifunction valve**



This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**

Dimensions (L \* D \* H): 341 x 160 x 200 mm



Article	Material-No.
MFV PP FP 100 G 1¼ – G 1¼ – 99	250060
MFV PP EP 100 G 1¼ – G 1¼ – 99	250061
MFV PV FP 100 G 1¼ – G 1¼ – 99	250064
MFV PV EP 100 G 1¼ – G 1¼ – 99	250065

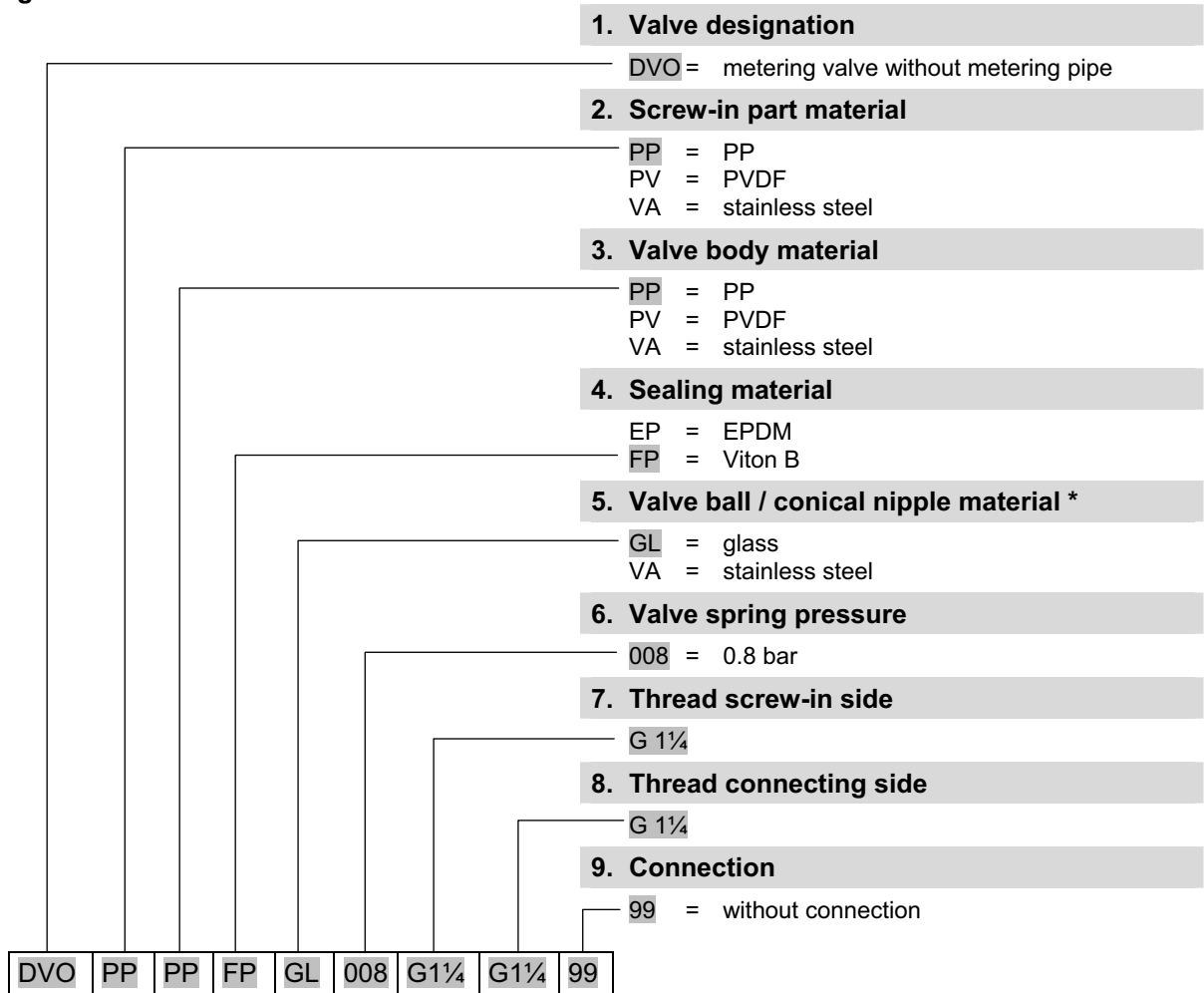
**Extent of supply:** 2 fixing clips with securing bracket (415018707), 3 O-ring seals (417003593) Viton B, user's manual

The multiple function valve should be installed close to the pump on a suitable wall.

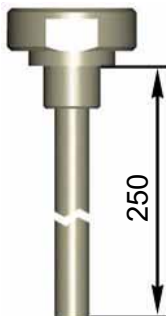
**Connection material see page 16**



**Metering valves**



\* standard valve ball material will soon be changed to ceramics



**Article**

**Material-No.**

DVO PP PP FP GL 008 G 1¼ – G 1¼ – 99	250017
DVO PP PP EP GL 008 G 1¼ – G 1¼ – 99	250018
DVO PV PV FP GL 008 G 1¼ – G 1¼ – 99	249086
DVO PV PV EP GL 008 G 1¼ – G 1¼ – 99	on request
DVO VA VA FP VA 008 G 1¼ – G 1¼ – 99	249468
DVO VA VA EP VA 008 G 1¼ – G 1¼ – 99	249059

**Connection material see page 16**

Metering pipe PP G ¾ for DVO G 1¼	249235
Metering pipe PV G ¾ for DVO G 1¼	249236

Connection material for suction and pressure valves,  
bottom admission valves and metering valves  
(to be ordered separately)



**Article**

**Material-No.**

**Connection set PP, G 1¼ - NW 20/22**

249239

consisting of:

1 union nut PP G 1¼ (415099835), 1 pressure hose nozzle PP  
NW 20/22 (34950256) and 2 hose clips for hose AD 25-40  
(415013306)



**Hose clips (stainless steel)**

for hose AD 20-32  
for hose AD 25-40

415013305

415013306



**Union nut G 1 1/4**

PP  
PVDF  
stainless steel

415099835

415099072

38610405



**Pressure hose nozzle**

PP for hose NW 20/22 (ill.)  
PP for hose NW 25/27  
PVDF for hose NW 20/22 (ill.)  
PVDF for hose NW 25/27  
stainless steel

34950256

34950257

34950199

34950201

on request






**O-ring**

Viton B 28 x 3.5  
EPDM 28.17 x 3.53

417003593

417001277

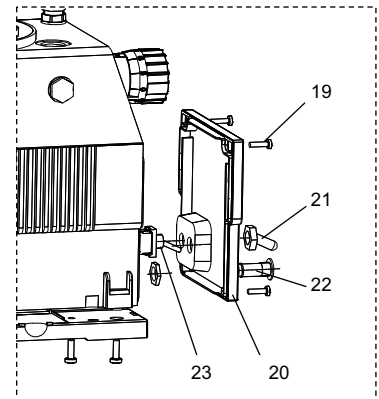
	<b>Article</b>	<b>Material-No.</b>
	<b>Connection to tubes</b>	
	<b>Union nut G 1¼</b>	
	PP	415099835
	PVDF	415099072
	stainless steel (1.4571)	38610405
	<b>Insertion part (welded bush) 1¼" for tube connection DN 20 (d25)</b>	
	PP	415099709
	PVDF	415099033
	stainless steel (screw-in thread G ¾)	38610407
	<b>O-ring</b>	
	Viton B 28 x 3.5	417003593
	EPDM 28.17 x 3.53	417001277

**Further connection material on request!**

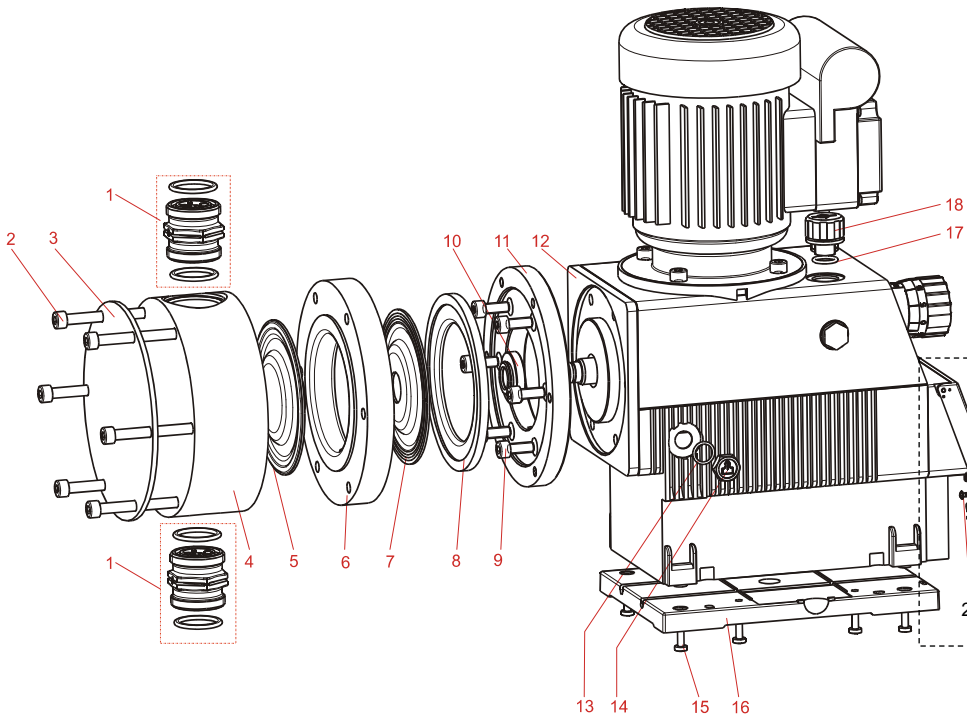
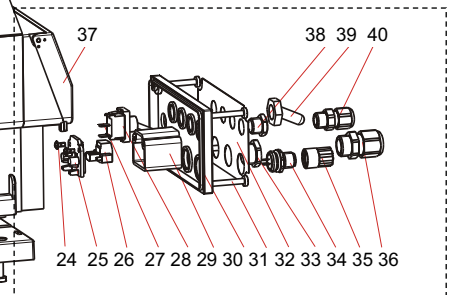


**Spare Parts:**

only for version E 00 / E 10



nur für Version E 60



Item	Article	Material-No.
1	Suction/pressure valve SDV <b>PP FP</b> KE 000 G1¼ -G1¼ - 99* Suction/pressure valve SDV <b>PP EP</b> KE 000 G1¼ - G1¼ - 99* Suction/pressure valve SDV <b>PV FP</b> KE 000 G1¼ - G1¼ - 99* Suction/pressure valve SDV <b>PV EP</b> KE 000 G1¼ - G1¼ - 99*	249075 249055 249074 249041
2	Hexagon socket screw M8 x 100 VA	413031066
3	Proofing plate	34950144
4	Pump head <b>PP</b> Pump head <b>PVDF</b>	34950135 34950137
5	Conveying diaphragm	34950101
6	Intermediate ring <b>PP</b> Intermediate ring <b>PVDF</b>	34950150 34950194
7	Protective diaphragm	34950163
8	Supporting disc	34950177
9	Hexagon socket screw M8 x 20 VA	413031055
10	Receiver disc for protective diaphragm	34950152
11	Intermediate plate	34950147
12	Flange plate	34950124

\* Please see page 20 for code declaration





Item	Article	Material-No.
13	O-ring 9 x 2 NBR	417002063
14	Locking nut	415204603
15	Oval head screw M5 x 16 VA	413119274
16	Mounting plate	34950123
17	O-ring 15 x 2.5 NBR	417002137
18	Vent screw	415204601

**only for versions E 00 / E 10**

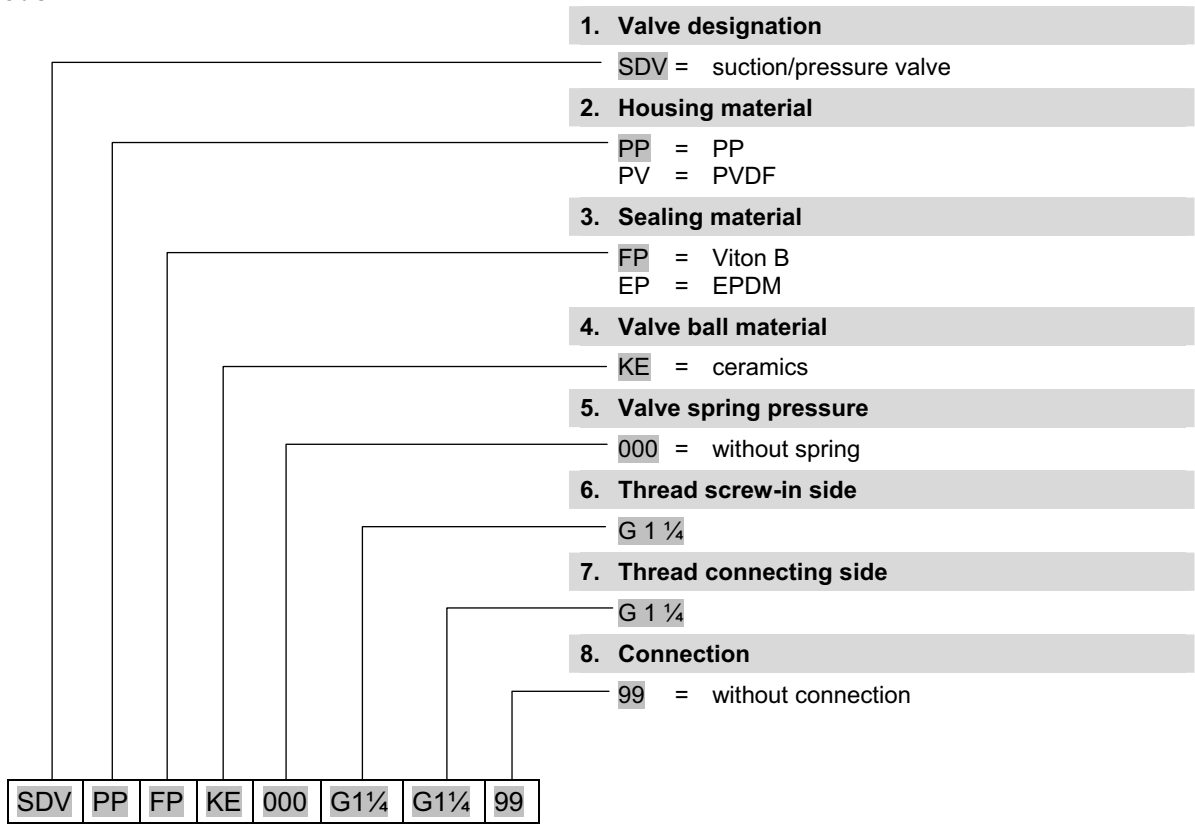
19	Oval head screw M4 x 16 VA	413119230
20	Front panel for version E00 Front panel for version E10	34950161 34950173
21	Protective cap for flip switch (E10 only)	418244179
22	Glow lamp 230 V (version E10 only) Glow lamp 115 V (version E10 only)	419011422 419011423
23	Flip switch Lever type slip-on sleeve for flip switch	418244171 418244180

**only for version E 60**

24	EJOT-PT - Screw KB 30 x 8	413071033
25	Connector mounting	34950125
26	Connector, two-pole, RM 5.08	418461544
27	Switch connecting cable	249690
28	Toggle switch Slip-on lever sleeve for toggle switch	418244171 418244180
29	Connecting cover	34950119
30	Sealing cord Ø 2 mm in connecting cover (0.37 m) (available by the meter)	417401005
31	Oval head bolt M4 x 30	413119236
32	Connection label E60	34950131
33	Dummy plug M16 x 1.5	418441042
34	Flange connector, 3-pole M12	34950209
35	Dummy connector, "Empty" signal input	248186
36	Threaded cable union M16 x 1.5	418441010
37	See-through cover	34950120
38	Dummy plug M12 x 1.5	418441041
39	Protective cap for toggle switch	418244179
40	Threaded cable union M12 x 1.5	418441009



**Valve code**



Connection material see page 16

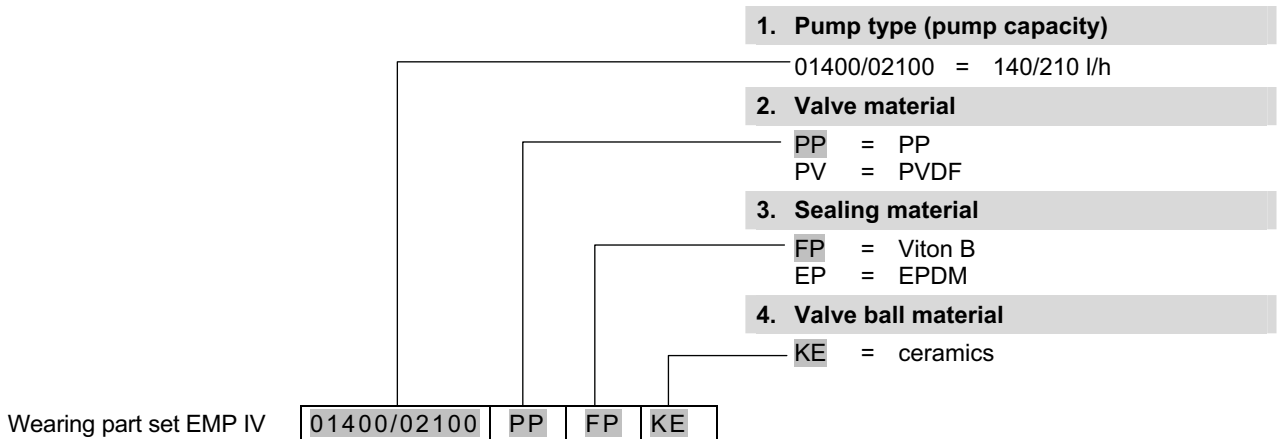


### Set of wearing parts (complete)

consisting of 1 piece each:

- Suction valve with hose connection material
- Pressure valve with hose connection material
- Diaphragms
- Supporting ring

Article	Code	Material-No.
<b>Wearing part set</b>	EMP IV 01400/02100 PP FP KE	250160
	EMP IV 01400/02100 PP EP KE	250161
	EMP IV 01400/02100 PV FP KE	250162
	EMP IV 01400/02100 PV EP KE	250163





## EMP IV HP (High Pressure)

**Note:** The pump versions EMP IV HP (High Pressure) 01400 and 02100 can be operated with a higher metering back pressure. The below pictured pump key enables the configuration of the desired EMP IV HP pumps.

### Pump code – part 1

#### 1. Electrical version (please see page 7)

E 00

E 10

**E 60**

#### 2. Pump capacity 50 Hz [60 Hz]

01400 = 135 l/h [162 l/h]  
02100 = 202 l/h [242 l/h]

#### 3. Pump material

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

#### 4. Metering back pressure (depends on pump capacity)

10 = 10 bar (for 202 l/h) [8 bar]  
**12** = 12 bar (for 135 l/h) [9.6 bar]

#### 5. Sealing material

EP = EPDM  
**FP** = Viton B (standard)  
KA = kalrez  
PT = teflon

#### 6. Valve ball material

**KE** = ceramics (standard)  
VA = stainless steel  
PT = teflon

#### 7. Valve material

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

#### 8. Valve spring

**99** = without spring (standard)

#### 9. Mains supply

**99** = without cable (standard)

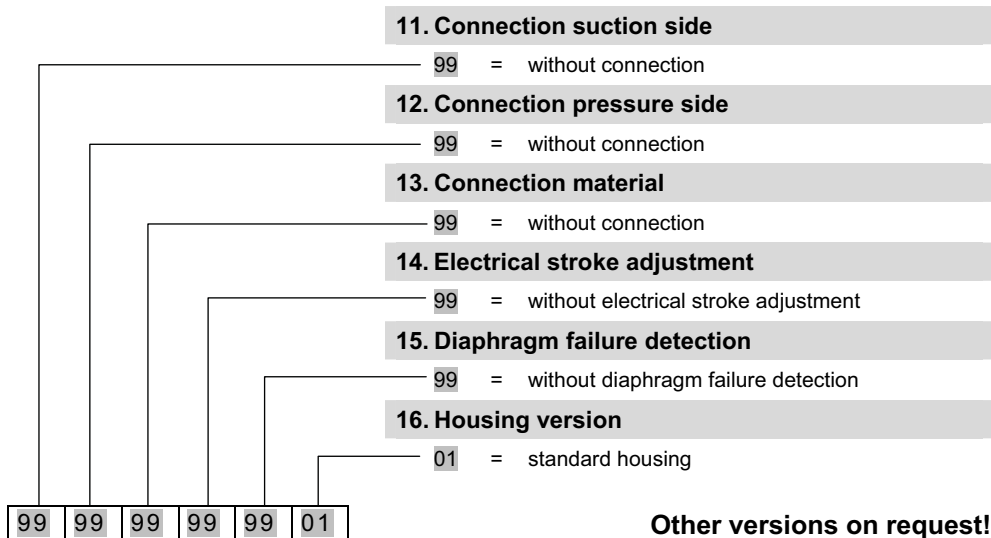
#### 10. Power supply

01 = 115 V / 50 Hz  
02 = 115 V / 60 Hz  
**03** = 230 V / 50 Hz  
04 = 230 V / 60 Hz  
10 = 3PE 400/230 V 50/60 Hz (only for version E00)

E60 01400 PP 12 FP KE PP 99 99 03

**Other versions on request!**

**Pump code – part 2**



Example of a complete pump code of a **EMP IV HP** pump:

E60	01400	PP	12	FP	KE	PP	99	99	03	-	99	99	99	99	99	01
-----	-------	----	----	----	----	----	----	----	----	---	----	----	----	----	----	----

(Pump code 1)

(Pump code 2)

**Note:** For pump versions **EMP IV HP** the hose connection material has to be ordered separately.

**Connection material (pressure side)**



**Straight connection PVDF**  
Connection G1/2a for hose 13/20

415102354



**Insertion part PVDF 1 1/4 G1/2i**

34900292



**Union nut PVDF G1 1/4 d25**

415099072

**Pressure lines (available by the metre)**

max. operating pressure [bar] bei 20° C



PVC-fabric 13/20 mm

15

417400128



- Single phase motor with winding protection, standard
- PP plastic material for pump head and valves, standard
- Plastic external housing, metal internal housing
- High delivery capacity at low number of strokes
- Electronics with display and mode switch for simple pre-selection of menu
- Safety diaphragm as a standard feature, signalling of fractures in diaphragm as a standard feature of electronic version
- Evaluation unit for signalling of fractures in diaphragm, standard feature of electronic version
- Selectable error signal relay, standard feature of electronic version
- Mechanical stroke adjustment
- Empty signal report and level pre-warning
- Empty signal and stroke signal output
- Pulse control
- Pulse multiplication and division
- Pulse storage
- Stroke frequency regulation
- Standard signal drive
- External metering stop
- Single stroke control



The ELADOS® EMP IV series of metering pumps is based on the building block principle. Devices of this series comprise the drive unit, the gear, the metering pump head and the electronics. Different electronic control variants guarantee that the pump

may be adapted to any processing sequence for proportional or quantity metering. The scope of delivery is rounded off by practical accessories, so forming a complete range of equipment for all metering applications.



**Technical Data:**

**Mechanical Data:**

Pump capacity [l/h]:	450	630	750
Metering back-pressure [bar]:	6	4	3
Delivering capacity per stroke [cm <sup>3</sup> ]:	62,5	87,5	87,5
Metering accuracy:	<± 3 %		
Suction height:	2 mWs, suction height with clean, slightly wet valves		
Metering frequency max:	122 / 122 / 146 1/min		
Pressure valve:	without spring		
Suction valve:	without spring		
Ambient temp. max.:	40° C		
All information relates to water at 20° C			

**Materials:**

Housing:	thermoplastic polyester
Pump head:	polypropylene <b>PP</b> <b>optional:</b> PVDF or stainless steel 1.4571
Diaphragm:	PTFE - EPDM compound diaphragm
Seals:	FPM 602 (Viton B) <b>optional:</b> EPDM or Kalrez
Valve balls:	ceramics <b>optional:</b> PTFE or stainless steel 1.4401
Weight [kg]	approx. 25
Colour:	blue RAL 5007

Special versions on request

All values at 50 Hz. All data refer to water temperature of 20° C according to the instructions of the technical manual, subject to!

**Electrical Data:**

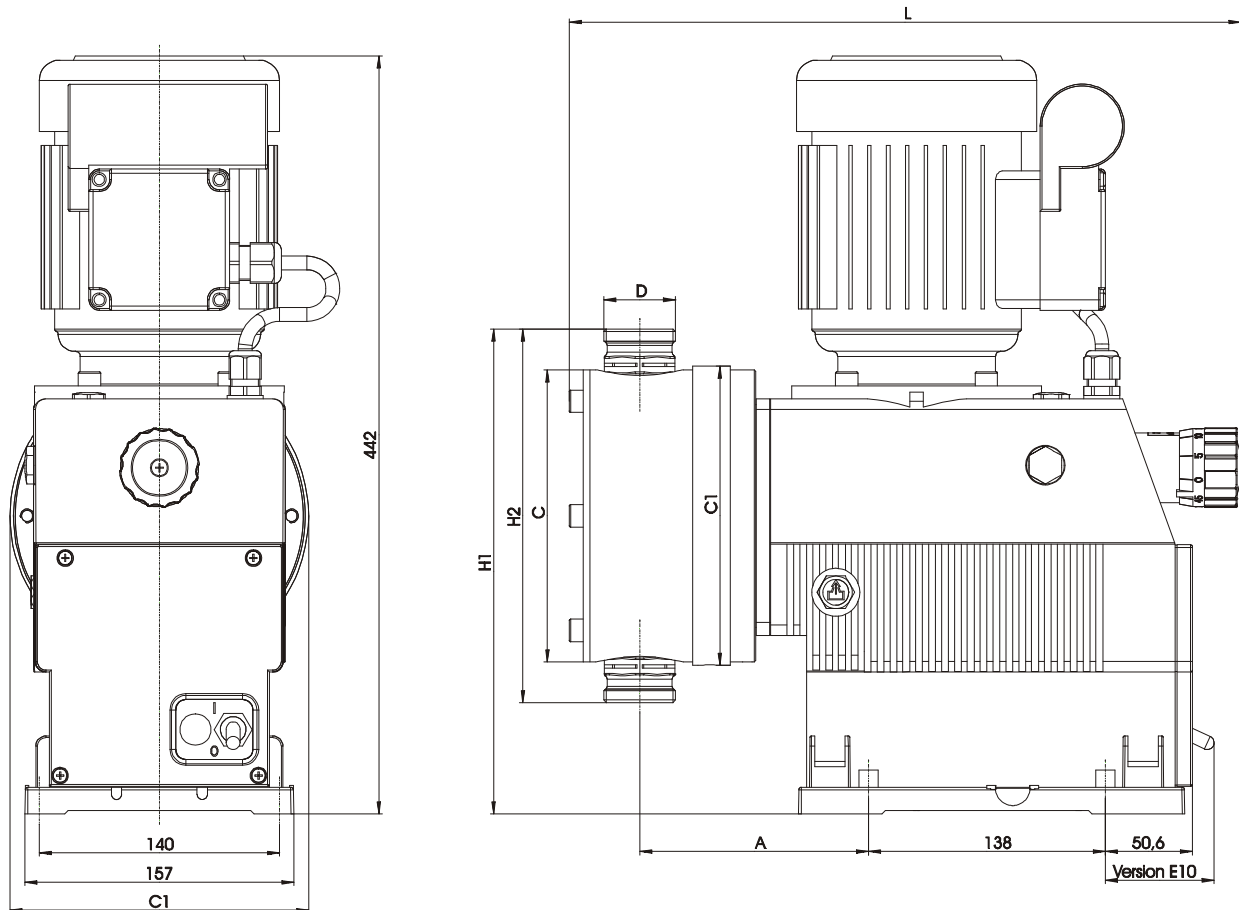
Connection:	230 V / 50 Hz 400 V / 50/60 Hz (only with E00)
Note:	At a mains frequency of 60 Hz delivery capacity increases by 20 % and back-pressure decreases by 20 %. Special voltages on request
Current consumption [A]:	2,3 (50 Hz)
Power output [kW]:	0,37 (50 Hz)
Safety type:	IP 55
Insulation class:	F

**Notice:** To guarantee the newest state of our products, we reserve the rights for single technical changes.



### Dimensions:

Version E 00 / E 10

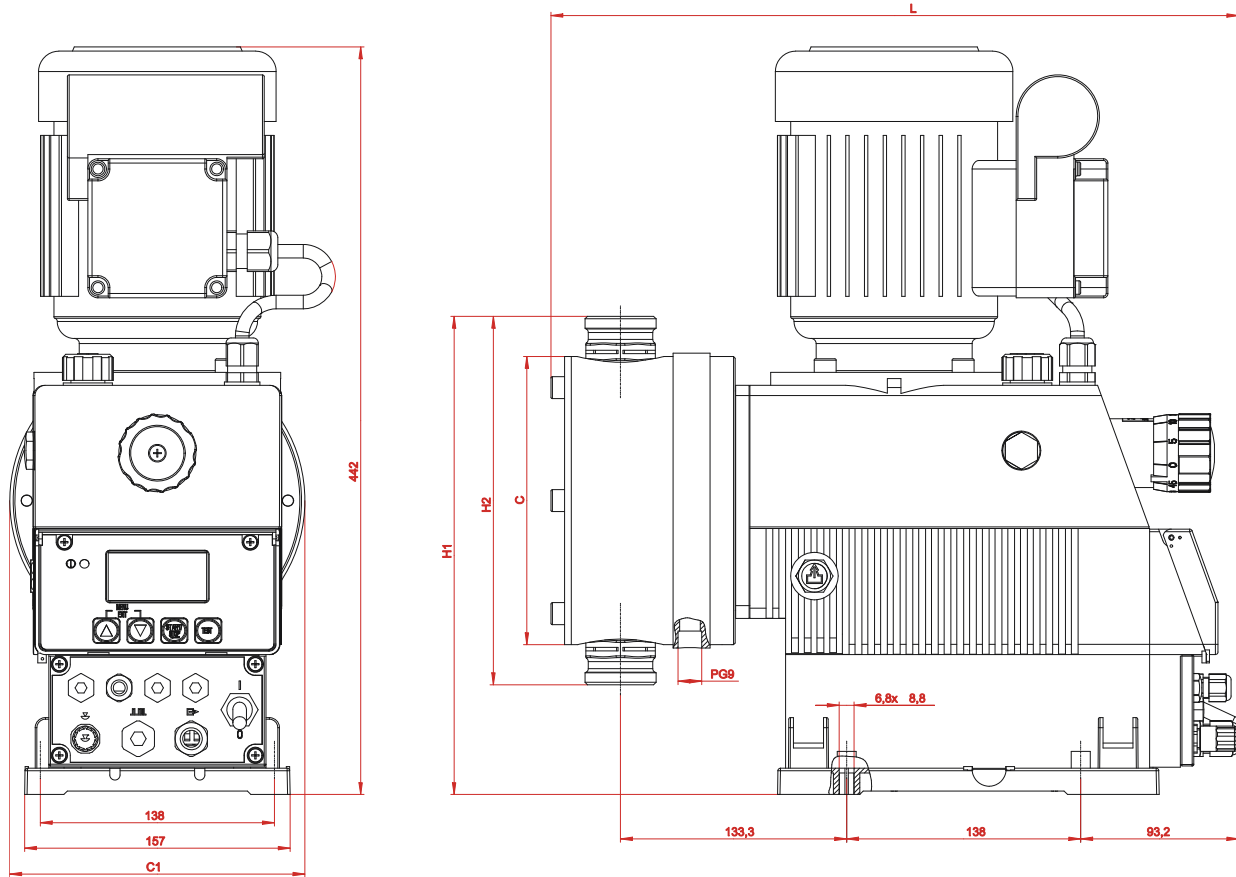


Capacity l / h	Dimensions in mm						
	A	C	C1	L	H1	H2	D
450	142,5	190	194	412	303,5	263	2"
630	142,5	220	225	412	318,5	293	2"
750	142,5	220	225	412	318,5	293	2"





Version E 60



Capacity l / h	Dimensions in mm				
	C	C1	L	H1	H2
450	190	194	412	303,5	263
630	220	225	412	318,5	293
750	220	225	412	318,5	293



### Pump code – part 1

**1. Electrical version** (please see legend on page 7)

E 00  
E 10  
E 60

**2. Pump capacity 50 Hz [60 Hz]**

04500 = 450 l/h [540 l/h]  
06300 = 630 l/h [756 l/h]  
07500 = 750 l/h [900 l/h]

**3. Pump material**

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

**4. Metering back pressure** (depends on pump capacity)

03 = 3 bar (for 750 l/h) [2,6 bar]  
04 = 4 bar (for 630 l/h) [3,2 bar]  
06 = 6 bar (for 450 l/h) [4,8 bar]

**5. Sealing material**

EP = EPDM  
FP = Viton B (standard)  
K = kalrez

**6. Valve ball material**

KE = ceramics (standard)  
VA = stainless steel  
PT = teflon

**7. Valve material**

PP = PP (standard)  
PV = PVDF  
VA = stainless steel

**8. Valve spring**

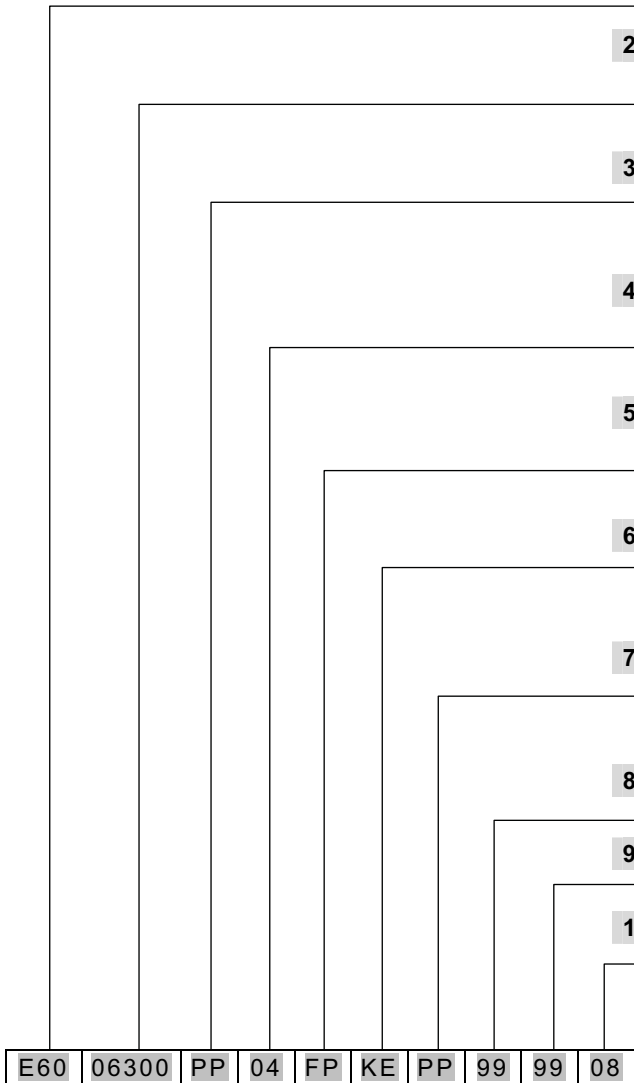
99 = without spring (standard)

**9. Mains supply**

99 = without cable (standard)

**10. Power supply**

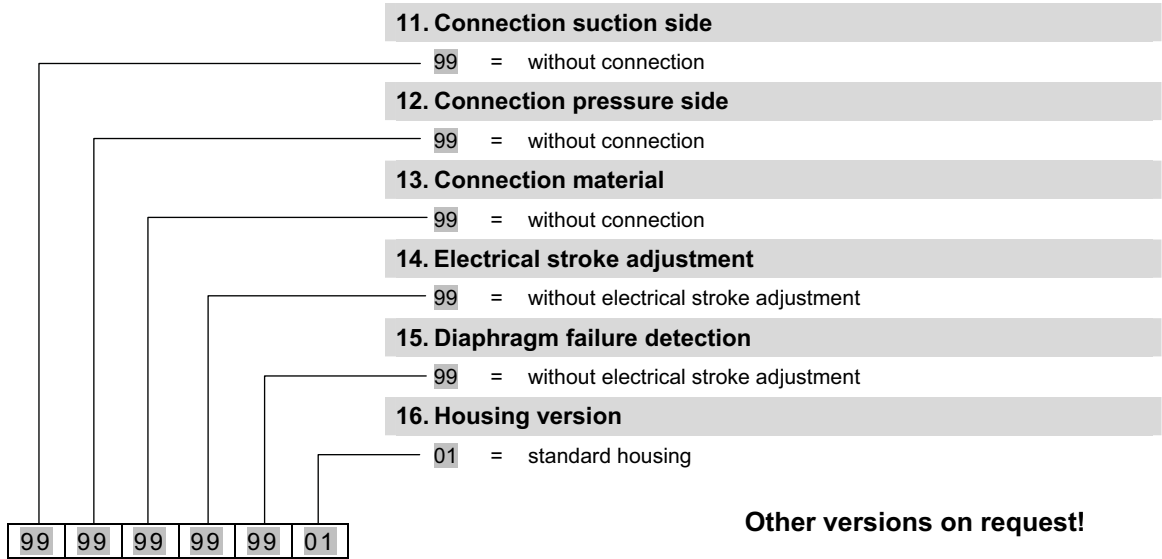
08 = 230V / 50/60 Hz  
09 = 115V / 50/60 Hz  
10 = 3PE 400/230 V 50/60 Hz (only for version E00)



**Other versions on request!**



**Pump code – part 2**



Example of a complete pump code of a standard pump:

E60	06300	PP	04	FP	KE	PP	99	99	08	-	99	99	99	99	99	01
(Pump code 1)								(Pump code 2)								



## Electrical versions

**E 00** Mechanical stroke adjustment

**E 10** On / off switch, mechanical stroke adjustment

- E 60**
- On / off switch
  - Mechanical stroke adjustment
  - Back-lit graphic display, 4 operating keys
  - Single stroke control (each stroke is completely executed)
  - Metering monitoring via stroke-signal output or via external metering-monitoring system (e.g. liquid level switch) possible
  - Registration of operating and consumption data (calculative)
  - Calibration function
  - Diaphragm failure detection

### Selectable operating modes:

#### **Internal mode**

Selection of metering rate/metering frequency via:

- Strokes/min
- Percent
- Liter/h (or gallon/h)

#### **External mode**

- Pulse mode (actuation via pulses)
  - Pulse multiplication (one incoming pulse = n metering strokes)
  - Pulse division (n incoming pulses = 1 metering stroke)
- Standard signal mode (actuation via external standard signal 0/4-20 mA or 20-0/4 mA)
- Charge mode (a previously selected quantity is metered, with initiation via an external initiation pulse)

#### **Inputs:**

- Level monitoring, package vessel (reserve and empty signal)
- Pulse
- Standard signal
- Enable (metering interlock)
- Metering control

#### **Outputs:**

- Level monitoring package vessel / malfunction
- Stroke signal



**Ordering data – standard pumps:**

Article	Pump code	Material-No.
ELADOS® EMP IV	E00 04500 PP 06 FP KE PP 99 99 08 - 99 99 99 99 01	150301
	E00 04500 PP 06 FP KE PP 99 99 10 - 99 99 99 99 01	150341
	E00 06300 PP 04 FP KE PP 99 99 08 - 99 99 99 99 01	150401
	E00 06300 PP 04 FP KE PP 99 99 10 - 99 99 99 99 01	150441
	E00 07500 PP 03 FP KE PP 99 99 08 - 99 99 99 99 01	150501
	E00 07500 PP 03 FP KE PP 99 99 10 - 99 99 99 99 01	150541

**Extent of supply:** Terminal box on motor,  
operating instructions  
**without** hose connection material  
**without** connector cable

ELADOS® EMP IV	E10 04500 PP 06 FP KE PP 99 99 08 - 99 99 99 99 01	150310
	E10 06300 PP 04 FP KE PP 99 99 08 - 99 99 99 99 01	150410
	E10 07500 PP 03 FP KE PP 99 99 08 - 99 99 99 99 01	150510

**Extent of supply:** Terminal box on motor,  
operating instructions  
**without** hose connection material  
**without** connector cable

ELADOS® EMP IV	E60 04500 PP 06 FP KE PP 99 99 08 - 99 99 99 99 01	150360
	E60 06300 PP 04 FP KE PP 99 99 08 - 99 99 99 99 01	150460
	E60 07500 PP 03 FP KE PP 99 99 08 - 99 99 99 99 01	150560

**Extent of supply:** Terminal box on motor,  
operating instructions  
**without** hose connection material  
**without** connector cable

**Connection material see page 16**

**ELADOS® EMP IV E 60<sup>PLUS</sup>**

with the add-on unit for the capture of operating data (dongle plate) the version E 60 turns to version E 60<sup>PLUS</sup>. For installation of the dongle plate the front panel has to be removed. Then the dongle plate can be plugged on the allocated terminal.



**Article**

**Material-No.**

**Dongle plate**

249629

with the following additional functions:

- Display of real metering quantity/time and automatic readjustment of pump output (only in combination with external flow monitoring system, e.g. oval gear meter)
- Automatic calibration function via oval gear meter
- Consumption data control by means of oval gear meter

**Accessories:**



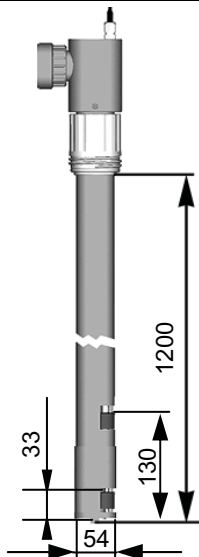
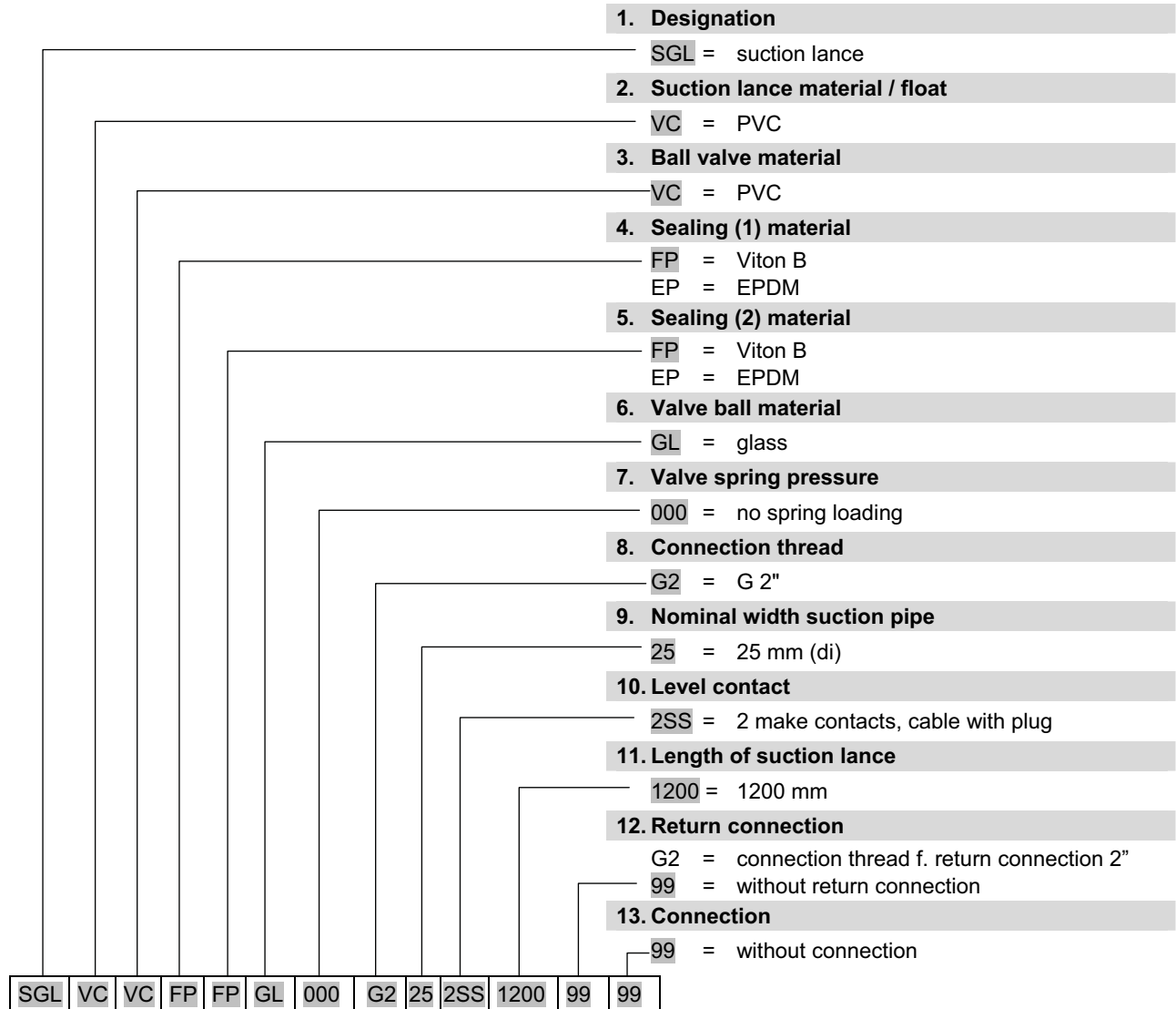
**Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 5 of “Measuring and Controlling”.**



**Suction lances**



**Article**

**Material-No.**

SGL VC VC FP FP GL 000 G2 25 2SS 1200 99 99	250052
SGL VC VC EP EP GL 000 G2 25 2SS 1200 99 99	250054
SGL VC VC FP FP GL 000 G2 25 2SS 1200 G2 99	250055
SGL VC VC EP EP GL 000 G2 25 2SS 1200 G2 99	250056

**Extent of supply:** Connecting seal EPDM (black) or Viton (brown), connection cable 5 m, container screw connection, **without** hose connection

**Connection material see page 16**



**Article**

**Material-No.**

**Suction lance adapter**

417401588

Screw cap DN 150 for container with bung plug

**Suction and pressure lines**

available by the metre  
max. operating pressure: 15 bar (at 20° C)



PVC-fabric, 19/27 mm (int.Ø/ext.Ø)\*

417400131

PVC-fabric, 25/34 mm (int.Ø/ext.Ø)

417400139

PVC-fabric, 30/38 mm (int.Ø/ext.Ø)

417400136

PVC-fabric, 32/42 mm (int.Ø/ext.Ø)

417400135

\*up to max. 450l/h on the pressure side

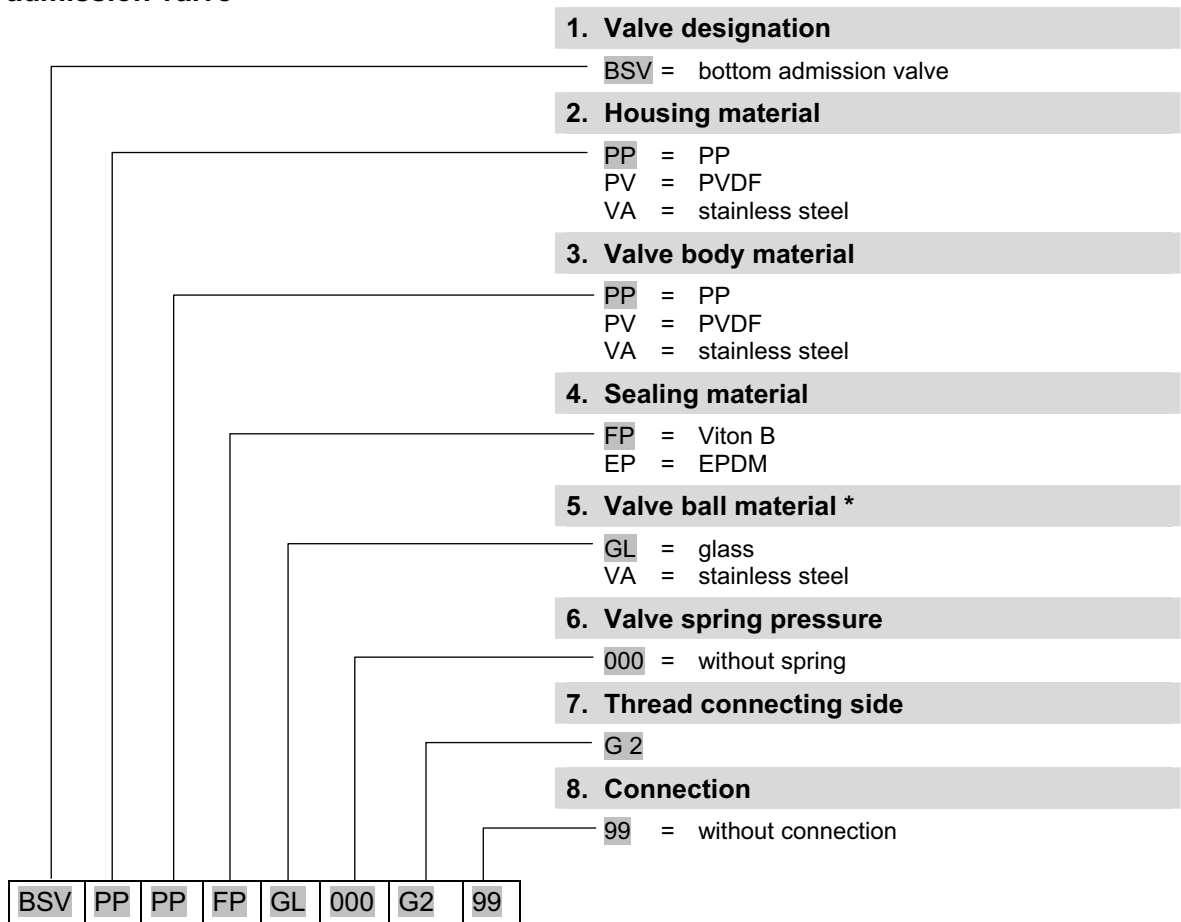
**Note:**

**We explicitly point out that PVC fabric tubes have a limited lifetime if alkaline chemicals will be used. To avoid damage for your staff and your company the tubes have to be exchanged at least every 6 months. In case of non-compliance we exclude all kinds of liability and responsibility.**





**Bottom admission valve**



Article	Material-No.
BSV PP PP FP GL 000 G 2 – 99	250007
BSV PP PP EP GL 000 G 2 – 99	250008
BSV PV PV FP GL 000 G 2 – 99	250009
BSV PV PV EP GL 000 G 2 – 99	250010
BSV VA VA FP VA 000 G 2 – 99	on request
BSV VA VA EP VA 000 G 2 – 99	on request

**Connection material see page 16**

\* standard valve ball material will soon be changed to ceramics



**Article**

**Material No.**



**Pulsation damper**

To reduce pressure peaks and pulsation at oscillating rotary pumps at the pressure side and to prevent cavitating at the suction side.

Stroke volume: 120 cm<sup>3</sup>/stroke  
 Admissible nominal pressure: 10 bar  
 Thread connection: G 1 ¼

**PDS 750 D32 PP/Hypalon**

415503007

Housing material: PP  
 Sealing/diaphragms: Hypalon

**PDS 750 D32 PP/Viton**

415503008

Housing material: PP  
 Sealing/diaphragms: Viton



**Manometer**

415502560

0-10 bar, connection G ¼

**Attention:**

When adjusting the initial pressure the pulsation damper has to be relieved on the metering media side.



**Reduction G ½ a – G ¼ i**

415202771

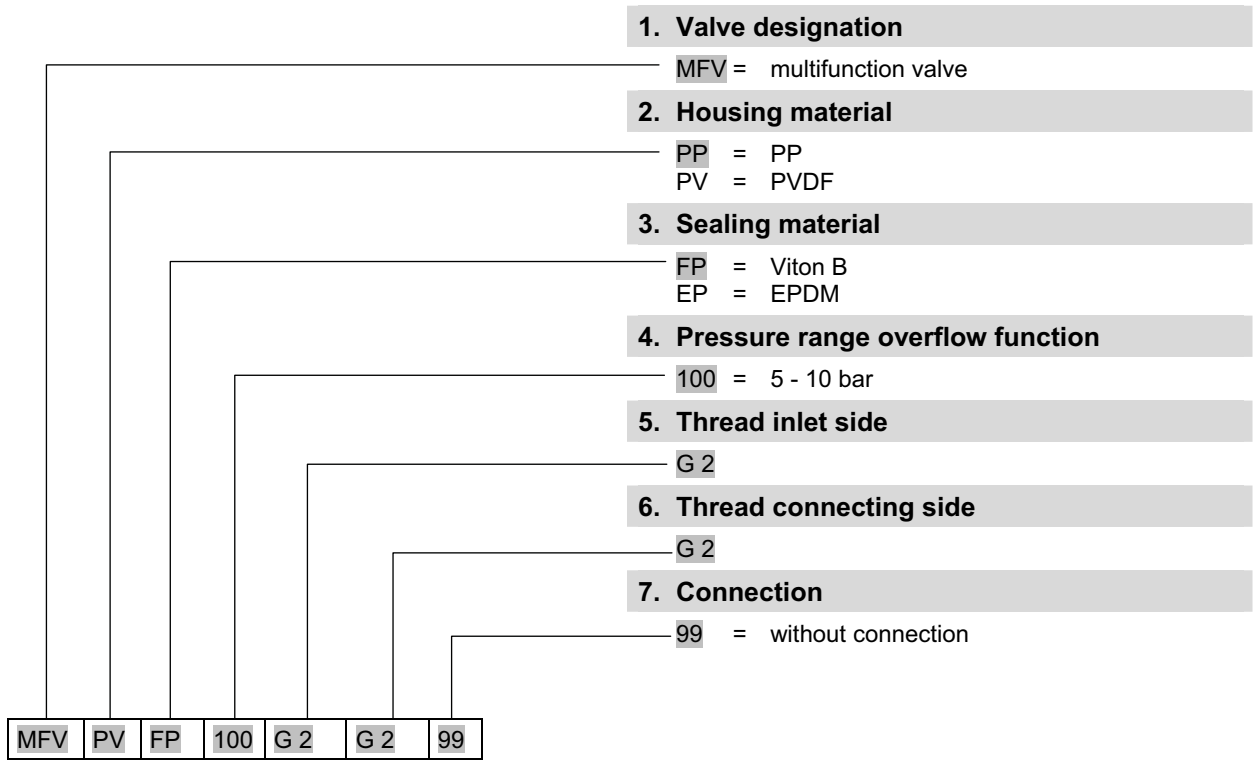


**Pump bracket**

250047

stainless steel, incl. mounting accessories  
 bracket with holder out 4 edge hollow profile  
 with movable fixing plate

**Multifunction valve**



This safety-relevant component serves the purpose of protecting the piping system and the metering pump and permits safe and reliable commissioning and maintenance of the system.

The multiple function valve combines all of the following functions: **overflow, pressure maintenance, venting and drainage**

Dimensions (L \* D \* H): 341 x 160 x 200 mm



Article	Material-No.
MFV PP FP 100 G 2 – G 2 – 99	250062
MFV PP EP 100 G 2 – G 2 – 99	250063
MFV PV FP 100 G 2 – G 2 – 99	250066
MFV PV EP 100 G 2 – G 2 – 99	250067

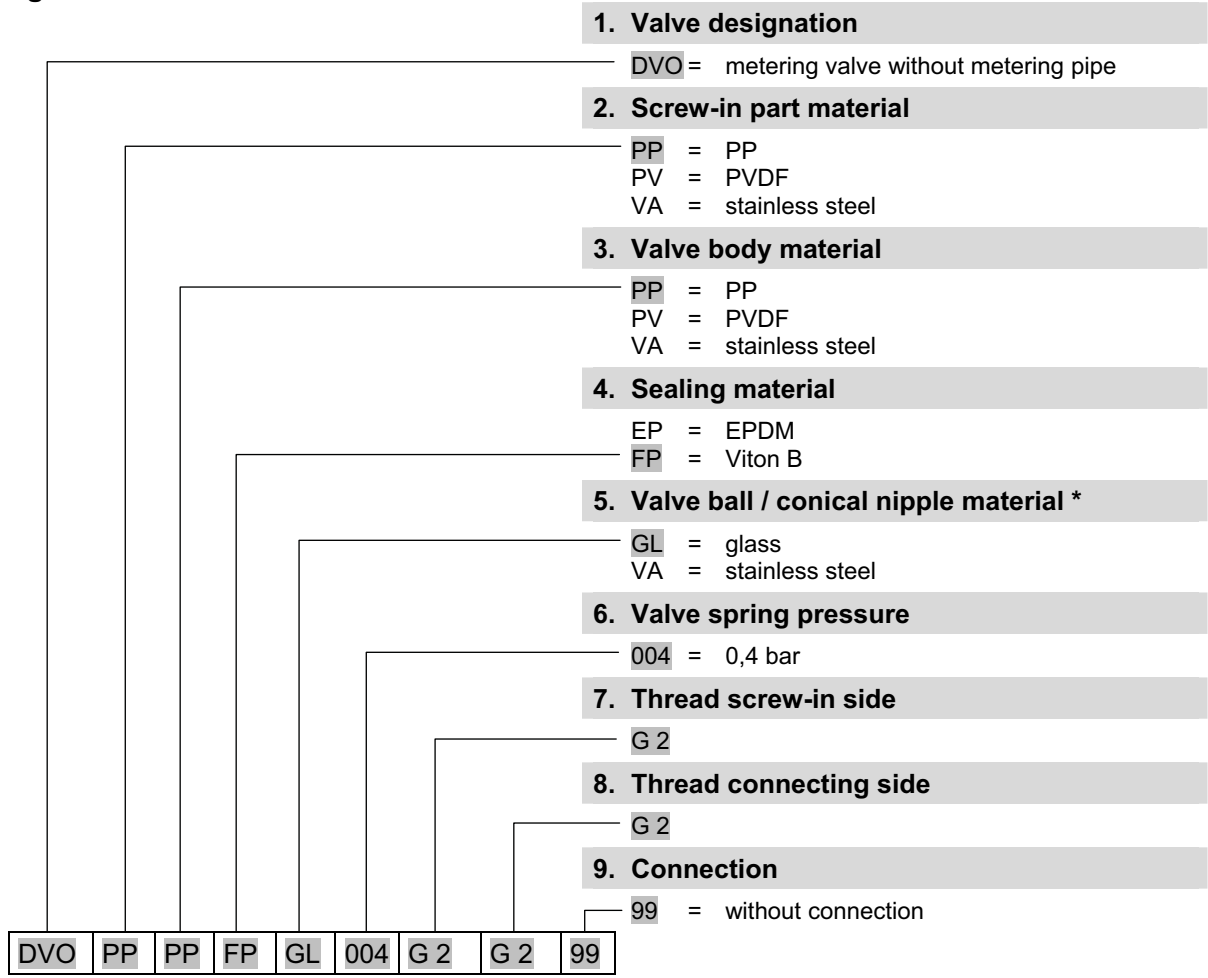
**Extent of supply:** 2 fixing clips with securing bracket (415018707), 3 O-ring seals (417003412) Viton B, user's manual

The multiple function valve should be installed close to the pump on a suitable wall.

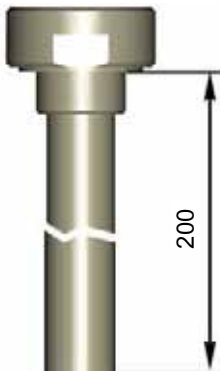
**Connection material see page 16**



**Metering valves**



\* standard valve ball material will soon be changed to ceramics



**Article**

**Material-No.**

DVO PP PP FP GL 004 G 2 – G 2 – 99	250013
DVO PP PP EP GL 004 G 2 – G 2 – 99	250014
DVO PV PV FP GL 004 G 2 – G 2 – 99	250015
DVO PV PV EP GL 004 G 2 – G 2 – 99	250016
DVO VA VA FP VA 004 G 2 – G 2 – 99	on request
DVO VA VA EP VA 004 G 2 – G 2 – 99	on request

**Connection material see page 16**

**Metering pipes**

Metering pipe PP G 1¼ für DVO G 2	250094
Metering pipe PV G 1¼ für DVO G 2	250095

**Connection material for suction and pressure valves,  
bottom admission valves and metering valves  
(to be ordered separately)**

**Article**

**Material-No.**



**Connection to pressure hose nozzle with hose clip**

**Connection set PP, G 2 - NW 25/27**

250096

consisting of:

1 union nut PP G 2 (415099837), 1 pressure hose nozzle PP NW 25/27 (34950254) and 2 hose clips for hose AD 25-40 (415013306)

**Connection set PP, G 2 - NW 30/32**

250097

consisting of:

1 union nut PP G 2 (415099837), 1 pressure hose nozzle PP NW 30/32 (34950255) and 2 hose clips for hose AD 25-40 (415013306)



**Hose clips (stainless steel)**

for hose AD 20-32

415013305

for hose AD 25-40

415013306



**Union nut G 2**

PP

415099837

PVDF

415099074

stainless steel (1.4571)

415205316



**Pressure hose nozzle**

PP NW 20/22

34950253

PP NW 25/27 (ill.)

34950254

PP NW 30/32

34950255

PVDF NW 20/22

34950197

PVDF NW 25/27 (ill.)

34950198

PVDF NW 30/32

34950202

stainless steel (1.4571)

on request



**O-ring**

Viton B 40,87x3,53

417003412

EPDM 40,87x3,53

417001943



**Connection to tubes**

**Article**

**Material-No.**



**Union nut G 2**

PP  
PVDF  
stainless steel (1.4571)

415099837  
415099074  
415205316

**Insertion part 2" (welded bush) for tube connection DN 25 (d32)**



PP  
PVDF

34950191  
34950192

**Insertion part 2" (welded bush) for tube connection DN 32 (d40)**



PP  
PVDF  
stainless steel (screw-in thread G 1¼ i)

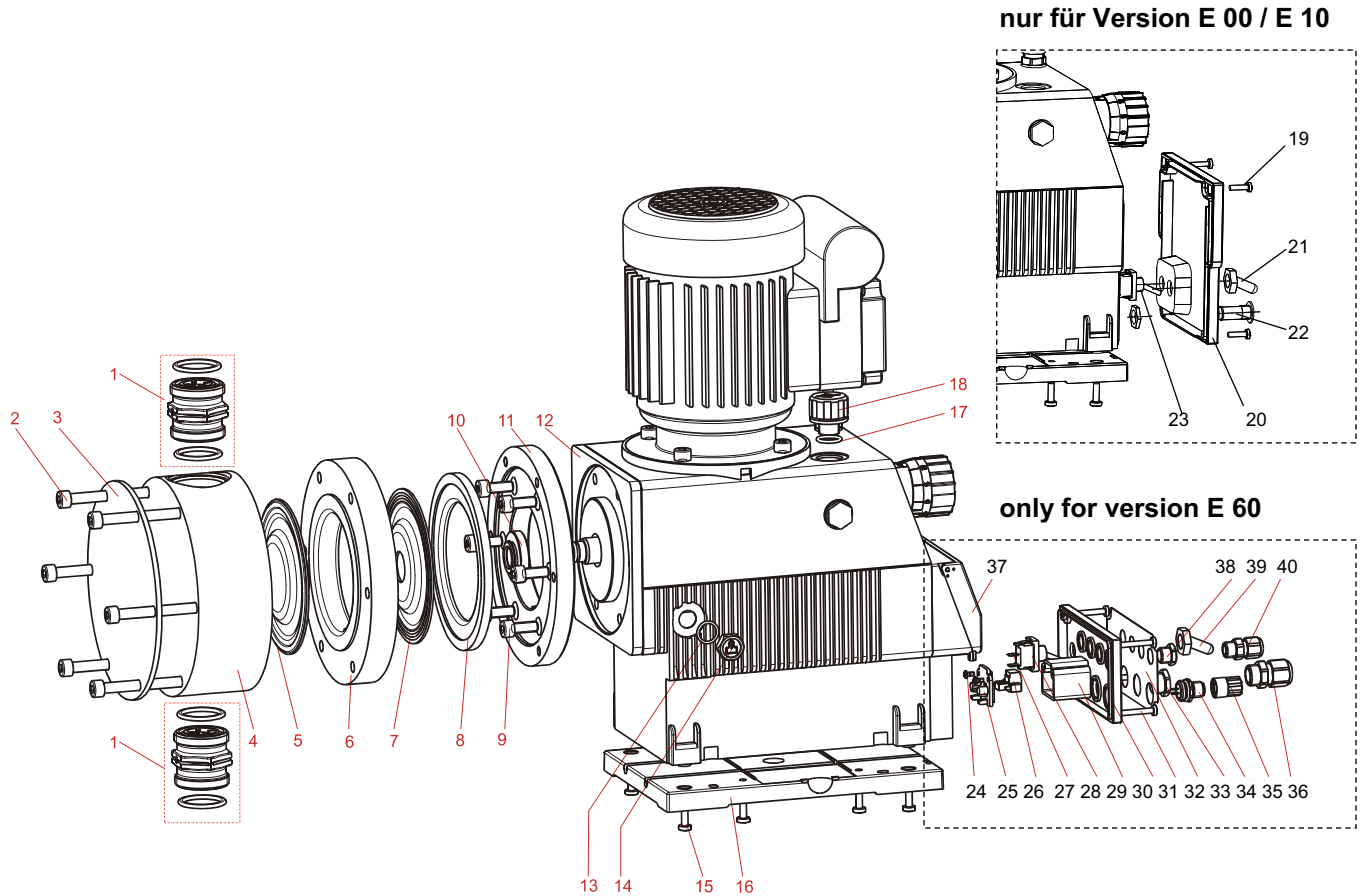
415099711  
415099035  
34950237

**O-Ring**

Viton B     40,87x3,53  
EPDM       40,87x3,53

417003412  
417001943

### Spare Parts:



nur für Version E 00 / E 10

only for version E 60

Item	Article	450 l/h (540 l/h)	630 - 750 l/h (756 - 900 l/h)
1	Suction/pressure valve SDV <b>PP FP</b> KE 000 G2 -G2 - 99* SDV <b>PP EP</b> KE 000 G2 -G2 - 99* SDV <b>PV FP</b> KE 000 G2 - G2 - 99* SDV <b>PV EP</b> KE 000 G2 - G2 - 99*	249503 249504 249505 249506	
2	Hexagon socket screw M8 x 120 VA	413031067	
3	Pressing plate	34950160	34950145
4	Pump head <b>PP</b> Pump head <b>PVDF</b>	34950134 34950138	34950136 34950139
5	Conveying diaphragm	34950153	34950105
6	Intermediate ring <b>PP</b> Intermediate ring <b>PVDF</b>	34950149 34950195	34950151 34950196
7	Protective diaphragm	34950164	34950165
9	Hexagon socket screw M8 x 20 VA	413031055	
10	Receiver disc for protective diaphragm	34950152	
11	Intermediate plate	34950146	34950148

\* Please see page 20 for code declaration



Item	Article	Material-No.
12	Flange plate	34950124
13	O-ring 9 x 2 NBR	417002063
14	Locking nut	415204603
15	Oval head screw M5 x 16 VA	413119274
16	Mounting plate	34950123
17	O-ring 15 x 2,5 NBR	417002137
18	Vent screw	415204601

**only for versions E 00 / E 10**

19	Oval head screw M4 x 16 VA	413119230
20	Front panel for version E00 Front panel for version E10	34950161 34950173
21	Protective cap for flip switch (E10 only)	418244179
22	Glow lamp 230 V (version E10 only) Glow lamp 115 V (version E10 only)	419011422 419011423
23	Flip switch Lever type slip-on sleeve for flip switch	418244171 418244180

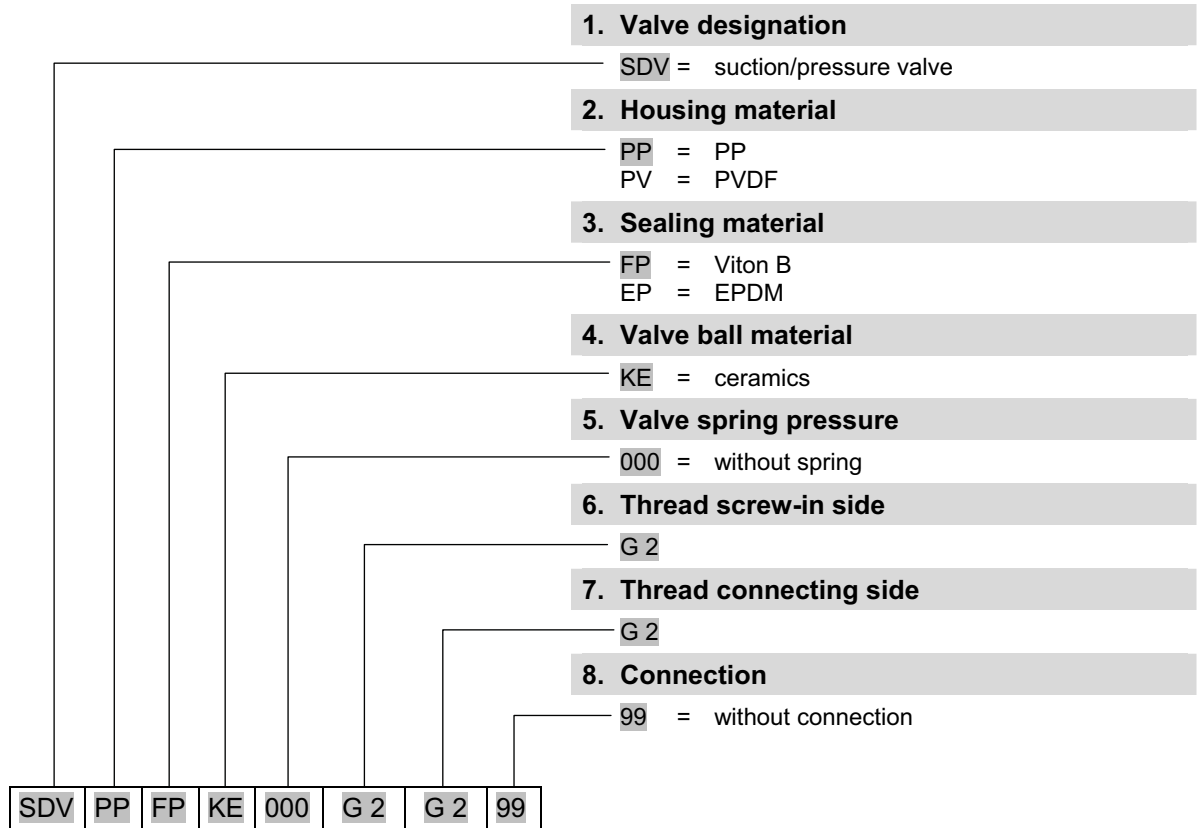
**only for version E 60**

24	EJOT-PT - Screw KB 30 x 8	413071033
25	Connector mounting	34950125
26	Connector, two-pole, RM 5.08	418461544
27	Switch connecting cable	249690
28	Toggle switch Slip-on lever sleeve for toggle switch	418244171 418244180
29	Connecting cover	34950119
30	Sealing cord Ø 2 mm in connecting cover (0.37 m) (available by the meter)	417401005
31	Oval head bolt M4 x 30	413119236
32	Connection label E60	34950131
33	Dummy plug M16 x 1,5	418441042
34	Flange connector, 3-pole M12	34950209
35	Dummy connector, "Empty" signal input	248186
36	Threaded cable union M16 x 1,5	418441010
37	See-through cover	34950120
38	Dummy plug M12 x 1,5	418441041
39	Protective cap for toggle switch	418244179
40	Threaded cable union M12 x 1,5	418441009





**Suction and pressure valve code**



**Connection material see page 16**

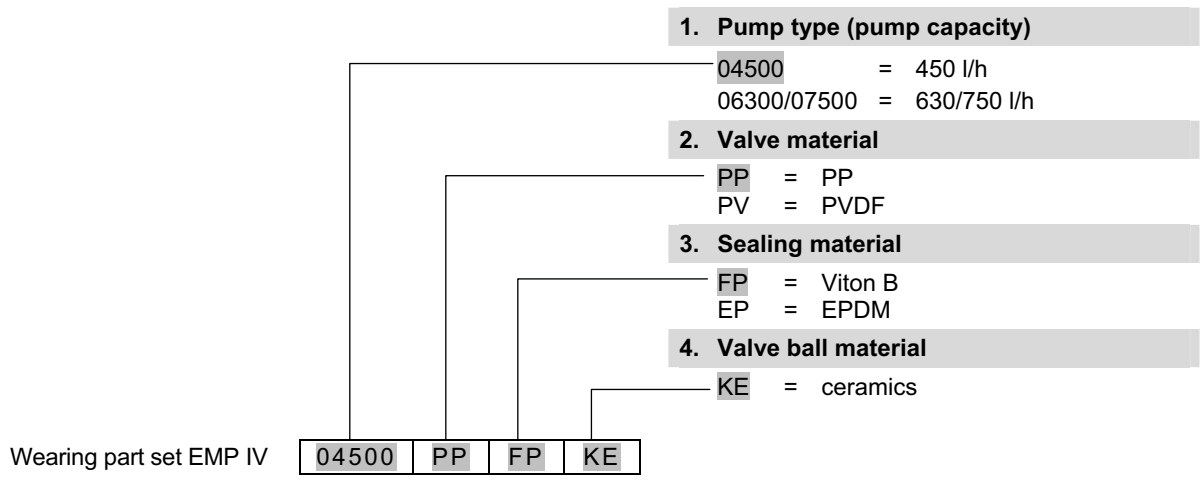


### Set of wearing parts (complete)

consisting of 1 piece each:

- Suction valve with hose connection material
- Pressure valve with hose connection material
- Diaphragms
- Supporting ring

Article	Code	Material-No.
<b>Wearing part set</b>	EMP IV 04500 PP FP KE	250164
	EMP IV 06300/07500 PP FP KE	250165
	EMP IV 04500 PP EP KE	250166
	EMP IV 06300/07500 PP EP KE	250167
	EMP IV 04500 PV FP KE	250168
	EMP IV 06300/07500 PV FP KE	250169
	EMP IV 04500 PV EP KE	250170
	EMP IV 06300/07500 PV EP KE	250171



- For quantity-proportional metering in water post-treatment technology , tested by DVGW (German Assoc. of Gas and Water Experts)
- With electric motor driven diaphragm pump
- With contact water meter as proportional pulse generator
- With mechanical stroke adjustment



The Compact Metering Device ELADOS<sup>®</sup> EMP is specially tailored for use in post-treatment of drinking water and is made on the building block principle. It consists of the proportional pulse generator incl. metering valve and the metering pump. The metering pump is provided with a mechanical stroke adjustment, On-Off- and Test

switch, pulse input, empty signal input with low level pre-warning and 4 LED displays. By appropriately matching all components of the compl. EMP program it is possible to combine metering units for widely varying applications with pump capacities up to 750 l/h and nominal diameters up to DN 150.

### Technical data:

Nominal diameter DN (mm):	20 / R ¾	25 / R 1	40 / R 1½	50 / flange
Nominal flow (m³/h):	2.5	6	10	15
Pump metering capacity l/h:	1.4	1.4	2.5	4.3
Metering capacity max. (cm³/pulse):	0.19	0.19	0.34	0.57
Metering back pressure max. (bar):	10	10	10	10
Pulse interval (l/Imp.):	1	1	2	2.5
Max. concentration (ppm):	190	190	170	228
Connection thread G:	R 1	R 1 1/4	R 2	flange
Electr. connection (V/Hz):	230/50	230/50	230/50	230/50
Power consumption (W):	10.4	10.4	10.4	18.7
Safety type:	IP 65	IP 65	IP 65	IP 65

Type:

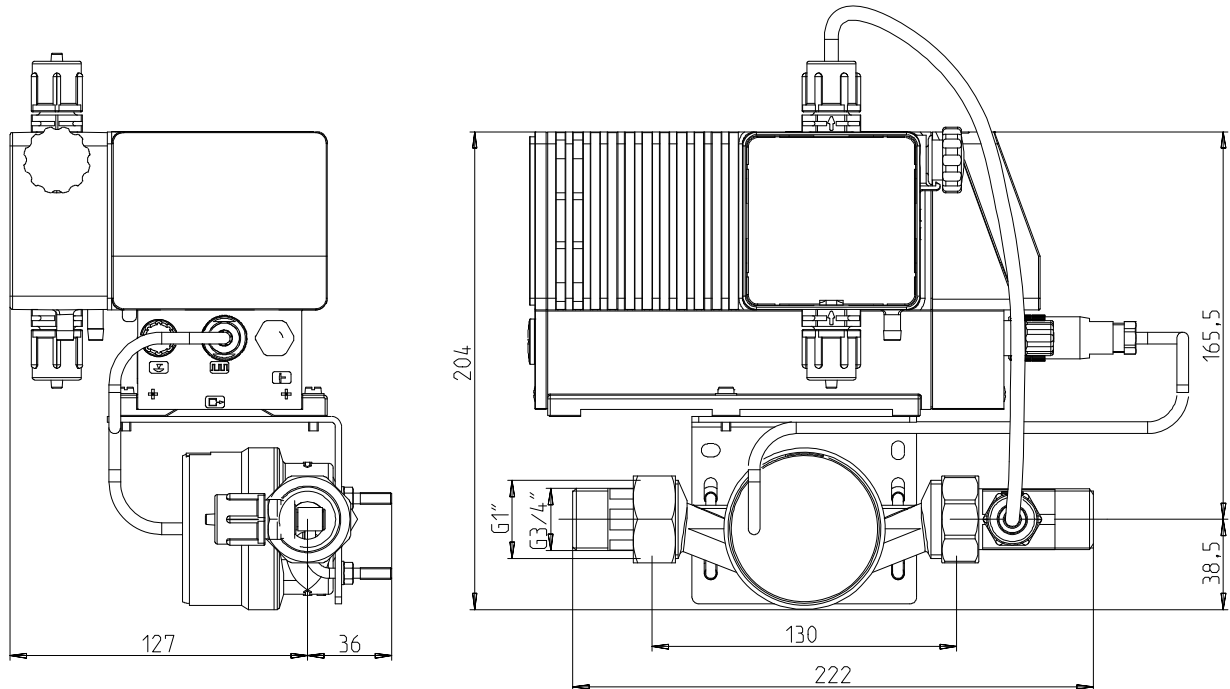
E25V3014PP10DN20

E25V3014PP10DN25

E25V3025PP10DN40

E2500043PP10DN50

## Dimensions:



	DN 20	DN 25	DN 40	DN 50
Length L (without screw connection):	130	260	300	270
Overall length L1 (mm)	222	365	447	--
Weight (kg)	4	5.5	8.1	15.6
Connection-thread G	R 1	R 1 1/4	R 2	Flange
Connection thread G1	R 3/4	R 1	R 1 1/2	Flange

## Ordering data:

Article	Material No.
ELADOS® EMP Compact	
E25 V3014 PP 10 EP KE PP DN20	141260
E25 V3014 PP 10 EP KE PP DN25	141274
E25 V3025 PP 10 EP KE PP DN40	141275
E25 00043 PP 10 EP KE PP DN50	141276

## Extent of supply:

1 contact compact water-meter with screw connection and ready-assembled metering valve, assembled metering pump with connection cable, fixing brackets for water-meter, ready-assembled metering line (approx. 500 mm length) including connecting elements and O-ring seals, 2 m metering line (PE) for use in case of on-wall installation, operating instructions.



**Article**

**Material No.**

**Suction lance D16 with empty signal report**

SGL VCPVFP99GL000-0008-06-1SS-0525-9999

incl. of ball non-return valve, level-pre-warning-contact,  
2 m connecting cable with connector and 2 m suction  
hose 6/8

Length: 525 mm

Nominal width (pipe): 6 mm

Material

Suction lance: PVC

Valve ball: glass

for chemical reservoir 20/30 l length 525 mm

249222



**Suction lance D16 with double empty signal  
report**

incl. of ball non-return valve, suction strainer, level-pre-  
warning-contact, zero-potential empty signal contact  
(level down = contact interrupted), hose connection  
material (4/6 mm, 6/8 mm, 6/12 mm)

Material: PVC

Seals: Viton B

Ball: Glass

Pipe diameter: 16 mm

Suction tube: PE

Connection cable: 3-pole connector incl.  
5 m cable

for chemical reservoir 20/30 l length 540 mm

249020

for chemical reservoir 60 l length 750 mm

249021

for chemical reservoir 100 l length 970 mm

249022

for chemical reservoir 200 l length 1125 mm

249023



**Article**

**Material No.**

**Adapter screw cap**

38619003



for suction lance ø 16 mm  
can be screwed on 10 l and 20 l canister  
Thread pitch: 5 mm  
Threaded internal diameter: 50 mm  
Threaded external diameter: 55 mm

**Adapter screw cap**

38619004

for suction lance ø 16 mm  
can be screwed on 60-200 l chemical reservoir  
or 30 l canister  
Thread pitch: 5 mm  
Threaded internal diameter: 56 mm  
Threaded external diameter: 61 mm

**Adapter cable for EMP II**

248201

between empty signal input plug suction lance EMP old  
and empty signal input EMP II/III

**Suction unit**



with floating empty signal contact  
(empty = contact interrupted)

consisting of:

Bottom admission valve (PVDF), ceramic weight,  
float switch (PVC/PP), 5m connection cable  
with 4-pin plug and PE cover dome

Suction unit for 4/6 mm hose

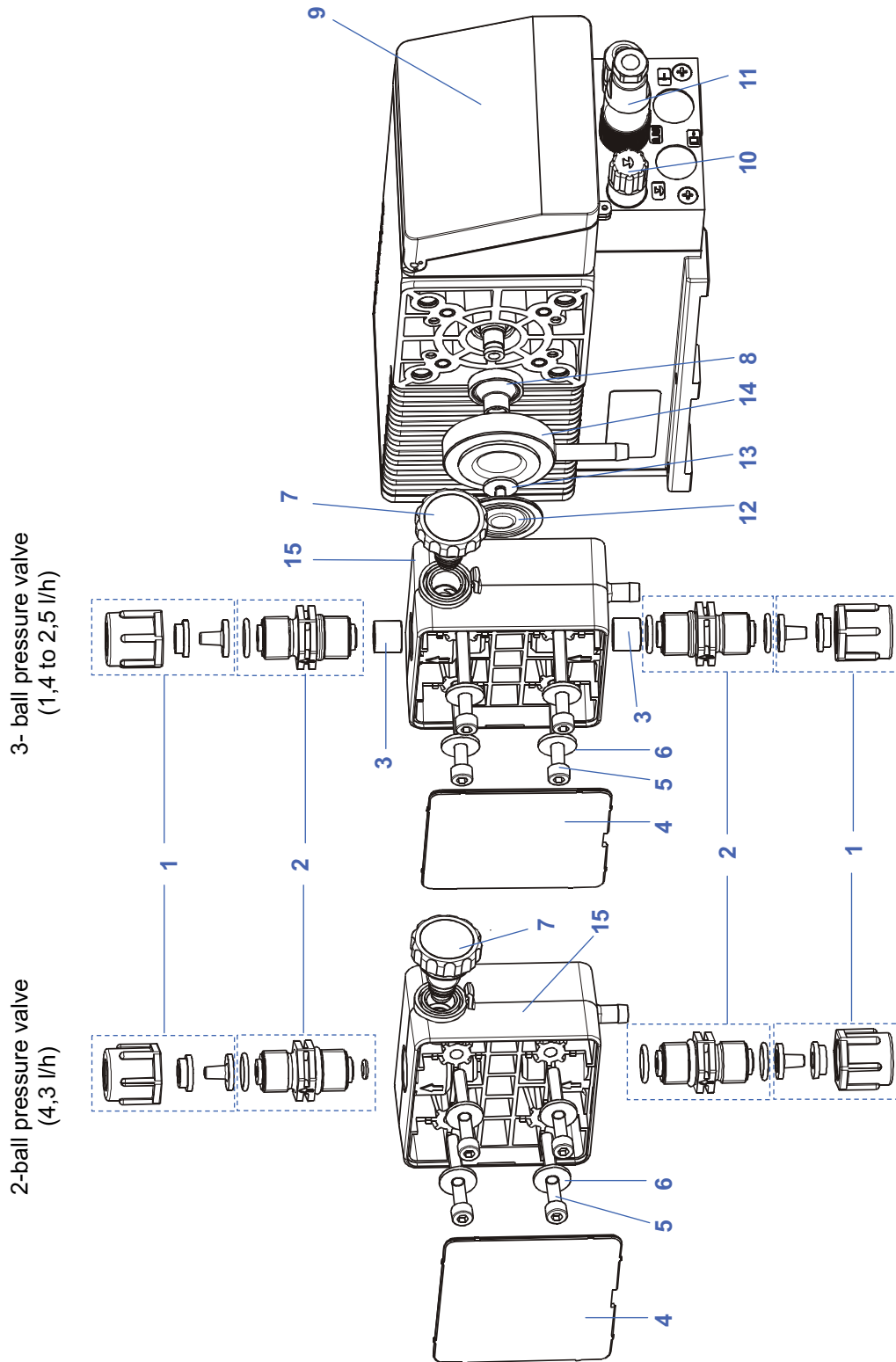
188461

Suction unit for 4/6 mm hose  
with "soft sealing"  
through O-ring

288461

**Spare parts:**

*EMP II pump*





Pos	Article	Material-No.
1	Connection set PP for hose 3/8" – 4/6, 6/8, 6/12 mm	on request
2	Suction/pressure valve, SDV PP EP KE 000 G3/8-G3/8-99	on request
3	Valve cartridge, V3 EMP II FP KE PV (for 1.4 l/h and 2.5 l/h)	248432
4	Cover plate	54000188
5	Hexagon socket screw, M 5 x 40, DIN 912, V2A	41303102 6
6	Washer, B15 x 5.3 x 1.6, DIN9021, ISO7093, V2A	41350172 0
7	Venting screw, PVDF/VITON B	243077
8	Bellow	34800132
9	Transparent enclosure cover	34800120
10	Dummy plug, empty signal and pulse input	248186
11	Plug 5-poles E30/E32, power/pulse input	41846311 8

		type 00014	type 00025	type 00043
12	Diaphragm	34800134	34800155	34800156
13	Supporting disk	34000158	--	34024302
14	Intermediate plate	34800133	34800150	34800151
15	Pump head PP	34800293	34800294	34000186



**Article**

**Material-No.**



**Contact water meter** DN 20, G 1, 1 l / pulse  
(for 141260)

419901047

**Contact water meter** DN 25, G 1 ¼, 1 l / pulse  
(for 141274)

419901237

**Contact water meter** DN 40, G 2, 2 l / pulse  
(for 141275)

419901238

**Contact water meter** DN 50, 2,5 l / pulse  
(for 141276)

419901233



**Contact water meter screw connection**

Material:  
for contact water meter

Brass  
DN 20 (G 1<sub>i</sub> – R ¾<sub>a</sub>)  
DN 25 (G 1¼<sub>i</sub> – R 1<sub>a</sub>)  
DN 40 (G 2<sub>i</sub> – R 1½<sub>a</sub>)

415506343  
415506344  
415506349



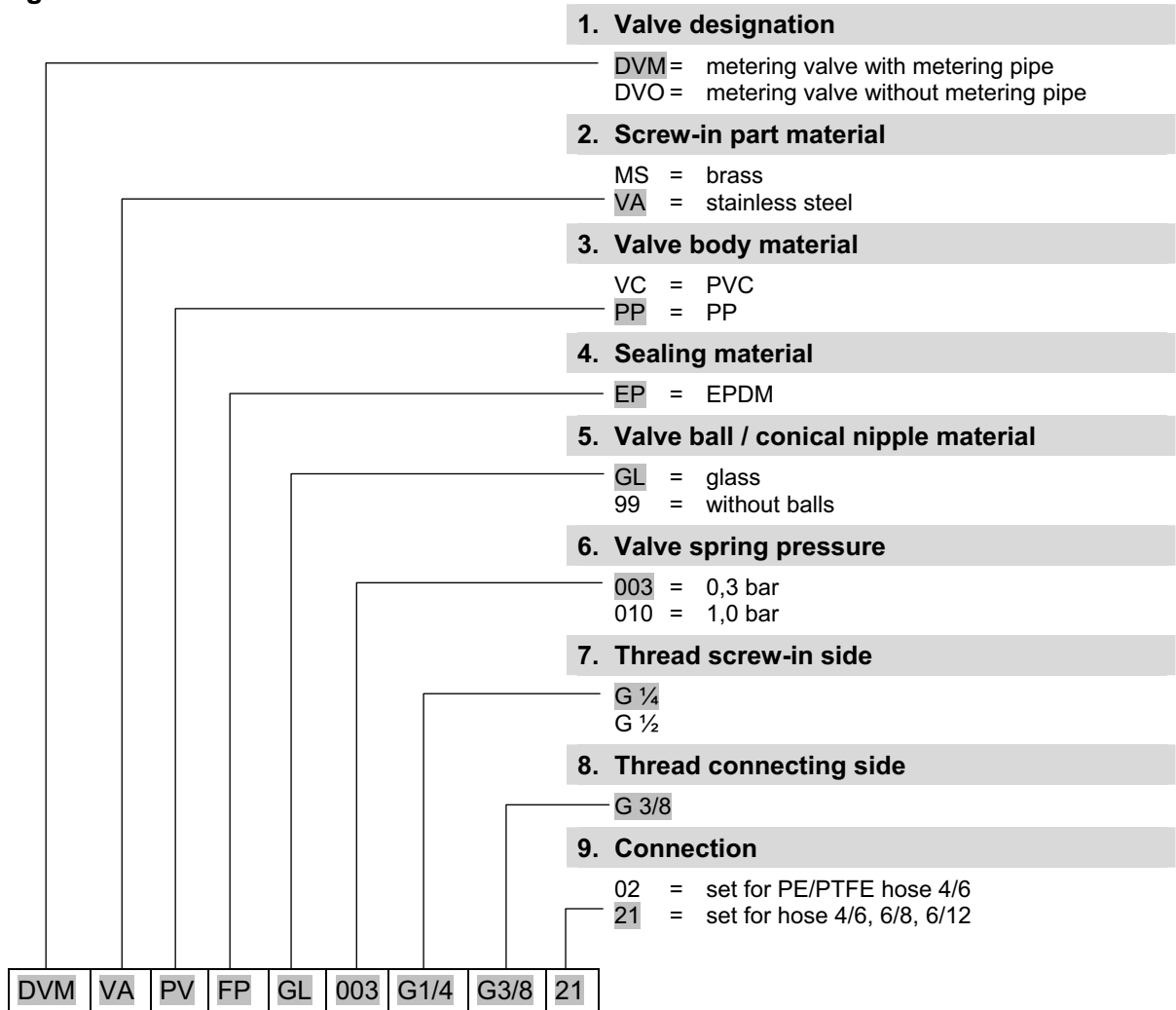
**Contact water meter screw connection  
with hole R 1/4 for metering valve**

Material:  
for contact water meter

Brass  
DN 20 (G 1<sub>i</sub> – R ¾<sub>a</sub>)  
DN 25 (G 1¼<sub>i</sub> – R 1<sub>a</sub>)  
DN 40 (G 2<sub>i</sub> – R 1½<sub>a</sub>)

415506331  
415506332  
415506334

## Metering valves - code



### Article

DVM MS VC EP 99 010 G 1/4 – G 3/8 – 02  
(for 141260)

DVM VA PP EP GL 003 G 1/4 – G 3/8 – 21  
(for 141274 and 141275)

DVM VA PP EP GL 003 G 1/2 – G 3/8 – 21  
(for 141276)

### Material-No.

243016

248053

248054