

- 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
- Metering regulator (readjustment of metering output) in combination with an oval gear meter



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 ± 10 % (100 - 240V 50/60Hz ± 10 % )*** (special voltages on request)								
Current consumption	at 50 Hz [A]		0.06	0.06	0.06	0.21	0.09	0.14 (0.7)***	
	at 60 Hz [A]		0.06	0.06	0.06	0.21	0.09	0.16 (0.7)***	
Power input at 50 Hz [W]	10.4	10.4	10.4	18.7	18.7	30 (25)***			
Power input at 60 Hz [W]	11.5	11.5	11.5	19.8	19.8	34.5 (25)***			
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%

\*\*\* The values in brackets refer to types 00072, 00112, 00240 with BLDC motor (recognizable by voltage indication 100- 240V on identification plate).

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

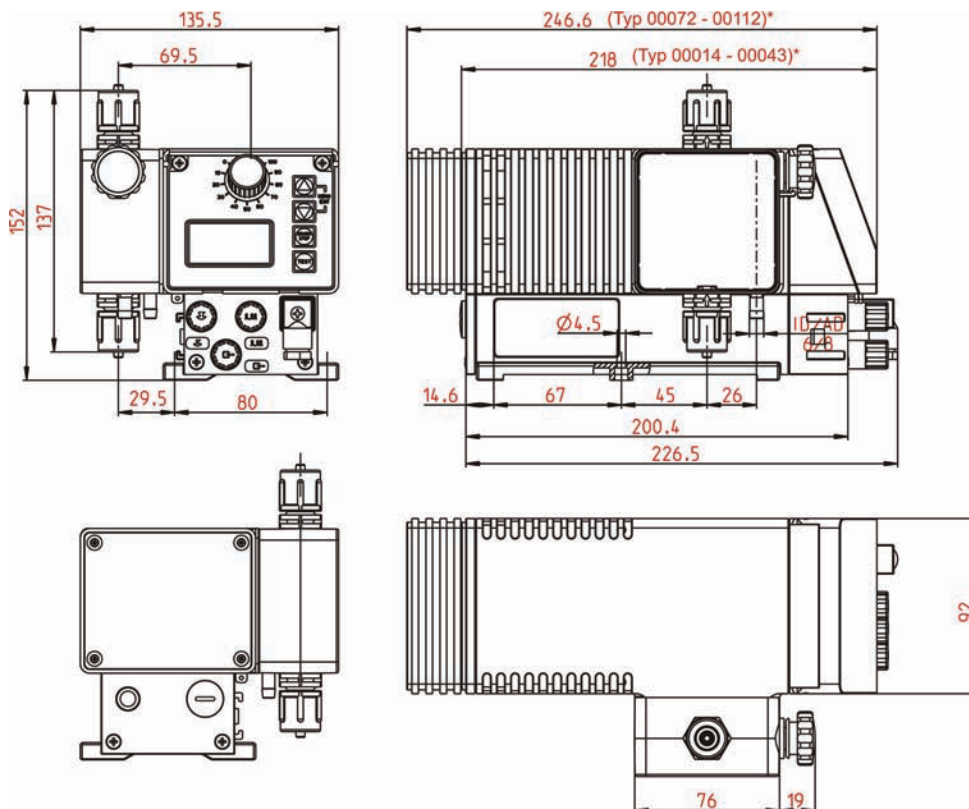
\*For EMP II HP (High Pressure) version see page 33.

Further 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

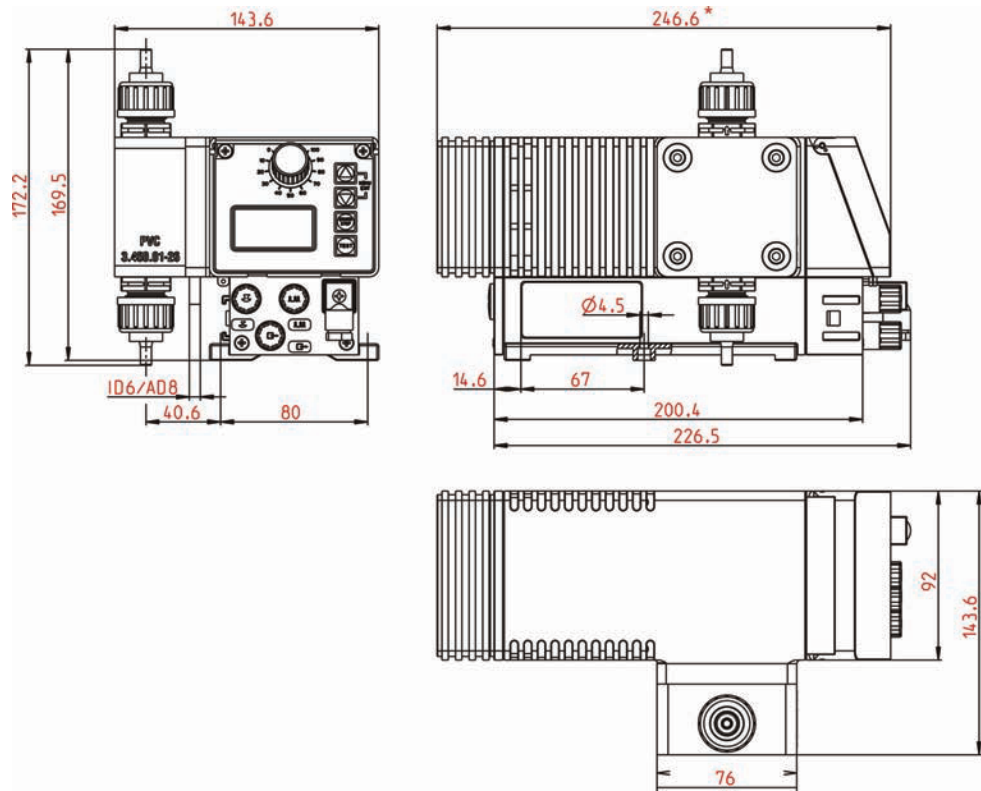
**Dimensions (type V3014 – 00112) :**



\* Linear dimension of types 00072 and 00112 with conventional synchronous motor as shown in the preceding figure (246.6 mm). Linear dimension of types 00072 and 00112 with BLDC motor (recognizable by voltage indication 100-240V on identification plate) identical with types 00014 up to 00043 (218 mm).

**Dimensions (type 00240):**

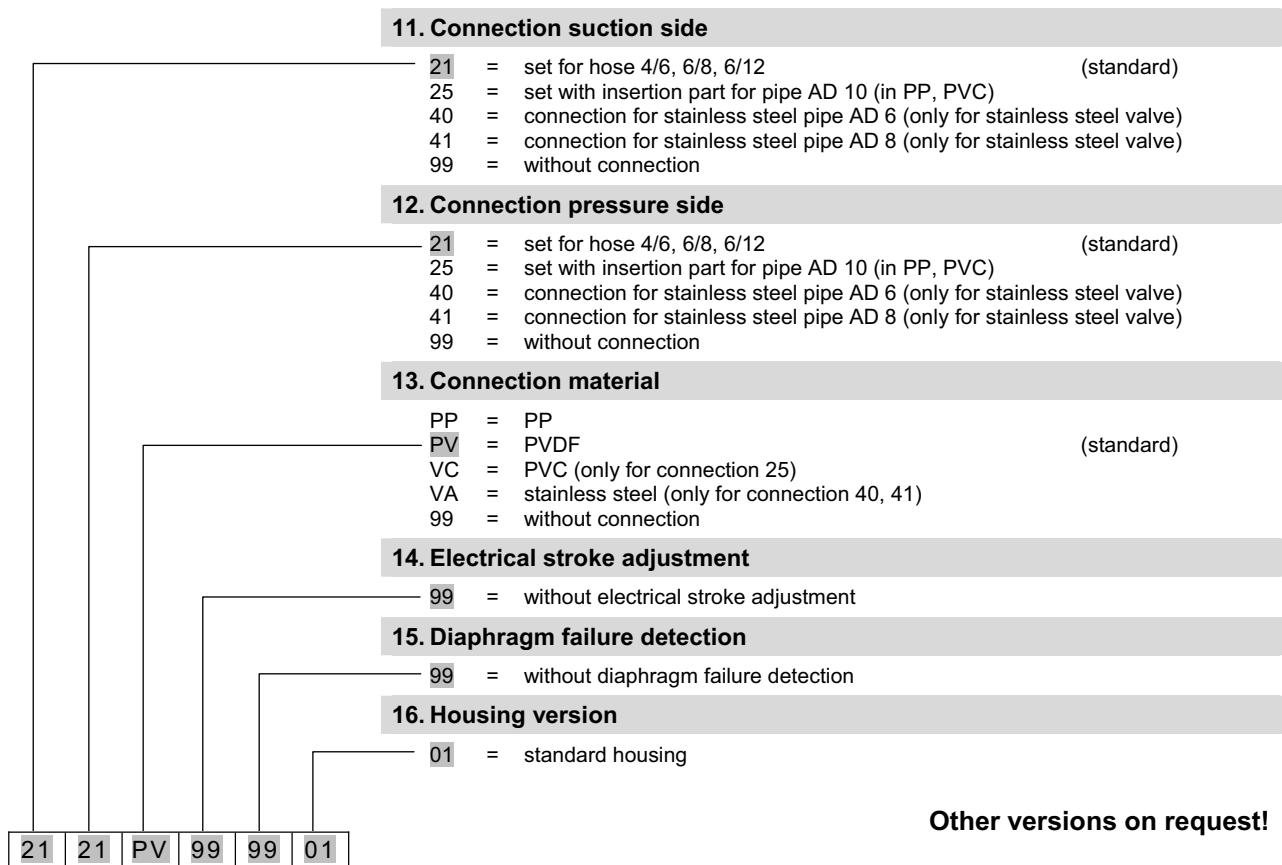
Fig. 14.2



\* Linear dimension of type 00240 with conventional synchronous motor as shown in the preceding figure (246,6 mm).  
Linear dimension of type 00240 with BLDC-Motor (recognizable by voltage indication 100-240V on identification plate) identical with types 00014 up to 00043 (218 mm).



### Pump code – part 2



**Other versions on request!**

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 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	148514
	E10 00112 PV 05 FP KE PV 99 01 03 – 21 21 PV 99 99 01	148614
	E10 00240 PV 02 FP KE PV 99 01 03 – 21 21 PV 99 99 01*	148714

**Extent of supply:** 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	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	148584
	E60 00112 PV 05 FP KE PV 99 17 03 – 21 21 PV 99 99 01	148684
	E60 00240 PV 02 FP KE PV 99 17 03 – 21 21 PV 99 99 01*	148784

**Extent of supply:** 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:

- Automatic readjustment of pump output in combination with an oval gear meter (for operating modes "internal" and "current" only)
- 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**

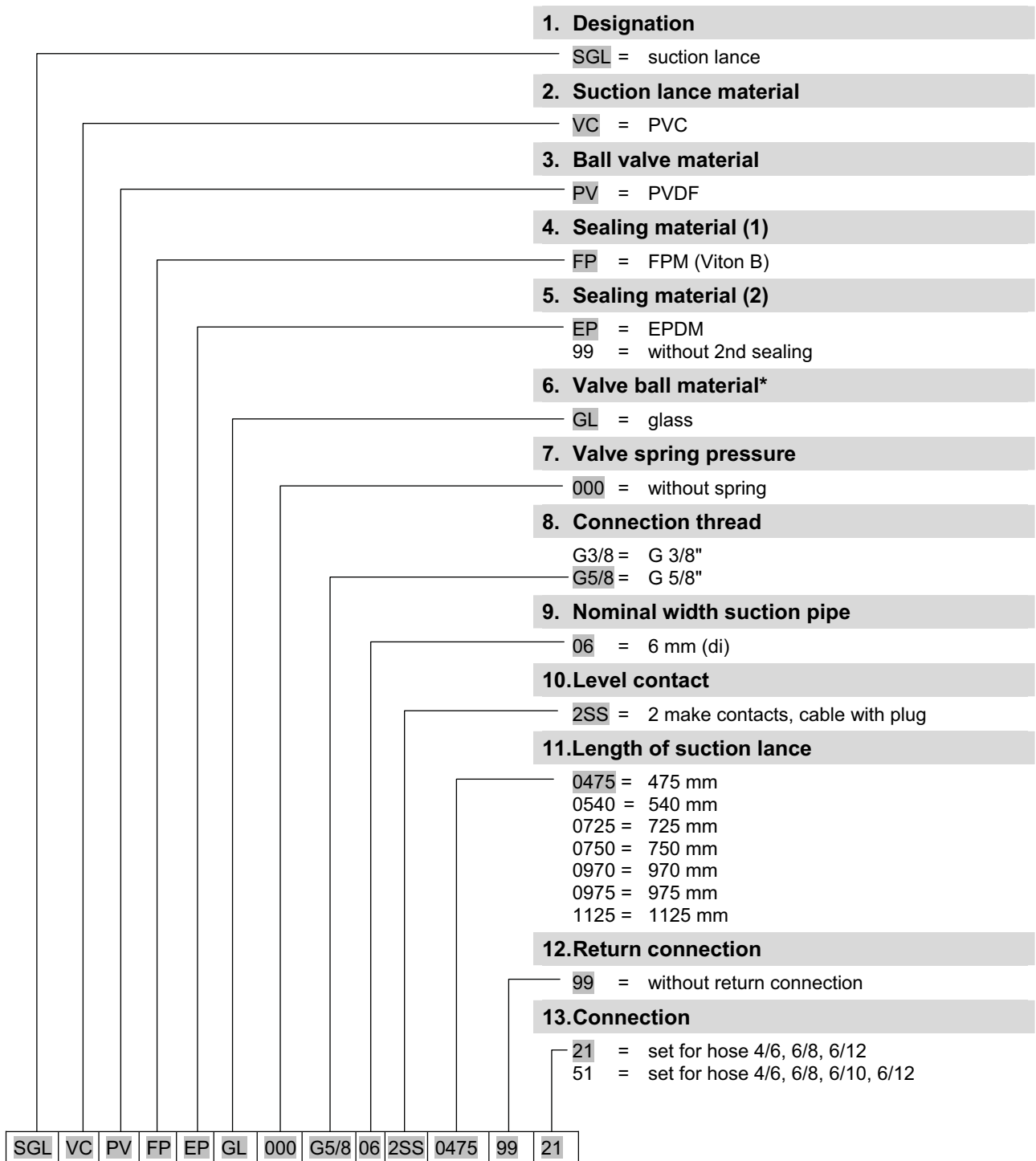
incl. of ball non-return valve, suction strainer and zero-potential empty signal contact (empty = contact interrupted), hose connection material (4/6 mm, 6/8 mm and 6/12 mm)

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



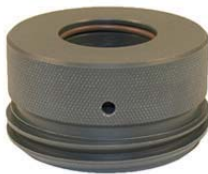
**Adapter**  
 2" internal thread for adapter screw connection **288570**  
 Tri-Sure external thread for container screw cap

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

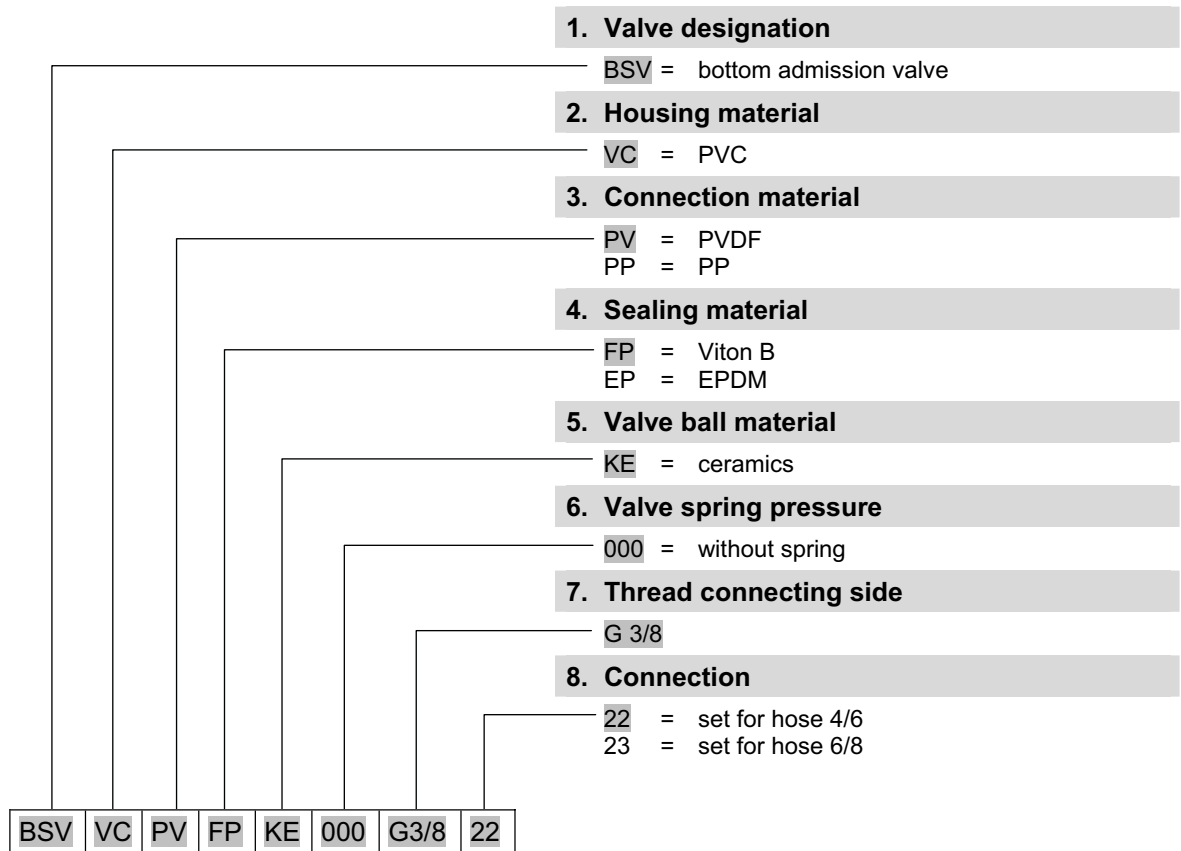
incl. fastening screw

**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 ¼" for measuring sensor**

34800189

Material: PVC

**Metering pipe G ½" 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 ¼" in optimal fitting position.



**Oval gear meter**

for volumetric measurement of the rate of flow

**Ordering data are to be found in chapter 6 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

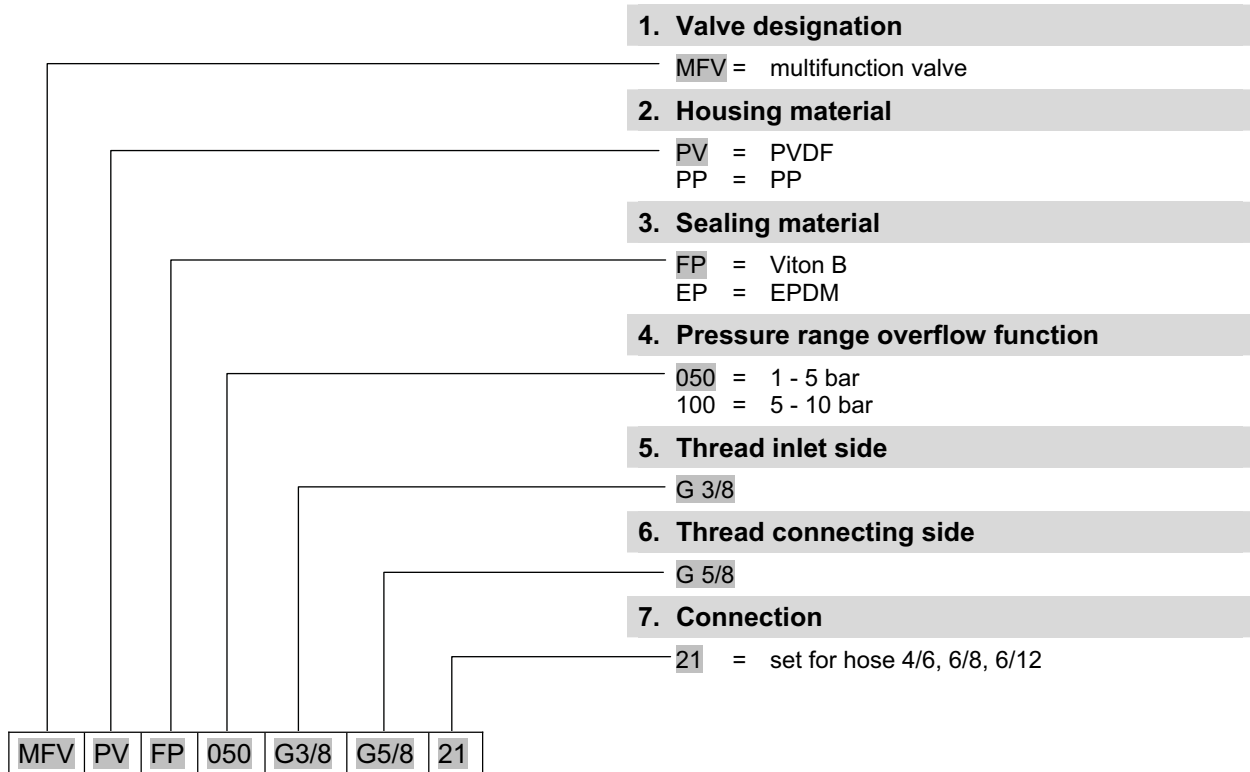


**Optical metering control**

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!**



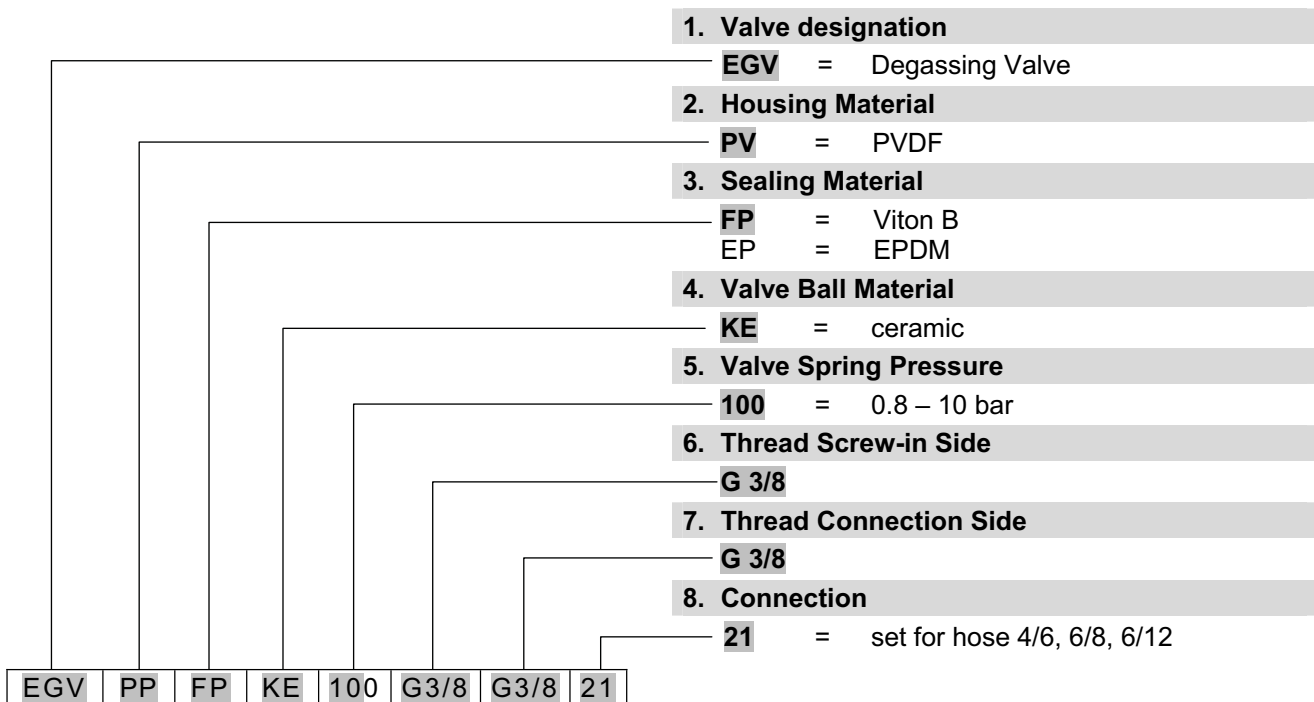
**Degassing Control „Degas<sup>PLUS</sup>“**

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.

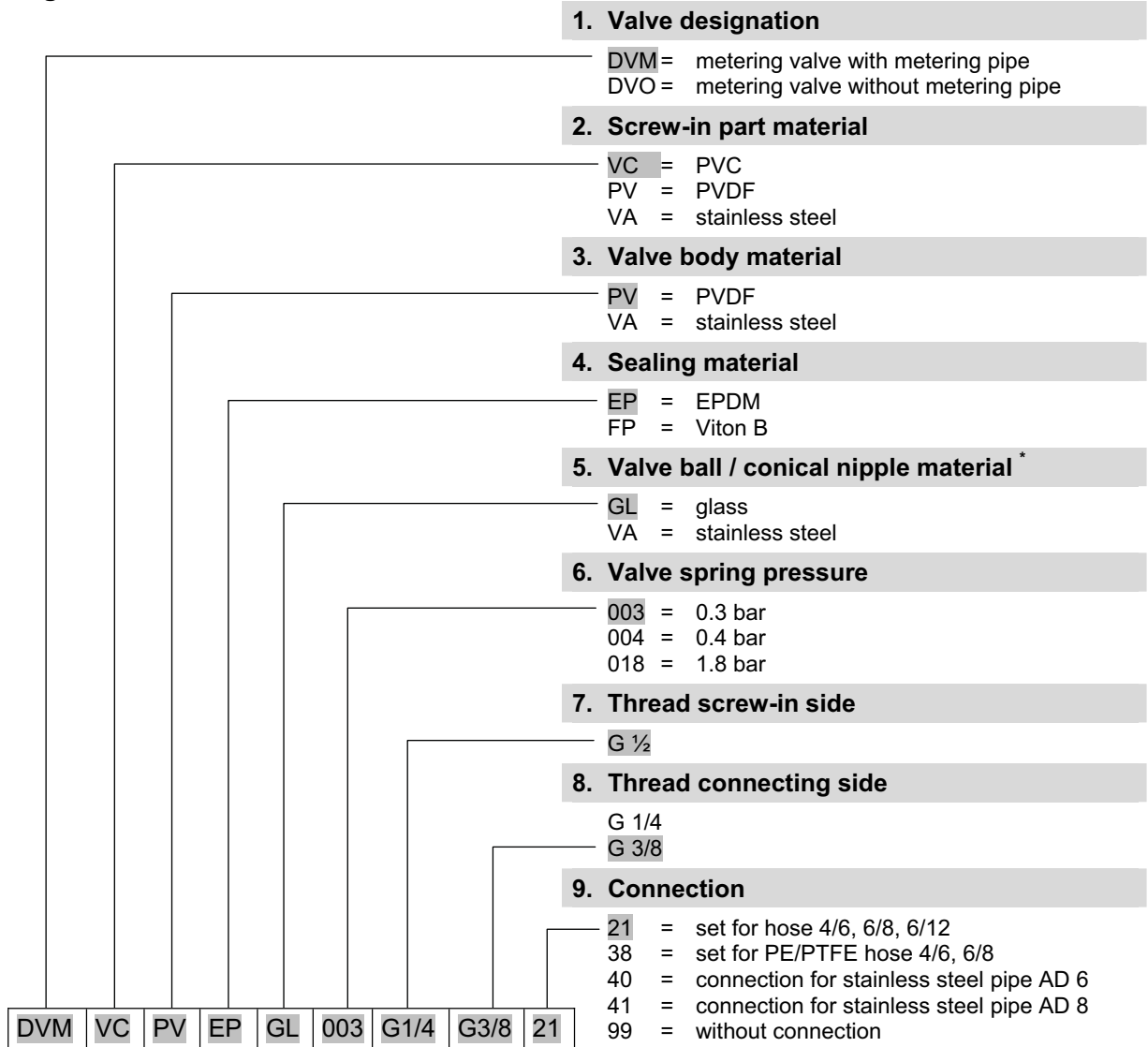


Degassing Valve (1)  
Connection cable (2)

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**

- 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
- DVM VA VA FP GL 004 G 1/2 – G 1/4 – 40
- DVM VA VA EP GL 004 G 1/2 – G 1/4 – 41

**Material-No.**

- 248059
- 248060
- 240150
- 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

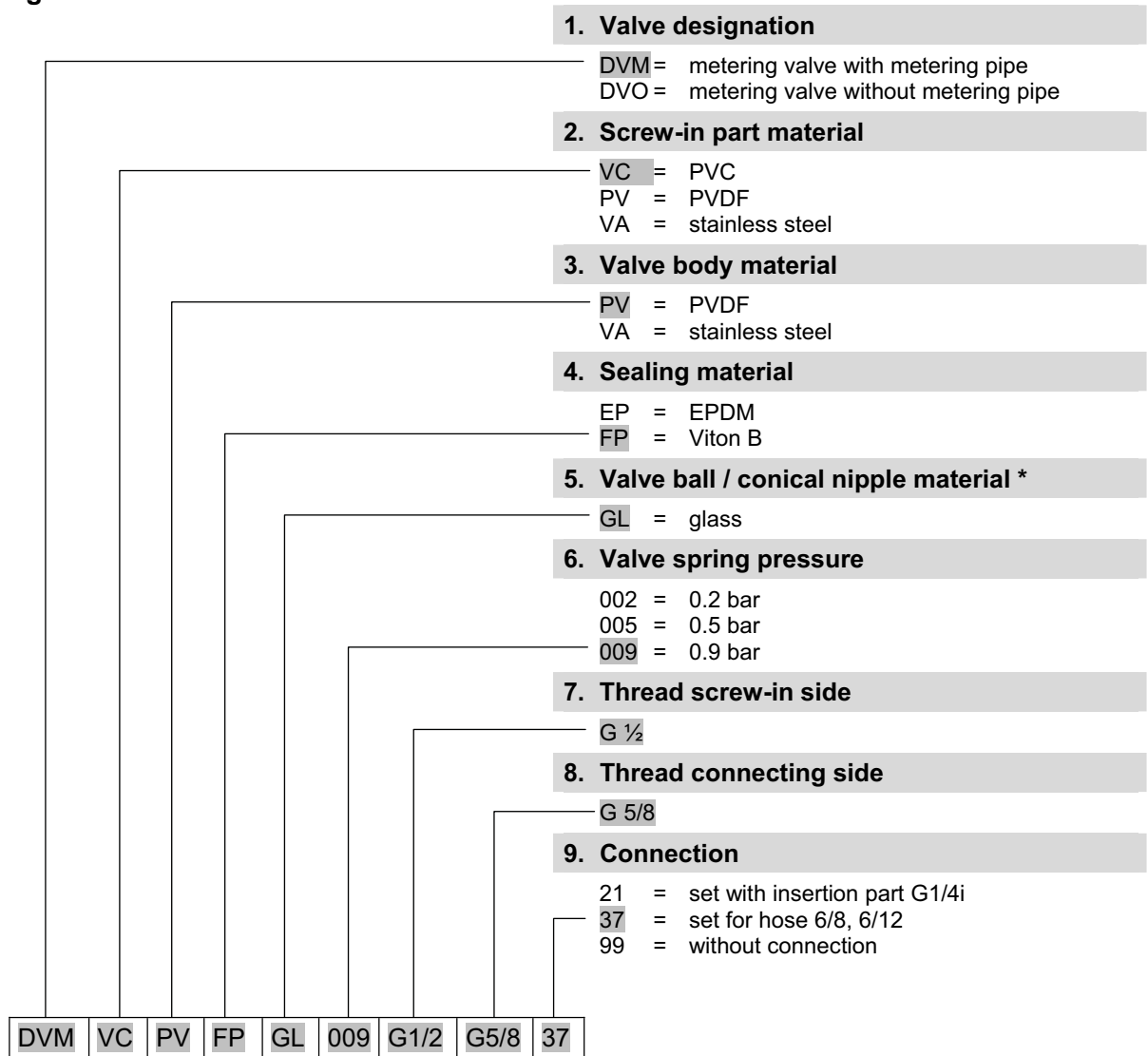
**Cooling stretch**

stainless steel spiral-pipe da 8 mm with adapter and connection material for hose 4/6, 6/8 and 6/12 mm (ID/AD)	248411
--	--------

**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

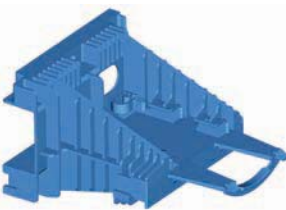
230 V / 50 Hz / IP 33 RO



**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

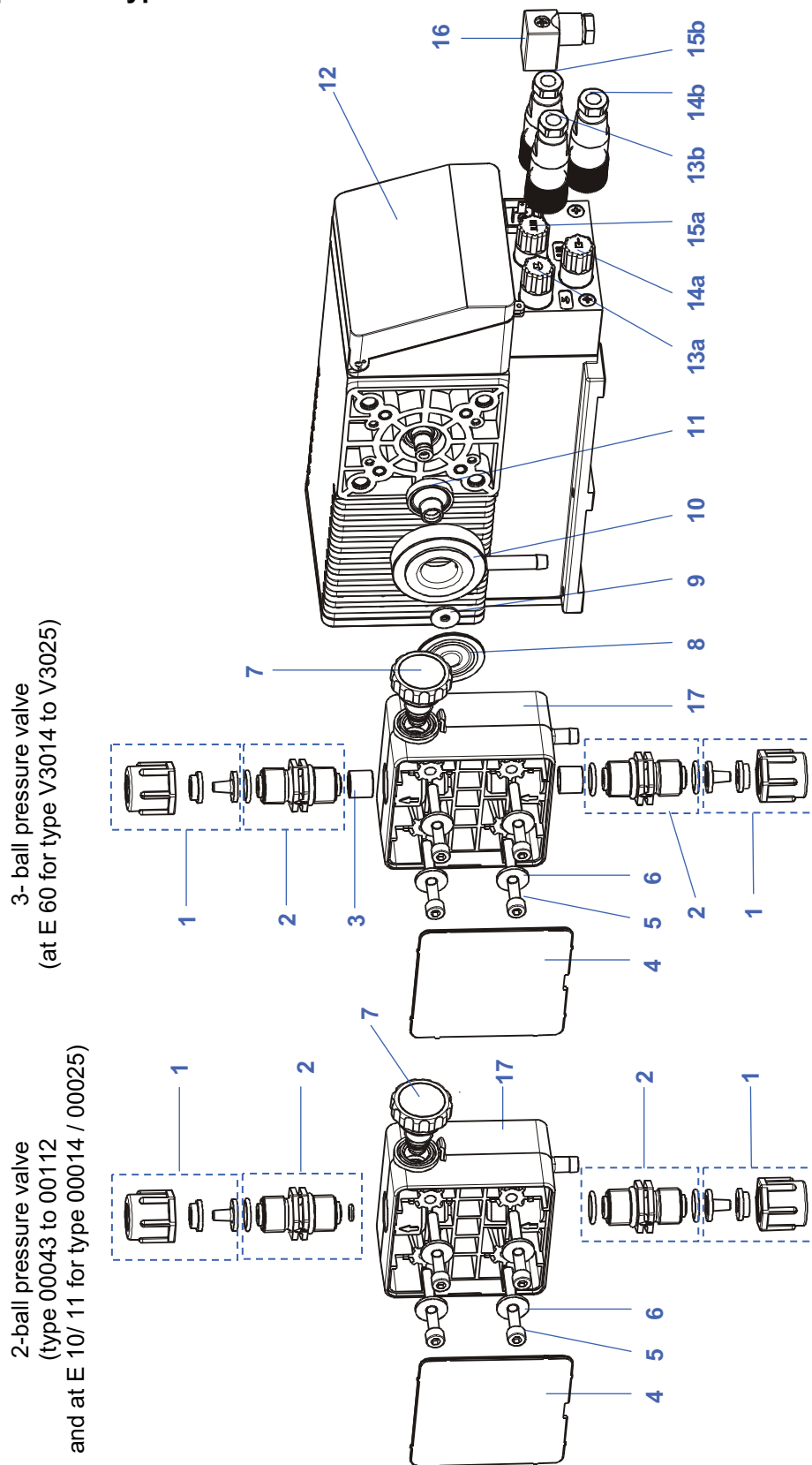
for pulse or current input with straight 5-pin plug

418439007

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

418439022

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

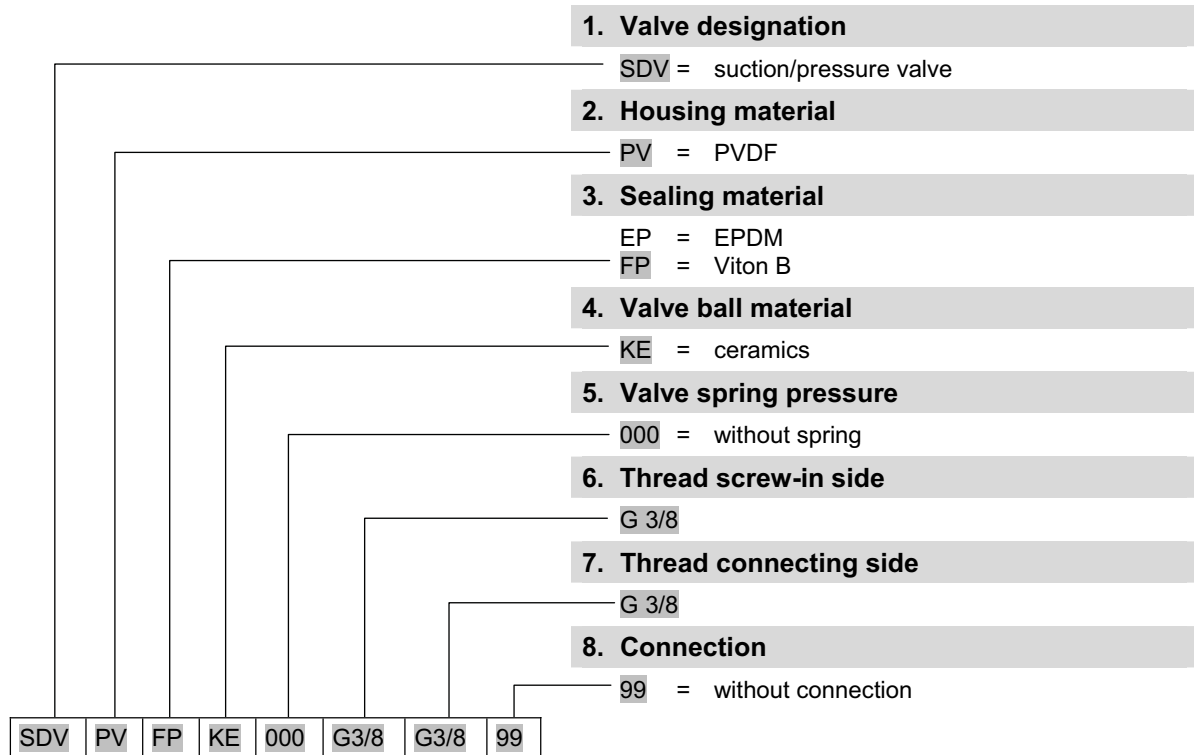


Pos	Article	Material-No.
1	Connection set PVDF for hose 3/8" - 4/6, 6/8, 6/12 mm (consisting of union nut, clamping pieces and tapered parts)	248491
2	Suction/pressure valve SDV PV <b>FP</b> KE 000 G3/8-G3/8-99* SDV PV <b>EP</b> KE 000 G3/8-G3/8-99*	248405 248406
3	Valve cartridge, V3 EMP II <b>FP</b> 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.

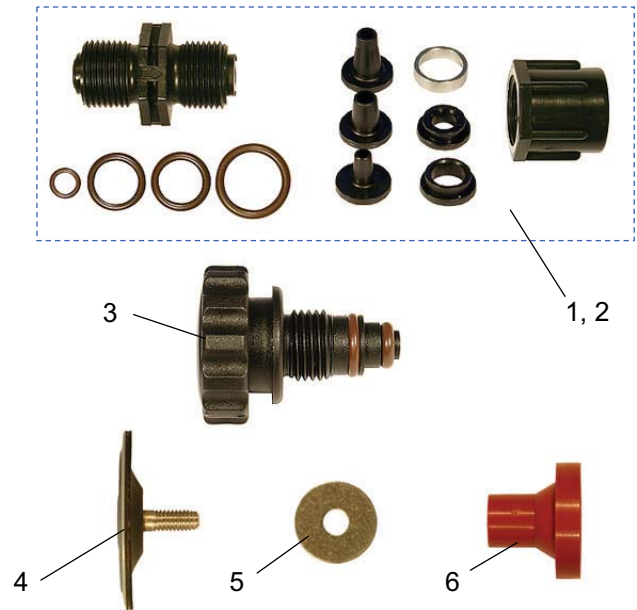
**Valve code**



### 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.
Wearing part set	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
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#### 3. Sealing material

FP	=	Viton B
EP	=	EPDM

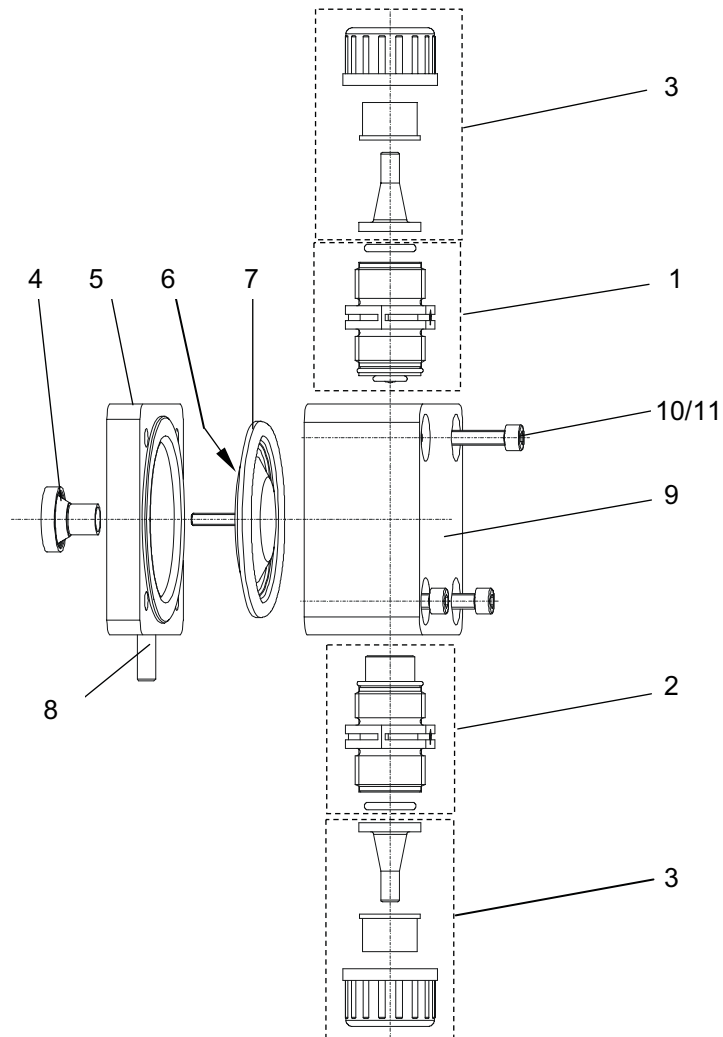
#### 4. Valve ball material

KE	=	ceramics
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Wearing part set EMP II 

V3014	PV	FP	KE
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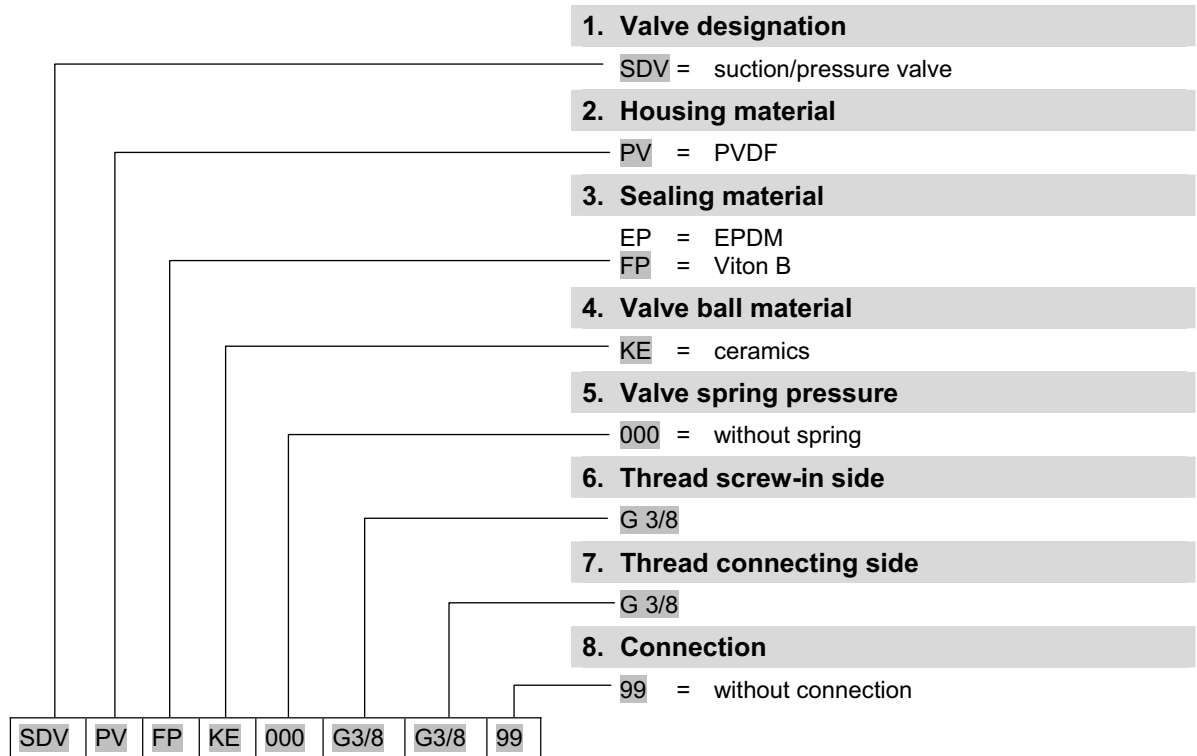
**Spare parts for type 00240**



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**

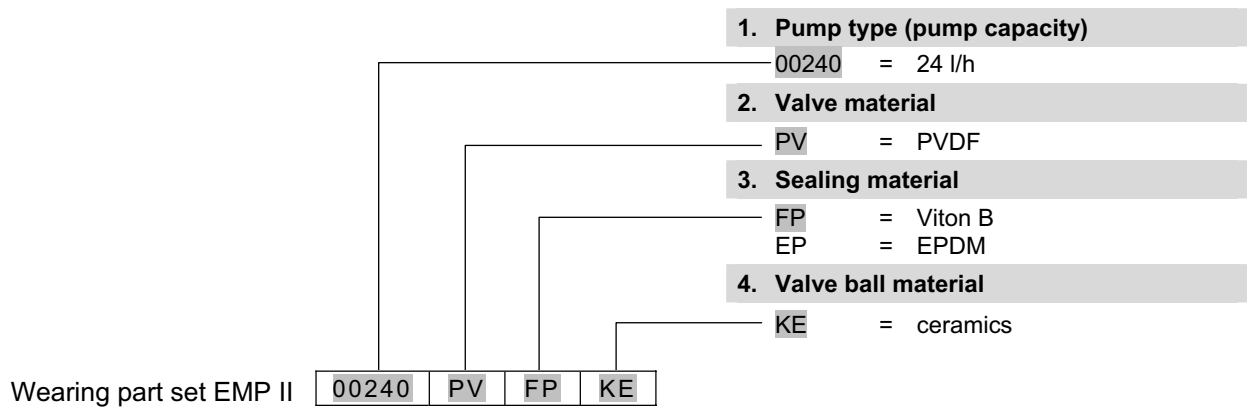


### Set of wearing parts (complete)

consisting of 1 piece each:

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

Article	Code	Material-No.
Wearing part set	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:**

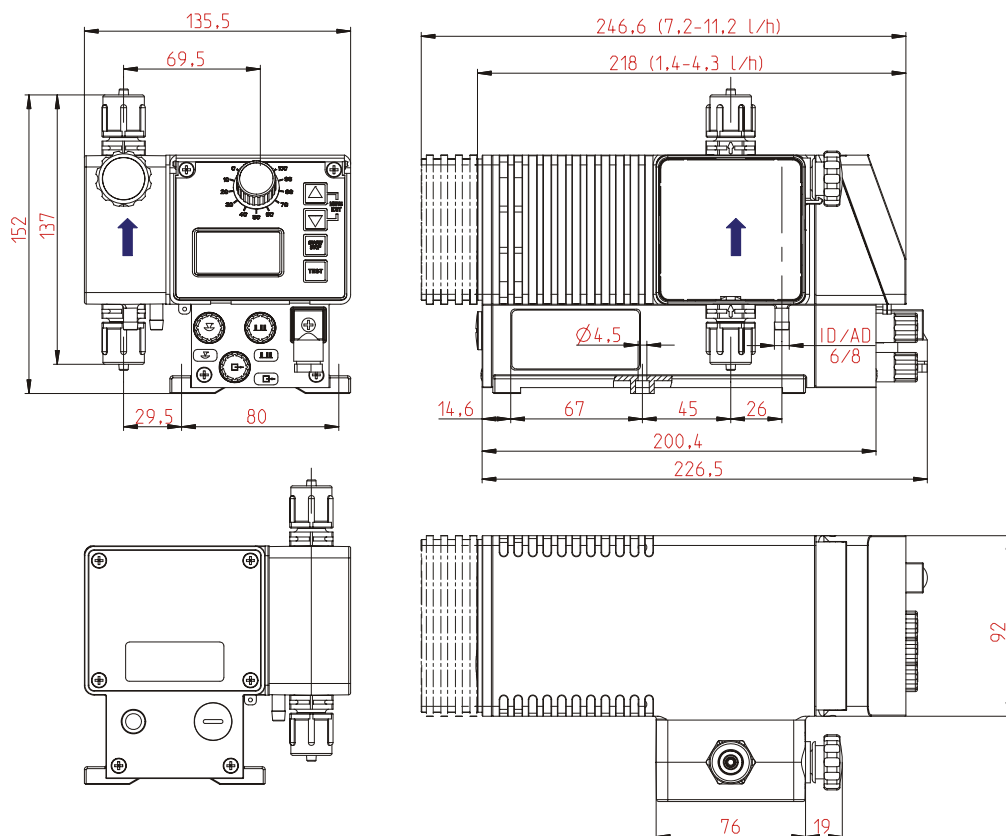
Pump type		V3014	V3025	00043
Pump capacity [l/h]		1.2	2.1	3.8
Metering back-pressure [bar]		16	16	16
Metering frequency max. [1/min]		122	122	122
Delivering capacity/stroke [cm <sup>3</sup> ]		0.16	0.29	0.52
Metering accuracy		< ± 3%		
Suction height		2 mWs, suction height with clean, slightly wet valves		
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:

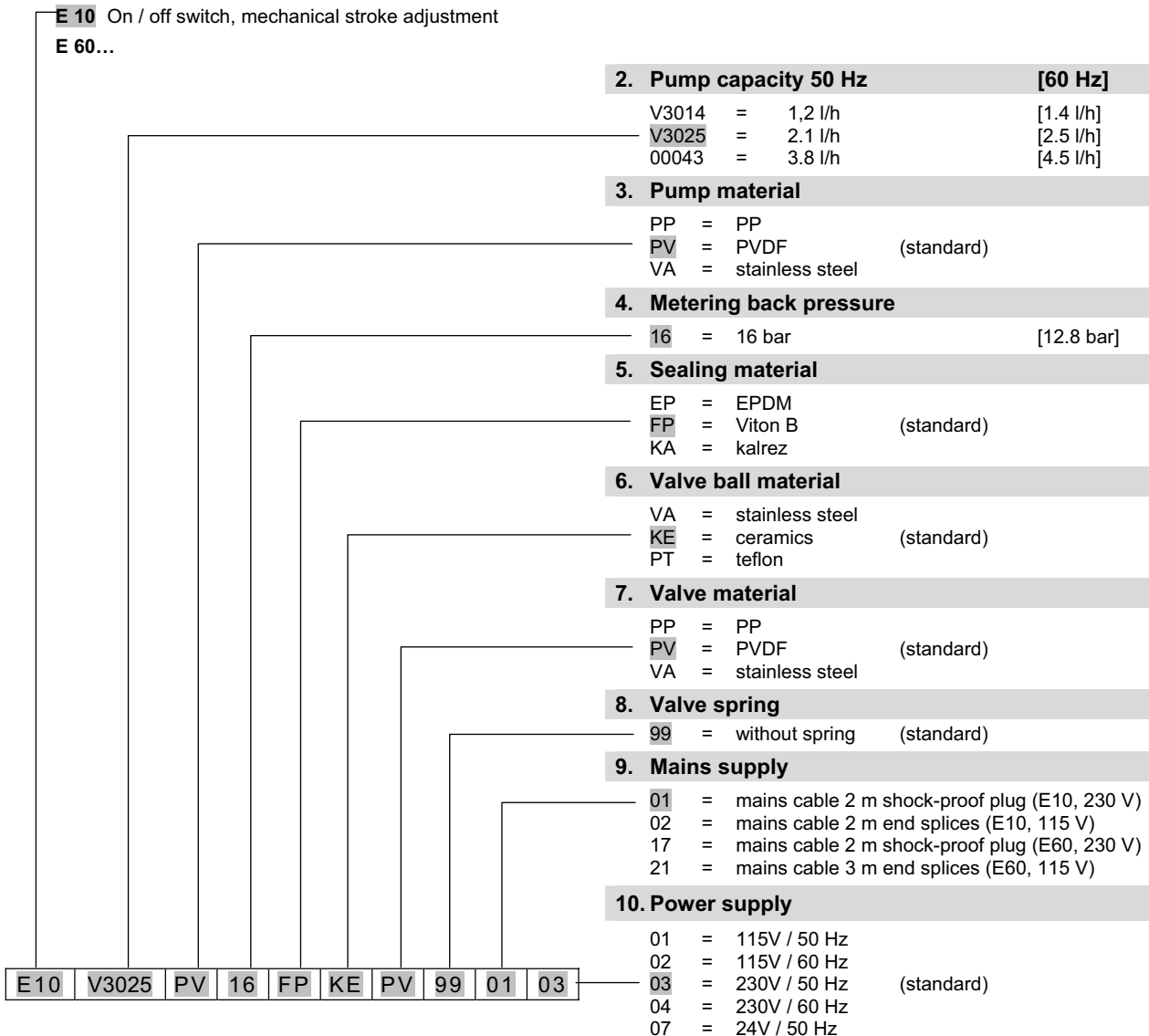


## Pump code – part 1 (EMP II HP)

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

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

**E 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]
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#### 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)
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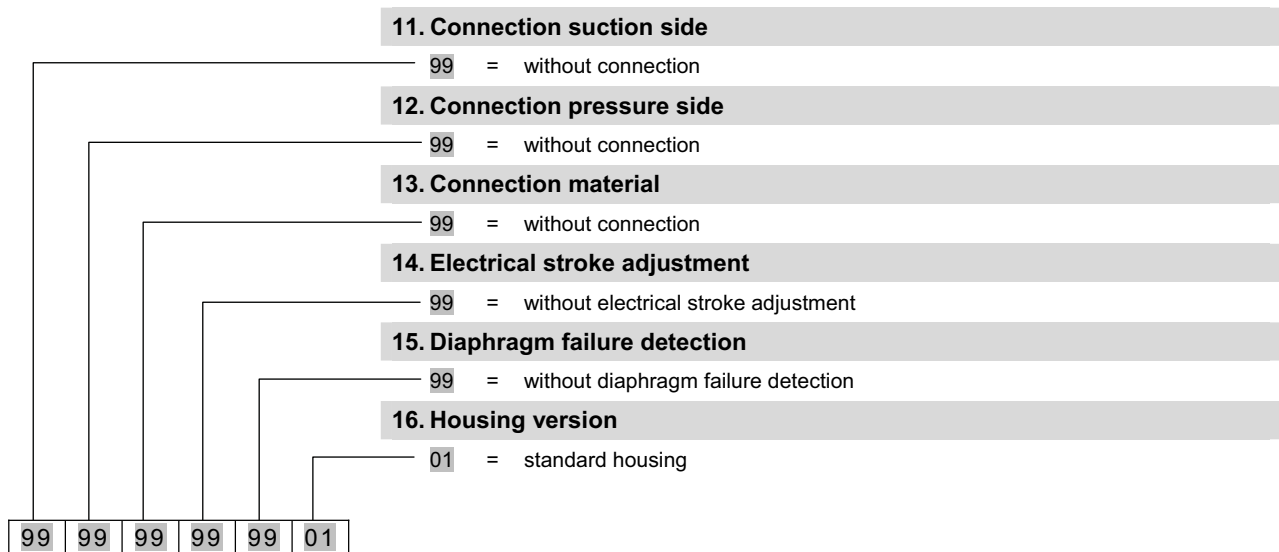
#### 9. Mains supply

01	=	mains cable 2 m shock-proof plug (E10, 230 V)
02	=	mains cable 2 m end splices (E10, 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:

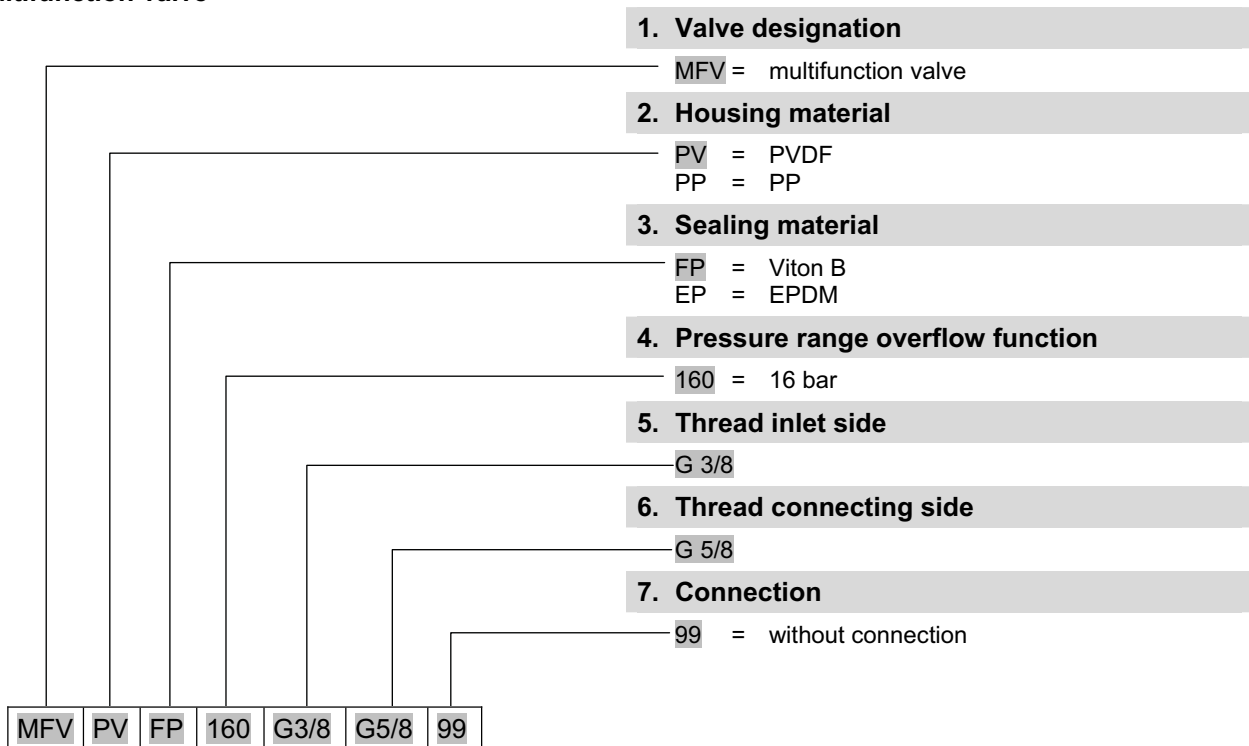
Accessories for the **suction side** can be selected from the standard versions (see page 9 – 14).

**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

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

**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



**Connection material (pressure side)**

**Straight screw on connection PVDF G3/8"i**

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](#)