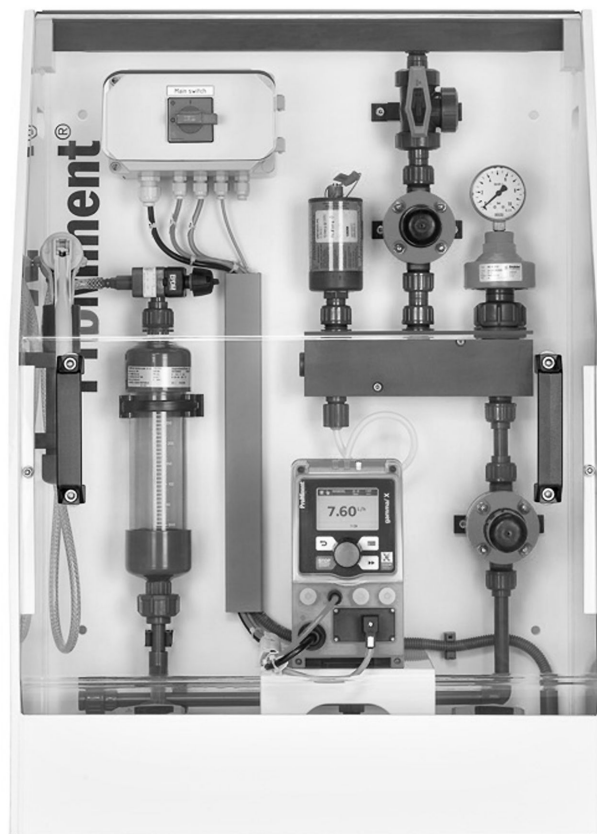


# Assembly and operating instructions

## Universal Metering System DSUa Mini PP / Mini PE

### Metering frame complete with all pipework

EN



A2700

Target group: trained users, unless otherwise required.

**Please carefully read these operating instructions before use. · Do not discard.  
The operator shall be liable for any damage caused by installation or operating errors.  
The latest version of the operating instructions are available on our homepage.**

### General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. The document is always aimed equally at women, men and gender-neutral persons. We kindly ask readers for their understanding in this simplification of the text.

### Supplementary information

➔ Please read the supplementary information in its entirety.

#### Information



*This provides important information relating to the correct operation of the unit or is intended to make your work easier.*

#### Warning information

Warning information includes detailed descriptions of the hazardous situation, see [🔗 Chapter 2.2 'Labelling of Warning Information' on page 20](#).

The following symbols are used to highlight instructions, links, lists, results and other elements in this document:

Tab. 1: More symbols

Symbol	Description
1. ➔	Action, step by step.
⇒	Outcome of an action.
🔗	Links to elements or sections of these instructions or other applicable documents.
■	List without set order.
[Button]	Display element (e.g. indicators). Operating element (e.g. button, switch).
'Display/GUI'	Screen elements (e.g. buttons, assignment of function keys).
CODE	Presentation of software elements and/or texts.

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# 1 About this product

## 1.1 Technical details

The metering system DULCODOS® universal combines standard components with the solenoid-driven metering pump you have selected. For the reliable metering of liquid chemicals.

Technical details:

- Solenoid-driven metering pumps Beta® 4/5
- gamma/ X
- gamma/ XL
- Material combinations: PP/FKM or PVC/EPDM. Pay attention to compatibility with the feed chemical.
- Relief valves to protect the pipework
- Manometer
- Collecting pan with leak sensor
- Flushing connectors
- Terminal box with master switch
- The assembly frame is available in 6 standard colours



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

### Nameplate

ProMinent GmbH Im Schumachergewann 5-11 D-69123 Heidelberg info@prominent.com Made by ProMinent Systems BLOVICE – Czech Republic	Type Project Nr. Serial number Power supply Powercon./Current/ Protection class	DSUaxxxxxxxxxxxxxx xxxxxxxxxx xxxxxxxxxx 100/230V 1-phase 50/60 Hz 60 W 0,3/0,24A IP65
---	--	--


xx/202x 

Fig. 1: Nameplate

### Field of application

Metering of liquid chemicals, e.g.

- Cooling water treatment
- Waste water and process water treatment
- Paper industry

## 1.2 Identity code

### 1.2.1 DULCODOS universal mini, PP

DSUa	DULCODOS universal mini	
	Pipework / Seal / Function	
A	PVC, EPDM, for 1 pump and 1 point of injection	
B	PVC, EPDM, for 2 pumps and 1 point of injection	
C	PVC, EPDM, for 2 pumps and 2 points of injection	
D	PP, FKM, for 1 pump and 1 point of injection	
E	PP, FKM, for 2 pumps and 1 point of injection	
F	PP, FKM, for 2 pumps and 2 points of injection	
	Assembly frame	
A	PP, white, 850x580x410 mm (HxWxD) [A/D]	
B	PP, white, 1000x680x410 mm (HxWxD) [B/E]	
C	PP, white, 850x880x410 mm (HxWxD) [C/F]	
	Design	
00	with ProMinent logo	
01	without ProMinent logo	
	Pulsation damper	
0	none	
1	1 x pulsation damper PVC/ EPDM	
2	1 x pulsation damper PP/FKM	
3	2 x pulsation dampers PVC/ EPDM	
4	2 x pulsation dampers PP/FKM	
	Hydraulic connectors	
0	Insert	
1	Hose nipple 6x4	
2	Hose nipple 8x5	
3	Hose nipple 12x9	
4	Pressure hose nozzle DN10	
5	Pressure hose nozzle 1/2" NPT	
	Flushing connectors	
0	closed	
1	Pressure hose nozzle DN10	
2	Gardena®	
3	Pressure hose nozzle 1/2" NPT	
	Splash guard	
0	none	
A	Splash guard for (A/D)	

DSUa		DULCODOS universal mini	
	B	Splash guard for (B/E)	
	C	Splash guard for (C/F)	
		Stainless steel bracket	
	D	No stainless steel bracket	
	A	Stainless steel bracket (H= 150 mm) + machine feet [A/D]	
	B	Stainless steel bracket (H= 150 mm) + machine feet [B/E]	
	C	Stainless steel bracket (H= 150 mm) + machine feet [C/F]	
		Pump 1	
	00	without pump	
		Beta® 4	
	41	10 bar / 0.74 l/h, BT4b 1000 PVT, 6x4	
	42	16 bar / 2.2 l/h, BT4b 1602 PVT, 6x4	
	43	16 bar / 3.60 l/h, BT4b 1604 PVT, 6x4	
	44	7 bar / 7.10 l/h, BT4b 0708 PVT, 8x5	
	45	4 bar / 12.30 l/h, BT4b 0413 PVT, 8x5	
	46	2 bar / 19.00 l/h, BT4b 0220 PVT, 12x9	
		Beta® 5	
	51	10 bar / 6.80 l/h, BT5b 1008 PVT, 8x5	
	52	7 bar / 11.0 l/h, BT5b 0713 PVT, 8x5	
	53	4 bar / 17.10 l/h, BT5b 0420 PVT, 12x9	
	54	2 bar / 32.00 l/h, BT5b 0232 NPE, 12x9	
		gamma/ XL®	
	D1	16 bar / 12 l/h, GXLAEU1612PVT, 8x5	
	D2	10 bar / 19.6 l/h, GXLAEU1020PVT, 12x9	
	D3	7 bar / 29.4 l/h, GXLAEU0730PVT, 12x9	
	D4	4 bar / 49.0 l/h, GXLAEU0450PVT, DN10	
	D5	2 bar / 78.5 l/h, GXLAEU0280PVT, DN10	
		gamma/ X®:	
	X1	16 bar / 3.6 l/h, GMXa 1604 PVT, 6x4	
	X2	7 bar / 7.6 l/h, GMXa 0708 PVT, 8x5	
	X3	10 bar / 9.0 l/h, GMXa 1009 PVT, 8x5	
	X4	4 bar / 13.5 l/h, GMXa 0414 PVT 8x5	
	X5	7 bar / 14.5 l/h, GMXa 0715 PVT, 8x5	
	X6	2 bar / 19.7 l/h, GMXa 0220 PVT, 12x9	
	X7	4 bar / 24.0 l/h, GMXa 0424 PVT, 12x9	
	X8	2 bar / 45.0 l/h, GMXa 0245 PVT, 12x9	
		Pump 2	

DSUa		DULCODOS universal mini	
	00	without pump	
	Beta® 4		
	41	10 bar / 0.74 l/h, BT4b 1000 PVT, 6x4	
	42	16 bar / 2.2 l/h, BT4b 1602 PVT, 6x4	
	43	16 bar / 3.60 l/h, BT4b 1604 PVT, 6x4	
	44	7 bar / 7.10 l/h, BT4b 0708 PVT, 8x5	
	45	4 bar / 12.30 l/h, BT4b 0413 PVT, 8x5	
	46	2 bar / 19.00 l/h, BT4b 0220 PVT, 12x9	
	Beta® 5		
	51	10 bar / 6.80 l/h, BT5b 1008 PVT, 8x5	
	52	7 bar / 11.0 l/h, BT5b 0713 PVT, 8x5	
	53	4 bar / 17.10 l/h, BT5b 0420 PVT, 12x9	
	54	2 bar / 32.00 l/h, BT5b 0232 NPE, 12x9	
	gamma/ XL®		
	D1	16 bar / 12 l/h, GXLAEU1612PVT, 8x5	
	D2	10 bar / 19.6 l/h, GXLAEU1020PVT, 12x9	
	D3	7 bar / 29.4 l/h, GXLAEU0730PVT, 12x9	
	D4	4 bar / 49.0 l/h, GXLAEU0450PVT, DN10	
	D5	2 bar / 78.5 l/h, GXLAEU0280PVT, DN10	
	gamma/ X®:		
	X1	16 bar / 3.6 l/h, GMXa 1604 PVT, 6x4	
	X2	7 bar / 7.6 l/h, GMXa 0708 PVT, 8x5	
	X3	10 bar / 9.0 l/h, GMXa 1009 PVT, 8x5	
	X4	4 bar / 13.5 l/h, GMXa 0414 PVT, 8x5	
	X5	7 bar / 14.5 l/h, GMXa 0715 PVT, 8x5	
	X6	2 bar / 19.7 l/h, GMXa 0220 PVT, 12x9	
	X7	4 bar / 24.0 l/h, GMXa 0424 PVT, 12x9	
	X8	2 bar / 45.0 l/h, GMXa 0245 PVT, 12x9	
	Operating instructions		
	CS	Czech	
	EN	German	
	EN	English	
	ES	Spanish	
	FR	French	
	IT	Italian	
	PT	Portuguese	
	All other languages are available on request.		





## 1.2.2 DULCODOS universal mini PE

DSUa	DULCODOS universal mini PE	
	Pipework / Seal / Function	
M	PVC, EPDM, for 1 pump and 1 point of injection	
N	PP, FKM, for 1 pump and 1 point of injection	
	Assembly frame	
5	PE natural	
6	PE orange	
7	PE yellow	
8	PE blue	
	Design	
00	with ProMinent logo	
01	without ProMinent logo	
	Pulsation damper	
0	none	
1	1 x pulsation damper PVC/ EPDM	
2	1 x pulsation damper PP/FKM	
	Hydraulic connectors	
	Insert	
0		
1	Hose nipple 6x4	
2	Hose nipple 8x5	
3	Hose nipple 12x9	
4	Pressure hose nozzle DN10	
5	Pressure hose nozzle 1/2" NPT	
	Flushing connectors	
0	closed	
1	Pressure hose nozzle DN10	
2	Gardena®	
3	Pressure hose nozzle 1/2" NPT	
	Splash guard	
0	none	
2	Splash guard	
	Stainless steel bracket	
5	Floor installation (without brackets)	
6	Machine feet (4 no.)	
8	Wall installation	
	Pump 1	
00	without pump	

DSUa		DULCODOS universal mini PE	
		Beta® 4	
41	10 bar / 0.74 l/h, BT4b 1000 PVT, 6x4		
42	16 bar / 2.2 l/h, BT4b 1602 PVT, 6x4		
43	16 bar / 3.60 l/h, BT4b 1604 PVT, 6x4		
44	7 bar / 7.10 l/h, BT4b 0708 PVT, 8x5		
45	4 bar / 12.30 l/h, BT4b 0413 PVT, 8x5		
46	2 bar / 19.00 l/h, BT4b 0220 PVT, 12x9		
		Beta® 5	
51	10 bar / 6.80 l/h, BT5b 1008 PVT, 8x5		
52	7 bar / 11.0 l/h, BT5b 0713 PVT, 8x5		
53	4 bar / 17.10 l/h, BT5b 0420 PVT, 12x9		
54	2 bar / 32.00 l/h, BT5b 0232 NPE, 12x9		
		gamma/ X®:	
X1	16 bar / 3.6 l/h, GMXa 1604 PVT, 6x4		
X2	7 bar / 7.6 l/h, GMXa 0708 PVT, 8x5		
X3	10 bar / 9.0 l/h, GMXa 1009 PVT, 8x5		
X4	4 bar / 13.5 l/h, GMXa 0414 PVT 8x5		
X5	7 bar / 14.5 l/h, GMXa 0715 PVT, 8x5		
X6	2 bar / 19.7 l/h, GMXa 0220 PVT, 12x9		
X7	4 bar / 24.0 l/h, GMXa 0424 PVT, 12x9		
X8	2 bar / 45.0 l/h, GMXa 0245 PVT, 12x9		
		Pump 2	
00	without pump		
		Operating instructions	
CS	Czech		
EN	German		
EN	English		
ES	Spanish		
FR	French		
IT	Italian		
PT	Portuguese		
		All other languages are available on request.	
		Certification	
01	CE certification		

### 1.3 Metering system, 1 pump, 1 point of injection, PP

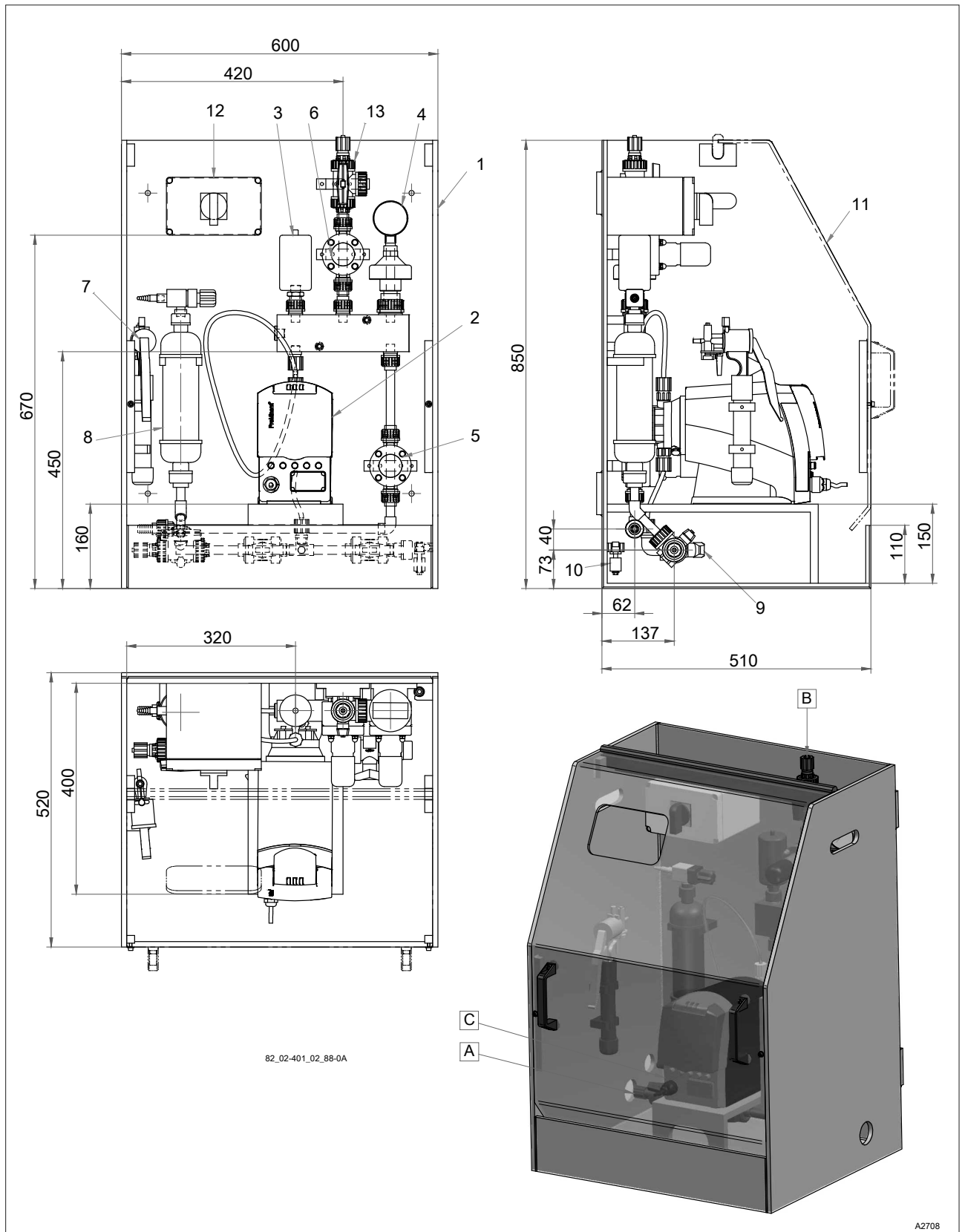


Fig. 2: Metering system, 1 pump, 1 point of injection, PP, all dimensions in mm

- A Feed
  - B Outlet
  - C Drain
- not shown Connecting parts for flushing pipe DN10, 2 no.

## About this product

#	Designation	Material/type	Dimension	Material	Quantity	Part number
1	Assembly frame	-	600x850x520	PP	1	1092058
2	Metering pump	To be selected by the customer.	-	-	1	-
3	Pulsation damper	Hidracar® U001	0.09 litres	PVC-U	1	1057944
4	Manometer	MDM902	Ø25 / G1/4"	PVC-U	1	1030362
5	DHV	DHV-U	DN10	PVC-U	1	1037765
6	Back pressure valve	DHV-U	DN10	PVC-U	1	1037765
7	Vacuum pump	Hubinont®	MI8121	-	1	1031565
8	Vacuum cylinder	-	DN10	PVC-U	1	1025699
9	Ball valve	546	DN10	PVC-U	2	1024538
10	Level switch	PP1/PE	-	-	1	142086
11	Splash guard	PVC glass	-	-	1	1092096
12	Terminal box	-	180x110x90 mm	-	1	1097397
13	3-way ball valve	543	DN10	PVC-U	2	1043568

### 1.4 Metering system, 2 pumps, 1 point of injection

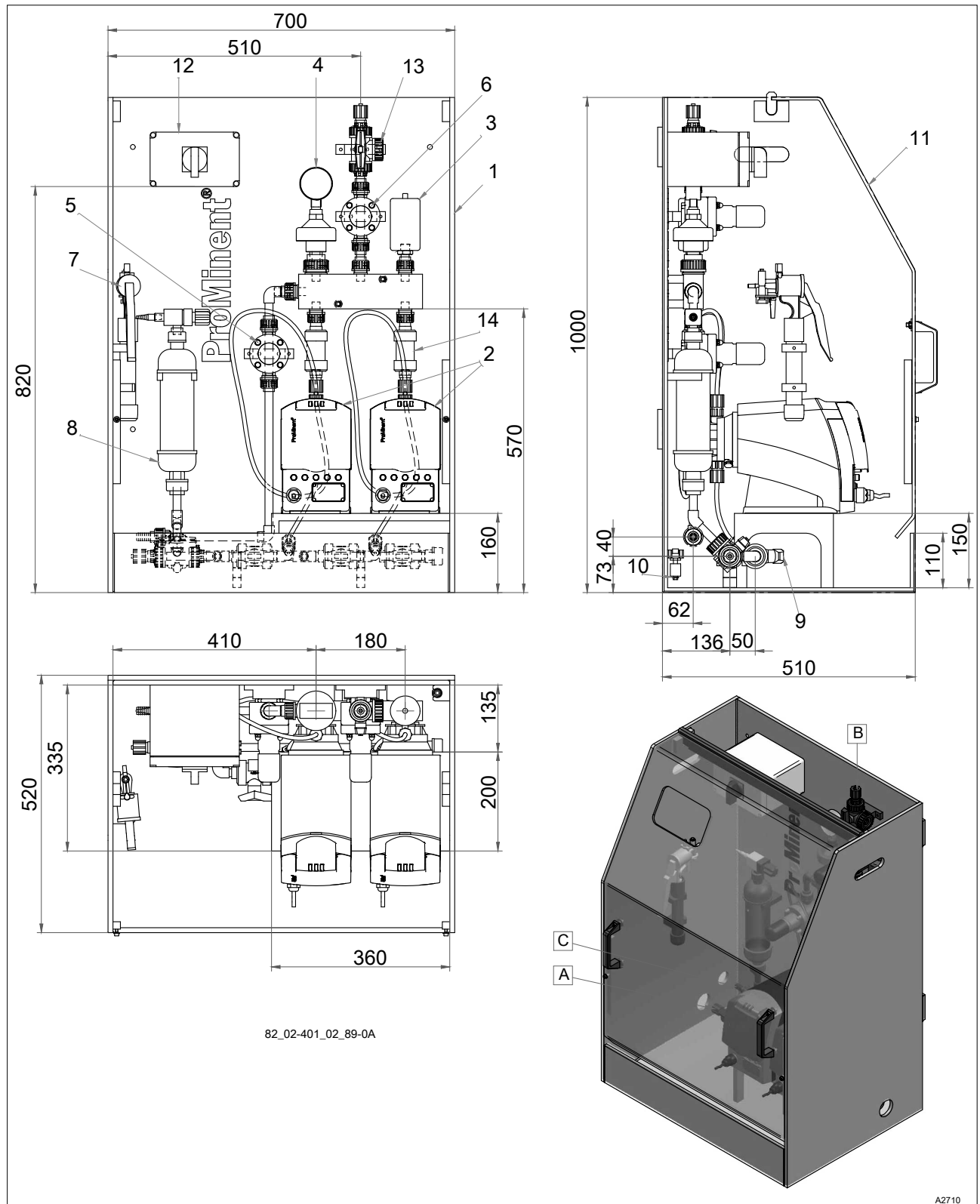


Fig. 3: Metering system, 2 pumps, 1 point of injection, PP, all dimensions in mm

- A Feed
- B Outlet
- C Drain

not shown Connecting parts for flushing pipe DN10, 2 no.

## About this product

#	Designation	Material/type	Dimension	Material	Quantity	Part number
1	Assembly frame	-	700x1000x520	PP	1	1096750
2	Metering pump	To be selected by the customer.	-	-	2	-
3	Pulsation damper	Hidracar® U001	0.09 litres	PVC-U	1	1057944
4	Manometer	MDM902	Ø25 / G1/4"	PVC-U	1	1030362
5	DHV	DHV-U	DN10	PVC-U	1	1037765
6	Back pressure valve	DHV-U	DN10	PVC-U	1	1037765
7	Vacuum pump	Hubinont®	MI8121	-	1	1031565
8	Vacuum cylinder	-	DN10	PVC-U	1	1025699
9	Ball valve	546	DN10	PVC-U	3	1024538
10	Level switch	PP1/PE	-	-	1	142086
11	Splash guard	PVC glass	-	-	1	1096772
12	Terminal box	-	180x110x90 mm	-	1	1097396
13	3-way ball valve	543	DN10	PVC-U	2	1043568
14	Non-return valve	561	ND10	PVC-U	2	1042372

### 1.5 Metering system, 2 pumps, 2 points of injection, PP

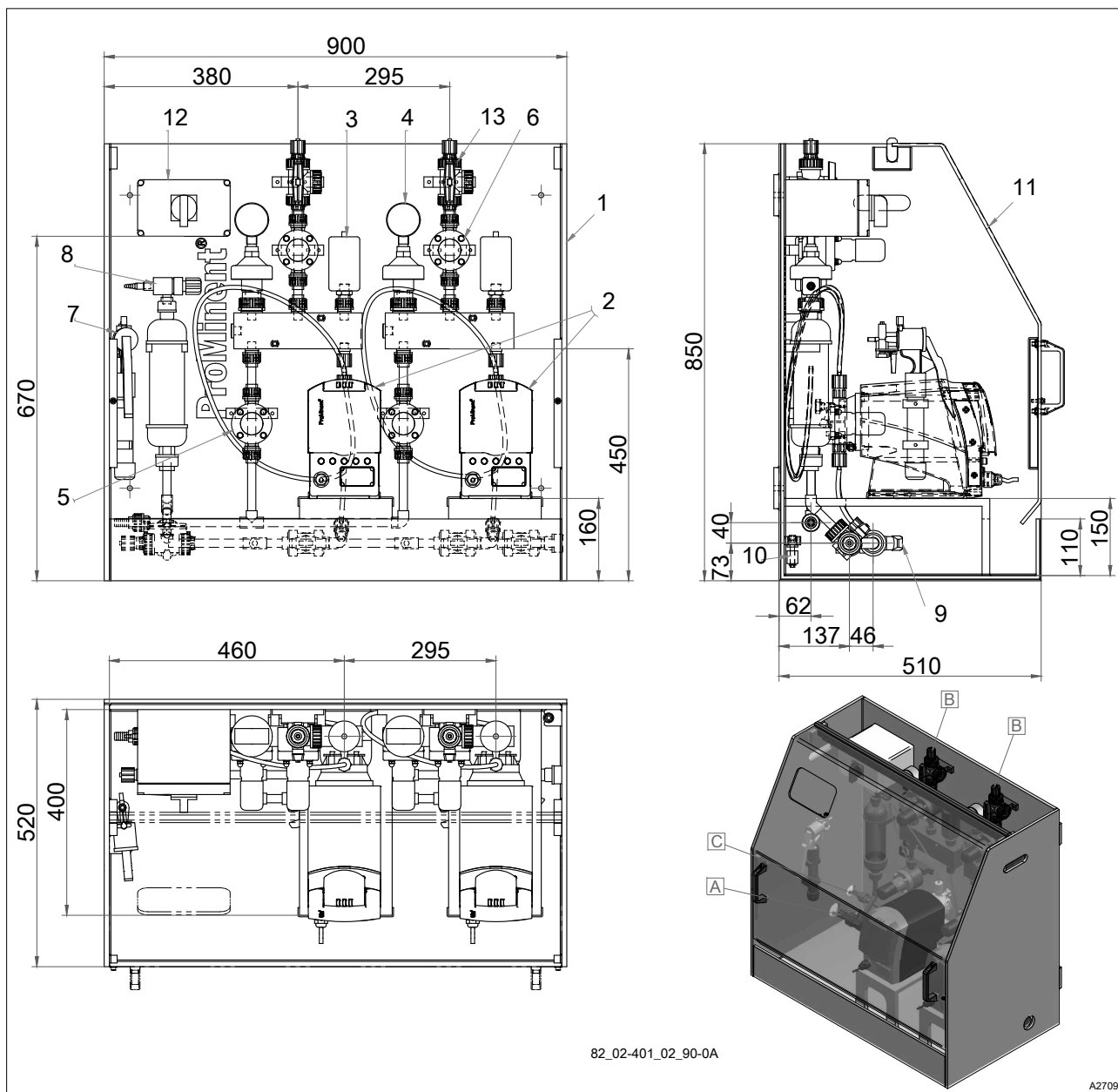


Fig. 4: Metering system, 2 pumps, 2 points of injection, PP, all dimensions in mm

- A Feed
- B Outlet
- C Drain
- not shown Connecting parts for flushing pipe DN10, 2 no.

#	Designation	Material/type	Dimension	Material	Quantity	Part number
1	Assembly frame	-	900x850x520	PP	1	1096773
2	Metering pump	To be selected by the customer.	-	-	2	-
3	Pulsation damper	Hidracar® U001	0.09 litres	PVC-U	2	1057944
4	Manometer	MDM902	Ø25 / G1/4"	PVC-U	2	1030362
5	DHV	DHV-U	DN10	PVC-U	2	1037765

---

## About this product

---

#	Designation	Material/type	Dimension	Material	Quantity	Part number
6	Back pressure valve	DHV-U	DN10	PVC-U	2	1037765
7	Vacuum pump	Hubinont®	MI8121	-	1	1031565
8	Vacuum cylinder	-	DN10	PVC-U	1	1025699
9	Ball valve	546	DN10	PVC-U	3	1024538
10	Level switch	PP1/PE	-	-	1	142086
11	Splash guard	PVC glass	-	-	1	1096795
12	Terminal box	-	180x110x90 mm	-	1	1097396
13	3-way ball valve	543	DN10	PVC-U	3	1043568



### 1.6 Metering system, 1 pump, 1 point of injection, PE

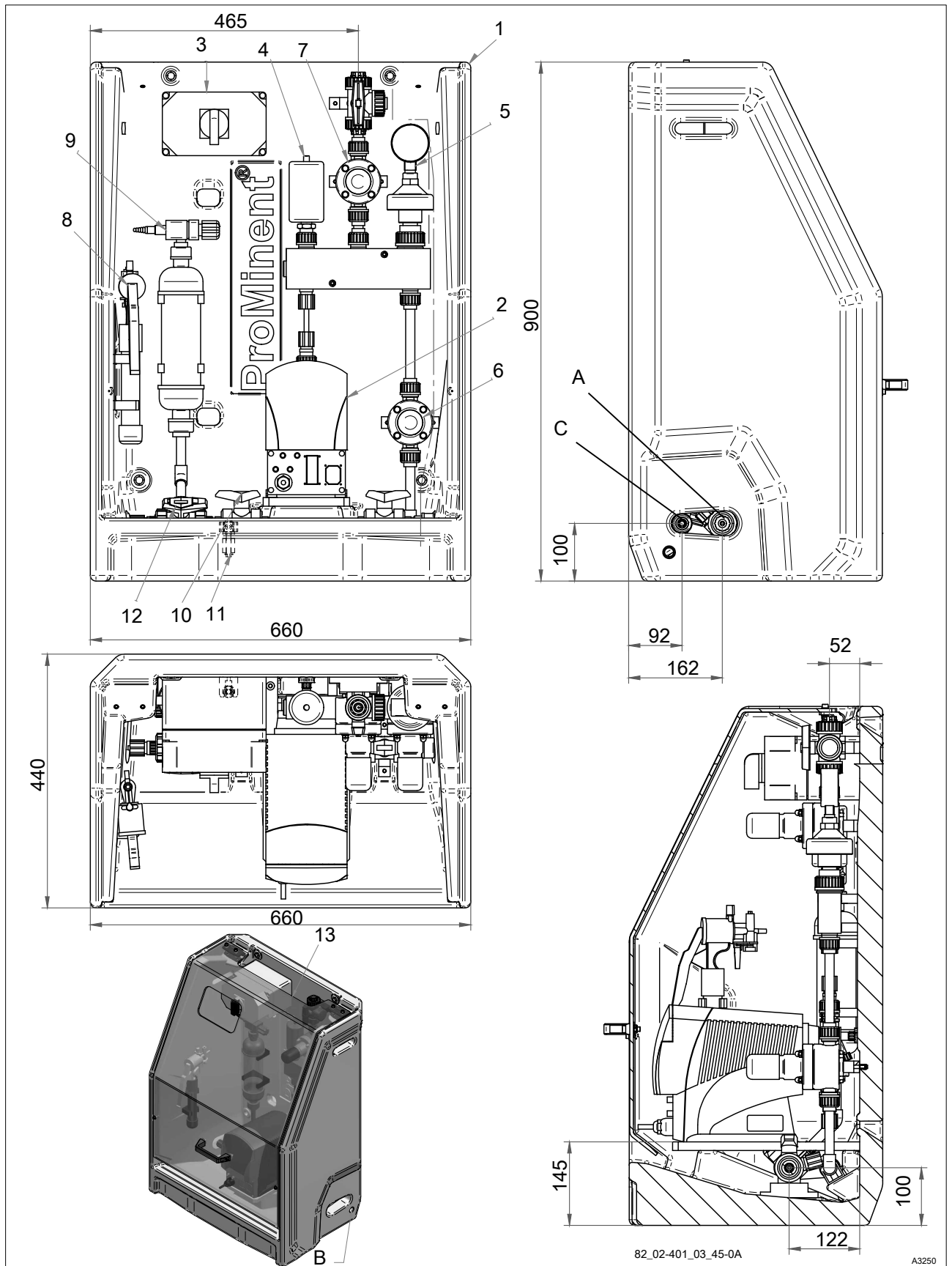


Fig. 5: Metering system, 1 pump, 1 point of injection, PE, all dimensions in mm

## About this product

A Feed  
 B Outlet  
 C Drain

not shown Connecting parts for flushing pipe DN10, 2 no.

#	Designation	Material/type	Dimension	Material	Quantity	Part number
1	Assembly frame	-	660x440x900	PP	1	-
2	Metering pump	To be selected by the customer.	-	-	1	-
3	Terminal box	-	180x110x90 mm	-	1	1024358
4	Pulsation damper	Hidracar® U001	0.09 litres	PVC-U	1	1057944
5	Manometer	MDM902	Ø25 / G1/4"	PVC-U	1	1030362
6	DHV	DHV-U	DN10	PVC-U	1	1037765
7	Back pressure valve	DHV-U	DN10	PVC-U	1	1037765
8	Vacuum pump	Hubinont®	MI8121	-	1	1031565
9	Vacuum cylinder	-	DN10	PVC-U	1	1025699
10	Ball valve	546	DN10	PVC-U	2	1024538
11	Level switch	PP1/PE	-	-	1	142086
12	3-way ball valve	543	DN10	PVC-U	2	1043568
13	Splash guard	PVC glass	-	-	1	1104651

## 2 Safety and responsibility

### 2.1 User qualification



#### WARNING!

**Danger of injury with inadequately qualified personnel**

**The operator of the system / equipment is responsible for ensuring that the qualifications are fulfilled.**

If inadequately qualified personnel work on the unit or loiter in the hazard zone of the unit, this could result in dangers that could cause serious injuries and material damage.

- All work on the unit should therefore only be conducted by qualified personnel.
- Unqualified personnel should be kept away from the hazard zone.

The pertinent accident prevention regulations, as well as all other generally acknowledged safety regulations, must be adhered to.

Training	Definition
Instructed personnel	An instructed person is deemed to be a person who has been instructed and, if required, trained in the tasks assigned to him and possible dangers that could result from improper behaviour, as well as having been instructed in the required protective equipment and protective measures.
Trained user	A trained user is a person who fulfils the requirements made of an instructed person and who has also received additional training specific to the system from the manufacturer or another authorised distribution partner.
Trained, qualified personnel	A trained, qualified employee is deemed to be a person who is able to assess the tasks assigned to him and recognize possible hazards based on his training, knowledge and experience, as well as knowledge of pertinent regulations. A trained, qualified employee must be able to perform the tasks assigned to him independently with the assistance of drawing documentation and parts lists. The assessment of a person's technical training can also be based on several years of work in the relevant field.
Electrical technician	An electrical technician is able to complete work on electrical systems and recognise and avoid possible dangers independently based on his technical training and experience as well as knowledge of pertinent standards and regulations. An electrical technician must be able to perform the tasks assigned to him independently with the assistance of drawing documentation, parts lists, terminal and circuit diagrams. The electrical technician must be specifically trained for the working environment in which the electrical technician is employed and be conversant with the relevant standards and regulations.
Service	The Service department refers to service technicians, who have received proven training and have been authorised by the manufacturer to work on the system.

## 2.2 Labelling of Warning Information

### Introduction

These operating instructions provide information on the technical data and functions of the product. These operating instructions provide detailed warning information and are provided as clear step-by-step instructions.

The warning information and notes are categorised according to the following scheme. A number of different symbols are used to denote different situations. The symbols shown here serve only as examples.



#### **DANGER!**

##### **Nature and source of the danger**

Consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger.

Description of hazard

- Denotes an immediate threatening danger. If the situation is disregarded, it will result in fatal or very serious injuries.



#### **WARNING!**

##### **Nature and source of the danger**

Possible consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger.

- Denotes a possibly hazardous situation. If the situation is disregarded, it could result in fatal or very serious injuries.



#### **CAUTION!**

##### **Nature and source of the danger**

Possible consequence: Slight or minor injuries. Material damage.

Measure to be taken to avoid this danger.

- Denotes a possibly hazardous situation. If the situation is disregarded, it could result in slight or minor injuries. May also be used as a warning about material damage.



#### **NOTICE!**

##### **Nature and source of the danger**

Damage to the product or its surroundings.

Measure to be taken to avoid this danger.

- Denotes a possibly damaging situation. If the situation is disregarded, the product or an object in its vicinity could be damaged.

**Type of information**

*Hints on use and additional information.*

*Source of the information. Additional measures.*

- *Denotes hints on use and other useful information. It does not indicate a hazardous or damaging situation.*

## 2.3 General safety information

**WARNING!****Danger from hazardous substances!**

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

**WARNING!****Unsuitable feed chemicals/ProMinent Resistance List**

Please note the resistance of the materials of the metering station to the chemicals you are using. Refer to the ProMinent Resistance List on the manufacturer's website.

**WARNING!****Live parts**

Possible consequence: Fatal or very serious injuries

- Measure: Disconnect the mains plug prior to opening the housing.
- De-energise damaged or faulty units, or units that have been tampered with, by disconnecting the mains plug.

Immediately disconnect the pump safely and as quickly as possible from the mains/power supply if the pump housing has been damaged. Only start up the pump again after authorised repair.



**WARNING!**

**Operating error / unauthorised access**

Possible consequence: fatal or very serious injuries.

- Measure: Ensure that there can be no unauthorised access to the unit.
- Ensure that the device is only operated by adequately qualified and technically expert personnel.
- Please also observe the operating instructions for the controller and fittings and any other units, such as sensors, sample water pumps ...
- The operator is responsible for ensuring that personnel are qualified.



**WARNING!**

**Use of the unit in areas at risk from explosion**

Possible consequence: fatal or very serious injuries.

Do not operate the unit in areas at risk from explosion. The unit is not approved to pump media at risk from explosion.



**WARNING!**

**Pumping flammable media**

Possible consequence: fatal or very serious injuries.

Take appropriate safety precautions when pumping flammable media. Observe the material safety data sheet for the medium.



**CAUTION!**

**Fixing the unit**

Only operate the unit when fixed to a wall or similar.



**CAUTION!**

**Caution: feed chemical spraying around**

The metering pump can generate a multiple of its nominal pressure. Hydraulic parts may rupture if a discharge line is blocked.

Fit a relief valve in the discharge line.



**CAUTION!**

**Caution: backflow**

Metering pumps are not absolutely leak-tight shut-off devices.

Use a shut-off valve, a solenoid valve or a vacuum breaker as an absolutely leak-tight shut-off device.

**CAUTION!****Injury to personnel and property / Unit starts up immediately**

The pump can start pumping as soon as it is connected to mains voltage.

Only connect the unit to the mains voltage when all installation work has been completed and the pumped chemicals can no longer escape in an uncontrolled manner.

Install an appropriate Emergency Stop switch in the pump power supply line or integrate the pump in the unit's Emergency Stop management system.

**CAUTION!****Contact with chemicals**

De-pressurise, drain and rinse the hydraulic part of the unit before working on it.

***Flushing connectors***

*Both flushing connectors can always remain closed in normal mode.*

**Information in the event of an emergency**

In the event of an electrical accident, disconnect the mains cable from the mains/power supply or press the Emergency Stop switch fitted on the side of the system. If feed chemical escapes, switch off the pump by pressing *[Stop/Start]*. If necessary, ensure that the hydraulic system around the pump is at atmospheric pressure. Adhere to the material safety data sheet for the feed chemical.

**2.4 Intended Use*****Intended Use***

*Only use the metering system to meter liquid feed chemicals into hydraulic systems.*

*The metering system is not intended for the metering of gaseous or solid media.*

*Only use the metering system in accordance with the technical data and specifications provided in these operating instructions and in the operating instructions for the individual components (such as sensors, fittings, calibration devices, metering pumps etc.).*


*The metering system is designed for installation indoors. Operation outdoors is not permitted.*

*Do not operate the metering system under conditions other than those described in the technical data.*

*Only allow technically expert personnel to operate the metering system.*

*All other uses or modifications are prohibited.*

### 3 Storage and Transport

- **User qualification:** instructed user, see  Chapter 2.1 'User qualification' on page 19



**WARNING!**

**Danger from hazardous substances!**

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



***Hazardous feed chemicals (hazardous substances)***

*Prior to storage or transportation, make sure that the metering system is free from hazardous feed chemicals.*

Immediately check the goods on receipt of delivery. Identify any damage caused by transportation as well as missing parts or incorrect delivery. Immediately notify us of defects in writing upon receipt of the goods.

Only transport the metering system standing and secured with tensioning straps.

Only transport the metering system on a pallet.

The metering system cannot be stacked.

Suitable hoisting and lifting equipment must be used for loading and unloading packed machine components. Make sure that the lifting equipment and means of transportation have sufficient load-bearing capacity.

When using forklifts, the forks must be sufficiently long to reach beyond the overall depth of the packaging and the spacing between the forks must also be sufficient.

Store and transport the metering system in an environment free from dust.

Do not expose the metering system to direct sunlight or UV radiation.

Storage and transport temperature of the metering system: -5 °C ... +50 °C

Maximum air humidity \*: 92 % relative air humidity



## 4 Assembly and installation

### 4.1 General

- **User qualification, mechanical installation:** trained and qualified personnel ↪ Chapter 2.1 'User qualification' on page 19
- **User qualification, electrical installation:** electrical technician ↪ Chapter 2.1 'User qualification' on page 19

#### Installation work:



#### **Intended use**

*The metering system is designed for installation indoors. Operation outdoors is not permitted.*

*Do not operate the metering system under conditions other than those described in the technical data.*

*Only allow adequately qualified and technically expert personnel to operate the metering system.*

*All other uses or modifications are prohibited.*

1. ➤ Only fix the metering system on the feet intended for this purpose or as a wall panel on the wall.
2. ➤ Ensure that the fixing surface is level (e.g. DIN 18202).
3. ➤ Tighten all connectors (threaded connectors, flange connectors ...).

#### Hydraulic installation:

1. ➤ When installing the metering system, always make sure that the connectors on site are connected to the metering system free of tension.
2. ➤ Only use materials that comply with the provisions and specifications of the ProMinent resistance list.

### Electrical installation:



#### WARNING!

##### Live parts

Cause: All work or installation work performed can lead to danger from electrical current.

Possible consequence: Fatal or very serious injuries.

Measure: Carry out all work in line with the applicable national and international statutory regulations, laws and standards. The system operator is responsible for compliance and implementation.

We fundamentally recommend the use of appropriate residual current circuit breakers (RCCB) or other residual current devices (RCD) providing they can be installed sensibly and professionally within the electrical installation. Please adhere to all national standards and regulations.

1. The transition point for the electrical system is a terminal box attached on the wall mounting plate with a master switch, to which all signals and the power supply to the pumps and the power supply to the controller are connected.
2. Connect the metering system in accordance with the terminal diagram supplied to the on-site electrical installation.

## 4.2 Installation on the floor

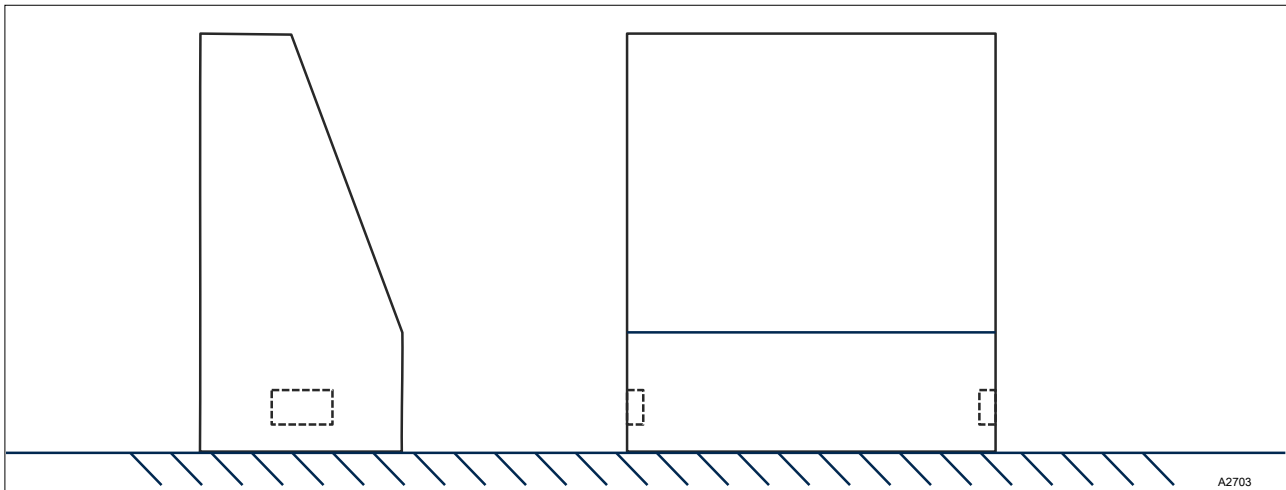


Fig. 6: Installation on the floor. No special fixing is required.

### 4.3 Installation with stainless steel bracket

4 x M8 machine feet with fixing hole  $\varnothing 15$  mm

- 1 x stainless steel bracket 1190x600x100 mm (LxHxW)
- 4 x M8 fixing bolts (bracket – mounting frame)

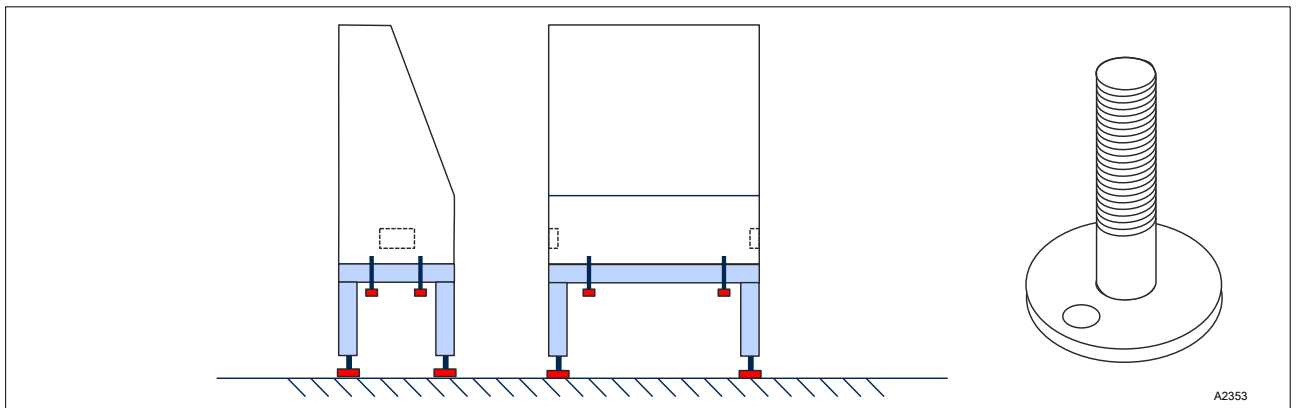


Fig. 7: Installation with stainless steel bracket

### 4.4 Installation on the wall

- 4 x M8 bolts

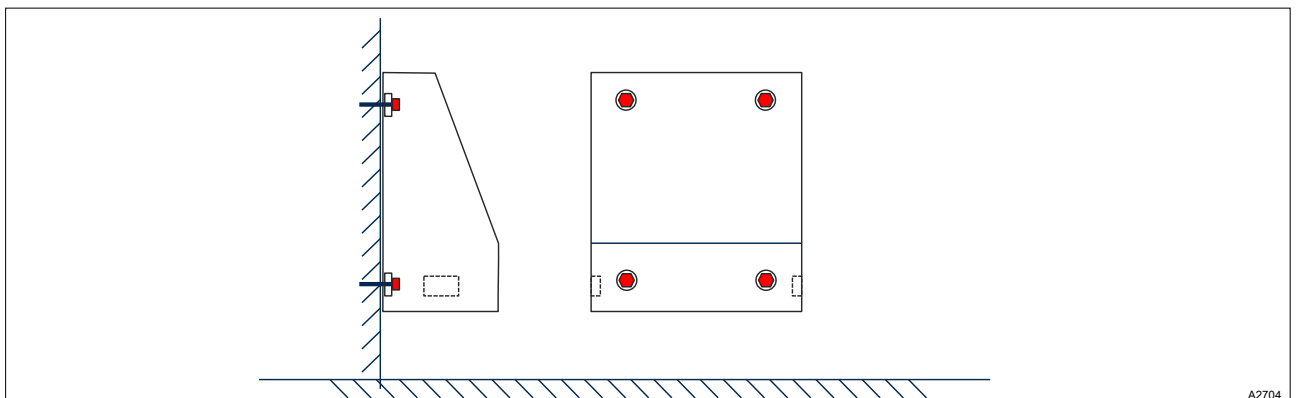


Fig. 8: Installation on the wall

### 4.5 Connect the suction lance level gauge

Model: 1 pump, 1 point of injection

- Connect the level switch to the pump.


Model: 2 pumps, 1 point of injection

- Connect the level switch to the active pump.

Model: 2 pumps, 2 points of injection

- Connect the level switch to the terminal box.
- Empty signal prompt by a higher-level control (by the customer).
- The pumps are switched off possibly by the Pause input (by the customer).

## 5 Commissioning

- **User qualification:** trained user, see  Chapter 2.1 'User qualification' on page 19



**Prerequisite for commissioning:**

*All installation and assembly work has been performed by qualified personnel.*

*The system operator has produced system-specific operating guidelines and has trained the operating personnel on the basis of these operating guidelines.*

*If necessary, the metering system has been checked, handed over and approved for operation in line with national standards and regulations.*

### 5.1 Leaks and Emissions



**WARNING!**

**Danger from hazardous substances!**

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

The continuous sound pressure level emitted by the metering system is max. 70 ±5 dB(A) in accordance with DIN EN ISO 3743-1.

## 5.2 Personal Protective Equipment (PPE)



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

- ➔ Always wear the necessary personal protective equipment (PPE) in accordance with the material safety data sheet for the feed chemical and the internal procedural instructions issued by the operator of the metering system.

## 5.3 Commissioning Test Run



### *Faults during the test run*

*Should you identify a fault during the test run, first remedy this fault. Only approve the metering system after a further test run with distilled water providing this test run is fault-free.*



*Details on the set up of the individual components can be found in the corresponding operating instructions for the respective components.*

*Start-up the respective metering pump with a 100% stroke. The stroke length settings are not pre-set.*

### Test run of the metering pump

1. ➔ Make sure that all fittings are in the operating position and the overflow connector on the multifunctional valve/back pressure valve is connected and the overflow connector is led back into a tank.
2. ➔ First, fill the two tanks provided on site with water for the test run.
3. ➔ Guide the suction lance correctly into the tank filled with water and check the discharge side connector to the injection point.
4. ➔ Start the test run of the metering pump (left line) and check all fittings and connections have the correct operating setting.
5. ➔ Counting the pump strokes enables you to identify the quantity removed.

6. ▶ Run the metering pump for a few minutes to allow all air bubbles to escape from the metering system. Set the pump to the required metering volume. You can adjust the pump output by changing the stroke rate and stroke length.
  - ⇒ If the discharge line is routed into a collecting tank, you can measure the metered volume to determine a metering volume. Switch off the metering pump again afterwards.

### Draining the metering system

7. ▶ Drain the metering system and fully remove water and contaminants from the metering system. The metering system can be drained by blowing compressed air through the lines. Do not allow the air pressure to exceed the metering system's permissible operating pressure.

## 5.4 Connecting the Chemical Tank for Commissioning



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



*Pay attention to the information in the operating instructions for the respective metering pumps.*

*The metering pumps are self-priming and prime the feed chemical into the metering line on the discharge side.*

*Fully bleed the metering line for trouble-free metering and fill with feed chemical.*

- ▶ Following a successful test run with distilled water, reinstall all connectors as they need to be for normal operation. Fully remove any temporary installations, if any are fitted. Set up the installations for proper operation.

## 6 Operation of the Metering System

- **User qualification:** instructed user, see [Chapter 2.1 'User qualification'](#) on page 19



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.


Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

During operation, perform daily checks to ensure the proper condition of the metering system. Information on this can be found in the operator's maintenance schedule and in the operating instructions for the components.

Keep all shut-off valves in the '*Open*' operating positions. Close all flushing connectors.

## 7 Maintenance and troubleshooting

- **User qualification:** trained user, see  Chapter 2.1 'User qualification' on page 19



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



### WARNING!

#### Live parts

Cause: Incorrectly performed installation work can lead to danger from electrical power.

Possible consequence: fatal or very serious injuries.

Measure: Make sure that the mains power supply is disconnected during all maintenance and repair work. Regularly check the continuity of the earth line by taking measurements. Carry out all work in line with the applicable national and international statutory regulations, laws and standards. The system operator is responsible for ensuring compliance and implementation.





### CAUTION!

#### Warning of feed chemical spraying around

Feed chemical may spray out of the hydraulic components if they are tampered with or opened due to pressure in the liquid end and adjacent parts of the system.

- Disconnect the pump from the mains power supply and ensure that it cannot be switched on again by unauthorised persons.
- Ensure that the system is at atmospheric pressure before commencing any work on hydraulic parts of the system.

1.  Drain and flush dosing heads, pulsation dampers, valves and pipework.
2.  Keep key spare parts near the metering system, including spare parts and wear parts sets for the pumps and spare parts for other system parts.



## 7.1 Maintenance



### **Maintenance intervals**

*Maintenance intervals strongly depend on the feed chemical, the hydraulic conditions and the effective run-time of the components. No general statement on maintenance intervals can therefore be provided. The maintenance intervals recommended and specified in the operating instructions are based on many years of experience. However, the maintenance intervals may alter due to the prevailing operating conditions.*

Carry out regular checks on the metering system. Pay attention to the operating instructions for the components:

- Tightness, visible damage and signs of corrosion
- Check the tightness of the seat of all components of the metering system
- Remove deposits of dust and soiling
- Check the capacities
- Check the charging pressure of the pulsation damper (bladder damper) – pay particular attention to the filling medium.
- Check the settings of the back pressure and relief valves, especially when changing the capacity
- Check and maintain the metering pumps in line with the corresponding operating instructions
- Check any flow meter equipment and flow displays fitted

Regularly replace wear parts, especially in the pump heads. If the wear parts are not regularly replaced, it can lead to damage or excessive noise emission levels.

Annually check all fittings for correct function and leak-tightness. Replace the seals, O-rings, diaphragms or all fittings etc., if required.

Following any maintenance work, check the functionality and leak-tightness of the metering system.

Tab. 2: "Maintenance" schedule for the metering system.

What?	Where?	Where described?
Metering pumps		
Functional test	Daily inspection	Pump operating instructions
Inspection of the electrical connections, mechanical intactness, secure fixing and corrosion damage	Quarterly inspection	Metering system operating instructions
Check the starting torques of the fixing bolts on the dosing head	24 hours after initial commissioning, then quarterly or when the diaphragm is replaced	
Check and, if required, replace suction and discharge valves	After 5,000 hours and/or as per the information in the operating instructions for the pump	
Check and, if required, replace the metering diaphragm	After 10,000 hours and/or as per the information in the operating instructions for the pump	
Back pressure / relief valves		
Functional test & diaphragm replacement	Annually or in the event of a fault	Metering system operating instructions Multifunctional valve operating instructions
Functional test	Weekly inspection	Metering system operating instructions
Drip tray		
Visual inspection for leak-tightness and damage	Weekly inspection	Metering system operating instructions
Leakage sensor (drip tray level switch)		
Functional test	Annually and/or in line with the specifications of the competent authority	Metering system operating instructions
Threaded connectors and hose connectors		
Check for secure fixing and leak-tightness, tighten if required	Monthly inspection	Metering system operating instructions
Pipework and hose lines		
Visual inspection for leak-tightness and damage / brittleness	Monthly inspection	Metering system operating instructions

## 7.2 Troubleshooting

Fault	Possible cause	Remedy
Suction line contains gas bubbles	Priming lift too high, operating conditions too close to the vapour pressure of the medium	Reduce priming lift, use automatic gas release, reduce temperature
	Suction line leaks and is drawing air	Check negative pressure tightness and connections, bleed line
	Medium tends to be gaseous	Automatic gas release at the highest point and in the dosing head, always lay suction lines at a continuous incline, avoid higher temperatures and UV radiation, flush suction connector
Metering pump is not pumping or indicates decreased capacity	Suction line contains gas bubbles	See separate fault indication
	Suction line is blocked	Remove blockage / dirt
	Suction pressure required is too high	Modify suction line, use a wider cross-section and/or use a priming pulsation damper
	Suction line contains gas bubbles	Bleed at the highest point, lay suction line with a continuous incline
	Flushing or drain open on the suction side	Close flushing or drain tap on the suction side
	Shut-off valve on the evacuation tank not closed	Close fitting and, if required, re-evacuate the suction line
	Tank and/or priming lift too high	Use priming aid
	Empty alert and/or low flow contact triggered	Top up chemicals into the storage tank: make sure that the level sensor is immersed in the medium
	Ball jammed/stuck in the metering pump suction or discharge valve	Dismantle, clean and, if required, replace valve
	Ball dissolved in the suction or discharge valve	Replace valve and check resistance
	Diaphragm tear / diaphragm rupture sensor activated	Replace diaphragm and sealing set
	Opening pressure of the relief valve / safety valve too low	Correctly set the opening pressure
	Open flushing and drainage connection on the discharge side	Close flushing and drainage connection
	Air in the discharge line	Bleed metering line at the highest points
	Metering line ruptured	Correctly repair the metering line
Shut-off valve closed (discharge side)	Open shut-off valve	
Metering line blocked	Rectify blockage, check opening pressure of the relief valve and/or safety valve	

The table does not claim to be complete.


Further reasons for failure and detailed information on the causes of faults can be found in the operating instructions for the individual components.

Fault	Possible cause	Remedy
	Back pressure too high at the injection point	Reduce back pressure or replace pump with a higher capacity
	Injection point blocked	Clean injection point
	Voltage drop or failure	Reconnect the power supply
	Cable for power supply is not correctly connected	Ensure correct power supply through measurement
	Control failure, no control signal	Ensure correct control signal through measurement
	Cable for control is loose or incorrectly connected	Check connector and, if required, rewire the signal cable
	Stroke rate or stroke length set to "0"	Set the stroke rate / stroke length to the desired value
	Pump is set to standby mode or pause	Check the control or pause signal
	Faulty operation of the pump/metering system	Train operating staff
	Electrical connection malfunctioning	Check the contacts for corrosion and secure fixing
Display on the pressure manometer pulsates	Pulsation damper pre-load is incorrect	Check the setting of the pulsation damper
		Retrofit pulsation damper if necessary
Discharge line displays strong vibrations or starts 'pulsating'	Pressure peaks too high	Check the setting of the pulsation damper
		Retrofit pulsation damper if necessary
Suction line displays strong vibrations or starts 'pulsating'	Pressure peaks too high	Check the setting of the pulsation damper
		Retrofit pulsation damper if necessary
Fluid is leaking from the backplate of the metering pump	Liquid end not tight	Tighten the screws on the dosing head crosswise to the correct tightening torque
		Replace diaphragm/sealing set

The table does not claim to be complete.

Further reasons for failure and detailed information on the causes of faults can be found in the operating instructions for the individual components.

## 8 Decommissioning and disposal

- **User qualification:** instructed user, see  Chapter 2.1 'User qualification' on page 19



### WARNING!

#### Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.







*During decommissioning, de-energise the mains cable and ensure that it cannot be switched on again.*

*Thoroughly clean the metering system of chemicals and dirt when decommissioning it.*

If the metering system is idle for a long period of time, thoroughly rinse, clean and then drain all pipework, fittings, metering pump and all other wetted parts. If possible, dry/flush the pipework with compressed air. Compressed air can pressurise residue out of the lines. When doing so, pay attention to the maximum permissible pressure of the metering system.

Secure the metering system against unauthorised intervention. Ensure that suitable barriers, such as flexible protective grating or barrier tape, are in place.

1.  Disconnect the metering system from the mains power supply.
2.  Depressurise all components of the metering system.
3.  Drain the metering system and thoroughly rinse it with a suitable medium.
4. 



*Also read the operating instructions for the individual components used.*

Comply with the storage conditions for temporary decommissioning.

## 8.1 Disposal of used parts

- **User qualification:** instructed user, see [Chapter 2.1 'User qualification'](#) on page 19



### NOTICE!

#### Regulations governing the disposal of used parts

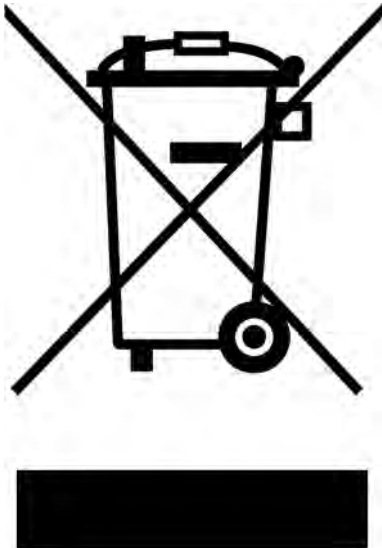
- Note the national regulations and legal standards that currently apply in your country

The manufacturer will take back decontaminated used devices providing they are covered by adequate postage.

Decontaminate the device before returning it for repair. To do so, remove all traces of hazardous substances. Refer to the Material Safety Data Sheet for your feed chemical.

A current Declaration of Decontamination is available to download on the ProMinent website.

### Sign indicating EU collection system



In accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment, this device features the symbol showing a waste bin with a line through it. The device must not be disposed of along with domestic waste. To return the device, use the return and collection systems available and observe the local legal requirements.

## 9 Technical data

DSUa:	1 pump, 1 point of injection	2 pumps, 1 point of injection
Dimensions HxWxD (mm)	600x850x520 / PP 660x440x900 / PE	700x1000x520
Weight without pump(s)	30 kg	45 kg
Weight with pump(s)	45 kg	65 kg
Storage and transport temperature	0 °C ... +50 °C	0 °C ... +50 °C
Operating temperature	0 °C ... +40 °C	0 °C ... +40 °C
Installation site	Indoors	Indoors
Maximum relative air humidity	< 92 %, non-condensing	< 92 %, non-condensing
Sound pressure level	< 70 dB (A)	< 70 dB (A)
Max. operating pressure (25 °C)	10 bar	10 bar
Max. operating pressure (40 °C)	6 bar	6 bar
Pulsation damper	Inline, 90 ml	Inline, 90 ml
Volume of vacuum cylinder	0.5 l	0.5 l
Metering pump 1	BT4a, BT5a, GXLa, GMXa	BT4a, BT5a, GXLa, GMXa
Metering pump 2	-	BT4a, BT5a, GXLa, GMXa
Maximum capacity	75 l/h, 2 bar	75 l/h, 2 bar
Nominal width of pipework	DN 10	DN 10
Nominal width of flushing connector	DN 10	DN 10
Nominal width of return line	DN 10	DN 10
Output	6x4, 8x5, 12x9, DN10 nozzle	6x4, 8x5, 12x9, DN10 nozzle
input	6x4, 8x5, 12x9, DN10 nozzle	6x4, 8x5, 12x9, DN10 nozzle

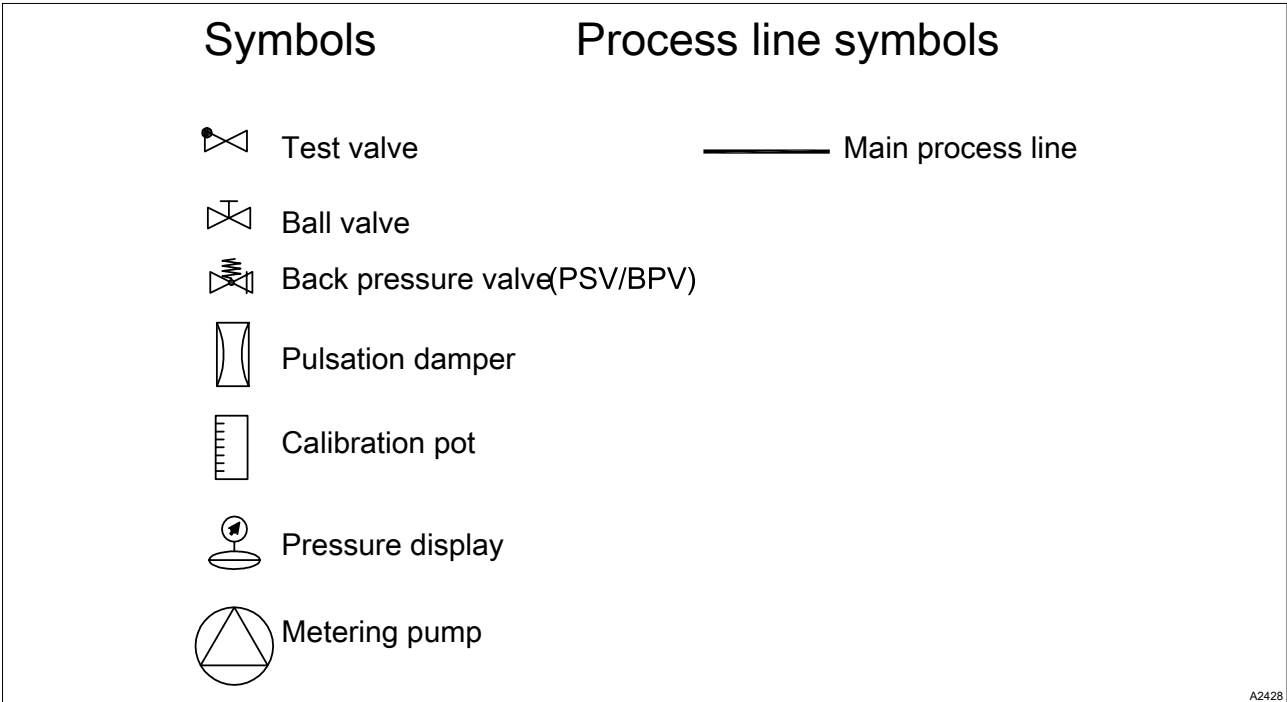
## Technical data

<b>DSUa:</b>	<b>2 pumps, 2 points of injection</b>
Dimensions HxWxD (mm)	900x850x520
Weight without pumps	50 kg
Weight with pumps	70 kg
Storage and transport temperature	0 °C ... +50 °C
Operating temperature	0 °C ... +40 °C
Installation site	Indoors
Maximum relative air humidity	< 92 %, non-condensing
Sound pressure level	< 70 dB (A)
Max. operating pressure (25 °C)	10 bar
Max. operating pressure (40 °C)	6 bar
Pulsation damper	Inline, 90 ml
Volume of vacuum cylinder	0.5 l
Metering pump 1	BT4a, BT5a, GXLa, GMXa
Metering pump 2	BT4a, BT5a, GXLa, GMXa
Maximum capacity	2 x 75 l/h, 2 bar
Nominal width of pipework	DN 10
Nominal width of flushing connector	DN 10
Nominal width of return line	DN 10
Output	6x4, 8x5, 12x9, DN10 nozzle
input	6x4, 8x5, 12x9, DN10 nozzle



# 10 Flow diagram of DSUa mini (PID)

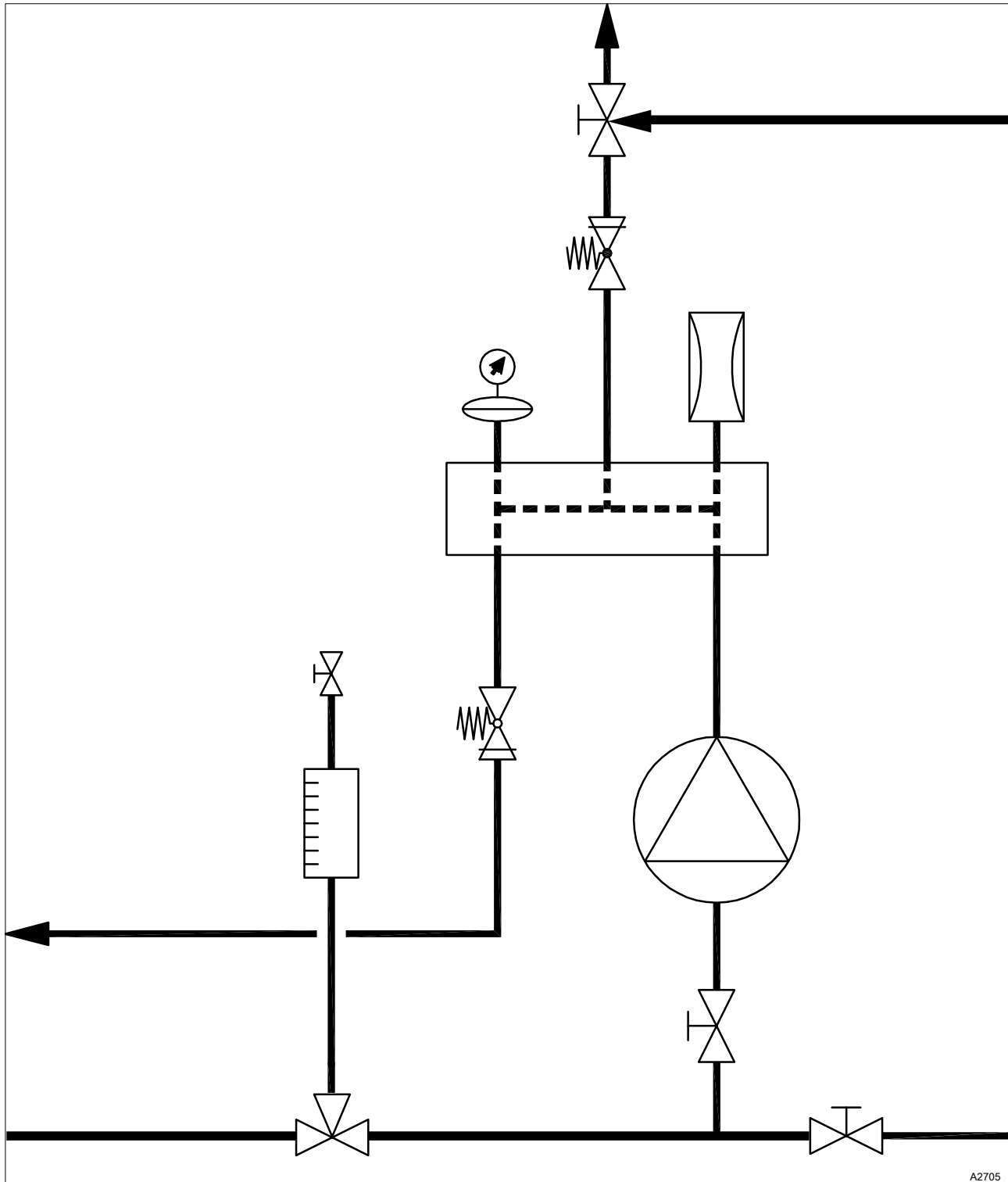
## 10.1 Legend for flow diagrams



A2428

Fig. 9: Legend for flow diagrams

10.2 Flow diagram of DSUa mini 1 (PID)



A2705

Fig. 10: Flow diagram of DSUa mini 1 (PID)

10.3 Flow diagram of DSUa mini 2 (PID)

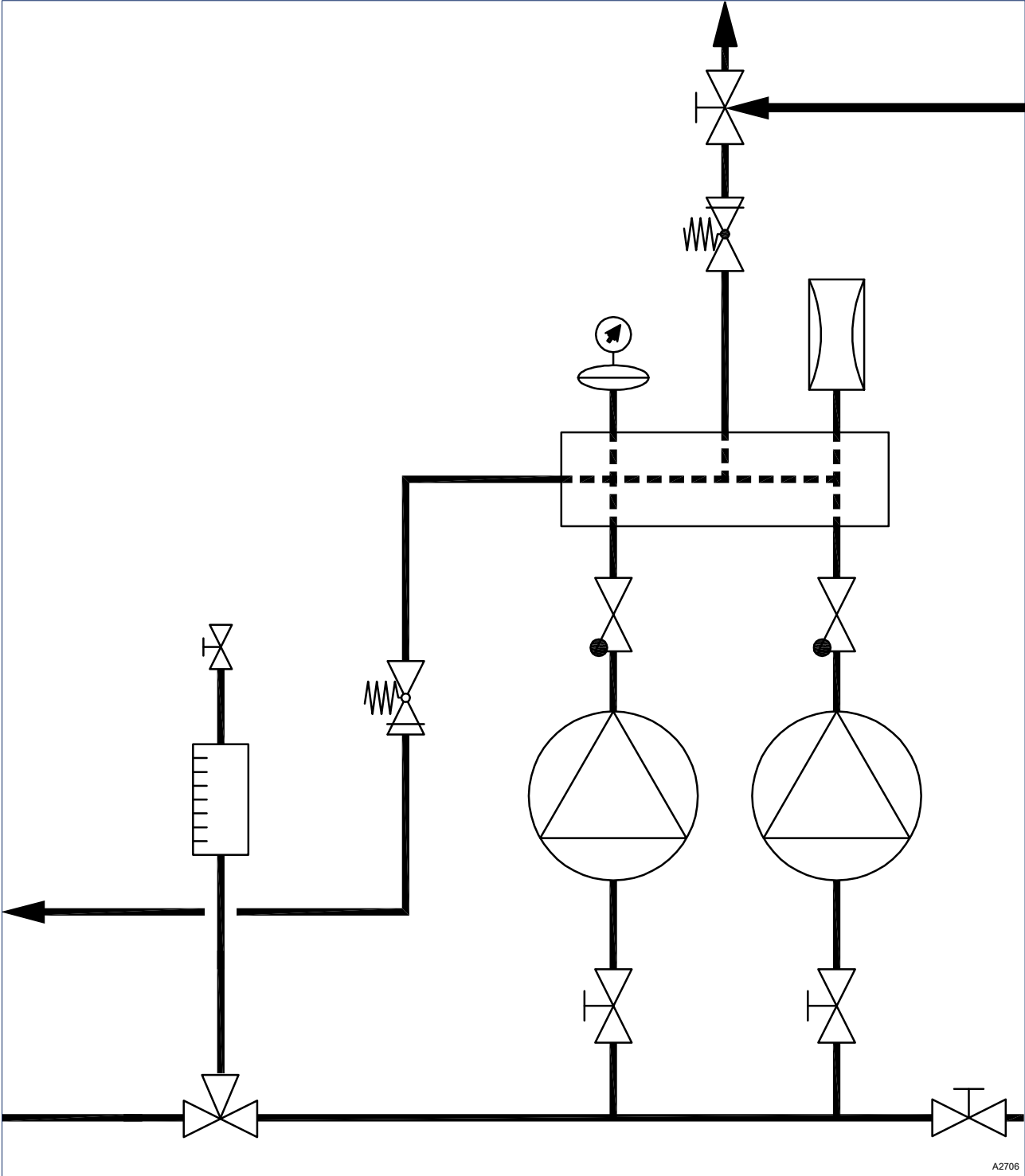


Fig. 11: Flow diagram of DSUa mini 2 (PID)

10.4 Flow diagram of DSUa mini 3 (PID)

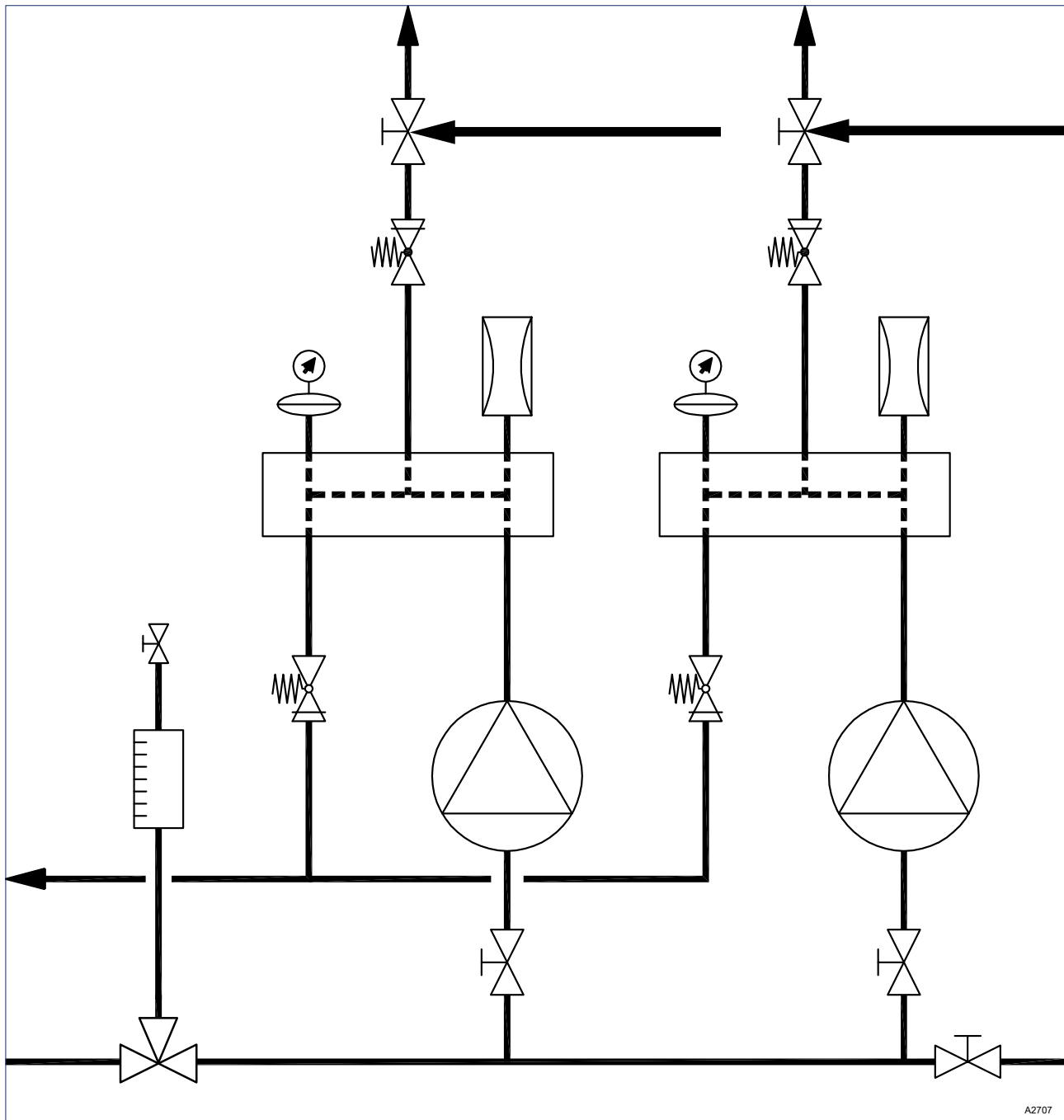


Fig. 12: Flow diagram of DSUa mini 3 (PID)

# 11 Electrical wiring diagram

## 11.1 Electrical Wiring Diagram, 1062129, 1 Pump

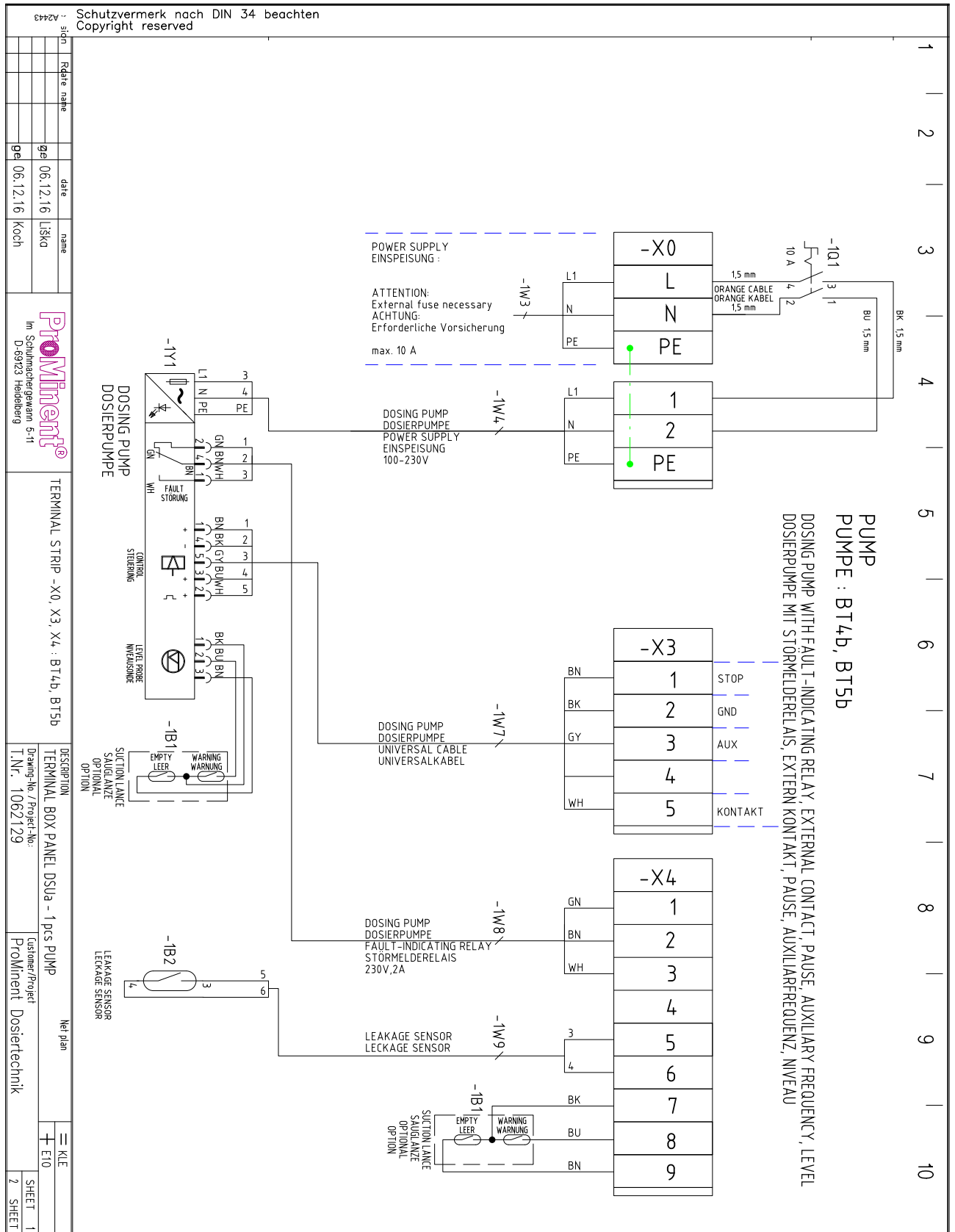


Fig. 13: BT4b, BT5b

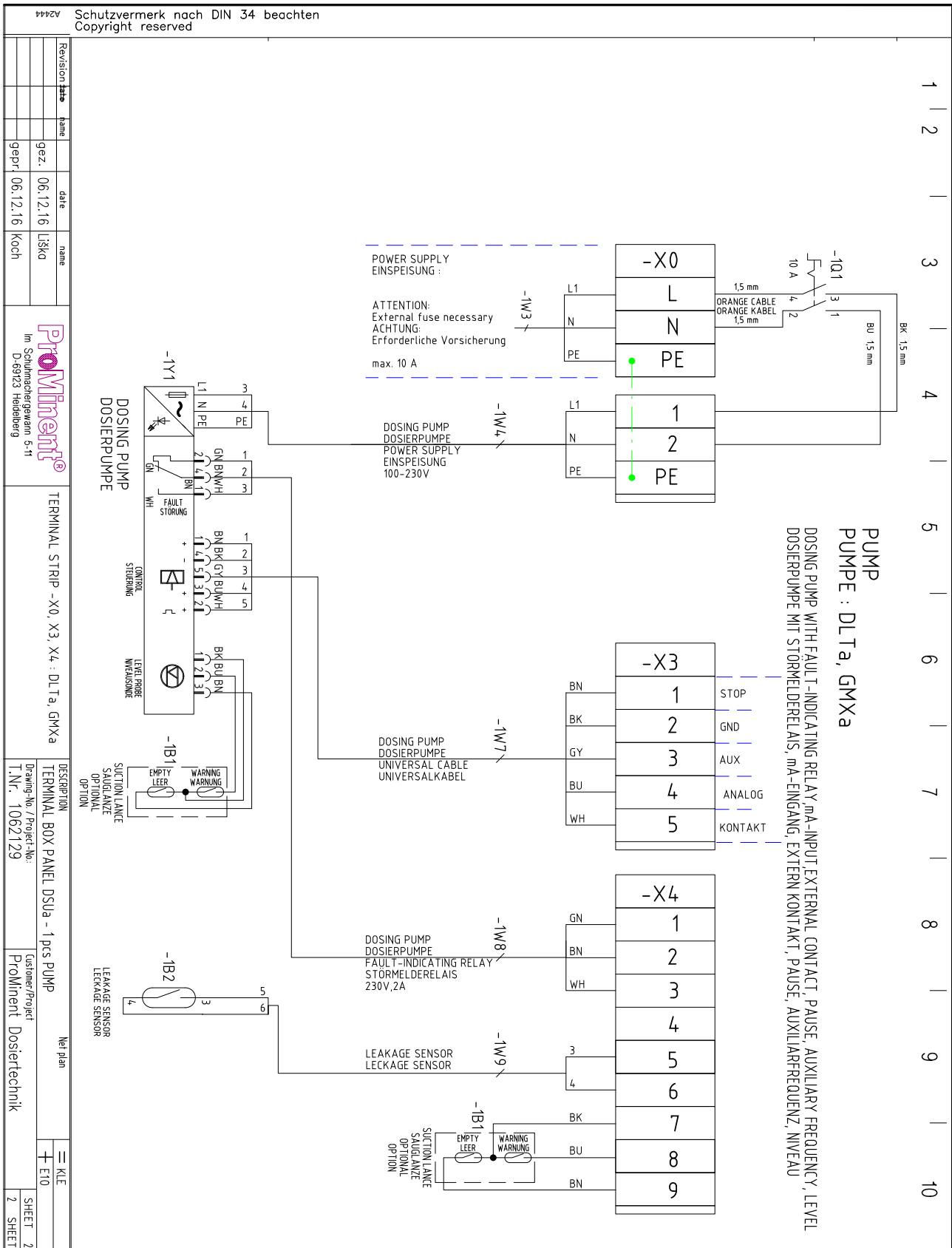


Fig. 14: DLTa, GMXa

### 11.2 Electrical wiring diagram, 2 pumps

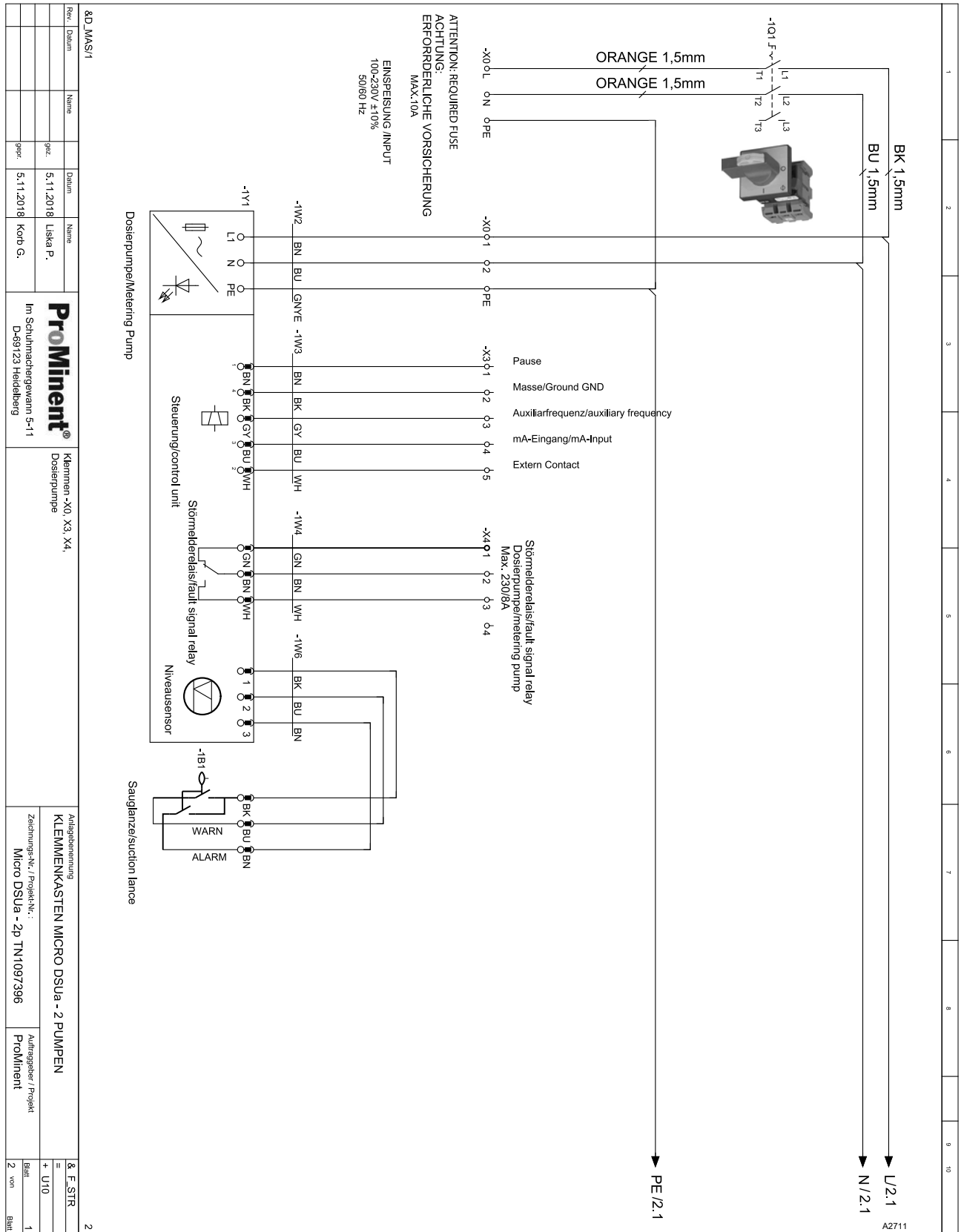


Fig. 15: Electrical wiring diagram, 2 pumps

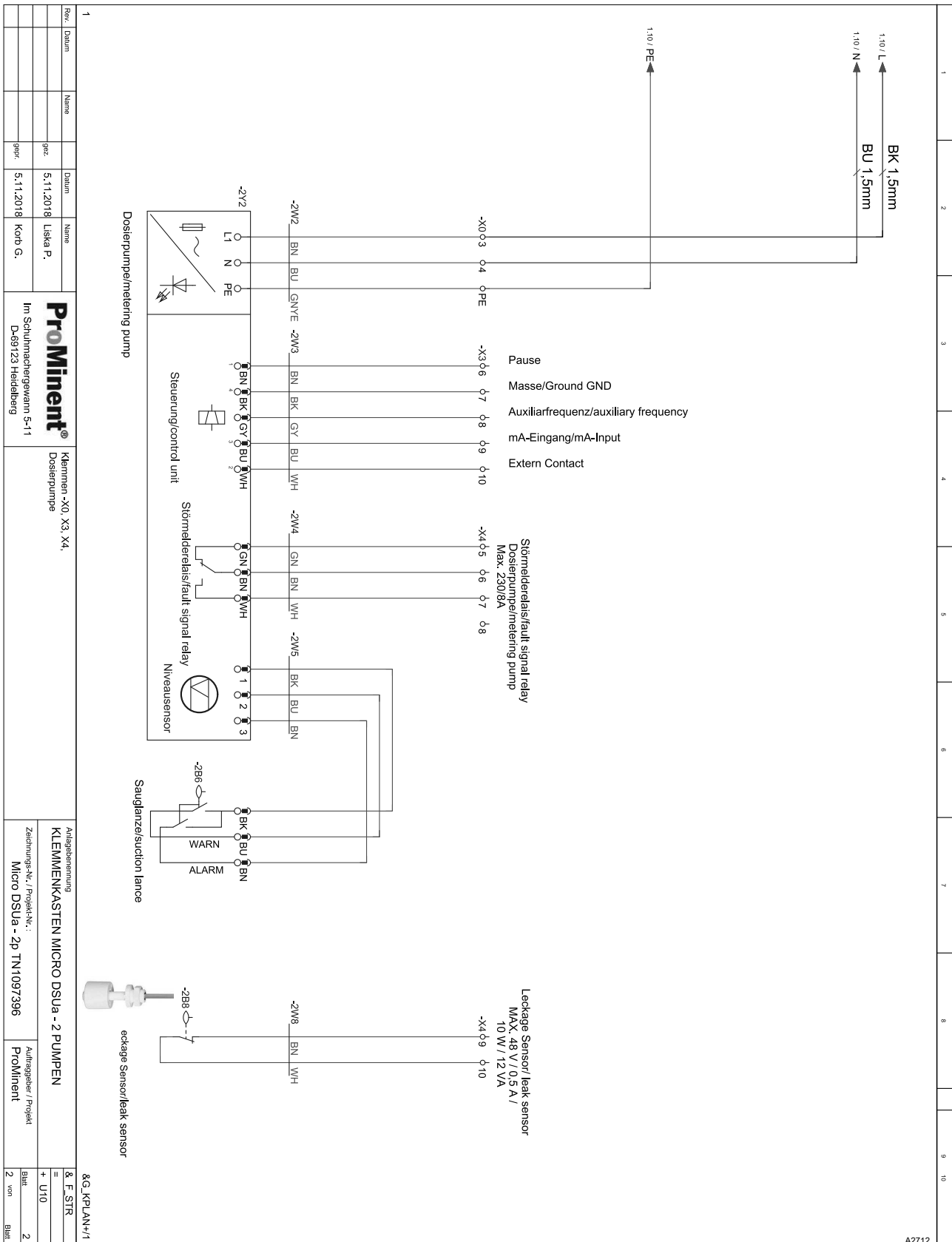
Rev:	Datum:	Name:	Datum:	Name:	Klemmen: -X0, X3, X4,	Anlagenbezeichnung:	& F-STR
					Dosierpumpe	KLEMMENKASTEN MICRO DSua - 2 PUMPEN	=
	gez.:	5.11.2018	5.11.2018	Liska P.			+ U10
	gepr.:	5.11.2018	5.11.2018	Kob G.			Bliht
							2 von
							Bliht
							1
							2

Im Schutzschneidergeräten 5-11  
 D-69123 Heidelberg

Micromicro DSua - 2P TN1097396

Auftraggeber / Projekt  
 ProMinent

# Electrical wiring diagram



A2712

Fig. 16: Electrical wiring diagram, 2 pumps



## 12 Declaration of Conformity for Machinery

In accordance with DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, Appendix I, BASIC HEALTH AND SAFETY REQUIREMENTS, section 1.7.4.2. C.

We,

- ProMinent Systems s.r.o.
- Fügnerova ul. 567
- CZ- 336 01 Blovice, Czech Republic
- IČ: 48363448

hereby declare that the product specified in the following, complies with the relevant basic health and safety requirements of the EU Directive, on the basis of its functional concept and design and in the version distributed by us. Any modification to the product not approved by us will invalidate this declaration.

*Tab. 3: Extract from the Declaration of Conformity*

Designation of the product:	Panel-mounted metering system DULCODOS universal
Product type:	DSUa
Serial number:	see nameplate on the device
Relevant EC directives:	EC Machinery Directive (2006/42/EC) EMC Directive (2014/30/EU) Compliance with the protection targets of the Low Voltage Directive 2006/95/EC according to Appendix I, No. 1.5.1 of the Machinery Directive 2014/35/EU.
Harmonised standards applied, in particular:	ČSN EN ISO 12100:2011 ČSN EN 60204-1, 2:2007 ČSN EN 60439-1, 2:2010 ČSN EN 61140, 2:2003 ČSN EN 61000-2-4, 2:2003 ČSN EN 61000-6-2, 3:2006 ČSN EN 60529 + A2:2014
Place/Date:	Blovice, 09.02.2017

The Declaration of Conformity is available to download on our homepage.

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