

INSTALLATION AND OPERATING INSTRUCTIONS

KESSEL Grease separator “M” NG 2, 4, 7 and 10 For installation in frost free areas With manually automated disposal program

Version according to DIN 4040-1 or
Version according to EN 1825

Product advantages



Complies with DIN 4040
(Certification # Z54.6-128)

Complies with EN 1825
(Certification # Z54.6-327)

From Polyethylene

Compact construction

Low maintenance costs
due to heavy-duty, easily
cleaned polymer
construction

100 % resistance against
aggressive grease acids

Art. # 93222.00/M1

The installation and service of this unit should be carried
out by a licensed professional servicer

Company - Telephone No.

Edition 06/2003-HG

ID number 010-617

(Subject to technical amendment)

Safety precautions

Dear Customer,

Before the KESSEL Euro Separator Version G is installed and placed in operation please carefully read and follow all of the instructions contained in this Installation, Maintenance and User's Manual.

Upon delivery of the Euro Separator please thoroughly inspect the separator to make sure that it has not been damaged during shipping. In case damage has occurred to the separator, please follow the instructions listed in the 'Guarantee' section of this user's manual.



By installation, use, maintenance and repair of this unit please follow all appropriate DIN / VDE / DVGW safety precautions and accident prevention guidelines. Also please follow any local safety precautions and accident prevention guidelines established in your area.

Please note that the unit is designed to receive kitchen waste water with a maximum temperature of 60 degrees Celsius (140 degrees F). Temperatures higher than 60 degrees Celsius could damage the unit.



Do not stand or place excessive weight on the separator. During disposal / emptying of a Type G separator, a step ladder should be used to help gain access to the openings on the top of the separator.

NO SMOKING! Smoking must not be permitted near the separator during use, maintenance and repair of the unit due to the potential build up of methane / biogas.



SLIPPERY WHEN WET! Take caution when standing / walking near the separator. During disposal, cleaning and maintenance the surrounding area can become extremely slippery due to spilled water / grease / fat.

Separator Area Regulations:

- No access of the separator for unauthorized personnel
- No storage of food / groceries / provisions (for hygienic reasons) if the separator is installed underground within a building.
- The location of the separator should be chosen carefully as to allow sufficient access for maintenance, inspection, repair and disposal of the separator.
- The wastewater in a grease separator can contain bacteria. After coming in contact with wastewater or the separator itself, it is important to wash, clean and disinfect all skin which has been contaminated.

All personnel having anything to do with the separator should have a sound knowledge of the above safety precautions.

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1. General

1.1 Application

According to DIN 4040 and EN 1825, the installation of grease separators is required wherever oils and fats from animals and plants are introduced into wastewater systems. Uncollected, oils and fats can cause serious damage to wastewater piping and private / public wastewater treatment plants.

1.2 Application area

Due to the specialty disposal equipment, the separator contents can be disposed without any odor release since the odor tight covers do not need to be removed during the disposal process. During the disposal process, the separator contents are pumped out of the separator and to the exterior wall of the building through pressure pipes and into a waiting disposal vehicle. This manually operated disposal system eliminates problematic odors and prevents the unhygienic process of a disposal suction hose being run from the vehicle to the separator.

1.3 Separator description

The KESSEL - NG 2-10 Version M Automated Grease Separator consists of a grease separator with integrated sludge trap constructed from polyethylene (LLD-PE). The separator is equipped with a pump for mixing, cleaning and disposing the contents of the separator. The LLD-PE interior walls of the separator require no extra protective coatings.

For important technical information concerning this separator please see the shield located on the separator itself – this information is also located in this User's Manual.

1.4 Table of article numbers

| According to DIN 4040 | Article number | |
|-----------------------|----------------|---------------|
| NG (l/sec) | Pump left | Pump right |
| 2 | 93222.50 / M1 | 93222.00 / M1 |
| 4 | 93224.50 / M1 | 93224.00 / M1 |
| 7 | 93227.50 / M1 | 93227.00 / M1 |
| 10 | 93210.50 / M1 | 93210.00 / M1 |

| According to EN 1825 | Article number | |
|----------------------|----------------|---------------|
| NG (l/sec) | Pump left | Pump right |
| 2 | 93002.50 / M1 | 93002.00 / M1 |
| 4 | 93004.50 / M1 | 93004.00 / M1 |
| 7 | 93007.50 / M1 | 93007.00 / M1 |
| 10 | 93010.50 / M1 | 93010.00 / M1 |

Pump left = operation side in flow direction left

Pump right = operation side in flow direction right

2. Installation

When the shipment arrives, please inspect it immediately for damages which may have been caused during transport / shipping!

2.1 General

The separator is to be installed in a dry, frost free room / area on a smooth, solid and level surface. This is especially important due to the electronic equipment accompanied with the separator. Based on the size of the grease separator it can be equipped with the following pump (customer separators may be equipped with custom pumps).

2.6 kW Pump

2.6 kW, 400 V, 50 Hz, IP 68 protection rating (0.5 Bar for 24 hours) - during disposal, this system pumps 25 cubic meters per hour at a head / pressure of 0.7 bar. This value is for clean water.

4.0 kW Pump

4.0 kW, 400 V, 50 Hz, IP 68 protection rating (0.5 Bar for 24 hours) - during disposal, this system pumps 30 cubic meters per hour at a head / pressure of 1.0 bar. This value is for clean water.

Custom Systems - Pumping data / power curves for custom designed systems will be specially noted in their according user's manuals.

2.2 Set-up

1. The separator is to be installed on a smooth, level, solid surface.
2. The pump (included in the delivery) is to be placed and secured to the floor with the included fastening bolts. In order to dampen pump vibrations be sure to place the included rubber mats under each of the three pumps.
3. The disposal pressure pipe is to be connected to the included flange on the end of the separator's disposal pipe stub (flange connection is DN65, PN 10 DIN 2501, Diameter 145mm (between center point of opposite flange holes). A Storz B coupling (with R 2 1/2 inside threads) is to be installed at the end of the pressure pipe in the exterior wall of the building in an area easily accessed by the disposal vehicle. Before the Storz B coupling it is also advisable to install a backwater flap to prevent any backflow from the disposal vehicle back into the pressure piping. The pressure piping should be firmly secured to the walls to prevent noise / vibrations during disposal.
4. The remote control should be installed near the Storz B coupling, if possible - above the coupling.
5. In order to protect the coupling and the remote control, it is advised that both of these items be contained in a lockable protective enclosure (box). Recommended enclosure dimensions (width - 400 mm, height - 600 mm, depth - 250 mm).
6. The two included 1 inch solenoid valves (for the cold water refill and the warm water rinsing) must be installed perfectly level (please see included installation guide).
7. Follow DIN 1988, DVGW as well as local installation codes when connected the cold water refill and the warm water rinsing pipes.
8. The refill pipe should be connected to a cold water pipe and, if possible, the rinsing connection should be attached to a warm water pipe.
9. Inlet and outlet of the separator are to be connected to appropriately sized SML rohr DIN 19522 wastewater piping. If a different type of wastewater drainage pipe is being used be sure to connect with appropriate adaptors.

2. Installation

2.3 Electrical Installations

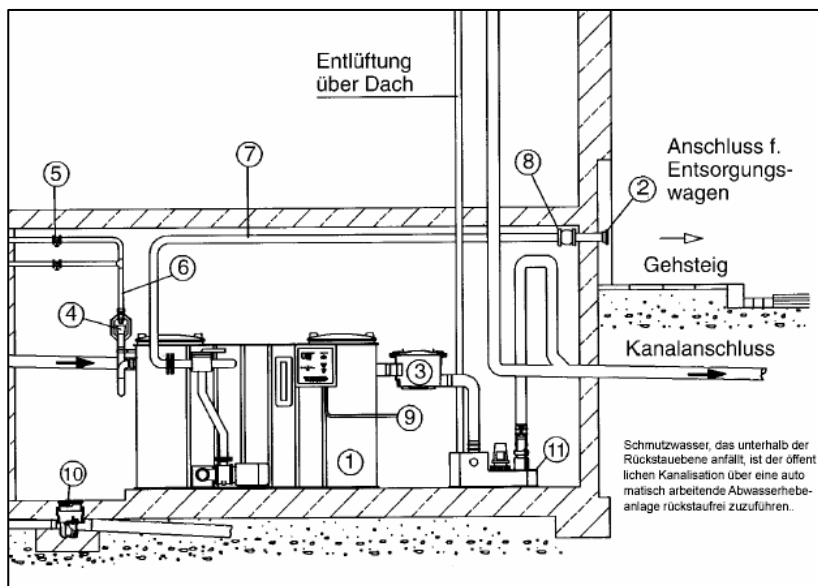
All electrical connections and work should be handled by a professional, licensed electrician.

1. Fuse: for 2.6 kW pump – 16 AMP
2. Fuse: for 4.0 kW pump – 20 AMP
3. When connecting the pump be sure that the cables are connected properly so that the pump's impeller rotates in the correct direction (see directional stickers on both pumps).
4. The run-dry motor protection setting is to be checked by doing the following:

Please take care that:

- That the user's manual and all operating instructions concerning the separator are kept in a safe location nearby the separator.
- That the disposal procedure is conducted exactly as it is described in the user's manual.
- All relevant safety precautions are followed at all times.
- Only allow professional licensed disposal companies to handle the disposal of the separator.
- Right reserved for technical changes.

2.4 Installation example



1. Grease separatore M NG 4 KESSEL
2. Storz-B hook up connection
3. Sampling device
4. Refilling device
5. Shut-off valve
6. Water connection
 - a cold water connection
 - b warm water connection
7. Disposal pipe
8. Non-return valve
9. Electrical connection
10. KESSEL Basement drain "The universal" with backwater valve
11. KESSEL lifting station

Entlüftung über Dach = Ventilation pipe

Anschluss für Entsorgungswagen = Connection for disposal truck

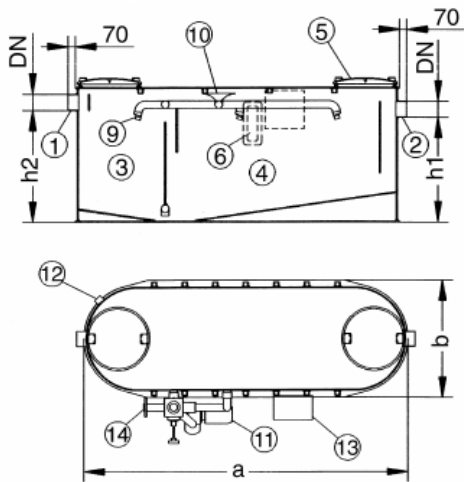
Gehsteig = Sidewalk

Kanalanschluss = Connection to public sewer

2. Installation

2.5 Dimensioned drawing

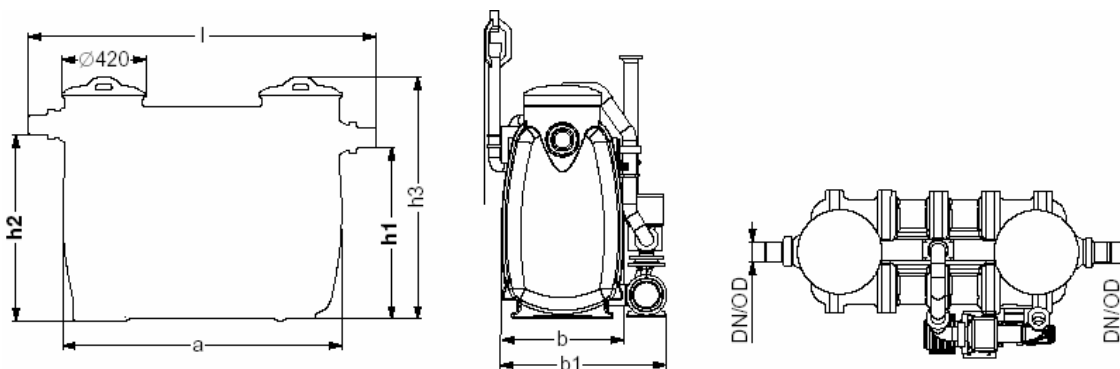
2.5.1 Grease separator acc. to DIN 4040



1. Inlet
2. Outlet
3. Sludge trap
4. Grease trap
5. Quick-release covers
6. Inspection window
7. Solenoid valve
8. Leva manuale
9. Cleaning jets
10. Cleaning water stream
11. Pump with closure locks
12. Warm water connection (rinsing) and cold water connection (refilling with fresh water)
13. Control unit
14. Disposal pipe

| NG (l/sec) | DN | Dimension w/o pump a x b | | b1 | h | h1 | h2 | h3 | Separator volumes | | Weight approx |
|---------------|-----|-----------------------------|------|------|------|------|------|------|-------------------|---------------|------------------|
| | | a | b | | | | | | Sludge chamber | Separ- tor | |
| 2 | 100 | 1700 | 680 | 1080 | 1455 | 1030 | 1100 | 1180 | 220 l | 570 l | 240 kg |
| 4 | 100 | 2250 | 920 | 1320 | 1455 | 1030 | 1100 | 1180 | 430 l | 1070 l | 290 kg |
| 7 | 150 | 3180 | 1150 | 1550 | 1455 | 1030 | 1100 | 1180 | 720 l | 1870 l | 400 kg |
| 10 | 150 | 3600 | 1350 | 1750 | 1455 | 1030 | 1100 | 1180 | 1052 l | 2480 l | 440 kg |

2.5.2 Grease separator acc. to EN 1825



| NG (l/sec) | DN | OD | a | b | b1 | h1 | h2 | h3 | l | Separator volumes | | Grease storage |
|---------------|-----|-----|------|-----|------|------|------|------|------|-------------------|-----------|-------------------|
| | | | | | | | | | | Sludge chamber | Separator | |
| 2 | 100 | 110 | 940 | 650 | 950 | 930 | 1000 | 1310 | 1250 | 200 l | 212 l | 106 l |
| 4 | 100 | 110 | 1500 | 650 | 950 | 930 | 1000 | 1310 | 1810 | 400 l | 354 l | 177 l |
| 7 | 150 | 160 | 1600 | 920 | 1220 | 1130 | 1200 | 1560 | 1850 | 700 l | 567 l | 302 l |
| 10 | 150 | 160 | 2430 | 920 | 1220 | 1130 | 1200 | 1560 | 2700 | 1000 l | 794 l | 423 l |

3. Setting up

3.1 Setting up for operation

Before the separator is put into operation, please make sure that:

- the separator is clean and the interior is free from any objects which may have been placed inside during shipping or installation.
- the separator is completely filled with clean cold water. Completely filling the separator is complete when water begins to drain from the outlet.

3.2 Initial Instructions

Placing the separator into full operation is normally handled by a licensed tradesman although upon request can be handled by a KESSEL representative.

The following personnel should be on hand when the initial instructions for placing the separator into operation are given:

- Building facilities manager
- Building maintenance workers
- Contracted plumber / tradesman
- Contracted disposal company

3.3 What to do

- Check to make sure the separator is completely watertight. Check to make sure that during transport and installation that no damage to the separator was caused. Check to make sure all connections to the separator (inlet, outlet, refill, rinse pipes etc.) are in perfect working order.
- Representative should discuss all necessary information regarding the disposal.
- Representative should take the customer step by step through all stages of a separator disposal
- After the separator has been emptied (disposed) all necessary paperwork and documentation should be handed over to the customer.
- The separator should be returned to service by filling the separator with fresh, cold water at least to the outlet control device (located inside the separator).

4. Operation

4.1 Manually operated disposal

The KESSEL Version M grease separator is controlled from the control unit by the 'Start Pumpe' and the 'Stop Pumpe' buttons. Any warning are displayed by the warning light.

4.2 First disposal

The first disposal should take place approximately 3 weeks after the separator has been placed into operation.

4.3 Disposal intervals

After the first disposal the separator should be emptied monthly or when the grease layer has reached 16 cm – whichever comes first. Because of the importance of proper disposal intervals, it is recommended that a disposal contract is signed with the appropriate disposal company.

4.4 Disposal procedure

Important to check before the disposal process begins is that both the grease separator covers are securely closed and that the outlet closure device by the pump is in the open position. Also make sure that the disposal hose from the disposal truck is securely connected to the direct disposal pressure pipe. During the disposal procedure, no wastewater should be allowed to enter the separator.

Important points:

1. During the disposal procedure, the disposal truck should **not** turn on (activate) its suction pump(s). All the disposal / pumping work will be handled by the disposal pump located on the grease separator.
2. A backwater valve should be installed near the Storz B hook up connection in the disposal piping to prevent any wastewater from the disposal truck from re-entering the grease separator disposal lines.

5. Disposal for grease separator acc. to. DIN 4040

5.1 For separators with manually automated disposal

Separators NG 2, NG 4, NG 7 and NG 10 acc. to DIN 4040

| Program step | Function | Valve setting | Pump running time in seconds | | | |
|--------------|---------------|------------------|------------------------------|------|------|-------|
| | | | NG 2 | NG 4 | NG 7 | NG 10 |
| 1 | partial empty | “Leeren” / empty | 40 | 60 | 80 | 120 |
| 2 | mix | “Mischen” / mix | 120 | 180 | 200 | 360 |
| 3 | empty | “Leeren” / empty | 120 | 180 | 300 | 360 |
| 4 | fill | “Mischen” / mix | 100 | 100 | 140 | 200 |
| 5 | mix | “Mischen” / mix | 120 | 120 | 160 | 240 |
| 6 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 7 | fill | “Spülen” / rinse | 100 | 100 | 140 | 200 |
| 8 | rinse | “Spülen” / rinse | 60 | 90 | 100 | 180 |
| 9 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 10 | fill | “Spülen” / rinse | 60 | 100 | 140 | 200 |
| 11 | rinse | “Spülen” / rinse | 60 | 90 | 100 | 180 |
| 12 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 13 | fill | “Leeren” / empty | 300 | 420 | 500 | 1000 |

| Pump | Valve warm water | Valve cold water | Hint |
|------|------------------|------------------|---|
| on | off | off | Let the pump run until water level has dropped by approx. 30 cm |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | on | off | until the pump runs dry |
| off | off | on | until separator overflow level |

Time settings can also be customized depending on pumping height, temperature or water pressures. Flow rate through a DN 25 solenoid valve is 23 m³/hour.

5. Disposal for grease separator acc. to. EN 1825

5.2 For separators with manually automated disposal

Separators NG 2, NG 4, NG 7 and NG 10 acc. to EN 1825

| Program step | Function | Valve setting | Pump running time in seconds | | | |
|--------------|---------------|------------------|------------------------------|------|------|-------|
| | | | NG 2 | NG 4 | NG 7 | NG 10 |
| 1 | partial empty | “Leeren” / empty | 30 | 40 | 50 | 80 |
| 2 | mix | “Spülen” / rinse | 120 | 180 | 200 | 360 |
| 3 | empty | “Leeren” / empty | 90 | 130 | 180 | 220 |
| 4 | fill | “Spülen” / rinse | 100 | 100 | 140 | 200 |
| 5 | mix | “Spülen” / rinse | 120 | 120 | 160 | 240 |
| 6 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 7 | fill | “Spülen” / rinse | 100 | 100 | 140 | 200 |
| 8 | rinse | “Spülen” / rinse | 60 | 90 | 100 | 180 |
| 9 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 10 | fill | “Spülen” / rinse | 60 | 100 | 140 | 200 |
| 11 | rinse | “Spülen” / rinse | 60 | 90 | 100 | 180 |
| 12 | empty | “Leeren” / empty | 30 | 30 | 60 | 60 |
| 13 | fill | “Leeren” / empty | 200 | 260 | 360 | 600 |

| Pump | Valve warm water | Valve cold water | Hint |
|------|------------------|------------------|---|
| on | off | off | Let the pump run until water level has dropped by approx. 30 cm |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | off | off | until the pump runs dry |
| off | on | off | approx. 25 cm filling level |
| on | off | off | |
| on | on | off | until the pump runs dry |
| off | off | on | until separator overflow level |

Time settings can also be customized depending on pumping height, temperature or water pressures. Flow rate through a DN 25 solenoid valve is 23 m³/hour.

6. Maintenance

Maintenance of the separator

The separator should be tested to make sure that it is completely watertight before it is placed into operation and also during periodic intervals thereafter. The macerating pump as well as the water nozzles are practically maintenance free.

1. Surface care - the interior walls of the separator should be cleaned and checked for problems at regular intervals.
 2. The controls (control unit and software) of the separator are maintenance free. The capacitive level switch should be checked during the bi-annual inspection (see electrical installation).
 3. The separator should be thoroughly checked two times per year. During these inspections the separator should be completely emptied and thoroughly cleaned. Also, inspect to make sure that the interior and exterior walls of the sludge separation area and the grease separation area are in operating condition.,The electrical portions of the separator as well as the pumps should be inspected during this time.
- Before the separator is placed into operation and at regular intervals thereafter, the separator should be checked to make sure that it is water tight.
 - The interior walls of the separator, as well as the exterior walls, should be cleaned and checked for damage every time the separator contents are disposed.
 - The separator should be inspected every 6 months. At this time the separator contents should be disposed and the entire unit should be cleaned. During the cleaning check the sludge trap and grease separation portions of the separator to make sure they are in proper working condition.
 - The electrical systems and the separator's pumps should be inspected. The run-dry motor protection setting is to be checked (see section 3.3 Electrical Installations of Chapter 3 - Installation of this manual.
 - It is recommended that a written log is kept for the separator. Documentation and information concerning all disposals and any other work done to the separator should be kept in this log for future reference.

Please make sure that:

1. This Installation, Service and Maintenance Guide and any other documentation relating to the separator is kept in a safe place accessible to all who work on the unit.
2. Disposal of the contents of the separator follows the exact guidelines stated in this guide.
3. The disposal of the separator is carried out by a qualified, licensed company.

7. Accessories / Replacement parts

7.1 Sampling chamber DN 100 or DN 150

KESSEL offers various sampling chambers for installation in frost free rooms or for underground installation. Sampling chambers are odour tight and are opened and closed by a quick release locking clamp. This sampling chamber makes it possible to take samples of the grease free wastewater for testing (according to DIN 38409). Each chamber is equipped with a DN 100 and DN 150 inlet and outlet. The required sizes can be obtained by cutting off the respective section.



| Type | Art. # |
|-------------------|---------|
| Horizontal outlet | 915 871 |
| Vertical outlet | 915 870 |

7.2 Lifting stations

KESSEL offers various lifting stations for installation after the separator so that the effluent can be pumped up to sewer levels.



| Output | Power | Outlet size | Art. # |
|--------|------------------------|-------------|---------------|
| 1,1 kW | 400 V direct (3-Phase) | DN 100 | 28 659 |
| 2,2 kW | 400 V direct (3-Phase) | DN 100 | 28 631 |

- The KESSEL Aqualift ®F for grey or sewage effluent for frost free areas consists of:
 - Submersible (IP 68) single or double pumps units with single vane impellers (40mm maximum passage) and rotation direction indicator and 5 meter connection cable
 - DN 100 Outlet (pressure) with backflow preventer and rubber coupling
 - Control unit for fully automatic pump control, splash-proof (IP65), wall mounted, operated on 400 V direct or 230 V alternating current at 50 Hz.
 - A polyethylene collection chamber
 - Pneumatic level control
 - Clean-out
 - DN 100 inlet ready
 - DN 70 ventilation port
 - DN 32 emergency hand pump port

7. Accessories / Replacement parts

7.3 Replacement Parts

| Article | Art. # |
|--|---------|
| For grease separators according to DIN 4040 | |
| ▪ Plastic cover Ø 630 mm | 916 901 |
| ▪ Cover gasket Ø 630 mm | 917 201 |
| ▪ Quick release clamp for cover Ø 630 mm | 917 001 |
| For grease separators according to EN 1825 | |
| ▪ Cover Ø 420 mm | 916 904 |
| ▪ Cover gasket Ø 420 mm | 916 204 |
| ▪ Quick release clamp for cover | 916 402 |
| For all KESSEL grease separators | |
| ▪ Disposal pump with cutting blades 2,2 kW | 916 401 |
| ▪ Disposal pump with cutting blades 4 kW | 916 402 |

8. Guarantee

1. In the case that a KESSEL product is defective, KESSEL has the option of repairing or replacing the product. If the product remains defective after the second attempt to repair or replace the product or it is economically unfeasible to repair or replace the product, the customer has the right to cancel the order / contract or reduce payment accordingly. KESSEL must be notified immediately in writing of defects in a product. In the case that the defect is not visible or difficult to detect, KESSEL must be notified immediately in writing of the defect as soon as it is discovered. If the product is repaired or replaced, the newly repaired or replaced product shall receive a new warranty identical to that which the original (defective) product was granted. The term defective product refers only to the product or part needing repair or replacement and not necessarily to the entire product or unit. KESSEL products are warranted for a period of 24 months. This warranty period begins on the day the product is shipped from KESSEL to its customer. The warranty only applies to newly manufactured products. Additional information can be found in section 377 and 378 of the HGB.

2. Wear and tear on a product will not be considered a defect. Problems with products resulting from improper installation, handling or maintenance will also not be considered a defect.

01.01.2002

9. Separator characteristics



KESSEL

Type _____

Weight / kg _____ length x width X height _____

EN _____ Approval _____

Sludge trap volume / l _____

Oil storage volume / l _____

Control stamp _____ Material _____

(Accessories) _____

This unit has been checked for watertightness to be sure that it is fully operational before leaving the factory.

Date

Name of examiner

Important contacts / Info

Separator Type _____

Day / Hour _____

Project description /
Building services supervisor
Address _____
Telephone / Fax _____

Builder
Address _____
Telephone / Fax _____

Planner
Address _____
Telephone / Fax _____

Contracted plumbing company
Address _____
Telephone / Fax _____

Commissioning no. KESSEL
System operator / owner
Address _____
Telephone / Fax _____

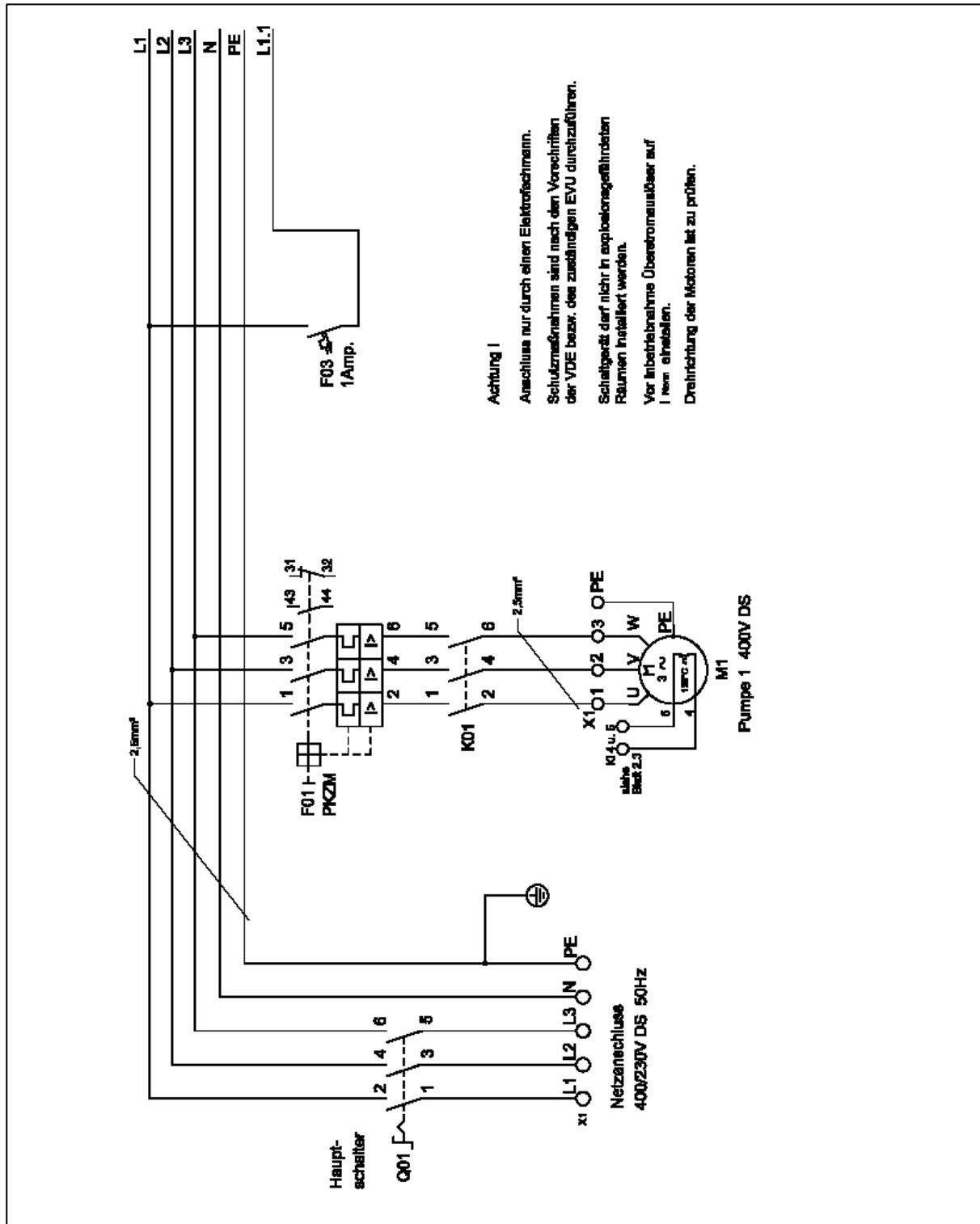
Other remarks _____

The system operator, and those responsible, were present during the commissioning of this system.

Place and Date

Electrical Schematic

Electrical schematic



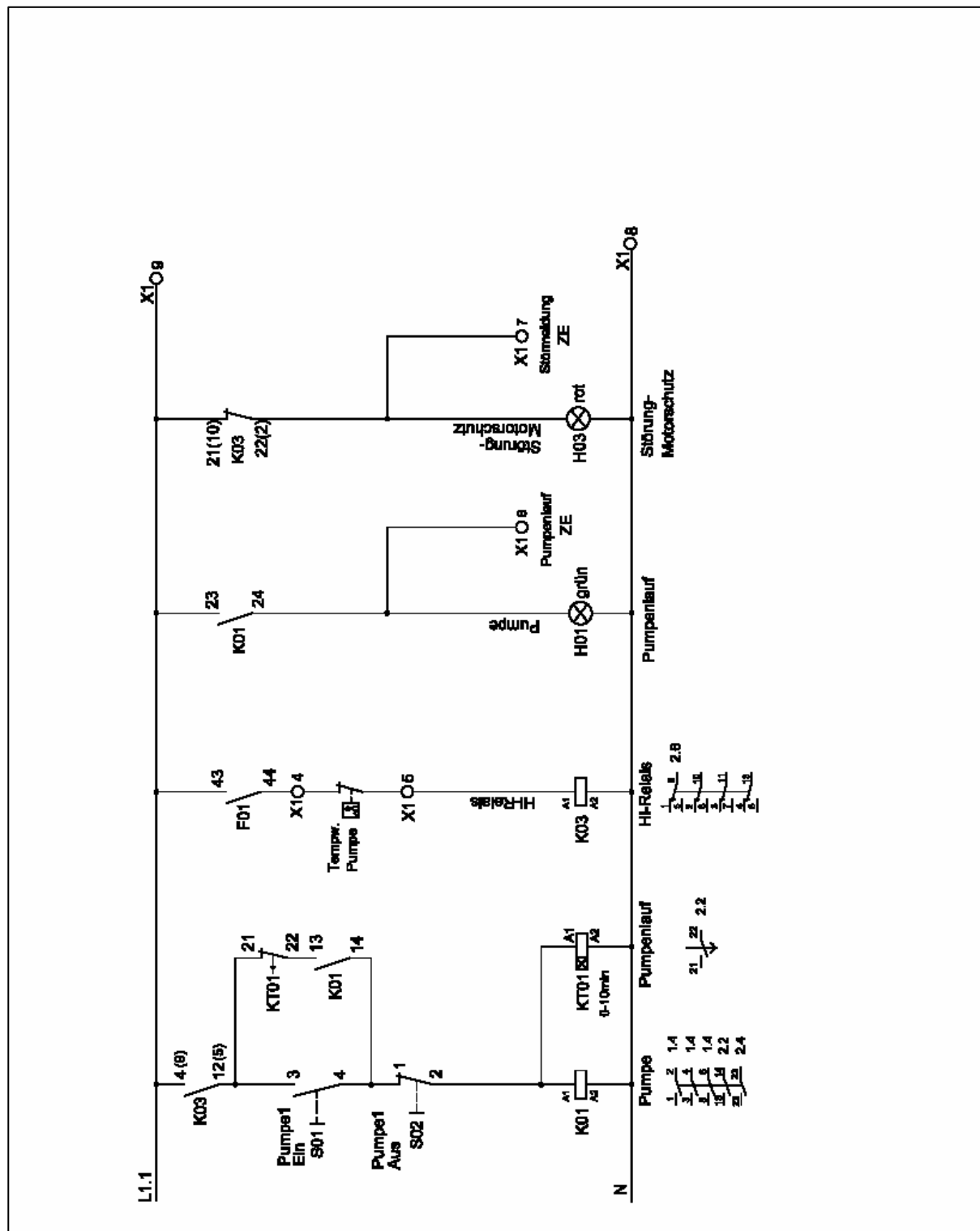
Hauptschalter = main switch
 Netzanschluß = public supply
 Pumpe 1 = pump 1

Attention!

Connection should only be made by a licensed tradesman. Protective measures according to VDE and EVU should be followed. Control unit must not be installed in an explosion endangered area. Before commissioning set overload switch to I_{Nenn}. Check for proper rotation of motor.

Electrical Schematic

Electrical schematic

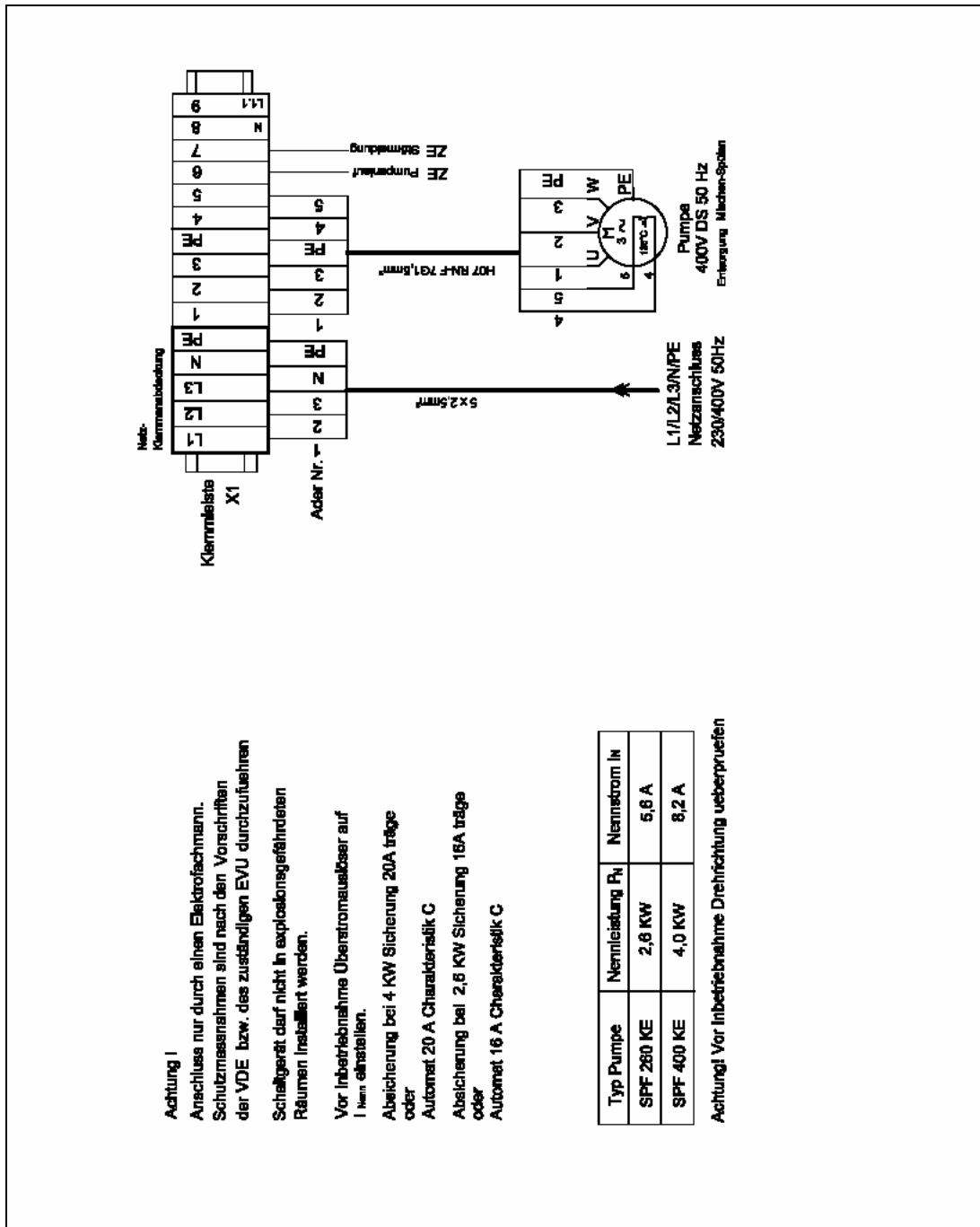


Pumpe 1 ein = pump 1 on
 Tempw. = thermostat
 Störung = default
 Motorschutz = motor protection
 Grün = green

Pumpe 1 aus = pump 1 off
 Relais = relay
 Störmeldung = default indication
 Rot = red

Electrical Schematic

Electrical schematic



Attention!

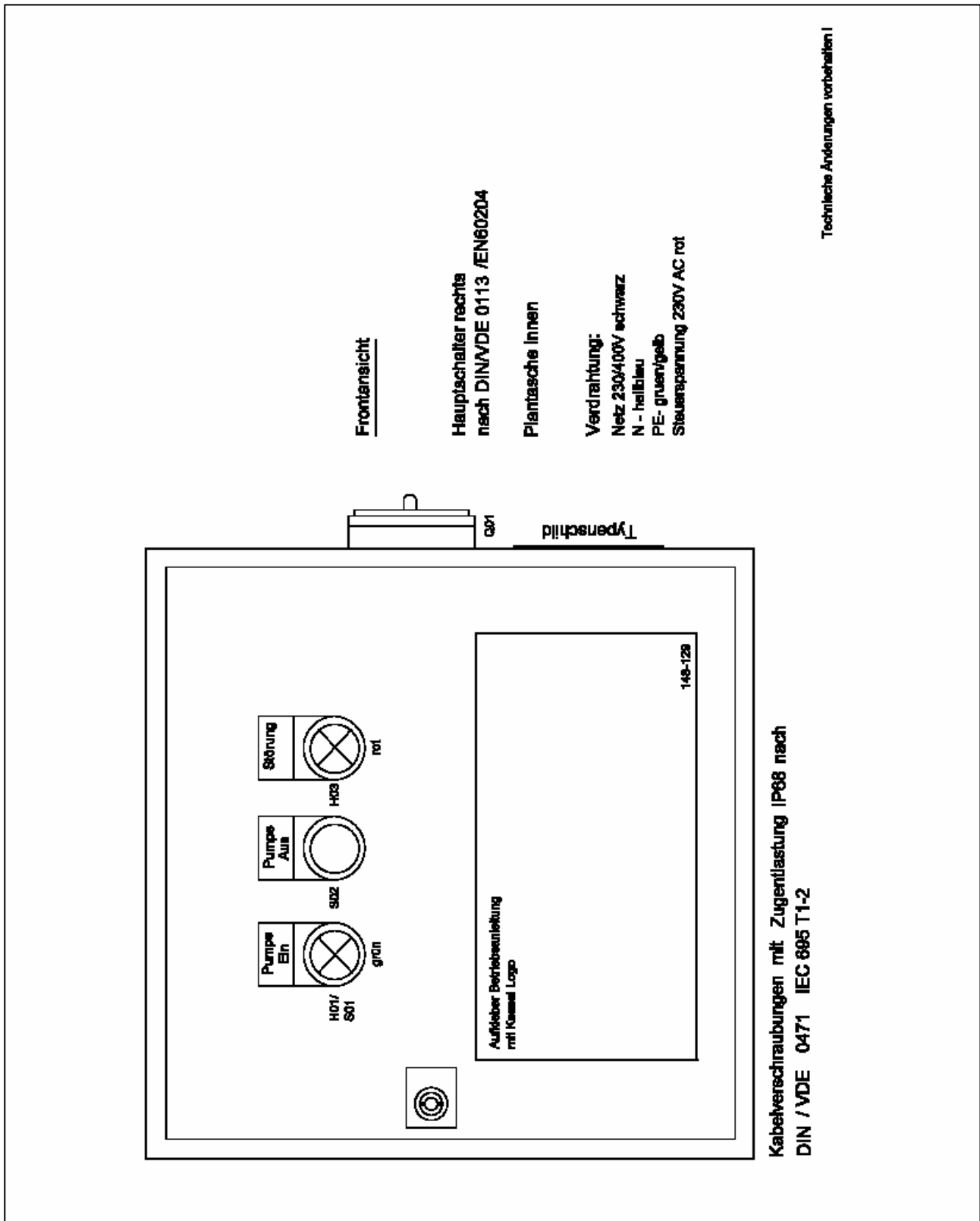
Connection should only be made by a licensed tradesman. Protective measures according to VDE and EVU should be followed. Control unit must not be installed in an explosion endangered area. Before commissioning set overload switch to I_{Nenn} . Check for proper rotation of motor.

Absicherung = fuse protection
Träge = inert
Nennleistung P_N = nominal power
Klemmleiste = connector block
Netzanschluß = public supply
Störmeldung = default indication

Sicherung = fuse
Typ pumpe = pump type
Nennstrom I_N = nominal current
Ader Nr. = lead of cable n°
Pumpe = pump

Electrical Schematic

Front view control unit



Pumpe ein = pump on
 Störung = default
 Grün = green
 Typenschild = type label

Pumpe aus = pump off
 Frontansicht = front view
 Rot = red
 Hauptschalter rechts = main switch right

Everything for drainage



- Backwater valves and cleanouts
- Polymer and cast iron drains
- Volatile liquid traps
- Lifting stations, pumps, warning and control units
- Rainwater management systems
- Grease separators
- Oil/fuel and coalescence separators
- Inspection chambers
- Custom projects for industrial applications