PENTAIR JUNG PUMPEN

BASICLOGO BD

BD 00 E - BD 00

EN Instruction Manual

You have purchased a product made by JUNG PUMPEN and with it, therefore, also excellent quality and service. Secure this service by carrying out the installation works in accordance with the instructions, so that our product can perform its task to your complete satisfaction. Please remember that damage caused by incorrect installation or handling will adversely affect the guarantee. Therefore please adhere to the instructions in this manual!

This appliance can be used by children aged 8 years or over and by persons with limited physical, sensory or intellectual capabilities, or with limited experience and knowledge, provided that they are supervised or have been instructed in the safe use of the appliance and are aware of the dangers involved. Children must not be allowed to play with the appliance. Cleaning and user maintenance must not be carried out by children unless they are supervised.

If this unit is equipped with a mains connection line without a plug or other means of disconnection from the mains, a complete disconnecting device must be installed on site in the fixed electrical installation in accordance with the installation regulations. A main switch of overvoltage category III can be installed as a complete disconnecting device. If the mains connection cable of this unit is damaged, it must be replaced by the manufacturer or its customer service or a similarly qualified person in order to avoid hazards.

Damage prevention in case of failure

Like any other electrical device, this product may fail due to a lack of mains voltage or a technical defect.

If damage (including consequential damage) can occur as a result of product failure, the following precautions can be taken at your discretion:

- Installation of a water level dependent (under circumstances, mains-independent) alarm system, so that the alarm can be heard before damage occurs.
- Inspection of the collecting tank/chamber for tightness up to the top edge before – or at the latest, during – installation or operation of the product.
- Installation of backflow protection for drainage units that can be damaged by wastewater leakage upon product failure.
- Installation of a further product that can compensate in case of failure of the other product (e.g. duplex unit).
- Installation of an emergency power generator.

As these precautions serve to prevent or minimise consequential damage upon product failure, they are to be strictly observed as the manufacturer's guideline – in line with the standard DIN EN specifications as state of the art – when using the product (Higher Regional Court Frankfurt/Main, Ref.: 2 U 205/11, 06/15/2012).

SAFETY INSTRUCTIONS

This instruction manual contains essential information that must be observed during installation, operation and servicing. It is therefore important that the installer and the responsible technician/operator read this instruction manual before the equipment is installed and put into operation. The manual must always be available at the location where the pump or the plant is installed.

Failure to observe the safety instructions can lead to the loss of all indemnity.

In this instruction manual, safety information is distinctly labelled with particular symbols. Disregarding this information can be dangerous.

 General danger to people

 Warning of electrical voltage

NOTICE! Danger to equipment and operation

Qualification and training of personnel

All personnel involved with the operation, servicing, inspection and installation of the equipment must be suitably qualified for this work and must have studied the instruction manual in depth to ensure that they are sufficiently conversant with its contents. The supervision, competence and areas of responsibility of the personnel must be precisely regulated by the operator. If the personnel do not have the necessary skills, they must be instructed and trained accordingly.

Safety-conscious working

The safety instructions in this instruction manual, the existing national regulations regarding accident prevention, and any internal working, operating and safety regulations must be adhered to.

Safety instructions for the operator/user

All legal regulations, local directives and safety regulations must be adhered to.

The possibility of danger due to electrical energy must be prevented.

Leakages of dangerous (e.g. explosive, toxic, hot) substances must be discharged such that no danger to people or the environment occurs. Legal regulations must be observed.

Safety instructions for installation, inspection and maintenance works

As a basic principle, works may only be carried out to the equipment when it is shut down. Pumps or plant that convey harmful substances must be decontaminated.

All safety and protection components must be re-fitted and/or made operational immediately after the works have been completed. Their effectiveness must be checked before restarting, taking into account the current regulations and stipulations.

Unauthorised modifications, manufacture of spare parts

The equipment may only be modified or altered in agreement with the manufacturer. The use of original spare parts and accessories approved by the manufacturer is important for safety reasons. The use of other parts can result in liability for consequential damage being rescinded.

Unauthorised operating methods

The operational safety of the supplied equipment is only guaranteed if the equipment is used for its intended purpose. The limiting values given in the "Technical Data" section may not be exceeded under any circumstances.

Instructions regarding accident prevention

Before commencing servicing or maintenance works, cordon off the working area and check that the lifting gear is in perfect condition.

Never work alone. Always wear a hard hat, safety glasses and safety shoes and, if necessary, a suitable safety belt.

Before carrying out welding works or using electrical devices, check to ensure there is no danger of explosion.

People working in wastewater systems must be vaccinated against the pathogens that may be found there. For the sake of your health, be sure to pay meticulous attention to cleanliness wherever you are working.

Make sure that there are no toxic gases in the working area.

Observe the health and safety at work regulations and make sure that a first-aid kit is to hand.

In some cases, the pump and the pumping medium may be hot and could cause burns.

For installations in areas subject to explosion hazards, special regulations apply!

TECHNICAL DATA

Operating voltage

- 1/N/PE x 230 V, 50 Hz (BD 00 E)
- 3/N/PE x 230/400 V, 50 Hz

Power consumption

- BD max. 4 W (Standby <1W)

Switching capacity

- BD 00E 2 x 2,2 kW AC3, 230 V
- BD... 2 x 4 kW AC3, 400V

Control voltage 230 VAC / 12 VDC

Ambient temperature -20° Celsius to 50° Celsius

Humidity Up to 90rH with no condensation

Terminals up to 2.5 mm^2

Housing dimensions H 455 x W 250 x D 155

Housing protection class IP 44

Weight approx. 6 kg

Motor protection

- BD 00E: 10 A
- BD 00: 4,0-6,3 A

Pre-fuse

- BD 00 E: 20 A
- BD 00: 16 A

DESCRIPTION

Electronic control unit for level control of two d.o.l. starting submersible pumps.

Up to four level contact sensors can be connected.

For duplex pump units the power-up sequence of pump 1 and pump 2 alternates automatically after every base-load pumping process. The resting pump is switched on in the event of high water or a pump fault.

Duplex units can be operated optionally without peak-load function (i.e. no parallel pump operation). Automatic switchover to the standby pump will occur in the event of failure.

The control unit incorporates mains-dependent LED failure indicators and an alarm buzzer to indicate faults. One potential-free centralised alarm contact can be used as an additional remote failure indicator. An optional 9V rechargeable battery can also be fitted to sustain an alarm facility even if a power cut occurs. The battery pack can supply the alarm system with power for about one hour of continuous use.

EMC

Our standard submersible pumps and accessories when installed as specified and used as intended meet the protective requirements of the EMC Directive, and is suitable for use in domestic and commercial areas of the public power supply network. When connected to an industrial mains supply in an industrial plant with the power supply provided by a company-owned high-voltage transformer, it is to be expected that there will be insufficient immunity to interference.

OPERATION

NOTICE! Operate the control in dry rooms only and keep the housing closed at all times.

Automatic operation

Automatic operation is the normal operating mode of the unit. The Manual-0-Automatic selector switch for the pumps must be set to the "Automatik" position for this operating mode. The pumps are switched on and off again automatically depending on the wastewater level in the collecting chamber. The green "Betrieb Pumpe" (Pump operation) indicator lights up when the pumps are operating.

Manual operation

In case of a malfunction in automatic operation, the collecting chamber can be drained manually as well. For this action, set the selector switch to the "Hand" (Manual) position. The pump will now operate continuously and independently of the wastewater level.

NOTICE! If the "Hand" (Manual) setting is actuated for too long at a time, the pump may draw in air. Certain pump types need to be vented in this case, since they would not pump otherwise.

Shutting down the pump

Set the rocker switch to "0". The pump is shut down. In duplex units the remaining pump continues to work in automatic operation.

FAULTS

WARNING!

Before carrying out any work: Disconnect the pump and the control unit from the mains and take action to ensure that no one else can reconnect them to the power supply.

NOTICE! Repairs and maintenance work on the control unit or the pump must be carried out by a qualified electrician only!

The fault message can only be acknowledged and cancelled by rectifying the fault.

Pump isn't working

If the pump does not work in automatic or manual mode and no faults are indicated, please check: The main switch is in the "ON" position. The pre-fuses in the distribution. Replace defective fuses only with fuses of the same rating! In case of repeated tripping, inform the customer service.

Indicator "Drehfeld falsch" (Wrong rotating field")

Not for BD 00E. Mains phase sequence is wrong or phase is absent. This results in little or no pump delivery.

Indicator "Störung Pumpe" (Pump fault)

Not for BD 00E.

Motor protection switch has been triggered:

- Phase error - two phases (pre-fuse defective ?).
- Overload - tight or blocked impeller.
- Faulty activation - wrongly set or defective motor protection.
- Failure of the electric motor - winding failure.

In order to switch on after a fault has been rectified, reset the motor protection switch.

Pumps with motor thermostat

The thermostat switches the pump off before the pump overheats. Pump overheats, e.g. because the pumped fluid is hotter than 35° Celsius or the pump has operated after surfacing. The pump is switched on again automatically after cooling down. A malfunction message is not generated.

Indicator "Hochwasseralarm" (High-water alarm)

Water level in the collecting chamber is too high due to insufficient pump delivery or excessive inflow.

Note on BD 00E.

If the device fuse is triggered, this does not cause "Störung Pumpe" (Pump failure) to be indicated, even though the pump is no longer working. An error message is only indicated if a high water alarm is triggered.

Notice! Replace defective fuses only with fuses with the same nominal value!

ASSEMBLY

When using the pumps, the relevant national laws as well as national and local regulations must be complied with.

WARNING!

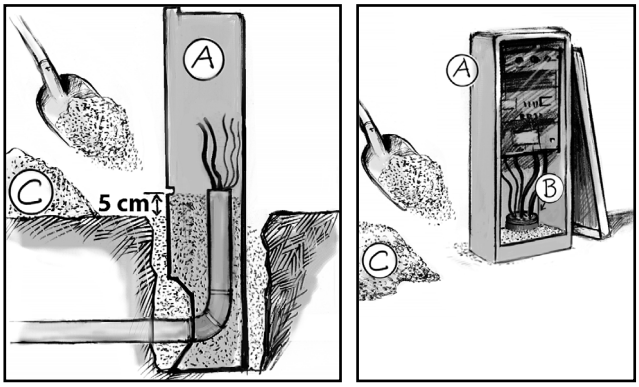
Before carrying out any work: Disconnect the pump and the control unit from the mains and take action to ensure that no one else can reconnect them to the power supply.

NOTICE! Repairs and maintenance work on the control unit or the pump must be carried out by a qualified electrician only!

NOTICE! The control unit must not be installed in a hazardous area or in the collecting chamber!

The control unit must only be installed in well ventilated rooms above the backup level, where it can be easily inspected at any time. Attach the housing vertically using at least four screws.

NOTICE! If the control unit is installed in a column which is located out of doors, there is a danger that condensation may occur. This could result in malfunctions or in complete failure of the control unit. Please observe the information given on correct installation of the column.



A - Empty housing B - Seal C - Dry white sand

NOTICE! Connections dashed in the circuit diagram have to be provided on site by the buyer.

Mains connection

Insert separate pre-fuses. Safety fuses must be used. For nominal value please refer to the Technical data.

Connect mains cable according to circuit diagram. In case of wrong phase sequence indicator "Drehfeld Falsch" (Wrong rotating field) is lit, the two phases must be interchanged (not applicable for alternating current).

The 230 volt current control circuits are fused at F2 and F3. If a fuse blows, it is not possible to start that particular pump.

Connection of the pumps

Only pumps which the manufacturer has expressly designated for this control unit may be connected.

The pump cable cores which are marked must be connected to the terminals of the control unit shown in the circuit diagram.

Not for BD 00E. The cores of the pump cable marked 30 and 32 (for the winding thermostats) must be connected as shown in the circuit diagram at the end of this manual. If pumps without a winding thermostat are connected, insulated wire bridges must be laid as follows: A2 (Q1/Q2) – 23 (Q3/Q4) .

Not for BD 00E. Set the motor protection switch (Q3/Q4) to the rated current of the pump (see type plate).

Note on BD 00. The motor protection switch only protects against a short-circuit in the pump. The current at the motor protection switch must therefore be adjusted to the maximum setting.

If the direction of rotation is correct, the starting jerk of the pump is counter to the direction of rotation arrow on the motor housing. If the direction of rotation is wrong, two phases of the pump cable must be interchanged on the control unit.

⚠ CAUTION!

The start-up jolt can be very forceful.

Level contact sensors (accessory)

The levels in the collecting chamber are detected by continuous contact sensors.

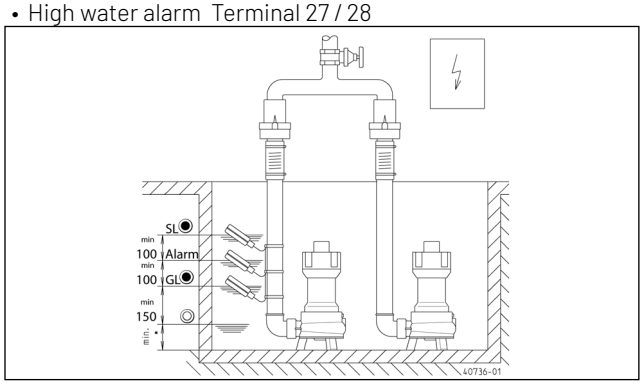
Examples: Air diaphragm control unit, static air level control, hydrostatic level contact sensors or float switch.

Connection of the continuous contact sensors:

- Base load ON-OFF....Terminal 21 / 23
- Peak load ON-OFF Terminal 24 / 25
- High water alarm Terminal 27 / 28

If a separate OFF float switch is connected

- Pump(s) OFF Terminal 21 / 22
- Base load ON Terminal 22 / 23
- Peak load ON Terminal 24 / 25
- High water alarm Terminal 27 / 28



GL= base load . SL= peak load . Alarm= High water alarm

Operation with peak-load function

If a high water alarm is activated, additional switch-on commands are given:

- or the base load pump (jumper BRX3 at GL) or
- for both pumps (jumper BRX3 at SL)

Operation without peak-load function (no parallel pump operation)

Do not connect the "Peak load" float switch, or, if already connected, disconnect it from terminal 24/25.

Jumper BRX3 must be set to "GL".

In the event of a motor fault, the control unit will automatically switch to the standby pump (not BD 00E).

Operation as a single pump unit

The control unit can also be operated with only one pump connected. Both motor protection switches must be switched on (not for BD 00E).

Set the selector switch of the unconnected pump to position "0" and of the connected pump to position "Automatik".

Internal alarm buzzer shutting down

The internal alarm can be shut down. To do so, remove jumper "BRX1" near the buzzer. To prevent the jumper from getting lost, re-attach it to a pin on the two-pole pin connector.

External alarm buzzer (accessory)

Notice! When an external buzzer is connected, the integrated buzzer must be shut down.

A 12V buzzer with a max. current consumption of 30 mA can be connected to terminals "S+" and "S-" with the correct polarity.

Remote failure indication system

Connect the remote system to terminals 40/41 on the PCB. The potential-free NO contact can be loaded with a maximum of 5 A / 250 VAC.

External 230V~ flashing light or warning light (accessory)

Connect a 230V~ lamp (1 A max.) to terminals N and 41.

Lay an insulated wire bridge from terminal U~ to terminal 40. The electric circuit is protected by F1.

Set Jumper BRX2 as follows:
Flashing light without BRX2 (Continuous ===)
Warning light with BRX2 (Flashing (_⎍_⎍_)

Battery pack for off the line operation of the alarm system (accessory)

Connect the battery pack to the connection clip, and use the existing cable ties to attach to the intended position on the PCB. An empty battery is ready for operation within approx. 24 hours. It is fully charged after about 100 hours.

NOTICE! Check the function of the battery pack at regular intervals! The service life is about 5 to 10 years. Note the insertion date on the battery pack and after five years the battery pack should be replaced as a precautionary measure.

⚠ CAUTION!

Only use the 9V-NiMh battery supplied by the manufacturer! If dry-cell batteries or Lithium batteries are used there is a danger of explosion!

Fitting the LCD time meter (accessory)

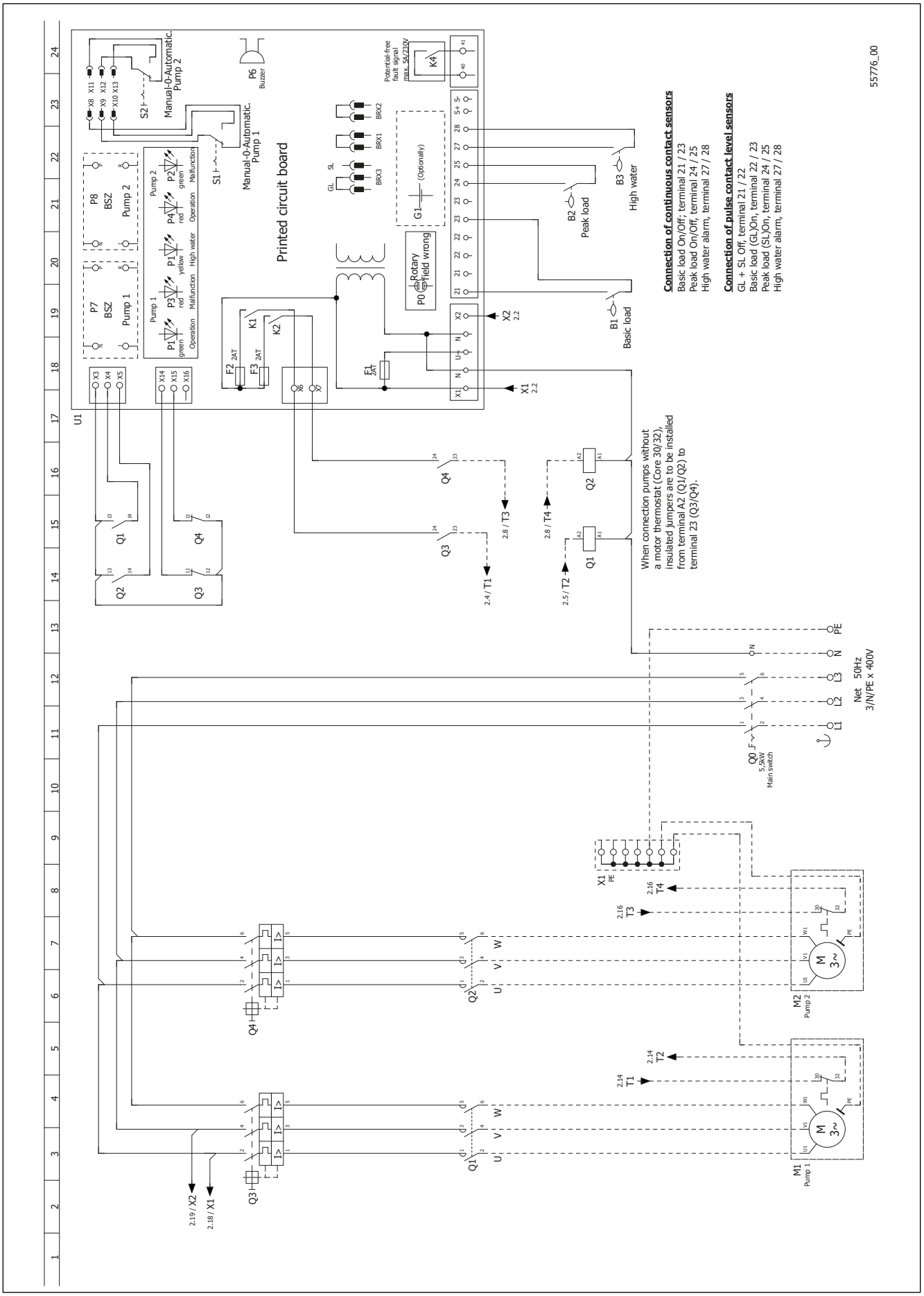
The positions on the printed circuit board for each pump are marked "BSZ". Shorten the connecting wires of the time meter to approx. 10 mm and insert them in the printed circuit board. The connecting wires and also the connectors on the printed circuit board are marked "N-P-I-R". After the mains voltage has been re-connected, the LCD should be visible. If no display appears, switch the mains voltage off again, disconnect the time meter and turn it through 180 degrees before reconnecting it.

MAINTENANCE

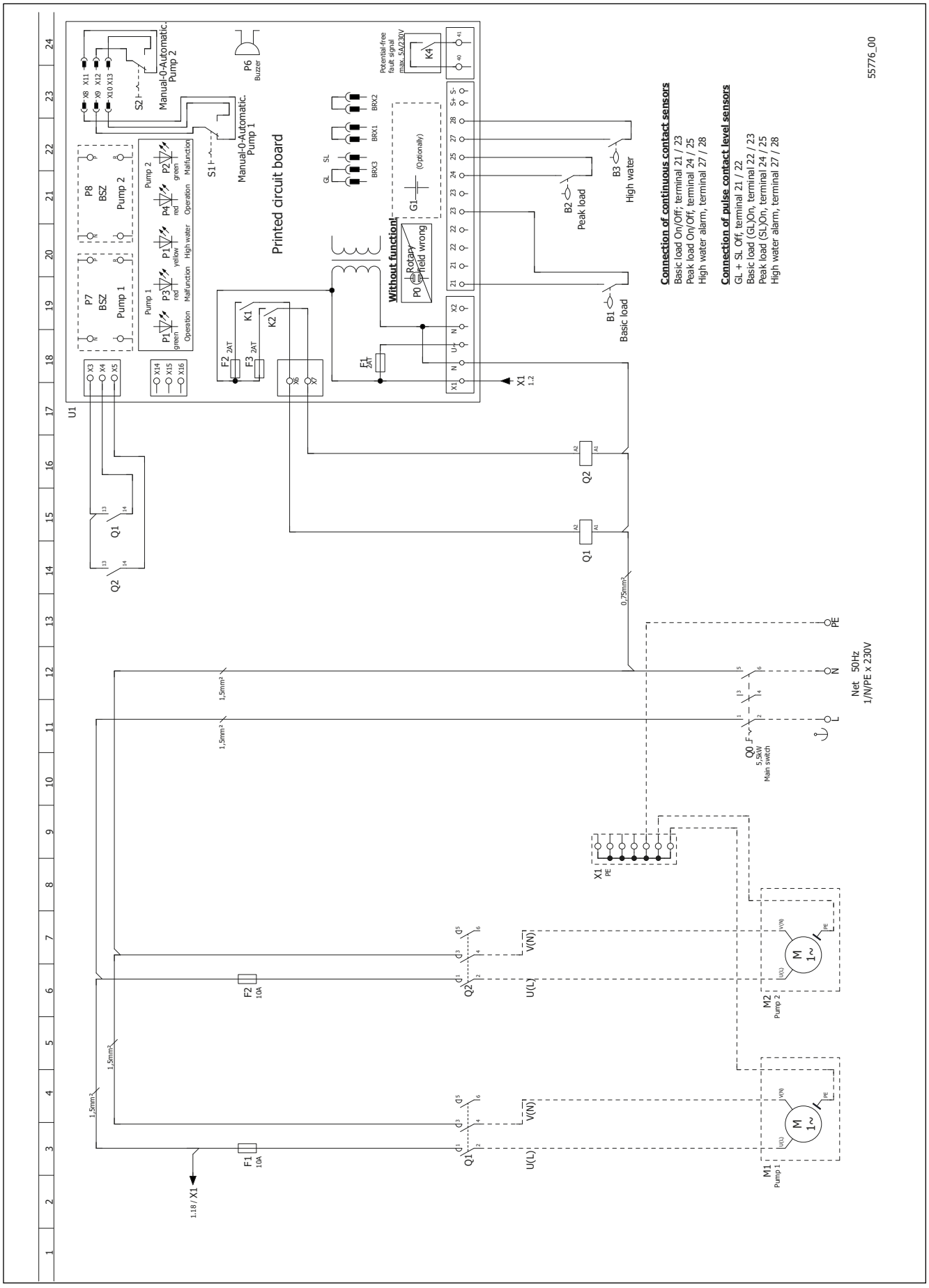
The control unit is maintenance-free. Depending on the quality of the wastewater, the level contact sensors must be checked at regular intervals, and any deposits must be removed! If a 9V battery pack is connected for a mains-independent alarm, it must be checked at regular intervals. For this purpose de-energise the control unit and trigger the alarm (by triggering the motor protection switch, for example). The pitch and volume of the buzzer must not change significantly for several minutes - otherwise replace the battery pack. Battery packs which are more than five years old should be replaced as a precautionary measure.

BD 00

If pumps without a winding thermostat are connected, insulated wire bridges must be laid from: A2 (Q1/Q2) to 23 (Q3/Q4)



BD 00E


Printed circuit board
Manual-0-Automatic. Pump 2
Manual-0-Automatic. Pump 1
Buzzer
Potential-free fault signal max. 5A/230V
Without function!
Rotary field wrong
(Optionally)
Basic load
Peak load
High water
Connection of continuous contact sensors
Basic load On/Off; terminal 21 / 23
Peak load On/Off; terminal 24 / 25
High water alarm, terminal 27 / 28
Connection of pulse contact level sensors
GL + SL Off, terminal 21 / 22
Basic load (GL)On, terminal 22 / 23
Peak load (SL)On, terminal 24 / 25
High water alarm, terminal 27 / 28
55776_00
Net 50Hz
1/N/PE x 230V
Main switch
Pump 1
Pump 2
1,5mm²
0,75mm²
1.18 / X1

PENTAIR JUNG PUMPEN

UKCA-Declaration of Conformity

Legislation - Designated Standards

• **Electromagnetic Compatibility Regulations 2016 (EMC)**	**EN 55014-1: 2017/A11:2020, EN 55014-2: 1997/A2:2008**
• **The Restriction of the Use of Certain Hazardous Substance in Electrical and Electronic Equipment Regulations 2012 (RoHS)**	
• **Electrical Equipment (Safety) Regulations 2016**	**EN 60335-1: 2012/A14:2019, EN 60204-1:2018**

Name and address of the manufacturer: JUNG PUMPEN GmbH - Industriestr. 4-6 - 33803 Steinhagen - Germany - www.jung-pumpen.de

We hereby declare, under our sole responsibility, that the product is in accordance with the specified Legislation.

BasicLogo BD 00 (JP50776) **BasicLogo BD 00E** (JP50775)

Other normative documents:

Authorized person for technical documention

JUNG PUMPEN - Stefan Sirges - Industriestr. 4-6 - 33804 Steinhagen

Steinhagen, 01-02-2023

_____
Stefan Sirges, General Manager

i.V. _____
Pascal Kölkebeck, Sales Manager

UKCA 610.10-2023.02

Jung Pumpen GmbH
Industriestr. 4-6
33803 Steinhagen
Deutschland
Tel. +49 5204 170
kd@jung-pumpen.de

Pentair Water Italy Srl
Via Masaccio, 13
56010 Lugnano - Pisa
Italia
Tel. +39 050 716 111
info@jung-pumpen.it

Pentair Water Polska Sp. z o.o.
ul. Plonów 21
41-200 Sosnowiec
Polska
Tel. +48 32 295 1200
infopl.jungpumpen@pentair.com