

Wilo-Control DrainAlarm/-GSM



- de** Einbau- und Betriebsanleitung
- en** Installation and operating instructions
- fr** Notice de montage et de mise en service
- it** Istruzioni di montaggio, uso e manutenzione
- nl** Inbouw- en bedieningsvoorschriften
- da** Monterings- og driftsvejledning
- no** Monterings- og driftsveiledning
- sv** Monterings- och skötselanvisning
- fi** Asennus- ja käyttöohje
- pl** Instrukcja montażu i obsługi
- ru** Инструкция по монтажу и эксплуатации
- ro** Instrucțiuni de montaj și exploatare

Fig. 1: DrainAlarm

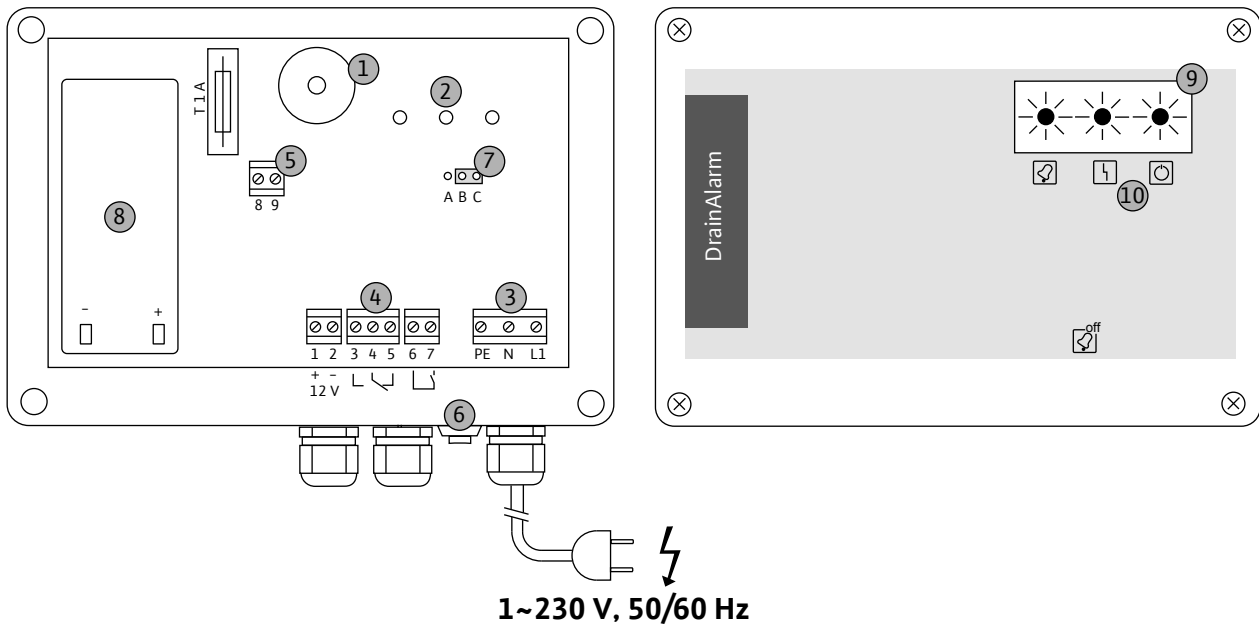
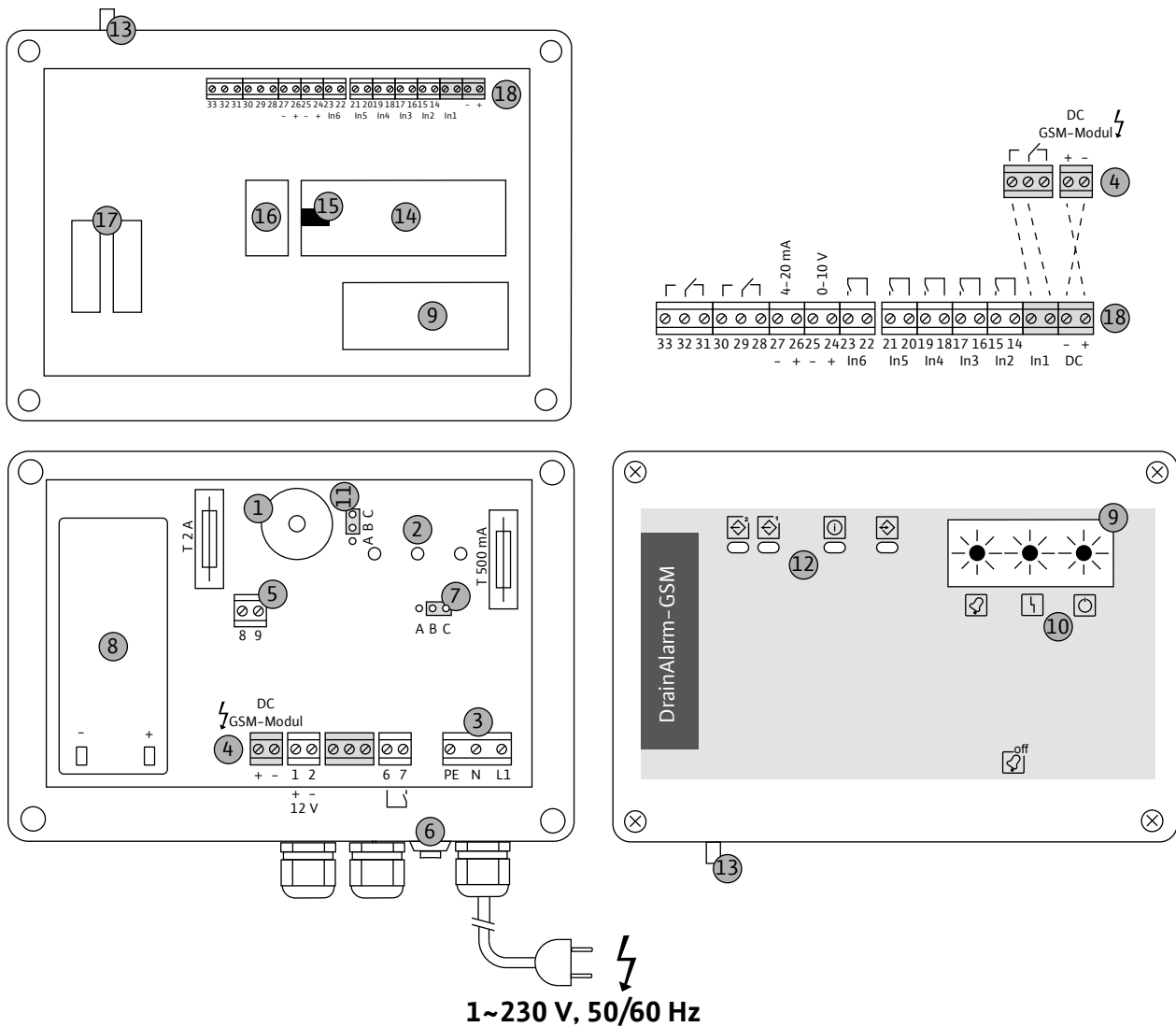


Fig. 2: DrainAlarm GSM



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1. Introduction

1.1. About this document

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

This manual is divided into individual sections, which are listed in the table of contents. Each section has a heading which clearly describes its content.

A copy of the EC declaration of conformity is a component of these operating instructions. If a technical modification is made on the designs named there without our agreement, this declaration loses its validity.

1.2. Personnel qualifications

All personnel who work on or with the alarm switchgear must be qualified for such work; electrical work, for example, may only be carried out by a qualified electrician. All personnel must be of legal age.

Operating and maintenance personnel must also observe national accident prevention regulations. It must be ensured that personnel have read and understood the instructions in this operating and maintenance handbook; if necessary, this manual must be ordered from the manufacturer in the required language.

This alarm switchgear is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are given supervision or instruction concerning use of the alarm switchgear by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the alarm switchgear.

1.3. Copyright

This operating and maintenance manual has been copyrighted by the manufacturer. The operating and maintenance manual is intended for use by installation, operating and maintenance personnel. It contains technical regulations and drawings which may not be reproduced or distributed, either completely or in part, or used for purposes of competition, or shared with others without the express consent of the manufacturer. The illustrations used may differ from the original and are only intended as an exemplary representation of the alarm switchgear.

1.4. Subject to change

The manufacturer reserves the right to make technical modifications to systems or components. This operation and maintenance manual refers to the alarm switchgear indicated on the title page.

1.5. Warranty

In general, the specifications in the current "General Terms and Conditions" apply for the warranty. You can find these here: www.wilo.com/legal
Any deviations must be contractually agreed and shall then be given priority.

1.6. Spare parts, add-ons and modifications

Only genuine spare parts from the manufacturer may be used for repairs, replacements, add-ons and modifications. Unauthorised add-ons and modifications or the use of non-original spare parts can seriously damage the alarm switchgear and/or injure personnel.

2. Safety

This section lists all the generally applicable safety instructions and technical information. In addition, all the other sections contain specific safety instructions and technical information. All instructions and information must be observed and followed during the various phases of the alarm switchgear life cycle (installation, operation, maintenance, transport, etc.)! The operator is responsible for ensuring that all personnel follow these instructions and guidelines.

2.1. Instructions and safety instructions

This manual uses instructions and safety instructions for preventing injury and damage to property. To clearly identify them for personnel, the instructions and safety instructions are distinguished as follows:

- Instructions appear in bold and refer directly to the preceding text or section.
- Safety instructions are slightly indented and bold and always start with a signal word.
 - **Danger**
Serious or fatal injuries can occur!
 - **Warning**
Serious injuries can occur!
 - **Caution**
Injuries can occur!
 - **Caution** (instruction without symbol)
Substantial property damage can occur. Irreparable damage is possible!
- Safety instructions that refer to personal injury appear in black and are always accompanied by a safety symbol. Danger, prohibition or instruction symbols are used as safety symbols.

Example:



Danger symbol: General hazard



Danger symbol, for example, electrical current



Symbol for prohibited action, e.g. No entry!



Instruction symbol, for example, wear protective clothing

The safety symbols used conform to the generally applicable directives and regulations, such as DIN and ANSI.

- Safety instructions that only refer to material damage are printed in grey, without safety symbols.

2.2. General safety information

- The system must be de-energised before any work is performed (installation, dismantling, maintenance). The alarm switchgear must be disconnected from all power sources (electricity grid, rechargeable battery)!
- The operator must report any faults or irregularities that occur to a line manager immediately.
- Where damage occurs to electrical components, the housing and/or the cables, the alarm switchgear must be shut down immediately by the operator.
- The alarm switchgear must not be installed in potentially explosive areas. There is a risk of explosions.

These instructions must be strictly observed. Non-observance can result in injury or substantial material damage.

2.3. Electrical work



DANGER due to electrical voltage! Improper procedures during electrical work may result in fatal injuries caused by electrical voltage! This work may only be carried out by a qualified electrician.

BEWARE of moisture! Ingress of moisture will result in damage to the alarm switchgear. During installation and operation, observe the permissible humidity and ensure the alarm switchgear is installed so it is overflow-proof.

The alarm switchgear is operated on the usual power sources. The governing national directives, standards and regulations (e.g. VDE 0100) as well as the requirements of the local energy supply company must be observed for the connection. The person operating the alarm switchgear must know where it is supplied with electrical power and how to cut off the supply. A residual-current device (RCD) must be provided by the customer. The section entitled 'Electrical connection' must be observed when connecting the product. The technical specifications must be observed strictly. The alarm switchgear must always be earthed. To do this, connect the protective earth conductor at the earth terminal indicated (⊕). The cross-section of the cable for the protective earth conductor must comply with the local regula-

tions. Alarm switchgear with connected plugs is earthed via the plug.

If the alarm switchgear has been switched off by a protective device, it must not be switched on again until the fault has been corrected.

2.4. Conduct during operation

When operating the alarm switchgear, always follow the locally applicable laws and regulations for work safety, accident prevention and handling electrical products. To help ensure safe working practice, the responsibilities of employees should be clearly specified by the operator. All personnel are responsible for ensuring that regulations are observed.

LEDs on the front of the housing are used to operate the alarm switchgear, display the operating status, and signal alarms and faults. The housing cover must not be opened during operation.



DANGER due to electrical voltage! When working on the uncovered alarm switchgear, there is a risk of fatal electric shocks. Only operate the alarm switchgear with the cover closed!



DANGER – hot surfaces! The transformer in the alarm switchgear can reach temperatures of up to 70 °C during operation. That can heat the housing accordingly.

2.5. Standards and directives applied

See the EC Declaration of Conformity for details of the standards and directives used.

2.6. CE marking

The CE marking is attached to the rating plate.

3. Product description

The alarm switchgear has been manufactured with great care and is subject to constant quality controls. Trouble-free operation is guaranteed if they are installed and maintained correctly.

3.1. Intended use and fields of application



DANGER – explosive atmosphere! If the connected alarm signals are used in potentially explosive areas, they must be connected via an intrinsically safe electric circuit. Direct connection of the alarm signal results in a risk of fatal injury due to explosions. Connections must always be made by a qualified electrician.

The DrainAlarm alarm switchgear is designed for

- Visual and audible alarm signalling at a defined level, which is registered by a connected signal transmitter.
- Visual and audible alarm signalling of external alarm signal (collective fault or high water signals)

The alarm switchgear must **not**

- Be installed in potentially explosive areas.
- Be flooded.
- Be used to connect pumps directly.

Intended use includes compliance with this manual. Any other use is regarded as non-compliant with the intended use.



NOTE

For level measurement, suitable signal transmitters (float switch) must be provided by the customer.

3.2. Set-up

The alarm switchgear DrainAlarm consists of a main PCB with all components incl. terminals, battery and transformer.

The alarm switchgear DrainAlarm-GSM also includes a GSM module incl. modem, card holder, relay and terminals in the cover.

For full configuration of the alarm switchgear, a PC with administrator rights is required, as the individual inputs and outputs must be programmed using software.

Fig. 1: DrainAlarm: Overview of components and controls

1	Internal buzzer
2	LEDs for displaying operating status
3	Mains connection terminals
4	Terminals for the inputs and outputs
5	Terminal for external acknowledgement button
6	Acknowledgement button
7	Jumper 1
8	Battery (12 V/1.2 AH, lead gel)
9	Window for LEDs
10	Symbols for LEDs

Fig. 2: DrainAlarm GSM: Overview of components and controls

1	Internal buzzer
2	LEDs for displaying operating status
3	Mains connection terminals
4	Terminals for the inputs and outputs
5	Terminal for external acknowledgement button
6	Acknowledgement button
7	Jumper 1
8	Battery (12 V/1.2 AH, lead gel)
9	Window for LEDs
10	Symbols for LEDs
11	Jumper 2
12	GSM module: LEDs for displaying operating status
13	GSM module: SMA connection for GSM antenna
14	GSM module: GSM modem
15	GSM module: Mini USB connection

16	GSM module: SIM card holder
17	GSM module: Output relay
18	GSM module: Terminals for the inputs and outputs

3.3. Inputs/outputs

3.3.1. DrainAlarm

- 1x digital alarm input (potential-free) for connecting external alarm signals (collective fault or high water signal, level measurement)
- 1x potential-free alarm output (changeover contact) for forwarding the alarm signal to other control systems e.g. remote control systems
- 1x alarm output for connecting external alarm signals (flash light or horn)

DrainAlarm GSM

- 1x digital alarm input (potential-free) for connecting external alarm signals (collective fault or high water signal, level measurement) with visual and audible alarm signal and via text message
- 5x digital alarm inputs (potential-free) for external alarm signals (collective fault or individual fault signals, high water signal, etc.) with alarm signalling via text message
- 1x analogue alarm input (0...10 V) for external alarm signals with alarm signalling via text message
- 1x analogue alarm input (4...20 mA) for external alarm signals with alarm signalling via text message
- 2x potential-free alarm outputs (changeover contact) for forwarding the alarm signal to other control systems e.g. remote control systems
- 1x alarm output for connecting external alarm signals (flash light or horn)

3.4. Function description

3.4.1. DrainAlarm

If a signal is pending at the alarm input (e.g. collective fault or high water signals), an audible and visual alarm signal is output. The alarm signal can be forwarded to a remote control system via the alarm outputs, or signalled via external alarm signal. The alarm can be acknowledged directly on the alarm switchgear via the acknowledgement button, or via an external acknowledgement button.

The power supply is also monitored. If the power supply is interrupted, an alarm signal will also be sent.

3.4.2. DrainAlarm GSM

If a signal is pending at the alarm input (e.g. collective fault or high water signals), an alarm signal is output by text message. In addition to this, an audible and visual alarm signal can be output on the switchgear. The alarm signal can be forwarded to a remote control system via the alarm outputs, or signalled via external alarm signal. The alarm can be acknowledged directly on the alarm

switchgear via the acknowledgement button, via an external acknowledgement button or by text message command.

The power supply is also monitored. If the power supply is interrupted, a visual and audible alarm signal will also be sent.

3.5. Technical data

Mains connection:	1~230 V, 50/60 Hz
Ambient/operating temperature:	-20...50 °C
Storage temperature:	-20...+60 °C
Max. relative humidity:	50%
Protection class:	DrainAlarm: IP 68 DrainAlarm GSM: IP 54 (if GSM antenna is connected: IP 44)
Switching capacity of potential-free alarm outputs:	250 V AC/DC, max. 4 A
Alarm output switching capacity:	12 VDC, max. 1 A
Housing material:	Polycarbonate
Dimensions (W x H x D):	200 x 120 x 95 mm

3.6. DrainAlarm GSM software version

See the rating plate for the latest version of the DrainAlarm GSM and the delivered software version. The rating plate is attached to side of the housing.

3.7. Type overview

DrainAlarm	Alarm switchgear with battery
DrainAlarm GSM	Alarm switchgear with battery and GSM module

3.8. Scope of delivery

3.8.1. DrainAlarm

- Alarm switchgear with built-in battery and power cable with shockproof plug
- 2x threaded cable connections M16 x 1.5
- Installation and operating instructions

3.8.2. DrainAlarm GSM

- Alarm switchgear with pre-assembled GSM module (without SIM card), built-in battery and power cable with shockproof plug
- GSM antenna
- USB cable
- CD-ROM with configuration software and extended installation and operating instructions
- Screwdriver
- 2x threaded cable connections M16 x 1.5
- 1x threaded cable connection M20 x 1.5
- Installation and operating instructions

3.9. Accessories

- Float switch for wastewater and sewage free of faeces

- Float switch for abrasive sewage containing faeces
- Accessories have to be ordered separately.

4. Transportation and storage

4.1. Delivery

On delivery, check immediately that the shipment is complete and undamaged. If any parts are damaged or missing, the transport company or the manufacturer must be notified on the day of delivery. Claims made after this date cannot be recognised. Damage to parts must be noted on the freight documentation.

4.2. Transport

Only the packaging used by the manufacturer or supplier may be used for transport. This normally precludes the possibility of damage occurring during transportation and storage. The packaging should be stored in a safe place for reuse if the product is frequently used at different locations.



NOTE

The blade connector at the plus contact (+) of the battery must be pulled for alarm switchgear DrainAlarm and DrainAlarm-GSM. The plus contact (+) on the battery must insulated with the bushing provided!

4.3. Storage

On delivery, alarm switchgears may be placed into temporary storage for up to 2 years until use.

The following should be taken into consideration for storage:

- Store the properly packaged alarm switchgear on a firm subsurface.
- The alarm switchgears may be stored from -20 °C to +60 °C at a max. relative humidity of 50%. The store room must be dry. We recommend a frost-protected room for storage with a temperature between 10 °C and 25 °C and a relative humidity of 40% to 50%.

Avoid condensation!

- Seal the threaded cable connections securely to prevent ingress of moisture.
- Connected power supply cables should be protected against kinking, damage, and moisture.

BEWARE of moisture!

Ingress of moisture will result in damage to the alarm switchgear. During storage, observe the permissible humidity and ensure the alarm switchgear is stored so it is overflow-proof.

- The alarm switchgear must be protected from direct sunlight, heat and dust. Heat or dust can cause damage to electrical components!
- Following an extended period of storage, the alarm switchgear should be dusted before commissioning.

If condensate has formed, the Wilo customer service team must check that the individual components are working properly. Defective components must be replaced immediately.

4.4. Return delivery

Alarm switchgears which are returned to the plant must be clean and correctly packaged. The packaging must protect the alarm switchgear from damage during transportation. If you have any questions, please contact the manufacturer!

5. Installation

In order to prevent damage to the alarm switchgear or serious injury during installation, the following points must be observed:

- Installation work – assembly and installation of the alarm switchgear – may only be carried out by qualified persons. The safety instructions must be followed at all times.
- The alarm switchgear must be inspected for transport damage before carrying out any installation work.

5.1. General

The alarm switchgear must be de-energised during installation. For this purpose, the battery must also be disconnected (blade connector on the plus contact (+) of the battery is pulled). Check that the available consulting documentation (installation plans, design of installation location, wiring diagram) is complete and correct. Please also observe the applicable national accident prevention regulations and trade association safety provisions.

5.2. Installation types

- Wall mounting

5.3. Installation



DANGER from installation within potentially explosive areas!

The alarm switchgear is not approved for potentially explosive areas and must always be installed outside such areas! Non-observance may lead to fatal injury due to explosion! Always have the connection carried out by a qualified electrician.

The following information must be observed when installing the alarm switchgear:

- The work must be carried out by a qualified electrician.
- The installation location must be clean, dry and free of vibrations. Avoid exposing the alarm switchgear to direct sunlight.
- The customer must provide the power supply cables. These must be of sufficient length so that connection to the alarm switchgear is possible without any problems (no tugging on the cable, no kinking, no crushing). Check the cable

cross-section used and the installation type selected, and whether the cable length is sufficient. The power supply cables should not be installed with power supply cables of other devices run on high voltage current. This could cause malfunctions.

- The following ambient conditions must be observed:
 - Ambient/operating temperature: -20 ... +50 °C
 - Max. relative humidity: 50%
 - Overflow-proof installation



NOTE

The following information must be observed when installing the alarm switchgear DrainAlarm-GSM:

- There must not be any items with a lot of steel or water at the installation site. In addition to this, there should not be any electrical equipment which could generate strong electric fields at the installation site (e.g. motors, radio devices). That could weaken the GSM signal.
- The GSM antenna is self-adhesive. A suitable surface must be available for installation.
- In order to avoid misplacement of the alarm switchgear, the signal strength at the installation site should be tested with a mobile phone. Ensure that the mobile phone uses the same provider as the alarm switchgear. The signal strength can vary significantly from provider to provider.

5.3.1. Basic advice on fixing the alarm switchgear

The alarm switchgear can be installed on various constructions (concrete wall, mounting rail etc.). For this reason, the fixation material provided by the customer must be suitable for the relevant construction.

Observe the following instructions for the fixation material:

- Ensure the proper edge clearance in order to prevent the construction material tearing or chipping.
- The depth of the hole depends on the length of the bolts. The hole should be 5 mm deeper than the bolt length.
- Drilling dust impairs holding strength. Therefore, always blow or vacuum out the borehole.
- Make sure the fixation material is not damaged during installation.

5.3.2. Installing the alarm switchgear

The alarm switchgear is generally fixed to the wall using 4 screws and 4 anchors.

1. Remove the cover on the alarm switchgear and place this on the intended assembly area.
2. Mark out the 4 holes on the mounting surface and place the alarm switchgear to one side again. **See the base of the alarm switchgear for the hole spacing.**
3. Drill the holes according to the specifications for the fixation material used. Observe the use instructions.

4. Fix the alarm switchgear to the wall.
5. Attach the cover to the housing again.

5.3.3. Monitoring a level

For level measurement, a corresponding signal transmitter must be installed and connected.

- DrainAlarm: Float switch
 - DrainAlarm GSM: Float switch or level sensor
- The signal transmitter is to be provided onsite. The signal transmitters must be installed in the operating space in accordance with system's installation plan.
- Note the following points when using the float switch:
- The float switch must be able to move freely in the operating space (chamber, tank)!
 - The switching point of the float switch must be tested before connection to the alarm switchgear.

5.4. Electrical connection



POTENTIALLY fatal danger due to electrical voltage!

The housing cover must be removed to connect the individual signal transmitter. Incorrect electrical connections can cause fatal electric shocks! The alarm switchgear must be de-energised during connection.

- Pull the plug
- Disconnect the rechargeable battery
- Do not connect the system to the mains until the end of the installation process.
- Electrical connections may only be carried out by a qualified electrician approved by the local energy supply company, in accordance with locally applicable regulations.



DANGER – explosive atmosphere!

If the connected signal transmitters are used in potentially explosive areas, they must be connected via an intrinsically safe electric circuit. If alarm signals are connected directly, there is a risk of fatal injury due to explosions. Connections must always be made by a qualified electrician.

- The mains connection current and voltage must be as stated on the rating plate.
- There must be a residual-current device (RCD) in the supply line.
- Lay the power supply cable in accordance with the valid standards/regulations, feed it through the threaded cable connections and secure accordingly.

5.4.1. Connecting the alarm inputs: digital signal transmitters

DrainAlarm

1x alarm input on the terminal strip (fig. 1, item 4):

- Terminal: 6 and 7
- The connection must be potential-free.
- Contact type: Normally open contact

DrainAlarm GSM

- 1x alarm input on the terminal strip on the main PCB (fig. 2, item 4):
 - Terminal: 6 and 7
 - The connection must be potential-free.
 - Contact type: Normally open contact
- 5x alarm inputs on the terminal strip of the GSM module (fig. 2, item 18):
 - In1: Occupied! (Converter bridge to alarm output on the main PCB)
 - In2: Terminal 14 and 15
 - In3: Terminal 16 and 17
 - In4: Terminal 18 and 19
 - In5: Terminal 20 and 21
 - In6: Terminal 22 and 23
 - The connection must be potential-free.
 - Contact type: Normally open contact

5.4.2. Setting the functions of the digital alarm inputs

DrainAlarm

Jumper 1 (fig. 1, item 7) can be used to define when an alarm is to be triggered: when the contact is open or closed

- Jumper on contact B/C (standard setting): An alarm is triggered when the contact is **closed**
- Jumper on contact A/B: An alarm is triggered when the contact is **open**

DrainAlarm GSM

Jumper 1 (fig. 2, item 7) can be used to define when an alarm is to be triggered on the alarm input on the main PCB (terminal 6 and 7, fig. 2, item 4): when the contact is open or closed

- Jumper on contact B/C (standard setting): An alarm is triggered when the contact is **closed**
- Jumper on contact A/B: An alarm is triggered when the contact is **open**

The function of the alarm inputs on the GSM module is configured using the software.

5.4.3. Connecting the alarm inputs: analogue signal transmitters (DrainAlarm GSM only)

Connection to the terminal strip of the GSM module (fig. 2, item 18):

- Analogue 0–10 V:
 - Terminal 24: –
 - Terminal 25: +
- Analogue 4–20 mA:
 - Terminal 26: –
 - Terminal 27: +

The function of the analogue alarm inputs is configured using the software.

5.4.4. Connecting external alarm signal (horn, flash light)

If an alarm is signalled, there is a DC voltage at the alarm output (DrainAlarm fig. 1, item 4/ DrainAlarm GSM fig. 2, item 4) for operating external alarm signals:

- Connected load: 12 VDC, max. 1 A
- Terminal 1: Plus (+)
- Terminal 2: Minus (–)
- Contact type: Normally open contact



NOTE

- No external voltage may be applied!
- The alarm contact can be loaded with max. 350 mA in continuous duty. At a higher load (max. 1 A), the maximum operating time is 30 min.

5.4.5. Connection of further controls to the alarm output

Further control systems (e.g. remote control systems) can be connected via a potential-free changeover contact.

DrainAlarm

Connection to the terminal strip (fig. 1, item 4):

- Terminal 3/4: Normally open contact
- Terminal 4/5: Normally closed contact
- Switching capacity: 250 V AC/DC, 4 A
- The connection must be potential-free.

DrainAlarm GSM

Connection to the terminal strip of the GSM module (fig. 2, item 18):

- Relay 1:
 - Terminal 29/30: Normally open contact
 - Terminal 28/29: Normally closed contact
 - Switching capacity: 250 V AC/DC, 4 A
 - The connection must be potential-free.
- Relay 2:
 - Terminal 32/33: Normally open contact
 - Terminal 31/32: Normally closed contact
 - Switching capacity: 250 V AC/DC, 4 A
 - The connection must be potential-free.

The function of the alarm outputs must be configured using the software.

5.4.6. Connecting an external acknowledgement button

The alarm switchgear is equipped with an acknowledgement button. Alarm signals must be acknowledged using this button. If remote acknowledgement is to be permitted, an external button can be connected:

- Terminal: 8 and 9 (fig. 1/2, item 5)
- Contact type: Normally open contact



NOTE

No external voltage may be applied!

5.4.7. Activating/deactivating the internal buzzer (DrainAlarm GSM only)

Jumper 2 (fig. 2, item 11) allows the internal buzzer to be activated/deactivated:

- Jumper on contact B/C (standard setting): Buzzer is activated.
- Jumper on contact A/B: Buzzer is deactivated.

5.4.8. Connecting the GSM antenna (DrainAlarm GSM only)

Connect and lay the GSM antenna to the SMA bush (fig. 1, item 13). The antenna is self-adhe-

sive. There must be a corresponding surface at the installation site for the adhesive layer to hold correctly.

The antenna should be installed near a window. The network coverage is better than in closed rooms.

5.4.9. Inserting the SIM card (DrainAlarm GSM only)

The SIM card must only be inserted if the alarm switchgear has already been configured. If the GSM module has not been configured yet, the SIM card must be installed later!

The SIM card holder (fig. 2, item 16) is designed for standard SIM cards (mini-SIM) and located on the GSM module at the rear of the housing cover.

1. Push the SIM card holder downwards (unlock) and open it.
2. Insert the SIM card.
3. Close the SIM card holder and push it upwards (lock).

5.4.10. Alarm switchgear mains connection

The alarm switchgear must not be connected to the mains until the end of the installation process.

As soon as the battery is connected or the mains connection is established, the alarm switchgear starts.

The mains connection process consists of two parts:

- Connecting the rechargeable battery
- Establishing the mains connection

Connecting the rechargeable battery

1. Remove the protective bushing from the plus contact (+) of the battery.
2. Connect the blade connector (+) to the plus contact (+) of the battery.
3. Attach the housing cover to the alarm switchgear.



NOTE

If the battery is fully discharged, the charging time can be up to 100 h.

Establishing the mains connection

The mains connection is equipped with a cable incl. shockproof plug as standard: The connection to the mains is established by inserting the plug into a standard shockproof socket.

If the alarm switchgear is to be connected permanently, the pre-installed power supply cable must be removed and the power supply cable laid onsite must be connected.

If connected permanently to the mains, a mains separator (main switch) must be installed onsite!


The wires must be connected to the terminal strip (fig. 1/2, item 4) as follows:

- Terminal "L": Phase
- Terminal "N": Neutral conductor
- Terminal "PE": Earth




5.4.1.1. Display of operating readiness

The LEDs in the housing cover signal proper function as follows.

DrainAlarm

Symbol	Colour	Description
	Green	LED is lit up: Mains voltage is present, battery is charging

DrainAlarm GSM

Symbol	Colour	Description
	Green	LED is lit up: Mains voltage is present, battery is charging
	Green	GSM module: LED is lit up Ready for operation after 2 minutes
	Yellow	GSM module: Status LED Continuous flashing: Start procedure Is lit up: Connected to the mains Flashes twice: SIM card not available

6. Operation and function

This section contains all information on operating the alarm switchgear and how it functions.




DANGER due to electrical voltage!
When working on the uncovered alarm switchgear, there is a risk of fatal electric shocks. Only operate the alarm switchgear with the cover closed!


6.1. Controls







After successful mains connection, the alarm switchgear operates fully autonomously. If an alarm is signalled, only the acknowledgement button must be pressed. The current operating status is indicated via LEDs.

6.1.1. Buttons

Symbol	Description
	Acknowledgement button This button is used to acknowledge alarm signals: the yellow LED goes out and the buzzer stops

6.1.2. LEDs

Symbol	Colour	Description
	Green	LED is lit up: Mains voltage is present, battery is charging

Symbol	Colour	Description
	Red	Alarm signal: LED is lit up: Signal present at terminal 6 and 7 or mains voltage missing LED goes out as soon as the signal at terminal 6 and 7 is no longer present and the mains voltage is present again.
	Yellow	Alarm signal: LED is lit up in parallel to the red LED LED goes out as soon as the alarm signal was acknowledged.
	Green	GSM module: LED is lit up Ready for operation after 2 minutes
	Yellow	GSM module: Status LED Continuous flashing: Start procedure Is lit up: Connected to the mains Flashes once: Modem does not respond Flashes twice: SIM card not available Flashes three times: GSM signal too weak
 	Green	GSM module: When the LED lights up, the respective relay is connected

6.2. Configuring the GSM module

After installation, the GSM module in the DrainAlarm GSM alarm switchgear must be configured via software. For this purpose, the alarm switchgear must be connected to the PC via a mini USB cable and configured via software.

6.2.1. Mobile phone plan and SIM card

The alarm switchgear starts automatically after the electrical connection is established. If configuration is incorrect, text messages can be sent automatically. This can result in high costs. To avoid this, always comply with the following points:

- Do not insert the SIM card until the device has been configured correctly and in full.
- Choose an appropriate mobile phone plan with transparent test message costs.

6.2.2. System requirements

Description	Minimum requirement	Recommended requirement
PC system	IBM compatible PC with x86 or x64 processor	
RAM	256 MB	512 MB
Hard drive space	10 MB	10 MB
CD-ROM	Required for installation from CD	
VGA	1024 x 768, 256 colours	1280 x 800 32 bit
USB standard*	2.0	2.0
USB connection	Mini-USB	Mini-USB

Description	Minimum re-requirement	Recommended requirement
Operating system	MS Windows XP, SP2 MS Windows Vista MS Windows 7, 32/64 bit MS Windows 8, 32/64 bit	

* USB 3.0 interfaces cannot be used!

6.2.3. Preparations

The alarm switchgear must be installed and connected fully as described in the "Installation" section.
The SIM card must not be inserted yet and the alarm switchgear must not be connected to the PC yet.

6.2.4. Installing the software and configuring the GSM module

See the extended installation and operating instructions on the enclosed CD-ROM for all other details on configuring the GSM module and the software.

7. Commissioning



POTENTIALLY fatal danger due to electrical voltage!
Incorrect electrical connections can cause fatal electric shocks! Electrical connections may only be inspected by a qualified electrician approved by the local energy supply company, in accordance with locally applicable regulations.

The "Commissioning" section contains all the important instructions for operating personnel on commissioning and operating the alarm switchgear safely.

Always keep this manual either by the alarm switchgear or in a place specially reserved for it, where it is accessible for all operating personnel at all times. All persons working on or with the alarm switchgear must have been provided with this operating and maintenance manual and have read and understood it.

In order to prevent damage or serious injury when commissioning the alarm switchgear, the following points must always be observed:

- The alarm switchgear must be installed as described in the "Installation" section and in accordance with the applicable national regulations.
- The alarm switchgear must be properly fused and earthed.
- All safety devices and emergency cut-outs must be connected and inspected to ensure that they are working properly.
- The alarm switchgear is suitable for use under the specified operating conditions.

7.1. Connections

The signal transmitters on the digital inputs and the controls/components at the alarm outputs (changeover contacts) are connected potential-free.

The signal transmitters are installed accordingly in the operating space to monitor the levels and the switching points were tested.

7.2. Operation in potentially explosive areas

The alarm switchgear may not be installed or used in potentially explosive areas.



RISK of fatal injury due to explosive atmosphere!

The alarm switchgear is not Ex-rated. Operation in potentially explosive areas will lead to explosions! The alarm switchgear must always be installed outside potentially explosive areas!

7.3. Switch on the alarm switchgear

As soon as the battery is connected or the mains connection is established, the alarm switchgear starts.

The LEDs in the housing cover signal proper function as follows.

DrainAlarm

Symbol	Colour	Description
	Green	LED is lit up: Mains voltage is present, battery is charging

DrainAlarm GSM

Symbol	Colour	Description
	Green	LED is lit up: Mains voltage is present, battery is charging
	Green	GSM module: LED is lit up Ready for operation after 2 minutes
	Yellow	GSM module: Status LED Continuous flashing: Start procedure Is lit up: Connected to the mains Flashes twice: SIM card not available

7.4. Conduct during operation

When operating the alarm switchgear, always follow the locally applicable laws and regulations for work safety, accident prevention and handling electrical products. To help ensure safe working practice, the responsibilities of employees should be clearly specified by the operator. All personnel are responsible for ensuring that regulations are observed.

LEDs on the front of the housing are used to operate the alarm switchgear, display the operating status, and signal alarms and faults. The housing cover must not be opened during operation.

DANGER due to electrical voltage!

When working on the uncovered alarm switchgear, there is a risk of fatal electric shocks. Only operate the alarm switchgear with the cover closed!





DANGER - hot surfaces!
The transformer in the alarm switchgear can reach temperatures of up to 70 °C during operation. That can heat the housing accordingly.

8. Decommissioning/disposal



POTENTIALLY fatal danger due to electrical voltage!
The housing cover of the alarm switchgear must be opened for decommissioning. There is a risk of fatal injury due to electric shock! This work may only be carried out by a qualified electrician approved by the local power supplier, in accordance with locally applicable regulations.

BEWARE of moisture!
Ingress of moisture will result in damage to the alarm switchgear. During downtime, observe the permissible humidity and ensure the switchgear is stored so it is overflow-proof.

1. Disconnect the mains plug!
2. Remove the housing cover and the blade connector from the plus contact (+) of the battery.
3. Push the protective bushing onto the plus contact (+) of the battery.
4. Disconnect all power supply cables and pull them out of the threaded cable connections.
5. Seal all openings and the ends of the power supply cables so that no moisture can enter the housing and the cable.
6. Loosen all fastening screws and remove the alarm switchgear from the construction.
7. Attach the housing cover to the housing again.

8.4.1. Return delivery/storage

For shipping purposes, the alarm switchgear must be packaged so it is protected against knocks and waterproof.

Please also refer to the "Transport and storage" section.

8.1. Disposal

8.2. Rechargeable battery

As end consumers, you are legally obliged to return all used battery and rechargeable batteries. **They must not be disposed of in the domestic waste.**

Batteries and rechargeable batteries containing harmful substances are marked with the symbol indicating the prohibition of disposing them in domestic waste. The terms for the heavy metals in question are

- **Cd** (=Cadmium)
- **Hg** (=Mercury)
- **Pb** (=Lead)

You can return used batteries and rechargeable batteries free of charge at your municipal collection points or specialist dealers. By doing so, you are fulfilling your legal obligations and contributing to environmental protection.

8.2.1. Product

Proper disposal of this product avoids damage to the environment and risks to personal health.

- Use the services of public or private waste disposal companies, or consult them for the disposal of the product or parts thereof.
- For more information on proper disposal, please contact your local council or waste disposal office or the supplier from whom you obtained the product.

9. Troubleshooting and possible solutions

The LEDs indicate possible faults. Please contact Wilo customer service if troubleshooting fails. Unsanctioned modifications to the alarm switchgear are made at the operator's own risk and release the manufacturer from any warranty obligations.

Symbol	Colour	Description
	Green	Fault: LED off Cause: No mains voltage present, battery discharged or defective Remedy: Check the mains connection, replace the rechargeable battery
	Green	Fault: LED off Cause: Power supply to the GSM module is defective Remedy: Contact the Wilo customer service
	Yellow	Fault: LED flashes once Cause: Modem does not respond Remedy: Restart the alarm switchgear
	Yellow	Fault: LED flashes twice Cause: SIM card not available Remedy: Insert SIM card; clean the contact surfaces if there is a SIM card
	Yellow	Fault: LED flashes 3x Cause: GSM signal too weak Remedy: Reposition the GSM antenna, connect a GSM antenna with better signal boosting





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