

# Instructions for Use Installation and Servicing

To be left with the user

## Condensate Pump



# Guarantee Registration

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Thank you for installing a new Glow-worm condensate pump in your home.

Glow-worm appliances' are manufactured to the very highest standard so we are pleased to offer our customers' a Comprehensive Guarantee.

Our Guarantee gives you peace of mind plus valuable protection against breakdown.

**For customer service call:**

01773 828100

Technical helpline: 01773 828300

**For General and Sales enquiries:**

Tel. 01773 824141

Fax: 01773 820569



# Contents - Testing and Certification

The instructions consist of three parts, User, Installation and Servicing Instructions. The instructions are an integral part of the appliance and must, to comply with the current issue of the Gas Safety (Installation and Use) Regulations, be handed to the user on completion of the installation.

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## Testing and Certification

Any alteration not approved by Glow-worm, could invalidate the certification, warranty and may also infringe the current issue of the Statutory Requirements.

**WARNING:** We cannot accept responsibility for any damage which may occur as a result of non-observance of these instructions.

Subject to alteration.

Spare Parts

**REMEMBER:** Use only genuine spare parts supplied by Glow-worm.

# 1 Description

The condensate pump is used for the extraction of condensate which accumulates in high efficiency condensing boilers. The condensate generated by the boiler flows through an inlet hose and into the pump's reservoir. The water level is constantly monitored, and when it reaches maximum capacity the pump switches on automatically and pumps the condensate out through an outlet hose.

Lethal voltage is present in both the appliance, and the power supply cable. For this reason, the appliance may only be installed or opened by a heating engineer. This engineer also assumes responsibility for installing the appliance properly and putting it into service for the first time. He is also responsible for the inspection and maintenance of the condensate pump.

**We accept no liability for any damage caused by non-observance of these instructions.**

## 1.1 Storage of documents

Please store this operating, installation, and maintenance manual, and all related documents, in a safe place in case they are needed for future reference. If you move out or sell the appliance, pass on the documents to the new owner.

## 1.2 Data badge

The data badge which lists the serial number, protection class, supply voltage, the frequency, and the CE label, is located on the underside of the condensate pump.

## 1.3 CE label

CE labelling shows that the condensate pump complies with the following basic requirements of the applicable directives as stated on the data badge:

- Permissible voltages (directives EN 60 335-1 and EN 60 335-2-41)
- Electromagnetic compatibility (directives EN 55 014-1 and EN 55 014-2)

## 1a Technical Data

Technical data	Units	Condensate Pump
Design		Appliance for wall-mounted installation
Nominal capacity	l	0,5
Mains voltage	V	230
Max. current consumption	A	1
Frequency	Hz	50
Max. power rating	W	22
Max. pump head	m	4
Flow volume	l/h	150
Dimension		
Height	mm	160
Width	mm	180
Depth	mm	100
Weight when filled with water	kg	1,8
Inlet hose (max. outside diameter)	mm	24
Outlet hose (min. inside diameter)	mm	10
Water inlet temperature	°C	1 ... 60
Ambient temperature	°C	5 ... 60
Safety		Radio-shielded, non-interacting with the mains supply
Overflow circuit breaker		5 mA ... 4A; 230 V
Level of protection according to EN 60529		IP 44

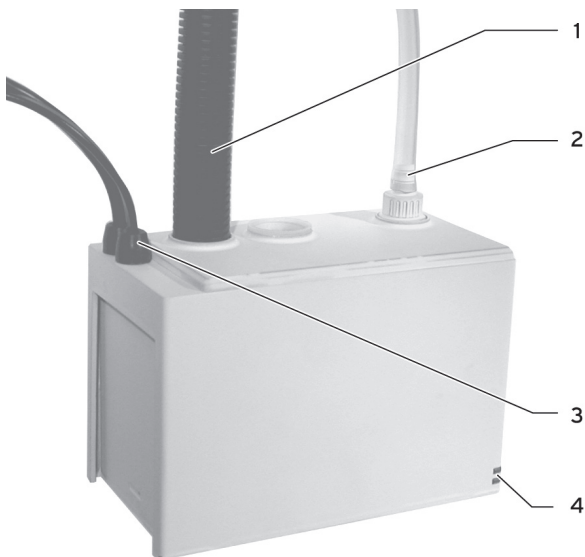
# 2 Instructions for Use

## 2.1 Intended use

The condensate pump may only be used with Glow-worm high efficiency boilers. The pump, and all of its components, are designed for the removal of condensate from heating systems. The intake of rainwater into the system through the flue has been taken into consideration. This also applies for the permissible amount, as well as the composition and quantity of solid particles in the condensate. The condensate pump is not suitable for the extraction of other liquids or solid materials. In particular, any type of waste water, chemicals, or oil-bearing emulsions may not be fed into the condensate pump. Any use other than those which are outlined here, especially the extraction of non-approved materials, is considered improper. The manufacturer or supplier is not liable for any damage resulting from improper use. The user alone bears any risk. Intended use includes the observance of operating, installation, and maintenance manuals.

## 2.2 Operation

### 2.2.1 Overview



#### Legend

- 1 Inlet hose
- 2 Outlet hose
- 3 Electrical connections
- 4 LED

### 2.2.2 Commissioning

Once the condensate pump has been installed and put into service, operation is self-regulating and does not require further attendance.

The pump is equipped with an overflow safety switch. If there is a malfunction, the safety switch (when properly connected) automatically switches off the boiler to prevent condensate from overflowing.

### 2.2.3 Display of operating status

On the front edge of the housing there are two integrated diodes which indicate the operating status of the condensate pump.

When the pump is provided with a 230 V power supply, the green LED is illuminated. This indicates that the pump is ready for operation.

The red LED indicates that the water level has exceeded the highest permissible limit, and that the overflow safety switch has been activated.

If the required connection to the boiler has been installed, it will be switched off in order to prevent the further accumulation of condensate.

**NOTE:** If the red LED lights up or flashes for a lengthy period, there is a fault in the installation or a defect in the pump. Contact a qualified installer to inspect the pump and restore operation.

## 2.3 Safety instructions

### 2.3.1 Alterations to the condensate pump

In general, alterations to the condensate pump are forbidden. For alterations to the environment, you must refer to the recognised installation/servicing company which is responsible for it.

**WARNING:** Risk of damage due to improper alterations! Under no circumstances should you ever attempt to make alterations to the pump or other parts of the system.

### 2.3.2 Condensate

The condensate which accumulates in the pump can cause injury if it comes into contact with the eyes. Be aware that the condensate pump should only be operated outside the reach of children.

### 2.3.3 Explosive liquids

Do not use the pump to pump out combustible or explosive liquids such as petrol, heating oil, etc.! There is a danger of being burned, or injured by explosions.

Do not operate the pump in a potentially explosive environment, as this could cause an explosion.

## 2.4 Care

Clean the exterior with a damp cloth. Do not use any caustic cleaning agents!

Have the condensate pump inspected and cleaned by a qualified service engineer at least once a year.

## 2.5 Manufacturer's warranty and liability

We only honor the manufacturer's warranty if the installation is performed by a qualified installer. We provide the owner of the appliance with a manufacturer's warranty for two years on parts and one year on labour. All work covered by the warranty is performed by our customer service. We can therefore only reimburse any costs you incur for work on the appliance during the warranty period if we have issued the order for the work and if it is covered by the warranty.

## 2.6 Recycling and disposal

Both the pump and its packaging are primarily made of recyclable raw materials.

**APPLIANCE:** Neither the pump, or any of its accessories belong in the household waste. Make sure the old appliance and any related accessories are disposed of properly.

**PACKAGING:** Please leave the disposal of the transport packaging to the engineer who installed the appliance.

# 3 Note to the Installer

## 3.1 Safety instructions and regulations

**WARNING:** Danger of death due to high voltage! Lethal voltage is present in both the appliance, and the power supply cable. For this reason, the appliance may only be installed or opened by a heating engineer.

### 3.1.1 Safety instructions

The condensate pump must be installed by an authorised heating engineering company, who is responsible for the observance of existing standards and regulations.

Proper transport, appropriate storage, professional setup and installation, as well as careful operation and maintenance, are all prerequisites for the safe and sound operation of the appliance.

Only heating engineers who are familiar with all of the safety, installation, operation, and maintenance instructions contained in this operating and installation manual may work on this appliance.

When the appliance is operating, some components contain dangerous levels of voltage which can result in serious injury or death. The following safety precautions must be taken in order to minimise the danger of serious injury or death:

- The appliance must be installed in accordance with safety regulations, as well as all other relevant local or state regulations. Proper earthing, adequate electrical wiring, and sufficient short circuit protection must be provided in order to ensure safe operation.
- The floor cover should only be opened by a qualified heating engineer. The floor cover may only be opened if all electrical connections are disconnected from the pump.
- Ensure that the power supply has been switched off and secured against reconnection before conducting visual inspections and maintenance work. The electrical connection area should never be touched if measurements are being taken while the power supply is switched on. Remove all jewellery from the wrists and fingers. Ensure that the test equipment is in good operating condition.
- Stand on insulated flooring when working on the appliance if it is switched on (i.e., ensure no earthing is possible).
- Maintain strict adherence to the instructions contained in this operating, installation, and maintenance manual, and observe all danger and caution warnings.
- This list is not a comprehensive representation of all the required measures for the safe operation of the appliance. If the owner does not have specific enough information to handle particular problems that may arise, please contact your authorised installation/servicing company for assistance.
- Do not use the pump to pump out combustible or explosive liquids such as petrol, heating oil, etc.! There is a danger of being burned, or injured by explosions.
- Do not operate the pump in a potentially explosive environment, as this could cause an explosion.
- The pump connection is equipped with an earth wire. Make sure that the power supply is earthed according to legal regulations.
- Connect an alarm or a power interruptor to the safety switch in order to prevent damage from condensate leakage or damage to the boiler from occurring if the pump should malfunction.
- Ensure that the pump is stable and secure during operation, or that it is fixed to a wall. Otherwise, the pump could malfunction. This can result in damage to the pump or boiler.
- Do not connect the pump's outlet hose tightly with the waste water line. Danger of poisoning due to the leakage of exhaust gas! The internal siphon in the boiler could be sucked completely dry.

- If the condensate discharge pipe needs to be extended during installation, only use DIN 1986-4 compliant discharge pipes. The use of improper discharge pipes can result in leakage, and thus cause damage from condensate leaking out.

### Alterations

In general, alterations to the pump are forbidden. Alterations to the environment are only permissible if done in accordance with national standards.

**WARNING:** Risk of damage due to improper alterations! Under no circumstances should you ever attempt to make alterations to the pump or other parts of the system.

### 3.1.2 Standards and regulations

IEC 60364-7-712 Electrical installations of buildings - Part 7-712 EMV test procedures in accordance with EN50081-1:1992, EN50082-1:1997

Emission interference: EN 55014-1: 1993

Interference resistance: EN 55014-2: 1997

### 3.1.3 Engineering rules

The installation must correspond to the conditions at the site of the customer, to local regulations and, last but not least, to the engineering rules. Of particular significance are:

- Electrical connection  
VDE 0100 Setting up high voltage systems with rated voltages up to 1000 V,
- VDE 0105 part 100 Operating electrical appliances
- DIN 18382 Electrical wiring and supply lines in buildings

# 4 Installation

## 4.1 Selecting the installation site

The condensate pump was intended to be installed in the room where the boiler is located.

The ambient room temperature must be between 5 °C and 60 °C.

The installation room should have a wall that is suitable for installation using the provided mounting hardware. If such a wall is not available, a suitable mounting surface must be prepared.

The condensate pump should not be used as a storage shelf

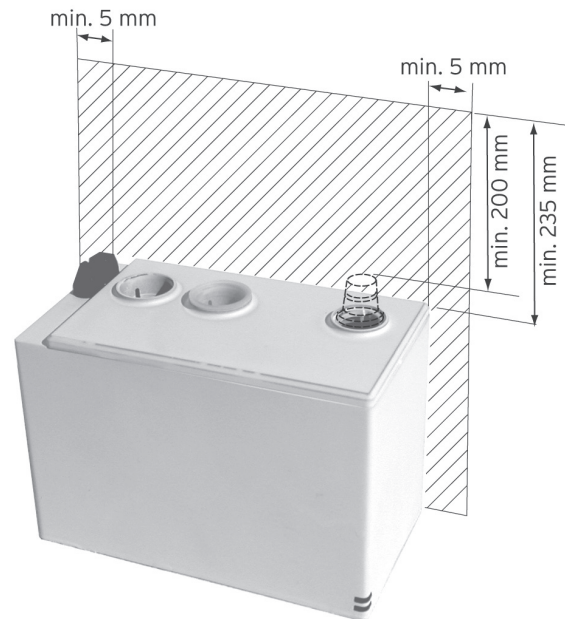
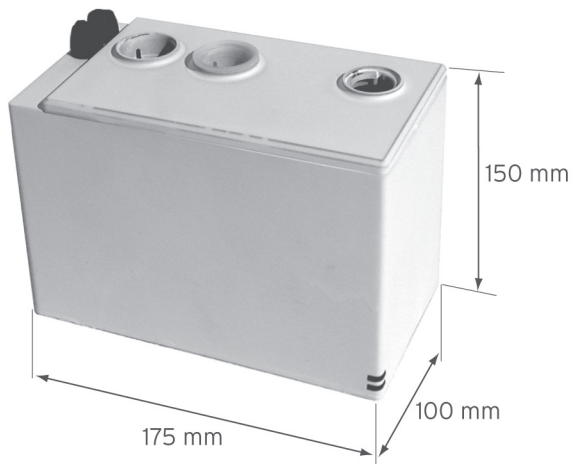
## 4.2 Scope of delivery

- Condensate pump
- Wall plugs (5 mm)
- Screws (4 x 35 mm)
- Inlet hose (Ø 24 mm x 1.15 m)
- Outlet hose (Ø 10 mm x 6 m)
- Wall bracket
- Wall bracket for drain hose
- Manual

The following tools are required for installation:

- Drill
- Drill bit (5 mm)
- Slot head screwdriver
- Spirit level
- Knife
- Tools for making electrical connections

## 4.3 Dimensions and installation spaces

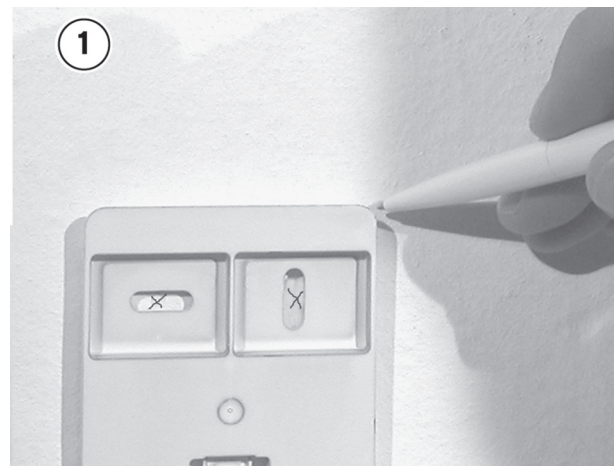


Dimensions and installation clearances

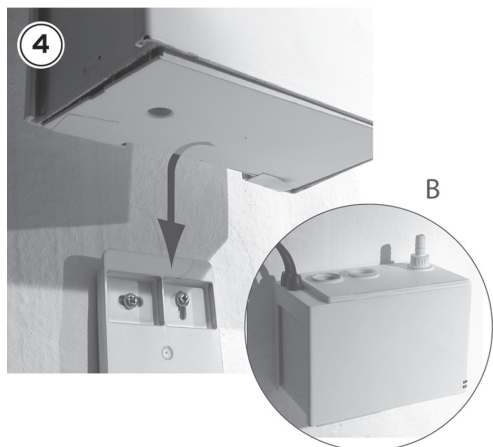
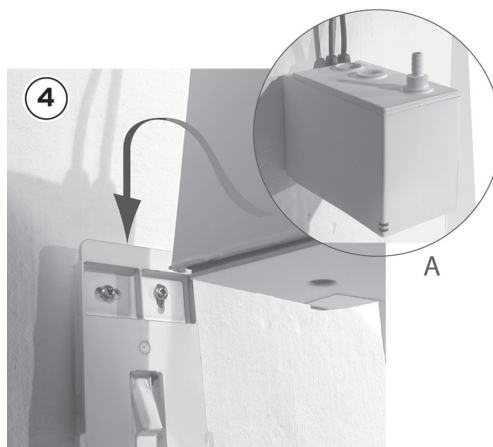
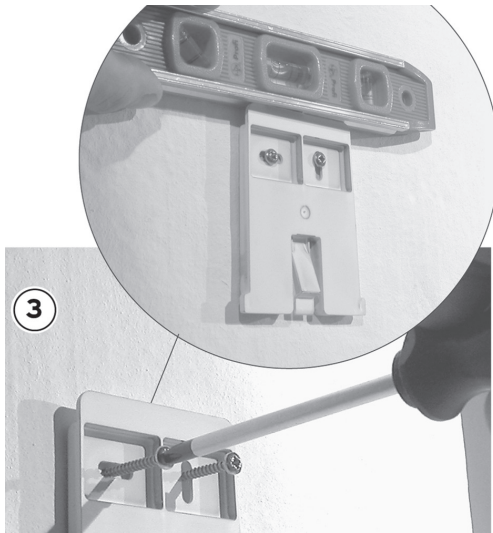
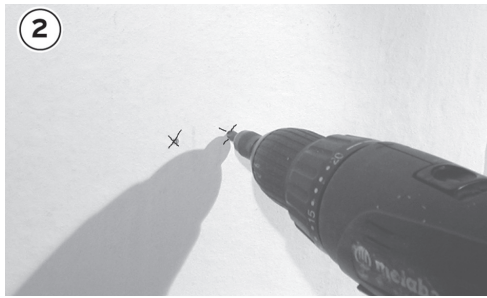
## 4.4 Installing the wall bracket

- Slide the pre-assembled wall bracket downward and out of the condensate pump housing.
- Install the wall bracket in a suitable position below the point where the condensate drains out of the boiler. The wall bracket must be installed in a level position! Use a spirit level!
- From above, slide the condensate pump straight down along the guiding edges of the wall bracket. A small hook at the lowest position catches the pump and secures it in the wall bracket.

**NOTE:** The condensate pump can be fastened to the wall bracket in two orientations, either sideways (A) or lengthways (B).



## 4 Installation



Installing the wall bracket

### 4.5 Connecting the inlet hose

**WARNING:** Remove the return valve (1) and the cover (2) before connecting the hoses. The pump and wall bracket can be damaged during assembly if excessive force is used.

**WARNING:** The inlet hose must be connected to the boiler in such a way that a constant slope is maintained, and without any loops or buckles in the hose. Otherwise, the water won't be able to flow unobstructed into the pump.

- Determine the required length of the hose.
- When shortening the hose, allow a min. of 10 mm extra length for the insertion depth of the hose in the pump's cover.
- Rotate the return valve (1) one quarter turn to the left (anticlockwise) in order to open the cover (2) on the pump. This unlocks both the cover and the return valve.

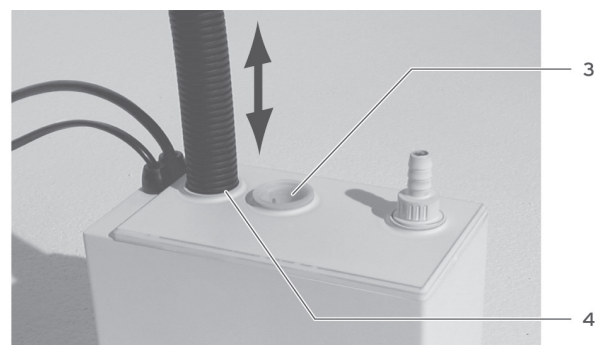
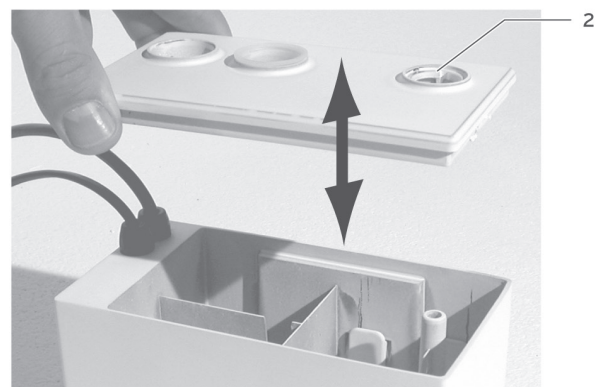
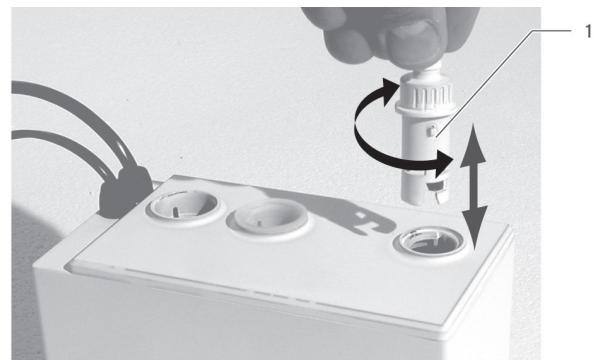
- Pull off the cover and return valve by lifting them upwards

#### Removing the return valve and cover

- Push the inlet hose into one of the inlet openings (3) on the removed cover until it catches.

**NOTE:** If a second hose will be connected, remove the plug from the second inlet opening (4) and connect the additional hose as shown above.

- Put the cover back onto the condensate pump from above.



## 4 Installation

### 4.6 Connecting and laying the outlet hose

- Push the outlet hose onto the removed return valve as far as it will go.
- Insert the return valve back into the cover, and lock it into place by rotating it a quarter turn to the right (clockwise).

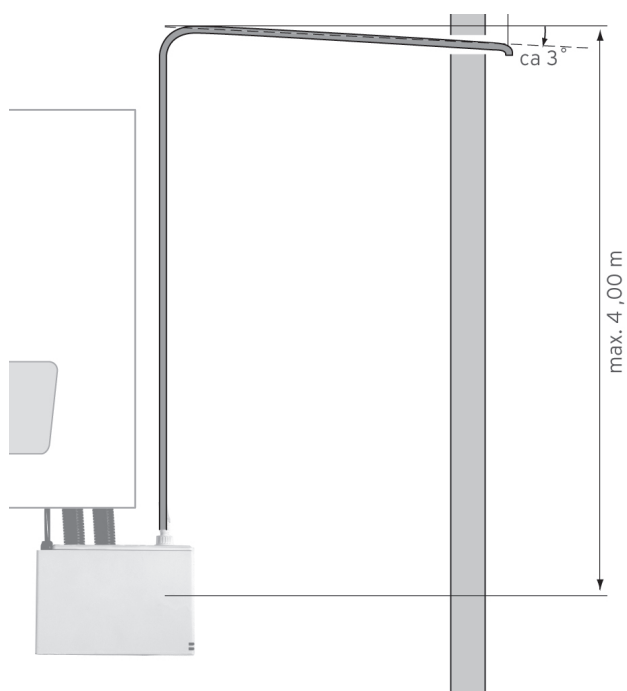
#### Laying the outlet hose:

The pump's outlet hose should be connected to the building's waste water system.

- Guide the outlet hose directly from the pump far enough upwards so that the height difference between the pump's outlet and the drainage point can be compensated for, and so that a slope in the hose can be created between the deflection point and the drainage point when the hose is laid.

**CAUTION!** Observe the pump's maximum delivery height of 4 m!

- Then lay the outlet hose with a constant slope down to the drainage point.
- Position the outlet hose with a U-shape at the highest point to prevent backflow.



Laying the outlet hose

### 4.7 Connecting to the boiler

Using the supplied inlet hose, the condensate pump can be connected to the siphon of any Glow-worm caloric value heating appliance.

- If the condensate drainage hose on the boiler is long enough, it can be connected directly to the pump (see Sec. 4.5).

If the hose on the boiler is too short, you can replace it with the supplied inlet hose.

- Connect the inlet hose to the boiler's condensate outlet.
- Connect the inlet hose to the condensate pump as described in section 4.5.

### 4.8 Electrical connection

#### 4.8.1 General information

Once the condensate pump has been installed, you can proceed with the electrical connection of the appliance.

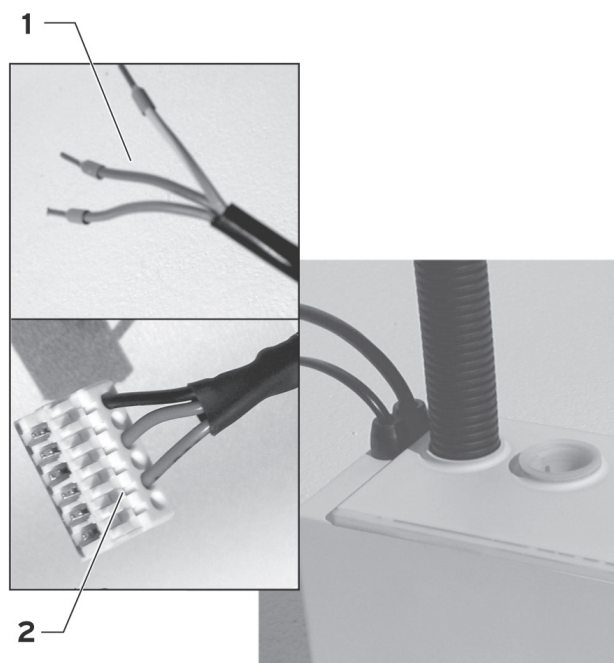
The pump is connected to the power supply using the cable (1) with the free end.

The overflow safety switch is connected to the boiler using the cable (2). The electrical connection may only be performed by a heating engineer.

**WARNING:** Risk of fatal electric shock! There is a danger of electrocution and of damage to the appliance if it is not correctly installed.

The power supply to the pump and boiler must be switched off and secured against reconnection before making electrical connections.

**NOTE:** All electrical and condensate-bearing connections to the pump must be made in a current-free state.



Overview of the electrical connections

#### Key

1 230 V Connection cable

2 Connection cable for the overflow safety switch

# 4 Installation

## 4.8.2 Connecting the 230 V mains voltage

There are two options for connecting the 230 V mains voltage:

- You can connect the cable (1) to the 230 V mains via the mains connection on the boiler

or

- You can install a mains plug on the cable (1) and connect the pump with a mains socket (the plug is not included in the scope of delivery).

## 4.8.3 Connecting the overflow safety switch

The type of connection to be made on the circuit board is dependent upon the respective boiler.

You can determine the connection type for the respective boiler using the table:

Appliance	Connection Type
Flexicom cx	A
Flexicom sx	A
Flexicom hx	A
Glow-worm cxi	B
Glow-worm sxi	B
Glow-worm hxi	B
Glow-worm Ultracom cxi	A
Glow-worm Ultracom cx	A
Glow-worm Ultracom hx	A
Glow-worm Ultracom sx	A
Glow-worm Ultrapower	A
Glow-worm Betacom C	B

### Types of connections for various boilers

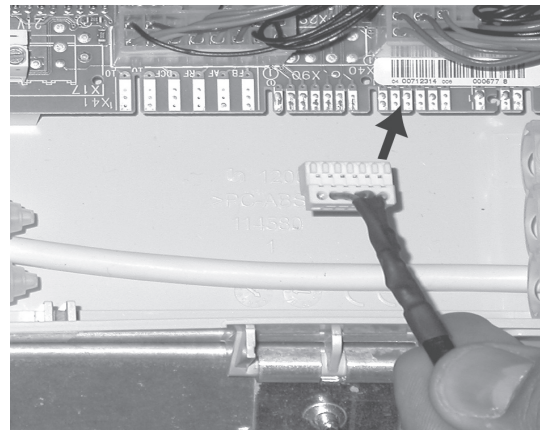
A description of the respective connection types is given in the following section.

#### Connection type A:

Connect the overflow safety switch to the boiler's low voltage circuit in the following manner:

- Open the control box on the boiler.
- Plug the matching plug into the X40 slot.

Note: If the Options Board has been fitted, connect the plug to X40b on the options board.

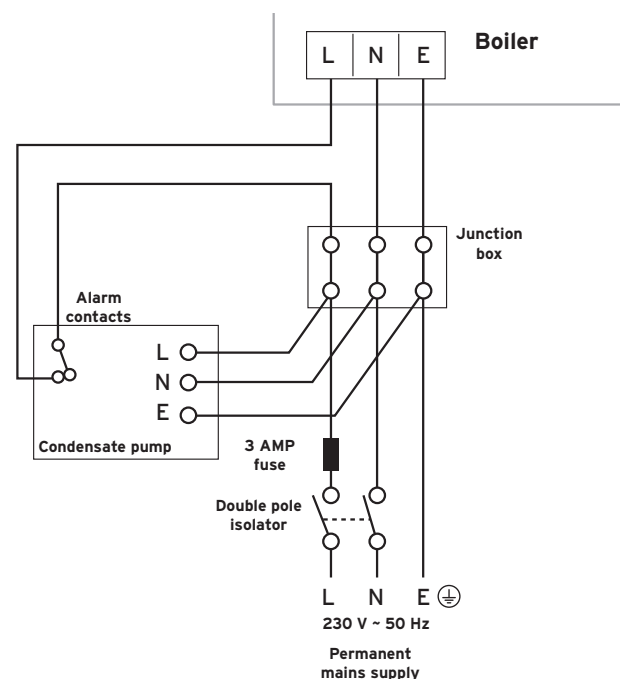


Connecting the overflow safety switch, connection type A

#### Connection type B:

Connect the overflow safety switch to the boiler in the following manner:

- Using a suitable cutting tool, cut off the plug at the end of the cable (2, Fig. Overview of the electrical connections) and remove the insulation from the ends of the wires.
- Connect with the mains voltage connection on the boiler as shown in the figure below.
- Connect to the 230 V mains voltage connection on the condensate pump as shown in Sec. 4.8.2.



Connecting the overflow safety switch, connection type B

# 5 Commissioning

Once the condensate pump has been mechanically and electrically installed, it is ready for operation. The green LED lights up.

**NOTE:** Once the pump has been installed and put into service, operation is self-regulating and does not require further attendance.

## 5.1 Display of operating status

On the front edge of the housing there are two integrated diodes which indicate the operating status of the condensate pump.

The green LED signals the following statuses:

Green LED	Red LED	Meaning
Lights up	Off	Pump has 230 V mains voltage supply
Flashes	Off	Pump is operating and pumping out condensate

**NOTE:** If the red LED lights up or flashes, a malfunction has occurred. See section 9

# 6 Maintenance

**WARNING:** Risk of fatal electric shock from touching live connections. Always switch off the power supply to the pump and boiler first. You may only proceed with the maintenance once this has been done.

- Make sure that the inlet and outlet are unobstructed.
- Remove the cover from the pump and inspect the condensate reservoir for contamination. If necessary, clean the condensate reservoir with warm water and a mild cleaning agent.
- Disassemble the return valve and clean it under running water.
- Inspect the inlet and outlet hoses and clean them if necessary.

- In order to ensure an unobstructed flow, make sure that the hoses are not pinched.

**NOTE:** Maintenance on the pump can be scheduled to coincide with the maintenance intervals for the boiler. Maintenance should be conducted on the pump at least once a year.

# 7 Fault Finding

## 7.1 Problems

The condensate pump can rectify temporary faults during normal operation by itself.

The red LED signals the following operating conditions:

Green LED	Red LED	Meaning
Flashes	Lights up	The maximum water level in the pump has been exceeded. The container is pumped out.
Flashes	Flashes	The pump remains in an idle state for a defined period, then starts up again automatically.

If the LED lights up or flashes, the water level has exceeded the maximum level and the overflow switch has been triggered. Either a zero-potential contact or the circuit is opened in order to switch off the boiler.

If the required connection to the boiler has been installed, it will be switched off in order to prevent the further accumulation of condensate.

## 7.2 Fault diagnosis

If the red LED lights up or flashes for a lengthy period, there is a fault in the installation or a defect in the pump.

Check the following points when troubleshooting:

Cause	Troubleshooting
Pump is not discharging condensate: Outlet hose is pinched	Eliminate the pinch
Motor blocked	Visually inspect the inlet area: look for foreign objects and remove if found
Motor is defective	Replace the condensate pump
Pump not being filled	Check the position of the hose, inspect for blockage, make sure it is properly attached to the pump, correct the problem if found
Water gauge float is blocked	Ensure the float can move freely

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*Because of our constant endeavour for improvement, details may vary slightly from those shown in these instructions.*

**Glow-worm**, Nottingham Road, Belper, Derbyshire. DE56 1JT