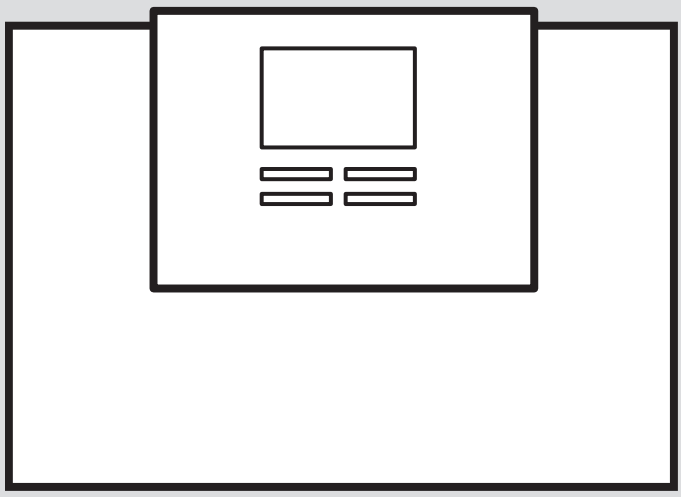
# Heat pump appliance interface

VWZ AI VWL X/2 A



0020151756_02 - 23.11.2022

**en** Installation instructions

# Installation instructions

## Contents

# 1 Safety

## 1.1 Action-related warnings

### Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning symbols and signal words:

### Warning symbols and signal words

**Danger!**
Imminent danger to life or risk of severe personal injury

**Danger!**
Risk of death from electric shock

**Warning.**
Risk of minor personal injury

**Caution.**
Risk of material or environmental damage

## 1.2 Intended use

In the event of inappropriate or improper use, damage to the product and other property may arise.

This product is a system component which is used with the VRC 470 control as of version /3 to control heating circuits and the domestic hot water supply in conjunction with a heat pump.

Intended use includes the following:

– observance of accompanying operating, installation and maintenance instructions for the product and any other system components
– installing and setting up the product in accordance with the product and system approval
– compliance with all inspection and maintenance conditions listed in the instructions.

Intended use also covers installation in accordance with the IP code.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.

**Caution.**

Improper use of any kind is prohibited.

## 1.3 General safety information

### 1.3.1 Risk caused by inadequate qualifications

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

– Set-up
– Dismantling
– Installation
– Start-up
– Inspection and maintenance
– Repair
– Decommissioning

► Proceed in accordance with current technology.

### 1.3.2 Risk of death from electric shock

There is a risk of death from electric shock if you touch live components.

Before commencing work on the product:

► Disconnect the product from the power supply by switching off all power supplies at all poles (electrical partition in overvoltage category III for full partition, e.g. fuse or circuit breaker).
► Secure against being switched back on again.
► Wait for at least 3 minutes until the capacitors have discharged.
► Check that there is no voltage.

### 1.3.3 Material damage due to unsuitable installation room

If you are installing the product in a moist environment, the electronics may be damaged by moisture.

► Only install the product in dry rooms.

### 1.3.4 Risk of material damage caused by using an unsuitable tool

► Use the correct tool.

### 1.3.5 Danger due to error functions

► Ensure that the heating system is in a technically perfect condition.

- Ensure that no safety or monitoring devices have been removed, bridged or disabled.
- Immediately rectify any faults and damage that may affect safety.
- At lengths of over 10 m, 230 V supply lines must be laid separately from sensor or bus lines.
- Secure all supply lines in the casing using the cable terminals.
- Do not use the unit's free terminals as supports for other wiring.

## 1.4 Regulations (directives, laws, standards)

- Observe the national regulations, standards, directives, ordinances and laws.

# 2 Notes on the documentation

## 2.1 Observing other applicable documents

► Always observe all the operating and installation instructions included with the system components.

## 2.2 Storing documents

► Pass these instructions and all other applicable documents on to the end user.

## 2.3 Validity of the instructions

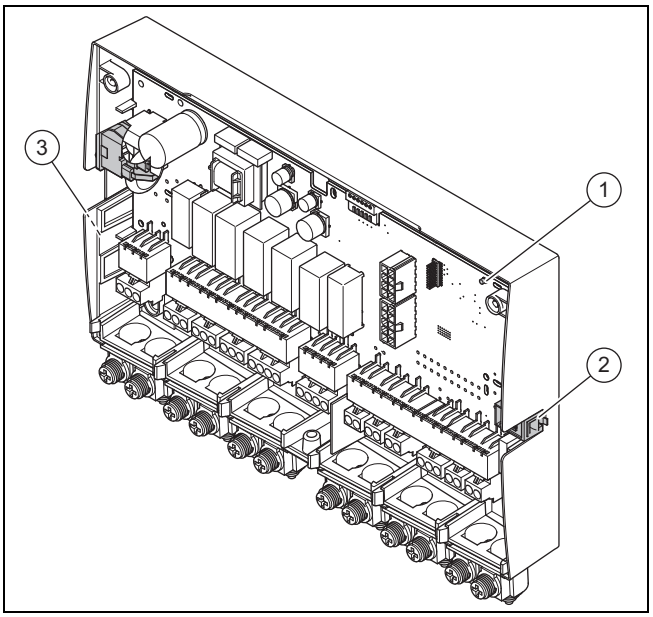
These instructions apply only to:

**Product article number**

| | |
|---|---|
| **VWZ AI VWL X/2 A** | 0020117049 |
| **VWZ AI VWL X/2 A** | 0020139944 |

# 3 Product overview

## 3.1 Product features



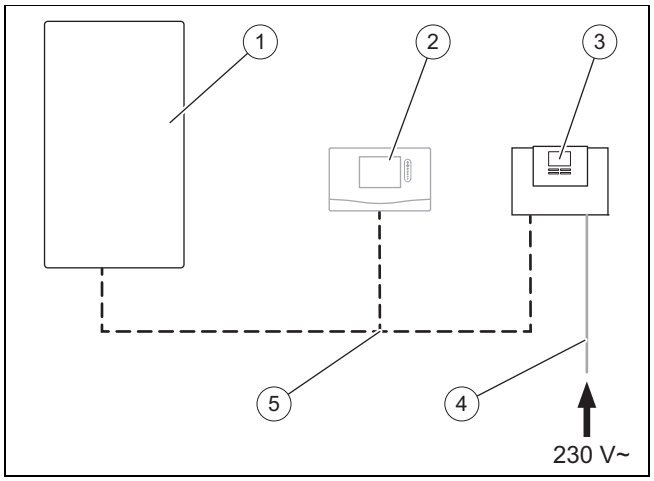

1 LED
2 Diagnostic socket (for later use)
3 Identification plate

The product is used to extend the control system.

You can use the product to implement various heating system configurations. (→ Installation instructions for the control)

You can use the control to set all of the required parameters.

You can connect corresponding function units directly to the product.




1 Heat pump
2 System control
3 VWZ AI
4 230 V power supply cable (on-site)
5 eBUS cable

The product is connected to the power supply on-site. You can branch the eBUS connection to the product at any part of the eBUS system.

## 3.2 CE marking

CE

The CE marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

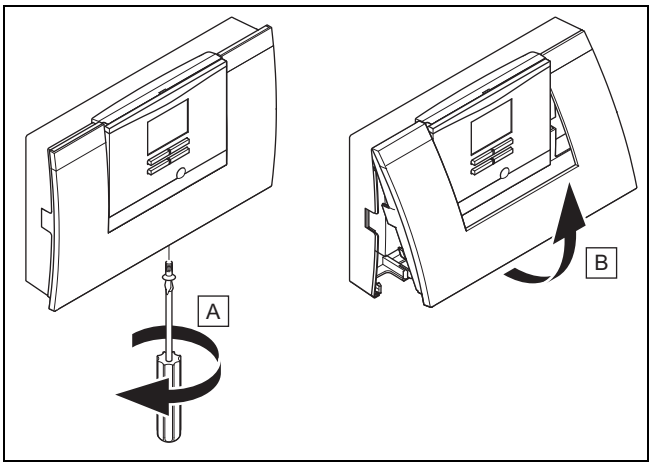
The declaration of conformity can be viewed at the manufacturer's site.

# 4 Set-up

## 4.1 Scope of delivery

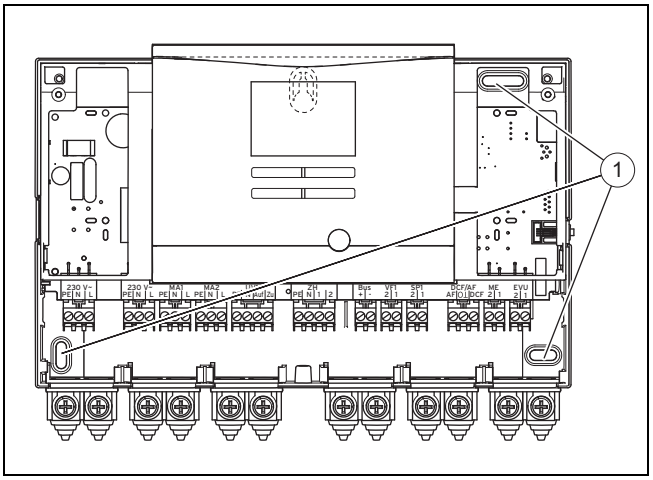
| Quantity | Designation |
|---|---|
| 1 | VWZ AI VWL X/2 A |
| 2 | VR 10 standard sensor |
| 1 | Installation accessories (screws and wall plugs) |
| 1 | Installation instructions |

### 4.2 Opening the casing




1. Unscrew the bolt from the underside of the casing.
2. Pull the casing cover slightly forwards at the lower edge.
3. Lift the casing cover upwards.

### 4.3 Installing the product




1. Mount the product and the supplied installation accessory on the wall. Use the fixing points **(1)** for this.
2. Connect the product. (→ Page 7)

### 4.4 Closing the casing

1. Insert the casing cover at the top into the hinges.
2. Fold down the casing cover.
3. Tighten the bolt on the underside of the casing.

## 5 Electrical installation

Only qualified electricians may carry out the electrical installation.

**Danger!**
**Risk of death from live connections!**

There is a risk of death from electric shock when working on the open product and in the electronics box of the heat pump.

- ► Before working on the product and in the heat pump's electronics box, switch off the power supply.
- ► Secure the power supply against being switched on again.

**Danger!**
**Risk of damage caused by incorrect installation.**

Connecting wires that have been stripped back too far may cause short circuits and damage the electronics if a strand accidentally comes loose.

- ► To prevent short circuits, only strip the outer sheathing of flexible cables to a maximum of 3.0 cm.
- ► Lay the lines correctly.
- ► Use strain reliefs.

### 5.1 Requirements for the eBUS line

Observe the following rules when routing the eBUS lines:

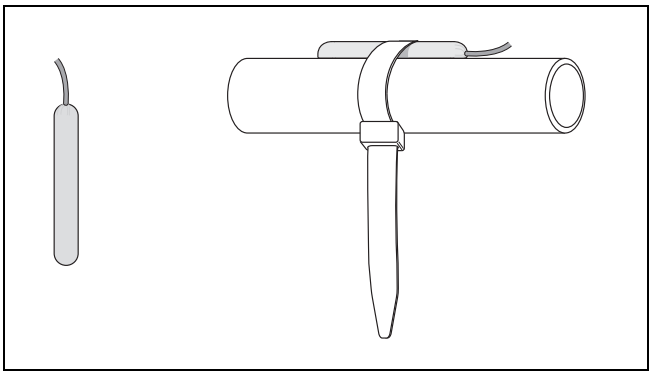
- ► Use twin-core cables.
- ► Never use shielded or twisted cables.
- ► Use only appropriate cables, e.g. NYM or H05VV (-F/-U).
- ► Observe the permissible total length of 125 m. In this case, a conductor cross-section of ≥ 0.75 mm² up to 50 m total length and a conductor cross-section of 1.5 mm² from 50 m.

In order to prevent faults in the eBUS signals (e.g. due to interferences):

- ► Maintain a minimum clearance of 120 mm to power supply cables or other electromagnetic sources of interference.
- ► For parallel routing to mains connection lines, guide the cables in accordance with the applicable regulations, e.g. on cable trays.
- ► **Exceptions:** For wall breaks and in the electronics box, it is acceptable to not reach the minimum clearance.

### 5.2 Installing the VR 10 standard sensor

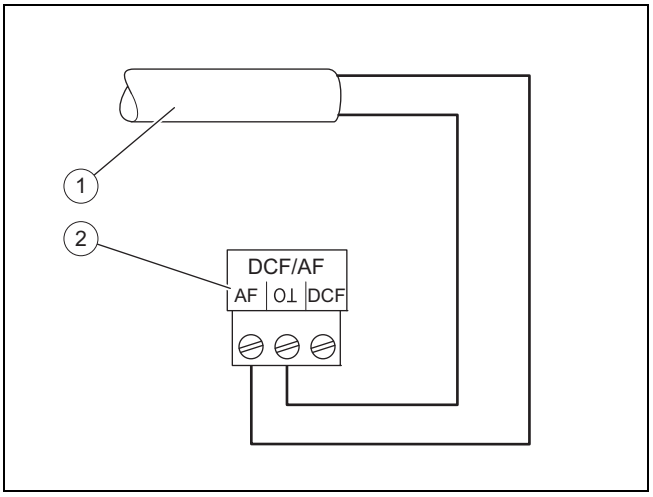
**Note**
You can use the VR 10 as a cylinder temperature sensor (for example, as an immersion sensor in a cylinder dry pocket), as a flow temperature sensor (for example, in the low loss header) or as a surface-mounted sensor. We recommend that the pipe with the sensor be insulated to ensure optimum temperature recording.



► If you use the VR 10 as a surface-mounted sensor, secure the VR 10 to a return/flow pipe using the enclosed strap.

### 5.3 Installing the outdoor temperature sensor

**Installing the outdoor temperature sensor**

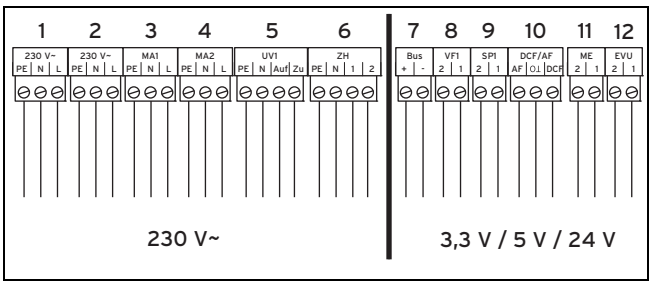



| | | | |
|---|---|---|---|
| 1 | Connection cable to the VRC 693 external temperature sensor | 2 | Connector in the product |

► Install the outdoor temperature sensor in accordance with its enclosed set-up instructions.

### 5.4 Connecting the product

**Note**
The power supply cable and the eBUS line are not included in the scope of delivery.




| | | | |
|---|---|---|---|
| 1 | Power supply | 6 | Back-up boiler |
| 2 | Power supply (alternative) | 7 | VRC 470 control |
| 3 | Multi-function output 1 | 8 | Flow temperature sensor |
| 4 | Multi-function output 2 | 9 | Cylinder temperature sensor |
| 5 | Diverter valve | 10 | DCF receiver with outdoor temperature sensor |
| | | 11 | Multi-function input |
| | | 12 | ESCO contact |

1. Connect the product using a fixed connection and a partition with a contact gap of at least 3 mm (e.g. fuses or power switches).
2. Wire the product as shown in the illustration.

**Note**
If the diverter valve should be in the position for cylinder charging, 230 V is output to the "Open" contact. If the diverter valve should not be in the position for cylinder charging, 230 V is output to the "Closed" contact.

**Note**
The ESCO contact is used to connect a blocking signal (can be configured on the control).
Contact open: Operation permitted
Contact closed: Operation blocked

3. Secure all lines in the product using the enclosed strain reliefs.
4. Close the casing. (→ Page 6)

## 6 Start-up

### 6.1 Starting up the product

1. Ensure that the casing is closed when starting up the product.
2. Start up the product together with the controller (→ Installation instructions for the controller).

## 7 Recycling and disposal

**Packaging**

► Dispose of the packaging correctly.

This product is an electrical or electronic unit within the context of EU Directive 2012/19/EU. The unit was developed and manufactured using high-quality materials and components. These can be recycled and reused.

Find out about the regulations that apply in your country regarding the separate collection of waste electrical or electronic equipment. Correctly disposing of old units protects the environment and people against potential negative effects.

► Dispose of the packaging correctly.
► Observe all relevant regulations.

**Disposing of the product**

If the product is labelled with this symbol:

► In this case, do not dispose of the product with the household waste.
► Instead, hand in the product to a collection centre for waste electrical or electronic equipment.

### Disposing of batteries

If the product contains batteries that are labelled with this symbol:

- In this case, dispose of the batteries at a collection point for batteries.
  - **Prerequisite:** The batteries can be removed from the product without causing any destruction. Otherwise, the batteries are disposed of together with the product.
- In accordance with the legal regulations, the end user is obligated to return used batteries.

### Deleting personal data

Personal data may be misused by unauthorised third parties.

If the product contains personal data:

- Ensure that there is no personal data on or in the product (e.g. online login details or similar) before you dispose of the product.

## 8 Customer service

**Validity:** Great Britain AND Vaillant

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.co.uk.

# Appendix

## A Technical data

| | VWZ AI VWL X/2 A |
|---|---|
| **Operating voltage $U_{max}$** | 230 V |
| **Power consumption** | ≤ 2 V·A |
| **Contact loading of the output relay** | ≤ 2 A |
| **Total current** | ≤ 4 A |
| **Sensor operating voltage** | 3.3 V |
| **Cross-section of eBUS line (extra low voltage)** | ≥ 0.75 mm² |
| **Cross-section of sensor line (extra low voltage)** | ≥ 0.75 mm² |
| **Cross-section of 230 V connection cable (pump or mixer connection cable)** | ≥ 1.5 mm² |
| **IP rating** | IP 20 |
| **Protection class** | II |
| **Maximum environmental temperature** | 40 °C |
| **Height** | 174 mm |
| **Width** | 272 mm |
| **Depth** | 52 mm |

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