

# Installation instructions

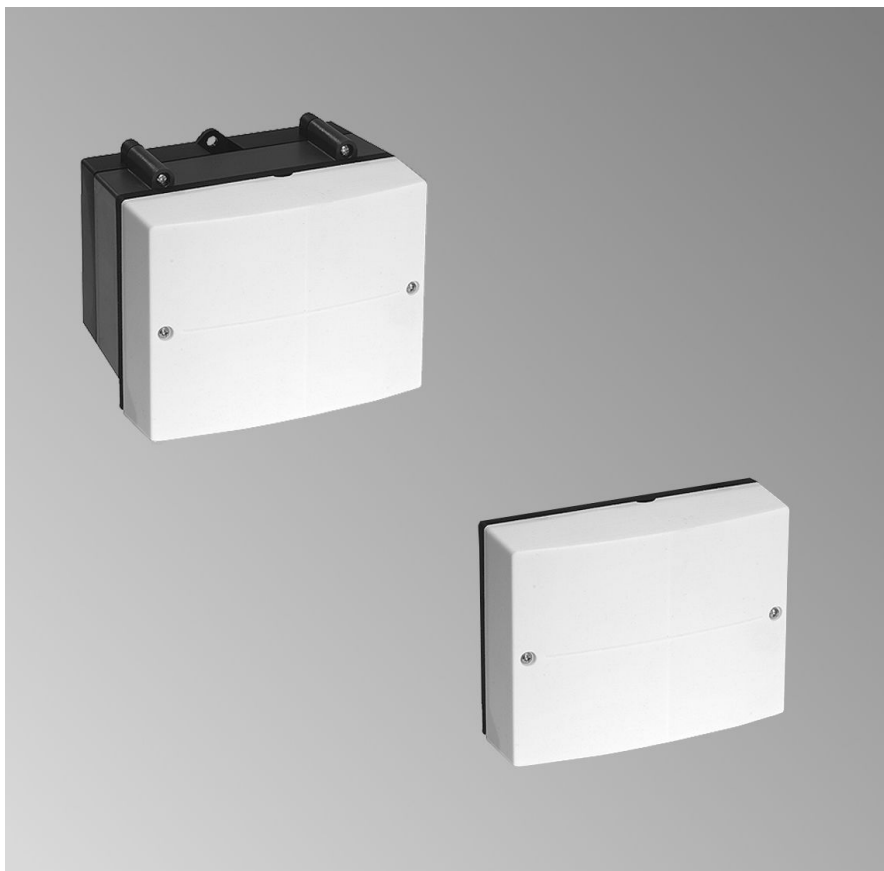
for contractors

**VIESMANN**

## Mixer extension kit

For one heating circuit with mixer

## Mixer extension kit



## Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

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### Safety instructions explained



#### **Danger**

This symbol warns against the risk of injury.

#### **Note**

*Details identified by the word "Note" contain additional information.*



#### **Please note**

This symbol warns against the risk of material losses and environmental pollution.

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### Target group

These instructions are exclusively intended for qualified contractors.

- Work on gas installations may only be carried out by a registered gas fitter.
- Work on electrical equipment may only be carried out by a qualified electrician.

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### Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
  - Ⓐ ÖNORM, EN, ÖVGW G K directives, ÖVGW-TRF and ÖVE
  - Ⓒ SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

## Safety instructions (cont.)

### Working on the system

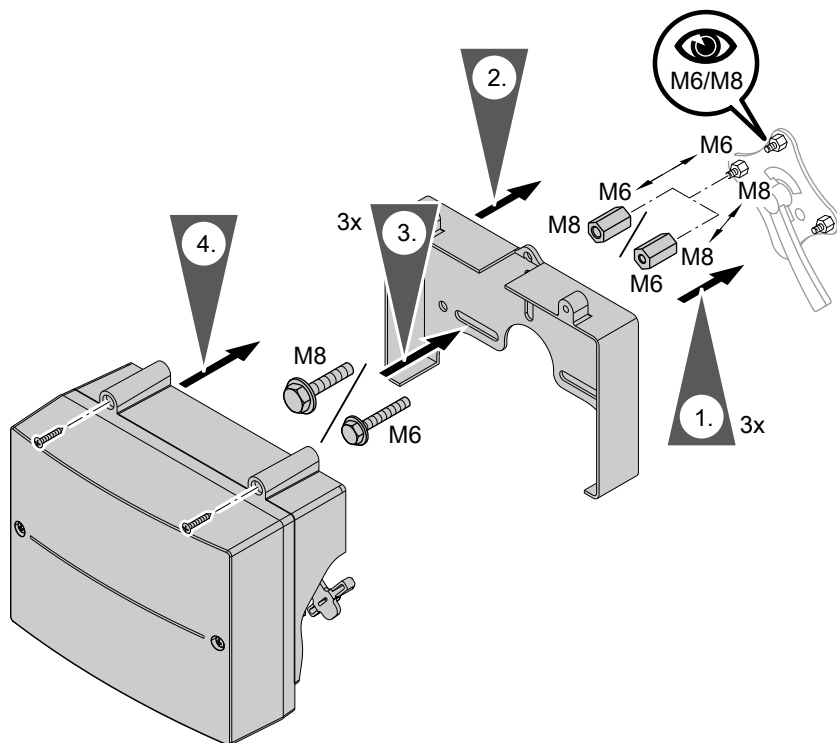
- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.
- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.

# Index

<b>Installation sequence</b>	
Mounting the mixer extension kit.....	5
■ Mixer mounting.....	5
■ Wall mounting.....	6
Mounting the temperature sensor.....	6
Overview of electrical connections.....	8
Connecting the temperature sensor.....	9
Connecting the mixer motor.....	9
■ Mixer motor.....	9
■ Mixer motors without plug or on-site mixer motors.....	10
Connecting the heating circuit pump.....	10
■ Heating circuit pump 230 V~.....	11
■ Heating circuit pump 400 V~.....	13
■ Pumps in the underfloor heating circuit.....	13
■ Temperature limiter for restricting the maximum temperature (accessories)....	14
Floorstanding boilers.....	15
Vitocrossal/Vitodens/Vitopend.....	16
Vitodens 300-W, type WB3E/B3HA, Vitodens 333-F, type B3TA.....	18
Vitodens with integral solar control module.....	20
Vitoladens/Vitoplus 300.....	22
Vitocal.....	23
Connecting several accessories.....	24
■ Power supply and KM-BUS connection.....	24
Separate mains connection.....	25
Commissioning.....	27
■ Rotational direction of the mixer motor.....	28
<b>Specification.....</b>	<b>29</b>
<b>Connection and wiring diagram.....</b>	<b>30</b>
<b>Declaration of Conformity.....</b>	<b>31</b>
<b>Keyword index.....</b>	<b>32</b>

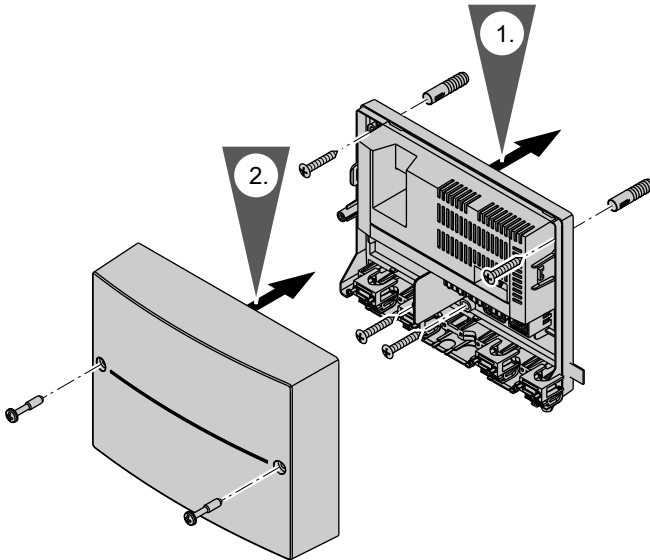
## Mounting the mixer extension kit

### Mixer mounting



## Mounting the mixer extension kit (cont.)

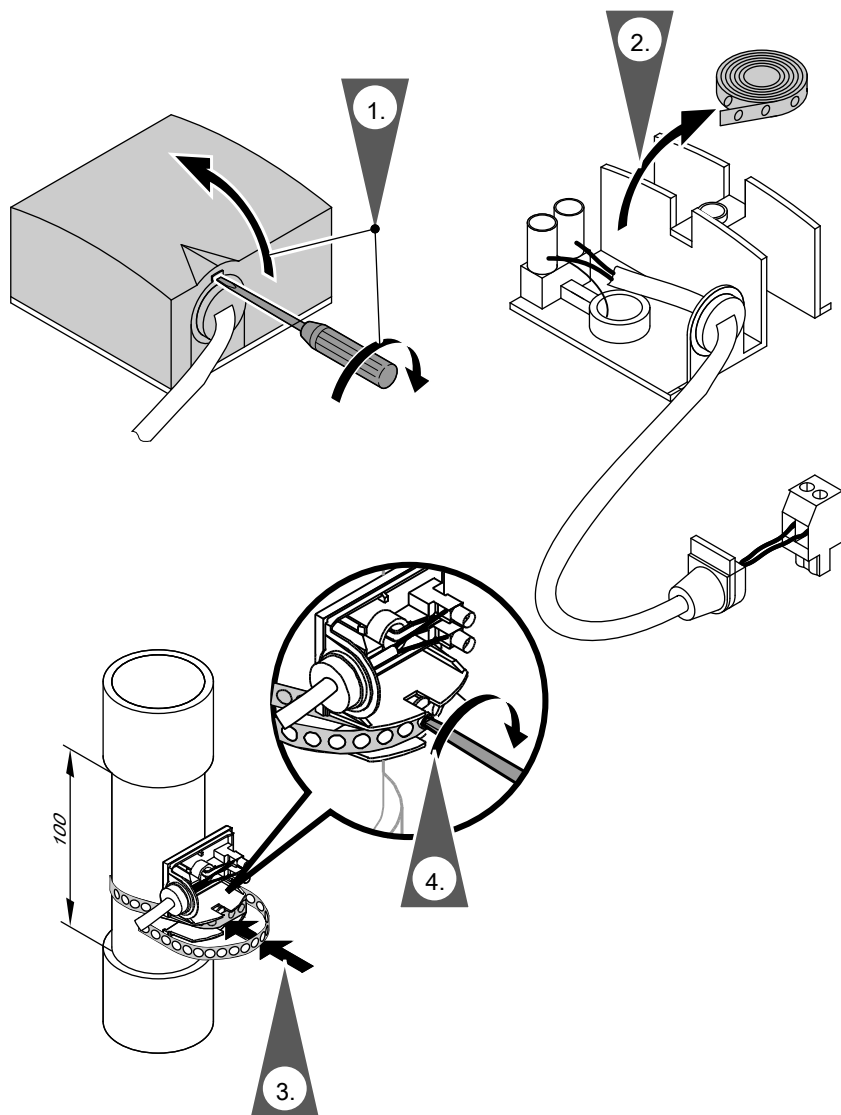
### Wall mounting



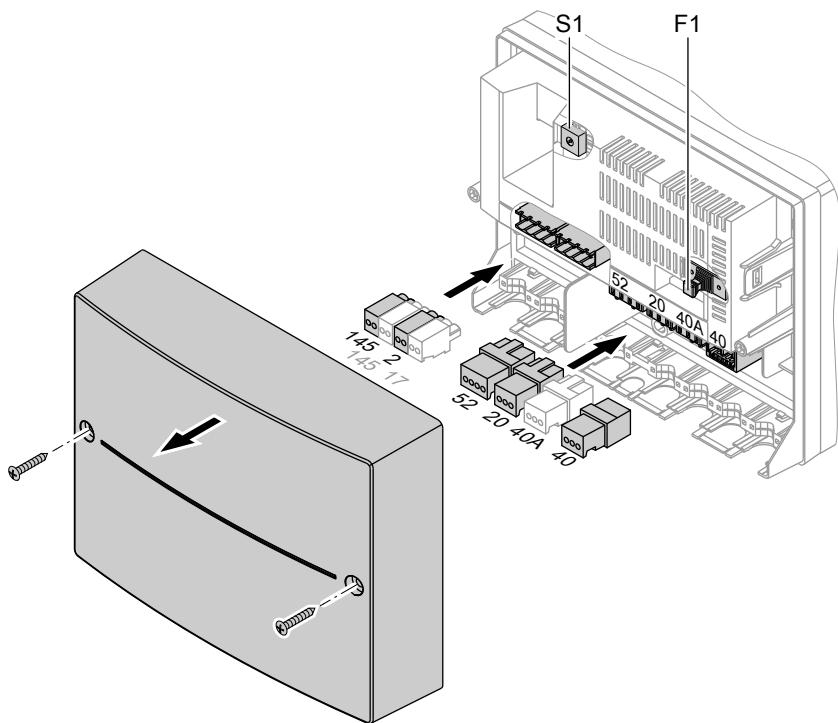
## Mounting the temperature sensor

- Fit the flow temperature sensor to the heating flow pipe immediately downstream of the heating circuit pump in the flow direction.
- Only in conjunction with the Vitotronic 300, type KW3:  
Fit the return temperature sensor to the heating return pipe.
- When using plastic pipes, fit the sensor to a metal intermediate piece.
- Clean the flow/return pipe down to bare metal.
- Heat conducting paste is not required.
- Do not thermally insulate the temperature sensor.

## Mounting the temperature sensor (cont.)



## Overview of electrical connections



F1 MCB/fuse 2 A (slow)  
S1 Rotary switch

Plug 230 V~

20 Heating circuit pump (on site)  
40 Mains connection  
40A Mains connection for accessories  
52 Mixer motor

LV connections

2 Flow temperature sensor  
17 Return temperature sensor (only  
in conjunction with the Vitotronic  
300, type KW3)  
145 KM-BUS



### Please note

Electronic assemblies can be damaged by electrostatic discharge.

Prior to commencing any work, touch earthed objects such as heating or water pipes to discharge static loads.

### Note

Apply strain relief to on-site cables.  
Seal any unnecessary apertures with cable grommets (not cut open).



## Connecting the temperature sensor

### 1. Flow temperature sensor

Connect plug **2** to the PCB (see diagram on page 8).

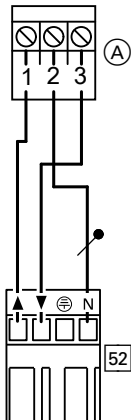
### 2. Return temperature sensor

Only in conjunction with the Vitotronic 300, type KW3:  
Connect plug **17** to the PCB.

## Connecting the mixer motor

Only in conjunction with extension kit for wall mounting

### Mixer motor

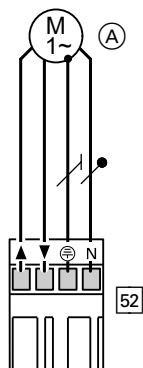


Connect the mixer motor in accordance with the diagram in the wall mounting base of the extension kit.  
Never interchange cores.

- (A)** Plug on mixer motor
- 52** Plug on mixer extension kit
- ▲** Mixer open
- ▼** Mixer close

## Connecting the mixer motor (cont.)

### Mixer motors without plug or on-site mixer motors



Connect the mixer motor in accordance with the diagram in the wall mounting base of the extension kit.  
Never interchange cores.

- Ⓐ Mixer motor
- 52 Plug on mixer extension kit
- ▲ Mixer open
- ▼ Mixer close

#### The mixer motor must meet the following criteria:

Rated voltage	230 V~
Rated breaking capacity of the relay output	0.2 (0.1) A
Runtime for 90°◄	120 s
Rotational direction	Can be changed

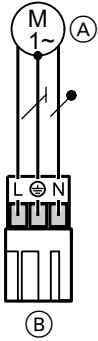
## Connecting the heating circuit pump

### Note

*In underfloor heating circuits, install a temperature limiter on site to restrict the maximum temperature of the underfloor heating system.*

## Connecting the heating circuit pump (cont.)

### Heating circuit pump 230 V~



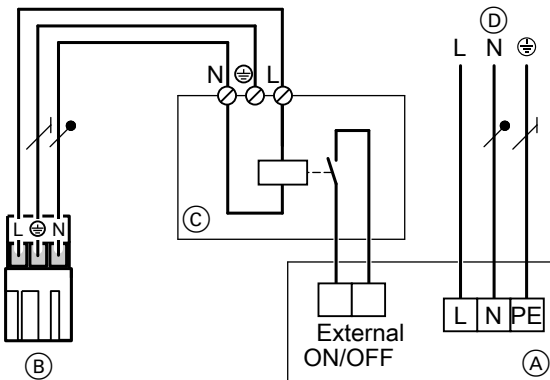
#### Specification

Rated current	2(1) A
Recommended connecting cable	H05VV-F3G 0.75 mm <sup>2</sup> or H05RN-F3G 0.75 mm <sup>2</sup>

- (A) Heating circuit pump
- (B) Plug 20 on the mixer extension kit

**Heating circuit pump with power consumption greater than 2 A or high efficiency circulation pump with high starting currents**

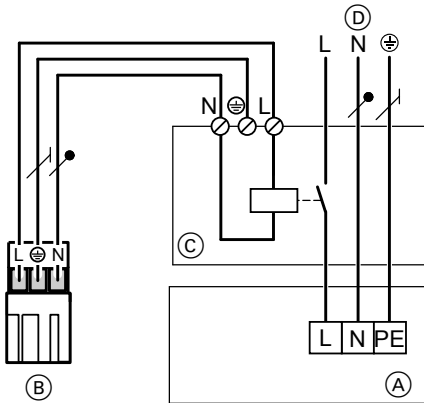
#### Pumps with switching input



- (A) Heating circuit pump
- (B) Plug 20 on the mixer extension kit
- (C) Contactor
- (D) Separate mains connection (observe manufacturer's instructions)

## Connecting the heating circuit pump (cont.)

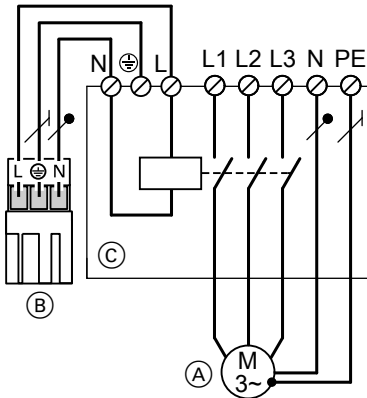
### Pumps without switching input



- (A) Heating circuit pump
- (B) Plug **20** on the mixer extension kit
- (C) Contactor
- (D) Separate mains connection  
(observe manufacturer's instructions)


## Connecting the heating circuit pump (cont.)

### Heating circuit pump 400 V~

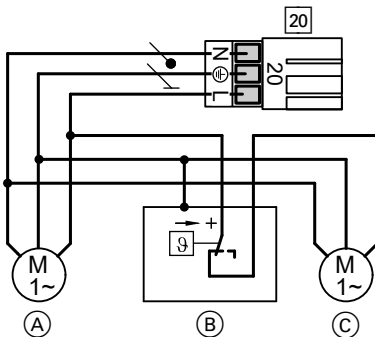


#### Specification for switching the contactor:


Rated voltage	230 V~
Rated current	2(1) A
Recommended connecting cable	H05VV-F3G 0.75 mm <sup>2</sup> or H05RN-F3G 0.75 mm <sup>2</sup>

- (A) Heating circuit pump
- (B) Plug  on the mixer extension kit
- (C) Contactor

### Pumps in the underfloor heating circuit

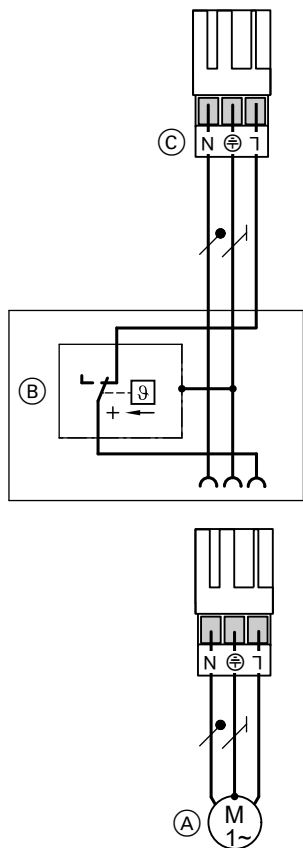


The common power consumption of both pumps must **not exceed 2 A**.

-  Plug on mixer extension kit
- (A) Primary heating circuit pump
- (B) Temperature limiter
- (C) Secondary heating circuit pump (in connection with system separation)

## Connecting the heating circuit pump (cont.)

### Temperature limiter for restricting the maximum temperature (accessories)



Electromechanical temperature limiter according to the liquid expansion principle.

- Switches the heating circuit pump off when the set value has been exceeded.
- The flow temperature decreases only slowly in this situation, i.e. it may be several hours before the system restarts again automatically.
- Connection: Screw terminals for  $1.5 \text{ mm}^2$

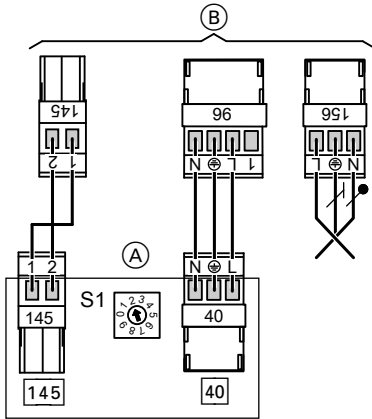
#### Specification

Setting range	30 to 80 °C
Switching differential	
■ Immersion thermostat	Max. 11 K
■ Contact thermostat	Max. 14 K

- (A) Heating circuit pump
- (B) Temperature controller/temperature limiter
- (C) Plug [20] of the temperature controller/temperature limiter to the mixer extension kit

## Floorstanding boilers

- Vitotronic 200, type **KO1B** and **KO2B**
- Vitotronic 300, type **KW3**



Make the electrical connections.



### Danger

Incorrect core assignment can result in serious injury and damage to the appliance. Take care not to interchange wires "L1" and "N".

- (A) Mixer extension kit
- 40 Power supply
  - 145 KM-BUS
- S1 Rotary switch: See the following table for position
- (B) To Vitotronic control unit
- 145 KM-BUS to the Vitotronic control unit or to the KM-BUS distributor (accessories)
  - 96 Power supply via Vitotronic 200
  - 156 Power supply via Vitotronic 300 or mains distributor (accessories)

### Setting the rotary switch:

Heating circuit affected by the mixer	Sensors connected	Rotary switch S1
Heating circuit 2 with mixer M2	Flow temperature sensor	"2" (delivered condition)
	Only in conjunction with the Vitotronic 300, type KW3: Flow temperature sensor and return temperature sensor	"3"

## Floorstanding boilers (cont.)

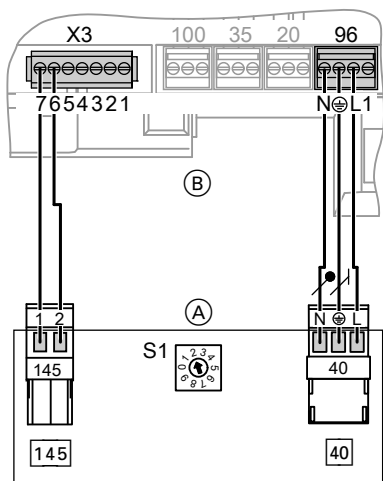
Heating circuit affected by the mixer	Sensors connected	Rotary switch S1
Heating circuit 3 with mixer M3	Flow temperature sensor	"4"
	Only in conjunction with the Vitotronic 300, type KW3: Flow temperature sensor and return temperature sensor	"5"

## Vitocrossal/Vitodens/Vitopend

- Vitotronic 200, type **HO1, HO1A, HO1B and HO2B** in conjunction with Vitodens/Vitopend.
- Vitotronic 200, type **KW6, KW6A and KW6B** in conjunction with Vitocrossal 300, type CU3A.
- Vitodens 242-F and 343-F with integral solar control module: See page 20.
- Vitodens 300-W, type WB3E and B3HA: See page 18.



## Vitocrossal/Vitodens/Vitopend (cont.)



Make the electrical connections.



### Danger

Incorrect core assignment can result in serious injury and damage to the appliance. Take care not to interchange wires "L1" and "N".

### Note

If the power supply terminal is already assigned, see page 25.

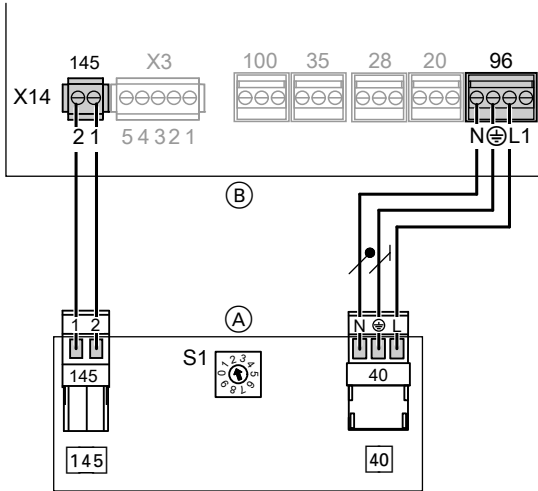
- (A) Mixer extension kit
  - 40 Power supply
  - 145 KM-BUS
  - S1 Rotary switch: See the following table for position
- (B) Vitotronic control unit
  - "X3" KM-BUS at terminals "7" and "6" (disconnect plug 145)
  - or
  - With plug 145 to the KM-BUS distributor (accessories)
  - 96 Power supply

### Setting the rotary switch:

Heating circuit affected by the mixer	Rotary switch S1
Heating circuit 2 with mixer M2	"2" (delivered condition)
Only in conjunction with Vitotronic 200, type HO1A, HO1B, KW6A and KW6B: Heating circuit 3 with mixer M3	"4"

## Vitodens 300-W, type WB3E/B3HA, Vitodens 333-F, type B3TA

Vitotronic 200, type HO1B, HO2B,  
HO1C and HO2C



- (A) Mixer extension kit  
 40 Power supply  
 145 KM-BUS  
 S1 Rotary switch: See the following table for position
- (B) Vitotronic control unit  
 145 KM-BUS at terminals "1" and "2" (disconnect plug 145)  
 or  
 With plug 145 to the KM-BUS distributor (accessories)  
 96 Power supply

## Vitodens 300-W, type WB3E/B3HA, Vitodens 333-F,... (cont.)

Make the electrical connections.



### **Danger**

Incorrect core assignment can result in serious injury and damage to the appliance.  
Take care not to interchange wires "L1" and "N".

### **Note**

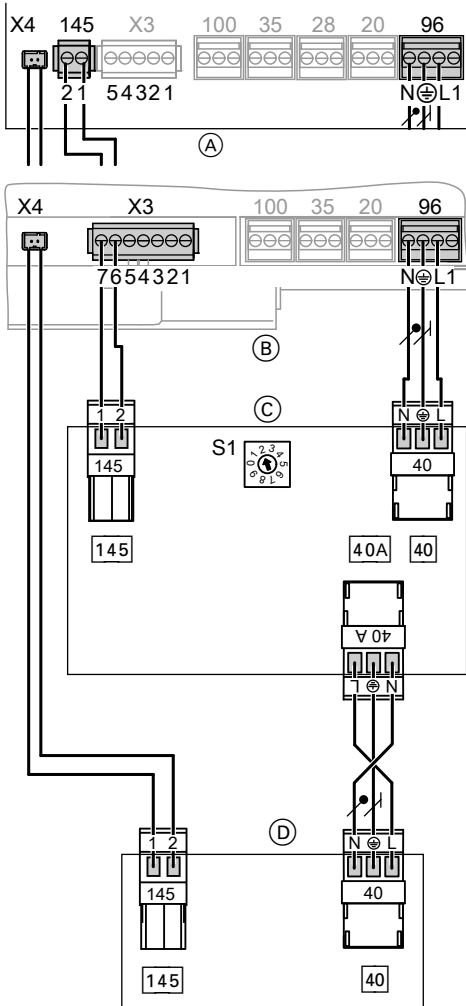
*If the power supply terminal is already assigned, see page 25.*

### **Setting the rotary switch:**

<b>Heating circuit affected by the mixer</b>	<b>Rotary switch S1</b>
Heating circuit 2 with mixer M2	"2" (delivered condition)
Heating circuit 3 with mixer M3	"4"

## Vitodens with integral solar control module

Vitodens 242-F or 343-F with solar control module, type SM1



## Vitodens with integral solar control module (cont.)

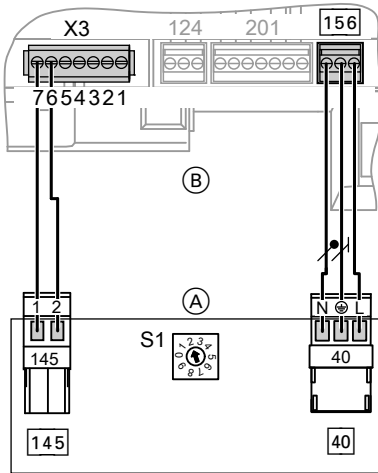
- Ⓐ Vitotronic 200, type HO1C  
 145 KM-BUS at terminals "1" and "2" (disconnect plug 145)  
 or  
 With plug 145 to the KM-BUS distributor (accessories)  
 96 Power supply
- Ⓑ Vitotronic 200, type HO1B  
 "X3" KM-BUS at terminals "7" and "6" (disconnect plug 145)  
 or  
 With plug 145 to the KM-BUS distributor (accessories)  
 96 Power supply
- Ⓒ Mixer extension kit  
 40 Power supply  
 40A Solar control module power supply  
 145 KM-BUS  
 S1 Rotary switch: See the following table for position
- Ⓓ Solar control module  
 40 Power supply  
 145 KM-BUS
1. Make the electrical connections.
  2. Connect KM-BUS cable with plug 145 to the mixer extension kit and cable to plug "X3" or 145.
  3. Disconnect plug 40 from the solar control module and connect to the mixer extension kit.
  4. At the loose end of the power cable supplied (with plug 40), connect plug 40A.
  5. Connect plug 40 of the power cable in the solar control module and plug 40A in the mixer extension kit.

### Setting the rotary switch:

Heating circuit affected by the mixer	Rotary switch S1
Heating circuit 2 with mixer M2	"2" (delivered condition)
Heating circuit 3 with mixer M3	"4"

## Vitoladens/Vitoplus 300

Vitotronic 200, type **HO1**, **HO1A**, **HO1B**, **KW6**, **KW6A** and **KW6B**



Make the electrical connections.



### Danger

Incorrect core assignment can result in serious injury and damage to the appliance. Take care not to interchange wires "L1" and "N".

### Note

If the power supply terminal is already assigned, see page 25.

- (A) Mixer extension kit
  - 40 Power supply
  - 145 KM-BUS
  - S1 Rotary switch: See the following table for position
- (B) Vitotronic control unit
  - "X3" KM-BUS at terminals "7" and "6" (disconnect plug 145)
  - or
  - With plug 145 to the KM-BUS distributor (accessories)
  - 156 Power supply

### Setting the rotary switch:

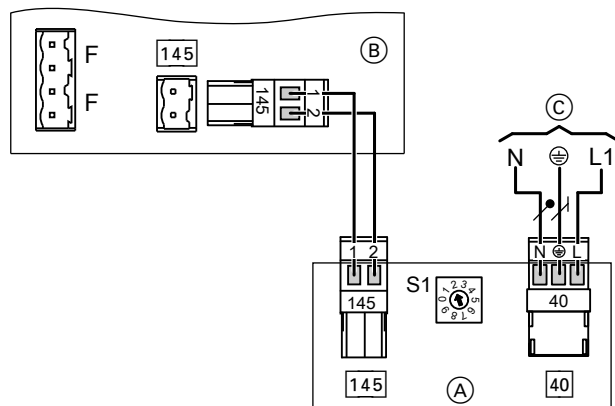
Heating circuit affected by the mixer	Rotary switch S1
Heating circuit 2 with mixer M2	"2" (delivered condition)
Only in conjunction with Vitotronic 200, type HO1A, HO1B, KW6A and KW6B: Heating circuit 3 with mixer M3	"4"

## Vitocal

Vitotronic 200, type **WO1A**, **WO1B** and **WO1C**

### Note

- For Vitocal 200 heating circuit M2 with mixer
- For Vitocal 300 heating circuit M3 with mixer



- (A) Mixer extension kit  
 40 Mains connection  
 145 KM-BUS  
 S1 For rotary switch position, see the following table
- (B) Vitotronic control unit  
 145 KM-BUS to the controller and sensor PCB or to the KM-BUS distributor (accessories)
- (C) Mains connection (see page 25)

Make the electrical connections.



### Danger

Incorrect core assignment can lead to serious injury from electrical current and result in appliance damage.

Never interchange cores "L" and "N".

## Vitocal (cont.)

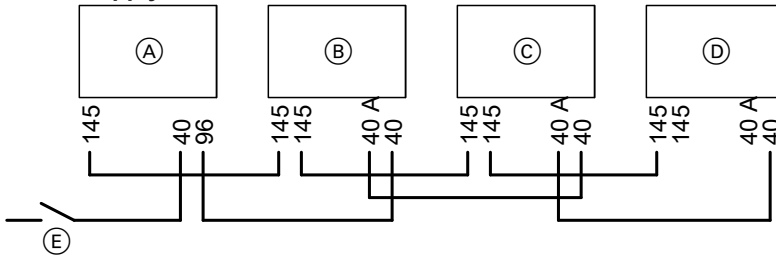
### Set the rotary switch:

Function	Sensors connected	Rotary switch S1
Heating	Flow temperature sensor	"2" (delivered condition)
Cooling	Flow temperature sensor	"4"

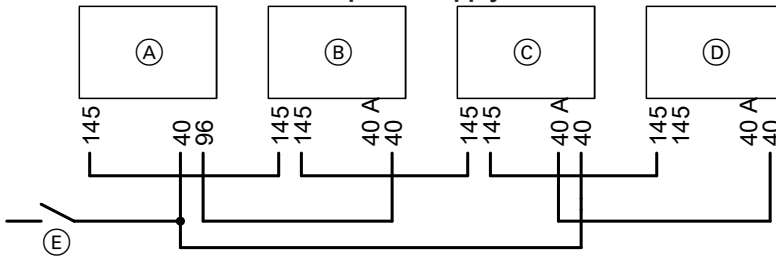
## Connecting several accessories

### Power supply and KM-BUS connection

#### Power supply for all accessories via Vitotronic control unit



#### Some accessories with direct power supply



- (A) Vitotronic control unit
- (B) Mixer extension kit for heating circuit with mixer M2
- (C) Mixer extension kit for heating circuit with mixer M3
- (D) AM1 extension, EA1 extension and/or solar control module, type SM1
- (E) ON/OFF switch
- 40 (A) Power supply
- 96/156 Power supply for accessories at the Vitotronic control unit
- 145 KM-BUS



## Connecting several accessories (cont.)

- In the following circumstances, use the output for the accessories only to switch an on-site relay:  
An actuator (e.g. circulation pump) with a higher power demand than the fuse rating required for the accessories is connected at the accessories output.
- In the following circumstances, connect one or more accessories directly to the mains supply via an ON/OFF switch:  
The max. permissible total current of the Vitotronic control unit for the heat generator is exceeded.  
Separate power supply: See the following chapter.

### **Note**

*In this event, the accessories concerned **cannot** be isolated with the ON/OFF switch on the Vitotronic control unit.*

## Separate mains connection

If the power supply for the extension kit is **not** made at the Vitotronic control unit for the heat generator.



### **Danger**

Incorrect electrical installations can lead to serious injury from electrical current and result in appliance damage.

## Separate mains connection (cont.)

Implement the mains connection and all safety measures (e.g. RCD circuit) in accordance with the following regulations:

- IEC 60364-4-41
- VDE regulations
- Technical connection requirements specified by the local power supply utility



### **Danger**

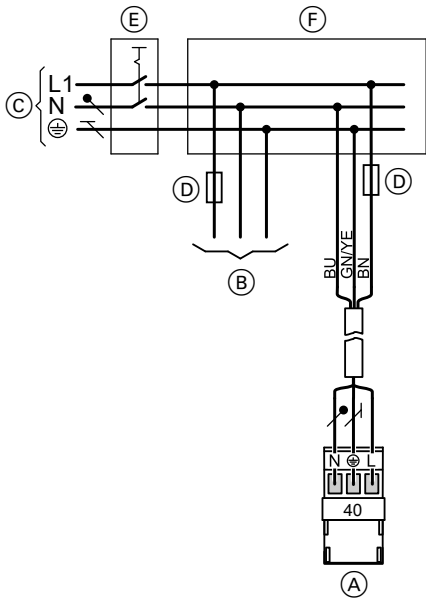
The absence of system component earthing can lead to serious injury from electric current if an electrical fault occurs.

The appliance and pipework must be connected to the equipotential bonding of the building.

### **Isolators for non-earthed conductors**

- The mains isolator (if installed) must simultaneously isolate all non-earthed conductors from the mains with a minimum contact separation of 3 mm.
- If **no** mains isolator is installed, all non-earthed conductors must be isolated from the power supply by the upstream circuit breaker with a minimum contact separation of 3 mm.

## Separate mains connection (cont.)



Make the mains connection in accordance with the diagram.



### Danger

Incorrect core assignment can result in serious injury and damage to the appliance. Never interchange cores "L" and "N".



### Please note

Incorrect phase sequence can cause damage to the appliance. Ensure phase equality with the Vitotronic control unit power supply.

Colour coding to IEC 60757

BN Brown

BU Blue

GNYE Green/yellow

- (A) Mains connection, mixer extension kit
- (B) Vitotronic control unit power supply
- (C) Mains connection 1/N/PE, 230 V/50 Hz
- (D) Fuse (max. 16 A)
- (E) Mains isolator, two-pole, on site
- (F) Junction box (on site)

## Commissioning



Heat source installation and service instructions

### Rotational direction of the mixer motor

#### Checking the rotational direction of the mixer motor

After being switched on, the appliance implements a self-test. During this, the mixer is opened and closed again.

Observe the rotational direction of the mixer motor during its self-test. Then manually set the mixer to "OPEN".

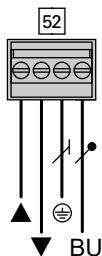
#### Note

*The flow temperature must now rise. If the temperature drops, either the motor is turning in the wrong direction or the mixer insert is incorrectly fitted.*



Mixer installation instructions

### Changing the rotational direction of the mixer motor (if required)



1. Remove the top casing cover of the mixer extension kit.



#### Danger

An electric shock can be life threatening.

Before opening the boiler, disconnect it from the mains voltage, e.g. at the fuse or mains isolator.

2. At plug **52**, swap the cores at terminals "▲" and "▼".
3. Refit the casing cover.

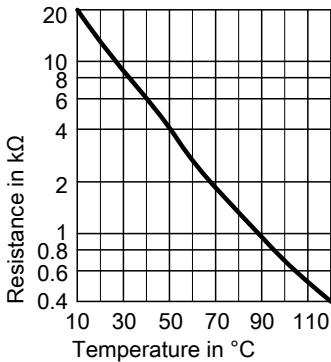
## Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	
■ Wall mounting	1.5 W
■ Mixer mounting	5.5 W
Protection class	I
IP rating	IP 32D to EN 60529; ensure through design/installation
Permissible ambient temperature	
■ Operation	0 to +40 °C
■ Storage and transport	-20 °C to +65 °C
Rated relay output breaking capacity	
■ Heating circuit pump <span style="border: 1px solid black; padding: 0 2px;">20</span>	2 (1) A 230 V~
■ Mixer motor	0.2 (0.1) A 230 V~

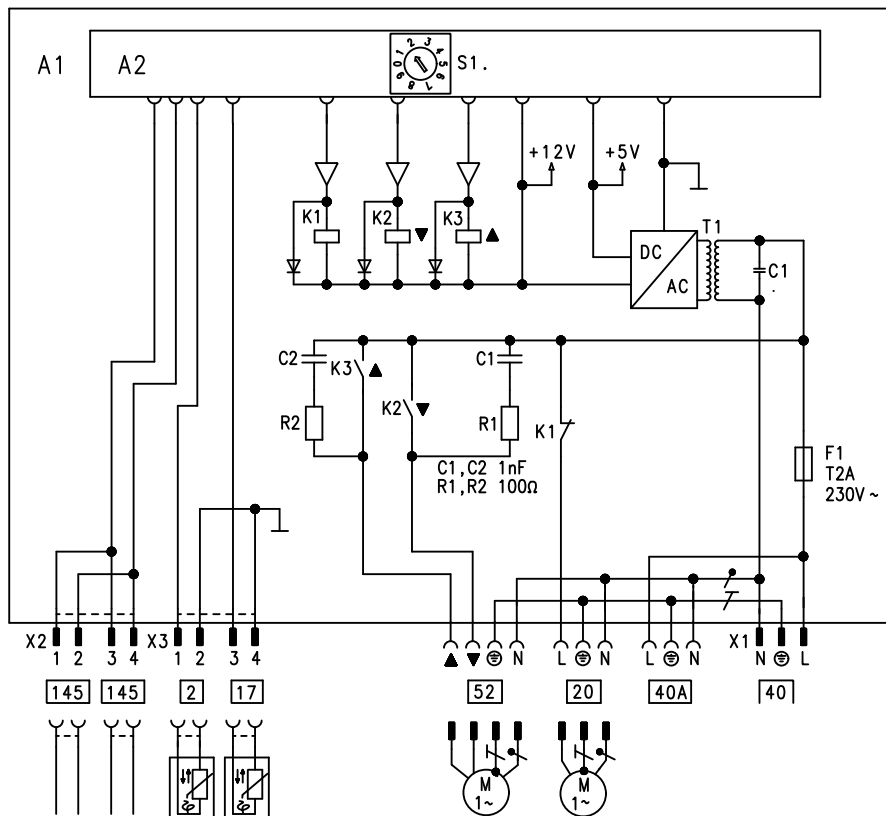
### Flow temperature sensor and return temperature sensor

Sensor type	NTC 10 kΩ, at 25 °C
IP rating	IP 53 to EN 60529; ensure through design/installation
Permissible ambient temperature	
■ Operation	0 to +120 °C
■ Storage and transport	-20 °C to +70 °C

### Curve



## Connection and wiring diagram



A1 Mixer extension kit PCB

F1 Fuse

S1 Rotary switch

230 V~ plugs

- 20 Heating circuit pump (on site)
- 40 Mains connection 230 V/50 Hz
- 40A Mains connection for accessories
- 52 Mixer motor

LV plug

- 2 Flow temperature sensor
- 145 KM-BUS cable for connection to the Vitotronic control unit and KM-BUS cable for connection to another accessory

## Declaration of Conformity

### Mixer extension kit (wall mounting and mixer mounting)

We, Viessmann Werke GmbH & Co. KG, 35107 Allendorf, Germany, declare as sole responsible body that the named product complies with the provisions of the following directives and regulations:

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS II Directive

### Applied standards:

EN 55014-1:2006+A1:2009+A2:2011  
EN 55014-2: 2015  
EN 60730-1:2011  
EN 60335-1 2012  
EN 60335-2-102: 2016  
EN 62233:2008

In accordance with the following Directives, these products are designated with



Allendorf, 16 February 2017

Viessmann Werke GmbH & Co. KG

A handwritten signature in black ink, appearing to read 'M. Sommer', is written over a light blue horizontal line.

Authorised signatory Manfred Sommer

## Keyword index

<b>C</b>		<b>P</b>	
Connection and wiring diagram.....	30	Pumps	
		– Underfloor heating circuit.....	13
<b>D</b>		<b>S</b>	
Declaration of Conformity.....	31	Specification.....	29
<b>E</b>		<b>T</b>	
Electrical connections.....	8	Temperature limiter.....	14
Extension kit mounting.....	5	<b>U</b>	
<b>F</b>		Underfloor heating circuit.....	13
Flow temperature sensor		<b>V</b>	
– Connecting.....	9	Vitodens with Vitotronic 200.....	16
– Mounting.....	6	Vitoladens with Vitotronic 200.....	22
<b>H</b>		Vitopend with Vitotronic 200.....	16
Heating circuit pump connection		Vitoplus with Vitotronic 200.....	22
– 230 V~.....	11		
– 400 V~.....	13		
<b>M</b>			
Mixer motor connection.....	9		

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