Mixing Valve Extension Module
for one heating circuit with mixing valve

IMPORTANT
Certified as a component part for Viessmann boilers

Product may not be exactly as shown

IMPORTANT
Read and save these instructions for future reference.
Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause product/property damage, severe personal injury, and/or loss of life. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

- **Product documentation**
  Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.
  
  ► For a listing of applicable literature, please see section entitled “Important Regulatory and Safety Requirements”.

- **Licensed professional heating contractor**
  The installation, adjustment, service and maintenance of this equipment must be performed by a licensed professional heating contractor.
  
  ► Please see section entitled Safety and “Important Regulatory and Installation Requirements”.

- **Advice to owner**
  Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shutdown procedure, and the need for professional service annually before the heating season begins.

- **Warranty**
  Information contained in this and related product documentation must be read and followed. Failure to do so renders the warranty null and void.
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Important Precautions

Important Regulatory and Installation Requirements

Approvals
Viessmann boilers, burners and controls are approved for sale in North America by CSA International.

Codes
The installation of this unit shall be in accordance with local codes. In the absence of local codes, use:
- CSA C22.1 Part 1 and/or local codes in Canada
- National Electrical Code ANSI/NFPA 70 in the U.S.
Always use latest editions of codes.
The heating contractor must comply with the Standard for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1 where required by the authority having jurisdiction.

Working on the equipment
The installation, adjustment, service, and maintenance of this product must be done by a licensed professional heating contractor who is qualified and experienced in the installation, service, and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner, or control.

Power supply
Install power supply in accordance with the regulations of the authorities having jurisdiction or, in absence of such requirements, in accordance with National Codes. Viessmann recommends the installation of a disconnect switch to the 120V power supply outside of the boiler room.
Ensure main power supply to equipment, the heating system, and all external controls have been deactivated. Close main oil or gas supply valve. Take precautions in both instances to avoid accidental activation of power during service work.

Please carefully read this manual prior to attempting installation. Any warranty is null and void if these instructions are not followed.

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product.

We offer frequent installation and service seminars to familiarize our partners with our products. Please inquire.

The completeness and functionality of field supplied electrical controls and components must be verified by the heating contractor. These include low water cut-offs, flow switches (if used), staging controls, pumps, motorized valves, air vents, thermostats, etc.

WARNING
Turn off electric power supply before servicing. Contact with live electric components can cause shock or loss of life.
About these Installation Instructions

Take note of all symbols and notations intended to draw attention to potential hazards or important product information.

**WARNING**

Warnings draw your attention to the presence of potential hazards or important product information.

- Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product/property damage.

**CAUTION**

Cautions draw your attention to the presence of potential hazards or important product information.

- Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/property damage.

**IMPORTANT**

- Helpful hints for installation, operation or maintenance which pertain to the product.

- This symbol indicates to note additional information

- This symbol indicates that other instructions must be referenced.
Mounting the Extension Kit

Extension kit for installation on a wall
1. Loosen the retaining screws from the extension kit enclosure (do not remove).
2. Remove cover and set aside.
3. Mount the extension module enclosure to the wall using the supplied hardware.
4. Install the cover.

Components
- Mixing valve extension module
- KM BUS plug 14 x2
- Power cord pre-wired to plug 40
- Strap on supply temperature sensor 2
- Heating circuit pump plug 20
- Mixing valve actuator plug 52
- Accessory power plug 40 A
Mixing Valve Extension Kit Installation

Fitting the Supply/Return Temperature Sensor (Contact Sensor)

Electrical connection
Insert plug [2] (supply temperature sensor) or plug [17] (return temperature sensor) at the extension kit (see page 7).

- Fit the sensor as supply temperature sensor in the flow direction on the heating flow pipe immediately downstream of the heating circuit pump.
- When using plastic pipes, fit the sensor on any metal intermediate piece.
- Clean the supply/return pipe down to bare metal.
- Heat conducting paste is not required.
- Never thermally insulate the sensor.
Overview of Electrical Connections

120V~ plugs

- 20 Heating circuit pump (on site)
- 40A Power supply
- 40 Power supply for additional controller kit for heating circuit with mixing valve (not used)
- 52 Mixing valve motor

Low voltage connections

- 2 Supply temperature sensor (included in actuator kit)
- 17 Return temperature sensor (optional accessory for Vitotronic 300, type KW3)
- 145 KM BUS

**CAUTION**

The electronic modules are static sensitive. To avoid damage caused by static discharge, follow Electro-Static Discharge safety procedures.
Open the mixing valve controller cover and insert uncut strain reliefs (supplied) into all unused knock-outs.

1. Cut the strain relief to fit the cable size.
2. Insert cable through the strain relief and reconnect the cable to the plug-in connector.
3. Snap the strain relief into an open knock-out.
4. Insert the plug-in connector into the corresponding socket.

1. Route high voltage cable through knockouts provided and apply proper strain relief.
Connecting the Heating Circuit Pump

Heating circuit pump 120V~

Specification of the heating circuit pump 120V~
Rated current: >1A

Specification of the contactor:
Rated voltage: 120V
Rated current: 1A

Note: In underfloor heating circuits, integrate a temperature limiter on site for limiting the maximum temperature of underfloor heating systems.

Heating circuit pump 240V~

Specification of the heating circuit pump 240V~
Specification of the contactor:
Rated voltage: 120V
Rated current: 1A

Heating circuit pump 208/460/575V~

Specification of the heating circuit pump 208/460/575V~
Specification switching the contactor:
Rated voltage 120V~
Rated current 1A

Legend
A Heating circuit pump
B Contactor/Relay
C Power supply with disconnect and protection
To the extension kit
The extension kit can be connected to the following appliances:
- Vitodens 200-W
  - Type B2HA/B2HB
- Vitodens 222-F
  - Type B2TA/B2TB
- Vitocrossal 300 CU3A

**WARNING**
Incorrect core termination can cause severe injuries and damage to the equipment. Never interchange cores “L” and “N”.

The mixing valve controller kit can only be used with the listed gas-fired hot water heating boilers listed above and a weather-responsive control.

For details on coding and connection to the control, please refer to the relevant boiler Start-up/Service Instructions.

A Mixing valve controller:
- 40 Power supply
- 145 KM BUS
- S1 Rotary selector: for position, see the table below
- 145 KM BUS to the control unit or to the KM BUS distributor (accessories)

B Vitotronic 200:
- KM BUS screw at terminals of the EA1 module, pre-installed in the boiler electrical connection box or
- 145 KM BUS to the control unit or to the KM BUS distributor (accessories)

C 120V receptacle

**IMPORTANT**

The receptacle must have a 15A overcurrent protection.
The extension kit can be connected to the following appliances:
- Vitodens 200-W
  - Type WB2B

**WARNING**
Incorrect core termination can cause severe injuries and damage to the equipment.
Never interchange cores “L” and “N”.

The mixing valve controller kit can only be used with the listed wall-mounted gas-fired hot water heating boilers and a weather-responsive control.

For details on coding and connection to the control, please refer to the relevant Start-up/Service Instructions.

**A** Mixing valve controller:
- 40 Power supply
- 145 KM BUS
- S1 Rotary selector: for position, see the table below
- 145 KM BUS to the control unit or to the KM BUS distributor (accessories)

**B** Vitotronic 200:
- “X3” KM BUS at terminals “7” and “6” (remove plug 145)
  - or 145 KM BUS to the control unit or to the KM BUS distributor (accessories)

**C** 120V receptacle

**IMPORTANT**
The receptacle must have a 15A overcurrent protection.
Mixing Valve Extension Kit Installation

Vitodens 200 WB2A with Comfortrol

Electrical Connections

A Mixing valve controller:
- Power supply
- KM BUS
- S1 Rotary selector: for position, see the table below
- KM BUS to the control unit or to the KM BUS distributor (accessories)

B Control unit:
- "X5" KM BUS at terminals “3” and “4” (remove plug 145)
- With plug 145 to the KM BUS distributor (accessories)

C 120V receptacle

Rotary selector settings

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<th>Heating circuit that the mixing valve affects</th>
<th>Connected sensors</th>
<th>Rotary selector position</th>
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<td>Heating circuit with mixing valve, M2</td>
<td>Supply temperature sensor</td>
<td>‘2’ (factory set)</td>
</tr>
<tr>
<td>Heating circuit with mixing valve, M3</td>
<td>Supply temperature sensor</td>
<td>‘4’</td>
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**WARNING**

Incorrect core termination can cause severe injuries and damage to the equipment.
Never interchange cores “L” and “N”.

**IMPORTANT**

The receptacle must have a 15A overcurrent protection.
**WARNING**

Incorrect core termination can cause severe injuries and damage to the equipment.
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**Electrical Connections**

Rotary selector settings

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<td>‘3’</td>
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<tr>
<td>Heating circuit with mixing valve, M3</td>
<td>Supply temperature sensor</td>
<td>‘4’</td>
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<tr>
<td></td>
<td>Supply temperature sensor and return temperature sensor</td>
<td>‘5’</td>
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**IMPORTANT**

The receptacle must have a 15A overcurrent protection.
Legend
A1  Main PCB
F1  Fuse
S1  Rotary selector

120V~plugs
20  Heating circuit pump (on site)
40  Power supply 120V 60Hz
40A Power supply for additional controller for heating circuit with mixing valve (not used)
52  Mixing valve actuator

Low voltage connections
2  Supply temperature sensor
17  Return temperature sensor (optional accessory for Vitotronic 300, type KW3)
145  KM BUS
Changing the Rotational Direction

Change the rotational direction in the following cases:
- On systems with Modular-Divicon.
- For the following installation examples:
1. Switch OFF the power supply to the control unit.
2. Remove the casing cover of the extension kit.
3. Interchange wires RD and BK at plug 52 to change the rotational direction.
4. Connect the extension kit.
5. Check the rotational direction.

Note: If a fault occurs during commissioning, check the mixing valve installation (see mixing valve installation instructions).

Legend
- HR Heating return
- HV Heating flow
- KR Boiler return
- KV Boiler flow

Specifications

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