Installation and service instructions

for contractors

CO limiter

Safety instructions

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

Safety instructions explained

Danger
This symbol warns against the risk of injury.

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

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

Installation, initial start-up, inspection, maintenance and repairs must only be carried out by a competent person (heating engineer/installation contractor).

Before working on the equipment/heating system, isolate the power supply (e.g. by removing a separate mains fuse or by means of a mains isolator) and safeguard against unauthorised reconnection.

When using gas as fuel, also close the main gas shut-off valve and safeguard against unauthorised reopening.

Repairing components which fulfil a safety function can compromise the safe operation of your heating system. For replacements, use only original spare parts supplied or approved by Viessmann.

Exclusion of liability

No liability is accepted for loss of profits, failure to make savings or other direct or indirect consequential losses arising from use of the CO limiter, or for losses arising from incorrect use.

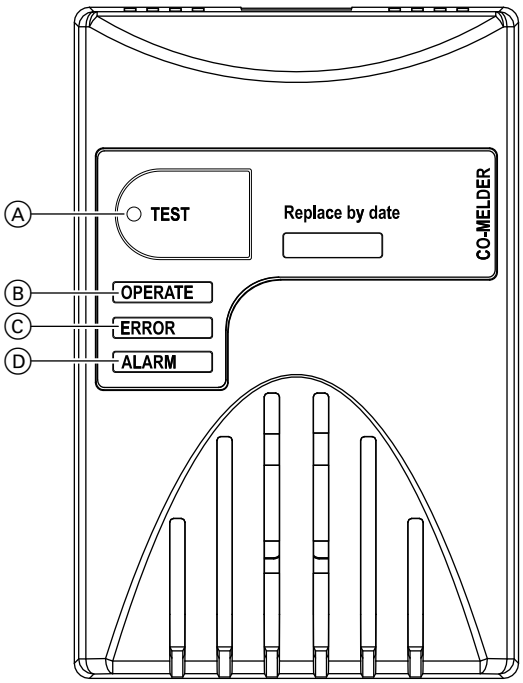
Product information

Monitoring device for safety shut down of the boiler in the event of escaping carbon monoxide.
Alarm threshold: 50 ppm CO according to EN 50 291-1
This device has been developed to provide protection from the acute effects of contact with carbon monoxide.

Danger
The CO limiter may not provide adequate protection for people with particular medical conditions.
If in doubt, please consult your doctor. People with relevant medical conditions should use an alarm that generates an audible or visible warning even at carbon monoxide concentrations of under 50 ppm.

Danger
The following substances can affect the CO limiter and may trigger a false alarm: Ethylene, ethanol, alcohol, isopropanol, petrol, toluene, ethyl acetate, hydrogen, hydrogen sulphide and sulphur dioxide.
Do not use the above substances in the room in which the CO limiter is installed.

Product information (cont.)



Indicators:

Ⓐ Test button
Ⓑ Operation (green LED)
Ⓒ Fault/test (yellow LED)
Ⓓ Alarm/test (red LED)

Acoustic signal:

- If the alarm is triggered, a constant alarm tone sounds.
- If the alarm is being tested, an alarm tone sounds whilst the test button is being pressed.

Function

Please note
Fault-free function of the CO limiter can only be guaranteed if it is correctly connected to the control unit.
- Connect the device according to the connection plans from page 7.
- Do not route the connecting cable in the immediate vicinity of power cables.

The green indicator illuminates while the device is operational.
- If the CO concentration exceeds the specified limit, the integral relay switches off. This turns off the burner in the boiler. The red and green indicators illuminate and the alarm tone sounds.
  Systems with Vitoladens 300-C, Vitoladens 300-W and Vitoladens 333-F: Fault message F9 appears.
- If the CO concentration falls below 30 ppm, the red LED and the alarm signal to the control unit are switched off. This re-enables the burner. The alarm tone stays on to signal that an increased CO concentration was detected earlier. To switch the alarm tone off, press the test button once or turn the control unit off and back on again at the ON/OFF switch.

Note
The function of the CO sensor is continuously monitored during operation. If the sensor is faulty, the yellow indicator illuminates and the integral relay drops out. This turns off the burner in the boiler.

Boiler service instructions

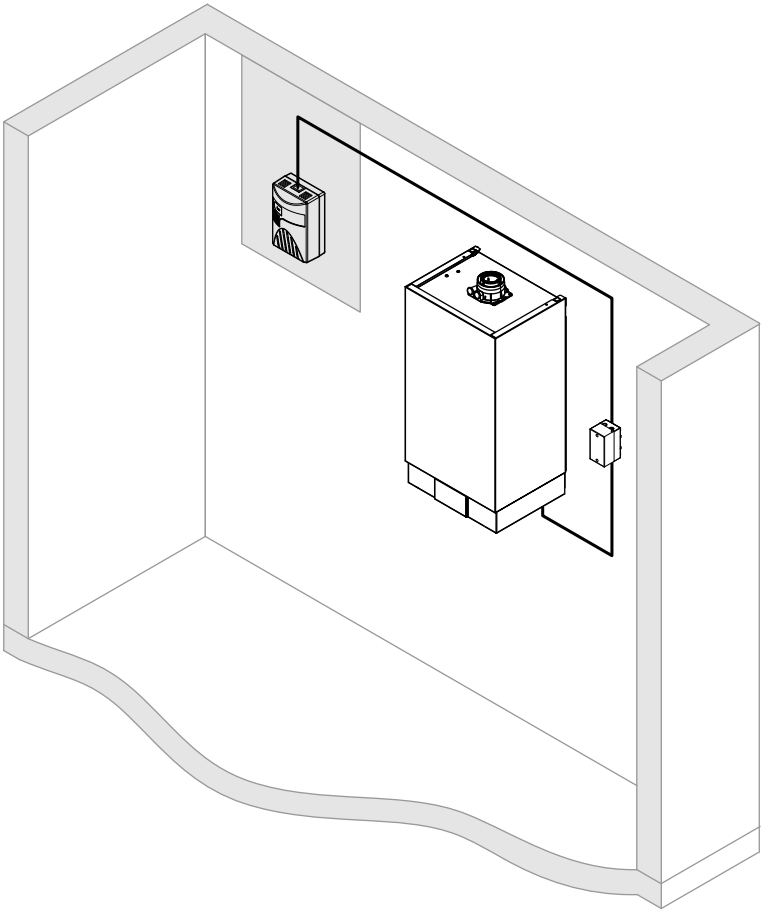
Service life

Replace the CO limiter after 10 years in operation.

For the replacement date, see "Replace by date" on the CO limiter.

Installation location

- In the vicinity of the appliance being monitored
- Close to the ceiling; carbon monoxide is lighter than air and therefore rises
- Mount the terminal box on the wall in close proximity to the boiler. Lead length to the boiler approx. 1.3 m.

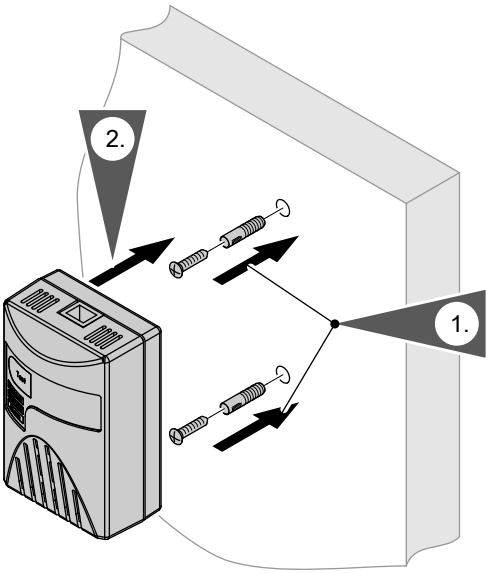


Installation location (cont.)

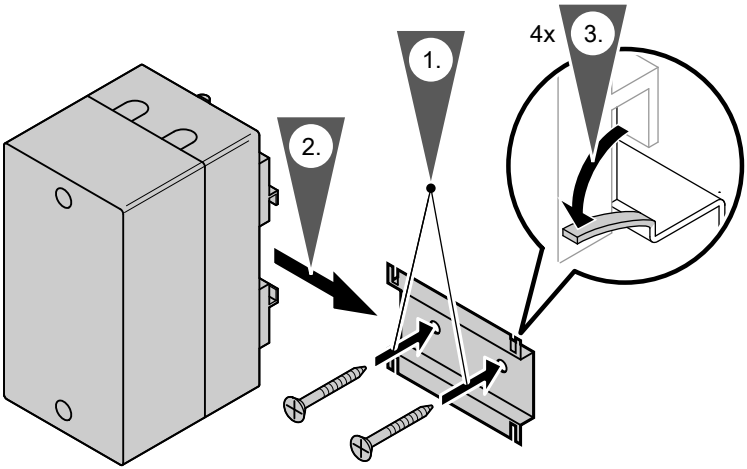
Do **not** install the CO limiter in the following areas:

- Places where an escape of gas could fail to trigger the alarm, e.g. behind curtains or in cupboards
- Places where water could be splashed or sprayed, e.g. above a washbasin
- Places of high humidity, e.g. next to a cooker
- In draughts caused by open windows, doors or air vents (ventilation or air conditioning)
- Areas where dust or dirt could cause the sensor to stop working
- In rooms where there is a risk of explosion

Mounting the CO limiter



Fitting the terminal box



Connecting the CO limiter to the boiler control unit

Colour coding to IEC 60757

BK Black
BN Brown
BU Blue
GY Grey

Note

- *In the connection diagrams the relay is depicted in a zero current state.*
- *The CO limiter must be connected using two separate cables.*
- *If the mains connection for the CO limiter cannot be made at the control unit or an accessory (all terminals assigned):*
  Connect the CO limiter to the power supply on site.

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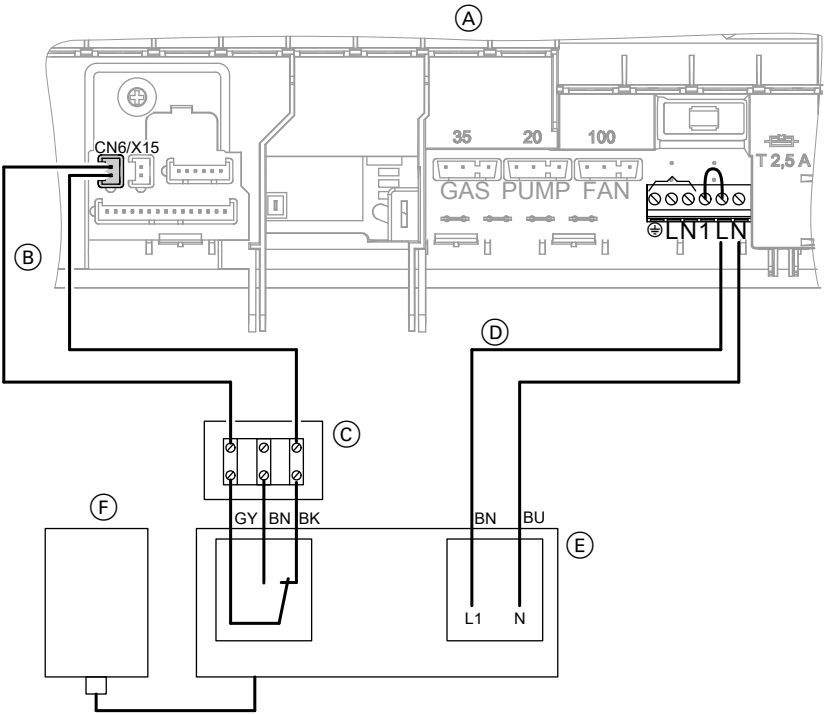
Connecting the CO limiter to the boiler control… (cont.)

Vitodens 100-W and Vitodens 111-W

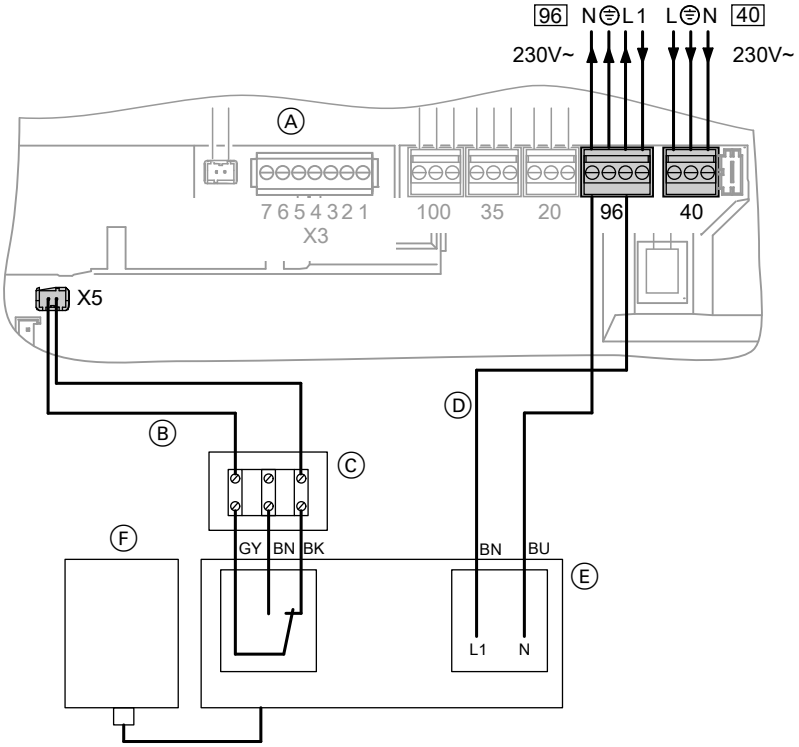


Ⓐ Vitotronic control unit
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site cable
Ⓔ Terminal box
Ⓕ CO limiter

Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Vitocrossal 300, type CU3A, Vitodens 2 ..., Vitodens 3 ..., Vitopend 2 ..., Vitocaldens 222-F and Vitosorp 200-F

Vitotronic 100/200 control unit types:
- HC1 ...
- HO1 ...
- KW6 ...
- WO1C



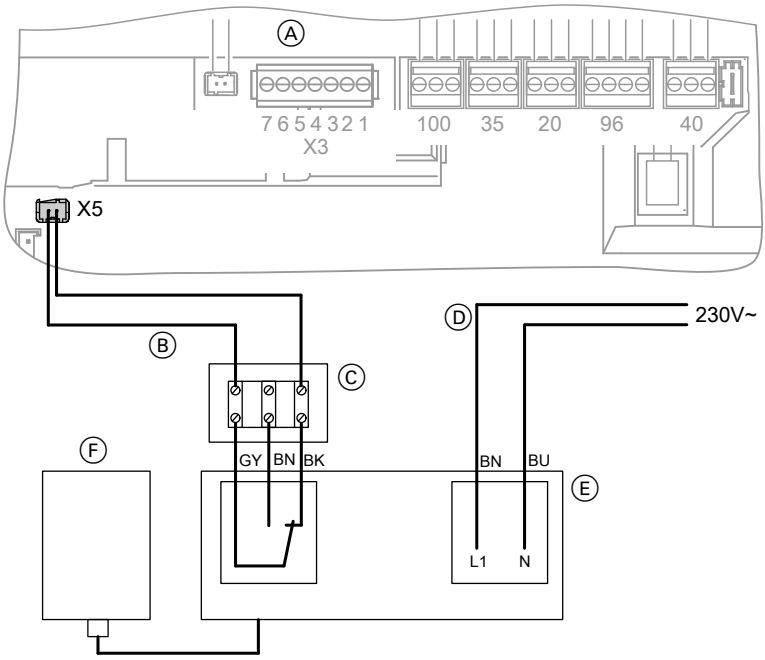
Ⓐ Vitotronic control unit
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site cable
Ⓔ Terminal box
Ⓕ CO limiter

Connecting the CO limiter to the boiler control… (cont.)

Note
If required, replace plug 96 of the Vitotronic control unit with supplied plug 96.

Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Vitovalor 300-P

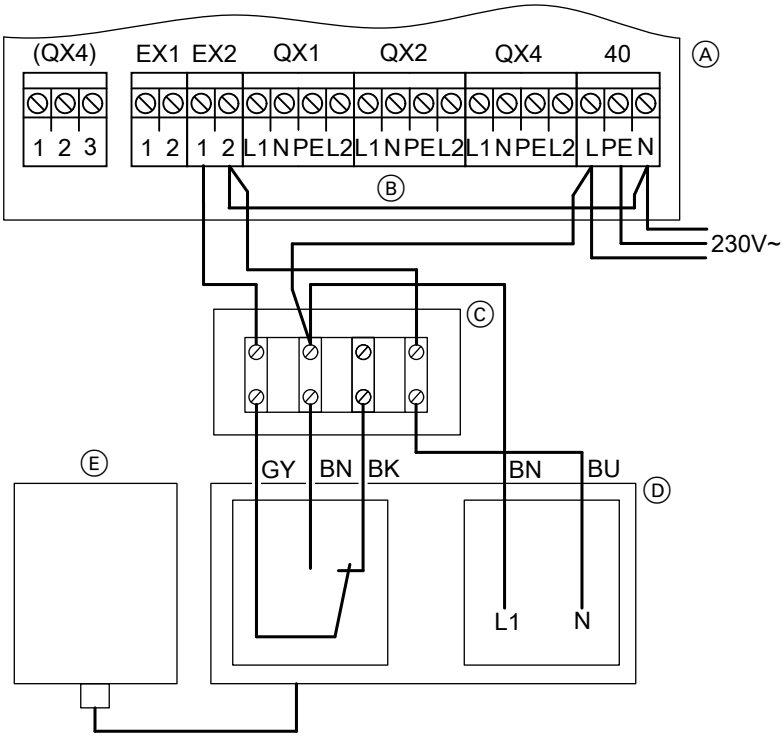


Ⓐ Vitotronic control unit
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site power cable
Ⓔ Terminal box
Ⓕ CO limiter

Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Vitotwin 300-W and 350-F

Connecting the CO limiter to the 230 V extension (accessories)



Ⓐ 230 V extension
Ⓑ Jumper (provide on-site)
Ⓒ On-site junction box
Ⓓ Terminal box
Ⓔ CO limiter

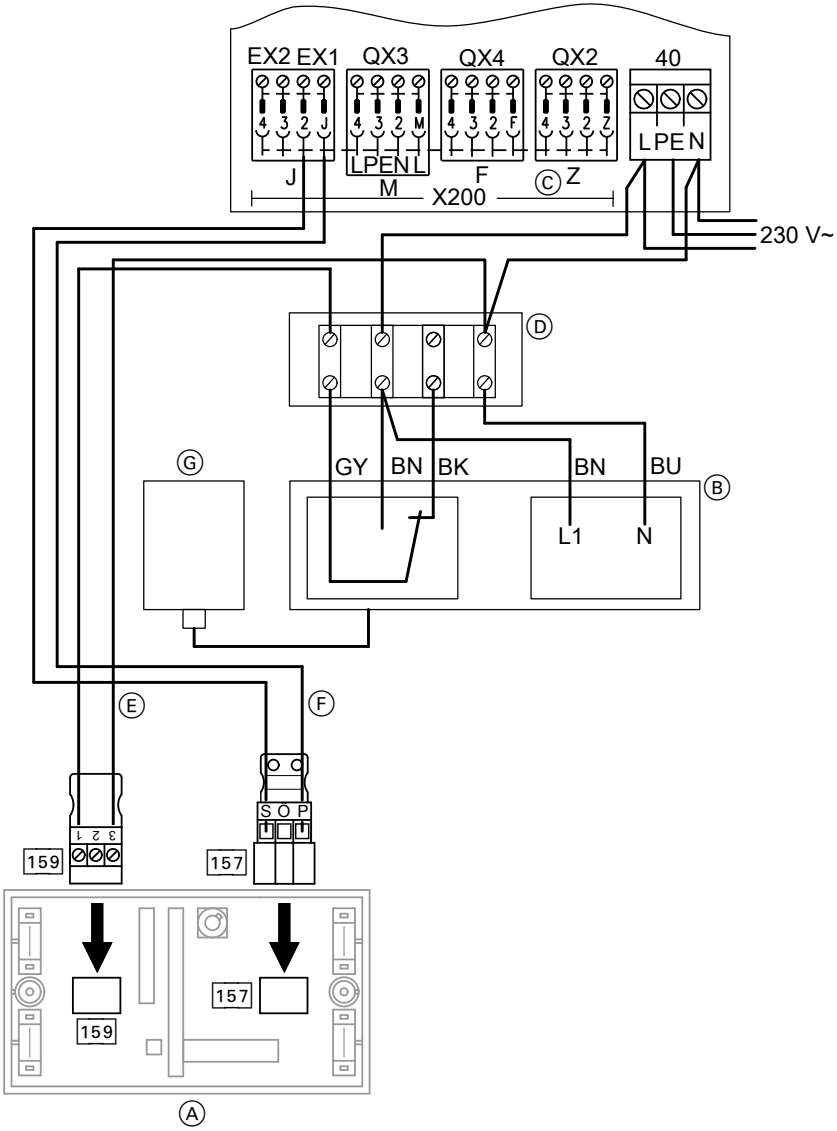
Set the following codes at the Vitotwin control unit:

- For **"Function input EX2"** set coding address 5982 to **"Heat generation lock"**
- For **"Cont type input EX2"**, set coding address 5983 to **"NC"**

Vitotwin installation and service instructions

Connecting the CO limiter to the boiler control… (cont.)

Connecting the CO limiter to the relay box (accessories)



Ⓐ Relay box

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Connecting the CO limiter to the boiler control… (cont.)

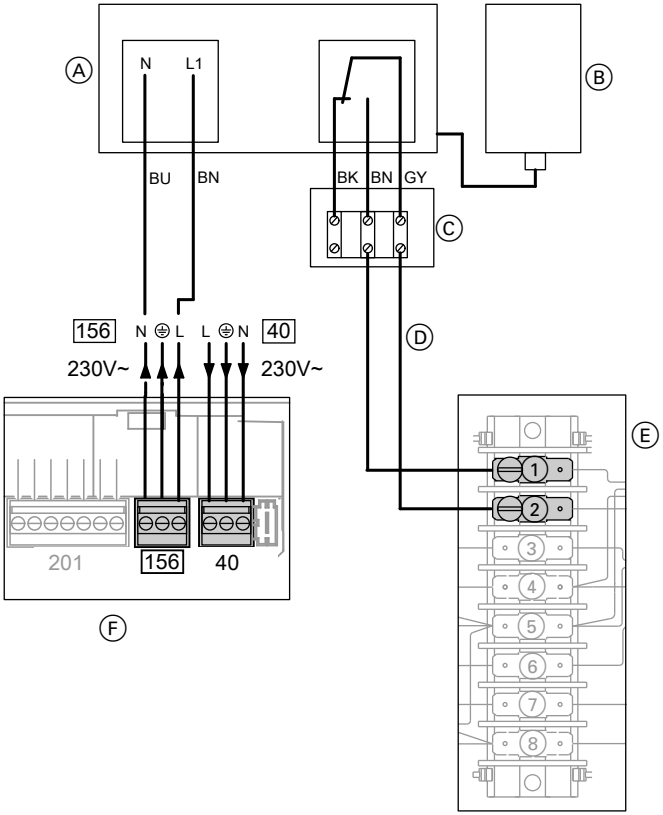
Ⓑ Terminal box
Ⓒ Vitotwin control unit
Ⓓ On-site junction box
Ⓔ On-site connecting cable
Ⓕ Connecting cable with plug 157 (1.8 m long, standard delivery)
Ⓖ CO limiter

Set the following codes at the Vitotwin control unit:

- For **"Function input EX1"** set coding address 5980 to **"Heat generation lock"**
- For **"Cont type input EX1"** set coding address 5981 to **"NC"**

Vitotwin installation and service instructions

Vitoladens 300-C, Vitoladens 300-W and Vitoladens 333-F



Ⓐ Terminal box
Ⓑ CO limiter
Ⓒ On-site junction box (if required)
Ⓓ On-site cable (if required)
Ⓔ Junction box on burner
Ⓕ Vitotronic control unit

Remove jumper across terminal 1 and 2 (junction box Ⓔ).

Note
If a fire safety switch or any other safety equipment has additionally been installed in the heating system, connect this in series with the CO limiter.

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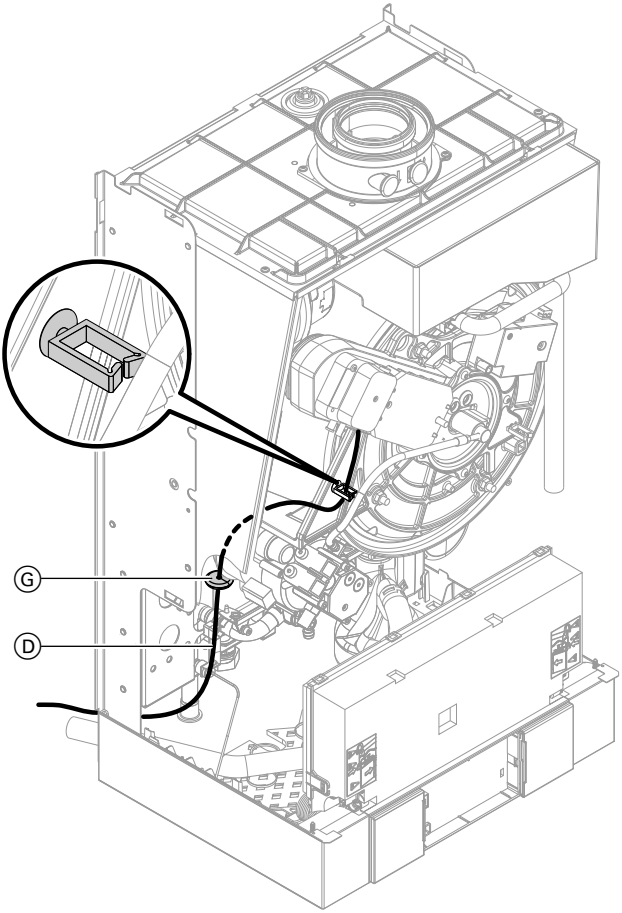
Connecting the CO limiter to the boiler control… (cont.)

Routing the connection lead in the Vitoladens 300-W and Vitoladens 333-F

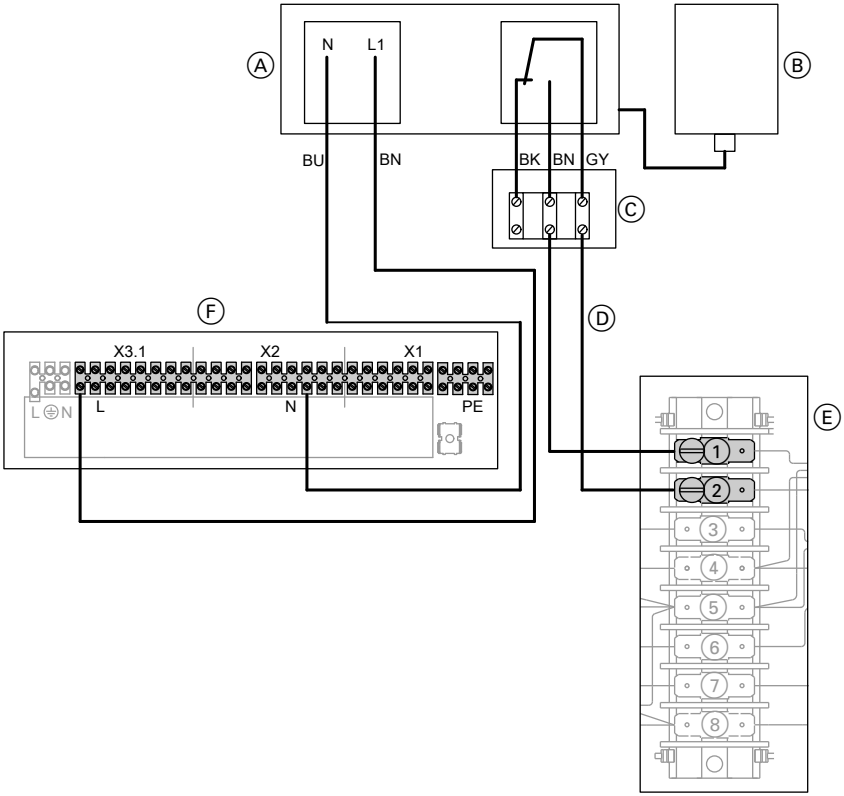


Ⓖ Diaphragm grommet for sensor leads

Route connection lead Ⓓ according to the diagram. On-site extension Ⓓ must be heat-resistant up to 70 °C.

Connecting the CO limiter to the boiler control… (cont.)

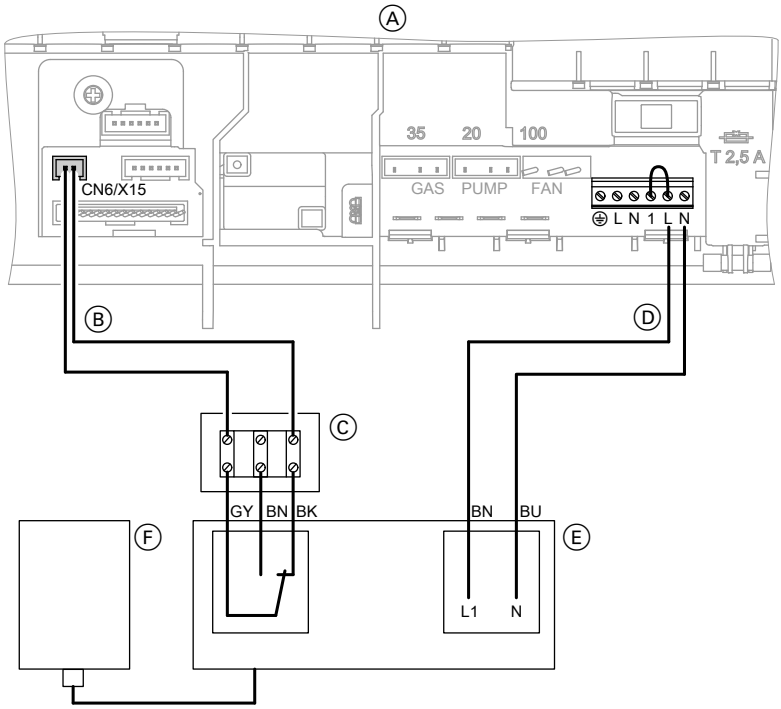
Vitolacaldens 222-F



Ⓐ Terminal box
Ⓑ CO limiter
Ⓒ On-site junction box (if required)
Ⓓ On-site cable (if required)
Ⓔ Junction box on burner
Ⓕ Vitotronic control unit

Connecting the CO limiter to the boiler control… (cont.)

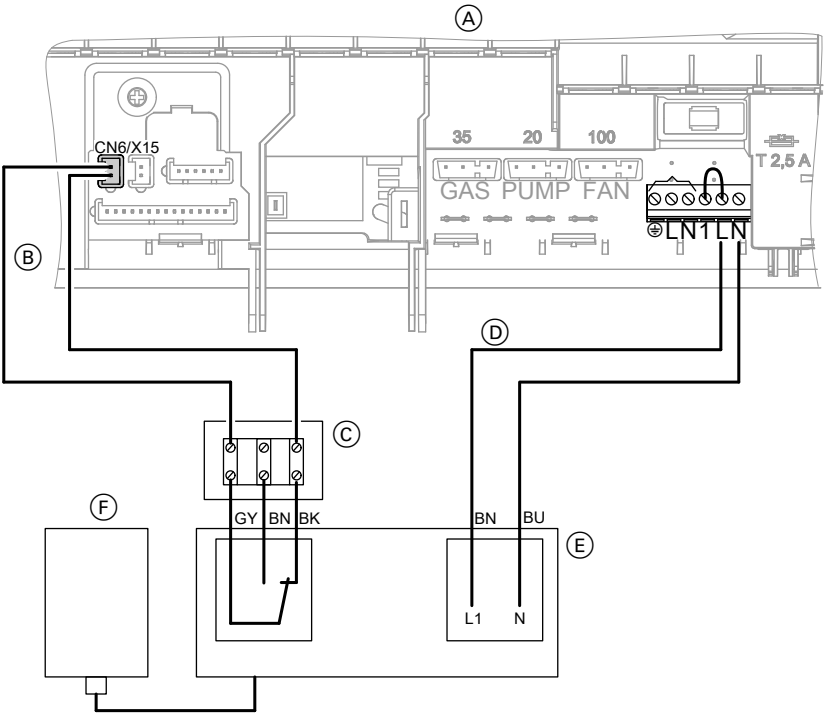
Vitopend 100-E and Vitopend 100-W, type WH1B, WH1C, WHKB



Ⓐ Control unit, boiler
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site cable
Ⓔ Terminal box
Ⓕ CO limiter

Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Vitopend 100-W, type WH1D

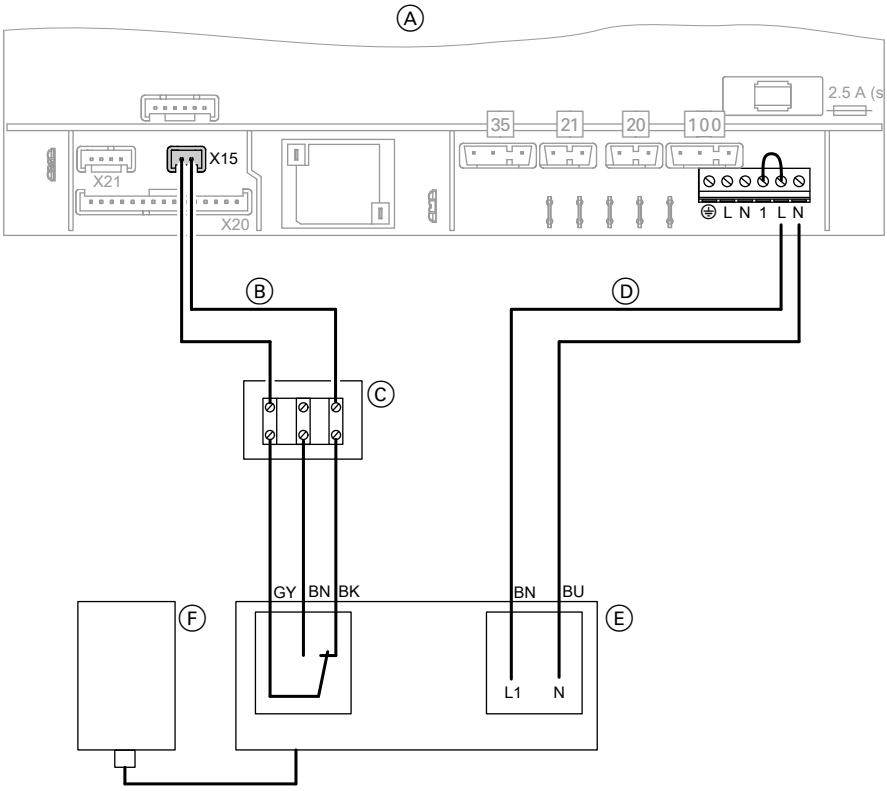


Ⓐ Control unit, boiler
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site cable
Ⓔ Terminal box
Ⓕ CO limiter

Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Connecting the CO limiter to the boiler control… (cont.)

Vitopend 111-W



Ⓐ Control unit, boiler
Ⓑ Connecting cable with plug (part of standard delivery)
Ⓒ Terminals provided (fix inside the enclosure)
Ⓓ On-site cable
Ⓔ Terminal box
Ⓕ CO limiter

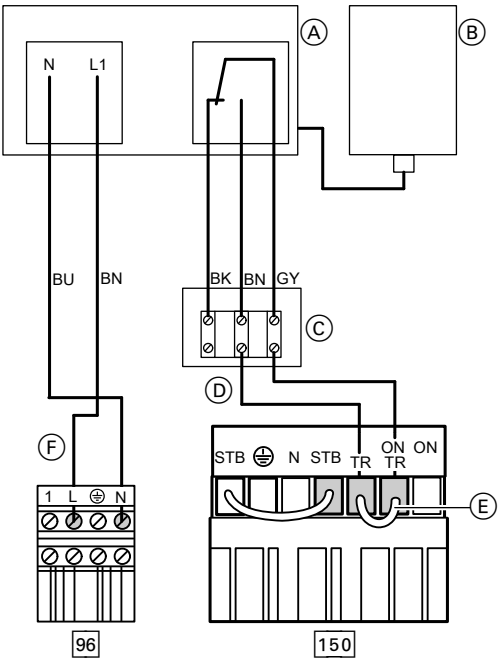
Note
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

Vitola, Vitoladens 300-T, Vitorond, Vitorondens and Vitogas

Vitotronic 100/200 control unit types:
- KC ...
- KO ...

Note
If required, replace control unit plug [96] *with supplied plug* [96].

Connection to external extension H5 (accessories).



Ⓐ Terminal box
Ⓑ CO limiter
Ⓒ On-site junction box
Ⓓ On-site cable
Ⓔ Jumper; remove when making this connection
Ⓕ On-site cable

[96] Power supply for accessories at the control unit
[150] Plug on extension H5 (accessories)

Note
If a fire safety switch or any other safety equipment has additionally been installed in the heating system, connect this in series with the CO limiter.

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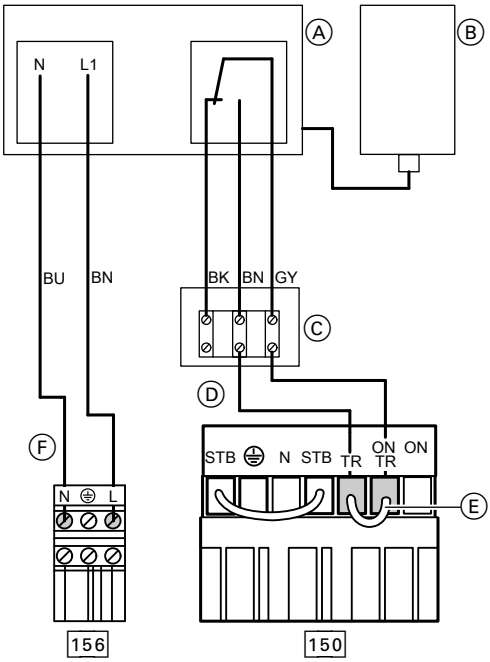
Vitocrossal 300, type CM3

Vitotronic 100/200 control unit types:
- CC1...
- CO1...
- CM1...
- GC1 ...
- GW1 ...
- GW2 ...

Connection to plug 150 in the control unit.



Ⓐ Terminal box
Ⓑ CO limiter
Ⓒ On-site junction box
Ⓓ On-site cable
Ⓔ Jumper; remove when making this connection
Ⓕ On-site cable

156 Power supply for accessories at the control unit
150 Safety equipment connection

Note
If any other safety equipment has been additionally installed in the heating system, connect this in series with the CO limiter.

Commissioning the CO limiter

Switch on the power supply via the control unit.
The green LED on the CO detector illuminates constantly during operation.
The CO detector is ready for operation.

Maintenance and function check

The CO limiter is maintenance free. A contractor should check the device annually for correct function (see following chapter).

Function test

1. Start the burner. Create a heat demand (emissions test mode).

2. Press and hold the Test button on the CO limiter until the burner shuts down (max. 10 s).
The yellow and red LEDs illuminate constantly whilst the test button is being held down. The acoustic warning signal sounds.
When the Test button is being held down, the burner should shut down within 10 s.

Note
The burner generally shuts down after approx. 3 s.

3. The function test can end once the burner shuts down. The CO limiter is working correctly and is ready for operation.

If the burner does not shut down within 10 s:
- Check the connecting lead between CO limiter and interface.
- Check the interface connection at the control unit.
- Replace the CO limiter if required.

Note
- *Heat generators for gas operation restart automatically after the function test. No fault message is shown.*
- *Vitoladens 300-C, 300-W and 333-F: Fault message F9 is shown after the function test. Reset the burner after the test.*
- *Vitotwin 300-W: Heat generation lock is shown after the function test. The burner then restarts automatically.*

Maintenance and function check (cont.)

Heating system maintenance

Regardless of whether a CO limiter is fitted, service the heating system components in accordance with the installation and service instructions and check them for correct function.

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Max. power consumption	2 W
Rated breaking capacity of the relay output	8 A 230 V~/10 mA 24 V~
Protection class	II
IP rating	IP 20 to EN 60 529
Service life	Approx. 10 years
Permissible ambient temperature	+0 to +40 °C
Air humidity	Max. 90 % non-condensing
Acoustic alarm	85 dBA/1 m
Sensor	Electrochemical

Declaration of Conformity

CO limiter

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

2014/30/EU	EMC Directive
2014/35/EC	Low Voltage Directive

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Declaration of Conformity (cont.)

Applied standards:
EN 50270: 2015
EN 50271: 2010
EN 50291-1: 2010 + A1: 2012
EN 60335-1: 2012 + AC: 2014
EN 60730-1: 2011
EN 61000-4-2: 2009
EN 61000-4-3: 2006 + A1: 2008 + A2: 2010
EN 61000-4-4: 2012
EN 61000-4-6: 2014
EN 61000-6-3: 2007 + A1: 2011 + AC: 2012
EN 61508-2: 2010
EN 61508-3: 2010

In accordance with the listed directives, this product is designated with CE.

Allendorf, 01 May 2017

Viessmann Werke GmbH & Co. KG

Authorised signatory Manfred Sommer

Applicability

Serial No.:
7549937

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5800 847 GB Subject to technical modifications.