

Installation and service instructions

for contractors

VISSMANN

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.



Warning

Warning of a medium risk of injury. If the risk is not avoided, it may result in death or serious 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 50291-1
- The device has been developed to provide protection from the acute effects of contact with carbon monoxide.

The CO limiter only indicates the presence of carbon monoxide gas at the sensor and switches off the connected appliance for as long as the CO concentration at this point remains above the response threshold. However, carbon monoxide gas may also be present in other areas. A carbon monoxide detector is not a substitute for a smoke detector or a flammable gas detector.

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.

For the detection of flammable gases or smoke, please install appropriate detectors.

The CO limiter must not be regarded as a substitute for the correct installation, use and maintenance of fuel-operated equipment (with adequate ventilation and flue systems), or for the cleaning of chimneys.



Danger

The CO limiter may not provide adequate protection for people with particular medical conditions.

If in doubt, consult a doctor.

Carbon monoxide is a chemical compound of carbon and oxygen. Carbon monoxide (CO) is an extremely toxic colourless, odourless and tasteless gas which is produced by the combustion of carbon-containing substances (e.g. wood, gas, petrol or oil).

Product information (cont.)

The symptoms of mild poisoning are headaches, dizziness and flu-like symptoms. Higher doses have a significant toxic effect on the central nervous system and heart, and can quickly lead to unconsciousness and death.

High CO values in buildings can have the following causes:

- Incorrect or poorly installed combustion equipment.
- Blocked or cracked chimneys/flues.
- Blocked fans or draught insulation, meaning that rooms with combustion equipment or open fireplaces are not ventilated.
- Running car engines or lawn mower motors in enclosed spaces.
- Portable petroleum or gas heaters in poorly ventilated rooms.



Please note

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.



Warning

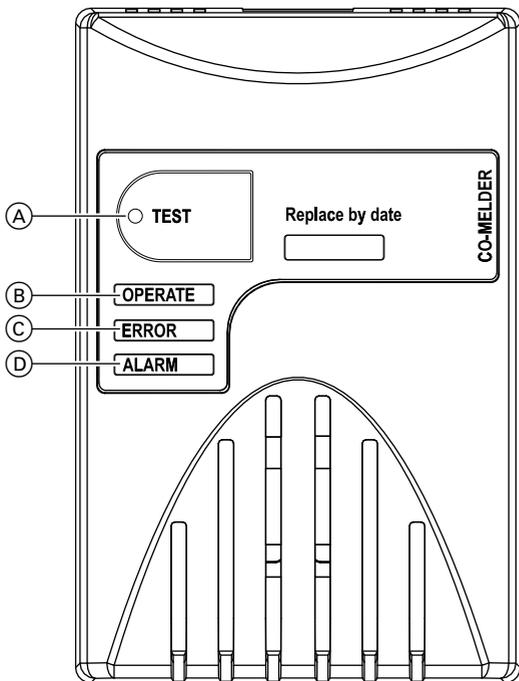
If the CO limiter issues an alarm signal, the following actions must be performed immediately in the order indicated:

1. Keep calm; open all doors and windows to increase the ventilation rate. Stop using all combustion appliances and ensure that they are switched off. For gas appliances, actuate the emergency stop valve.
2. If the alarm remains active, evacuate the building. Leave doors and windows open. Do not enter the building again until the alarm has stopped. In apartment blocks and multi-storey buildings, ensure that all residents are warned of the danger.
3. Request medical attention if you experience symptoms of carbon monoxide poisoning. Explain that inhalation of carbon monoxide is suspected.



Product information (cont.)

4. Inform the service and/or maintenance company. If necessary, dial the emergency number of the responsible fuel supplier or the public emergency number so that the source of the carbon monoxide leak can be identified and eliminated.
Do not operate the combustion appliance until it has been tested and approved for use by a competent person in accordance with national regulations.



Product information (cont.)

Displays:

- Ⓐ Test button
- Ⓑ Operating (green LED)

- Ⓒ Error/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.

Service life

Replace the CO limiter after 10 years in operation.

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

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 10.
- Do not route the connecting cable in the immediate vicinity of power cables.

Product information (cont.)

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.

Note

In systems with a Vitoladens 300-C, Vitoladens 300-W or Vitoladens 333-F, fault message F9 or F5 is displayed, depending on the operating phase of the burner during the shutdown process.

- If the CO concentration falls below 30 ppm, the red LED and the alarm signal to the control unit are switched off and the burner is re-enabled.
- Subsequently reset the CO limiter at test button (A) and/or the burner and control unit.

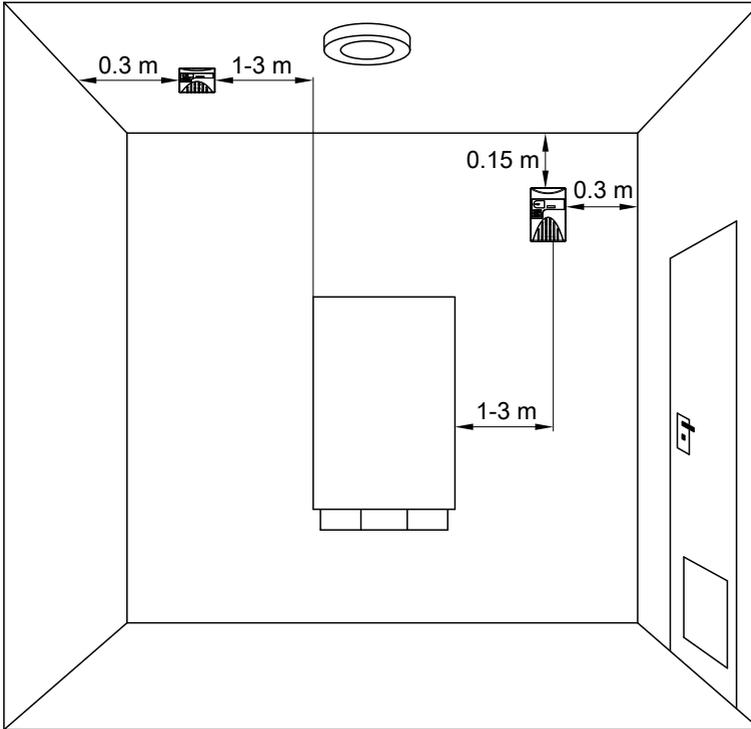
Note

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.



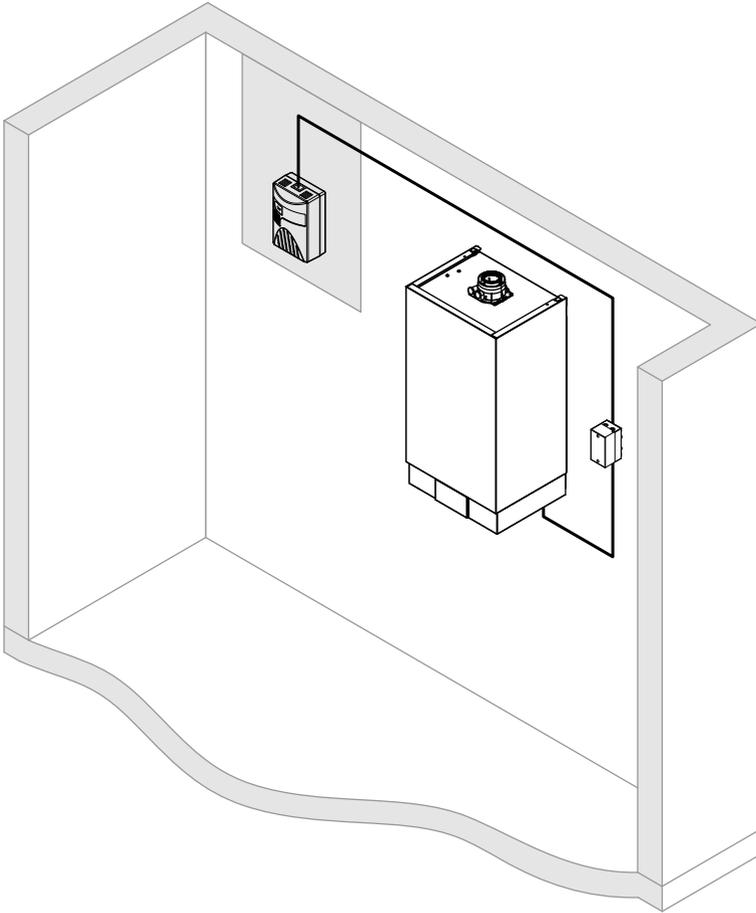
Boiler service instructions

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.

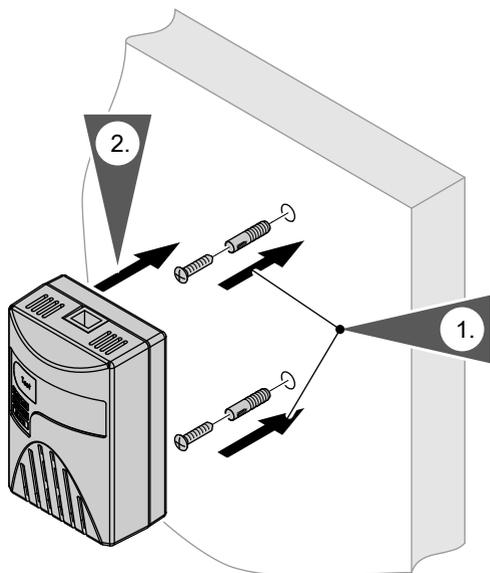
Installation location (cont.)



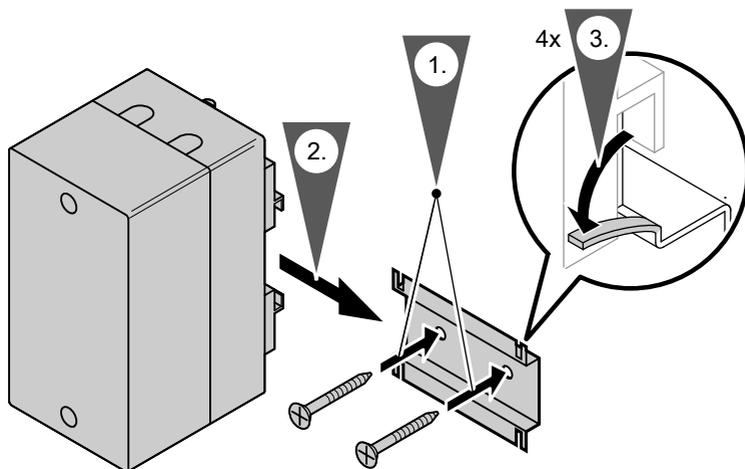
Do **not** install the CO limiter in the following areas:

- 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... (cont.)

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

Note

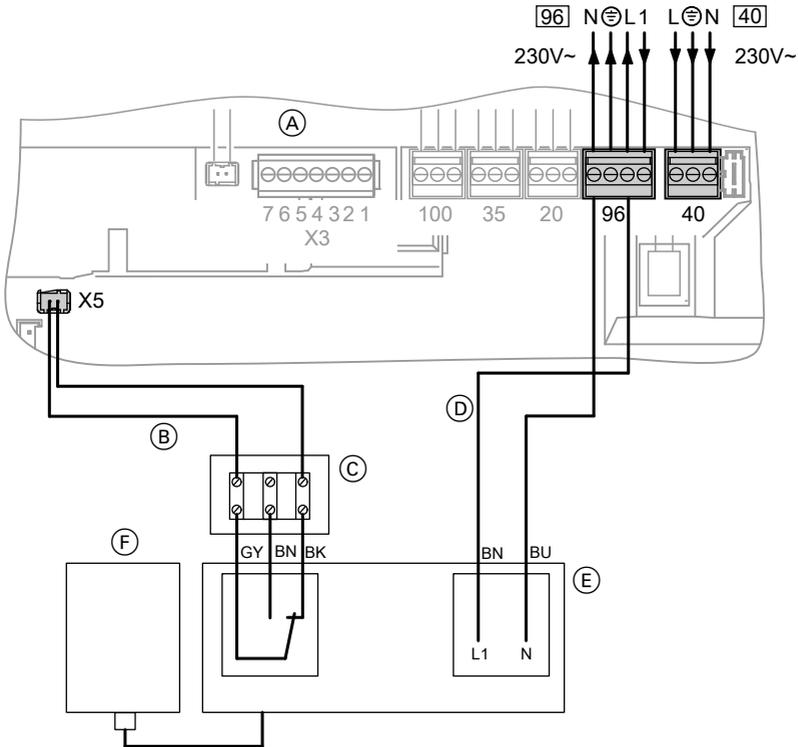
If a gas pressure switch is additionally installed in the heating system, connect this in parallel with the CO limiter.

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

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



- (A) Vitotronic control unit
- (B) Connecting cable with plug (part of standard delivery)
- (C) Terminals provided (fix inside the enclosure)

- (D) Connecting cable (part of standard delivery)
- (E) Terminal box
- (F) CO limiter

Note

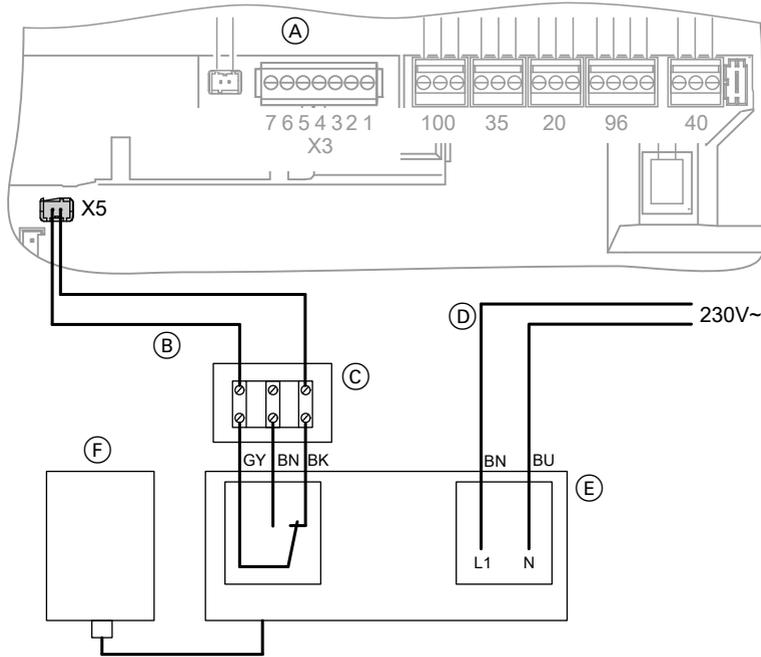
If required, replace plug 96 of the Vitotronic control unit with supplied plug 96.

Note

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

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

Vitovvalor 300-P



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

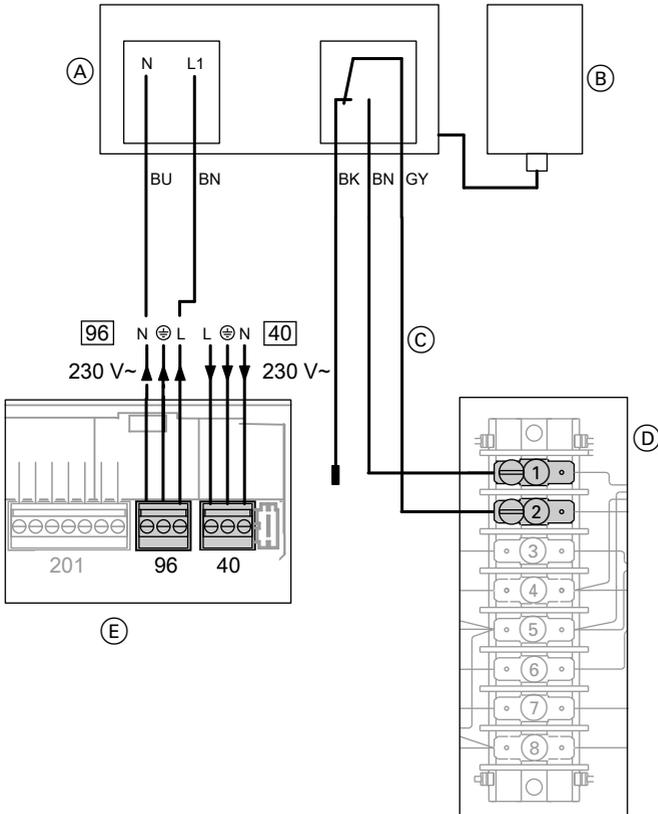
Note

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.)

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

Modulating

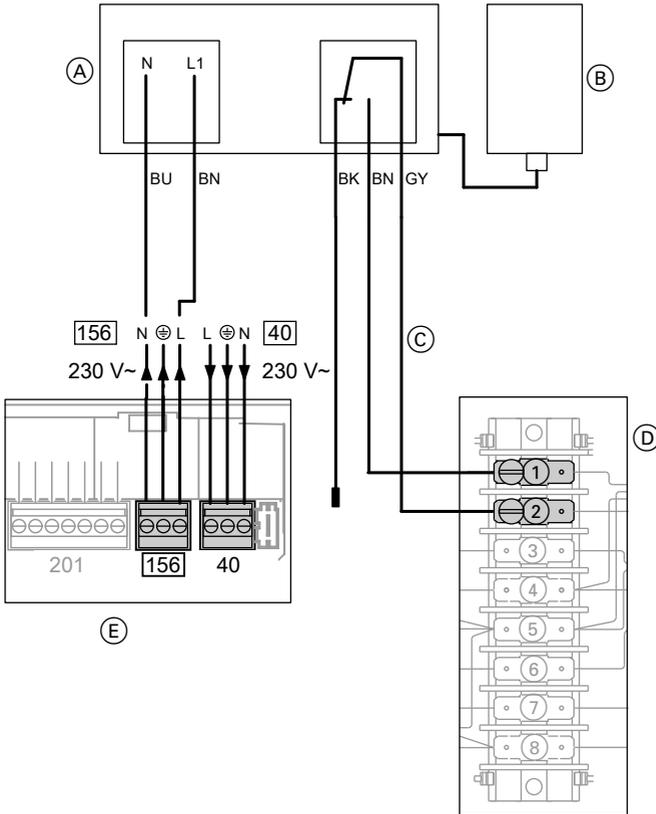


- (A) Junction box
- (B) CO limiter
- (C) Connecting cable (part of standard delivery)
- (D) Junction box on burner
- (E) Vitotronic control unit

Remove jumper across terminals 1 and 2 (junction box (D)).

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

2-stage



- (A) Junction box
- (B) CO limiter
- (C) Connecting cable (part of standard delivery)
- (D) Junction box on burner
- (E) Vitotronic control unit (plug 156 part of standard delivery)

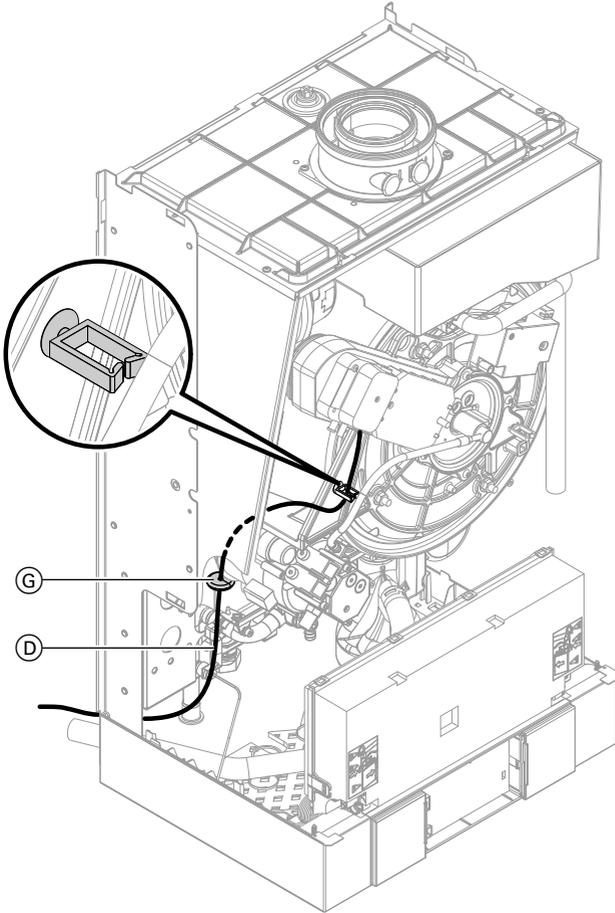
Remove jumper across terminals 1 and 2 (junction box (D)).

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.

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

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

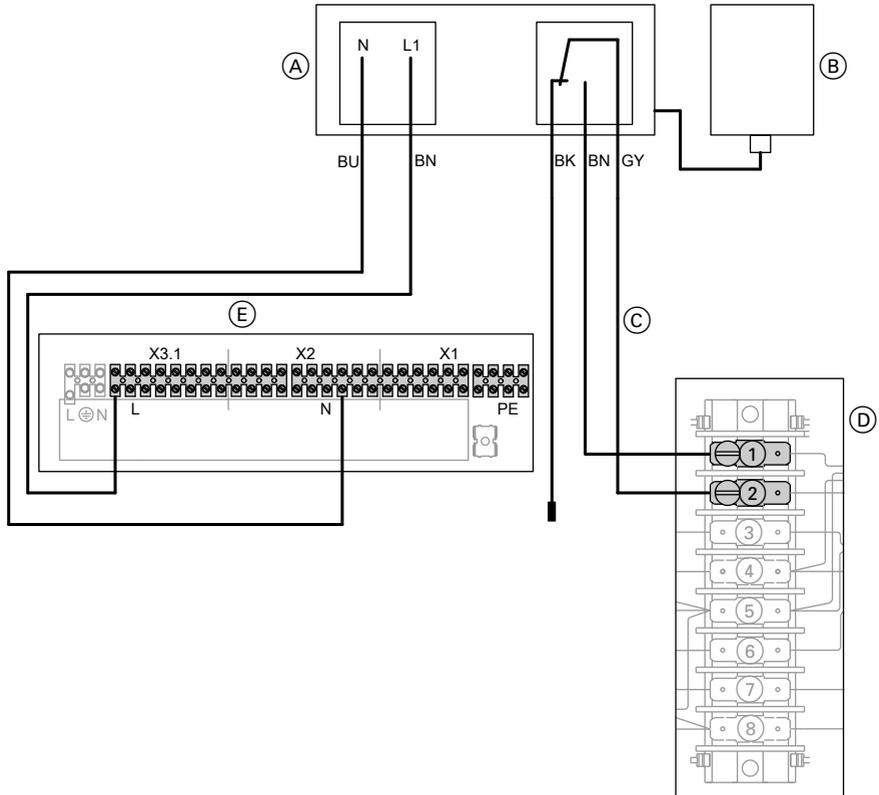


- Ⓒ Diaphragm grommet for sensor leads

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

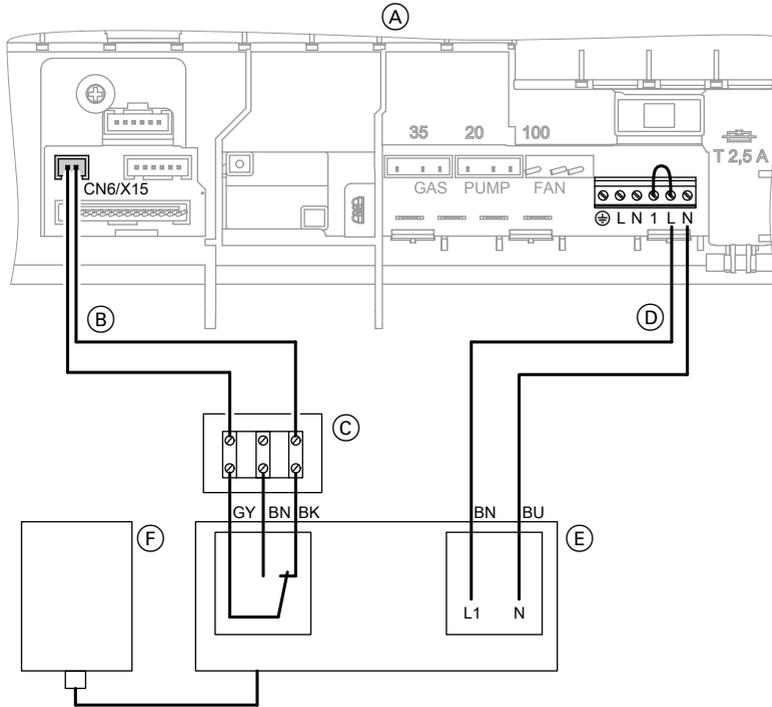


- Ⓐ Terminal box
- Ⓑ CO limiter
- Ⓒ Connecting cable (part of standard delivery)

- Ⓓ 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



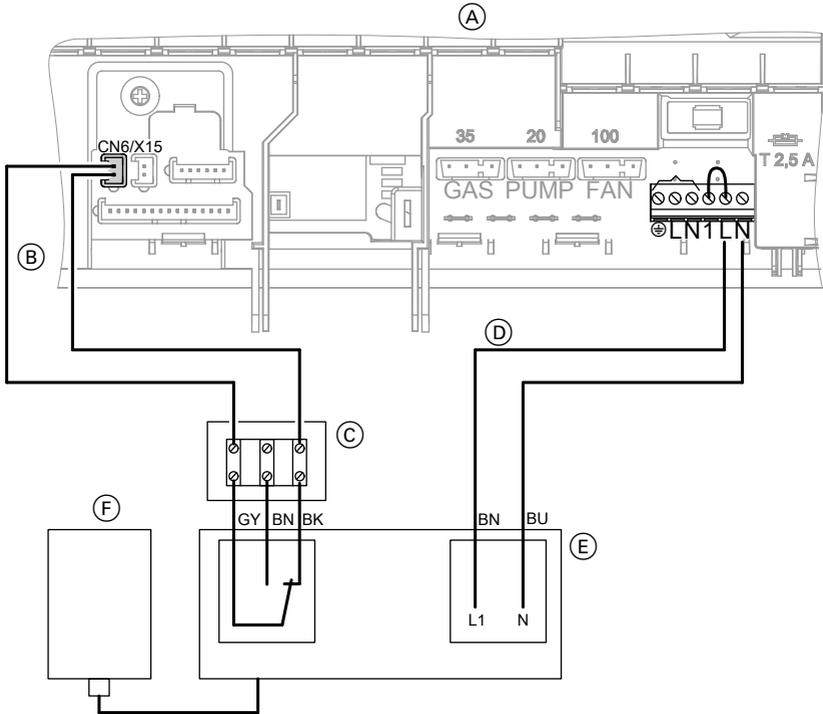
- (A) Control unit, boiler
- (B) Connecting cable with plug (part of standard delivery)
- (C) Terminals provided (fix inside the enclosure)
- (D) Connecting cable (part of standard delivery)
- (E) Terminal box
- (F) CO limiter

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 100-W, type WH1D



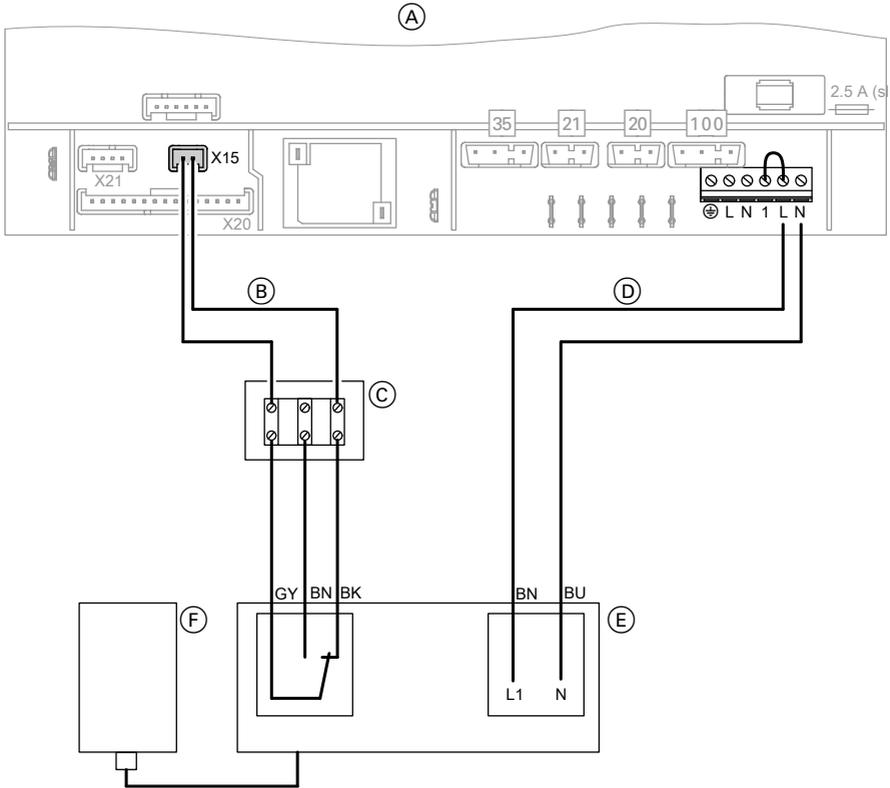
- (A) Control unit, boiler
- (B) Connecting cable with plug (part of standard delivery)
- (C) Terminals provided (fix inside the enclosure)
- (D) Connecting cable (part of standard delivery)
- (E) Terminal box
- (F) CO limiter

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



- (A) Control unit, boiler
- (B) Connecting cable with plug (part of standard delivery)
- (C) Terminals provided (fix inside the enclosure)

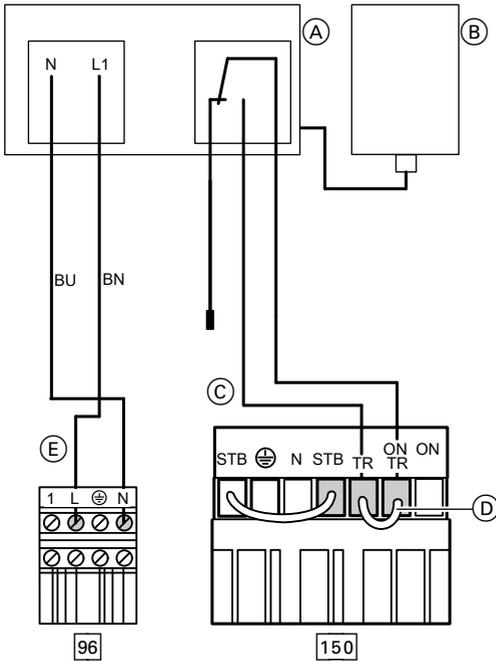
- (D) Connecting cable (part of standard delivery)
- (E) Terminal box
- (F) CO limiter

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.)

Vitogas



- (A) Terminal box
- (B) CO limiter
- (C) Connecting cable (part of standard delivery)

- (D) Jumper; remove when making this connection
- (E) Connecting cable (part of standard delivery)

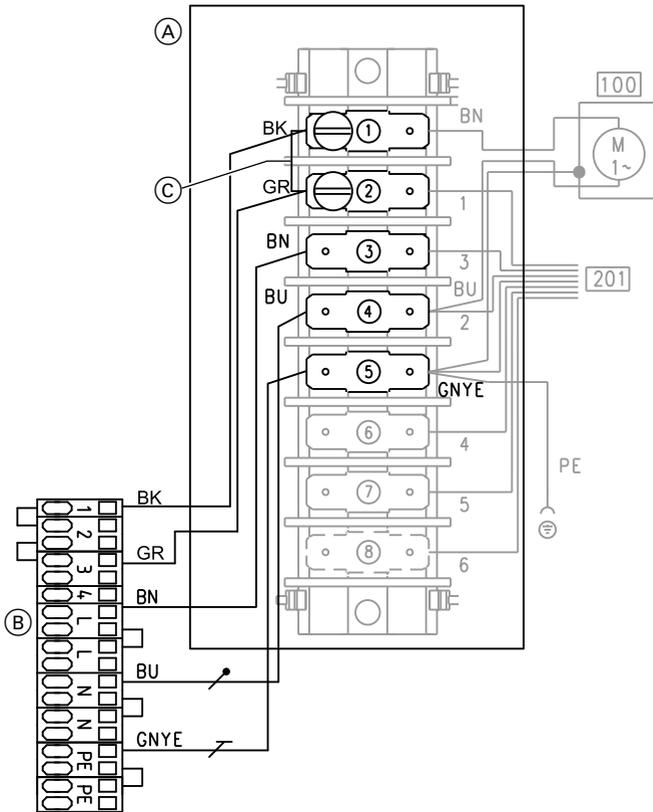
96 Power supply for accessories at the control unit

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.

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



- (A) Junction box on burner
 (B) Connecting cable with multiple connection adaptor
 (C) Jumper
 BK Black

- BN Brown
 BU Blue
 GNYE Green/yellow
 GR Grey

1. Remove jumper (C).
2. Connect the cable in accordance with the diagram and apply strain relief by means of cable ties.

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

Note

- *In the case of a single-level terminal connector, disconnect the blade receptacle and connect it to the angled part of the blade receptacle on the connecting cable.*
- *In the case of a three-level terminal connector, use the upper slot and bend the angled part of the blade receptacle on the connecting cable. Otherwise the cover of the junction box will not close properly.*

3. Close the junction box on the burner.

Note

The Vitoladens 300-T is not locked out. The burner restarts once the shutdown threshold is undershot.

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

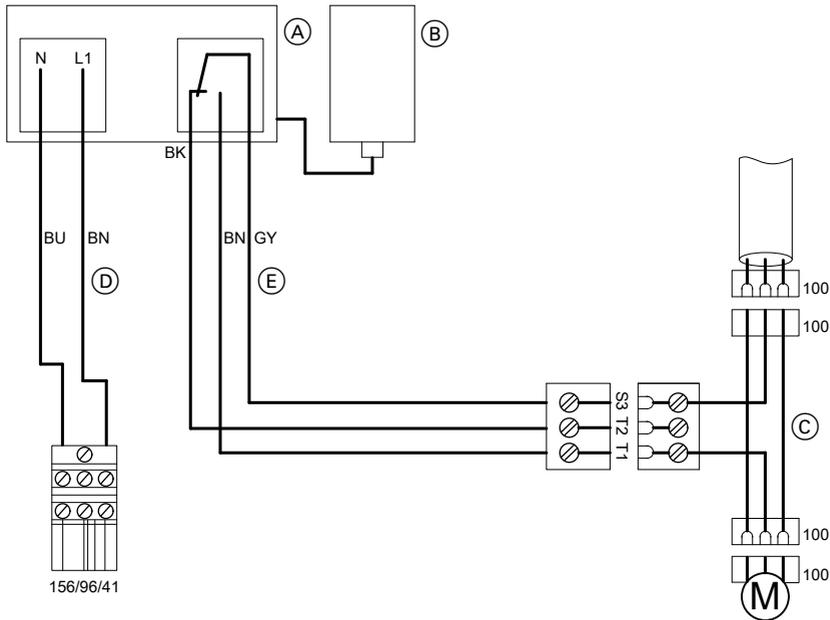
Vitoplus 3..., Vitoladens 3..., Vitorondens 2..., Vitocrossal...

Vitorondens 200-T, Vitoplus 300-W, Vitoplus 300-T, Vitoladens 300-T

Vitoladens 300-W, type VP3A - VP3B - VP3C

Vitoladens 333-F, type VP3S - VP3T - VP3U

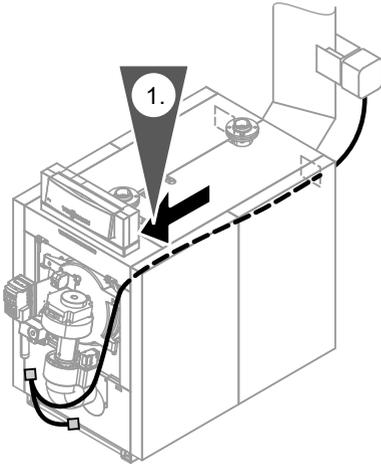
Vitocrossal 100 / 200 / 300, type CI - CI1 - CM2 - CM2B - CM2C - CU3 - CM3 - CM3C - CT3 - CT3B - CT3U



- (A) Junction box
- (B) CO limiter
- (C) Connecting cable
- (D) Connecting cable with plug-in connector (part of standard delivery)
- (E) Connecting cable with plug-in connector (part of standard delivery)

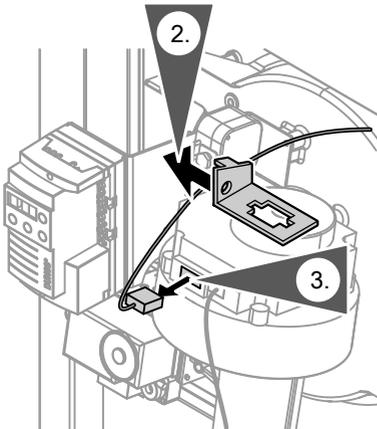
Connecting the CO limiter to the boiler control... (cont.)

Connection to e.g. Vitocrossal 200, type CM2B



1. Route the connecting cable with plug and adaptor to the burner through the aperture in the back panel. Use cable ties to provide strain relief for the connecting cable.

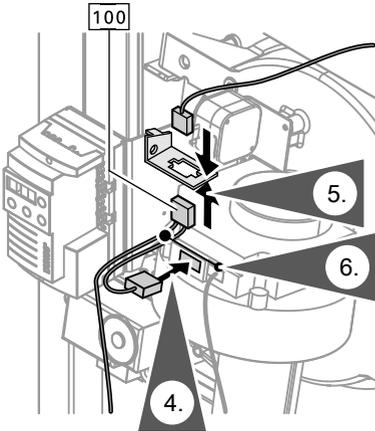
! **Please note**
Melting cable insulation can damage the appliance.
Never let cables come into contact with or secure them to hot components.



2. Secure the strain relief bracket.
3. Disconnect the I.h. plug from the fan.



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



4. Connect the flue gas damper plug to the fan.
5. Connect the free plug to adaptor **100** at the strain relief bracket.
6. Bind cables together with cable ties.

Commissioning the CO limiter

Switch on the power supply via the control unit.

The green LED on the CO limiter illuminates constantly during operation. The CO limiter is ready for operation.

Maintenance and function check

The CO limiter is maintenance-free. Its function should be checked once a year by a specialist contractor (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).

Maintenance and function check (cont.)

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 necessary.

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.

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.*

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	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 European directives and supplementary national requirements in terms of its design and operational characteristics.

Using the serial number, the full Declaration of Conformity can be found on the following website:

www.viessmann.co.uk/eu-conformity



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5863772 Subject to technical modifications.