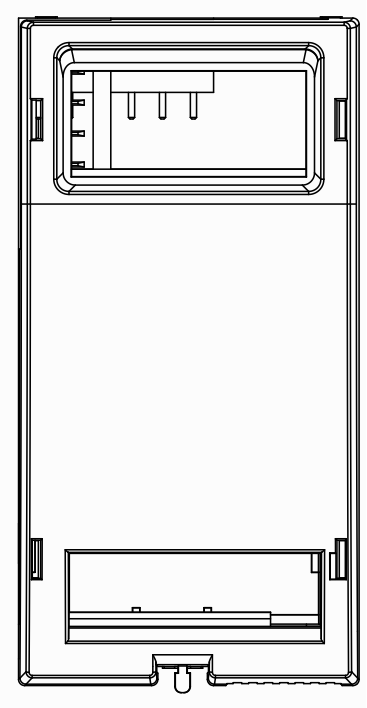
installation and setup manual

FOR THE QUALIFIED PROFESSIONAL

EXTENSION CLIP-IN MODULE
AGU2.550

FOR NESTA CHROME, COILMASTER, NESTA AND NESTA PLUS RANGES



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Symbols

Indicates an essential instruction which, if not followed, can result in a hazardous situation that can cause serious damage to equipment and/or injuries or death.

Indicates an essential instruction in relation with the presence of electrical power and a danger of electrical shock.

Indicates an important instruction which, if not followed, could result in a hazardous situation that could cause damage to equipment and/or injuries.

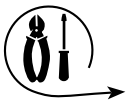
Indicates an important piece of information.

High Voltage - danger of electric shock.

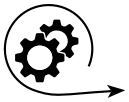
Ground / Earth.

Do !

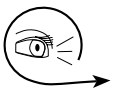
Don't !



... to electrical connection information.



.... to controller setup information.



Read additional information in another location or manual

Interactive icon, to get back to the last view

Safety Requirements

All tasks related to the installation, connection and setup of this accessory must be carried out by a qualified professional in accordance with current standards and regulations in force.

- When the appliance is connected to the electrical network, it must be earthed.
- Make sure that a fuse or circuit breaker of the recommended rating is installed outside the appliance, to allow electrical isolation.
- Before making any wiring changes in the connection area, completely isolate the appliance from mains supply. Ensure that the appliance cannot be inadvertently switched on again and that no live current is present. Failure to comply can result in electric shock
- Do not touch the appliance with any wet body parts when it is supplied with electrical power.
- Ensure protection against electric shock by providing adequate protection for the connection terminals
- Open contacts of the mains plug (X1) must be covered up. If not observed, there is a risk of electric shock.

- Do not open, interfere with or modify the module!
- Make sure to make the connections to the correct terminals, as indicated on the wiring diagram. If high voltage cables are installed on a low-voltage terminal, the electronic board will be damaged.
- When connecting wires to the terminals, check that the connection is secure and that all the wire strands are tightly held.
- Fall or shock can adversely affect the safety functions. If the accessory falls or is subjected to a shock, do not put it into operation, even if no damage is visible.
- Different mains phase connections to relay terminals are not permitted. If not observed, there is a risk of fire.
- Fusing of the load circuit must be ensured via the LMS... (AUX) (if installed) or by a suitable external fuse. If not observed, there is a risk of fire.
- Condensation, formation of ice and ingress of water are not permitted.

- *The accessory does not provide any safety functions (e.g. control of a fan).*
- *Power to the relay outputs must always be supplied via boiler management system connection*

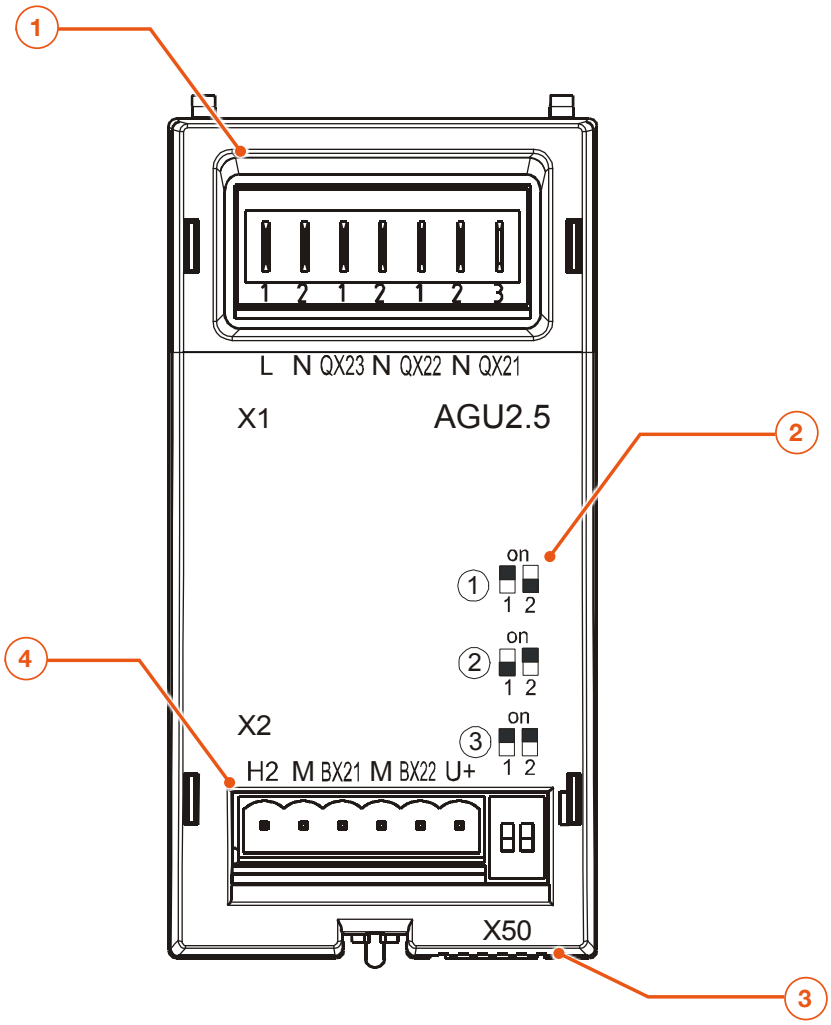
AGU2.550 Extension ClipIn Module

The extension ClipIn module complements the boiler management unit to extend its functions and allow the connection of additional accessories, such as pumps, mixing valves, thermostats, etc. in additional heating circuits.

Up to 3 extension modules can be installed to complement the boiler management unit that controls AIC's products. Each of them needs to be specifically configured so as to be recognized by the boiler.

"Installation Location" on page 8

"Technical data" on page 5



1. X1 terminal strip (high voltage), including:
   - Power supply connection to the boiler (L & N)
   - 230 V programmable relay outputs (QX21, QX22 and QX23)
2. Module configuration switches (to be set to ON or Off to identify them as AGU module 1, 2 or 3).

"AGU Module Setup" on page 46

3. X50 connector allowing to connect the ClipIn module to the boiler management unit using a flat cable.
4. X2 terminal strip (low voltage), including:
   - Programmable 12 V - DC digital or 0 -10 V DC analog input NTC (H2)
   - 10K / Pt1000 sensor programmable input (Bx21 & BX22)
   - 12 V DC output (U+)

Technical data

		Wiring of terminals
Inputs/Outputs		Solid/stranded wire (with ferrule) - 0,5 to 1,5 mm² BSB bus: PCB direct connector RAST2.5, coded
Inputs	**Digital Inputs H2**	Safety extra low-voltage for potential-free low-voltage contacts › Voltage with contact open : DC 12 V › Current with contact closed : DC 3 mA (against ground)
	Analog input H2	Protective extra low-voltage › Operating range DC 0…10 V › Internal resistance >100 kΩ
	Sensor inputs BX21, BX22	**NTC 10k (QAZ36…, QAD36…)** Perm. sensor cable (copper) › With cross-sectional area 0,25 / 0,5 / 0,75 / 1 / 1,5 mm² › Max. length 20 / 40 / 60 / 80 / 120 m
Outputs	**Power supply to sensor U+**	› Safety extra low-voltage: DC 12 V / <5 mA (against ground)
	Relay outputs QX21, QX22, QX23	› Rated voltage AC 230 V › Rated current AC 5 mA...1 A › Cosφ >0,8 › Mains frequency : 50 Hz **In connection with the load on the outputs, the total current draw of the basic unit must be taken into consideration! In case of bigger loads relay or contactor should be used.**

Also refer to the Installation and Maintenance manual of the appliance for electrical characteristics and specific safety requirements and recommendations.

AGU ClipIn Kits - Description

Nesta Chrome 60 to 150

Nesta Chrome - AGU Starter Kit: allows the installation of 1 AGU module

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
	Bus flat cable, 5 connectors	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1
WAGO	Terminal block (L), 4 Poles	1
	Terminal block (N), 4 Poles	1
	Terminal block (PE), 4 Poles	1
	End Plate, Gray	1
AGU Box, Nesta Chrome (boiler casing extension)		1

Nesta Chrome - AGU extension kit: for additional AGU module(s) (max 2)

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1

CoilMaster 35 to 120

CoilMaster - AGU Starter Kit: allows the installation of 1 AGU module

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
	Bus flat cable, 5 connectors	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1
WAGO	Terminal block (L), 4 Poles	1
	Terminal block (N), 4 Poles	1
	Terminal block (PE), 4 Poles	1
	End Plate, Gray	1

CoilMaster - AGU extension kit: for additional AGU module(s) (max 2)

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1

"Preparation of High Voltage and Low Voltage wire harnesses" on page 10

Nesta 120 to 250

Nesta - AGU Starter Kit: allows the installation of 1 AGU module

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
	Bus flat cable, 2 connectors	1
WAGO	Terminal block	11
	Terminal block	2
	Terminal block marker	1
	Terminal block, 7 holes, without insulation	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1
Rivet		2
Cable Gland and locknut		3
Label, Nesta Front panel, AGU Starter Kit		1
Label, ground		1

Nesta - AGU Extension kit: for additional AGU module(s) (max 2)

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
	Bus flat cable, 2 connectors	1
WAGO	Terminal block	11
	Terminal block marker	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1
Label, Nesta Front panel, AGU extension Kitl		1

Nesta Plus 280 to 840

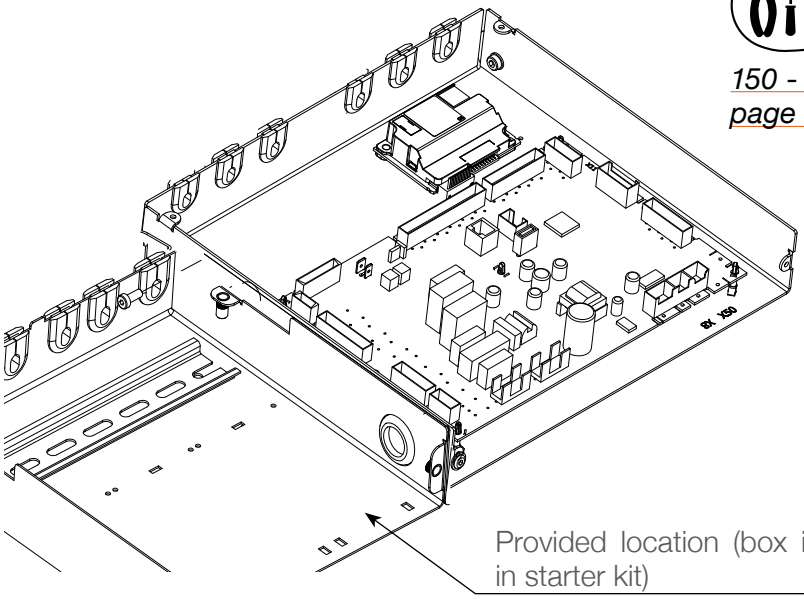
Nesta Plus - AGU extension kit: for additional AGU module(s) (max 2)

Part		Qty
AGU module	Extension Clip-in AGU 2.550	1
	Bus flat cable, 2 connectors	1
WAGO	Terminal block	11
	Terminal block	1
	Terminal block	2
	Terminal block marker	1
HV Connector (to be cabled)		1
LV Connector (to be cabled)		1
Cable Gland and locknut		3
Label, Front panel 2		1

Installation Location

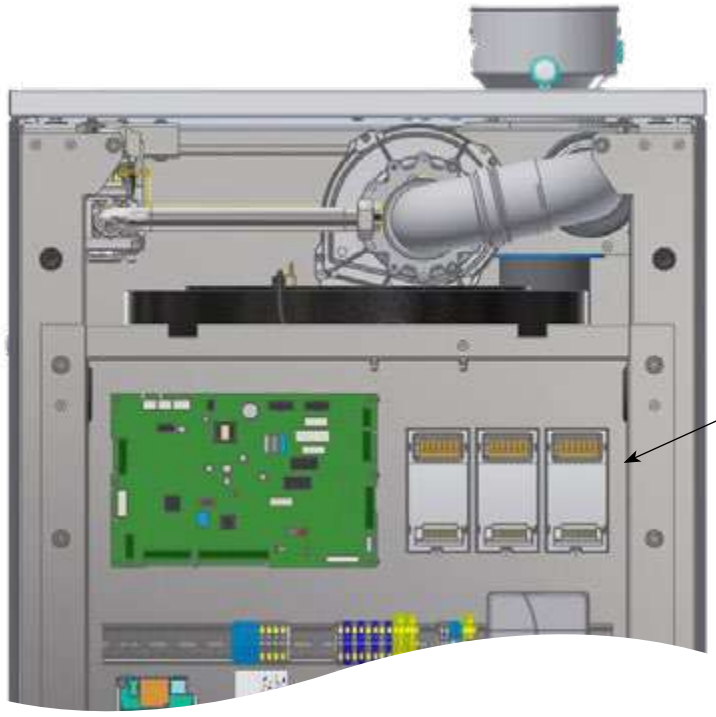
To access the extension ClipIn module installation location, please refer to the appliance installation and maintenance manual.

Nesta Chrome 60 to 150



"Nesta Chrome 60 to 150 - Starter Kit Installation" on page 14

CoilMaster 35 to 120



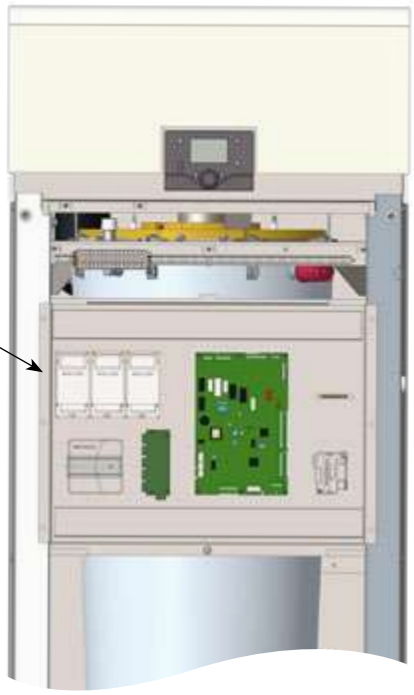
The position may slightly differ according to the model.

"CoilMaster 35 to 120 - Starter Kit Installation" on page 22

Nesta 120 to 250

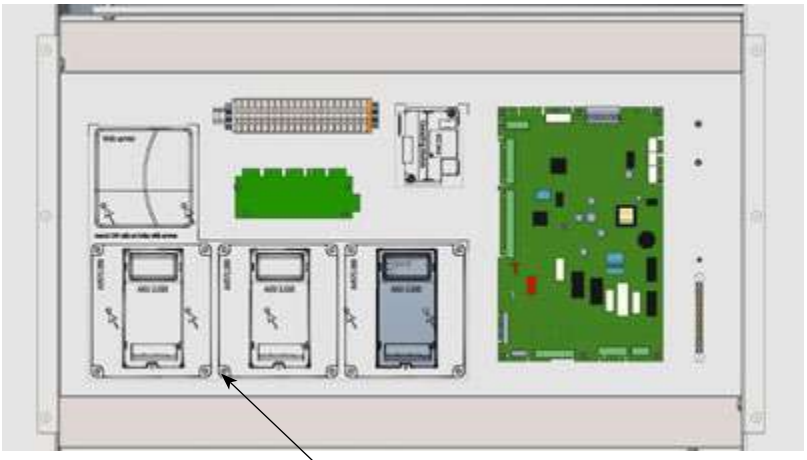
"Nesta 120 to 250 - Starter Kit Installation" on page 28

Provided location - for up to 3 AGU modules, marked with a sticker



Nesta Plus 280 to 840 (one AGU module already installed as standard)

"Nesta Plus 280 to 840 - Extension Kit Installation" on page 36



Provided locations for 2 additional AGU modules, marked with stickers

Preparation of High Voltage and Low Voltage wire harnesses

Tools and material:

- Wire of the correct type (L, N and ground)
- Single and double wire ferrules for wire connection to terminals
- Electrical toolbox

Process:

The wire harnesses should be prepared beforehand to make later installation easier. The High and Low voltage (HV and LV) harnesses need to be equipped at one end with the HV and LV connectors provided in the kits.

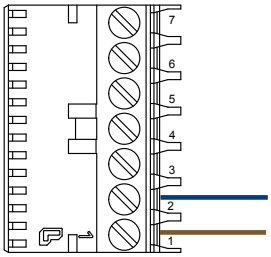
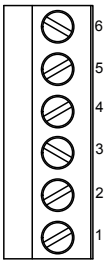
- *Please note that in some cases, additional individual pieces of wires may be required for specific connections.*

- *Always use the same wire diameter inside a harness and protect the ends of wires with bootlace ferrules.*

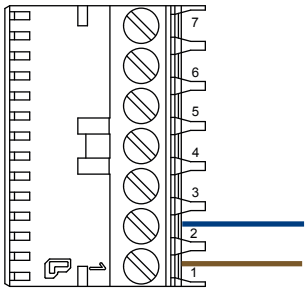
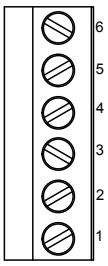
- **Wires and harness assembly should comply with the requirements stated in the technical specifications (see *"Technical data" on page 5*) and with all applicable EU and local standards and regulations.**
- **Assembly and installation must be performed by qualified personnel, with state-of-the-art techniques and in compliance with all applicable EU and local standards and regulations.**

The following tables state, for each appliance range, the required wire length and colour and the installation details.

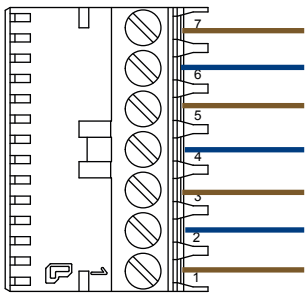
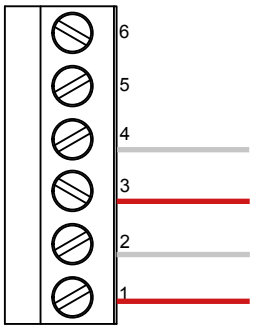
NESTA CHROME 60 to 150

	Colours / nb of pieces	Min length	Max length	Where to connect	kit type
HV harness	Brown (L) ..... 1 Blue (N) / 1	300 mm	330 mm		Starter Extension
LV harness	Connect Low voltage accessories to the AGU module using this connector, routing the LV cable through the dedicated grommets at the bottom of the boiler. Refer to the appliance Installation and Maintenance Manual fo more information				Starter Extension
Free ends cables	Brown (L) ..... 1 Blue (N) / 1	350 mm	380 mm	Crimp together one end of 350 mm and 400 mm brown wires using double ferrule. Do the same for blue wires. Install single ferrules at both ends of Yellow/Green wire	Starter
	Brown (L) ..... 1 Blue (N) / ..... 1 Yellow/Green (PE) ... 1	400 mm	430 mm	Double ferrule end to boiler terminal strip Single ferrule end (L & N) to AGU terminal block (400 mm) and to power supply connector (350 mm) PE wire between AGU terminal. block and boiler terminal block	Starter

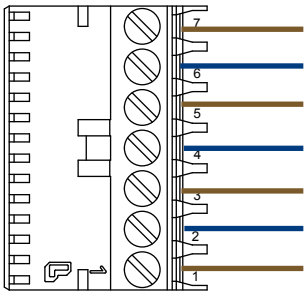
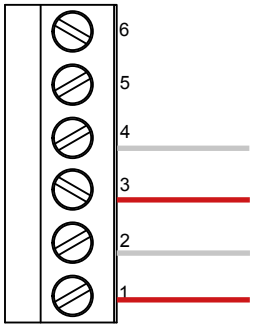
COILMASTER 35 to 120

	Colours / nb of pieces	Min length	Max length	Where to connect	kit type
HV harness	Brown (L) ..... 1 Blue (N) / 1	270 mm	300 mm		Starter Extension
LV harness	Connect Low voltage accessories to the AGU module using this connector, routing the LV cable through the dedicated grommets at the bottom of the boiler. Refer to the appliance Installation and Maintenance Manual fo more information				Starter Extension
Free ends cables	Brown (L) ..... 1 Blue (N) / 1	270 mm	300 mm	Install ferrules at all wire ends Connect to AGU terminal block and to power supply connector (Boiler management unit)	Starter
	Yellow/Green (PE) ... 1	270 mm	300 mm	Install ferrules at all wire ends Connect to boiler terminal block and to AGU terminal block	Starter

NESTA 120 to 250

	Colours / nb of pieces	Min length	Max length	Where to connect	kit type
HV harness	Brown (L) ..... 4 Blue (N) / 3	2430 mm	2460 mm		Starter Extension
LV harness	Red (signal) ..... 2 White (ground) 2	1100 mm	1130 mm		Starter Extension
Free ends cables	Yellow/Green (earth) 1	650 mm	680 mm	Rear box - Between Q2 and Q3 ground strip	Starter
	Yellow/Green (earth) 2	210 mm	240 mm	Rear box - between terminal strip and Q3 ground strip	Starter
	Brown (L) ..... 1 Blue (N)..... 1	500 mm	530 mm	Rear box - between relay and terminal strip	Starter

NESTA PLUS 280 to 840

	Colours / nb of pieces	Min length	Max length	Where to connect	kit type
HV harness	Brown (L) ..... 4 Blue (N) / 3	4010 mm (Nesta Plus 280 to 570)	4040 mm (Nesta Plus 280 to 570)		Extension
		4600 mm (Nesta Plus 840)	4630 mm (Nesta Plus 840)		
LV harness	Red (signal) ..... 2 White (ground) 2	1200 mm	1230 mm		Extension
Free ends cables	Yellow/Green (earth) 2	150 mm	180 mm		Extension

Nesta Chrome 60 to 150 - Starter Kit Installation

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

Conditions: OFF

Tools and material:

- AGU starter kit
- Prepared harness and wire pieces
- Single and double wire ferrules for wire connection to terminals
- Electrical toolbox

AGU Extension Module Installation Procedure:

1. Remove boiler front panel, refer to appliance Installation and Maintenance manual.
2. Remove one screw (**1**). Retain for installation.
3. Lower the electronic casing (**2**).
4. Release four screws and remove protective cover from main electronic casing (**2**). Retain hardware for reinstallation.
5. Release four screws (**3**) and remove cover (**4**) from the AGU casing (**5**) provided in the kit.
6. Install AGU casing (**5**) base on electronic casing (**2**) using two screws (**6**).
7. Clip 4-pole terminal blocks provided in the kit on the DIN rail (**7**).

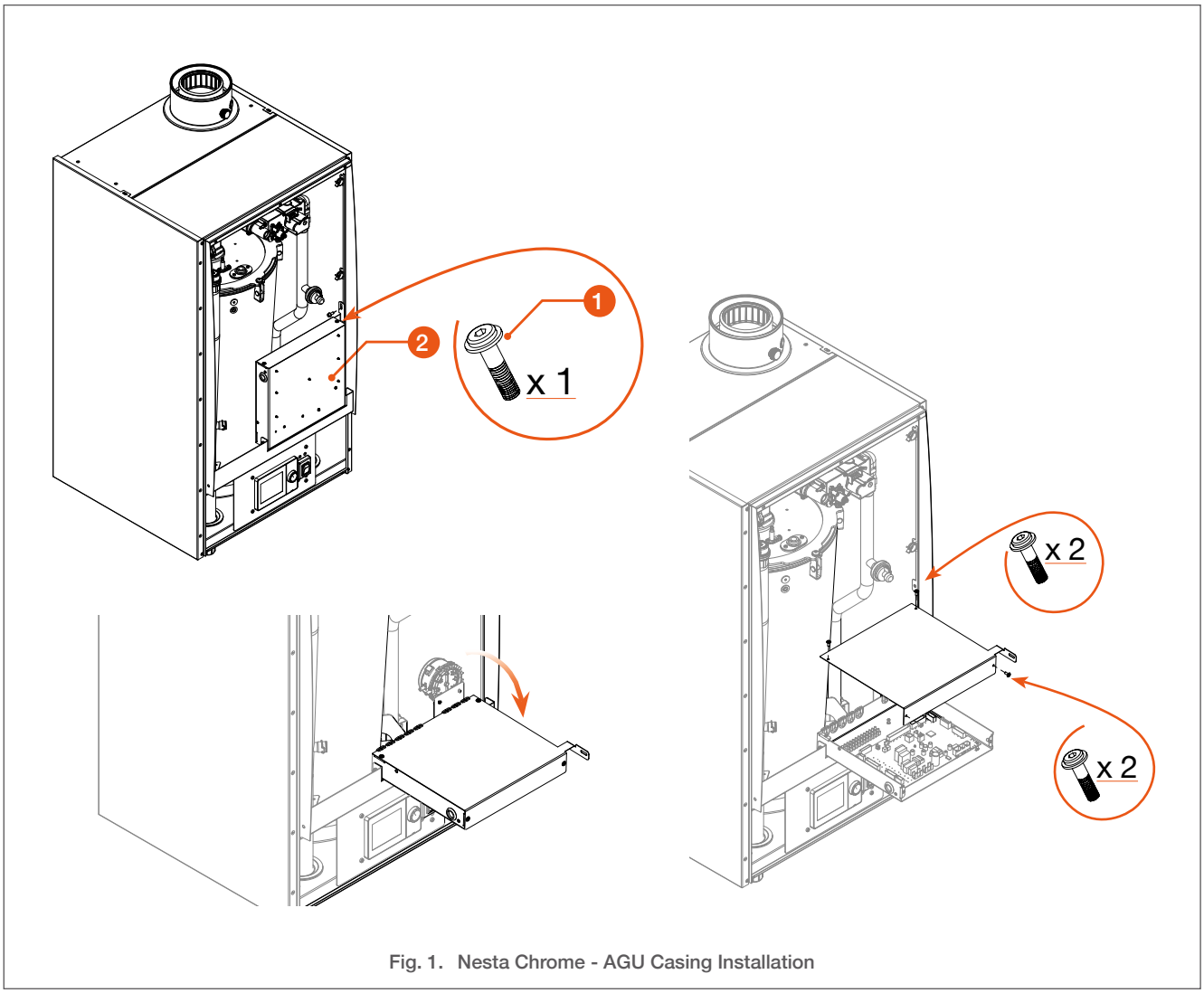
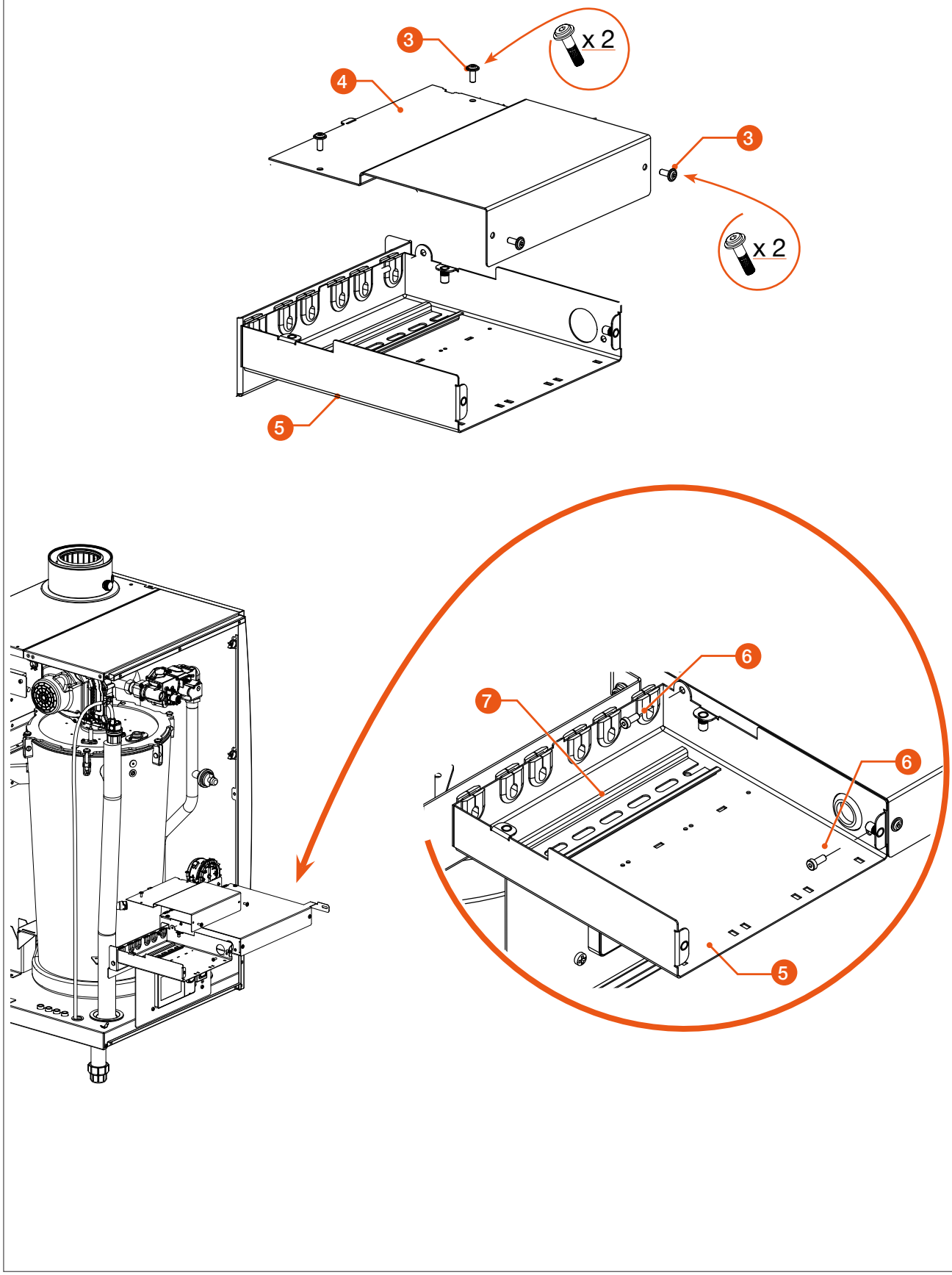


Fig. 1. Nesta Chrome - AGU Casing Installation


3
x 2
4
3
x 2
5
6
7
6
5

AGU Connection Procedure

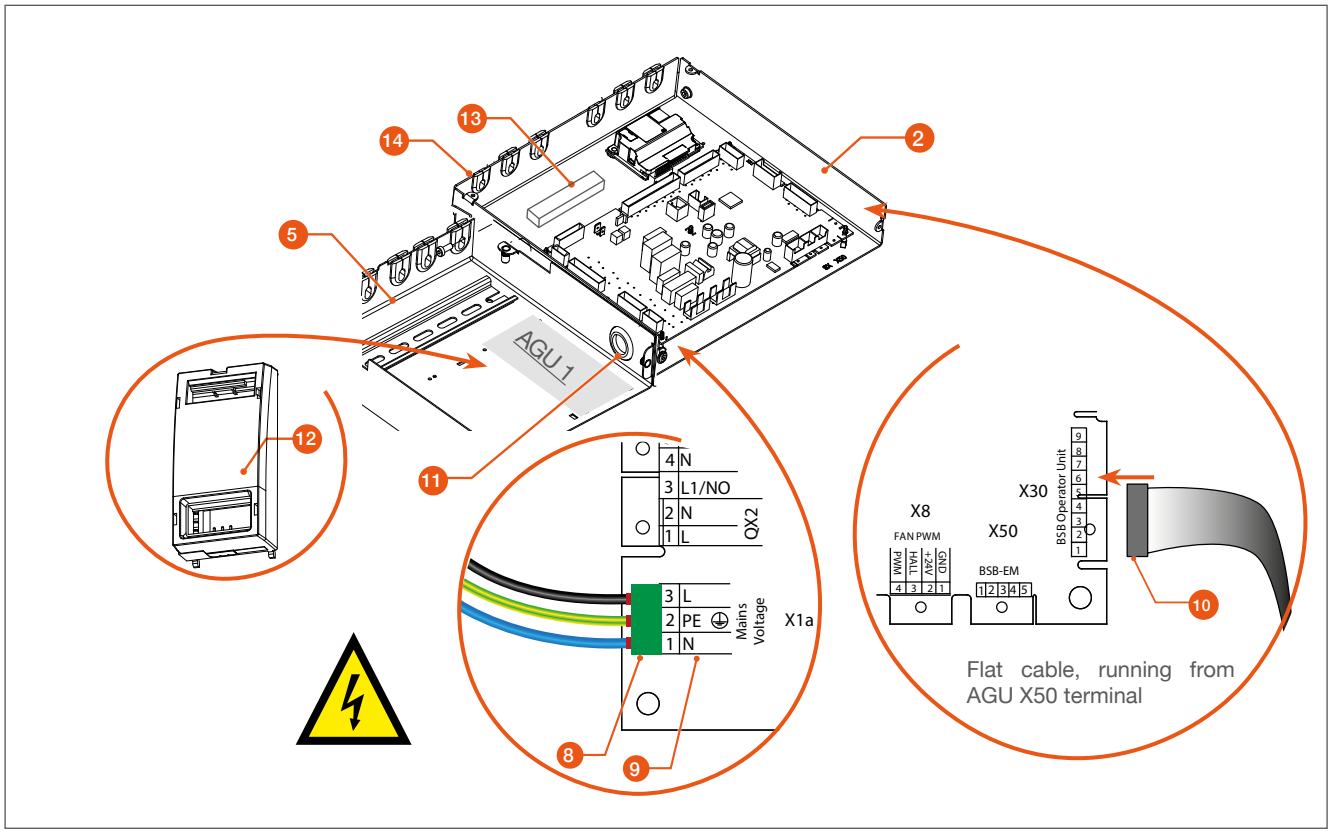
Make sure that the power supply to the appliance is deactivated

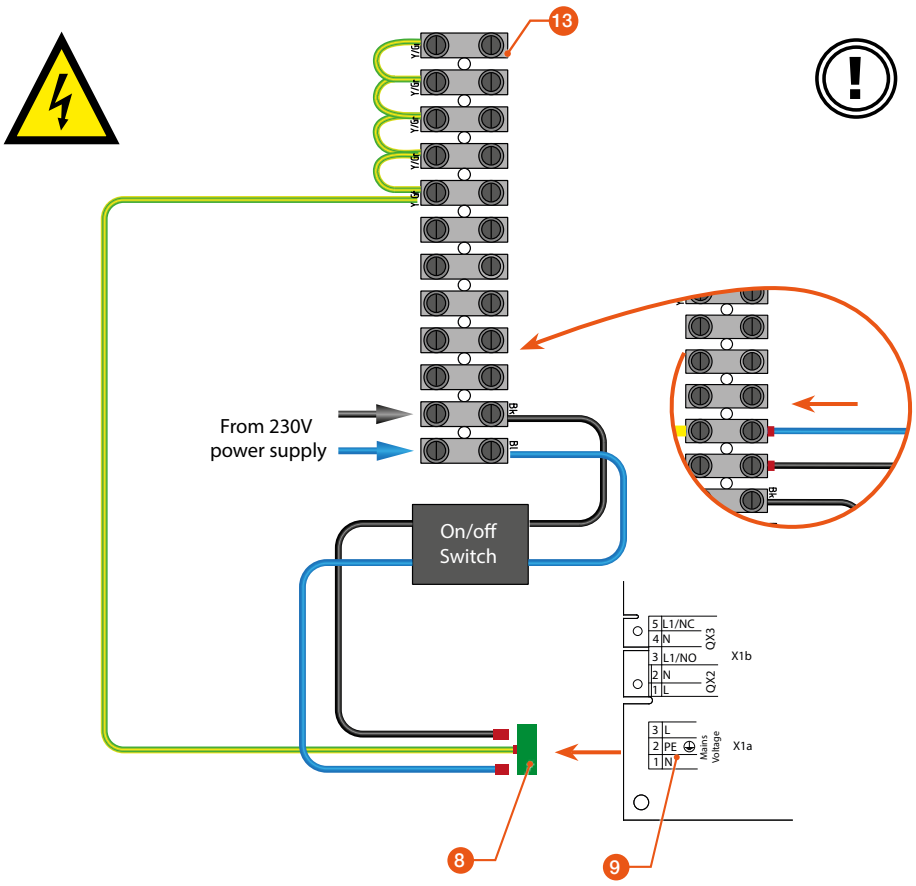
1. On electronic board, disconnect 230 V power supply connector (**8**) from X1a terminal (**9**).
2. Push flat cable connector (**10**) through the electronic casing cable gland (**11**).
3. Clip AGU module (**12**) into the provided holes of the AGU casing (**5**).
4. Connect flat cable connector (**10**) to boiler management unit X30 terminal (BSB), pins 1 to 5.
5. Connect the other end of the cable to AGU module (**12**) X50 terminal.
6. Disconnect L and N wires (black and blue) from power supply connector (**8**).
7. Install those two wires into free terminal strip (**13**) connections.
8. Install 40 cm wires with double ferrule ends into boiler terminal strip (**13**).
9. Install single ferrule ends wires into AGU terminal block (**15**) located in AGU casing (**5**), passing the cables through grommet (**14**).
10. Install single-wire ferrules on the ends of the 35 cm pieces (L and N) and connect them to the power supply connector (**8**).
11. Reconnect power supply connector (**8**) to X1a terminal (**9**).
12. Install free ends of prepared HV harness to the terminal block (**15**) and connect HV connector to the X1 terminal (**16**) of the AGU module.

Follow-on tasks:

1. Connect accessories to High voltage terminal X1 (pump QX23, Mixing valve QX21 and QX22), through free terminals of HV connector.
2. Connect accessories to low voltage X2 terminal, using LV connector.
3. Perform required setup,

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.





Depending on model configuration, some bridges may be present on L and N terminals of the block. Remove brigdes to carry out the installation.

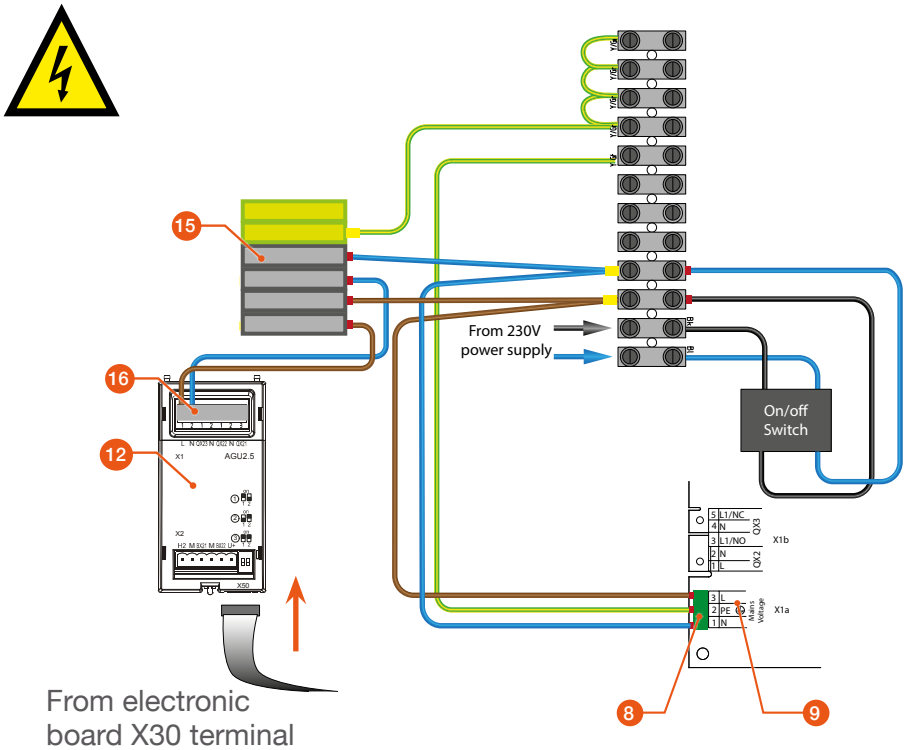


Fig. 2. Nesta Chrome Starter Kit Installation - Connections

Nesta Chrome 60 to 150 - Extension Kit Installation

AGU Connection Procedure

Make sure that the power supply to the appliance is deactivated

1. Clip AGU module (**1**) into the provided holes of the AGU casing (**2**).
2. Connect second connector of flat cable (**3**) to AGU module 2 (**1**) X50 terminal.
3. Install free ends of prepared HV harness to the terminal block (**5**) and connect HV connector to the X1 terminal (**4**) of the AGU module (**1**).
4. Proceed the same way for AGU module 3 (if any).

Follow-on tasks:

1. Connect accessories to High voltage terminal X1 (pump QX23, Mixing valve QX21 and QX22), through free terminals of HV connector.
2. Connect accessories to low voltage X2 terminal, using LV connector.
3. Perform required setup.

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.

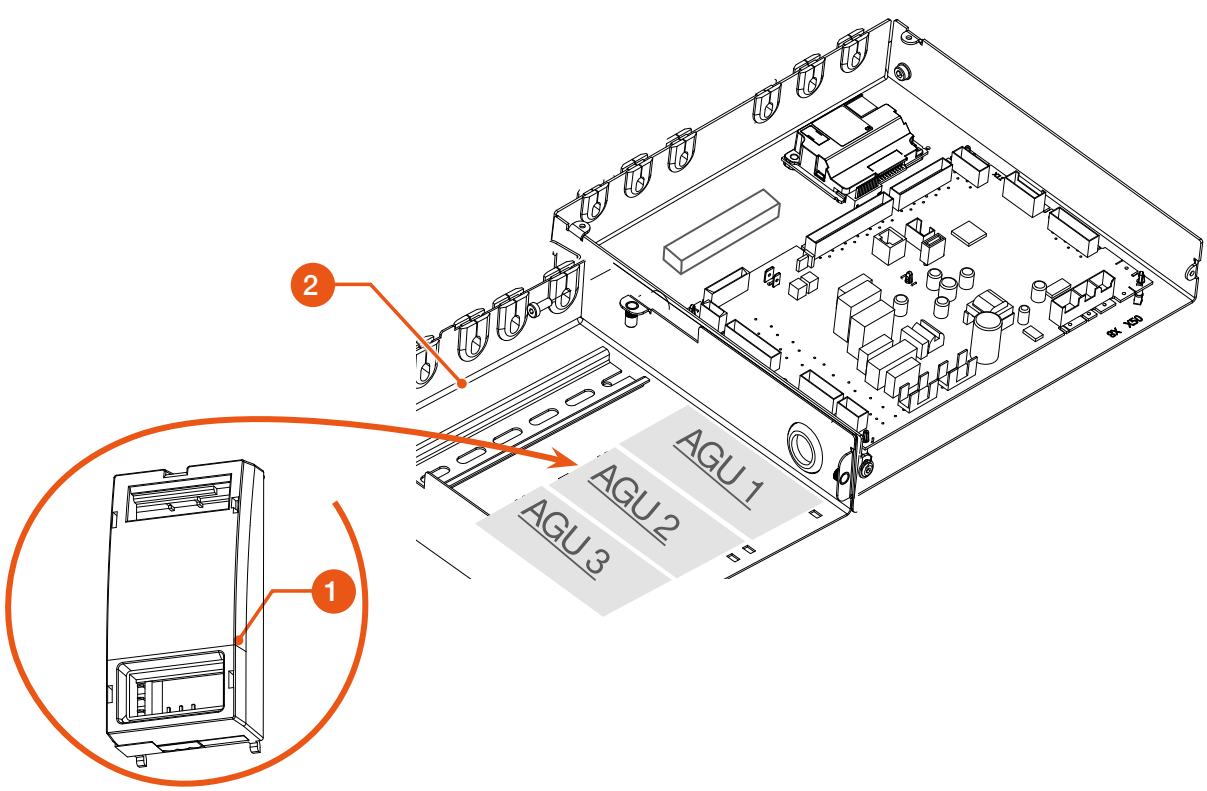


Fig. 3. Nesta Chrome - Extension Kit installation

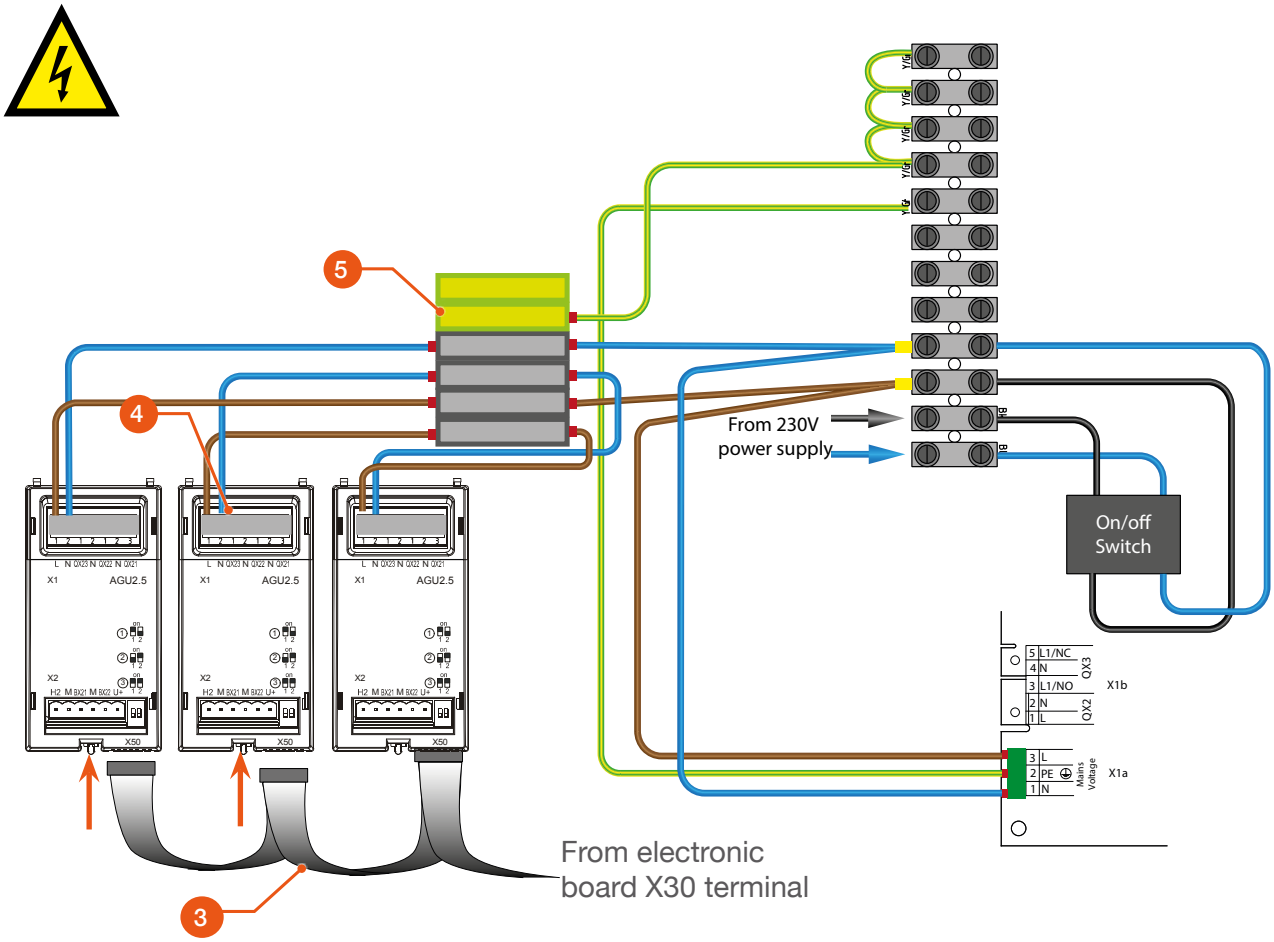
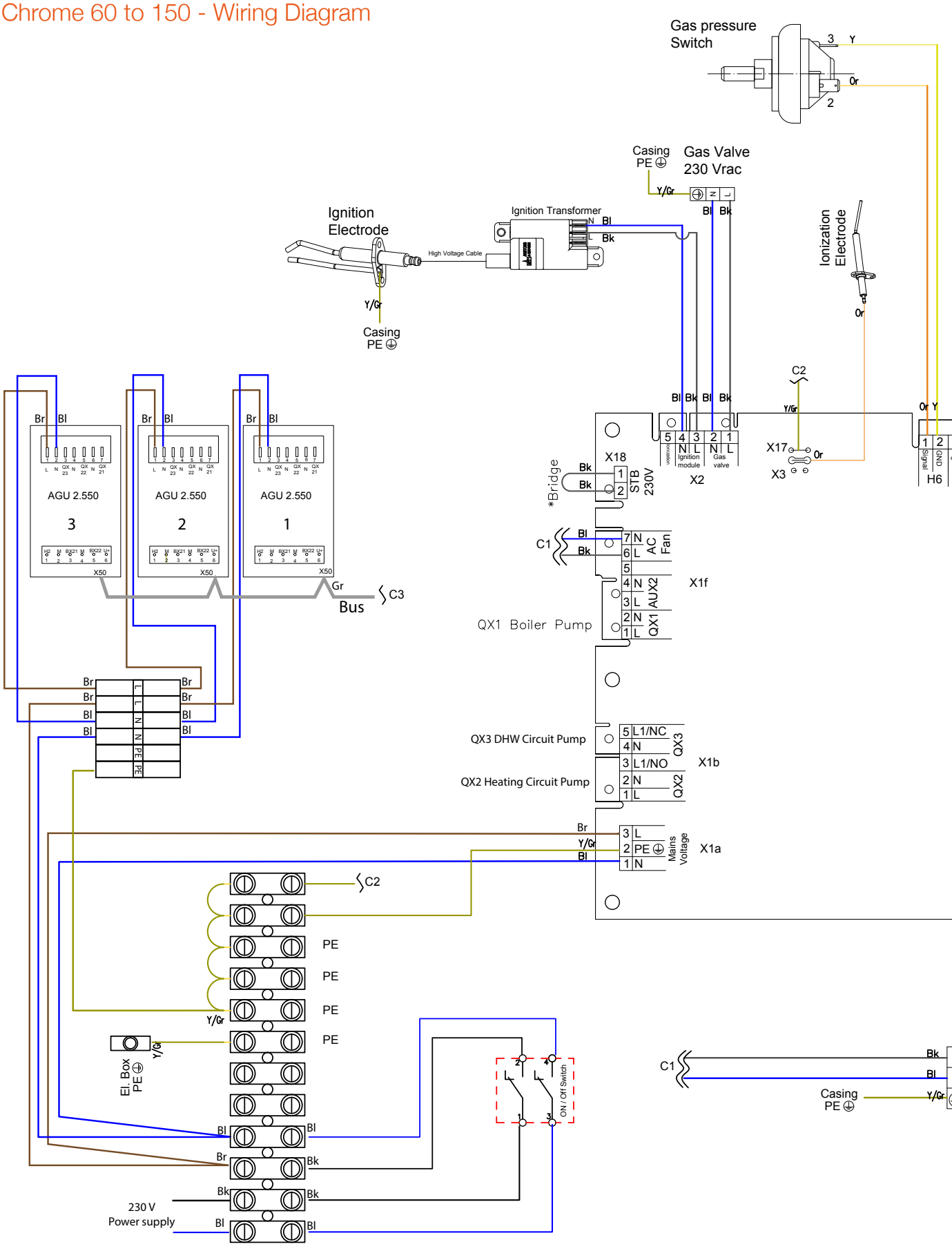
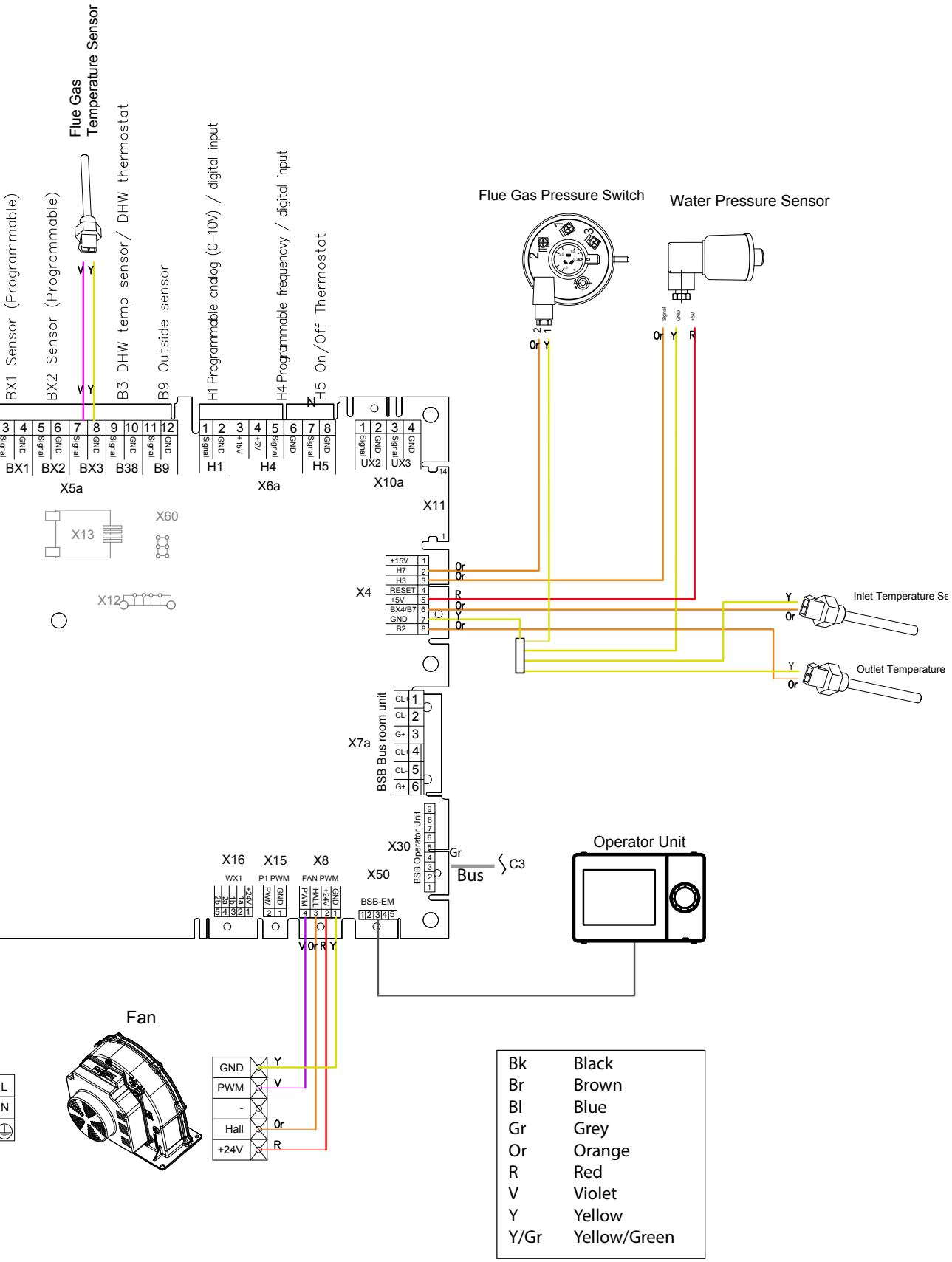


Fig. 4. Nesta Chrome - Extension Kit Connection

Nesta Chrome 60 to 150 - Wiring Diagram





Bk	Black
Br	Brown
Bl	Blue
Gr	Grey
Or	Orange
R	Red
V	Violet
Y	Yellow
Y/Gr	Yellow/Green

CoilMaster 35 to 120 - Starter Kit Installation

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

Conditions: OFF

Tools and material:

- AGU starter kit
- Prepared harness and wire pieces
- Single and double wire ferrules for wire connection to terminals
- Electrical toolbox

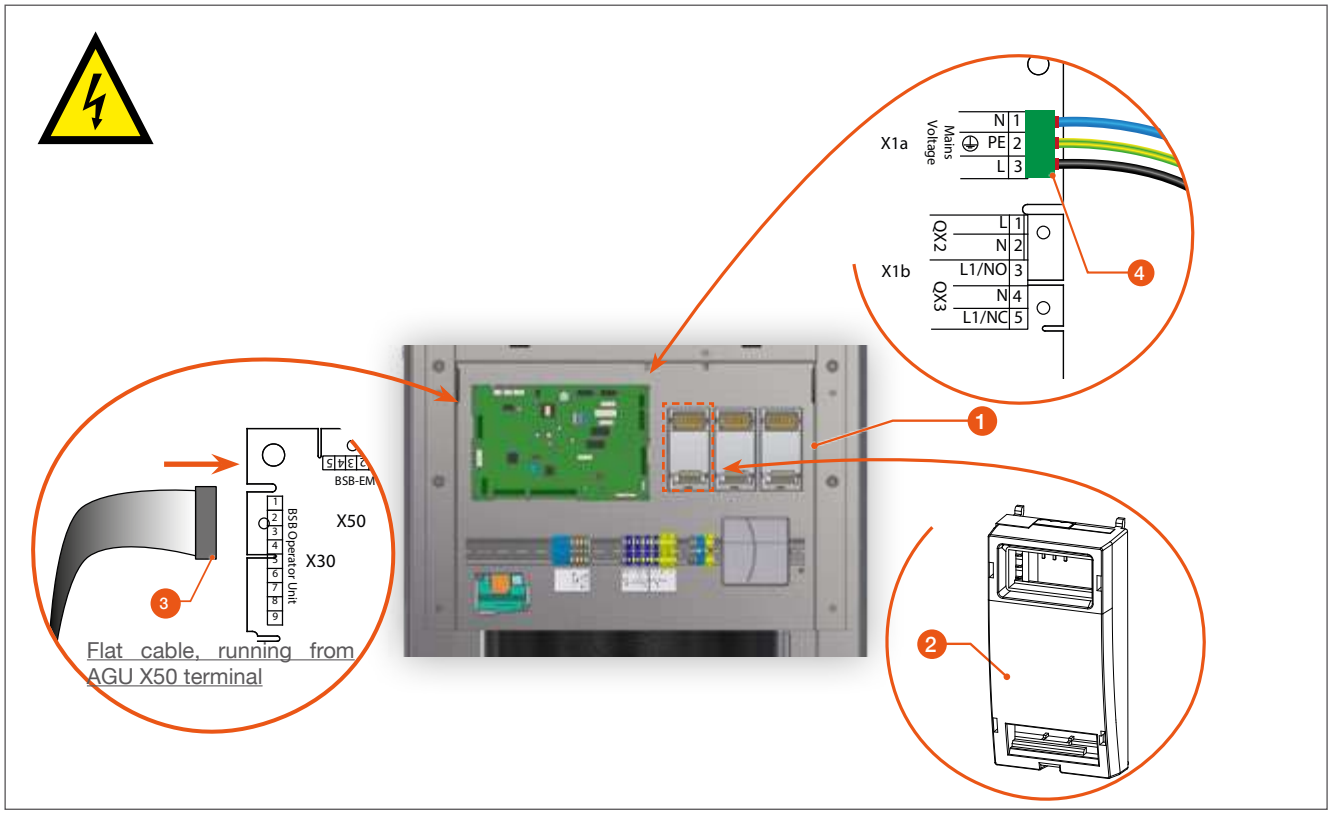
AGU Connection Procedure

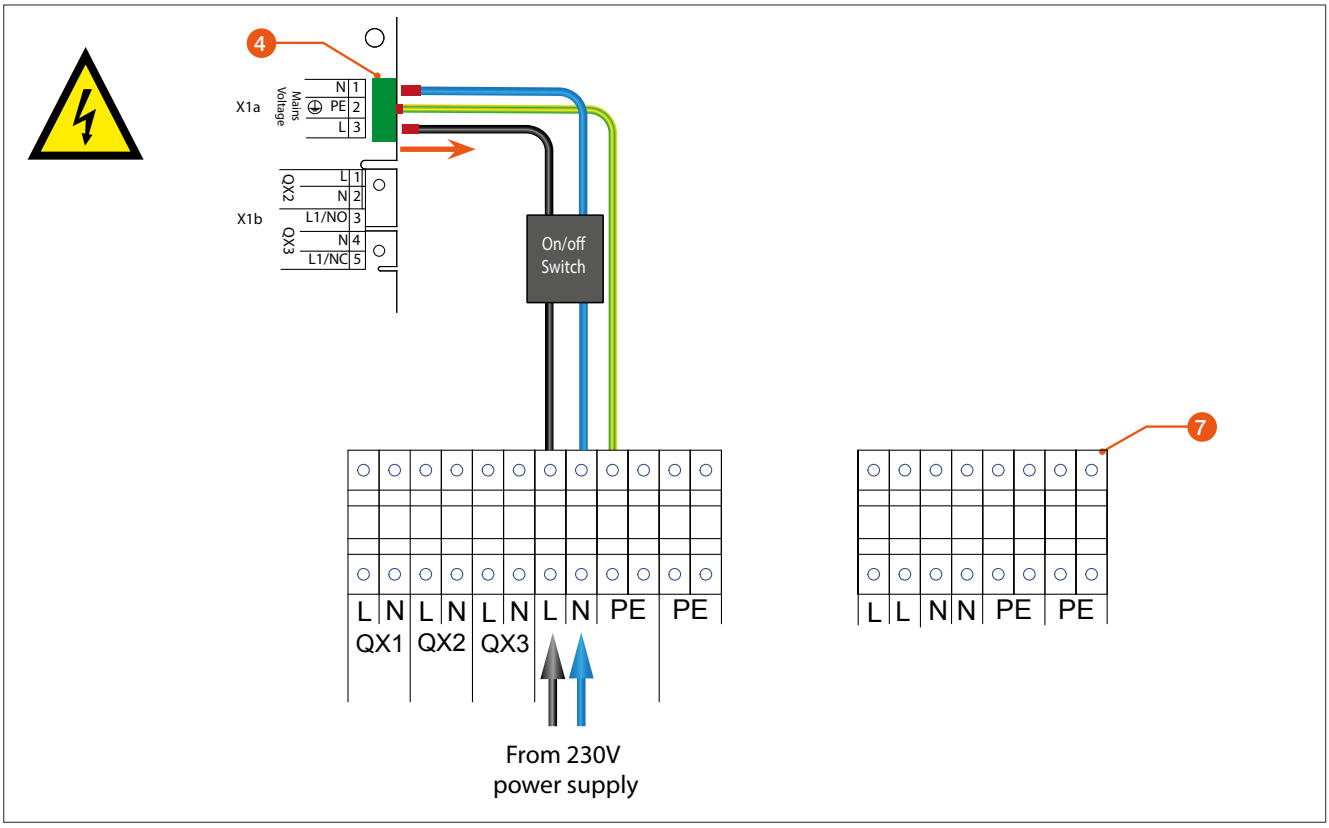
1. Remove boiler front panel, refer to appliance Installation and Maintenance manual.
2. Install provided terminal blocks (**7**) on DIN rail.
3. Clip AGU module (**2**) into the provided holes of the electronic box (**1**).
4. Connect flat cable connector (**3**) to boiler management unit X30 terminal (BSB), pins 1 to 5.
5. Connect the other end of the cable to AGU module (**6**) X50 terminal.
6. On boiler management unit, disconnect 230 V power supply connector (**4**) from X1a terminal.
7. Disconnect L and N wires (black and blue) from power supply connector (**4**) and install those two wires into AGU terminal block (**7**).
8. Install yellow/green wire between boiler terminal block (**8**) and AGU terminal block (**7**).
9. Install brown and blue wire pieces into AGU terminal block (**7**) and the other ends into the power supply connector (**4**).
10. Reconnect power supply connector (**4**) to X1a terminal.
11. Install free ends of prepared HV harness to the AGU terminal block (**7**) and connect HV connector to the X1 terminal (**9**) of the AGU module.

Follow-on tasks:

1. Connect accessories to High voltage terminal X1 (pump QX23, Mixing valve QX21 and QX22), through free terminals of HV connector.
2. Connect accessories to low voltage X2 terminal, using LV connector.
3. Perform required setup.

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.





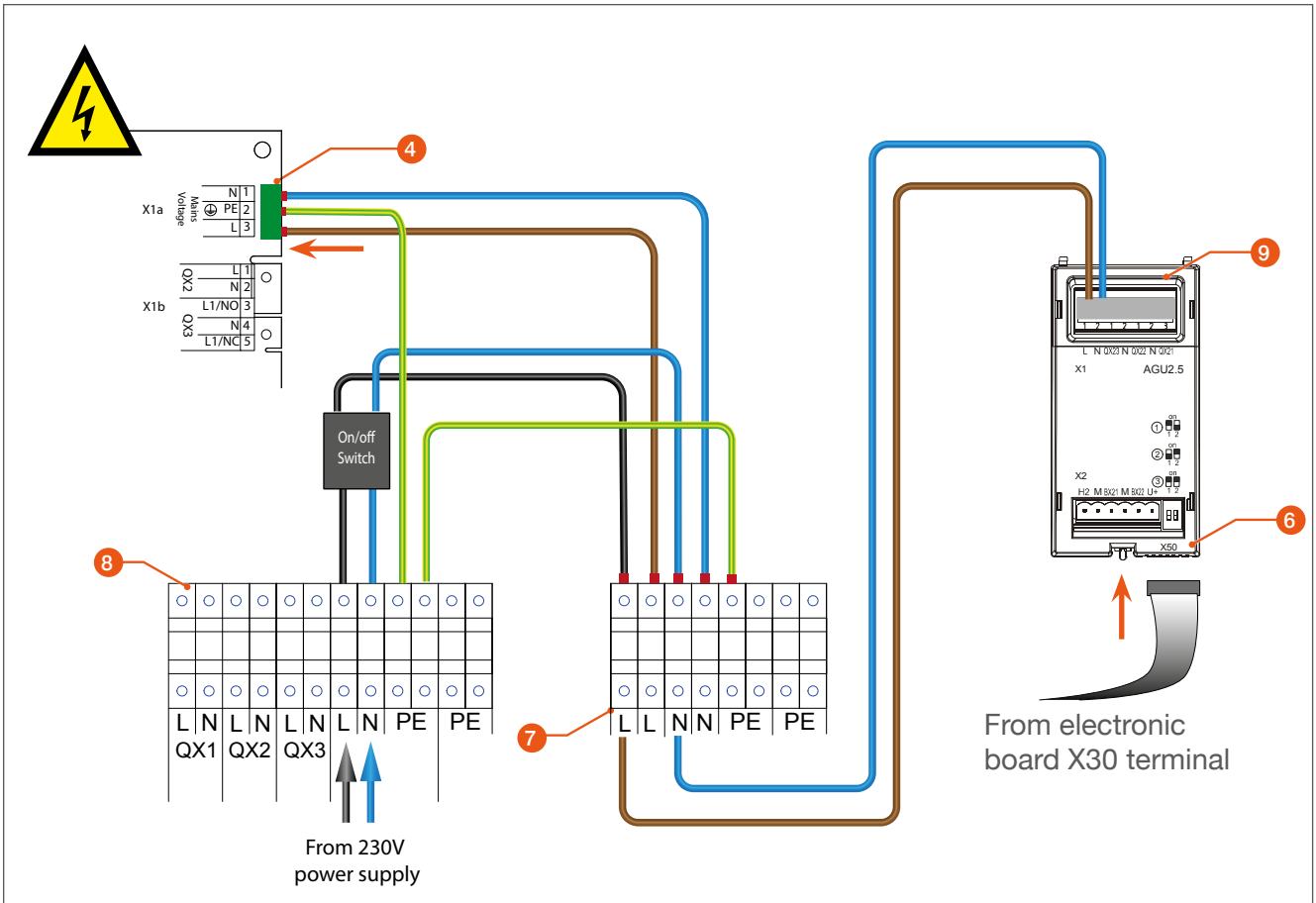


Fig. 5. CoilMaster - Starter Kit installation and Connection

CoilMaster 35 to 120 - Extension Kit Installation

AGU Connection Procedure

Make sure that the power supply to the appliance is deactivated

1. Clip AGU module (**1**) into the provided holes of the electronic box (**2**).
2. Connect second connector of flat cable (**3**) to AGU module 2 (**1**) X50 terminal.
3. Install free ends of prepared HV harness to the terminal block (**5**) and connect HV connector to the X1 terminal (**4**) of the AGU module (**1**).
4. Proceed the same way for AGU module 3 (if any).

Follow-on tasks:

1. Connect accessories to High voltage terminal X1 (pump QX23, Mixing valve QX21 and QX22), through free terminals of HV connector.
2. Connect accessories to low voltage X2 terminal, using LV connector.
3. Perform required setup.

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.

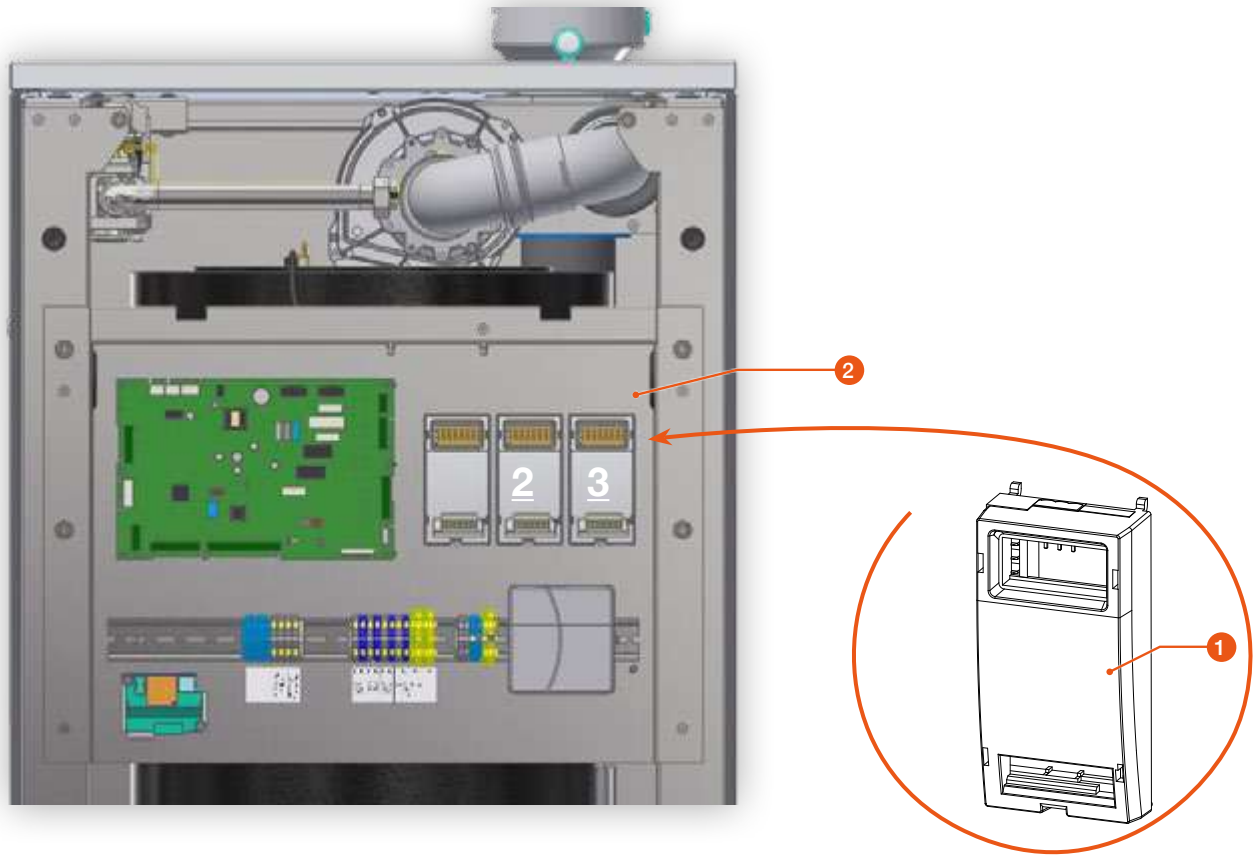


Fig. 6. CoilMaster - Extension Kit installation

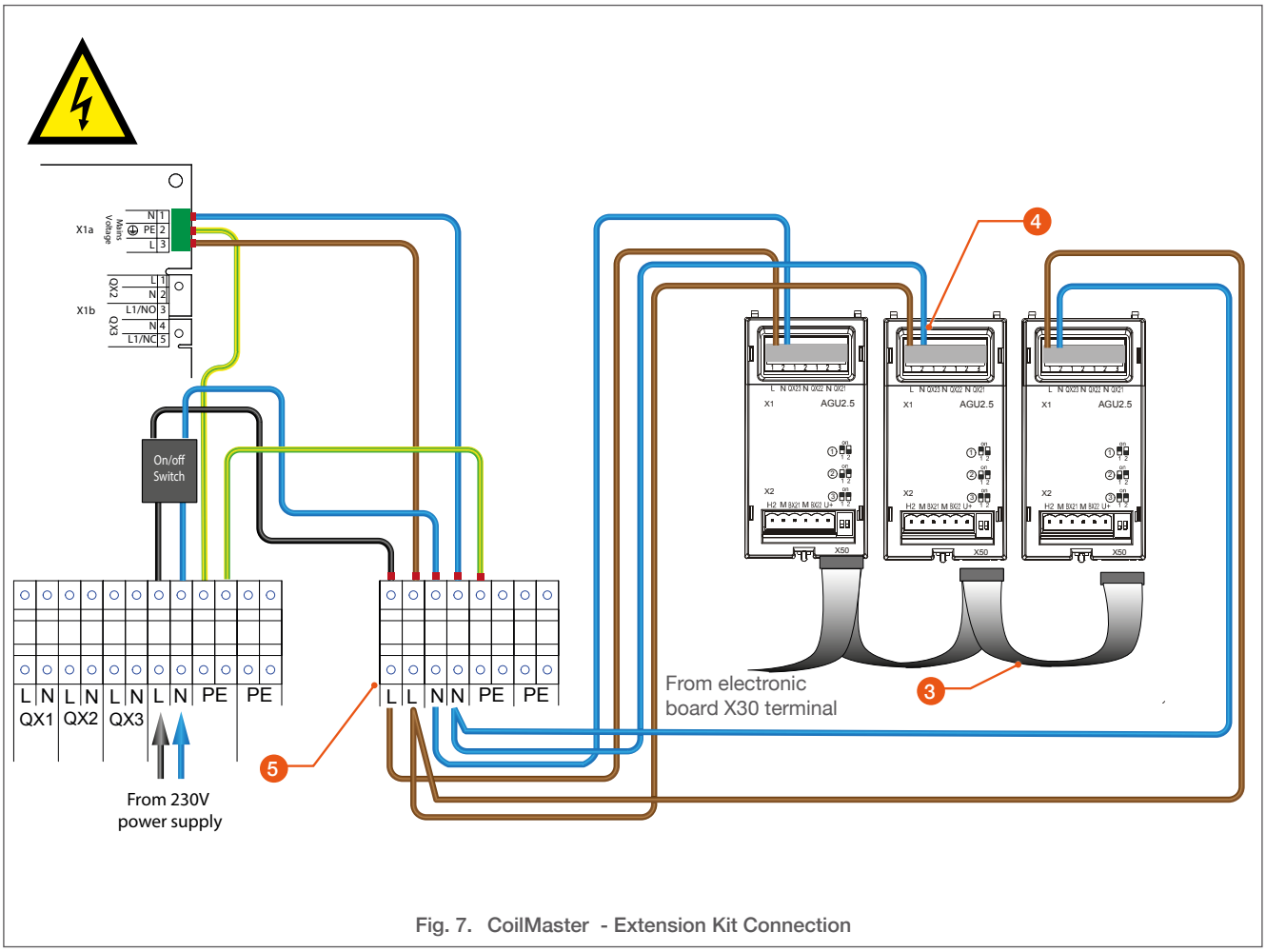
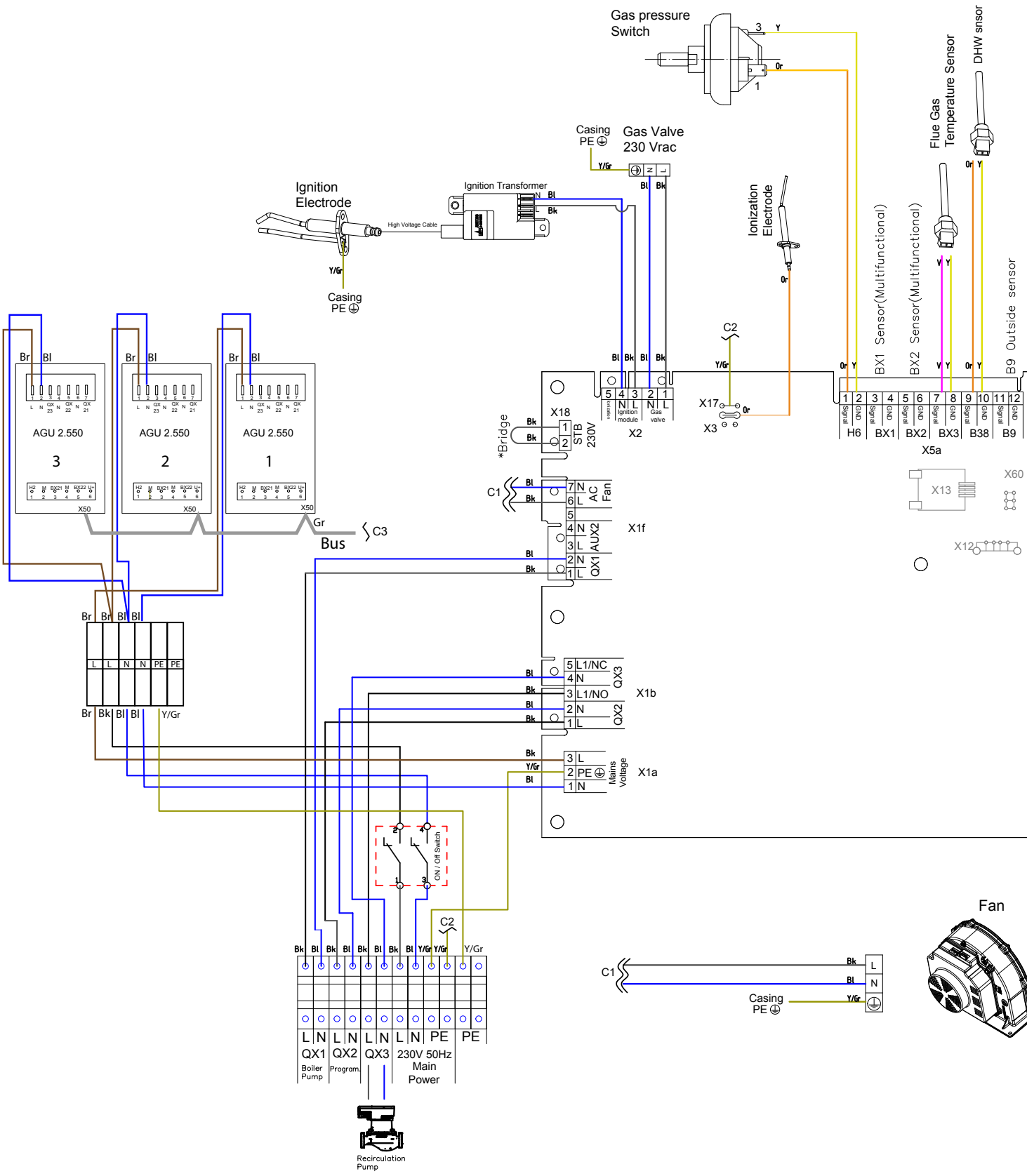
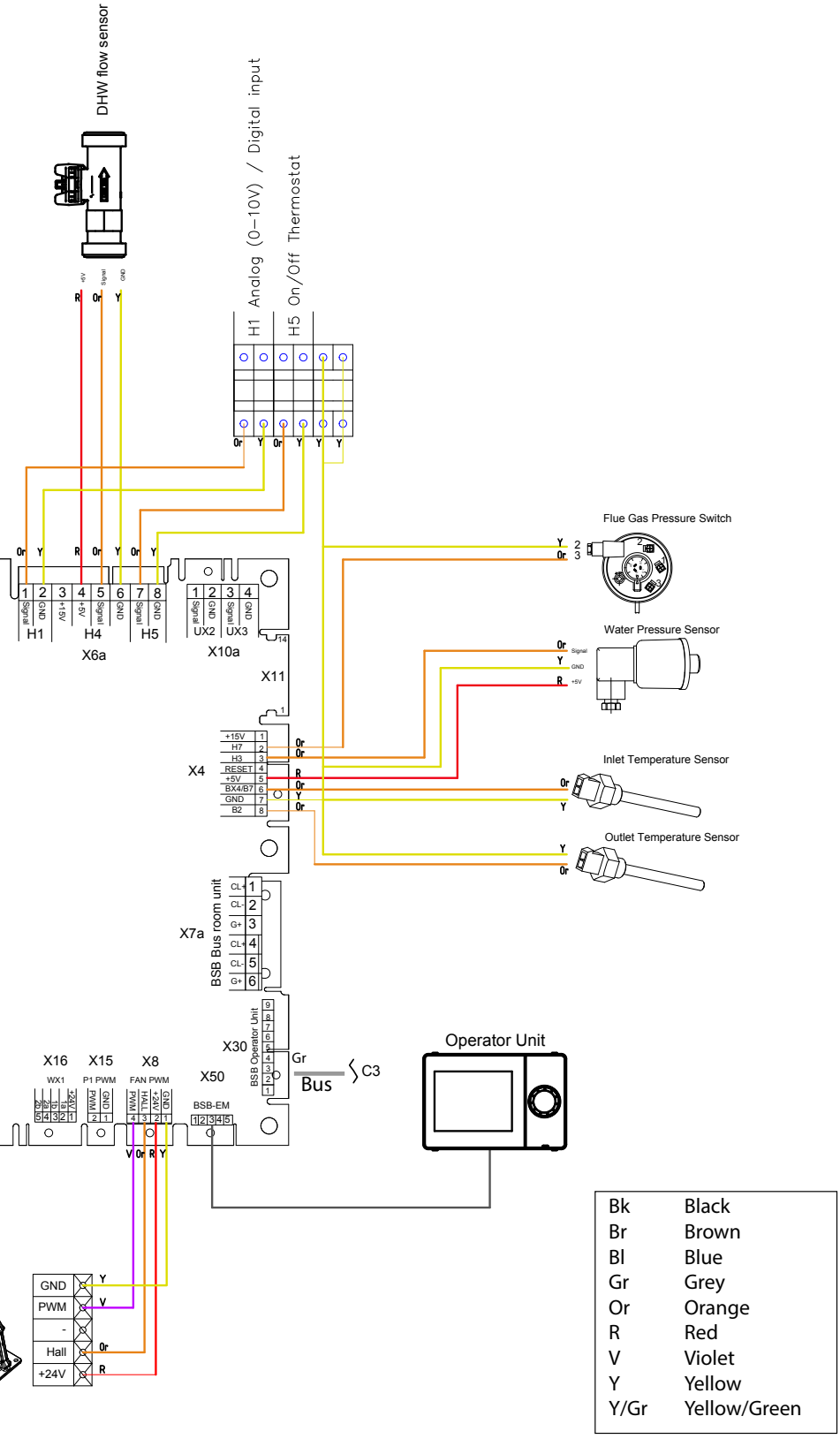


Fig. 7. CoilMaster - Extension Kit Connection

CoilMaster 35 to120 - Wiring Diagram





Bk	Black
Br	Brown
Bl	Blue
Gr	Grey
Or	Orange
R	Red
V	Violet
Y	Yellow
Y/Gr	Yellow/Green

Nesta 120 to 250 - Starter Kit Installation

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

Conditions: OFF

Tools and material:

- AGU starter kit
- Wire of the correct type (L, N and ground)
- Ferrules for wire connection to terminals
- Electrical toolbox

Installation Procedure - Front:

1. Remove boiler front panel, refer to appliance Installation and Maintenance manual.
2. Clip AGU module (**1**) into the provided holes in the dedicated location (**2**). Use the location the closest to the boiler management unit.
3. Remove end-stop and end-plate (**3**) from terminal block. Retain for reinstallation.
4. Install a 4-block terminal (**4**) on the DIN rail, and reinstall the end-stop and end-plate (**3**) removed previously.
5. Install markers on block terminals.
6. Place sticker (**5**) on the frame above the terminal block, to identify the destination of the new connections.

Installation Procedure - Rear:

1. Open rear electronic box access panel. Refer to appliance Installation and Maintenance manual.
2. Remove end-stop and end-plate (**6**) from terminal block. Retain for reinstallation.
3. Install a 7-block terminal (**7**) on the DIN rail, and reinstall the end-stop and end-plate (**6**) removed previously.
4. Install grounding bar (**8**) using two rivets. Push them into provided holes.
5. Place ground identification sticker (**9**) under the grounding strip.
6. Install two cables glands (**10**).

The lower one should be used for accessories to be connected to HV terminal strip at the back (e.g. pumps, valves, etc.), the upper one for accessories to be connected to LV terminal strip at the front of the boiler (e.g. sensors, etc.).

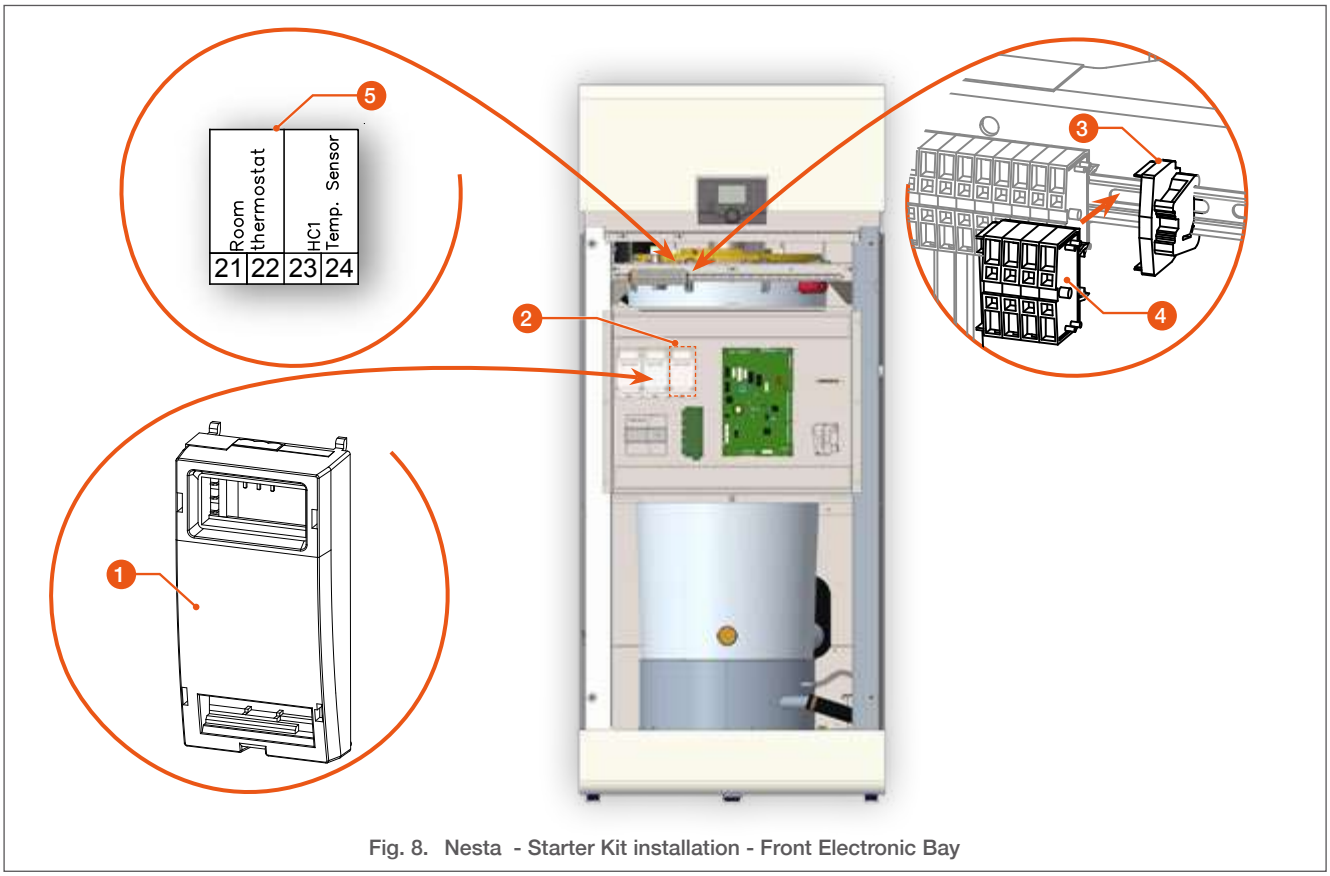


Fig. 8. Nesta - Starter Kit installation - Front Electronic Bay

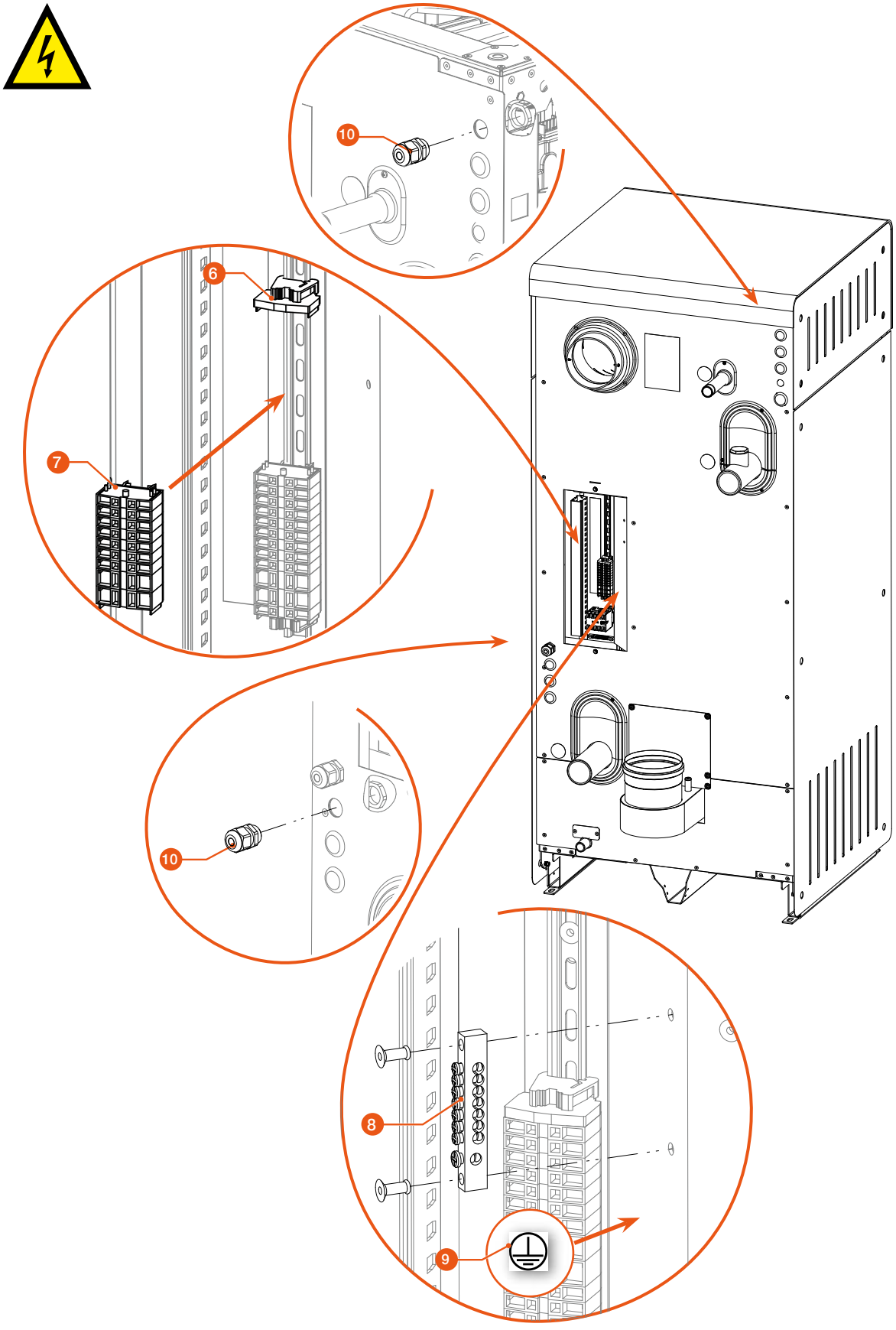


Fig. 9. Nesta - Starter Kit installation - Rear electrical box

Connection procedures

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

1. Connect grey flat cable connector (1) to AGU X50 connection (2) and to a free cable hub terminal (3), as shown in picture below.
2. Connect LV wire harness connector (4) to AGU module (2) and the free ends of the harness to the front terminal strip (5), using ferrules, as indicated in the picture below. Route the wires as shown on the opposite page.
3. Connect HV wire harness connector (6) to AGU module (2) and the free ends of the harness to the rear terminal strip (7), using ferrules, as indicated in the picture below. Route the cables as shown on the opposite page.

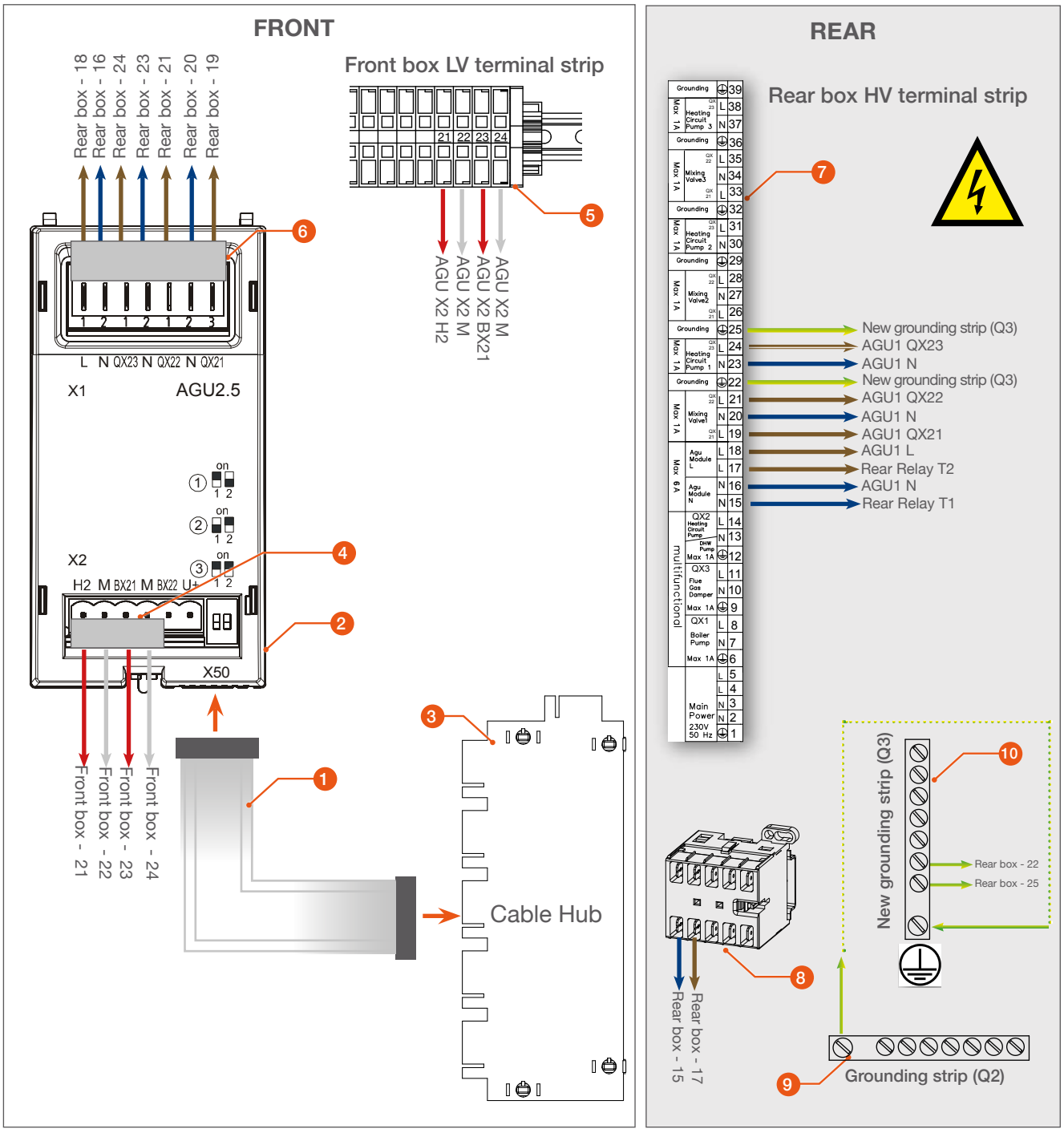


Fig. 10. Nesta - Connecting the cables - AGU 1 (starter)

4. Connect rear relay (**8**) to rear terminal strip (**7**), as indicated in the picture below. Route the harness as indicated in ***Fig. 10***.
5. Connect lower ground strip (rear box) (**9**) to the new grounding strip (**10**) using one 650 mm long ground wire.
6. Connect ground terminals 22 and 25 of rear terminal strip (**7**) to new grounding strip (**10**) using two 210 mm long ground wires

For a detail of the connections, also refer to "Nesta 120 to 250 - Wiring Diagram" on page 34.

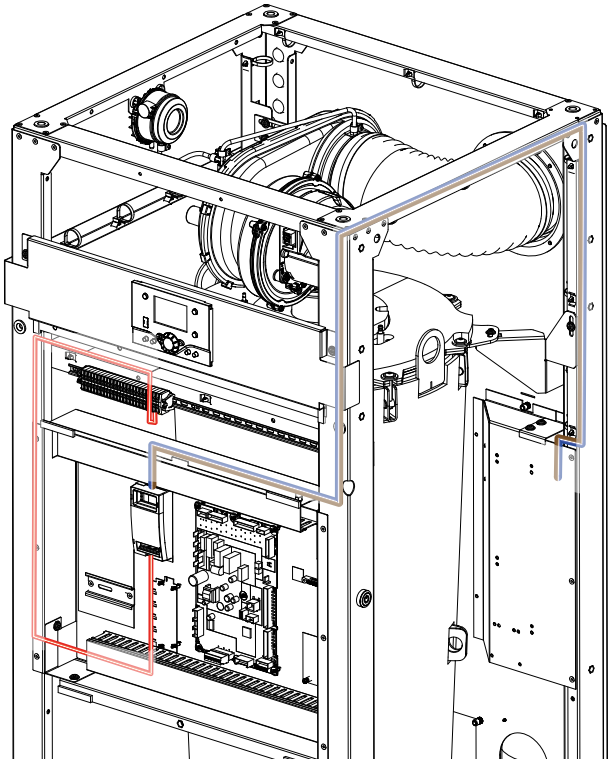
Follow-on tasks:

1. Connect accessories to high voltage terminal or low voltage terminal, as required.
2. Perform required setup,

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.

HV harness - blue and brown - Clamp to existing high voltage harness

LV harness - red and white



Rear box

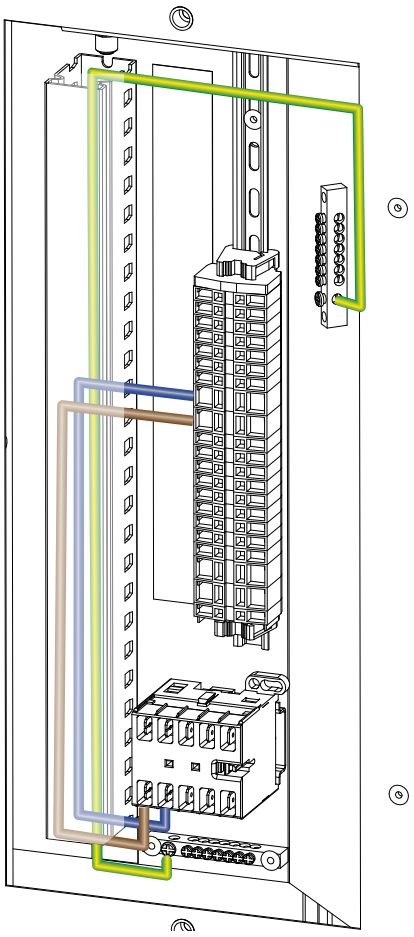


Fig. 11. Nesta - Routing the cables

Nesta 120 to 250 - Extension Kit Installation

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

Conditions: 

Tools and material:

- AGU extension kit
- Wire ferrules for wire connection to terminals
- Electrical toolbox

Installation Procedure

The principles of AGU module installation are the same as those explained for AGU starter kit (refer to "Nesta 120 to 250 - Starter Kit Installation" on page 28).

The second AGU module should be installed in the central location, the third, in the left location.

1. Connect the cables connectors to the AGU module, their other extremities respectively to the cable hub, the front terminal strip and the rear terminal strip, after installing additional terminal blocks (provided with each kit).

For a detail of the connections, also refer to "Nesta 120 to 250 - Wiring Diagram" on page 34.

2. For the connection to the front and rear terminal strip, install ferrules to the end of the wires before connecting them. Refer to *"Fig. 12. Nesta - Connecting the cables - AGU 2 & 3 (extension)" on page 33* for the connection locations.
3. Route the wiring according to *"Fig. 11. Nesta - Routing the cables" on page 31*.

Follow-on tasks:

1. Connect accessories to high voltage terminal or low voltage terminal, as required.
2. Perform required setup.

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.

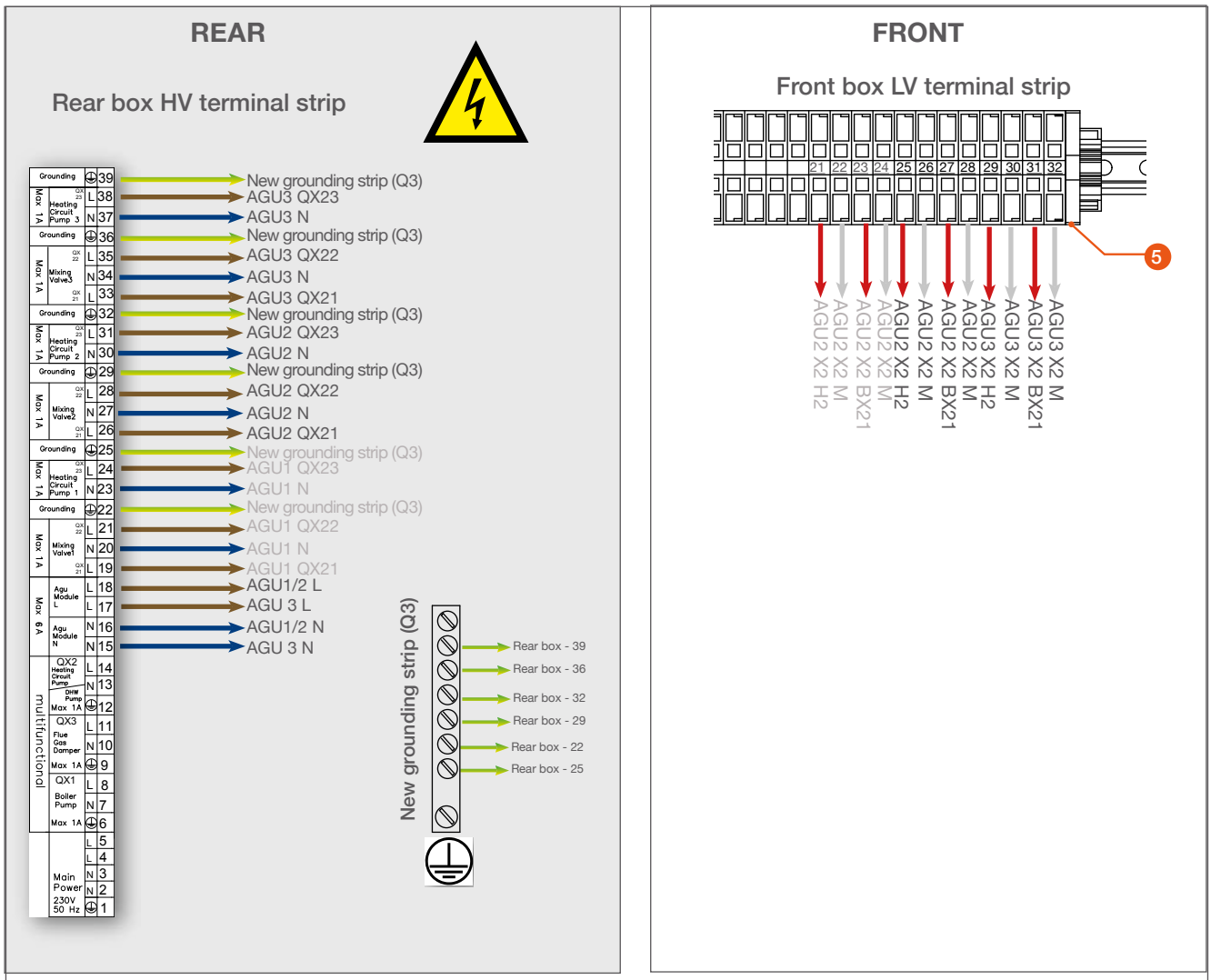
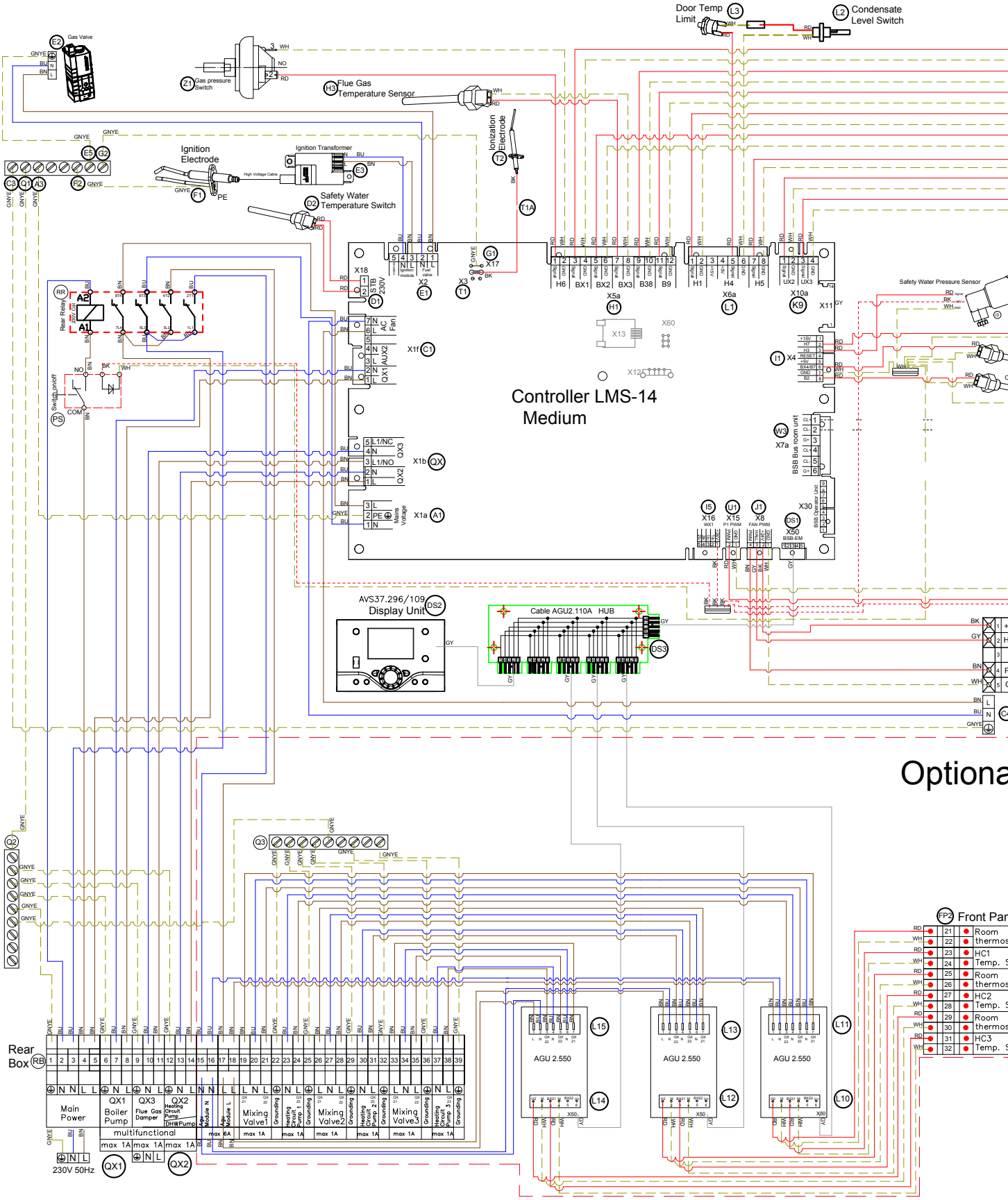
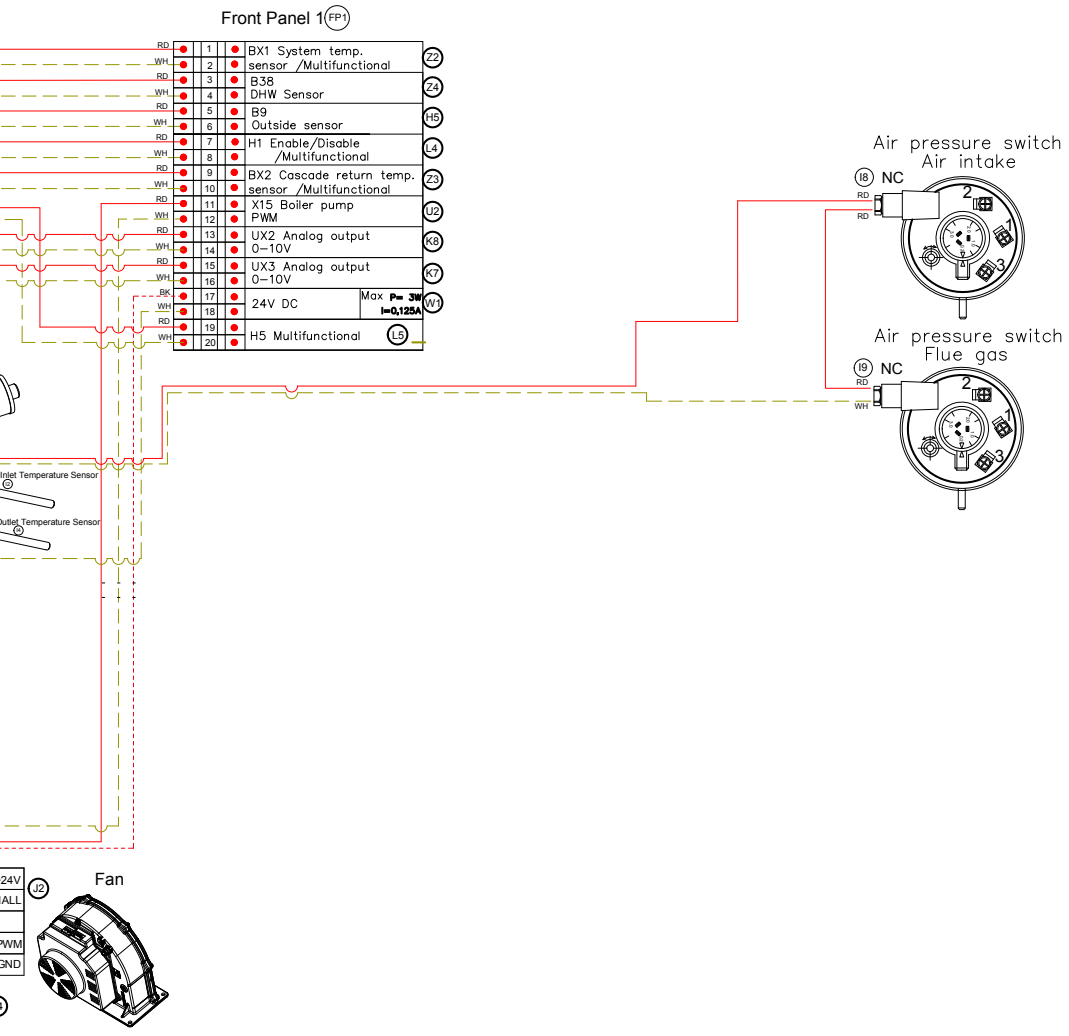


Fig. 12. Nesta - Connecting the cables - AGU 2 & 3 (extension)

Nesta 120 to 250 - Wiring Diagram





Legend		
RD	Red	Signal
BK	Black	24V DC
GNYE	Green-Yellow	HV Grounding
WH	White	Signal Grounding
BU	Blue	Neutral
BN	Bronze	Phase
GY	Grey	X50

Nesta Plus 280 to 840 - Extension Kit Installation

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

Conditions: OFF

Tools and material:

- AGU kit
- Wire of the correct type (L, N and ground)
- Wire ferrules for wire connection to terminals
- Electrical toolbox

Procedure:

1. Remove boiler center front panel, refer to appliance Installation and Maintenance manual.
2. Remove the electronic bay access panel (**4**), refer to appliance Installation and Maintenance manual.
3. Clip AGU module (**1**) into the provided holes in the dedicated location (**2**).
4. Install one 4-block terminal (**4**) per additional AGU module on the DIN rail, and install the provided end-stops and end-plates.
5. Install markers on block terminals.
6. Place sticker (**5**) on the inner face of the electronic bay access panel (**4**).

Installation Procedure - Rear:

1. Open rear electronic box access panel. Refer to appliance Installation and Maintenance manual.
2. Remove end-stop and end-plate (**6**) from terminal block. Retain for reinstallation.
3. Install one 7-block terminal (**7**) per additional AGU module on the DIN rail, and reinstall the end-stop and end-plate (**6**) removed previously.
4. Install two cables glands (**8**).

The lower one should be used for accessories to be connected to HV terminal strip at the back (e.g. pumps, valves, etc.), the upper one for accessories to be connected to LV terminal strip at the front of the boiler (e.g. sensors, etc.).

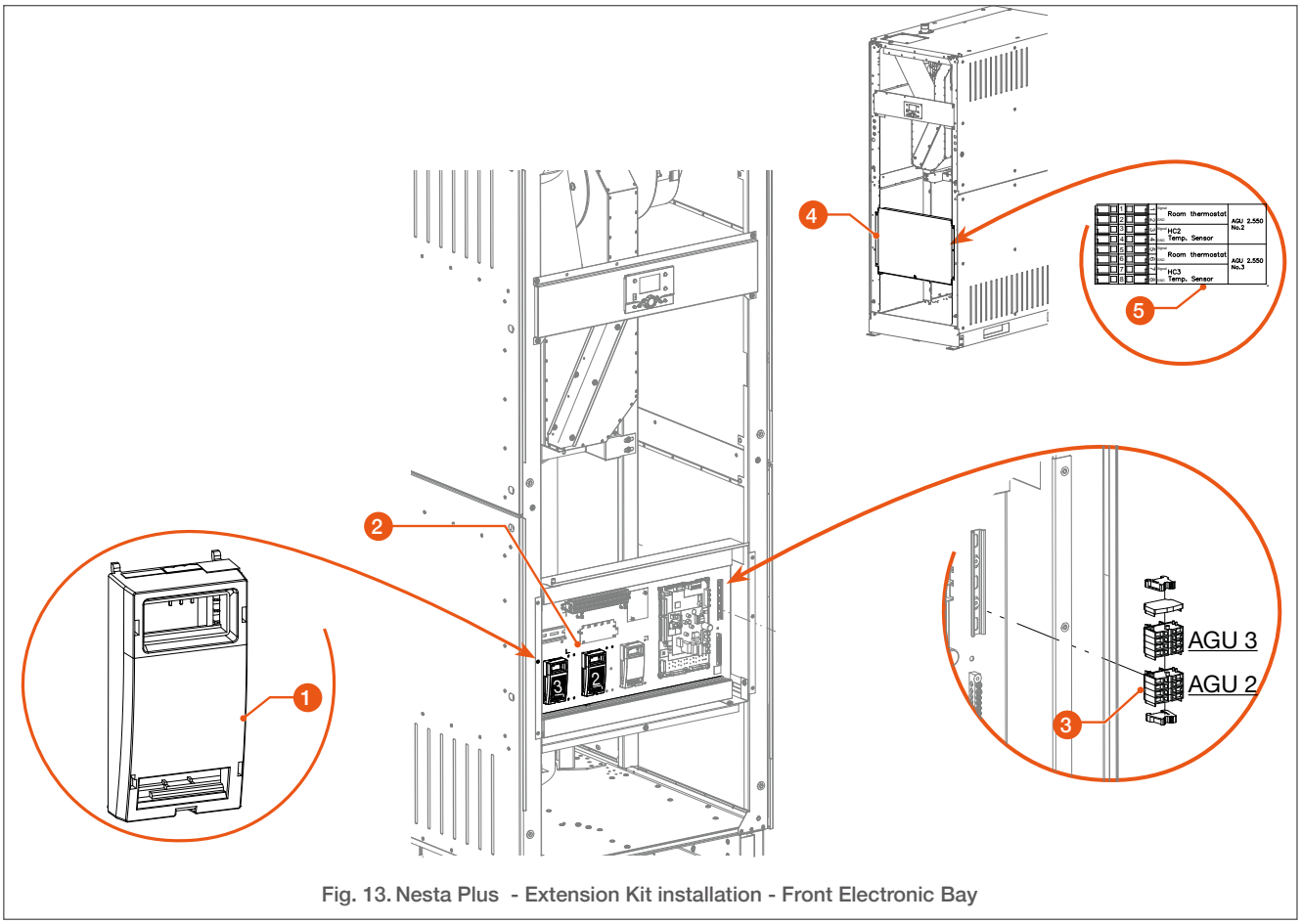


Fig. 13. Nesta Plus - Extension Kit installation - Front Electronic Bay

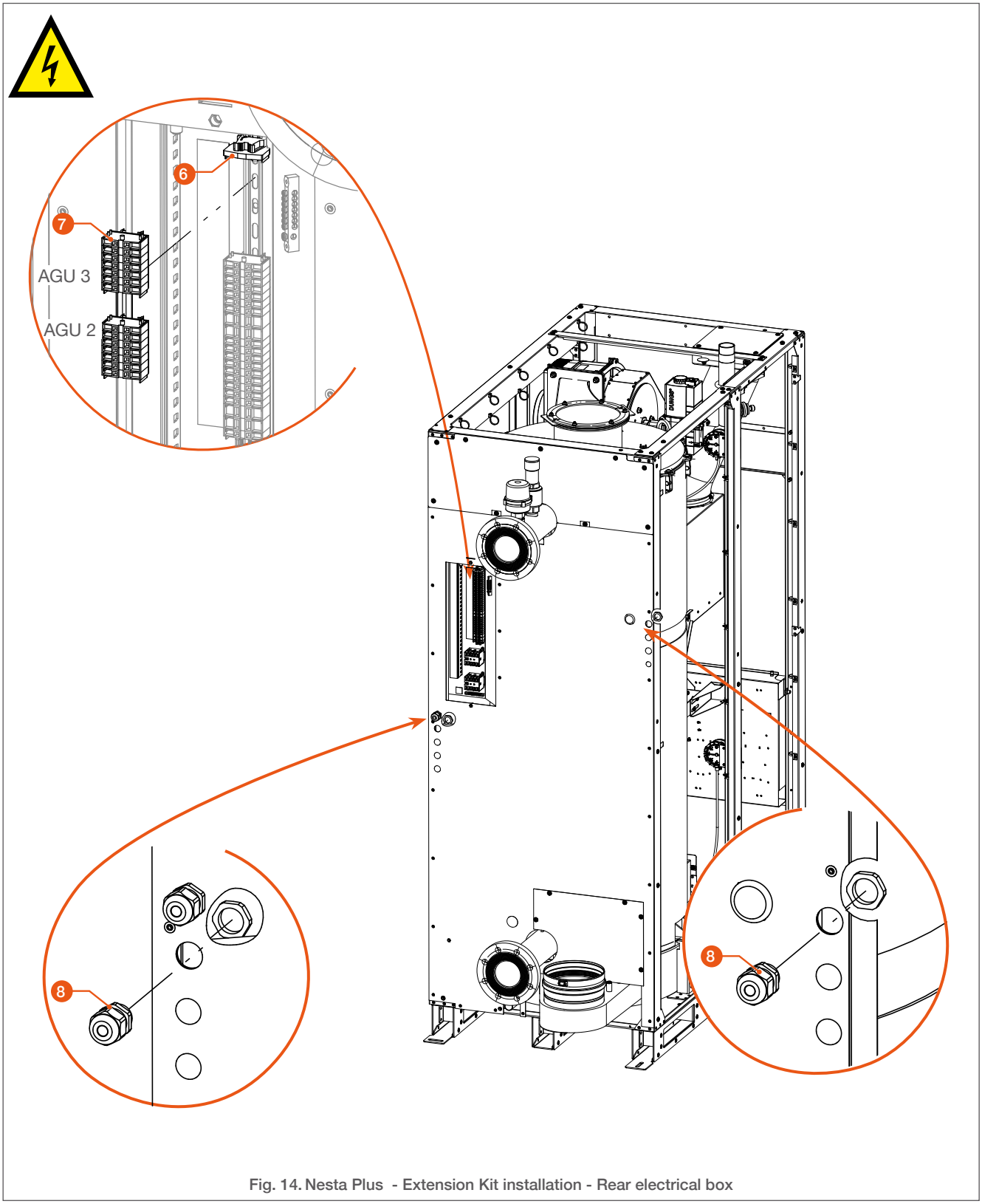


Fig. 14. Nesta Plus - Extension Kit installation - Rear electrical box

Connection procedures

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the appliance).

1. Connect grey flat cable connector (**1**) to AGU X50 connection (**2**) and to a free cable hub (**3**) terminal, as shown in picture below.
2. Connect LV cable connector (**4**) to AGU module (**5**) and the free ends of the harness to the front terminal strip (**7**), using ferrules, as indicated in the picture opposite. Route the cables as shown in *Fig. 16*.
3. Connect HV cable connector (**6**) to AGU module (**5**) and the free ends of the harness to the rear terminal strip (**9**), using ferrules, as indicated in the picture opposite. Route the cables as shown in *Fig. 16*.
4. Also make sure to connect ground terminals of rear terminal strip (**9**) to grounding strip (**7**) using two 150 mm long ground wires (per AGU module).

Follow-on tasks:

1. Connect accessories to High voltage or low voltage terminal, as required.
2. Perform required setup.

"AGU Module Setup" on page 46 and "Connection of Accessories and Setup" on page 46.

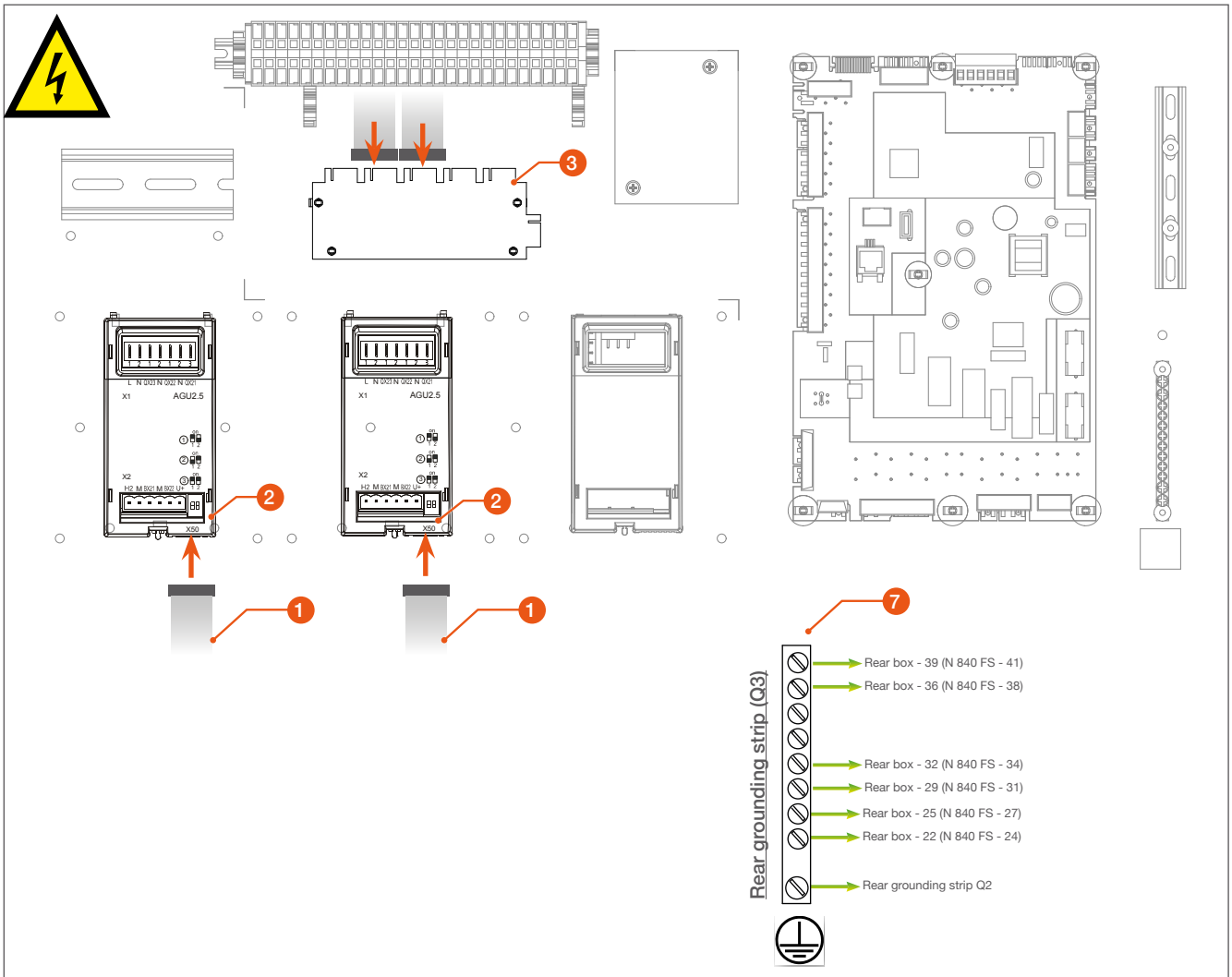
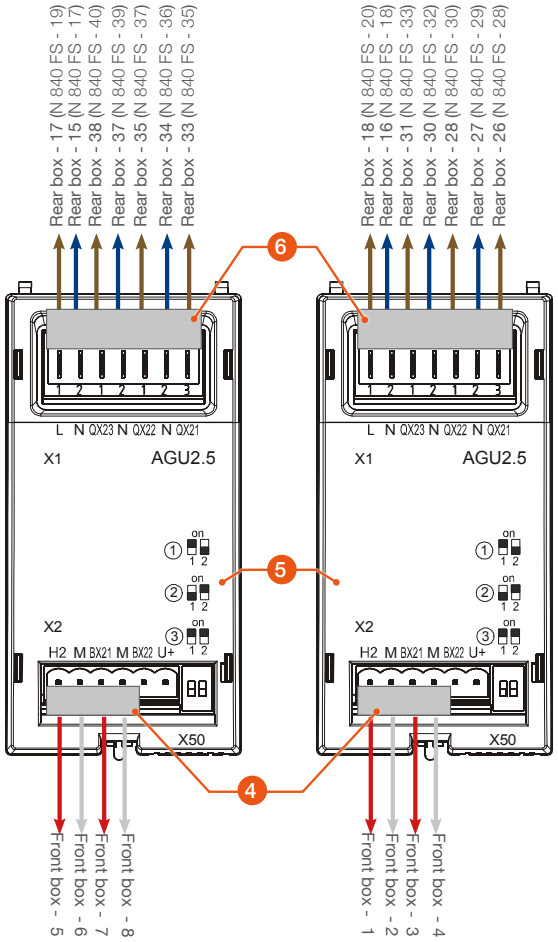
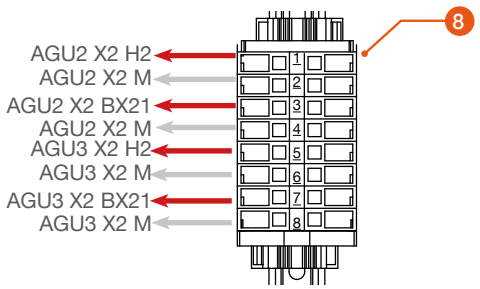


Fig. 15. Nesta Plus - Connecting the cables - AGU 2 & 3 (extension)

FRONT

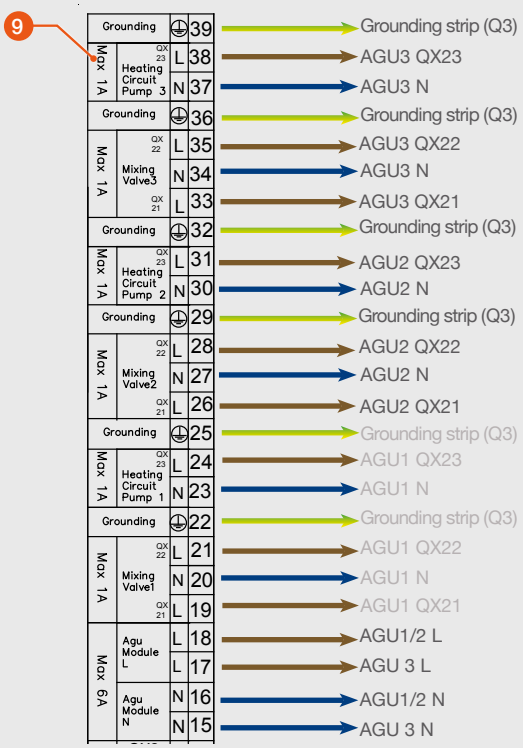


Front box LV terminal strip

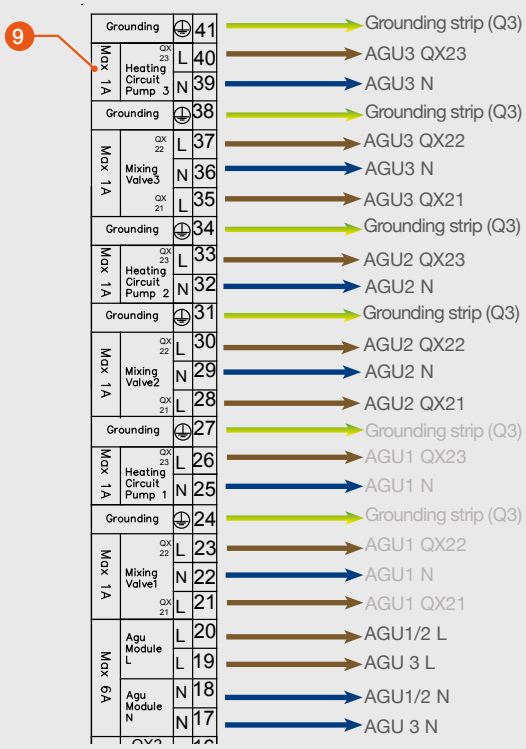


REAR

N 280 to N 570 FS Rear box HV terminal strip

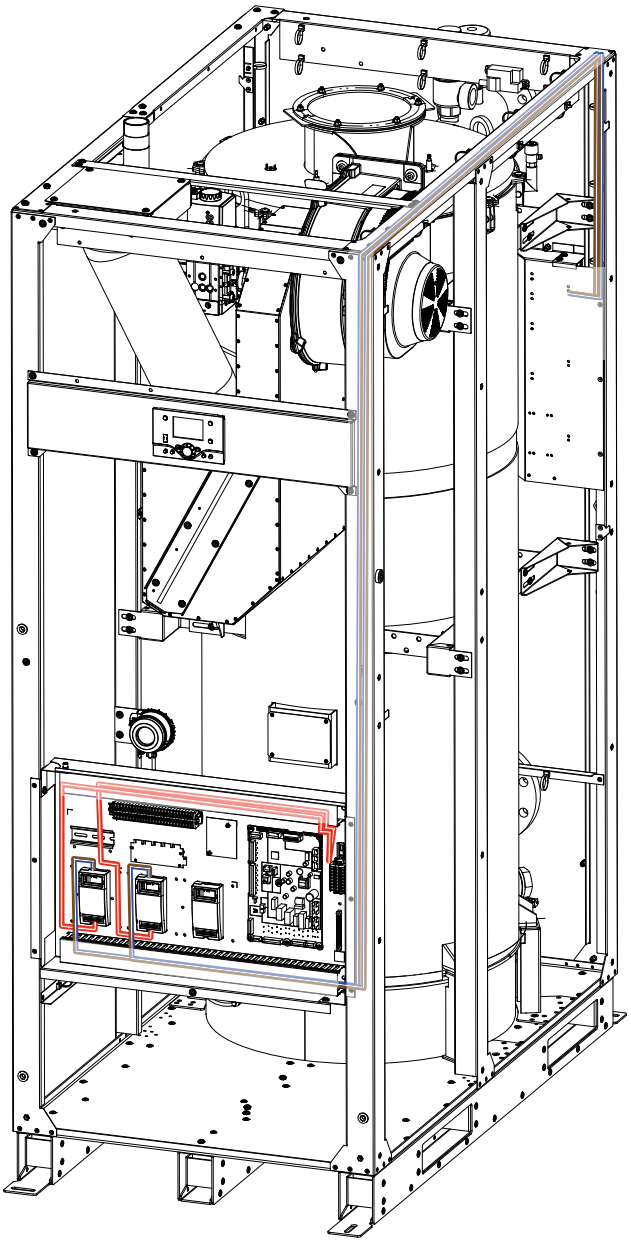


N 840 FS Rear box HV terminal strip

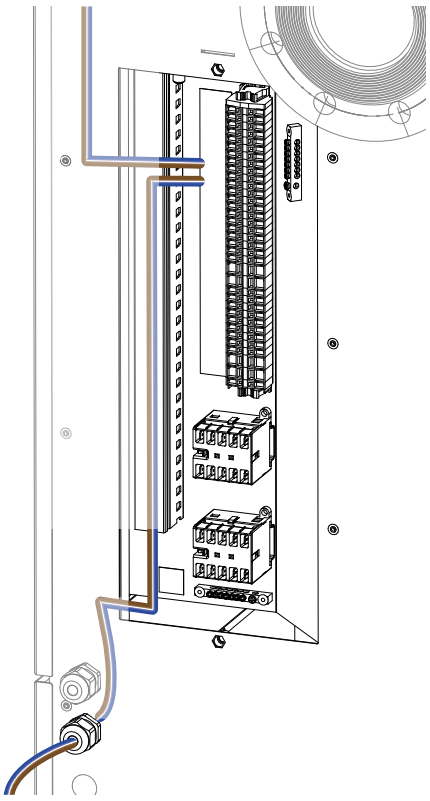


LV harness - red and white

HV harness - blue and brown - Clamp to existing high voltage harness



Rear box



Route accessories connected to HV through here

Fig. 16. Nesta Plus - Routing the wiring

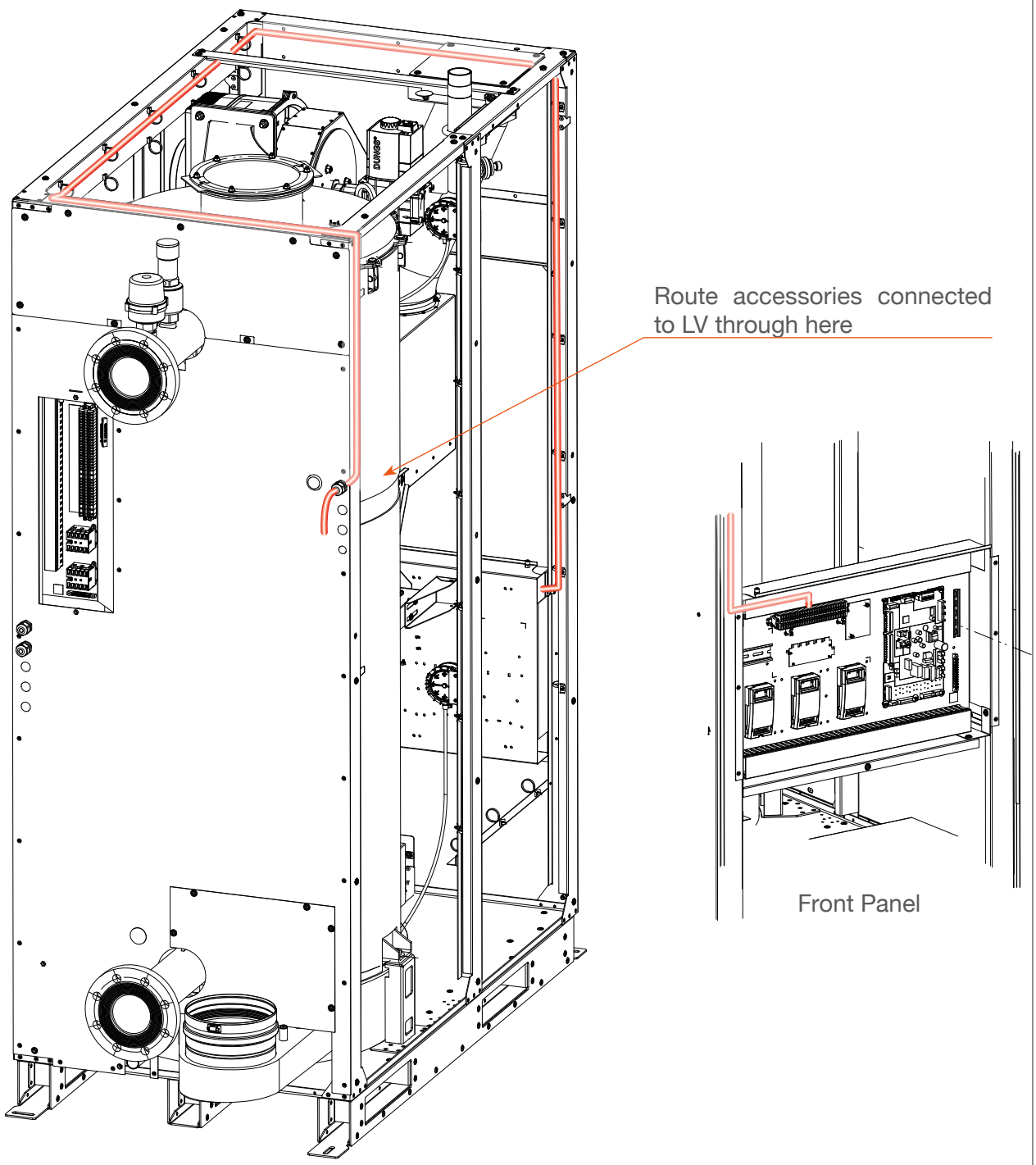
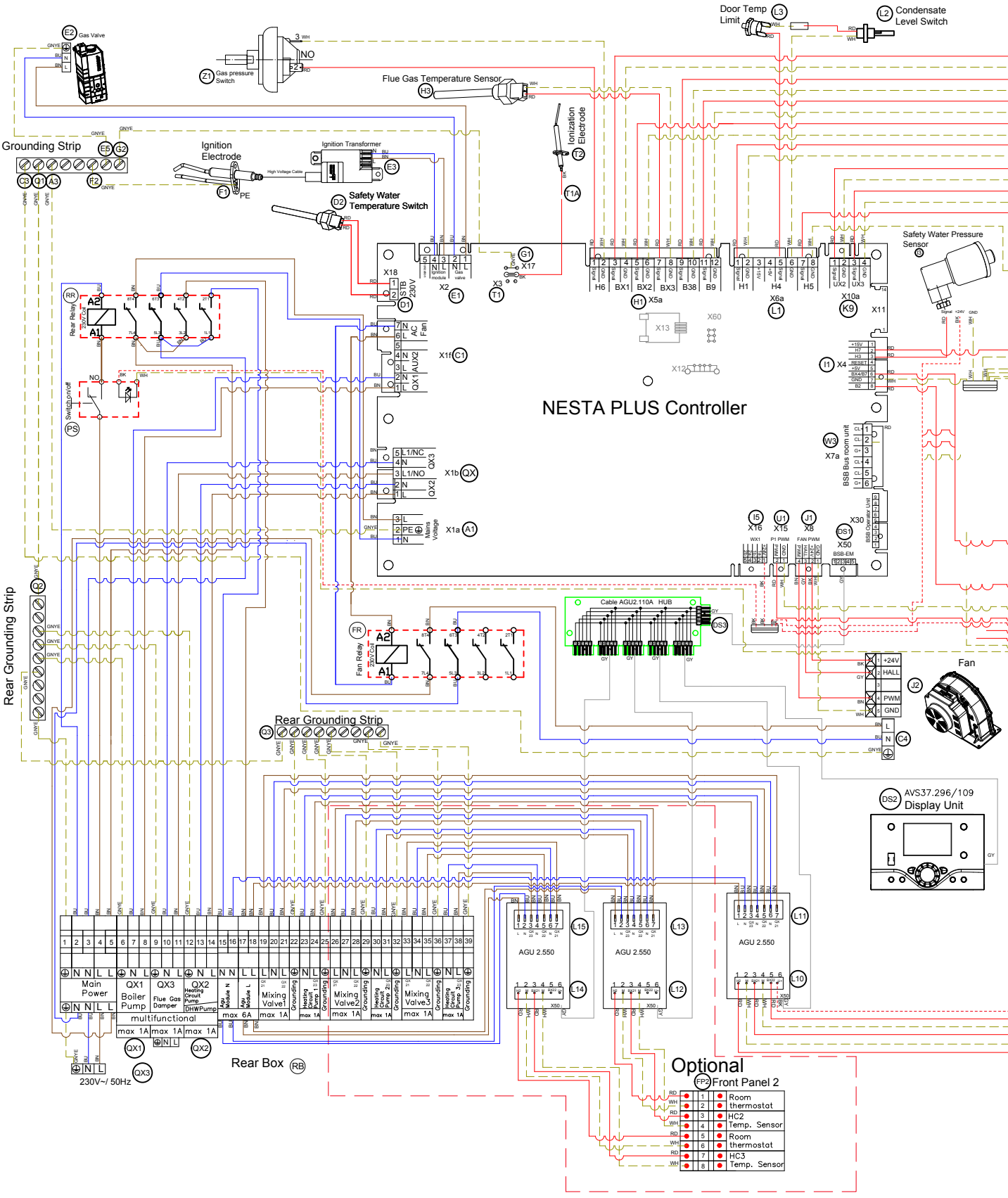
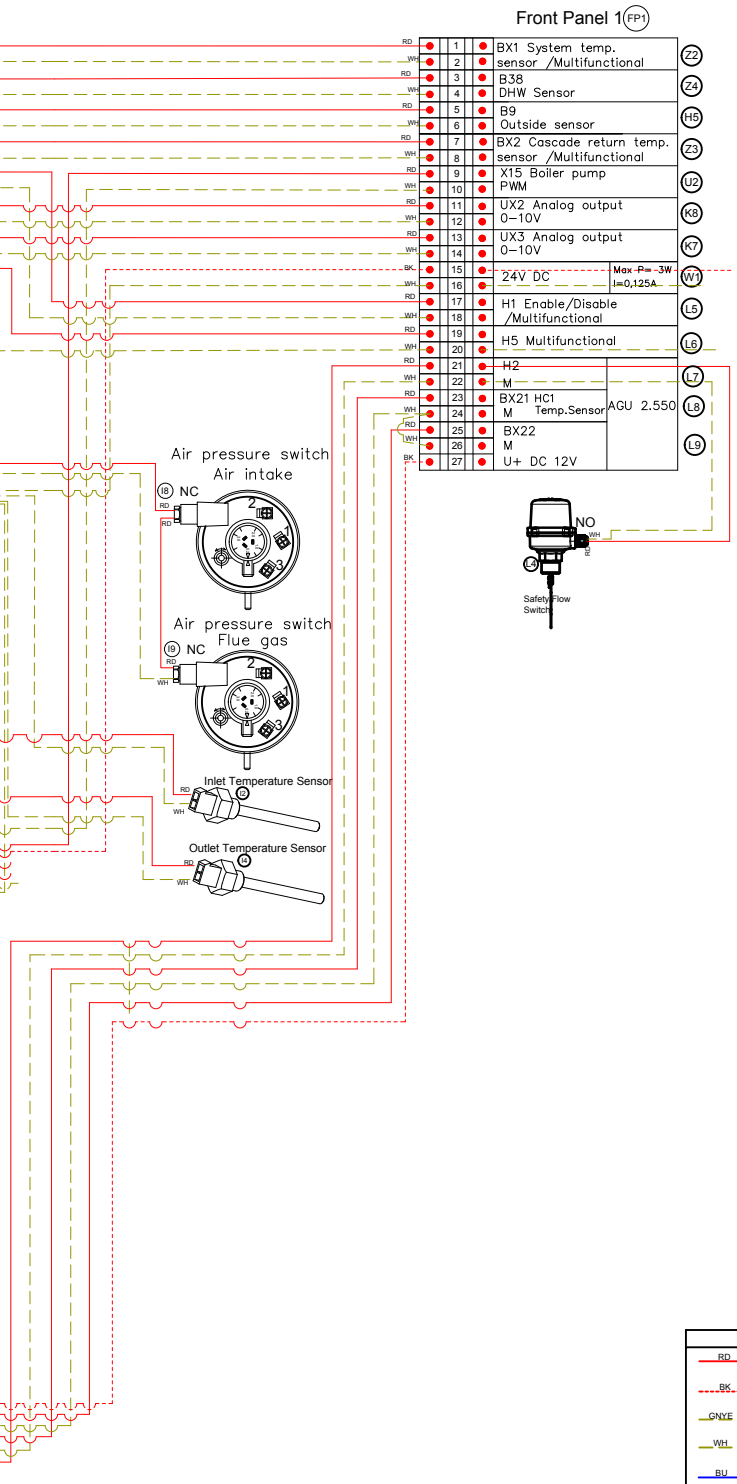


Fig. 17. Nesta Plus - Routing the LV accessories wiring

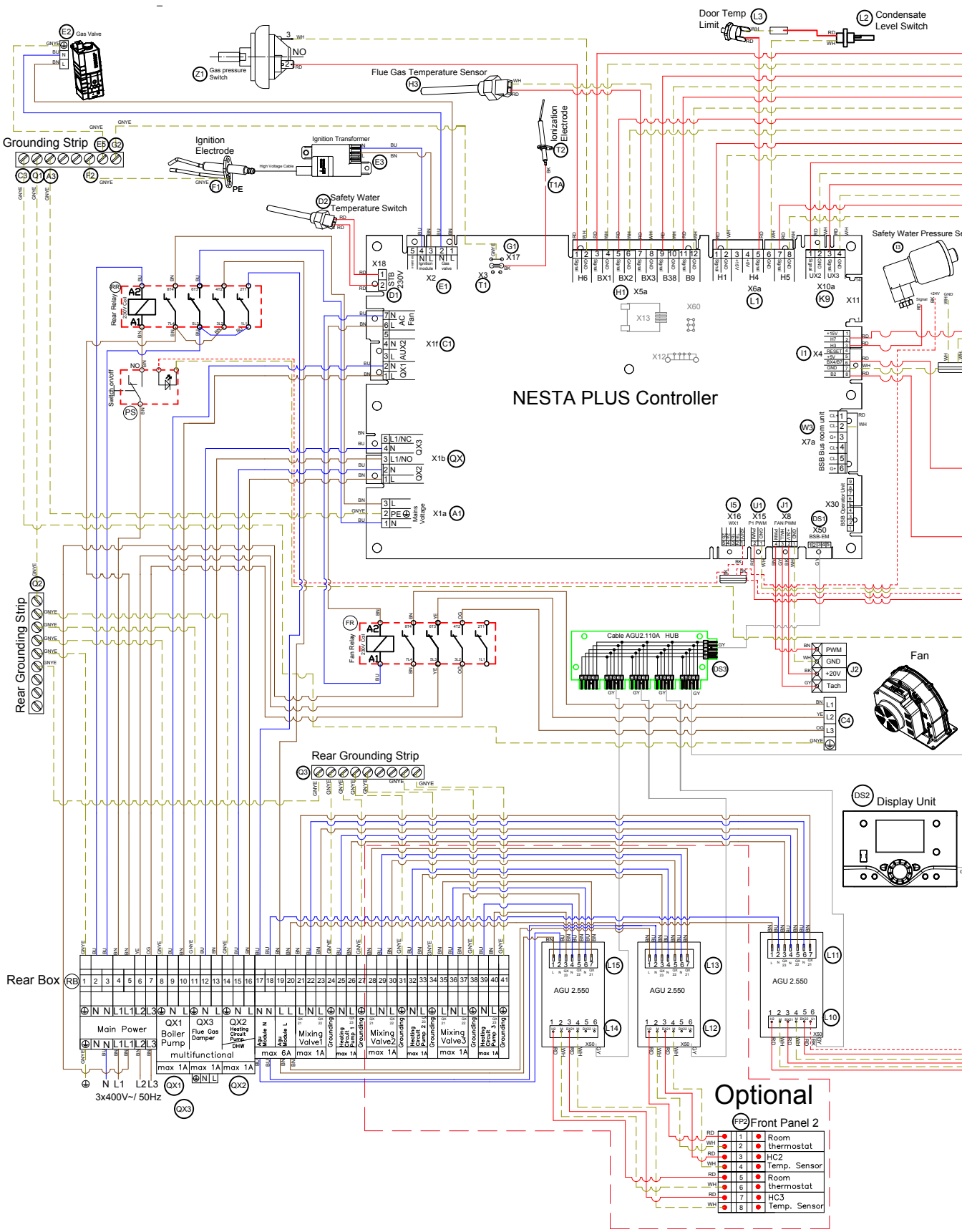
Nesta Plus 280 - 420 - 570 Wiring Diagram

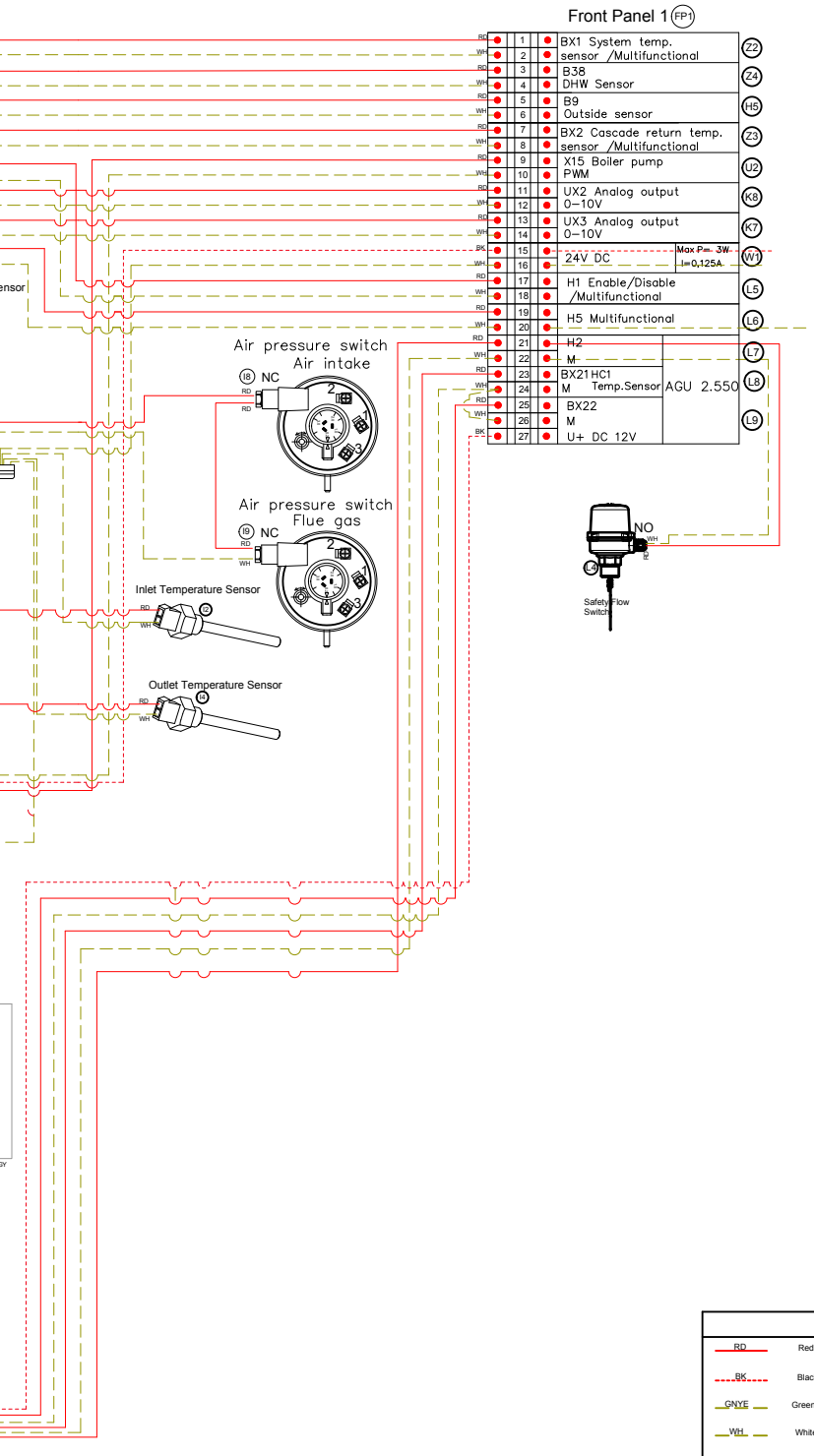




Legend		
RD	Red	Signal
BK	Black	24V DC
GNYE	Green-Yellow	HV Grounding
WH	White	Signal Grounding
BU	Blue	Neutral
BN	Bronze	Phase
GY	Grey	X50

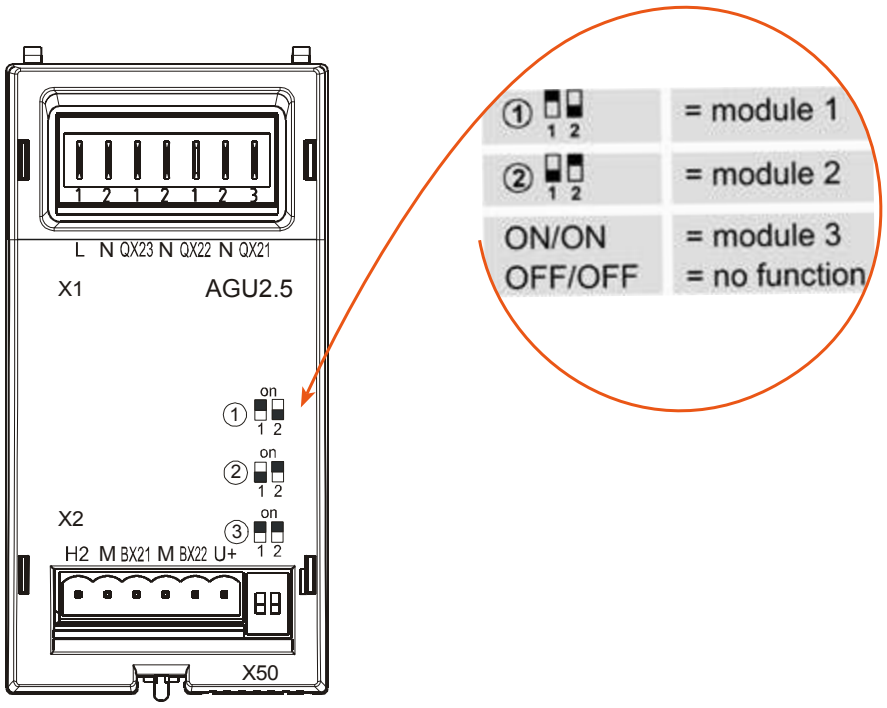
Nesta Plus 840 Wiring Diagram





Legend		
RD	Red	Signal
BK	Black	24V DC
GNYE	Green-Yellow	HV Grounding
WH	White	Signal Grounding
BU	Blue	Neutral
BN	Bronze	Phase
GY	Grey	X50

AGU Module Setup



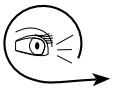
Connection of Accessories and Setup

This is an example provided for 1 additional heating circuit (through 1 AGU module). Principles are the same for additional heating circuits.

Accessory	Where to connect		
	Nesta Chrome & CoilMaster	**Nesta**	**Nesta Plus**
Flow sensor	LV connector (to be connected to AGU module) BX21 - M	Front LV terminal block - terminals 23 and 24	Front LV terminal block - terminals 3 and 4
Mixing valve	HV connector (to be connected to AGU module) QX21 - N - QX22	Rear HV terminal block - terminals 19-20-21	Rear HV terminal block - terminals 19-20-21 (N 280 to 570 FS) terminals 21-22-23 (N 840 FS)
Mixed zone pump	HV connector (to be connected to AGU module) QX23 - N	Front HV terminal block - terminals 22-23-24	Rear HV terminal block - terminals 22-23-24 (N 280 to 570 FS) terminals 24-25-26 (N 840 FS)

On Nesta Plus, one mixed circuit can be controlled through the existing AGU module. Room thermostat can then be connected to H5 terminal (boiler management unit) if necessary.

1. Close all open access panels.
2. Start up the boiler.
3. Perfom the setup according to the following table.



Appliance Installation and Maintenance Manual for detailed procedures.

Controller setup

Heating Circuit	Pgm number	Top menu	Submenu	Parameter Setting	Remark
HC1	5710	Configuration	Heating circuit 1	ON	define HC1 to hydraulic diagram
	6020	Configuration	Function extension module 1	Heating circuit 1	define AGU1 for mixing HC1
	6047	Configuration	Function input H2/H21 modul 1	Room thermostat HC1	define room thermostat for HC1 (optional) (not in Nesta+)
	710	Heating Circuit 1	Comfort setpoint	20	set desired calculated room temperature (16-30 C deg) for HC1
	720	Heating Circuit 1	Heating curve slope	0.5 to 4	set the slope for HC1 in case of weather compensation
	740	Heating Circuit 1	Flow temp setpoint min	50	min flow temp regarding out temp
	741	Heating Circuit 1	Flow temp setpoint max	70	max flow temp regarding out temp
	742	Heating Circuit 1	Flow temp setpoint room stat	---	in case of weather compensation must be set to ---, in case of fixed flow temp set desired value (e.g. 65)
	834	Heating Circuit 1	Actuator running time	120 s (default)	set time for mixing valve for rotation 90 deg
HC2	5715	Configuration	Heating circuit 2	ON	define HC2 to hydraulic diagram
	6021	Configuration	Function extension module 2	Heating circuit 2	define AGU2 for mixing HC2
	6054	Configuration	Function input H2/H21 modul 2	Room thermostat HC2	define room thermostat for HC2 (optional)
	1010	Heating Circuit 2	Comfort setpoint	20	set desired room temperature (16-30 C deg)
	1020	Heating Circuit 2	Heating curve slope	0.5 to 4	set the slope for HC2 in case of weather compensation
	1040	Heating Circuit 2	Flow temp setpoint min	50	min flow temp regarding out temp
	1041	Heating Circuit 2	Flow temp setpoint max	70	max flow temp regarding out temp
	1042	Heating Circuit 2	Flow temp setpoint room stat	---	in case of weather compensation must be set to ---, in case of fixed flow temp set desired value (e.g. 65)
	1134	Heating Circuit 2	Actuator running time	120 s (default)	set time for mixing valve for rotation 90 deg
HC3	5721	Configuration	Heating circuit 3	ON	define HC3 to hydraulic diagram
	6022	Configuration	Function extension module 3	Heating circuit 3	define AGU3 for mixing HC3
	6062	Configuration	Function input H2/H21 modul 3	Room thermostat HC3	define room thermostat for HC3 (optional)
	1310	Heating Circuit 3	Comfort setpoint	20	set desired calculated room temperature (16-30 C deg)
	1320	Heating Circuit 3	Heating curve slope	0.5 to 4	set the slope for HC3 in case of weather compensation
	1340	Heating Circuit 3	Flow temp setpoint min	50	min flow temp regarding out temp
	1341	Heating Circuit 3	Flow temp setpoint max	70	max flow temp regarding out temp
	1342	Heating Circuit 3	Flow temp setpoint room stat	---	in case of weather compensation must be set to ---, in case of fixed flow temp set desired value (e.g. 65)
	1434	Heating Circuit 3	Actuator running time	120 s (default)	set time for mixing valve for rotation 90 deg

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