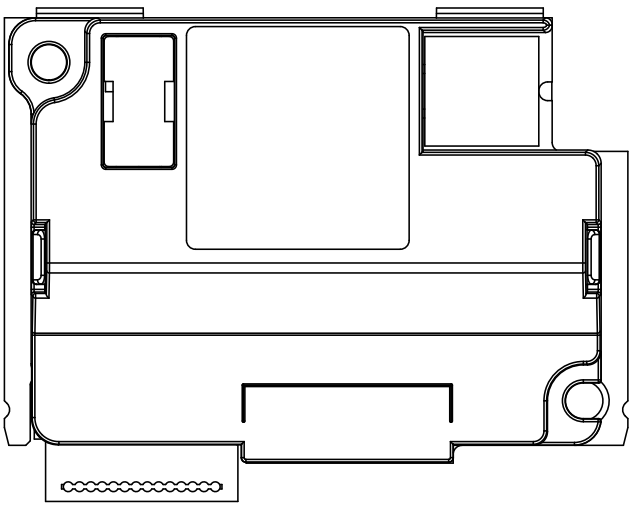
installation and setup manual

FOR THE QUALIFIED PROFESSIONAL

CLIP-IN CASCADE MODULE
OCI345

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.

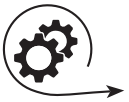
High Voltage - danger of electric shock.

Ground / Earth.

Do !

Don't !

... to electrical connection information.



.... to controller setup information.

Read additional information in another location or manual

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.

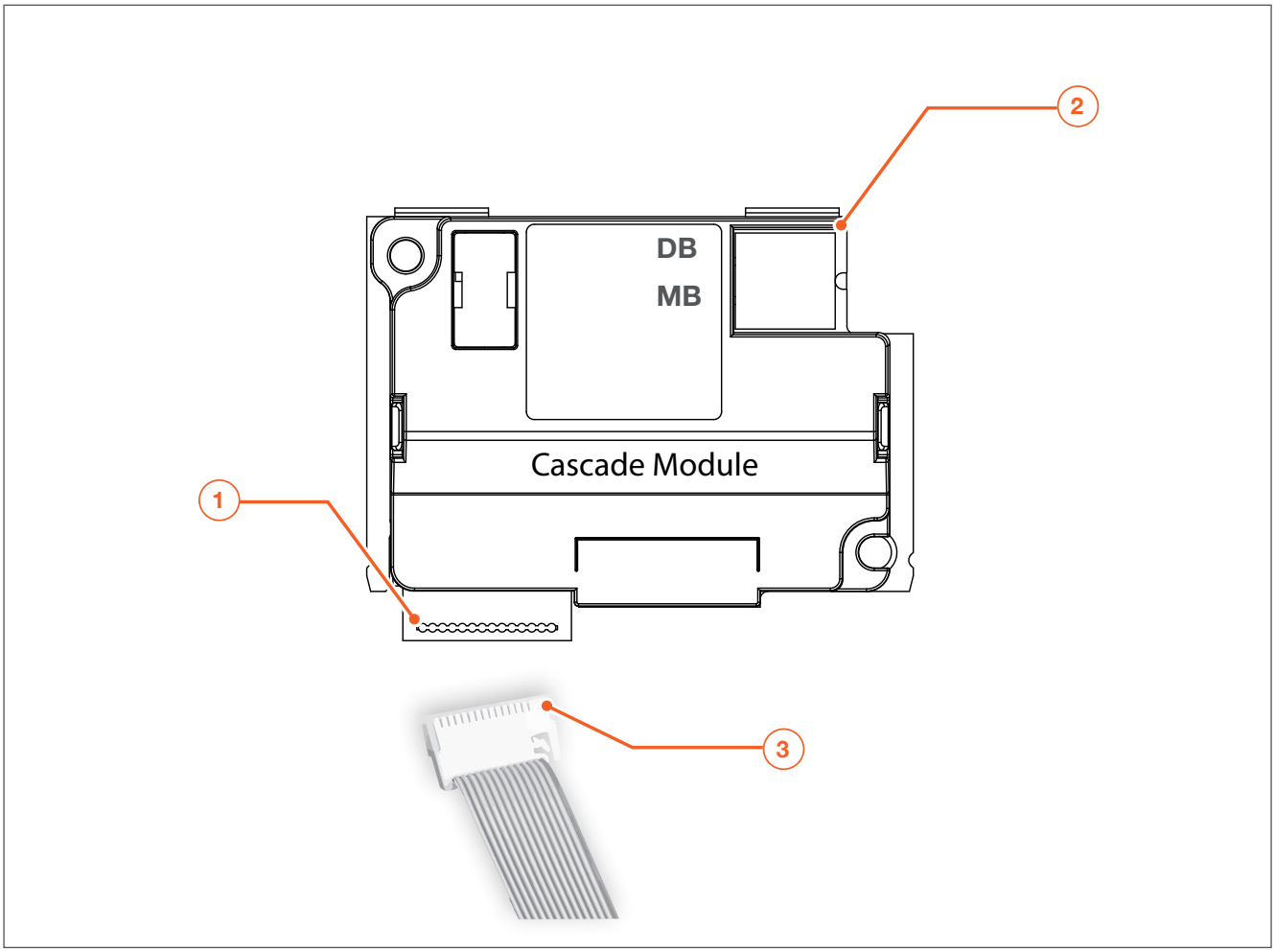
- When the appliance is connected to the electrical network, it must be earthed.
- Make sure that a fuse or circuit breaker of the recommended rating is installed outside the appliance, to allow electrical isolation.
- Before making any wiring changes in the connection area, completely isolate the appliance 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 to 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*

OCI345 Clip-In Cascade Module

The cascade module enables communication from one boiler to another in a cascade system. One module must be installed in each boiler and connected to the next in the chain.



1. Connector used to connect the module to the boiler management unit (LMS - X11 terminal) using a flat cable (provided with the module).
2. Connector used to connect boilers to one another through a LPB Bus. The LPB bus is a 2-wire bus whose wires are not interchangeable (terminals DB and MB). Refer to ***"Nesta Chrome and CoilMaster - Cascade module Installation" on page 8 or "Nesta and Nesta Plus - Cascade module Installation" on page 9*** for installation details.
3. Flat cable provided with the module to connect the interface to the boiler management unit (electronic board).

Cascade Connection Principles

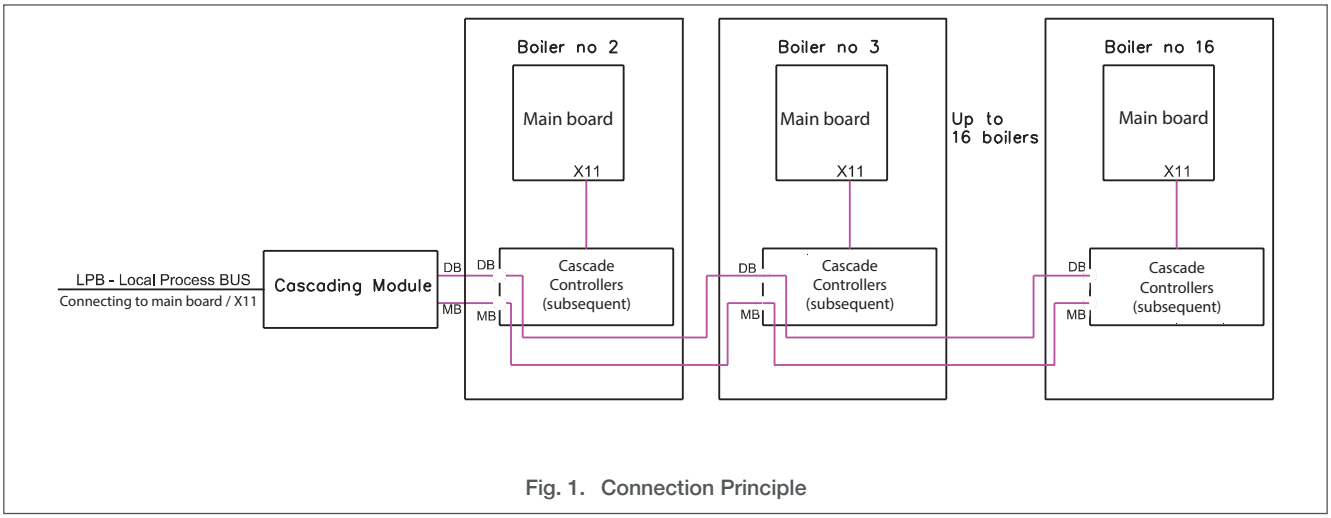


Fig. 1. Connection Principle

Boilers are connected to one another through the cascading module DB/MB connection (LPB).

The cascading module installed in each boiler is connected to X11 terminal of each boiler's boiler management unit.

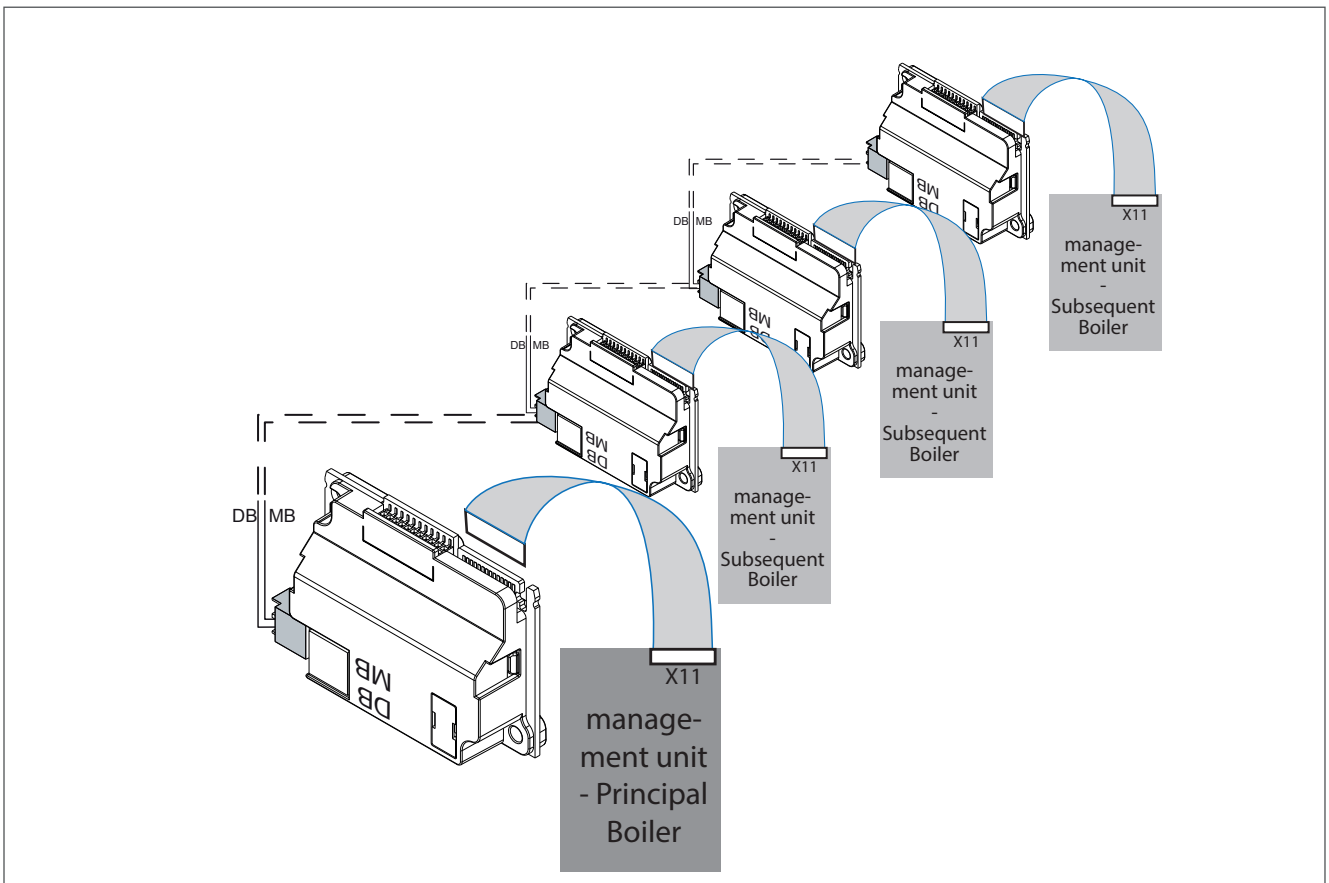
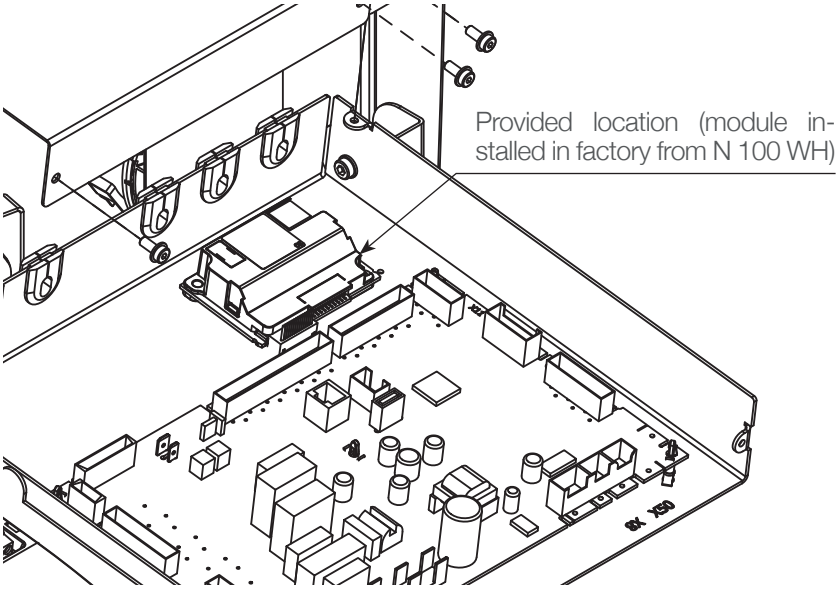


Fig. 2. 4-Connection of boilers in cascade

Installation Location

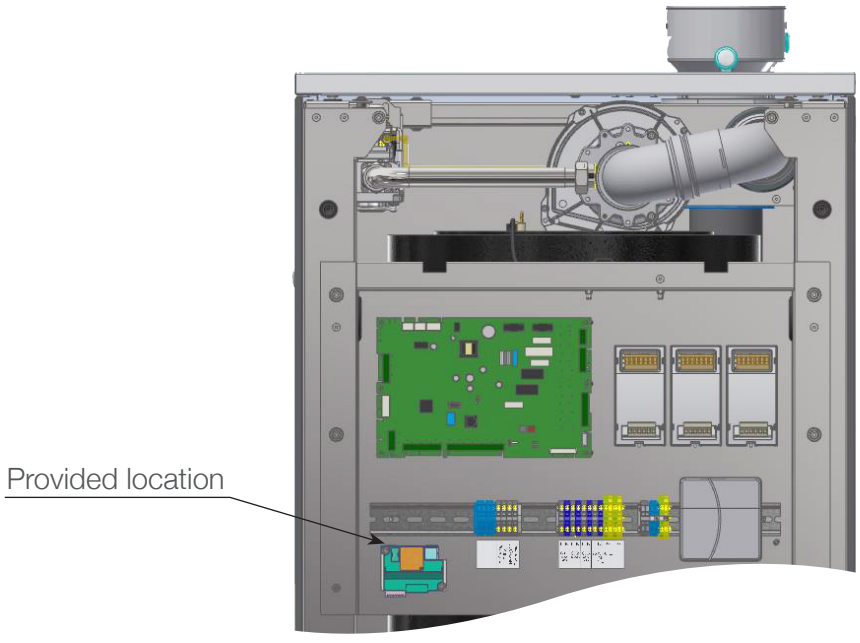
To access the extension Clip-In module installation location, please refer to the appliance installation and maintenance manual.

Nesta Chrome 24 to 150

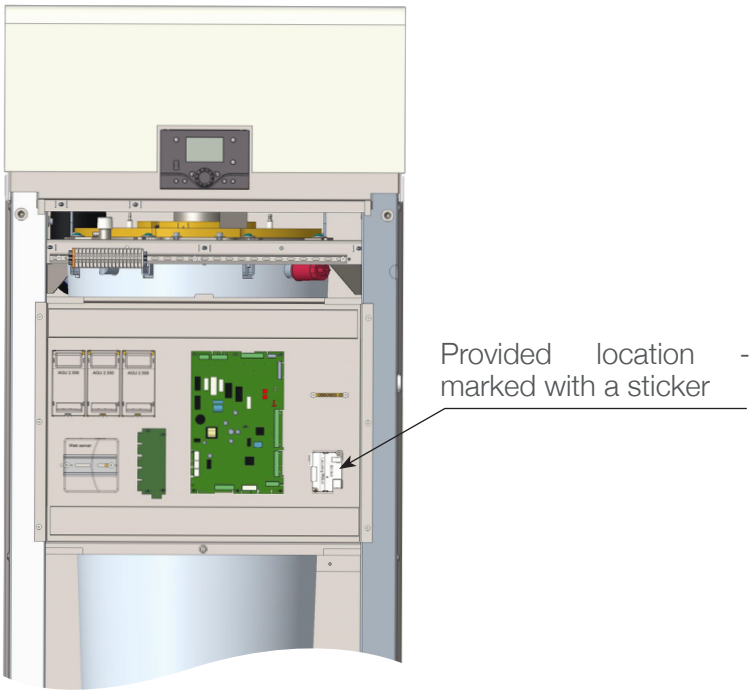


CoilMaster 35 to 120

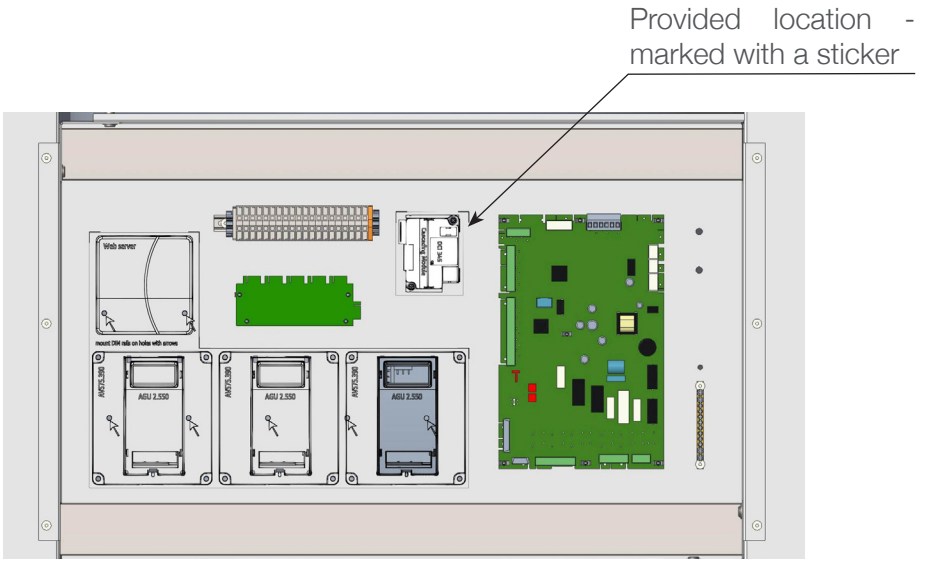
The position may slightly differ according to the model.



Nesta 120 to 250



Nesta Plus 280 to 840



Nesta Chrome and CoilMaster - Cascade module Installation

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

Conditions: OFF

Tools and material:

- Cascade clip-in module and flat cable
- Screwdriver, cross-head
- 2-wire twisted cable (2x1,5 mm² gauge)

OCI Cascade Module Installation Procedure:

1. Remove boiler front panel, refer to appliance Installation and Maintenance manual.
2. In Nesta Chrome, also get access to the electronic casing. Refer to the appliance Installation and Maintenance manual.

In Nesta Chrome, the module installation is only required on models N 24 to 80 WH; it is installed from factory from N 100 WH.

3. Install cascade module on the LMS board, as required, using two provided screws (**1**).
4. Connect one end of the flat cable to the cascade module connector (**2**) and the other end to the X11 connector (**4**) on the Boiler Management Unit (LMS). Also check the wiring diagram for correct location. Refer to ***"Nesta Chrome Wiring Diagram" and "CoilMaster Wiring Diagram".***
5. Prepare a 2-wire twisted cable (2x1,5 mm² gauge) of adequate length and connect its ends to the DB/MB connector (**3**). Its other ends will be connected to the DB/MB connector of the OCI cascade module installed on the following boiler in the cascade chain.

The illustration below shows the installation in a Nesta Chrome boiler. Principles are the same for a CoilMaster unit.

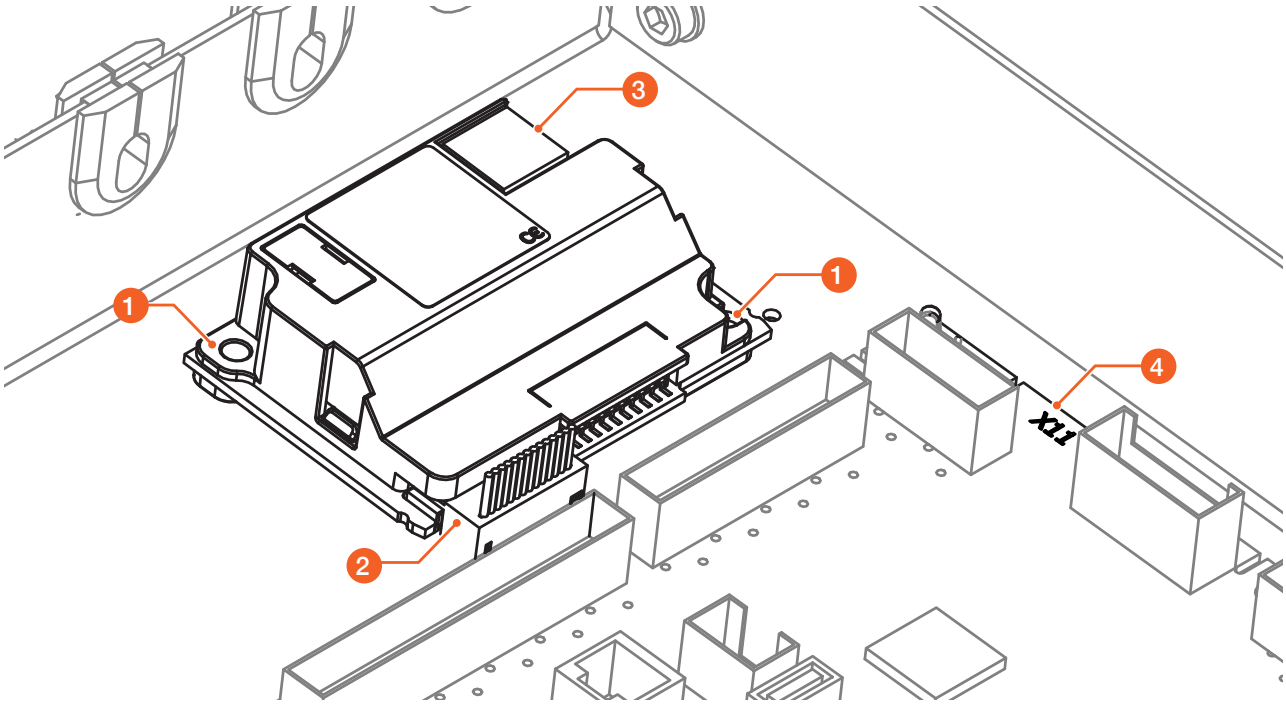


Fig. 3. Nesta Chrome - OCI cascade module Installation

Nesta and Nesta Plus - Cascade module Installation

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

Conditions: OFF

Tools and material:

- Cascade clip-in module and flat cable
- Screwdriver, cross-head
- 2-wire twisted cable (2x1,5 mm^2 gauge)

OCI Cascade Module Installation Procedure:

1. Remove boiler front panel, refer to appliance Installation and Maintenance manual.
2. Release two screws (**1**) from their support.
3. Install cascade module on the LMS board using two screws (**1**).
4. Connect one end of the flat cable to the cascade module connector (**2**) and the other end to the X11 connector on the Boiler Management Unit (LMS). For the exact location, refer to ***"Nesta Wiring Diagram" and "Nesta Plus Wiring Diagram" on page 16.***
5. Prepare a 2-wire twisted cable (2x1,5 mm^2 gauge) of adequate length and connect its ends to the DB/MB connector (**3**). Its other ends will be connected to the DB/MB connector of the OCI cascade module installed on the following boiler in the cascade chain.

Principles of installation are the same for a Nesta and a Nesta Plus unit.

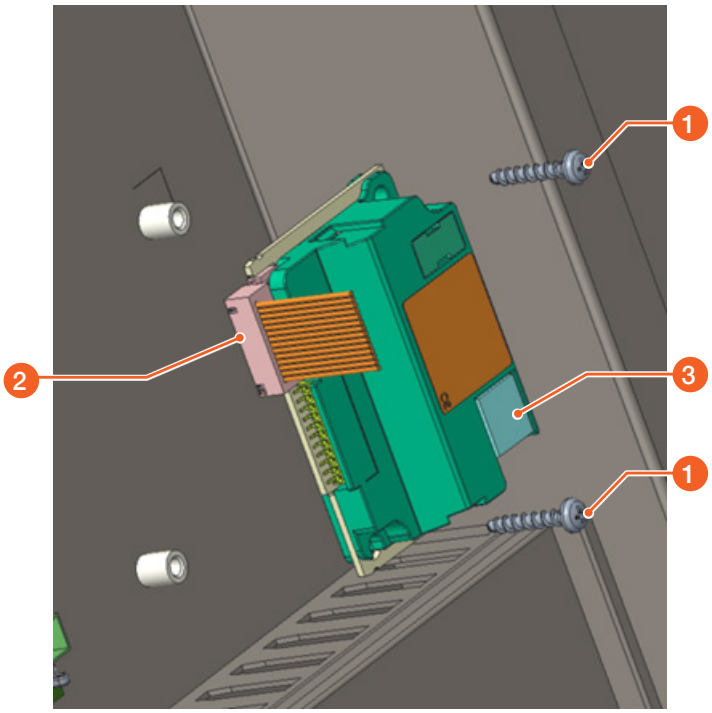
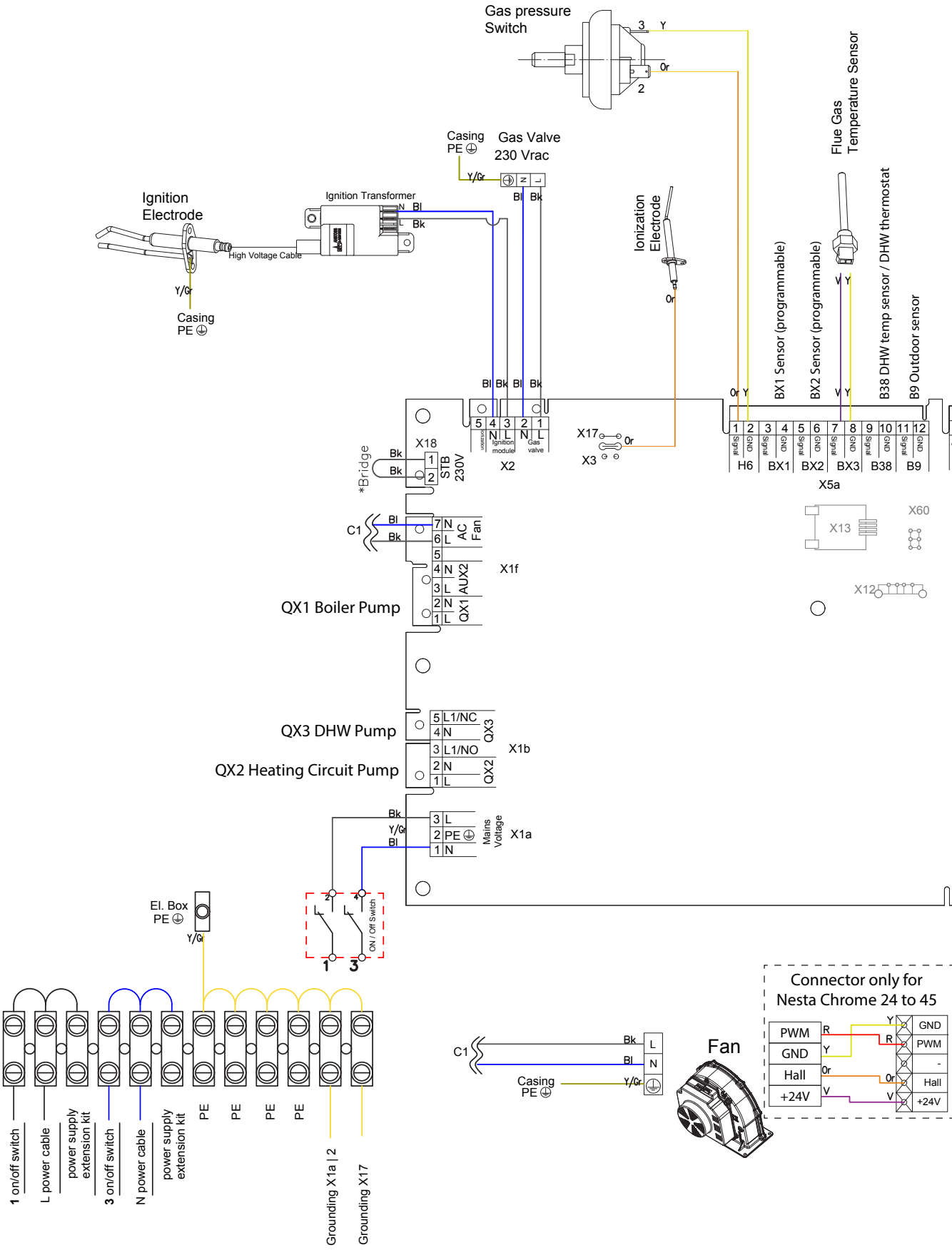
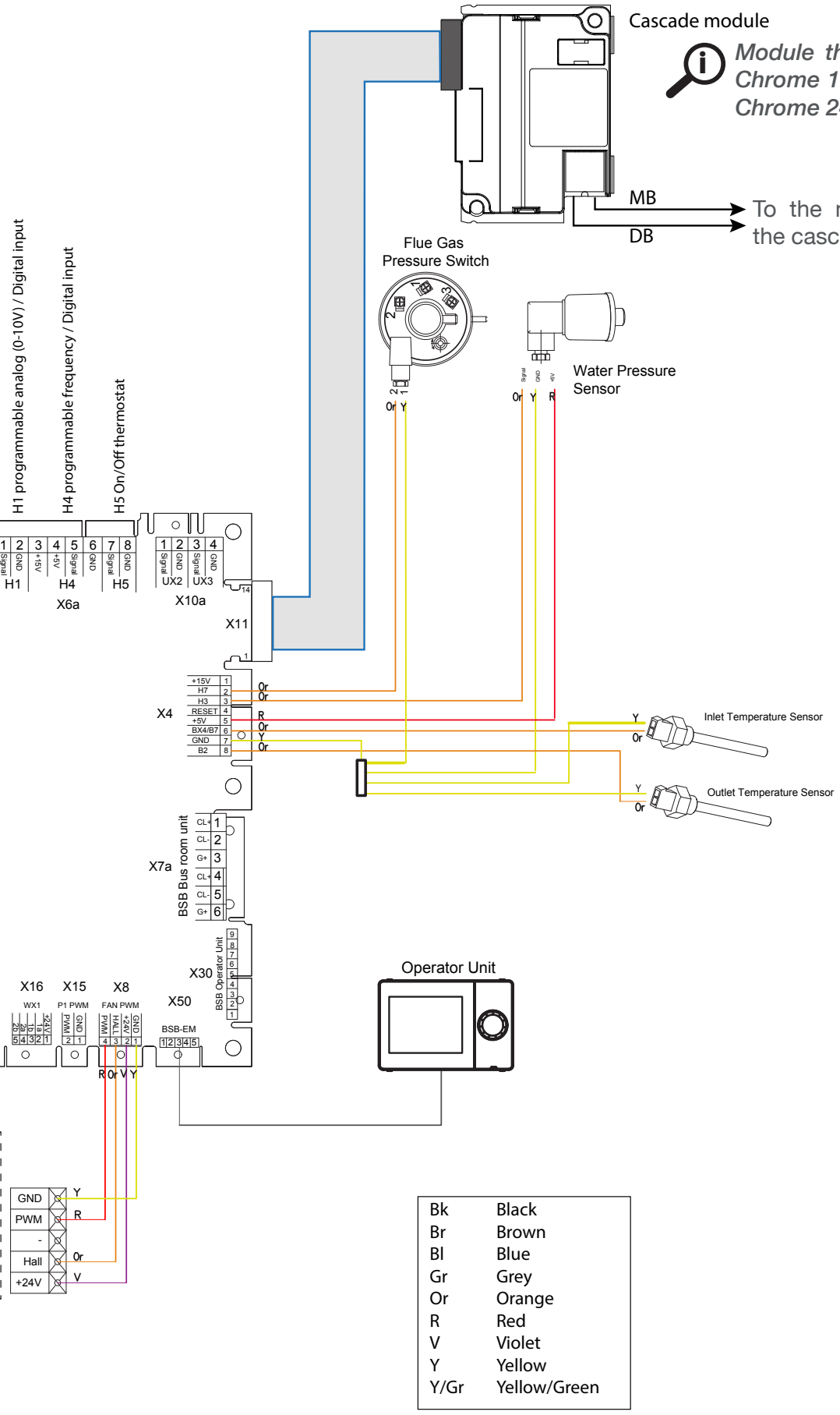


Fig. 4. Nesta and Nesta Plus - OCI cascade module Installation

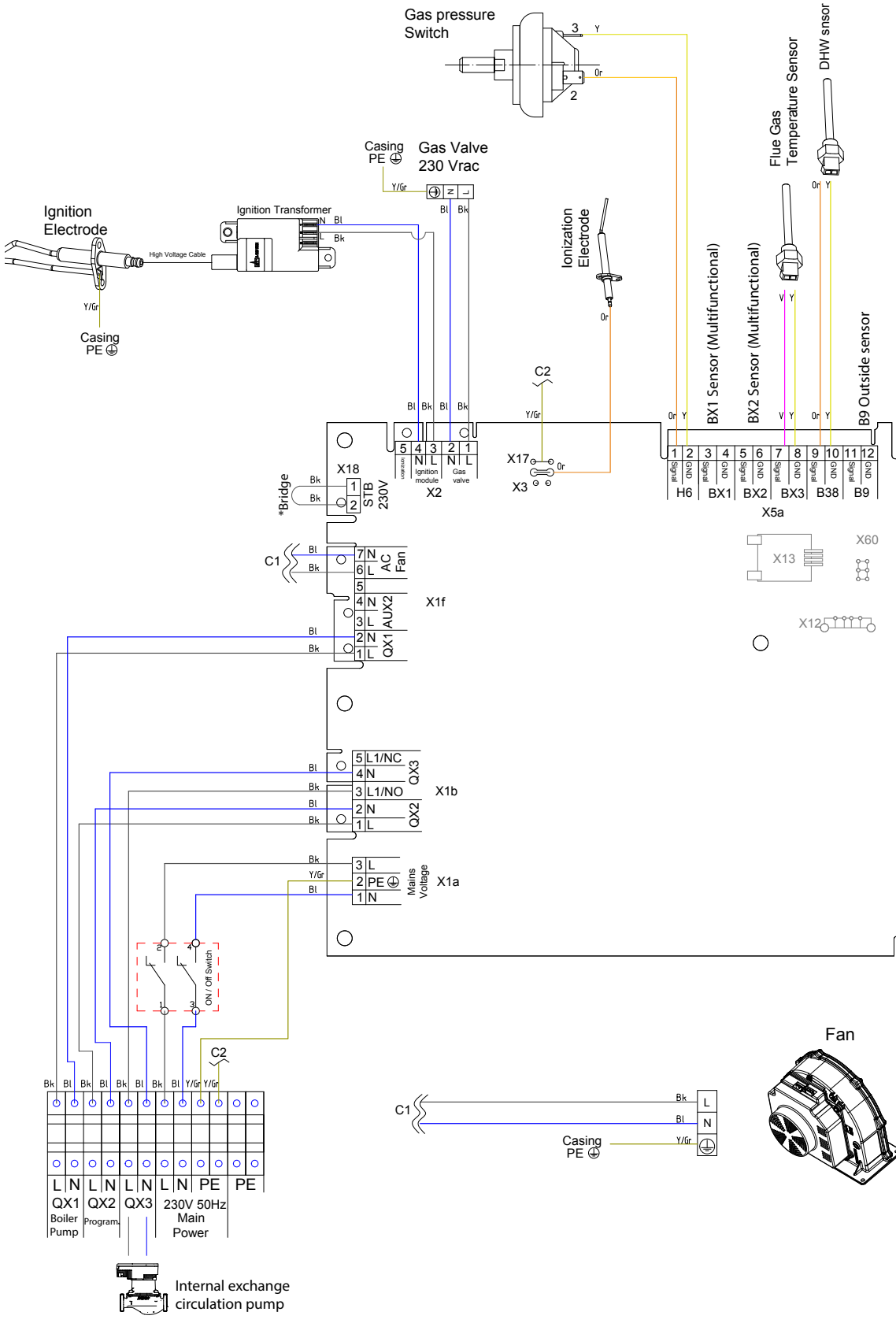
Nesta Chrome Wiring Diagram

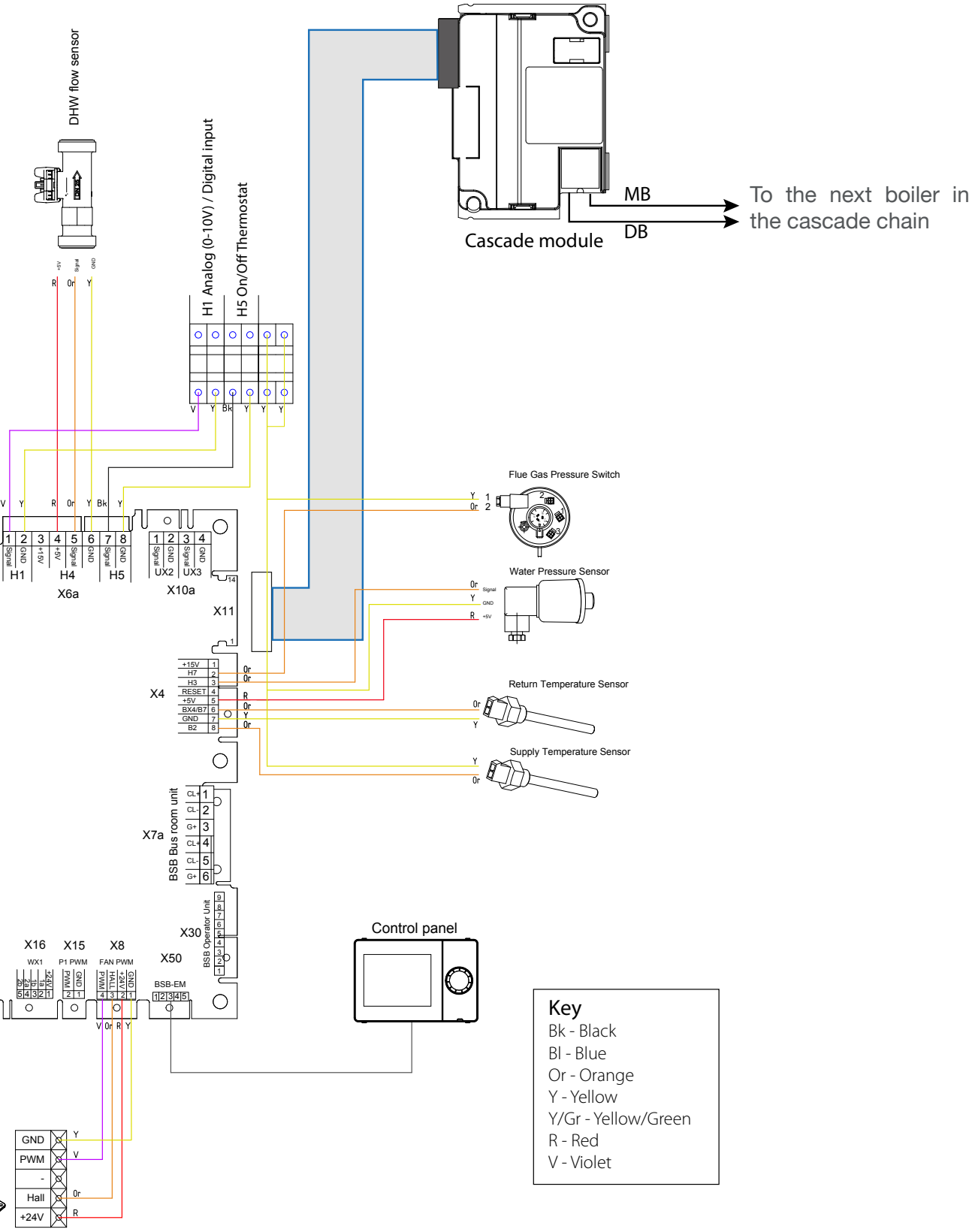




Bk	Black
Br	Brown
Bl	Blue
Gr	Grey
Or	Orange
R	Red
V	Violet
Y	Yellow
Y/Gr	Yellow/Green

CoilMaster Wiring Diagram

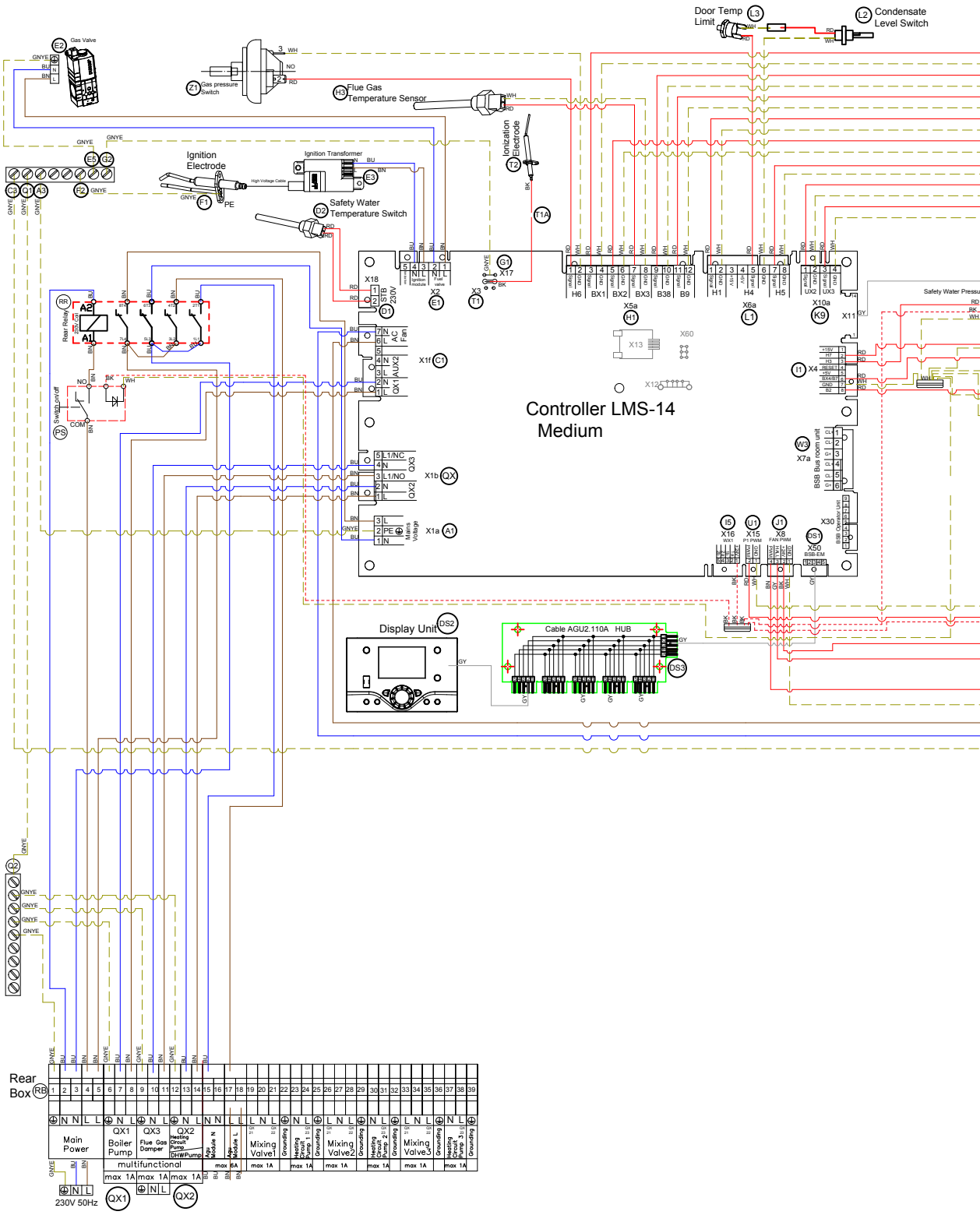


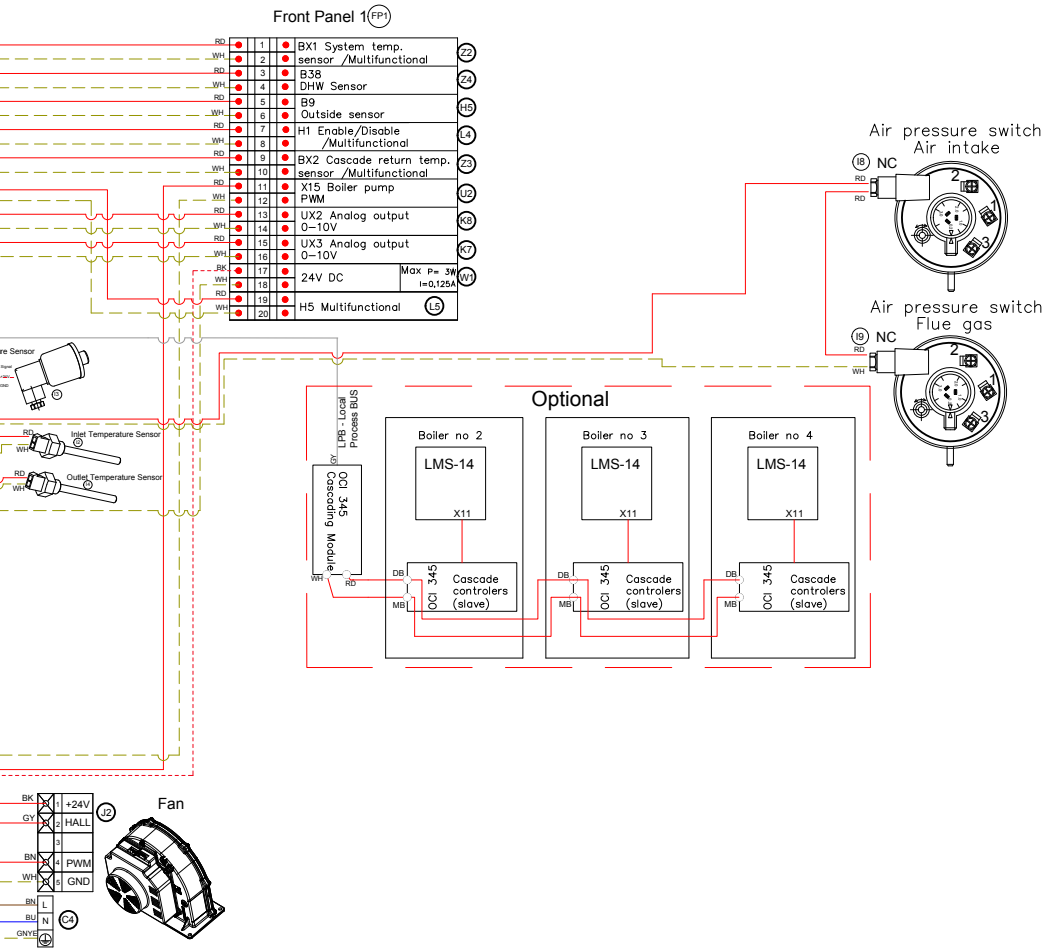


Key

Bk - Black
Bl - Blue
Or - Orange
Y - Yellow
Y/Gr - Yellow/Green
R - Red
V - Violet

Nesta Wiring Diagram

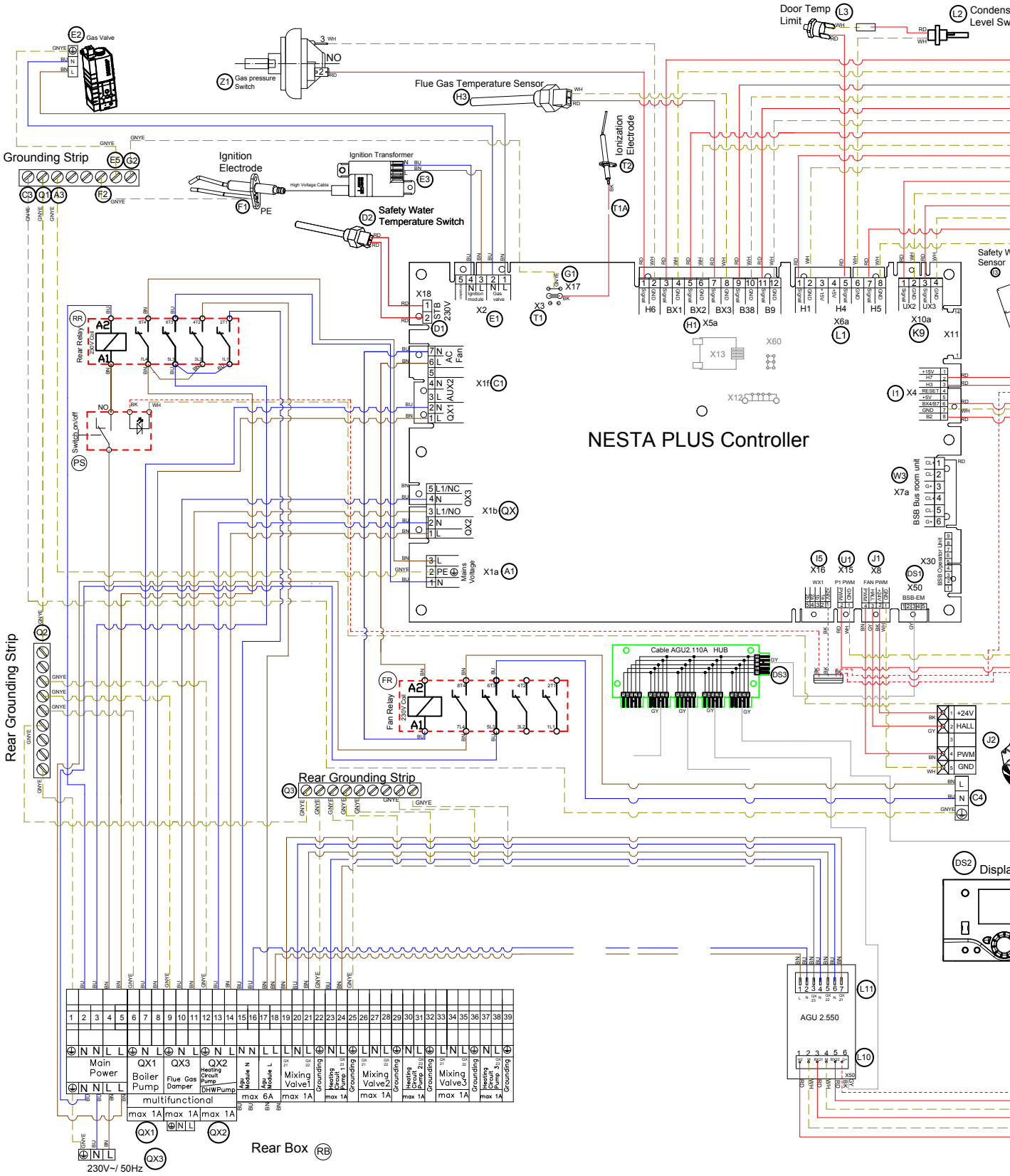


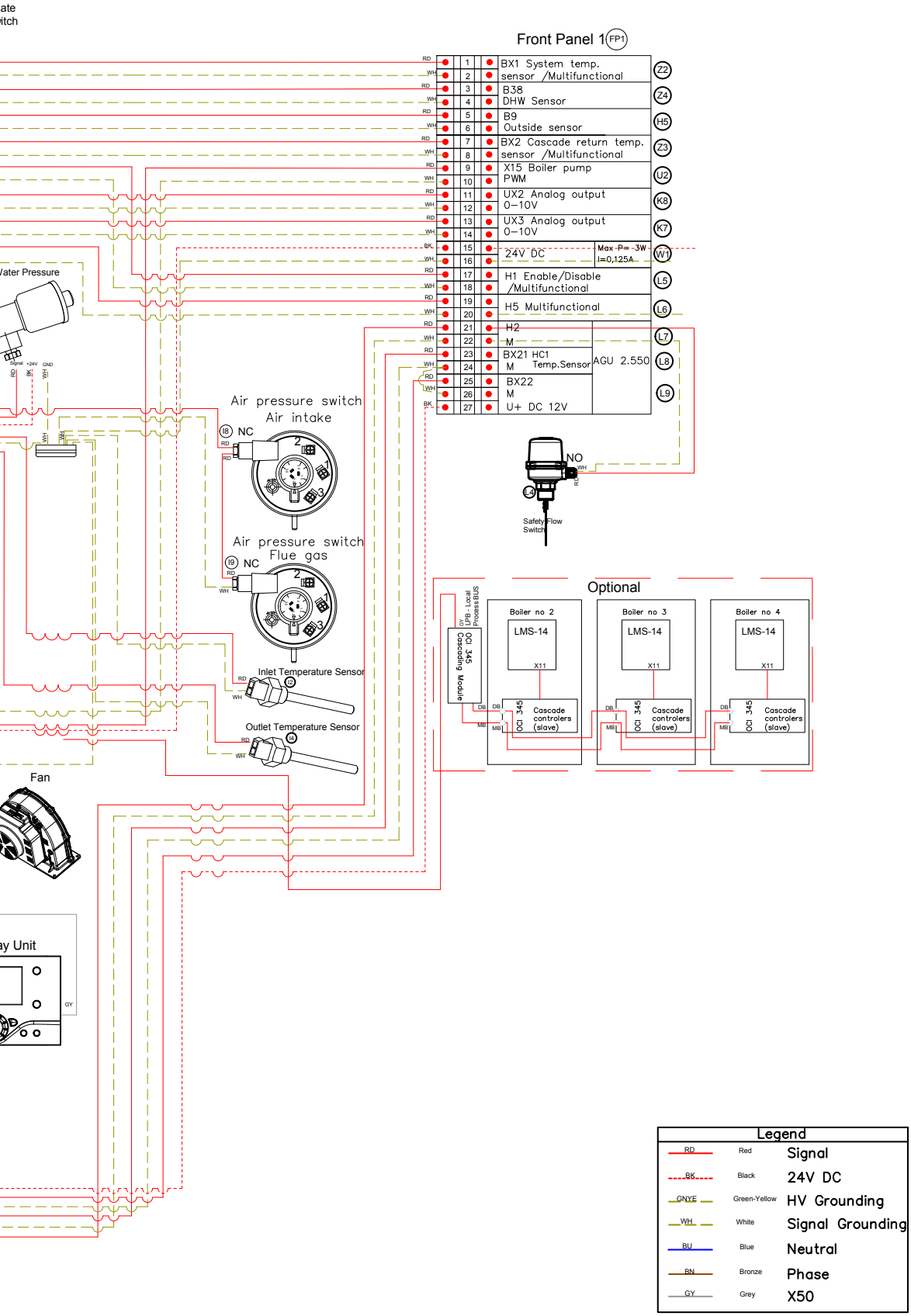


Legend		
RD	Red	Signal
BK	Black	24V DC
GNYE	Green-Yellow	HV Grounding
WH	White	Signal Grounding
BU	Blue	Neutral
BN	Bronze	Phase
GY	Grey	X50

Nesta Plus Wiring Diagram

This wiring Diagram applies to Nesta Plus 280 to 570. Principles of connection are the same foir Nesta Plus 840.




Front Panel 1 FP1
1 BX1 System temp. sensor /Multifunctional Z2
3 B38 DHW Sensor Z4
5 B9 Outside sensor H5
7 BX2 Cascade return temp. sensor /Multifunctional Z3
9 X15 Boiler pump PWM U2
11 UX2 Analog output 0–10V K8
13 UX3 Analog output 0–10V K7
15 16 24V DC Max P= 3W I=0,125A W1
17 H1 Enable/Disable /Multifunctional L5
19 H5 Multifunctional L6
21 H2 L7
22 M
23 BX21 HC1 L8
24 M Temp.Sensor
25 BX22 L9
26 M
27 U+ DC 12V
AGU 2.550
Air pressure switch Air intake
I8 NC
Air pressure switch Flue gas
I9 NC
Inlet Temperature Sensor
Outlet Temperature Sensor
NO
L4
Safety Flow Switch
Optional
Boiler no 2
Boiler no 3
Boiler no 4
LMS-14
X11
Cascade controlers (slave)
OCI 345
Cascade coupling Module
Fan
Water Pressure
Display Unit
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

Controller Setup

Controller interfaces can differ according to the model. Refer to appliance installation and maintenance manual for more information on its operation.

Principal Boiler

Access the Engineer Level, then set the following program lines as follows:

In the controller menus, please note that the Principal boiler is called "Master" and a Subsequent boiler is called "Slave".

Menu	*Pgm*	*Submenu*	*Setup*	*Explanation*
Heating Circuit 1	720	Heating curve 1 slope	2,5	heating curve to be adjusted for customer needs
	740	Flow temp min limitation heat circuit 1	55	min flow temp of system (with weather compensation)
	741	Flow temp max limitation heat circuit 1	80	max flow temp of system (with weather compensation)
	742	Flow temp setpoint room thermostat HC1	---	weather compensation [---], for fix flow temp set value [e.g.70]
Configuration	5710	Heating circuit 1	ON	heating circuit 1 active
	5890	Relay output QX1	Boiler pump Q1	define QX1 for boiler pump
	5930	Sensor input BX1	Common flow sensor B10	common system flow sensor (T20 on diagram)
	5977	Function input H5	Room thermostat HC1	define H5 for heat demand from thermostat or BMS*
	5978	Contact type H5	NO	define H5 input to normally open
LPB	6600	Device address	1	define LPB address of principal boiler
	6601	Segment address	0	define LPB segment address of principal boiler

*put this parameter (5977) to "none" if there is no Room thermostat, for heating set comfort mode with operation key on HMI (or automatic mode for using schedule)

Subsequent Boiler(s)

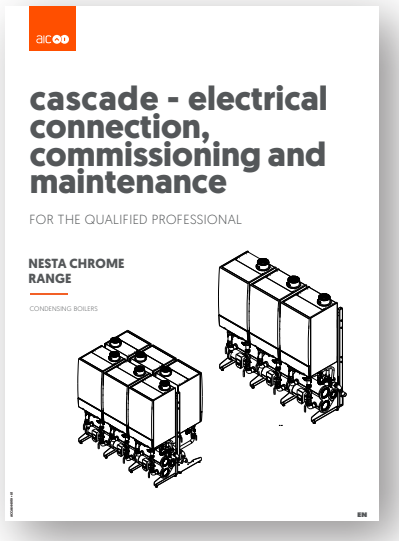
Menu	*Pgm*	*Menu*	*Setup*	*Explanation*
Configu-ration	5710	Heating circuit 1	OFF	no heating circuits
	5890	Relay output QX1	Boiler pump Q1	define QX1 for boiler pump
LPB	6600	Device address	2	define LPB address of subsequent boilers (boiler nb 2 gets address 2, boiler 3, address 3, etc.)
	6601	Segment address	0	define LPB segment address of subsequent boiler

After adjusting the boilers as indicated in "Controller Setup", restart all the boilers. Refer to the installation and Maintenance Manual of the appliance. Make any required additional adjustments if:

- *additional accessories are installed (DHW tank, thermostats, sensors, plate heat exchanger, etc.).*
- *the cascade defaults require adjustment with respect to the system construction.*
- *the chimney is set in a cascade (Nesta Chrome boilers ONLY - see below - adjust all the boilers in the cascade)*

Table 1. Fan Speed Adjustment for the Boilers in a Flue Cascade Only

Menu	*Pgm*	*Submenu*	*Setup*	
			N 60 to 150 WH	N 24 to 45 WH
Burner Control	9512	Required speed ignition	2800 rpm	4000 rpm
	9504	Required speed prepurging	3200 rpm	6000 rpm
	9524	Required speed LF	2800 rpm	3000 rpm
	9650	Chimney drying	permanent	permanent
	9651	Req speed chimney drying	2800 rpm	4000 rpm



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