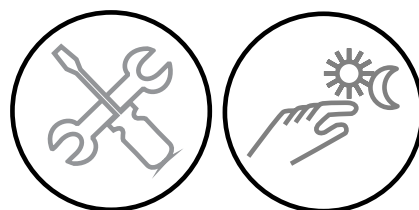


NAVISTEM B1000

CONTROL PANEL FOR STEEL SHELL BOILERS

Document No. OTA0Z0109-B / 01.02.2018

FR EN DE ES IT NL



Instructions for installation, use and maintenance



MANUFACTURER:
**GROUPE
ATLANTIC**

SITE DE CAUROI

Route de Solesmes
FR - 59400 CAUROI

1. WARNINGS AND COMPLIANCE

Unpacking and reservations

With the carrier present, carefully check the general appearance of the packaging and of the control panel. If in doubt, do not use the appliance.

In the case of any dispute, state any appropriate reservations to the carrier in writing within 48 hours and send a copy of this letter to the After-Sales service.

Storage

The control panel:

- must be arranged horizontally in a place where the temperature is between 0 °C and +50 °C
- must be protected from humidity.

Symbols used in this document



INFORMATION: This symbol draws attention to comments.



WARNING: Failure to comply with these instructions may cause damage to the installation or to other objects.



DANGER: Failure to comply with these instructions may cause injury and serious material damage.



DANGER: Failure to comply with these instructions may cause electrocution.

Compliance with European Directives

Low voltage (2006/95/CE)

- This appliance complies with all requirements of low voltage directive EN60730-1 + EN60730-2-9.
- This appliance is not intended for use by persons (including children) whose physical, sensory or mental abilities are reduced, or persons without experience or knowledge, unless they have been able to benefit, through someone responsible for their safety, from supervision or prior instruction concerning the use of the appliance.
- Children must be supervised to ensure they do not play with the appliance.

Electromagnetic compatibility (2004/108/CEE)

- This appliance conforms with all requirements of the electromagnetic compatibility directive EN61000 - 6 - 1, EN61000 - 6 - 3.
- This is a class A appliance. In a residential environment, this appliance may cause radio-electric interference. In this case, the user may be asked to take appropriate measures.



Environmental compatibility

- This appliance contains electrical and electronic elements which must not be thrown away with household waste.
- Local legislation must be complied with.

Installation and maintenance rules

The control panel must be installed and maintained by an approved professional in accordance with the prevailing regulations and code of practice, in particular:

- Comply with rules in force and with specific instructions and norms applicable in the country of installation.



WARNING:

The control panel is classified as an appliance which is not accessible to the public (closed electrical operating zone).



WARNING:

The control panel must only be used for the purpose for which it was designed; any other use must be considered inappropriate and therefore dangerous.



WARNING:

The appliance must be sheltered from rain, snow and frost.



INFORMATION:

This product must be assembled, used and maintained in compliance with the information provided in these technical instructions.



DANGER:

Always turn the control panel off before carrying out any work on it.



DANGER:

Always turn the control panel off before carrying out any work on the burner, boiler or other heating elements (pumps, valves, etc.) controlled by the control panel.

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2. TECHNICAL SPECIFICATIONS

2.1. General

The NAVISTEM B1000 control panel commands the boiler's burner via a two-stage control thermostat.

2.2. Dimensions

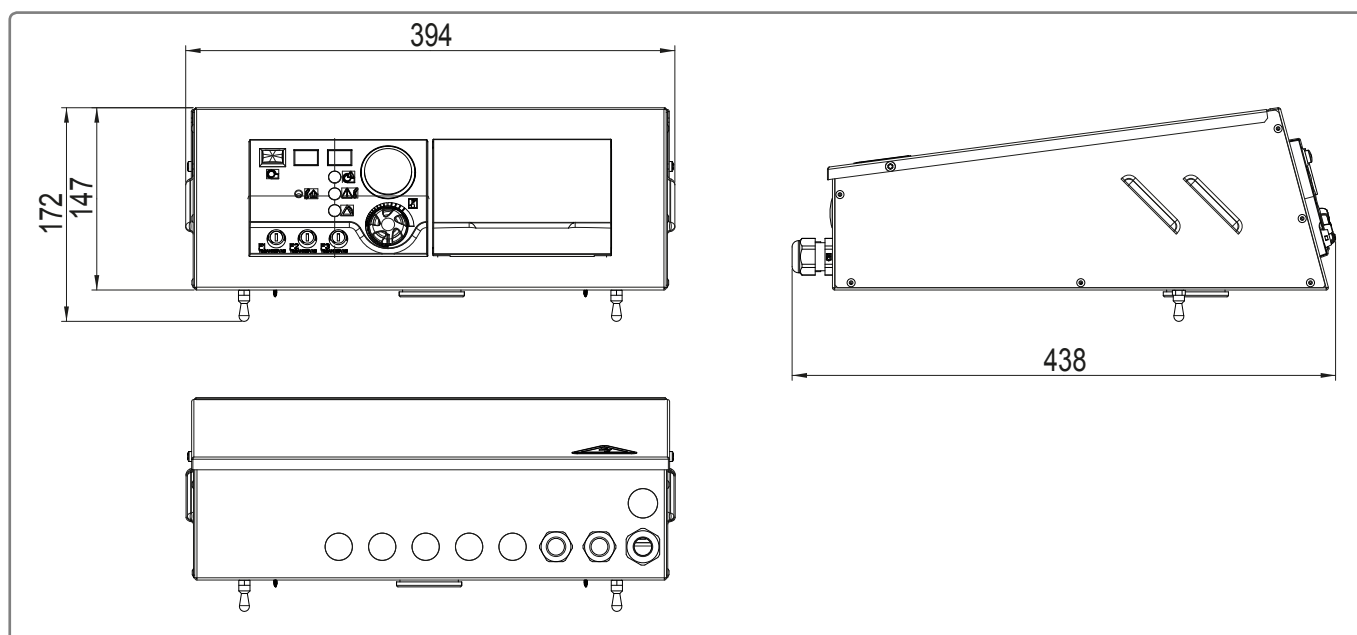


figure 1 - Dimensions (in mm)

2.3. Delivered unit

- Sheet metal casing
- Thermostat module
- Servicing, installation instructions
- Electrical diagram
- Assembly kit (screws)

2.4. Technical data

Name of manufacturer	YGNIS INDUSTRIE
Unique reference	NAVISTEM B1000
Single-phase power supply	230V (AC) 50Hz
Rated current	16A
Casing protection index	IP20
Reference operating temperature	T45
Degree of pollution	Degree of pollution II
Protection index	Class I (Surge voltage = 800V)
Safety thermostat	110°C Maximum Temperature (+0/-9°C)
Burner thermostat setting at stage 1 - Low fire	35...95°C (+/-3°C). To adjust depending on the required temperature and the boiler used.
Burner thermostat setting at stage 2 - High fire	29...89°C (+/-3°C). Fixed differential setting in relation to the first speed of 6°C. The two speeds are set with the same button.
Electrical consumption	Depends on appliances plugged in (burners, pumps, mixing valves)
Maximum installation altitude	2,000 m
Relative humidity	5 to 95%
Terminal output power	Voltage: 230V AC (+10%/-15%) Amperage: 5mA to 2A.
GWFI plastic interface	550°C
Type of printed circuit board(s) coating	EPOXY FR4 FT glass


WARNING:

The control thermostat must be set taking into account the temperature constraints of the boiler on which the NAVISTEM B1000 control panel is used (temperature limit to avoid condensation in the heat exchanger).

2.5. Thermostat module

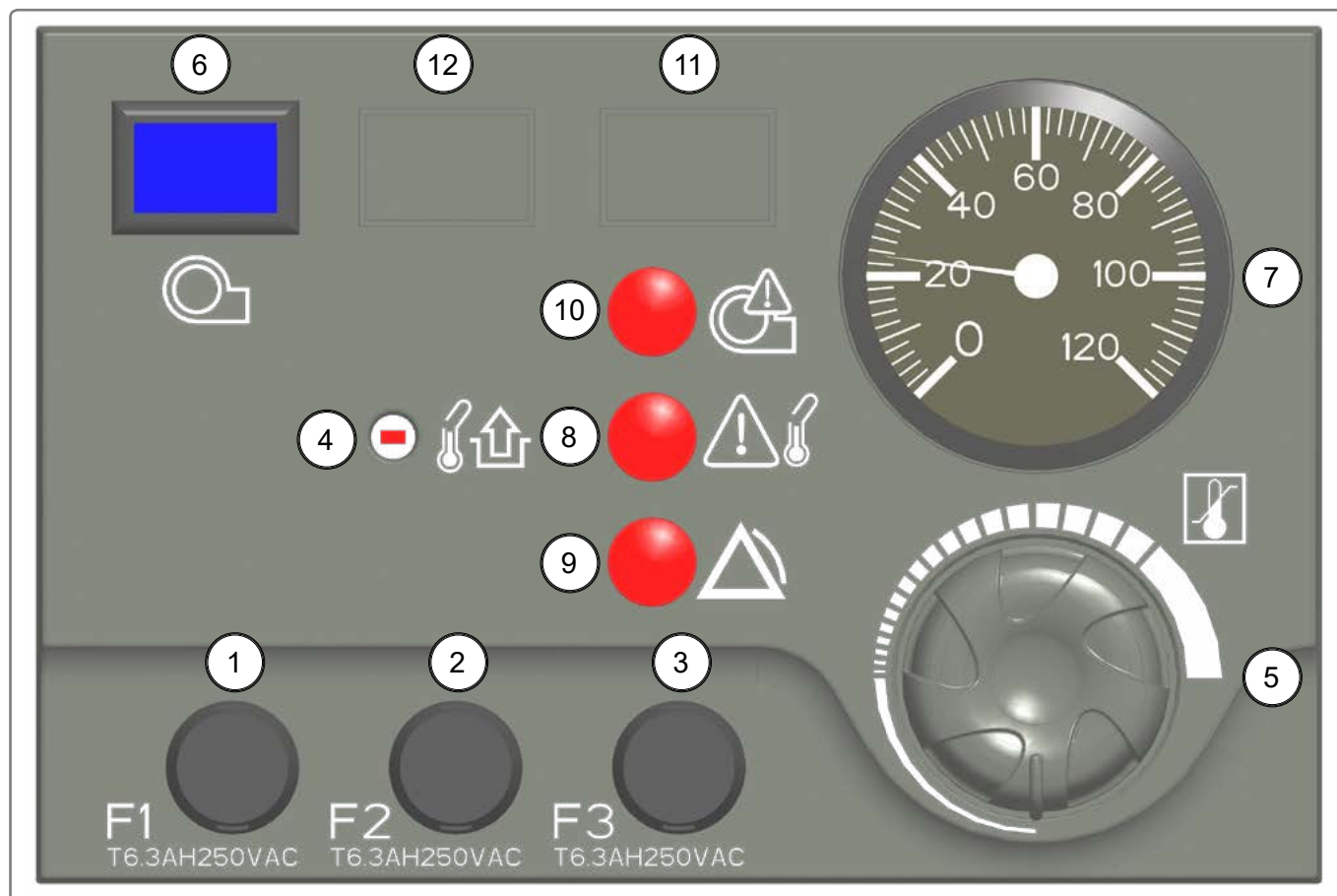


figure 2 - Thermostat module

Legend

- 1 F1: 6.3 AH 250 V AC Burner / Boiler fuse
- 2 F2: 6.3 AH 250 V AC heating regulator fuse — Not used
- 3 F3: 6.3 AH 250 V AC additional heating regulator fuse — Not used
- 4 Safety thermostat (reset button)
- 5 First stage and second stage control thermostat. Adjusting thermostat setpoints (fixed differential setting of 6°C between the two stages).
- 6 ON / OFF switch for burner power supply
- 7 Thermometer: indication of the boiler's water temperature
- 8 LED indicating a problem with the safety thermostat (boiler temperature too high)
- 9 LED indicating an external fault (safety interlock circuit)
- 10 LED indicating a fault with the burner (lockout)
- 11 Position for the burner's remote reset button (not applicable in U.K.)
- 12 Position for TUV switch (not applicable in U.K.)

2.6. Basic control panel equipment

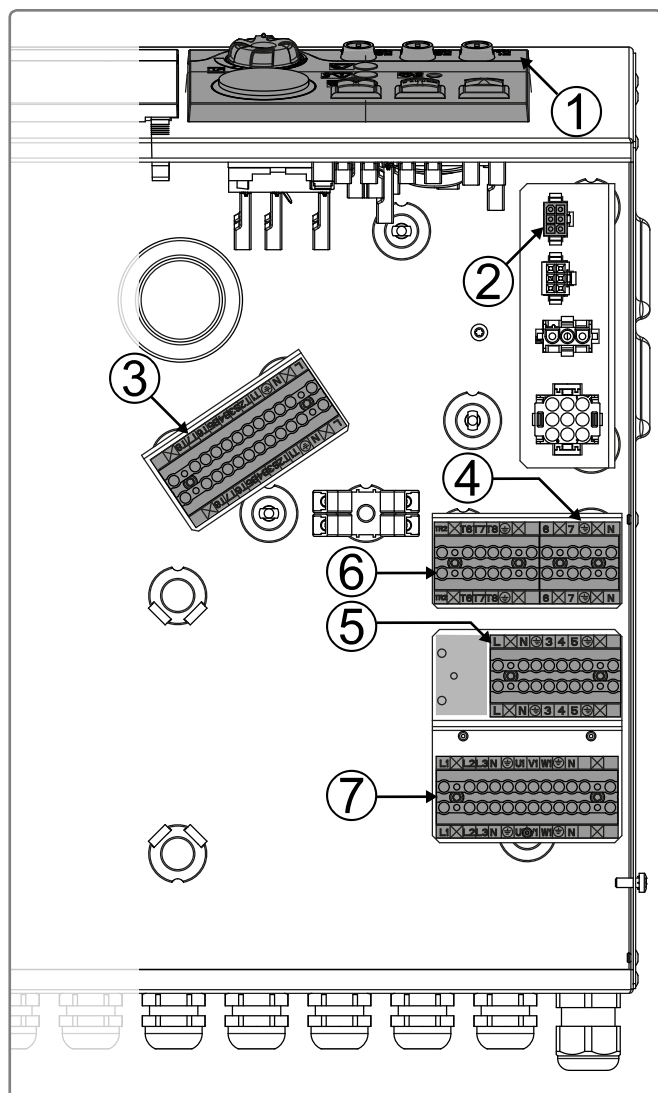


figure 3 - Internal layout of control panel

- 1 Thermostat module
- 2 Connector for alarm relay board
- 3 Burner connection terminal
- 4 Connection terminal to release the burner's operation
- 5 Power supply and connection terminal of safety devices specific to the installation
- 6 Connection terminal to release operation of the burner's second speed.
- 7 Accessory terminal for three-phase burner power supply (optional)

Terminals 4 and 6 allow an external control system such as a B.M.S. or boiler sequence control panel to control the high and low firing stages of the boiler. The control thermostat must be set at its maximum setting when this function is used.

3. INSTALLATION

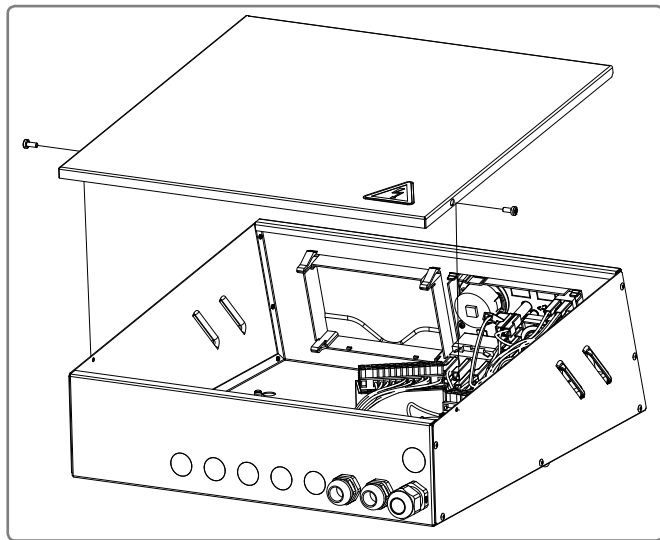
3.1. Installation of the control panel



WARNING:

The control panel must be fitted and installed in the intended position on the boiler.

3.1.1. Opening the control panel



Remove the screws on the cover.

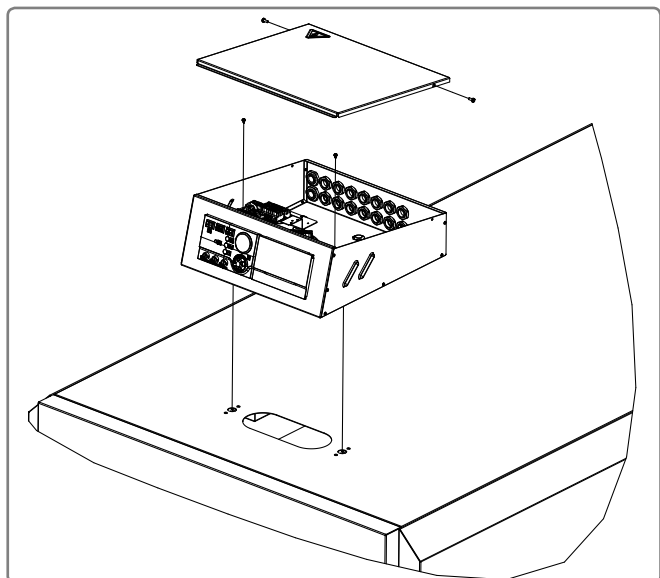
figure 4 - Opening the control panel



DANGER:

Keep the screws from the control panel's cover. They are specific and ensure grounding continuity.

3.1.2. Fitting above the boiler



- Pass the three capillaries (thermometer, control thermostat, safety thermostat) through the oblong hole on the boiler's upper jacket.
- Pass the boiler outlet sensor through the same oblong hole.
- After installing the capillaries, clip the control panel to the boiler's upper jacket using studs.
- Fit the control panel to the boiler's upper jacket using the sheet metal screws included.

figure 5 - Fitting the control panel

3.1.3. Fitting to the side of the boiler

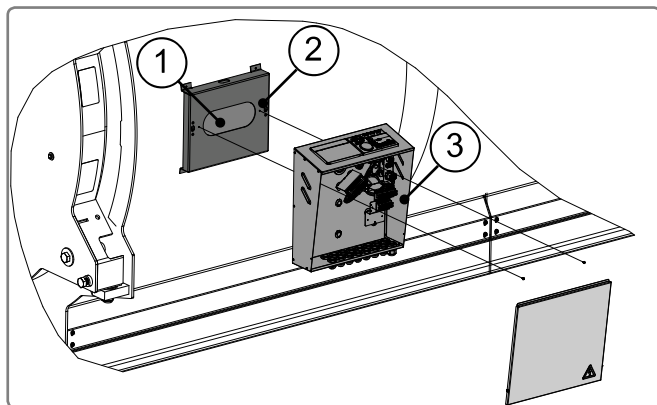


figure 6 - Fitting the control panel

- Pass the three capillaries (thermometer, control thermostat, safety thermostat) through the oblong hole 1 on support 2.
- Fit the control panel 3 with the studs to support 2 fitted on the boiler's side jacket.
- Fit the control panel to the support on the boiler's side jacket using the sheet metal screws included.

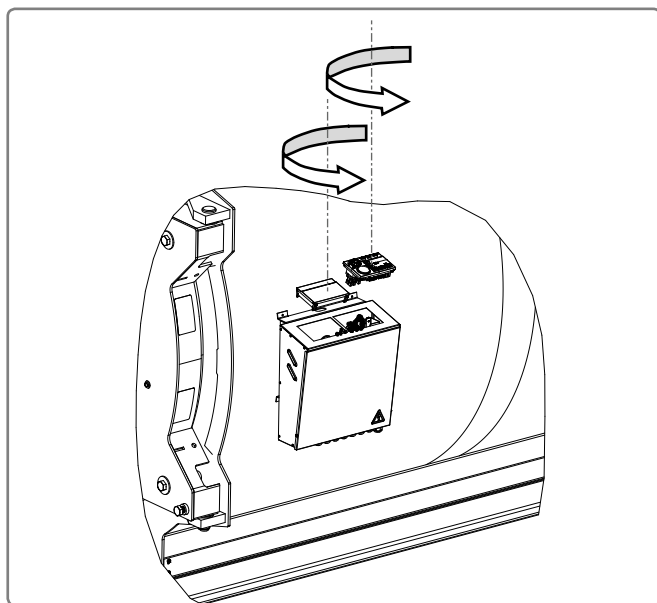


figure 7 - Rotation of the interfaces

- Rotation of the interfaces so that they can be read by the user



WARNING:

Follow the direction of rotation indicated on the diagram above (anti-clockwise)

3.2. Fitting the sensors (bulbs)

3.2.1. Tri-lobal sensor pocket

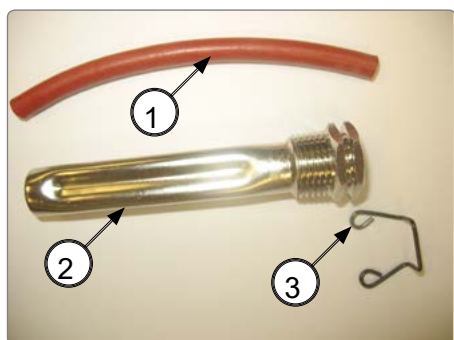


figure 8 - Tri-lobal thimble

- 1 Foam seal Ø 8
- 2 Tri-lobal sensor pocket
- 3 Retention clip

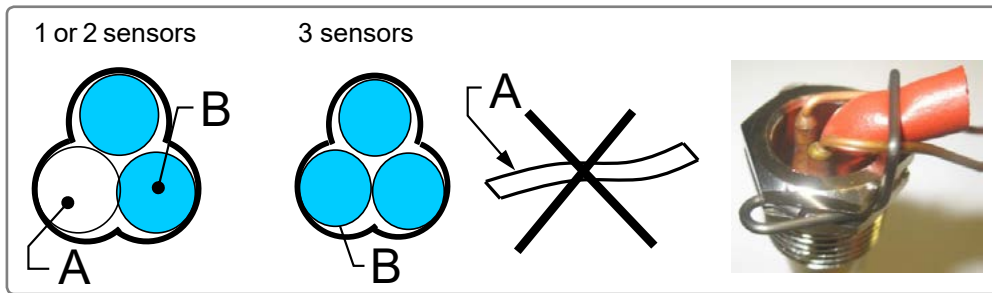


figure 9 - Installation of sensors

A: Foam seal Ø 8 mm

B: Sensor

- To get a correct temperature reading, insert the sensors with the Ø 8 mm foam seal.
- The minimum curve radius of the capillaries is 5 mm.
- After installing, retain the sensors with the clip included with the pocket.



DANGER:

Do not fill the protective tubes with oil. Do not use heat conducting paste or similar products.



WARNING:

Do not damage or deteriorate the capillaries when fitting.

3.2.2. ENSBURY boilers

Position of sensors

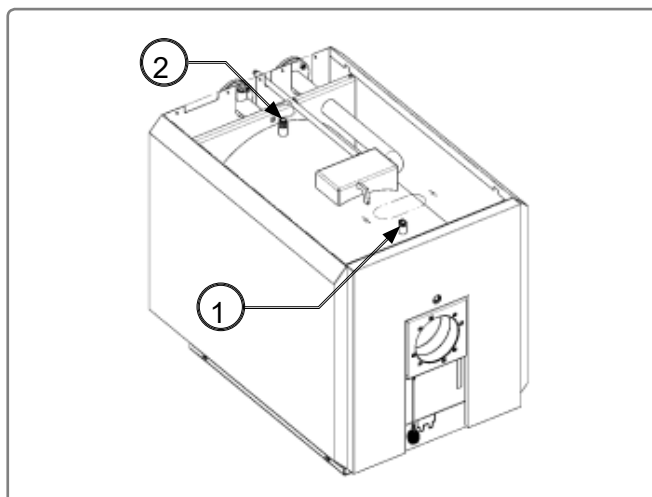


figure 10 - ENSBURY boilers

- 1 F4: Safety thermostat
- 2 F5: Control thermostat
Thermometer

3.2.3. MELBURY HE3800 to HE10000 boilers

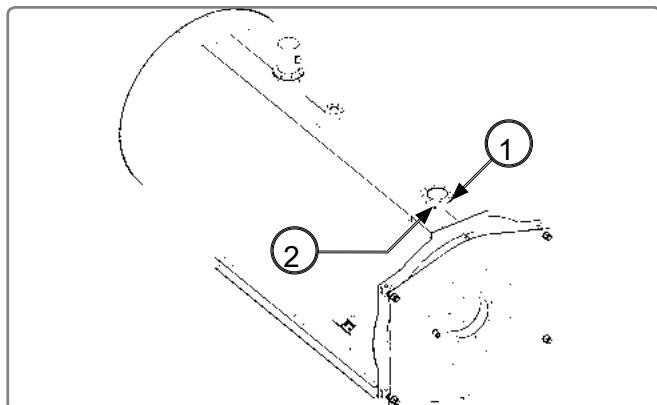


figure 11 - MELBURY HE3800 to HE10000 boilers

Position of sensors

- 1 F4: Safety thermostat
- 2 F5: Control thermostat Thermometer

3.2.4. MELBURY HE530 to HE3000 boilers

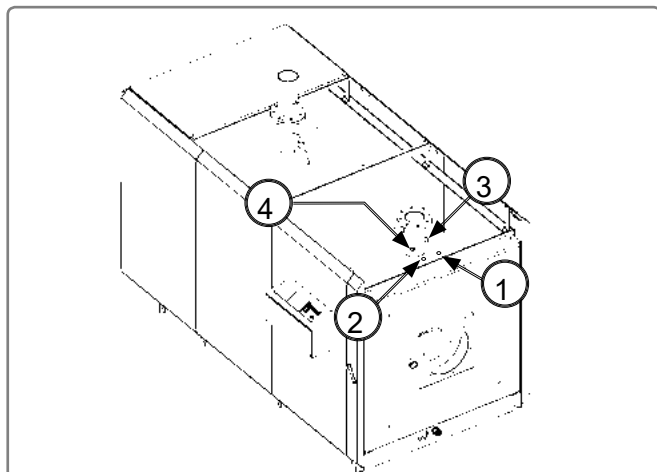


figure 12 - MELBURY HE530 to HE3000 boilers

Position of sensors

HE 530 - 895

- 1 F4: Safety thermostat
- 2 F5: Control thermostat Thermometer

HE 1150 - 3000

- 3 F4: Safety thermostat
- 4 F5: Control thermostat Thermometer

3.2.5. MELBURY C boilers

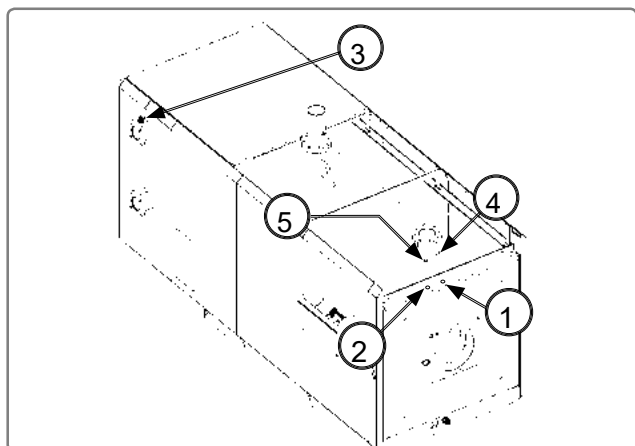


figure 13 - MELBURY C boilers

Position of sensors

C 580 - 895

- 1 F4: Safety thermostat
- 2 F5: Control thermostat Thermometer
- 3 S11: RT Economiser thermostat (not included with the control panel).

C 1150 - 3000

- 1 F4: Safety thermostat
- 2 F5: Control thermostat Thermometer
- 3 S11: RT Economiser thermostat (not included with the control panel).

3.3. Electrical connection



INFORMATION: The electrical diagram is attached to the control panel. It is stuck under the cover.



WARNING: Do not pull the electrical cables. Remove them from heat sources.



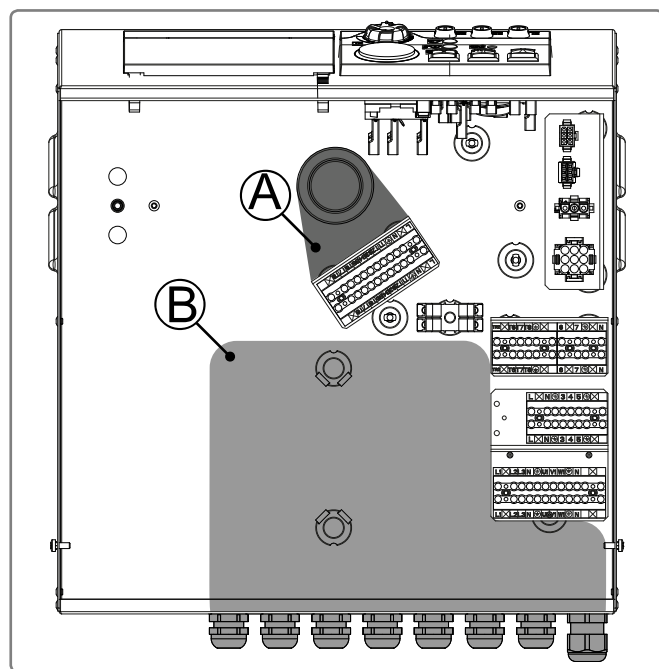
WARNING: Only carry out electrical connections, in particular connection to the main supply, when all other fitting and installation work is completed.



WARNING: Installations carried out by the customer (cable runs, gas or fuel pipes, etc.) must not be secured to the boiler's casing!



WARNING: The control panel must be fitted and installed in the position intended for this on the boiler.



- A Location for burner connection cables.
- B Location for low voltage cables (LV: between 50 V AC and 400 V AC).

figure 14 - Cabling



DANGER: Comply with the cabling locations and separation of LV and VLV cables.

3.3.1. Control panel cabling diagram

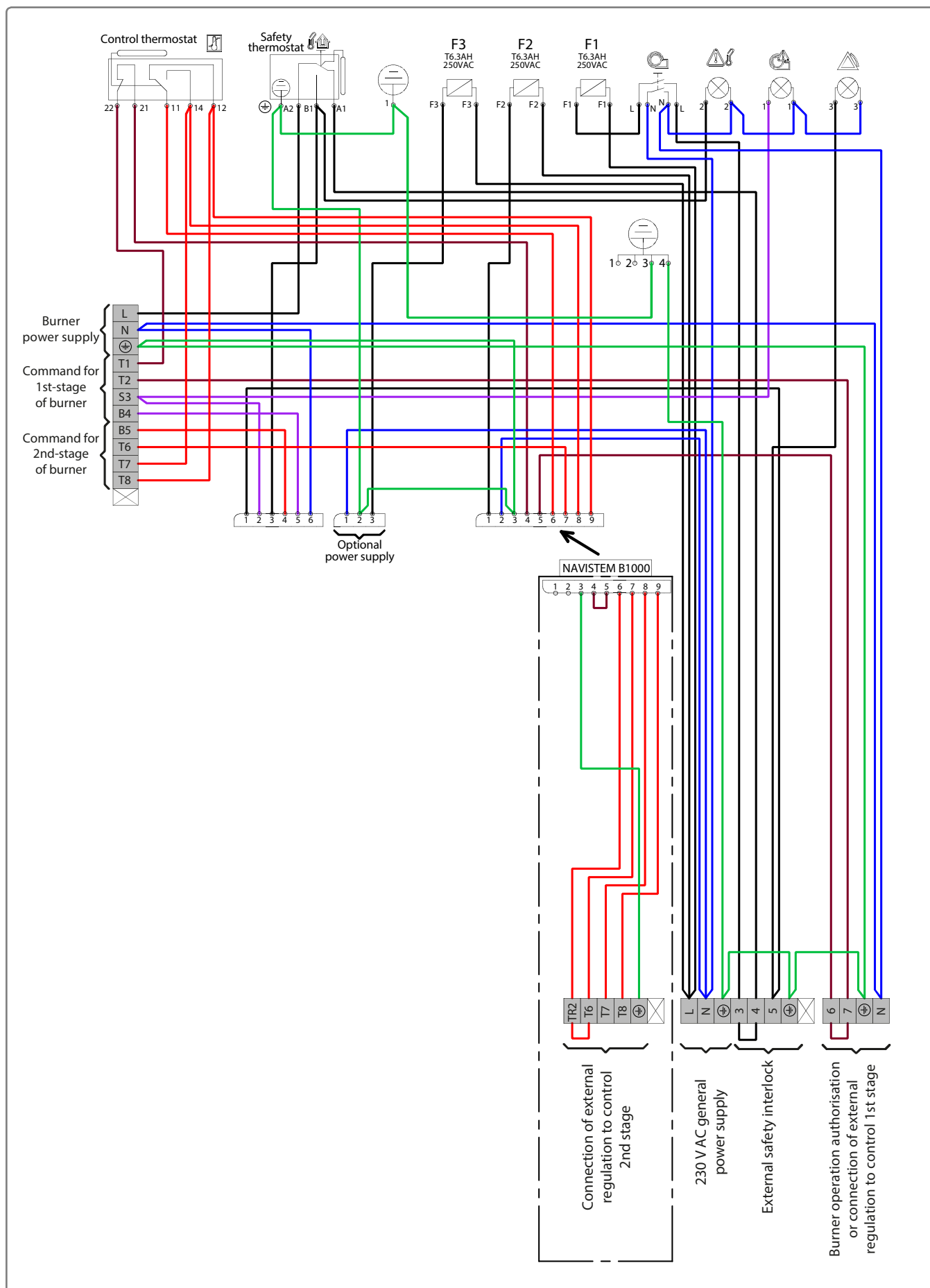
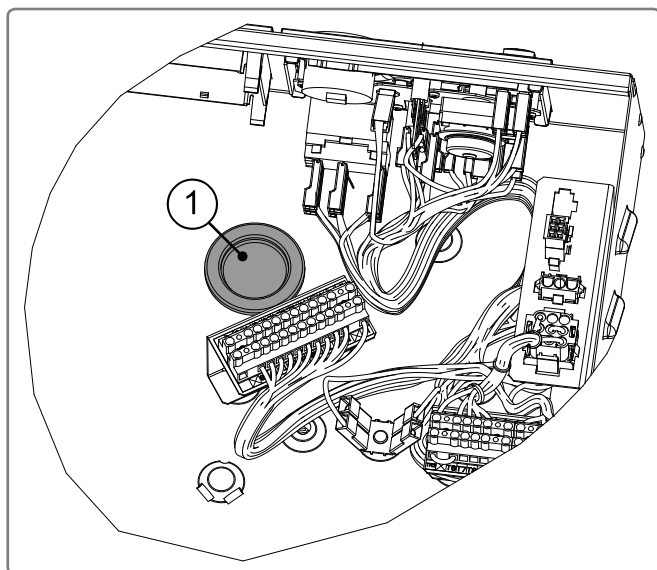


figure 15 - Control panel electrical connection diagram

3.3.2. Burner cables



- Pass the burner connection cables through the rubber membrane 1 and position them between the insulation and the boiler's casing.

figure 16 - Burner cables and outlet sensor

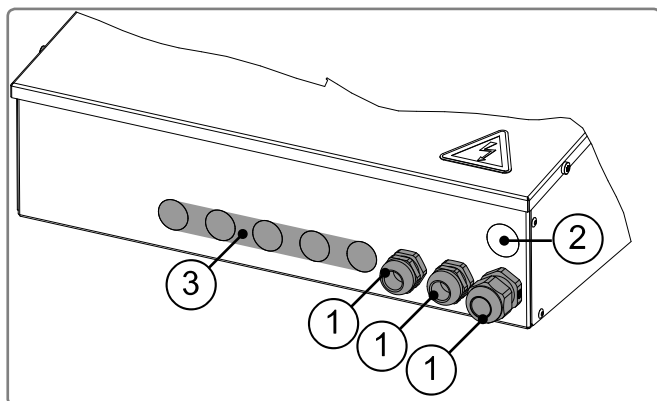


WARNING:

Do not remove or alter the boiler's insulation. Ensure there is no direct contact between the cables and the heat exchanger.

3.3.3. Other cables

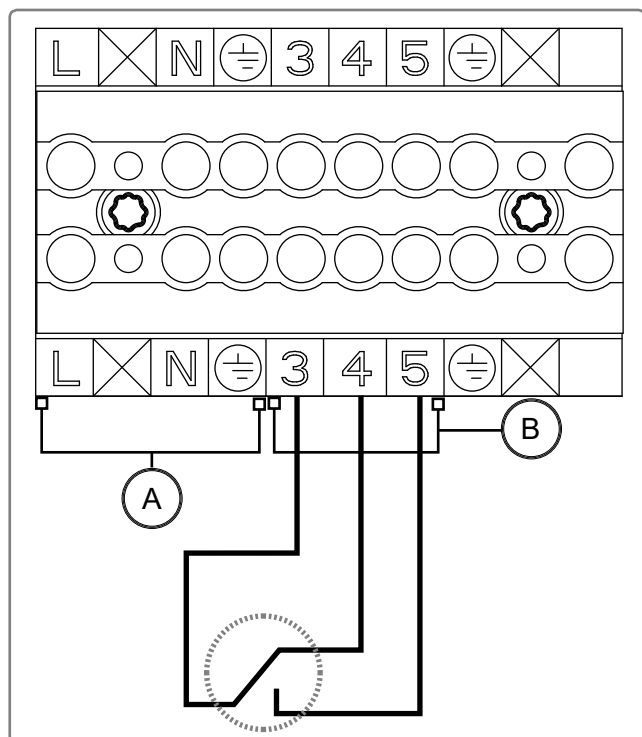
The other cables of the different elements (error relay, power supply cables, etc.) can be directly positioned at the back of the control panel via the cable glands.



- 1 Cable glands for power cables
- 2 Position for the three-phase burner supply cable gland
- 3 Position for the alarm relay board cable gland

figure 17 - Other cables

3.3.4. Connection of the control panel's electrical power supply and external safety interlock connections



- A Control panel's electrical power supply: 230 V AC 50Hz
Maximum intensity: 16 A
Type of cable: 3 G 2.5 mm²
- B External safety connections: 230 V AC 50Hz
Remove the shunt between 3 and 4 to connect the external safety elements
Maximum intensity: 16 A
Type of cable: 2.5 mm²

figure 18 - Connection of the control panel's electrical power supply and external safety interlock connections



WARNING: Do not reverse phase and neutral.



WARNING: Never use a socket for the power supply.



WARNING: The control panel must be powered by special protected lines leaving the boiler room's electric panel via all-pole circuit breakers.



WARNING: The protective earth conductor must be longer than the phase and neutral conductors.

3.3.5. Burner connection

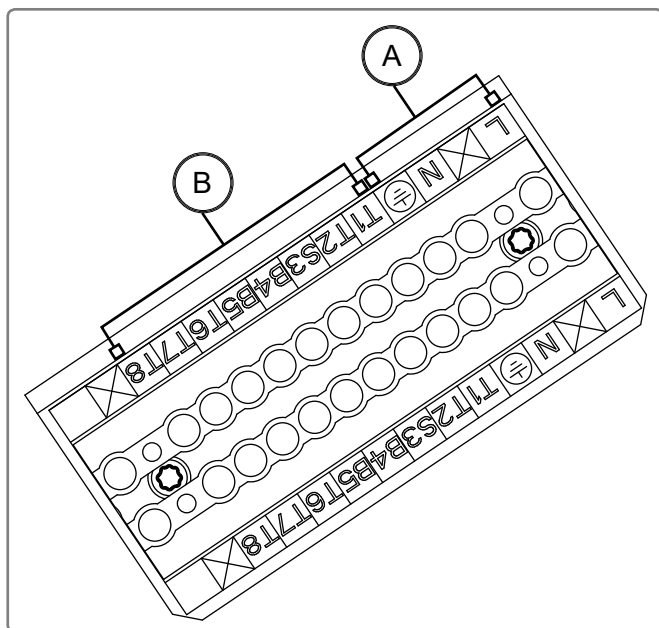


figure 19 - Burner connection

- A Burner's electrical power supply:
230 V AC 50 Hz
Maximum intensity: 6.3 A
Type of cable: 3 G 1.5 mm²
- B Burner's electrical commands:
230 V AC 50 Hz
Maximum intensity: 6.3 A
Type of cable: 3 G 1.5 mm²



WARNING:

The protective earth conductor must be longer than the phase and neutral conductors.

3.3.6. Connection of the cable to enable the burner's operation

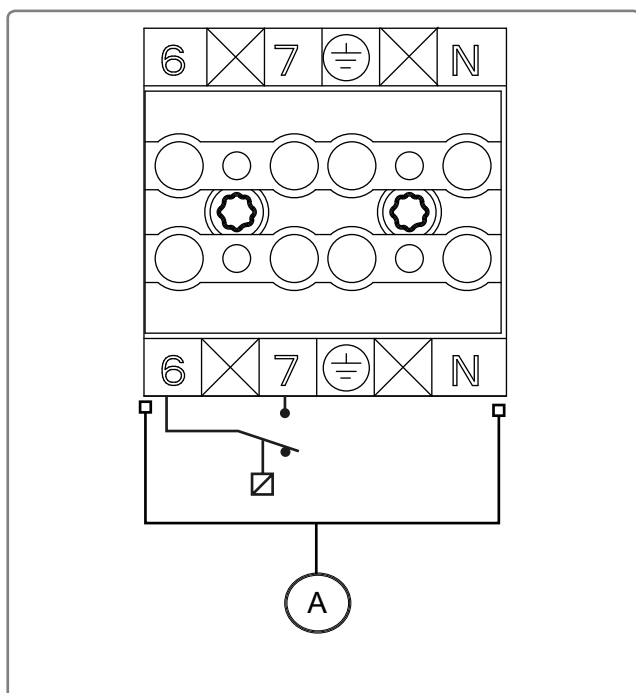


figure 20 - Connection of the cable to enable the burner's operation

- A Connection of the cable to ensure the burner's operation: 230 V AC 50 Hz
Remove the shunt between 6 and 7 to connect the external control
Maximum intensity: 6.3 A
Type of cable: 1.5 mm²

3.3.7. Connection of the cable to enable operation of the burner's second stage

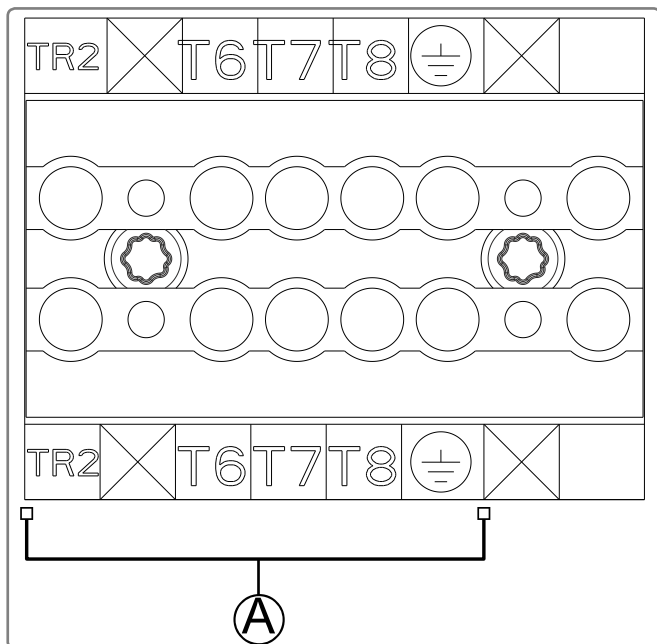


figure 21 - Connection of the cable to enable operation of the burner's second stage

- A Connection of the cable to ensure operation of the burner at second stage: 230 V (AC) 50Hz
Maximum intensity 6.3 A
Type of cable: 1.5 mm²

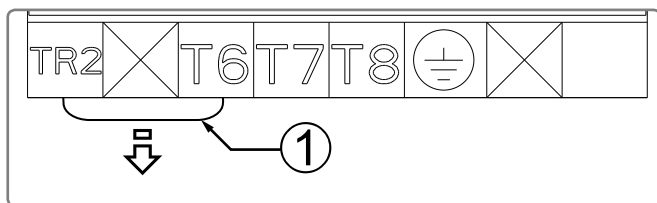


figure 22 - Removal of shunt

- Remove shunt 1 between TR2 and T6 to connect the external control

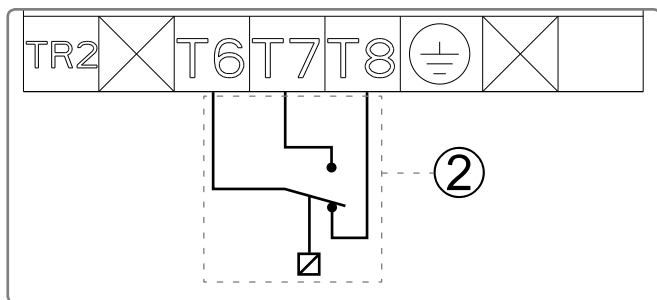


figure 23 - Connection of external control

- The external control 2 is connected to terminals T6 - T7 and T8

3.3.8. Closing the control panel

When all connections have been made, close the control panel.



WARNING:

To close the control panel, use the screws you previously removed.



WARNING:

Ensure each cable gland is tight so that no connection inside the control panel can be attempted.

4. ADDITIONAL ACCESSORIES

Each additional accessory is delivered with its own instructions (fitting, electrical connections and use).

4.1. Accessories

Alarm relay board without potential (A123).....Ref. 059808

- Relay of the following information in the form of contacts without potential:
 - Burner stage 1
 - Burner stage 2
 - Burner signal lockout
 - Safety thermostat signal lockout
 - External interlock fault signal (safety elements specific to the installation)

Three-phase power supplyRef. 408503

- Terminal recommended when using a three-phase current and/or a three-phase pump.
- Supplied with the three-phase burner power cable (3.5 m long)

Burner cables

- Possibility to supply different sets of cables fitted with 4 or 7-terminal pin plug connectors and available in different lengths.

Designation	Reference
Single-phase set of burner cables, 3.5 m with extension	059811
Single-phase set of burner cables, 3.5 m without extension	408385
Gas safety valve cable	059814



INFORMATION:

Ready-to-install cable sets which ensure rapid and easy installation are delivered with combinations of burners and LRP-UNIT boiler and with distributors.

Time and pulse meterRef. 059812

- Meters providing information on the number of start-ups and the operating hours for both low and high fire burner stages.

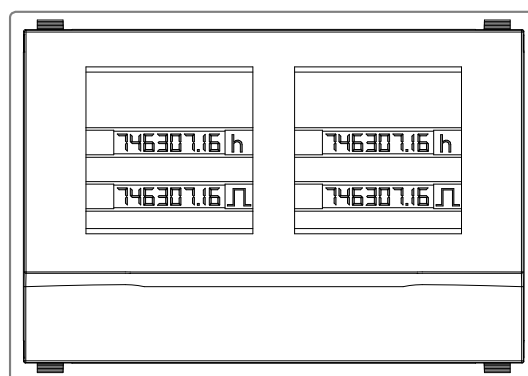


figure 24 - Time and pulse meter

5. USING THE CONTROL PANEL

5.1. Start-up (Commissioning)

5.1.1. Setting the control thermostat

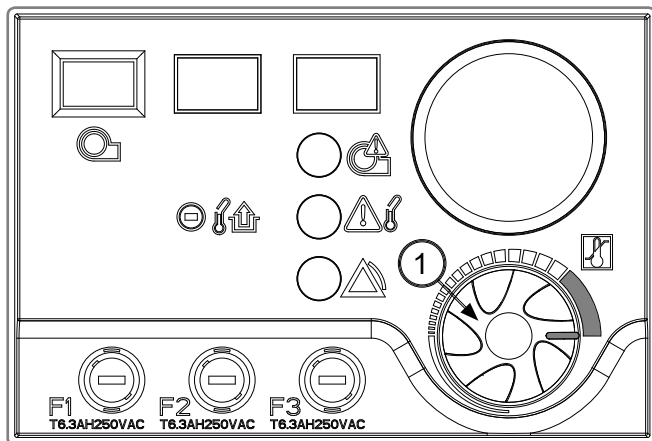


figure 25 - Thumbwheel in maximum position

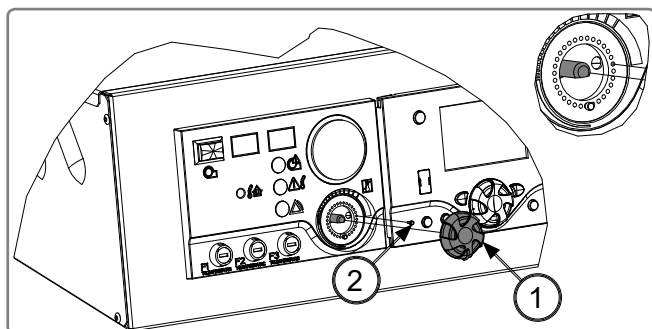


figure 26 - Positioning the thumbwheel's stopping pin

- Turn the thumbwheel 1 to the desired water temperature (see the value on the thermometer);
- Stopping pins are positioned behind the thumbwheel of the control thermostat so that the water temperature cannot be set lower than the dew point temperature of the exhaust gases (risk of condensation)
- The user can alter these stoppers by proceeding as follows:
 - Remove the thumbwheel
 - Put the stopping pin 2 in the desired position.
 - Refit the thumbwheel 1.

5.1.2. Switching on the control panel

Switch the all-polar circuit breaker to ON.



DANGER:

As soon as the circuit breaker is switched on again, some parts of the control panel become live.

5.1.3. Switching the burner on

- ON/OFF switch 1 for the burner's power supply.

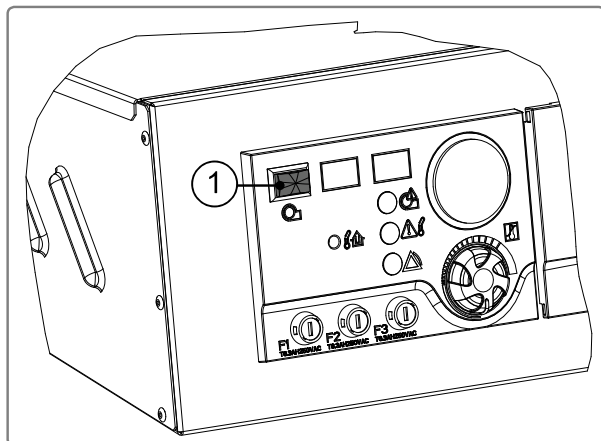


figure 27 - Burner's ON/OFF switch



INFORMATION: The switch is lit up when the burner is on.

5.2. Breakdown maintenance

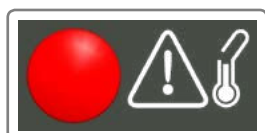


DANGER: Before working on the control panel, cut off the control panel's general power supply via the circuit breaker in the boiler room's electrical cabinet.



DANGER: The thermostat module switch only cuts off the burner's power supply. Some parts of the control panel remain live when this switch is OFF.

5.2.1. Overheat LED lit up



If the overheat LED is lit up, find the cause of overheat and repair if necessary. Once the problem has been solved, it is necessary to manually reset on the safety thermostat.



WARNING: The safety thermostat can only be reset if the temperature has decreased by 20°C in relation to the overheat temperature of 110°C.

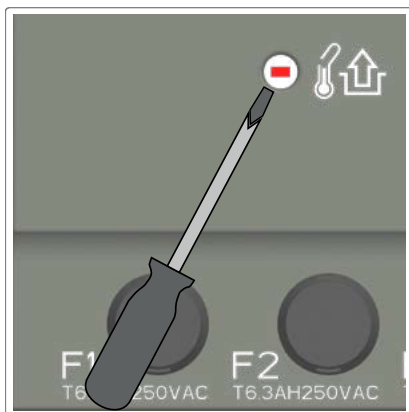
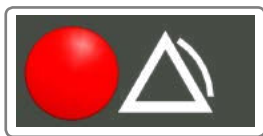


figure 28 - Resetting the safety thermostat

- Use a screwdriver to reset the safety thermostat

5.2.2. External safety interlock circuit LED lit up



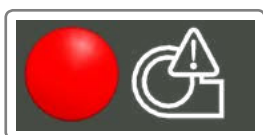
If the external safety interlock circuit LED is lit up, refer to the external appliance which is connected to terminals 3, 4 and 5 of the control panel to identify the fault, find the cause and eliminate it. It is not necessary to reset the control panel.



INFORMATION:

The display indicating a problem disappears as soon as the fault has been resolved.

5.2.3. Burner fault LED lit up



If the burner fault LED is lit up, refer to the burner documentation to identify the fault, find the cause and eliminate it. It is not necessary to reset the control panel.



INFORMATION:

The display indicating the problem disappears as soon as the fault has been resolved and the burner reset.

5.2.4. Replacing fuses



figure 29 - Position of fuses

- Fuse F1 protects the burner line
- Fuse F2 protects the regulation of the NAVISTEM B1000 control panel — Not used
- Fuse F3 protects the additional regulation sold as an accessory — Not used



INFORMATION:

All fuses used on the control panel have the following characteristics: Fuse 5x20 T6.3 AH 250 V AC.



WARNING:

Use the correct fuse rating. Never replace a fuse with a higher rating.

6. SPARE PARTS LIST

Reference	Description
76320	ON / OFF switch for burner
76321	Thermometer - water temperature
76322	Control thermostat - 2 stage (without knurled wheel)
76323	Safety thermostat
76324	LED indicator
76130	Fuse holders
71898	Fuses

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