# **Control panel B/B2**

Package FM126 - Control panel B

Package FM159 - Control panel B2

**English** 17/01/06



D000250



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# Symbols used



Caution danger

Risk of injury and damage to equipment. Attention must be paid to the warnings on safety of persons and equipment



Specific information

Information must be kept in mind to maintain comfort



Refer to another manual or other pages in this instruction manual

**DHW**: Domestic hot water

# Important recommendations



For a proper operating of the boiler, follow carefully the instructions.



Any intervention on the appliance and heating equipment must be carried out by a qualified technician.



The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified fitter).



Keep to the polarity shown on the terminals : phase (L), neutral (N) and earth  $\frac{1}{2}$ .



To guarantee protection against the corrosion of domestic hot water calorifiers fitted with a titanium anode (Titan Active System® protection system), always leave the control panel switched on. To switch off the heating or the domestic hot water, use the Summer or Antifreeze mode.

# **Description**

#### 1 Introduction

Electrical board for heating which includes the production of domestic hot water as a priority.

The control panel B equips the boilers De Dietrich GT 120 / GT 220.

The control panel B2 equips the boilers De Dietrich GT 220.

#### The standard delivery of panel B/B2 includes:

- 1 Panel B/B2
- 1 boiler sensor measuring the temperature in the boiler

#### The following options can be ordered:

- Non settable ambient thermostat (Package AD 140)
- Settable ambient thermostat (Package AD 137)
- Wireless settable ambient thermostat (Package AD 200)
- DHW sensor with Titan Active System® simulation connector for the connection of a domestic hot water calorifier without titanium anode (Package AD 212)

#### 2 Presentation

- The control panel B, for controlling a 1-stage burner, includes:
  - 1 Boiler thermostat
  - 1 domestic hot water thermostat
  - The Titan Active System® function for tank with titanium anode
  - 1 electronic thermostat
  - 1 Safety thermostat

If 2 ambient thermostats are also added (option), the board allows 2 direct circuits to be controlled.

# The control panel B2, for controlling a 2-stage burner, includes:

- 1 Boiler thermostat for 2-stage burner
  - ▶The 1st stage is controlled in relation to the setting of the electronic thermostat.
  - ▶The 2nd stage is controlled in relation to the setting of the electronic thermostat, offset by -4°C.
  - ▶ If producing domestic hot water, the 2 stages are activated.
- 1 domestic hot water thermostat
- The Titan Active System® function for tank with titanium anode
- 1 electronic thermostat
- 1 Safety thermostat

By adding 1 room thermostat, it is possible to control 1 direct circuit.

The boiler thermostat regulates the boiler operating temperature.

The safety thermostat with manual reset ensures that the boiler operates safely.



In the event that there is an abnormal rise in the temperature in the boiler 110° C. Advise your installation engineer.

If domestic hot water is being heated, the domestic hot water thermostat allows the average temperature of the stored domestic hot water to be regulated giving priority to the preparation of domestic hot water.

Whenever there is a demand for domestic hot water, the domestic hot water priority starts the burner and the dhw pump stops the heating pumps. On the summer setting, the boiler temperature is not maintained between two domestic loads. The temperature of the domestic hot water is measured with the dhw sensor.

4

## 3 Technical characteristics

Electricity supply: 230V (-10%, +10%) - 50 HZ

Value of the water probes (Boiler and Domestic hot water)

Temperature in °C	Resistance in ohm	Temperature in °C	Resistance in ohm
0°C	32 014 Ω	50°C	3 661 Ω
10°C	19 691 Ω	60°C	2 535 Ω
20°C	12 474 Ω	70°C	1 794 Ω
30°C	8 080 Ω	80°C	1 290 Ω
40°C	5 372 Ω	90°C	941 Ω

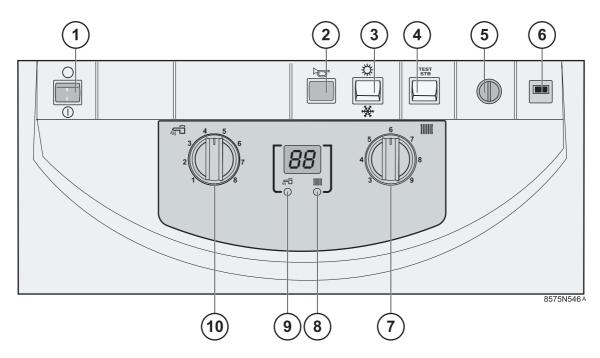
# Compliance / Stamp ( )

This product complies to the requirements to the European Directives and following standards:

73/23/EEC Low Voltage DirectiveReference Standard : EN 60.335.1

89/336/EEC Electromagnetic Compatibility Directive
 Generic standards: EN1000-6-3; EN 61000-6-1

17/01/06 - 300002725-001-C Control panel B/B2



# 1. General ON () / OFF () switch

Position : Start

#### 2. Alarm indicator

This indicator lights up when the burner is on safety (faulty).

## 3. Summer 💥 / Winter 🔆 switch

"WINTER" position \*\*: Heating and domestic hot water working.

"SUMMER" position 类: Only domestic hot water operating. If no accumulator is connected, the boiler remains off.

**1** The stopping of the heating accelorator is set at 12 minutes after moving to "Summer" mode.

## 4. Test-STB button

Button kept pressed down, safety thermostat test cutting the pump(s).

#### 5. Safety thermostat with manual reset

Set at 110° C

## 6. Control panel B: Timed circuit breaker (4 A)

Control panel B2: Timed circuit breaker (6 A)

#### 7. Electronic thermostat

Set the boiler temperature between 30° C and 90° C using manual setting

#### 8. Indicator lights up

Boiler temperature display

# When preparing domestic hot water

#### 9. Indicator lights up

Domestic hot water display

#### 10. Electronic thermostat

Regulating the storage temperature of domestic hot water between 10° C and 80° C



After switching on, the system performs an automatic purge of the accumulator interchanger for one minute by intermittently operating the domestic load pump and the heating pump. This purge sequence is deactivated if the temperature in the accumulator is above 25° C

# **Commissionning**



# The first start-up is to be performed by your installation engineer

Before starting the boiler, check if the installation **is filled with water** Start the boiler in the following order:

- Place the boiler thermostat 7 in the required position. If necessary, change the position of the maximim temperature.
- When preparing domestic hot water:
   Place thermostat 10 on the required setting. Setting 6 (approx 60° C) recommended.

# This value must always be below the temperature limiter for the domestic hot water load.

- Check that safety thermostat 5 is properly set. To do so, Unscrew the safety thermostat cover and press the reset button using a screwdriver.
- Place the Summer / Winter switch 3 on Winter &.
- Place the Stop /Start 1 switch on Start ().

17/01/06 - 300002725-001-C Control panel B/B2

# Assembly, electrical connections and installer's settings

#### 1 Control panel assembly

Refer to the technical and assembly instructions delivered with the boiler.

#### 2 Connecting the boiler sensor

Refer to the technical and assembly instructions delivered with the boiler.

#### 3 Electrical connections

🚹 On

Only qualified professionnals may carry out electrical connections, always with the power off.



As the electrical wiring has been carefuly checked in the factory, the internal connections on the control panel must not be changed in any way.

Electrical connections must match the electrical diagrams delivered with the equipment and comply with the instructions in the manual.

The equipment must have a power supply equipped with a omnipolar switch with an opening distance above 3 mm. The earth must comply with the NFC 15.100 (France) or the RGPT (Belgium) standards.

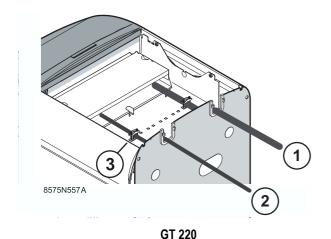
**GT 120** 

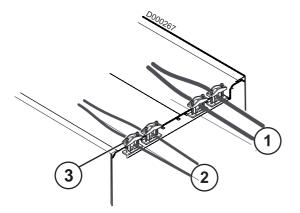
- 1 Power supply 230 V
- (2) Sensors
- (3) Cable clamps

All connections are made with the terminal boxes designed for that purpose on the back of the boiler's command board.

The connection cables enter the boiler via the openings on the back panel, these openings may be used later for cable guides.

These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).







The available output per outlet is 450 W (with cos  $\phi$  = 0,7) and the inrush current must be lower than 16 A.

The sensor cables have to be separated from the 230V circuit cables.

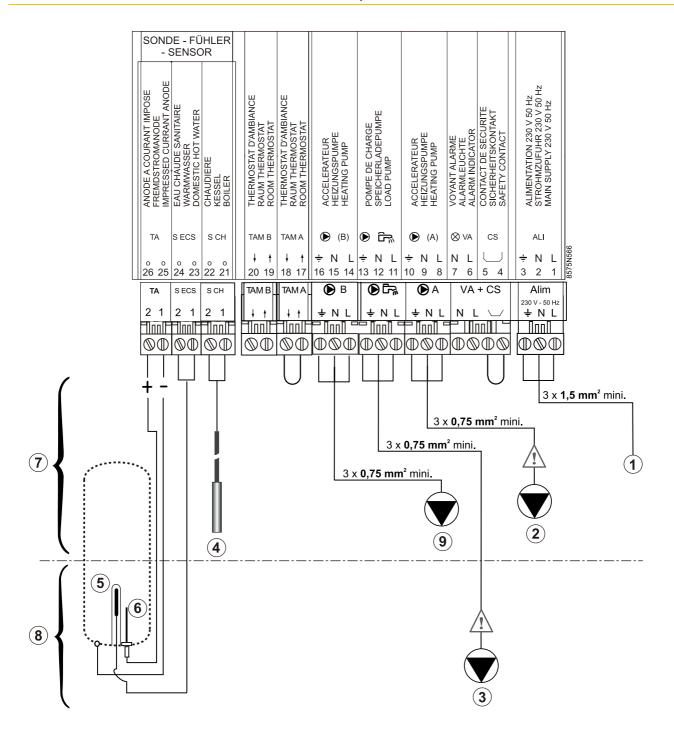


In the boiler: use the 2 wire guides on either side of the

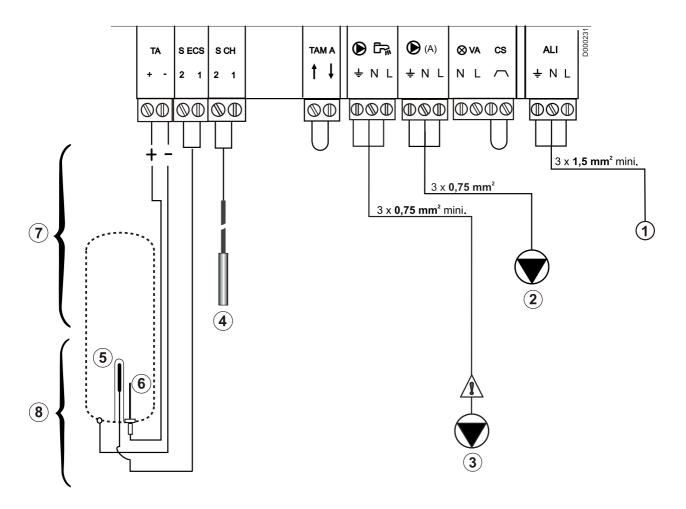
Outside the boiler : use 2 pipes or cable guides at least 10 cm apart.

All electrical connections are made on the marked bars located under the boiler's card screen. Power supply connection is made using a 3 wire cable with a 1,5 mm² diameter on the 3 plot bar (terminals 1, 2, 3) located under the boiler's card card. For other electrical connections, use the 3 wire cable with a diameter of 0,75 mm².

Keep to the polarity shown on the terminals : phase (L), neutral (N) and earth  $\frac{1}{2}$ .



- Power supply 230 V
- Heating pump Circuit A 2
- 3 Dhw pump
- Boiler sensor 4
- 5 Domestic hot water sensor
- 6 Titane anode
- 7 Boiler with or without accumulator
- Boiler with accumulator
- Heating pump Circuit B



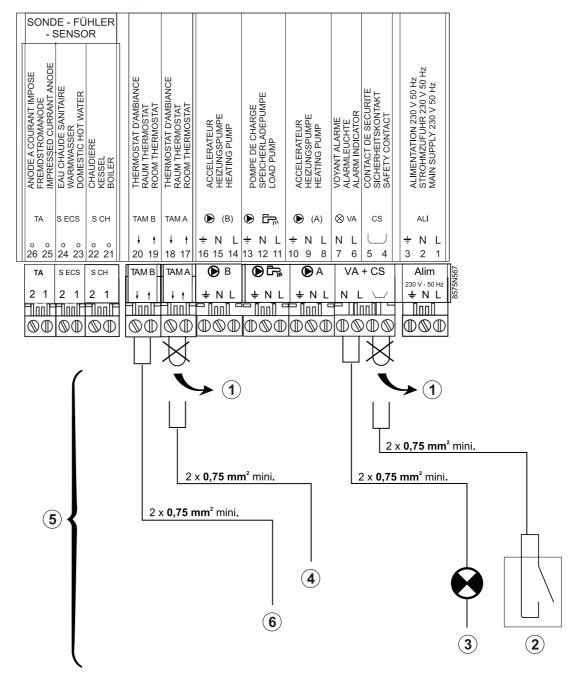
- 1 Power supply 230 V
- 2 Heating pump Circuit A
- 3 Dhw pump
- 4 Boiler sensor
- 5 Domestic hot water sensor
- 6 Titane anode
- 7 Boiler with or without accumulator
- 8 Boiler with accumulator



The sensor cables have to be separated from the 230V circuit cables.

In the boiler: use the 2 wire guides on either side of the boiler.

Outside the boiler : use 2 pipes or cable guides at least 10 cm apart.



- 1 Remove bridge
- 2 Safety contact
- 3 Alarm indicator
- 4 Room thermostat Circuit A
- 5 Boiler with or without accumulator
- 6 Room thermostat Circuit B

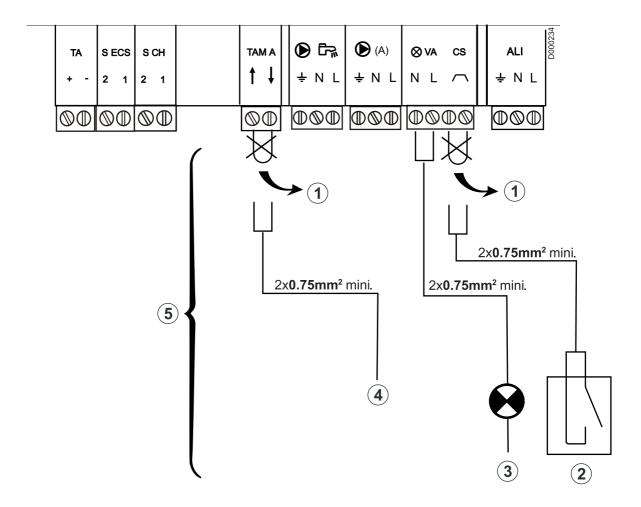
If only one circuit is used, connect the ambient thermostat to circuit A and do not bridge this connector.

# · Connection to a flue gas thermostat (TF)

When used in combination with a wood fired boiler: the flue gas thermostat is connected on the terminals (CS) after having removed the existing bridge.

#### Safety contact connection (CS)

Terminals (CS) after having removed the bridge: allows the connection of a safety device (e.g. low water pressostat, fire safety, ...).



- 1 Remove bridge
- 2 Safety contact
- 3 Alarm indicator
- 4 Room thermostat Circuit A
- 5 Boiler with or without accumulator

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The sensor cables have to be separated from the 230V circuit cables.

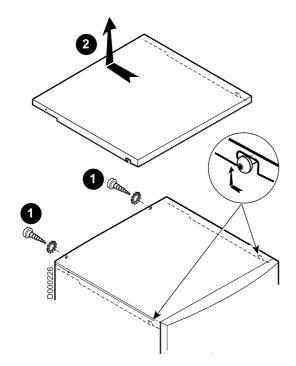
In the boiler: use the 2 wire guides on either side of the boiler.

Outside the boiler: use 2 pipes or cable guides at least 10 cm apart.

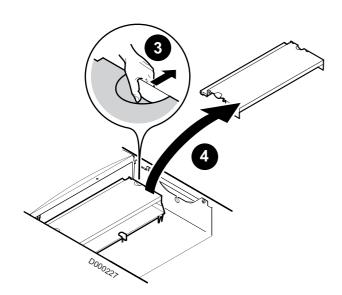
## 4 Installer's settings

The settings below have different functions and configure the installation. They may only be changed by a qualified professionnal.

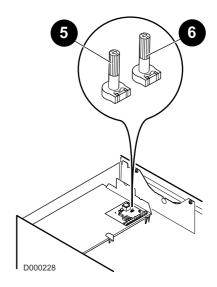
Access to the potentiometers for setting the domestic hot water pump timer and the domestic hot water load temperature limiter.



- Take out the 2 nuts and bolts from the back of the boiler.
- Remove the upper panel from the boiler.



- Cosen the protection for the flat bars on either side.
- Disassemble the protective cover from the flat bars.
- · Set the domestic hot water load temperature limiter



3575N075A



The potentiometer (**6**) on the boiler's flat bar allows the temperature of the boiler to be regulated whilst the hot water is being heated.

The load temperature setting may be between 60 and 90° C (factory setting 75° C).

· Setting the timer for the domestic hot water pump

The potentiometer (5) on the boiler's flat bar allows the timing of the domestic hot water pump to be set.

The timer has a setting range from 0 to 10 minutes (factory setting 4 minutes).

# Assembly

When the setting has finished, assemble the protective cover for the bars and the upper panel in the reverse order as disassembly.



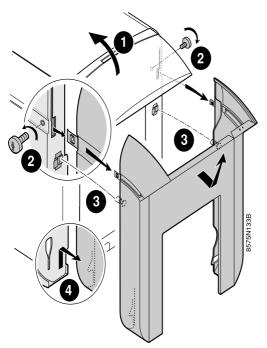
Do not leave out the toothed washers.

When the domestic hot water priority is deactivated, the heating is not cut off during the hot water heating phases.

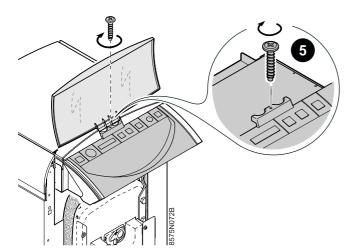
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Cut the power supply to the boiler.

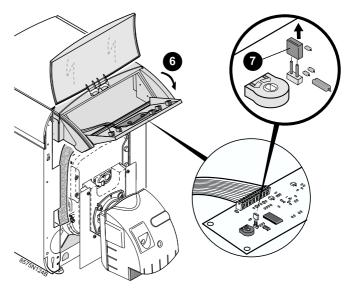
GT 120



- 1 Lift up the glass.
- 2 Unscrew the 2 holding screws located on the side panels.
- 3 Take out the front panel from the clips and from the notches, by pulling it towards you.
- **4** Take oput the panel from the notches at the bottom of the side panels.

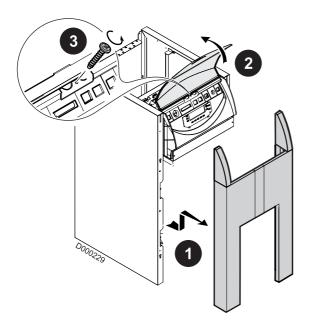


. Turn the screw on the front panel of the command box.

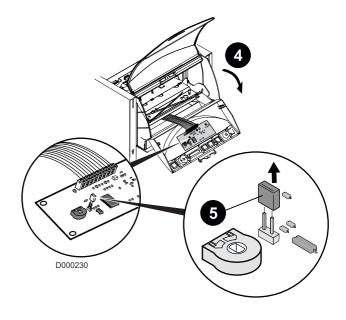


- 6 Turn the panel.
- Take out the shunt (bridge).

Reclose the command box and replace the front panel in the reverse order.



- Remove the front panel (lift and pull).
- 2 Lift up the glass.
- 3 Turn the screw on the front panel of the command box.



- 4 Turn the panel.
- **5** Take out the shunt (bridge).

Reclose the command box and replace the front panel in the reverse order.

# 6 Heating accelerator timing

The timer for the heater accelorator is set at 12 minutes after the ambient thermostat closing or when moving into summer mode.

If there are two accelerators connected with two ambient thermostats, the timer is deactivated while the circulation pump is working.

FA FILTRE ANTIPARASITE

RL BR RELAIS DE COMMANDE BRULEUR

RL RELAIS DE COMMANDE ECS POMPE DE CHARGE

NEUTRE

CONNECTEUR CIRCUIT IMPRIME PHASE

FUNKENENSTÖRUNGSFILTER

LEITERPLATTE STECKER

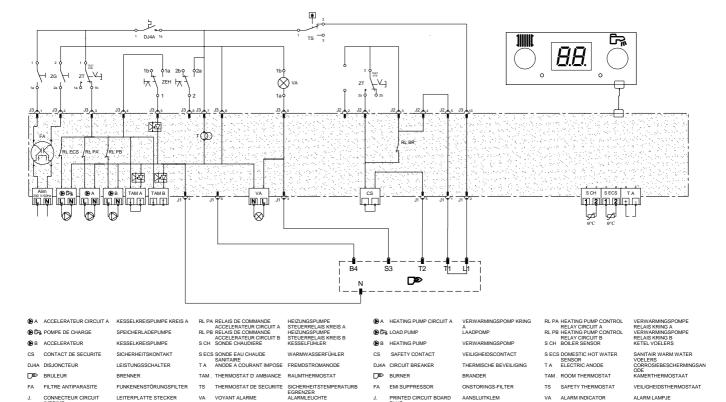
BRENNER STEUERRELAIS

SPEICHERLADEPUMPE STEUERRELAIS

PHASE

NULLEITER

# Control panel B



FA EMI SUPPRESSOR

N NEUTRAL

ZEH INTERRUPTEUR ETE-HIVER SOMMER-WINTERSCHALTER

TESTSCHALTER

ZG INTERRUPTEUR GENERAL HAUPTSCHALTER

ZT INTERRUPTEUR TEST

PRINTED CIRCUIT BOARD PLUG PHASE

RL BR BURNER CONTROL RELAY BRANDER RELAIS

RL LOAD PUMP CONTROL RELAY RELAIS STURING LAADPOMP ECS

ONSTORINGS-FILTER

AANSLUITKLEM

FASE

NULLEIDER

Plan n°: 300001532-001-B

TEST SCHAKELAAR

ALARM LAMPJE

VEILIGHEIDSTHERMOSTAAT

ZOMMER-WINTER SCHAKELAAR ALGEMENE SCHAKELAAR

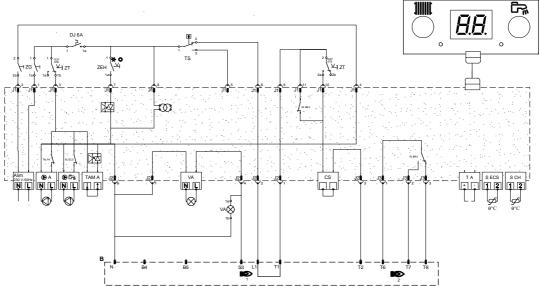
TS SAFETY THERMOSTAT

ZEH SUMMER-WINTER SWITCH

VA ALARM INDICATOR

ZG MAIN SWITCH

ZT TEST SWITCH



♠ A	ACCELERATEUR CIRCUIT A
œ È	POMPE DE CHARGE
All	ALIMENTATION
B	BRUI FUR
cs	CONTACT DE SECURITE
DJ6A	DISJONCTEUR
J-	CONNECTEUR CIRCUIT IMPRIME
ĭ	PHASE
N	NEUTRE
RL BR1	RELAIS DE COMMANDE BRULEUR 1ere ALLUR
RL BR2	RELAIS DE COMMANDE BRULEUR 2e ALLURE
RL ECS	RELAIS DE COMMANDE POMPE DE CHARGE
RL PA	RELAIS DE COMMANDE ACCELERATEUR
S CH	SONDE CHAUDIERE
SECS	SONDE EAU CHAUDE SANITAIRE
TA	ANODE A COURANT IMPOSE
TAM A	THERMOSTAT D'AMBIANCE
TS	THERMOSTAT DE SECURITE
VA	VOYANT ALARME
ZEH	INTERRUPTEUR ETE-HIVER
ZG	INTERRUPTEUR GENERAL
ZT	INTERRUPTEUR TEST

KESSELKREISPUMPE KREIS A
SPEICHERLADEPUMPE
NETZANSCHLUSS
BRENNER
SICHERHEITSKONTAKT
LEISTUNGSSCHALTER
LEITERPLATTE STECKER
PHASE
NULLEITER
BRENNER STEUERRELAIS 1.STUFE
BRENNER STEUERRELAIS 2.STUFE
SPEICHERLADEPUMPE STEUERRELAIS
HEIZUNGSPUMPE STEUERRELAIS
KESSELFÜHLER
WARMWASSERFÜHLER
FREMDSTROMANODE
RAUMTHERMOSTAT
SICHERHEITSTEMPERATURBEGRENZER
ALARMLEUCHTE
SOMMER-WINTERSCHALTER
HAUPTSCHALTER
TESTSCHALTER

PΑ	HEATING PUMP CIRCUIT A
ĎĒ,	LOAD PUMP
ALI "	MAIN SUPPLY
В	BURNER
CS	SAFETY CONTACT
DJ6A	CIRCUIT BREAKER
J-	PRINTED CIRCUIT BOARD PLUG
L	PHASE
N	NEUTRAL
RL BR1	BURNER 1st STAGE CONTROL RELAY
RL BR2	BURNER 2nd STAGE CONTROL RELA
RL ECS	LOAD PUMP CONTROL RELAY
RL PA	HEATING PUMP CONTROL RELAY
S CH	BOILER SENSOR
S ECS	DOMESTIC HOT WATER SENSOR
TΑ	ELECTRIC ANODE
TAM A	ROOM THERMOSTAT
TS	SAFETY THERMOSTAT
VA	ALARM INDICATOR
ZEH	SUMMER-WINTER SWITCH
ZG	MAIN SWITCH
ZT	TEST SWITCH

VERWARMINGSPOMP KRING A
VUL POMP
VOEDING
BRANDER
VELIGHEIDSCONTACT
THERMINGHE BEVEILIGING
AANSLUITKLEM
FASE
NULLEIDER
BRANDER RELAIS 1st TRAP
COMPENSIONED TO SENDER
SANITAIR WARTH WATER SENSORS
CORROSIEDES CHERNINGSANDE
KAMERTHERMOSTAAT
ALARM LAMPJE
ZOMMER-WINTER SCHAKELAAR
ALGEMENE SCHAKELAAR
TEST SCHAKELAAR

PLAN n° 300007073-001-B

# **Alarm messages**

In the event of a fault, the display may show the following messages:

Message	Faults	Probable causes	Solution
AL 50	Boiler sensor	The sensor is cut or has short circuit.	The sensor is cut or has short circuit.  Advise the installer. See comments below.
AL 52	Domestic hot water sensor		
AL td	Titane anode	The titanium anode is on an open circuit or the tank is empty.	Check that the titane anode is properly connected or fill the dhw tank.
AL tc		A short circuit has occurred on the titanium anode or connection reversed.	Check that there is no short circuit or an inversion of the wires of the titane anode.

Operation mode in the event of a fault :

AL 50: The installation is stopped.

**AL 52**: In the event of a fault with the domestic hot water probe, the installation continues to operate, but heating the domestic hot water is no longer guaranteed.

**AL td and AL tc**: Production of domestic hot water is stopped. This may be reactivated for 24 hours by disconnecting and reconnecting the power supply to the boiler.

There are 2 options:

- With a domestic hot water tank protected by a titane anode: the tank is no longer protected against corrosion. This will mean that the accumulator is no longer protected.

Contact **NECESSARELY** your installation engineer.

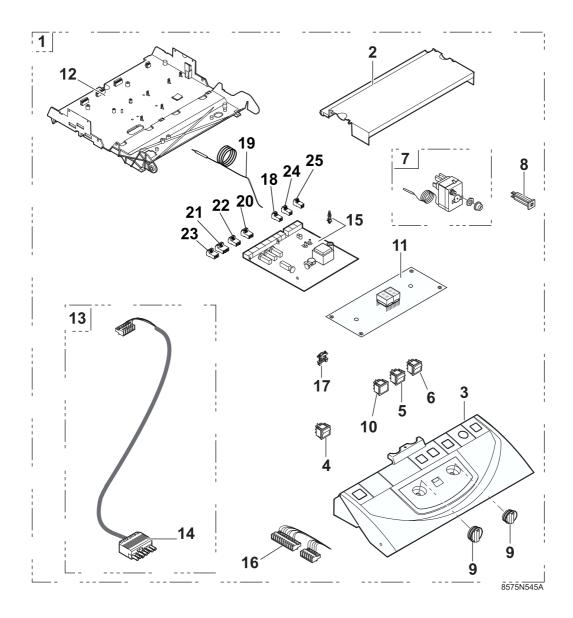
 With a domestic hot water tank protected by a magnesium anode: check that the connector delivered with AD212 package is placed on the sensor p.c.b.. Check that the AD212 container connector, with the 22 kOhm resistance and a 100 nF capacitor, is properly connected to terminals 25 26.

17/01/06 - 300002725-001-C Control panel B/B2

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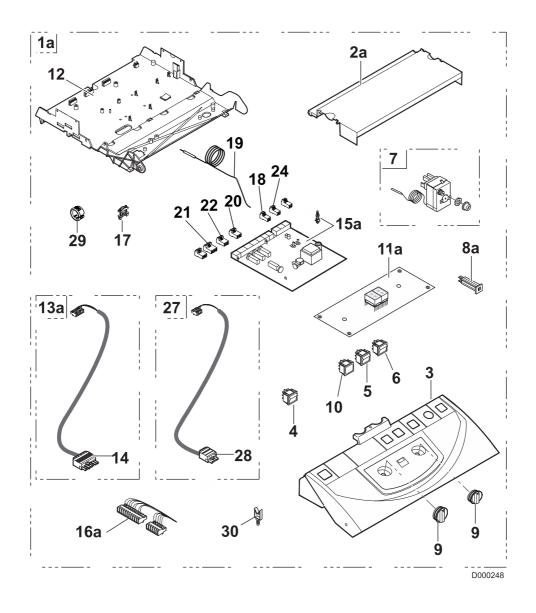
To order a spare part, quote the reference number next to the part required.

# Control panel B with Titan Active System® function for GT120 / GT220



# Control panel B

Solition paties B		
Rep	Code no.	Description
1	100001620	Standard complete control panel
2	200001651	Standard card cover
3	9786-4038	Plastic coated panel
4	9532-5027	Green S/S bipolar switch
5	8500-0035	Bipolar switch
6	9532-5028	Bipolar inversor switch
7	8500-0032	Safety thermostat 110° C
8	9534-0288	Circuit breaker 4A TS710/4A
9	8559-5507	Setting button
10	9521-6220	Red indicator
11	200000243	Basic UC display card
12	9752-5378	Card support
13	8575-4945	Burner cable
14	9531-7395	Burner connector
15	8806-5564	Basic relay card
16	200001789	Standard beam
17	9532-0187	Cable clamps
18	200000625	Connector assembly with label
19	9536-2446	KVT sensor 60 l. 1 m
20	8575-4905	3-bridge pwer supply connector, assembled
21	8575-4922	4-bridge VA+CS connector, assembled
22	8575-4924	Connector 3 pt assembled pump A/VS
23	8575-4926	Connector 3 pt assembled auxiliary pump
24	8575-4920	Connector 2 pt assembled TAM
25	8575-4949	Connector 2 pt assembled TAM B



# Control panel B2

D	0.4	December 1
Rep	Code no.	Description
1a	100004376	Standard complete control panel
2a	200004950	Standard card cover
3	9786-4038	Plastic coated panel
4	9532-5027	Green S/S bipolar switch
5	8500-0035	Bipolar switch
6a	8500-0034	Test Switch
7	8500-0032	Safety thermostat 110° C
8a	9534-0285	Circuit breaker 6A
9	8559-5507	Setting button
10	9521-6220	Red indicator
11a	200005084	Basic UC display card
12	9752-5378	Card support
13a	200004753	Burner cable 1 stage
14	9531-7395	Burner connector
15a	200004948	Basic relay card
16a	200004772	Standard beam
17	9532-0187	Cable clamps
18	200000625	Connector assembly with label
19	9536-2446	KVT sensor 60 l. 1 m
20	8575-4905	3-bridge pwer supply connector, assembled
21	8575-4922	4-bridge VA+CS connector, assembled
22	8575-4924	Connector 3 pt assembled pump A/VS
24	8575-4920	Connector 2 pt assembled TAM
27	200004754	Burner cable 2nd stage
28	9531-7384	4-pin plug
29	9532-0532	Feed through
30	9655-0352	Beam mounting FTH15

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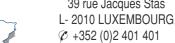
# DE --

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