

**GT 330 - GT 430 - GT 530 - GTU C 330**

en

**Control panel DIEMATIC-m3**

**Control panel (MD1)**

**Lateral control panel (MD138)**



A000398



**Installation  
instructions**


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# 1 Symbols used

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 **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.


 Reference  
Refer to another manual or other pages in this instruction manual.

DHW: Domestic hot water


## 2 General

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- **Control panel assembly**

 See: Boiler installation instructions.


- **Fitting the boiler sensor**

 See: Boiler installation instructions.


- **Connection of the water circuit for domestic use**

 See: Calorifier instructions.

- **Installing options**

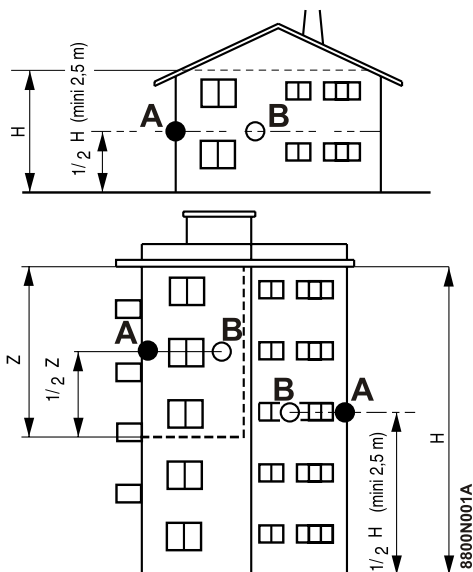
 See: Option instructions.

- **Parameter settings and installation configuration**

 See: Control panel technical instructions.

# 3 Installing the outside sensor

## ■ Advised positions



Choose a location:

- on one face of the area to be heated, on the north if possible
- under the influence of meteorological variations
- protected from direct sunlight
- easy to access

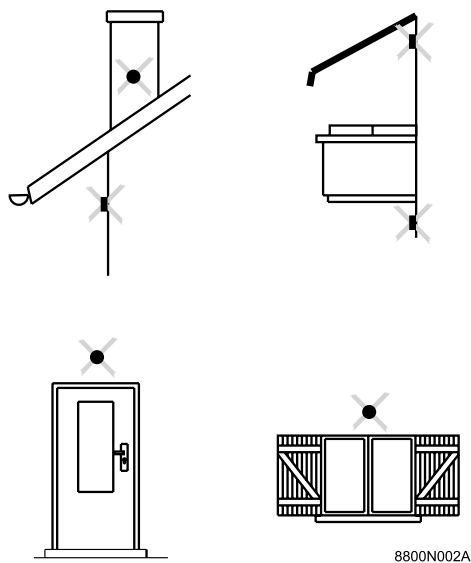
Z: Inhabited area controlled by the sensor

H: Inhabited height controlled by the sensor

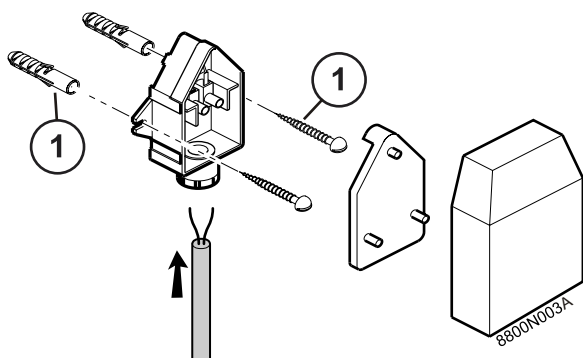
A: recommended position on a corner

B: Possible position

## ■ Positions to be avoided



## ■ Installing the outside sensor



- ① CB Ø 4 wood screw + Inserts (provided)

## 4 Electrical connections

### 4.1 Important recommendations

**!** The power supply must be cut prior to any intervention on the heating installation (for example, via the appropriate fuse or a general switch) and any restart must be prevented.

**!** Connections must be made by a qualified technician.

**!** Do not modify the connections inside the control panel.

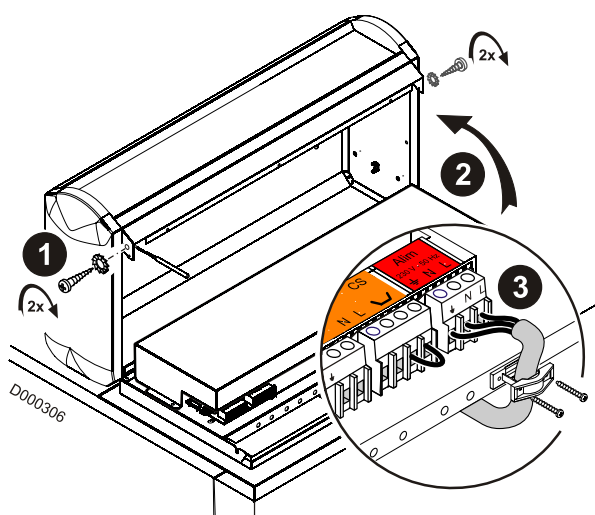
**i** All connections are made to the terminals on the control panel.

**i** Separate the sensor cables from the 230 V cables.  
In the boiler: Use the boiler's 2 grommets:  
Use 2 cableways at least 10 cm apart.

**i** Attach the cables to the cable clamps provided for this purpose.

### 4.2 Access to the connection terminal

#### ■ Control panel



Proceed as follows to open the control panel:

**1** Loosen the 2 screws located on either side of the front of the panel by two turns.

**2** Tilt back the control panel.

**3** Bring the connecting cables to the control panel through the openings located on the rear panel of the boiler and 1 or 2 cable channels, depending upon the type of boiler.

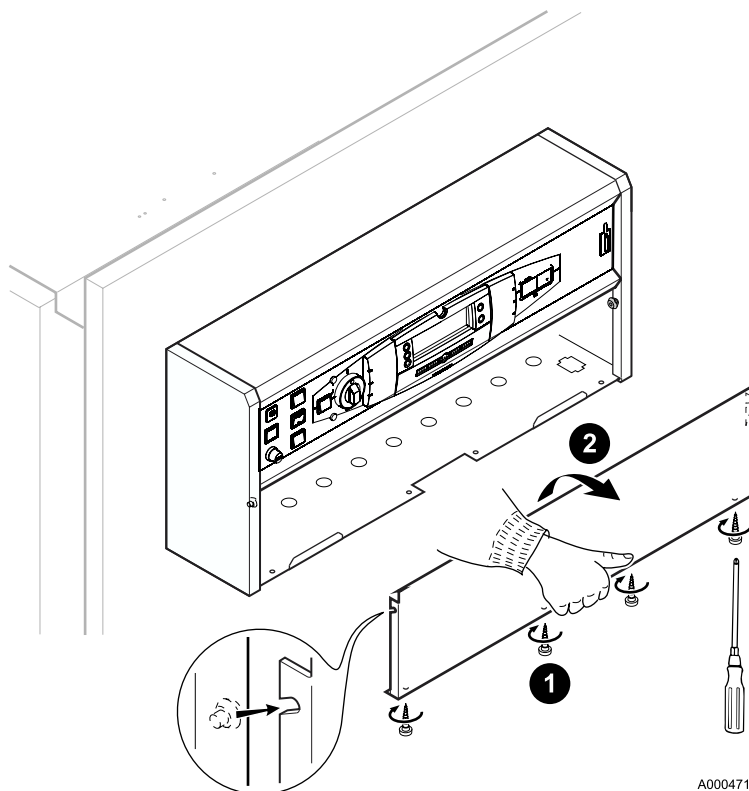
These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).

**!** The available output per outlet is 450 W (2 A, with  $\cos \varphi = 0,7$ ) and the inrush current must be lower than 16 A.

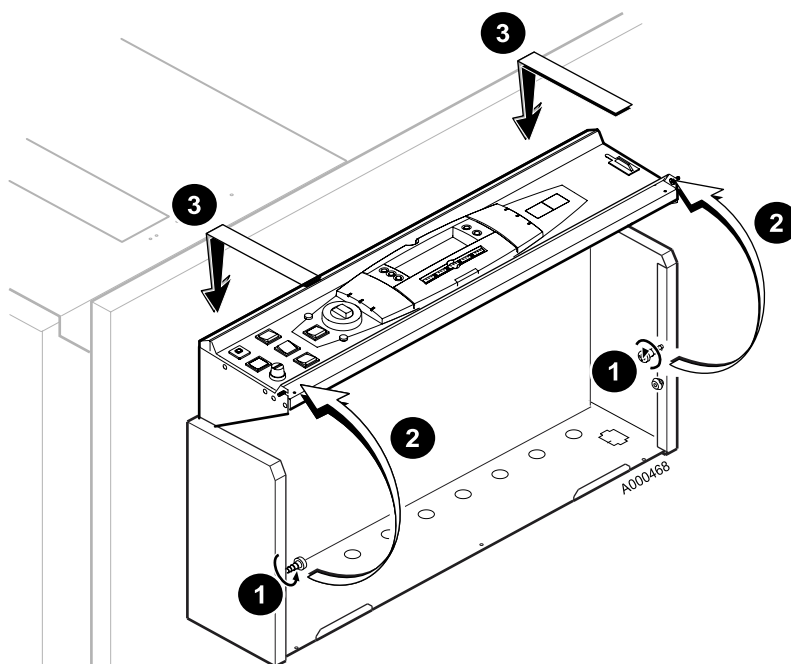
If the charge exceeds one of these values, relay the command using a contactor (fitted outside the control panel).

■ Lateral control panel

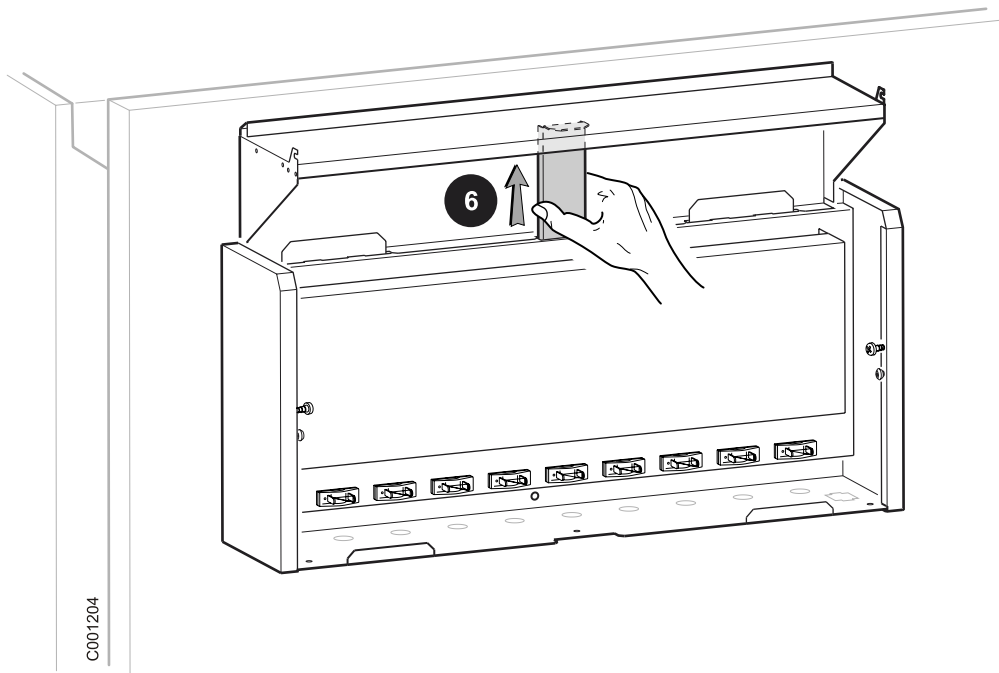
1



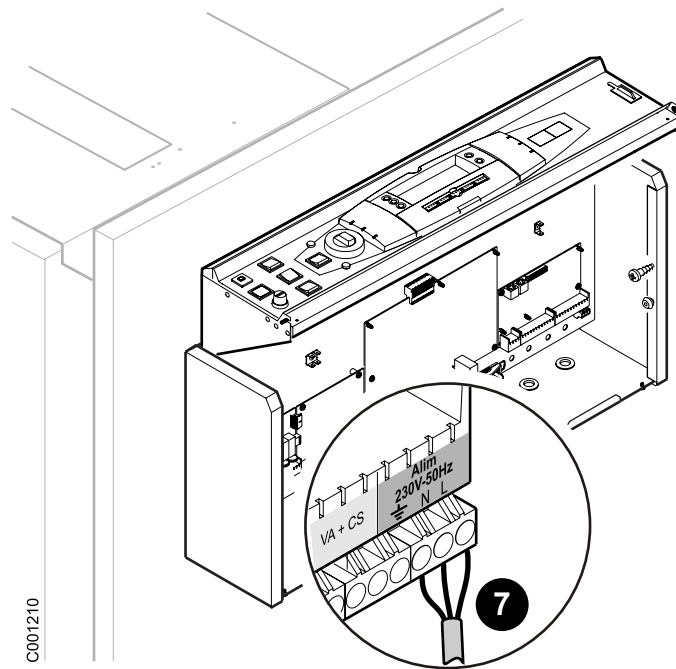
2



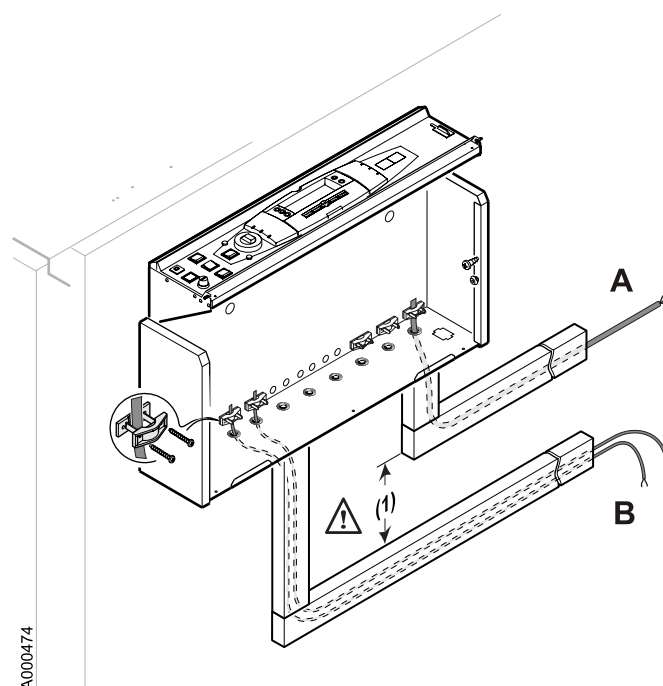
3



4



## 5



- A. 230 V  
 B. Very low voltage sensors  
 (1) 100 mm

### 4.3 Cable routing

**⚠** Connect the 230 V power supply to each control panel.

**⚠** Separate the extra low voltage sensor wires from 230 V power wires in order to prevent electromagnetic interference.

**⚠** Failure to comply with these instructions could lead to interference and control unit malfunctioning or even damage to the electronic circuitry.

Inside the boiler:

- Boilers with one cable channel: Place the 230 V main supply cables on one side of the cable channel and the sensor cables on the other. These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).
- Boilers with two cable channels: Place the 230 V main supply cables in one cable channel and the sensor cables in the other. These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).

Outside the boiler:


- Use 2 pipes or cable guides at least 10 cm apart.



## 4.4 Type of connection

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For the 230 V electrical connections, use 3-wire cables with a cross-section of 1,5 mm<sup>2</sup>.

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

## 4.5 General


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Make the electrical connections of the appliance according to:

- The instructions of the prevailing standards,
- The instructions on the circuit diagrams provided with the appliance,
- The manufacturer's instructions.

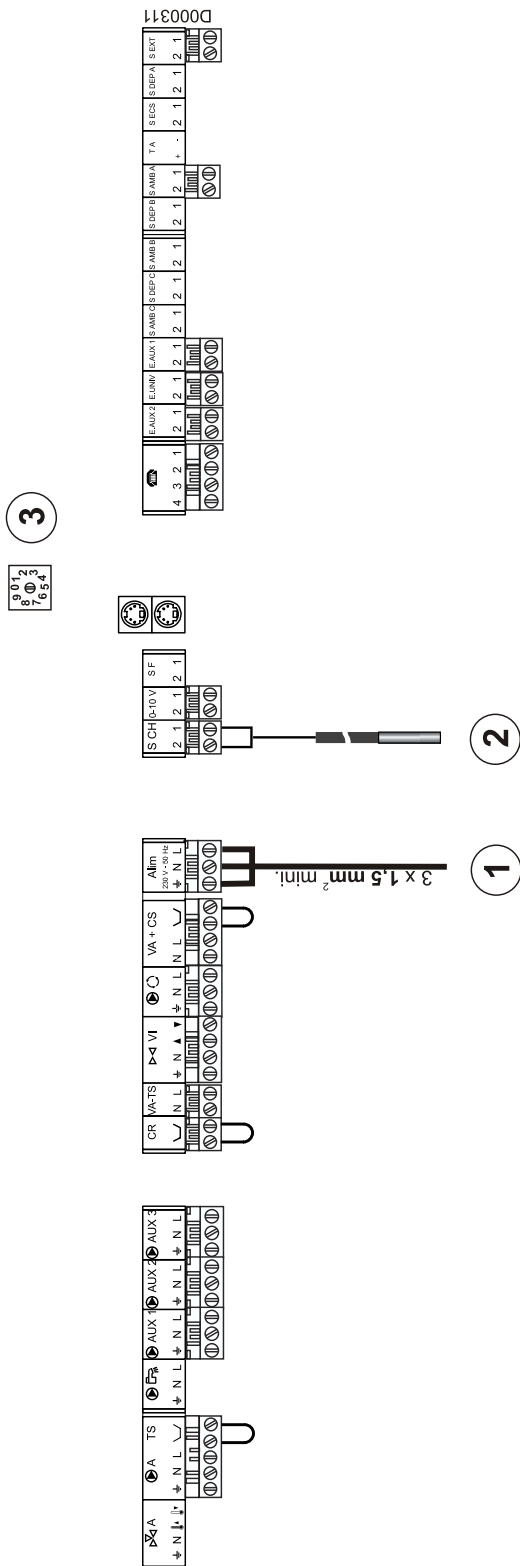
Power the appliance via a circuit which includes a remote omnipolar switch with a gap of more than 3 mm.

Earthing shall comply with standard NFC 15100 (France) or RGBT (Belgium).

 **The available output per outlet is 450 W (2 A, with  $\cos \varphi = 0,7$ ) and the inrush current must be lower than 16 A. If the charge exceeds one of these values, relay the command using a contactor (fitted outside the control panel).**

## 4.6 Terminal block

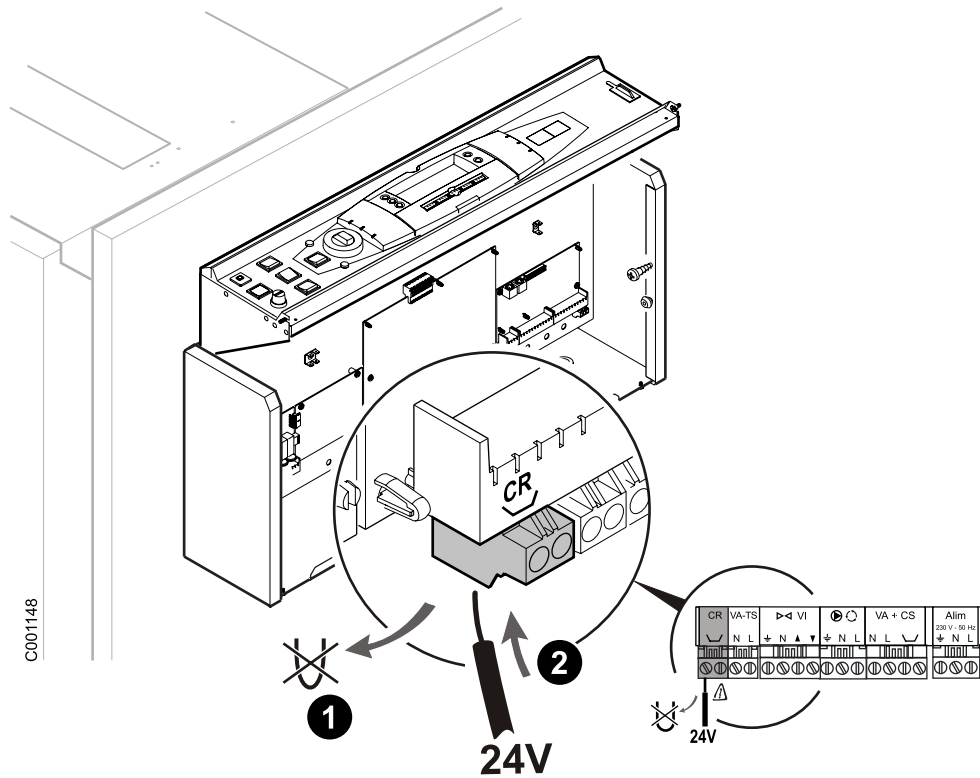
State on delivery



- 1 230 V main supply
  - 2 Boiler sensor
  - 3 Code wheel (Factory setting = 0)
- i** In a cascade installation, each boiler must have a different number.

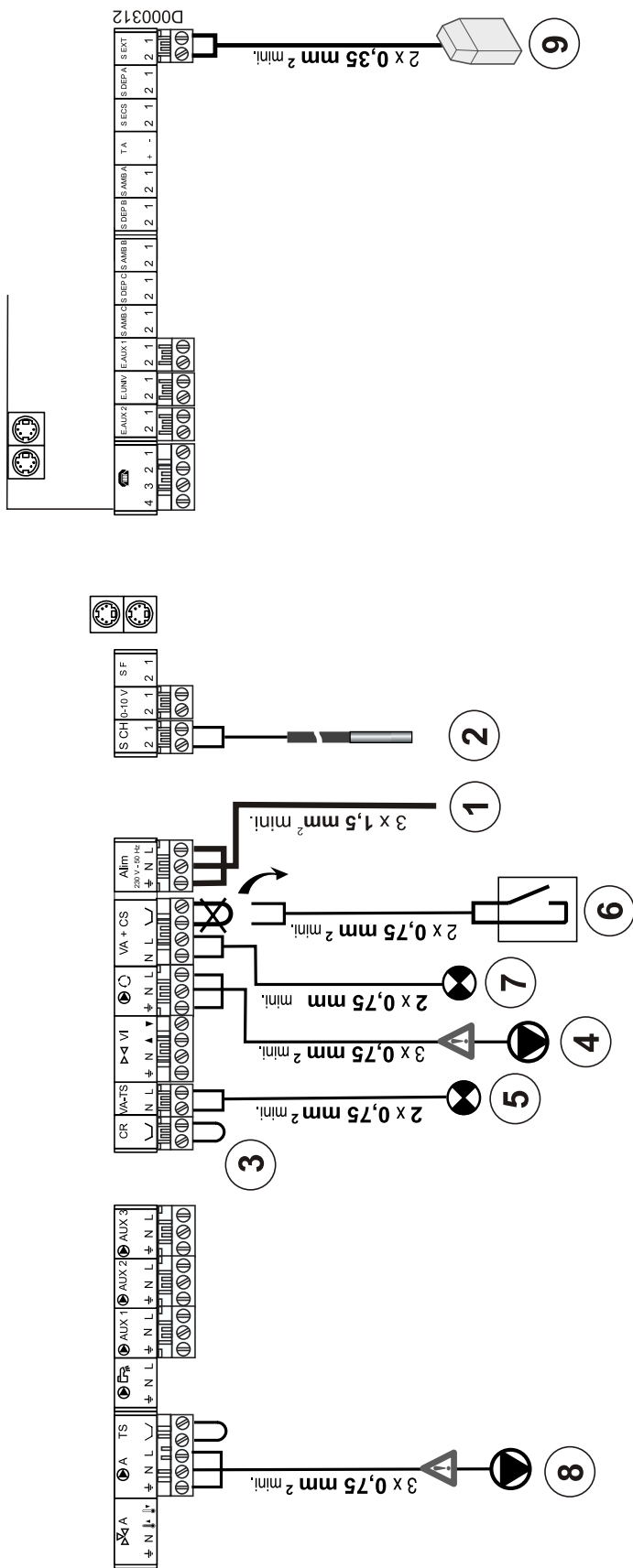
► Master boiler: Set to 0	Boiler <b>1</b>
► Secondary boiler: Set to 1	Boiler <b>2</b>
► Secondary boiler: Set to 2	Boiler <b>3</b>
► (etc.)	

## ■ Control at very low voltage - 24 V



To get a control at very low voltage (e.g. 24 V) on the pump and valve outlets, it is necessary to remove the bridge CR **1** and power the terminal **2** with the desired voltage.

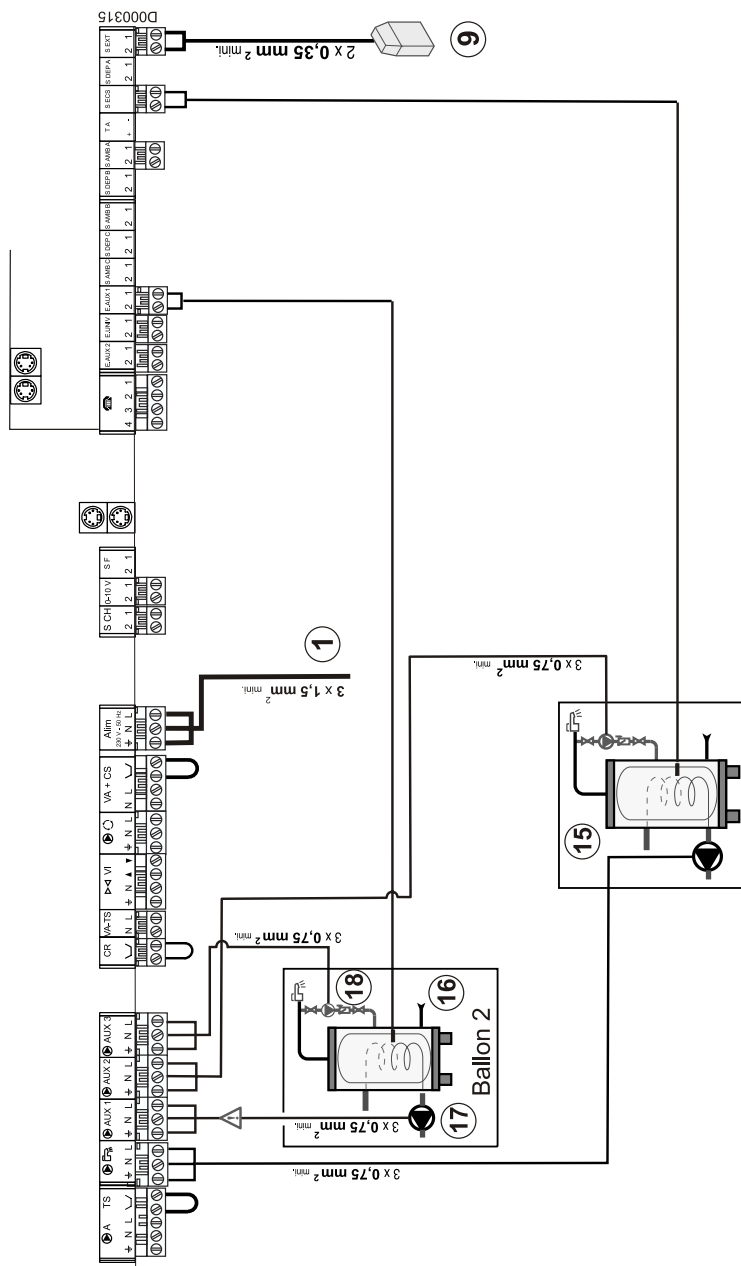
## 4.7 Basic connections







- 1 230 V main supply
- 2 Boiler sensor
- 3 Relay contact
- 4 Shunt pump
- 5 Alarm indicator - Safety thermostat
- 6 Safety contact  
Only shuts down the burner on the boiler  
(For example: Low water pressure switch)
- 7 Burner fault alarm light
- 8 Heating pump circuit A
- 9 Outside sensor



## 4.9 Connection of a second domestic hot water tank





- 1 230 V main supply
- 9 Outside sensor
- 15 Principal DHW tank
- 16 DHW tank 2
- 17 DHW pump Tank 2
- 18 D.H.W. loop back pump Tank 2

- Set the parameter **#CONFIGURATION** to **DHW 2 : ON**.
- Fit the sensor (package AD212) into the second DHW tank.
- Plug in:
  - ▶ Domestic hot water tank sensor 2: E.AUX1
  - ▶ DHW pump Tank 2:  AUX 1
  - ▶ D.H.W. loop back pump:  AUX 3 (Optional)<sup>(a)</sup>
  - ▶ Adjust the setting **WATER T. DAY 2** or **WATER T. NIGHT 2** using keys  and .
- Use the auxiliary time programme to programme the heating periods for the second domestic hot water tank.

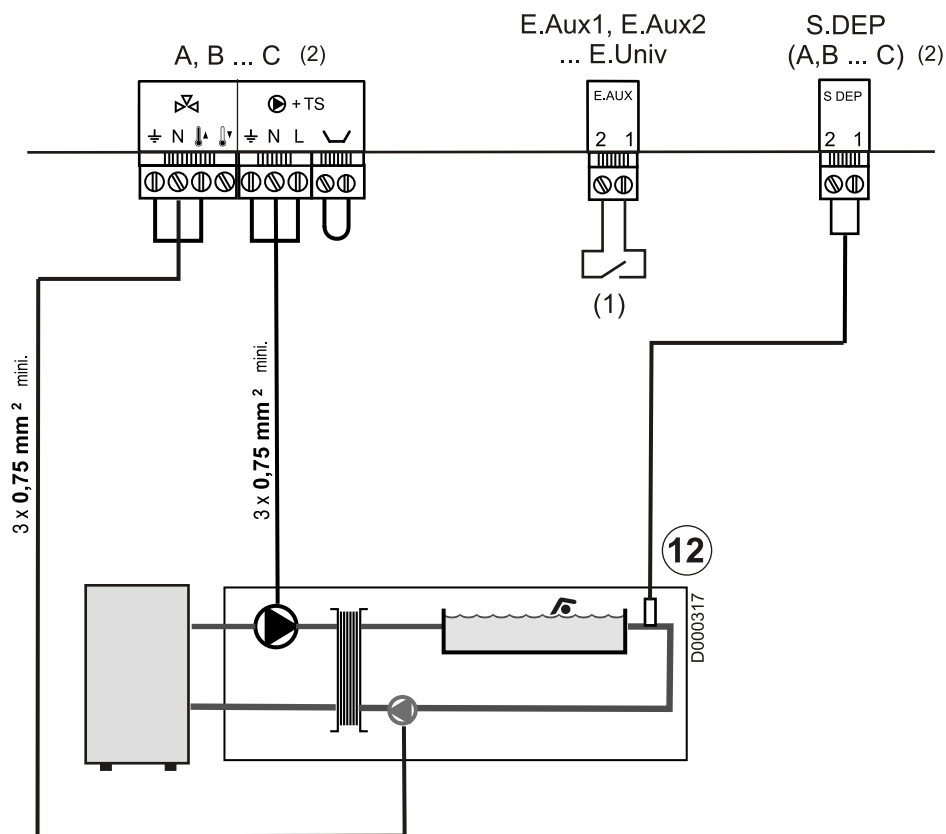
**i** The loop pump operates during the entire comfort period on the auxiliary time programme and during any DHW overrides.

(a) To use outlet  AUX 3 as loop pump Tank 2:

Configure the parameter **S.AUX3**: in the menu **#CONFIGURATION** to **DHW LO2**.

 **E.AUX 1,  AUX 1 are no longer available for other functions. Their settings are therefore no longer displayed.**

## 4.10 Pool connection



### 12 Swimming pool sensor

(1) Contact used to stop pool heating  
(Contact closed = Reheating enabled).

To activate this function, set the parameter **E.AUX1**;, **E.AUX2**: or **E.UNIV**: to **STOR. A**, **STOR. B** or **STOR. C** depending on the input used.

This function is used to protect the liner if the pool sensor fails.

(2) As far as the sensor and pumps are concerned, the pool uses one and the same circuit.


For example: To connect the pump to circuit B, you must also use outlet sensor B.

### ■ Controlling the pool circuit

The DIEMATIC-m3 regulation can be used to control a pool circuit in **two different cases**:

#### • Case 1

The regulation DIEMATIC-m3 regulates the primary circuit (boiler / exchanger) and the secondary circuit (exchanger / pool).

- Set the value of **MAX. CIRC. A**, **MAX. CIRC. B** or **MAX. CIRC. C** to the temperature which suits the needs of the exchanger.
- Set the parameter **CIRC. A:**, **CIRC. B:** or **CIRC. C:** to **SWIM**.
- Connect the primary circuit pump (boiler/exchanger) to the pump A, B, C outlet. The temperature **MAX. CIRC. A**, **MAX. CIRC. B** or **MAX. CIRC. C** is guaranteed during comfort periods in programme A, B, C in **summer** and **winter** alike.
- Connect the pool sensor (package AD212) to the input S DEP (A, B or C).
- Set the value of the pool sensor using key  in the range 0.5-39°C or to **FF** (Frost Free).
- With an **FF** setting, the primary pump starts up and the secondary pump stays off if the installation's antifreeze function is activated.

#### • Case 2

The pool has already a regulation system that is to be kept. The DIEMATIC-m3 control unit only regulates the primary circuit (boiler/exchanger).

- Set the value of **MAX. CIRC. A**, **MAX. CIRC. B** or **MAX. CIRC. C** to the temperature which suits the needs of the exchanger.
- Set the parameter **CIRC. A:**, **CIRC. B:** or **CIRC. C:** to **SWIM**.
- Connect the primary circuit pump (boiler/exchanger) to the pump A, B, C outlet. The temperature **MAX. CIRC. A**, **MAX. CIRC. B** or **MAX. CIRC. C** is guaranteed during comfort periods in programme A, B, C in **summer** and **winter** alike.

### ■ Hourly programming of the secondary circuit pump

The secondary pump operates during programme A, B, C comfort periods in summer and winter alike.

### ■ Stopping

 To prepare your pool for winter, consult your pool specialist.






## ■ Parameter settings

Set:

▶ **#CONFIGURATION: SUN: ON.**

Package AD160 contains 2 sensors (Markers 9 - 15)



**E.AUX2, E.UNIV,  AUX 3 are no longer available for other functions. Their settings are therefore no longer displayed.**

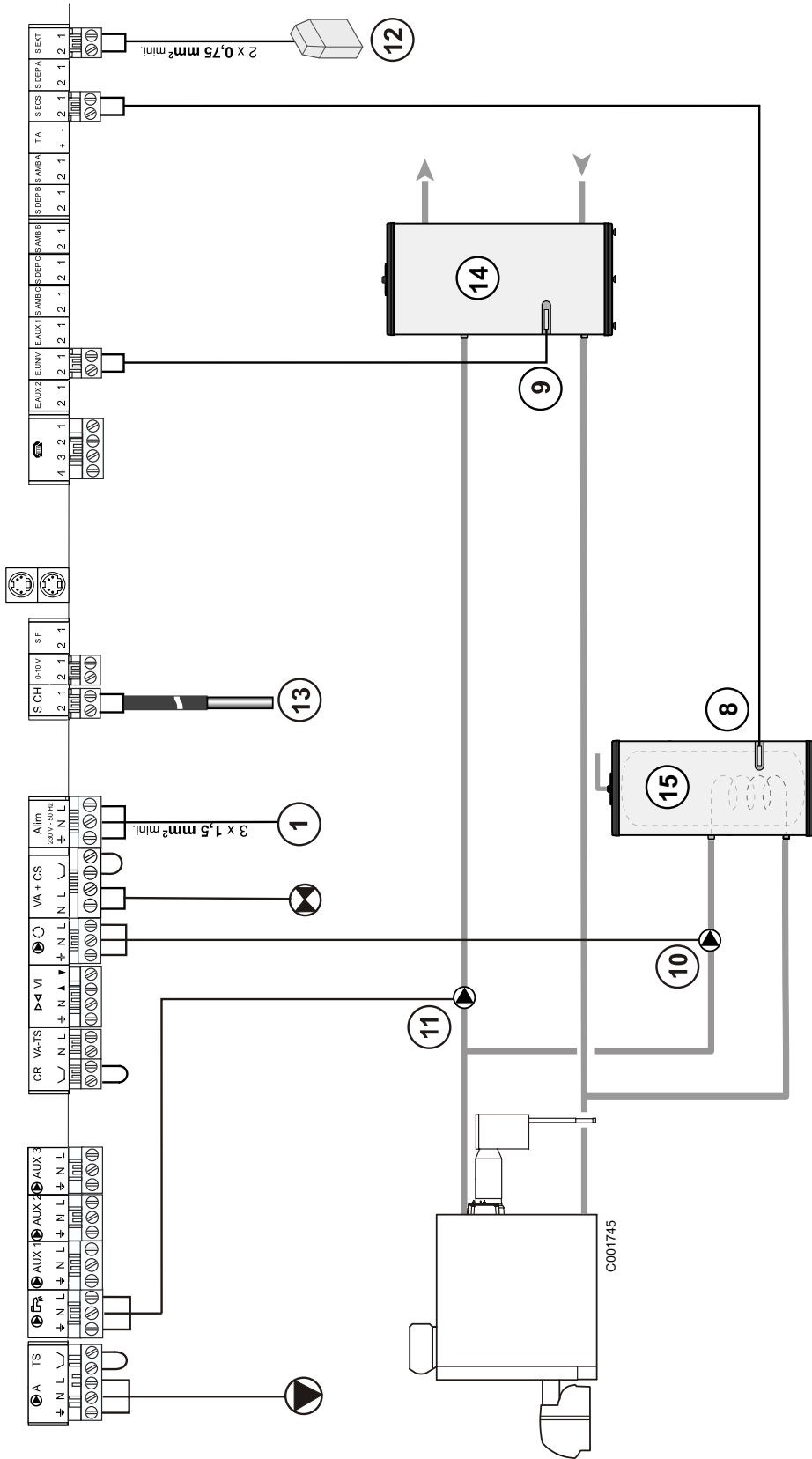
## 4.12 Connecting one or two circuits with mixer valve

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To connect the mixing valve PCB + sensor options - See:  
Instructions for option FM48.

### 4.13 Hot water storage tank connection



- 1 230 V main supply
- 8 Tank sensor
- 9 Hot water storage tank sensor
- 10 D.H.W. load pump
- 11 Buffer tank pump
- 12 Outside sensor
- 13 Boiler sensor
- 14 Buffer tank
- 15 Domestic hot water boiler

#### 4. Electrical connections

The storage tank handles heating and DHW production.

Package AD160 contains 2 sensors:

- The sensor for the solar panel is used as a storage tank sensor (Marker **9**)
- The sensor for the storage tank is used as a DHW sensor (Marker **8**)



**E.UNIV is no longer available for other functions. Its setting is therefore no longer displayed.**

#### ■ Parameter settings

Set the parameter **STOR.T.SENS (#CONFIGURATION)** to **ON**.

#### ■ Operation

##### • In DHW production:

Operation is the same as the normal operation. The boiler setting only is equal to the DHW setting +10 K. The heating load pump is off.

##### • In heating mode:

The burner and the heating load pump (Boiler pump):

- are off if the temperature of the storage tank is higher than the boiler setting.
- start up if the temperature of the storage tank falls below the boiler setting -6 K.

## 4.14 Basic connections in a cascade installation

The common outlet temperature is measured by one of the sensors (auxiliary or universal) in the DIEMATIC-m3 control panel.

Place the 6 mm Ø sensor in a sensor tube 1 m downstream from the last boiler connection.

The cable can be lengthened if necessary.

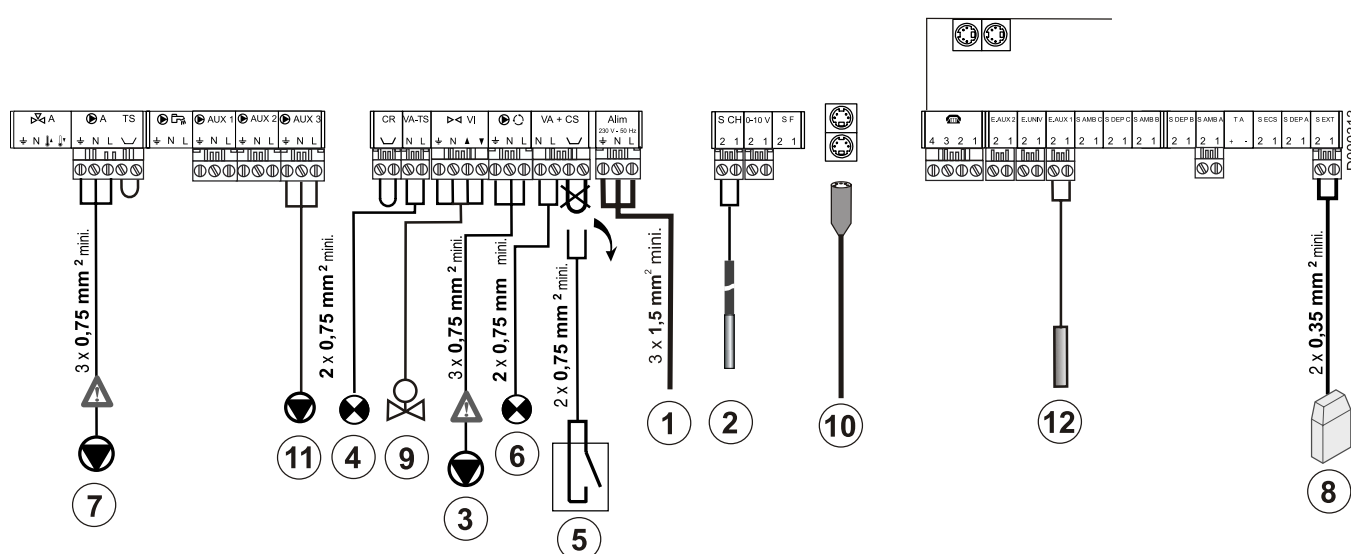
Use the dip sensor with sensor tube (package AD218) if the diameter of the pipes exceeds 100 mm.

For reliable temperature measurement:

- Check that the sensor is always irrigated.
- Check the speed in the pipes upstream of the sensor:

Number of boilers connected in cascade	Minimum water speed
≤ 3	0,2 m/s
≤ 6	0,4 m/s
≤ 10	0,6 m/s

### 4.14.1 Cascade installation (Gate valve + Boiler pump)



- 1 Power supply 230 V
- 2 Boiler sensor
- 3 Shunt pump
- 4 Alarm indicator
- 5 Safety contact  
Only shuts down the burner on the boiler  
(For example: Low water pressure switch)
- 6 Burner fault alarm light
- 7 Heating pump circuit A
- 8 Outside sensor
- 9 Gate valve
- 10 To 2 secondary boiler
- 11 Network pump VM
- 12 Boiler sensor on common output

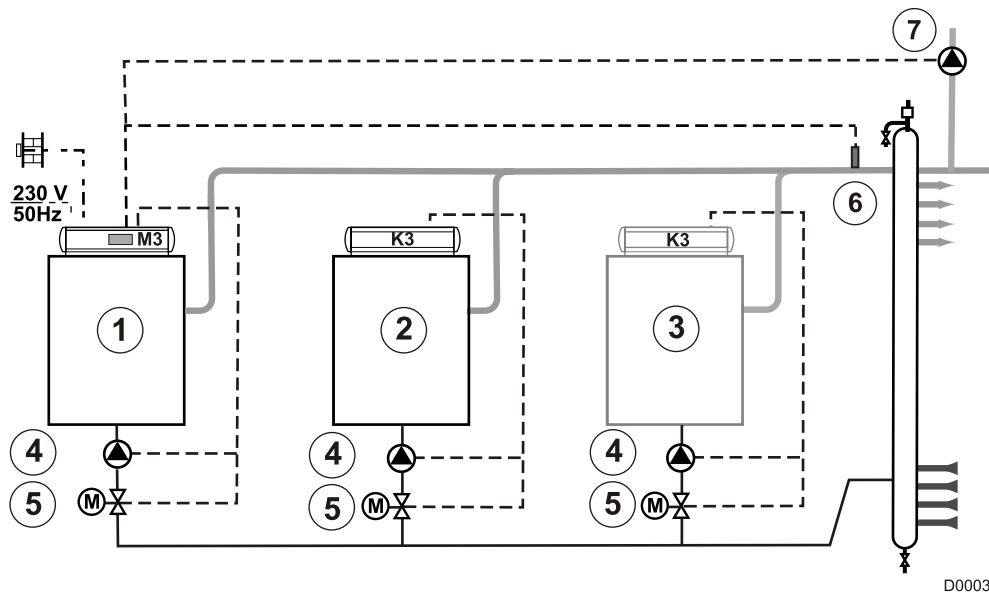
#### ■ Parameter settings

Set:

- ▶ **#CONFIGURATION: E.AUX1 CASC**
- ▶ **#CONFIGURATION: S.AUX3 VM P** (Optional)
- ▶ Code wheel

Adjustment:

- 0 on Boiler ①
- 1 on Boiler ②
- 2 on Boiler ③



- ① Master boiler + DIEMATIC-m3 control panel
- ② Secondary boiler + K3 control panel
- ③ Secondary boiler + K3 control panel
- ④ Injection pump connected to the boiler pump outlet
- ⑤ Gate valve connected to the gate valve outlet
- ⑥ Common outlet sensor to be connected to the E.AUX1 input on boiler ①
- ⑦ VM network pump (if necessary) connected to outlet  
▶ AUX 3
- ⑧ Complete cascade system up to 10 boilers

**i** The VM ⑦ network pump switches on when at least one VM is required for heating.

**i** The cascade outlet sensor can also be connected to inputs E.AUX2 or E.UNIV.

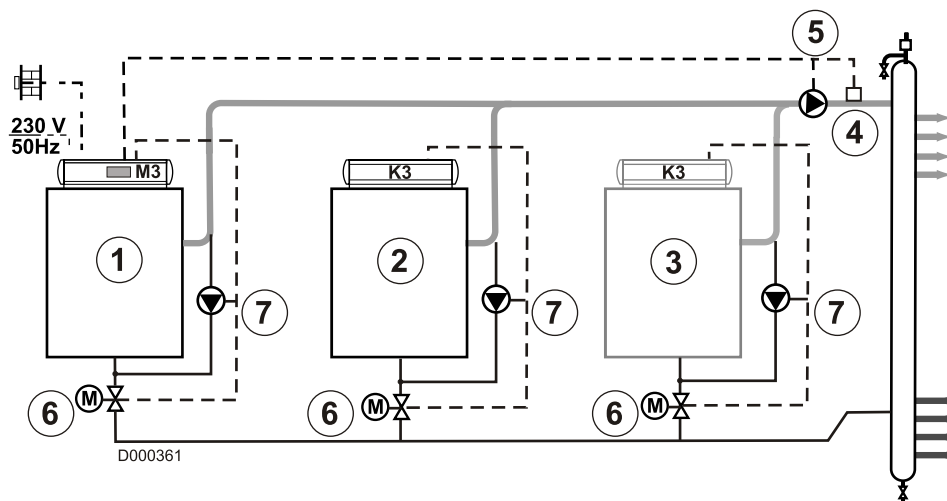
Set:

▶ #CONFIGURATION: E.AUX2 CASC

or

▶ #CONFIGURATION: E.UNIV CASC





- ① Master boiler + DIEMATIC-m3 control panel
- ② Secondary boiler + K3 control panel
- ③ Secondary boiler + K3 control panel
- ④ Boiler sensor on common output
- ⑤ Primary pump connected to outlet AUX 3
- ⑥ Gate valve connected to the gate valve outlet
- ⑦ Shunt pump connected to the boiler pump outlets

**i** The primary pump can also be connected to outlets AUX 1,  
 AUX 2.

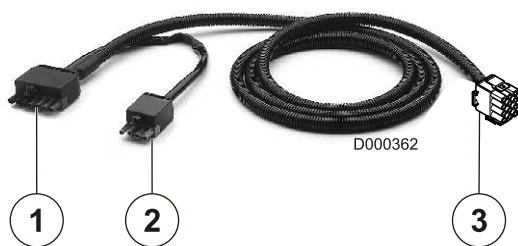
Set:

- ▶ **#CONFIGURATION: S.AUX1 PRIM.P**
- or
- ▶ **#CONFIGURATION: S.AUX2 PRIM.P**



## 4.15 Connecting the burner

### • Burner cable

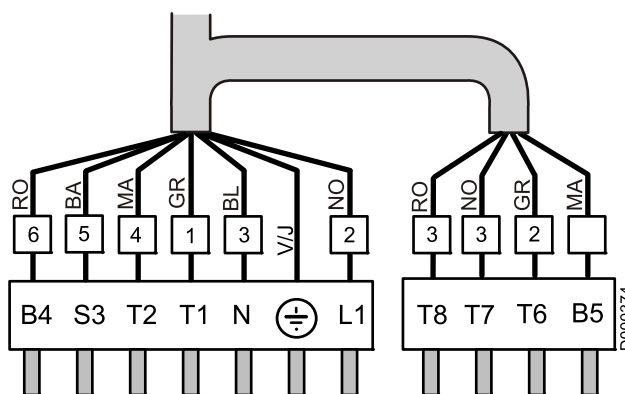


- ① 7-pin plug for 1-stage burners or stage 1 of 2-stage burners
- ② 4-pin plug for stage 2 of the burner
- ③ 9-pin connector

The control panel is supplied with the burner power cable.

The control panel is delivered with the 9-pin counter-connector.

### • Burner side



#### Burner fitted with pin connectors

Refer to the burner cable diagram.

#### Burner without plug-in connectors

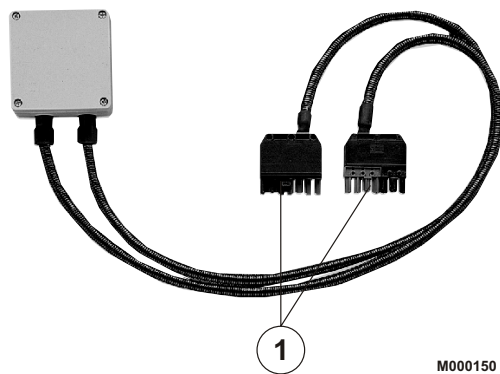
In this case, the connectors supplied with the burner cable must be rewired.

The diagram shows the wire numbers and the terminals of the burner connectors.

The table below specifies the way in which the cables are to be connected on the burner control box.

Connector terminal -No	Wire No	From	Connection to the burner control box
L1	2 (NO)	Continuous phase from the safety thermostat	Burner main supply
⏚	V/J	Earthing	Earthing
N	3 (BL)	Neutral taken after On/Off	Neutral terminal
T1/T2	1/4 (GR/MA)	Dry contact of the stage 1 boiler thermostat	Insert in the control circuit of boiler stage 1
S3	5 (BA)	Burner alarm indicator	Alarm output (phase)
T6	2 (GR)	Stage 2 boiler thermostat input	Insert in the control circuit of burner stage 2
T7	3 (NO)	Stage 2 "boiler off" thermostat output	Connect only if the burner is of the modulating type
T8	3 (RO)	Stage 2 "boiler on" thermostat output	Insert in the control circuit of burner stage 2
B4	6 (RO)	Stage 1 On indicator (or hour run meter)	Stage 1 operation monitoring output (phase)
B5	4 (MA)	Stage 2 On indicator (or hour run meter)	Stage 2 operation monitoring output (phase)

#### 4. Electrical connections



① 7-pin plugs for connecting to the control panel and burner connectors.

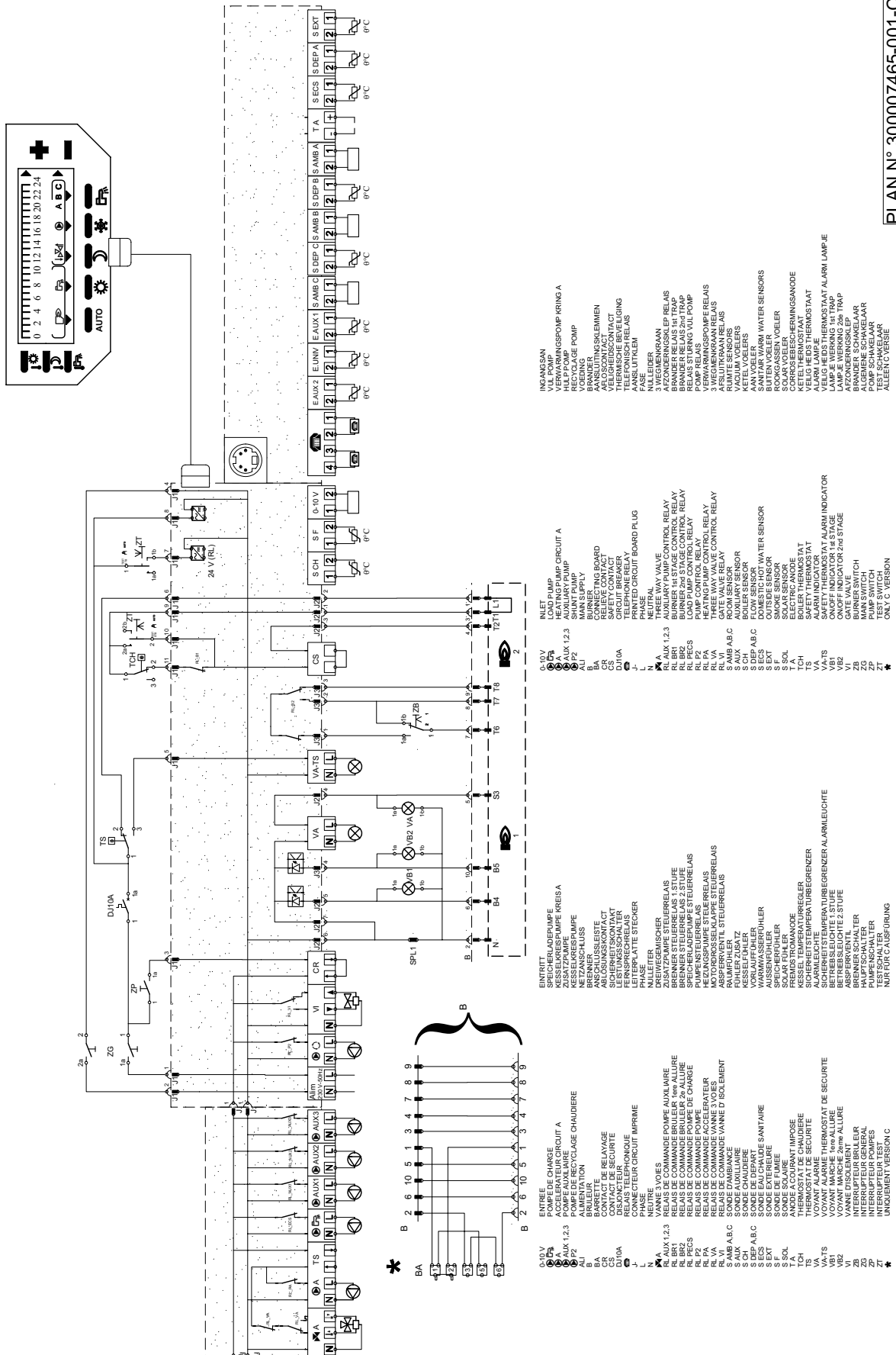
If the electrical characteristics of the burner exceed the following values

- inrush current > 16 A or
- $P > 450 \text{ W}$  or
- $I > 2 \text{ A}$   $\cos \varphi = 0.7$







The burner controls must be relayed, e.g. with the relaying kit (package BP51, optional).

# 5 Skeleton Diagrams

## Schéma de principe - Stromlaufplan - Principe diagram - Principeschema DIEMATIC M3



PLAN N° 300007465-001-C

0-10 V	Input
	DHW pump
	Heating pump circuit A
	Auxiliary pump
	Boiler shunt pump
ALI	Power supply
B	Burner
BA	Terminal
CR	Relay contact
CS	Safety contact
DJ10A	Circuit breaker
FA	EMI-supressor filter
	Telephone relay
J	PCB connector
L	Live
N	Neutral
	3-way valve
RL AUX 1,2,3	External relay for auxilliary pump
RL BR1	Control relay - 1-stage burner
RL BR2	Control relay - 2-stage burner
RL ECS	Dhw pump control relays
RL P2	Control relay - Pump
RL PA	Heating pump control relay
RL VA	Three way valve control relay
RL VI	Isolating valve control relay
S AMB A,B,C	Room sensor
S AUX	Auxiliary sensor
S CH	Boiler sensor
S DEP A,B,C	Flow sensor
S ECS	Domestic hot water sensor
S EXT	Outside sensor
SF	Flue gas sensor
S SOL	Solar sensor
TA	Impressed current anode
TCH	Boiler thermostat
TS	Safety thermostat
VA	Alarm indicator
VA-TS	Alarm indicator - Safety thermostat
V B1, B2	ON lights (1st and 2nd stage)
VI	Gate valve
ZB	Burner switch
ZG	General switch
ZP	Pump shutdown switch
ZT	Test Switch
*	Only C version







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