

1. SYSTEM CONNECTING: All of the system components are wired to the control centre. It is recommended you locate it close to the inner unit of the air conditioning equipment.

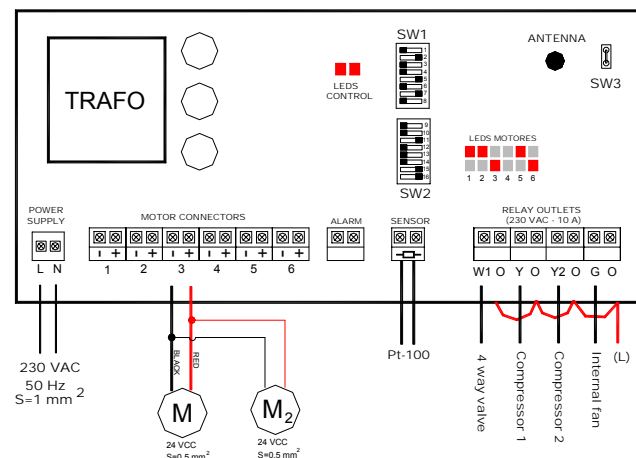
IMPORTANT

The control centre must preferably be located in a raised place away from metal masses and conductive elements.

Where this is not the case, the scope between the thermostats and said centre may be reduced.

Connect the entire system without power

Protect the system using the normal devices.



1.1. Power : Supply the centre with 230 VAC, 50/60 Hz, wires S > 1 mm². Consumption 10 VA.

1.2. Motorised regulations: Connect the motors for each regulation to terminal blocks 1 to 6 on the board. Use a wire (red (+) / black (-)) S > 0.5 mm². In the event of two regulations per zone (maximum), connect the parallel as indicated in the figure. The regulation installed in the area where the MASTER is fitted must be connected to terminal block 1.

1.3. Air conditioning equipment: The connection between the production equipment and the control centre depends on the brand and model of the equipment used. MADEL has the wiring diagrams for the most common equipment on the market. There are three types of connection according to the type of machine control:

Electro-mechanics: Allows for the machine thermostat to be eliminated. The master thermostat of the Zoning System assumes full control of the air conditioning equipment.

- **TYPE A:** Relays OW1, OY, OY2 and OG must be connected.
 - **OW1:** Control relay for the V4V. See point 2.4.1 /III.
 - **OY:** Compressor control relay.
 - **OV:** Control relay for the 2nd stage of the compressor. *Available soon*
 - **OG:** Control relay for the Inner fan.

Electronics: The machine thermostat cannot be replaced and must always be connected to prevent the air conditioning equipment from stopping. Thus, select the max. order temperature in summer and the min. order temperature in winter. Cold-warm switching must be made on the machine thermostat and on the master thermostat.

- **TYPE B:** Relay OY is used to switch the equipment ON and OFF.
- **TYPE C:** Relay OY acts as a 3-sec. button and is used to switch the equipment ON and OFF.

Always connect the air conditioning equipment after configuring the control board and the thermostats.

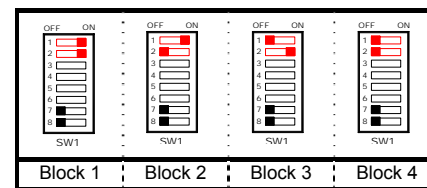
1.4. Safety sensor: Disconnect the 100 Ω resistor that is connected by default to the SENSOR terminal block and connect a PT-100 type sensor. This measures the temperature of the air conditioning equipment refrigerating circuit and not the temperature of the air passing through it. Therefore, it should not be installed on the equipment discharge or return but on the direct contact with the inner unit battery

It must be installed on all types of machine (A, B and C) and its function is to stop the air conditioning equipment in the event of the temperature of the inner battery dropping below -4°C or rising above 55°C.

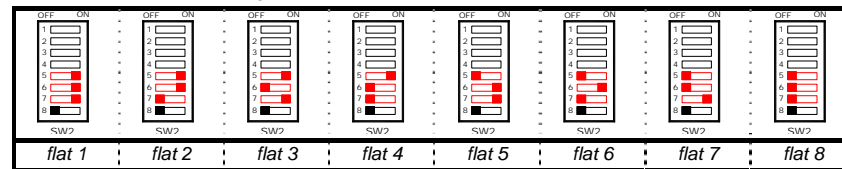
1.5. Alarm (optional): For installations with a fire and/or gas detection centre, etc. In the event of alarm, the regulations close and the equipment switches off. It works as a normally open, voltage-free contact.

2. CONFIGURATION: The control board must be configured (switches SW1 and SW2) to tune the thermostats with said centre and also to configure different machine parameters according to the air conditioning equipment installed.

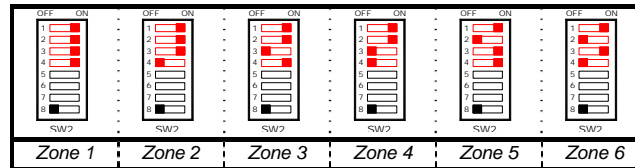
2.1. Block (SW1): This indicates the block of flats where the system is installed. It allows for up to 4 separate blocks to be distinguished.



2.2. Flat (SW2): This indicates the flat where the equipment is installed. It allows for up to 8 separate flats to be distinguished.



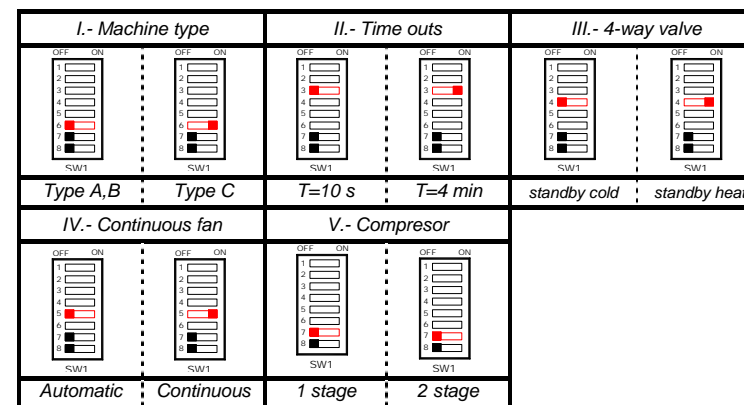
2.3. Zone (SW2): This indicates the number of zones that control the board (from 1 to 6).



2.4. Machine configuration (SW1): This allows for different parameters of the air conditioning equipment to be configured.

2.4.1. TYPE A Machines: The machine thermostat is replaced. The control is fully assumed by the ZONING SYSTEM.

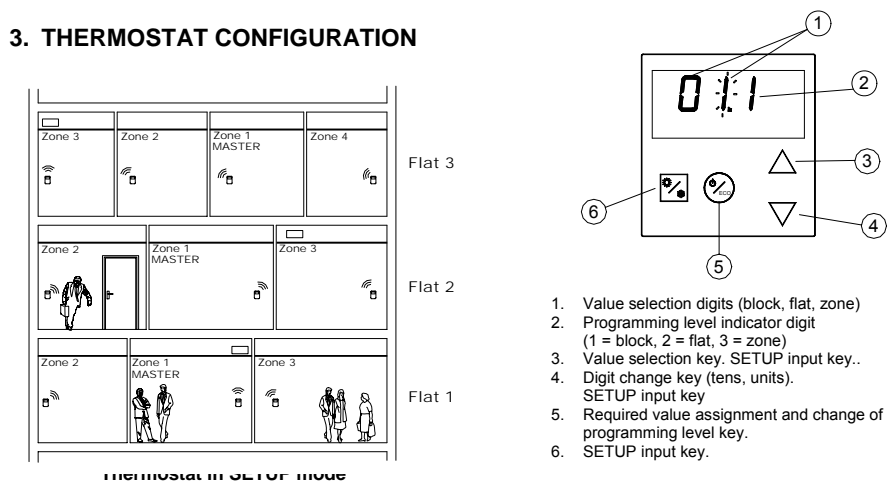
- Machine type:** The machine type is selected (A,B or C)
- Time outs:** Startup time outs are established in the event of the air conditioning equipment not having them.
 - The equipment **does not have** time outs → **ON** is assigned t = 4 min..
 - The equipment **has** time outs → **OFF** is assigned t = 10 s.
- 4-way valve:** This is configured according to the standby status of the valve.
 - HEAT** production standby status → **ON**
 - COLD** production standby status → **OFF**
- Continuous fan:** Select to leave the inner unit fan permanently connected. A flow of ventilation air is therefore assured.
 - CONTINUOUS** fan → **ON**
 - AUTOMATIC** fan → **OFF**
- 2-STAGE equipment:** Select for machines with a second compressor stage (*available soon*).
 - 2-STAGE** equipment → **ON**
 - 1-STAGE** equipment → **OFF**



2.4.2. TYPE B machines: Only connect relay OY, configure as TYPE A, without start-up time out (T = 10 s. Sect. 2.4.1/II) and Auto. Fan (Sect. 2.4.1/IV).

2.4.3. TYPE C machines: Select as TYPE C (Sect. 2.4.1/I). The OY relay acts as a 3-sec. button. Configure without start-up time out (Sect. 2.4.1/II) and Auto. Fan (Sect. 2.4.1/IV)..

3. THERMOSTAT CONFIGURATION



- Value selection digits (block, flat, zone)
- Programming level indicator digit (1 = block, 2 = flat, 3 = zone)
- Value selection key, SETUP input key..
- Digit change key (tens, units), SETUP input key
- Required value assignment and change of programming level key.
- SETUP input key.

3.1. Verification of collisions: Before inserting the batteries in the thermostats to programme them, check to make sure that there is no other ZONING SYSTEM R/C configured in the same manner.

- Power the control centre at 230 VAC. The centre will implement an opening cycle and will light up a row of 6 red LEDs (Closed) that progressively change to green (open). If the grilles have not opened, check their polarity.
- The control LED on the left must not give a communication signal. After 5 minutes, all motor LEDs (red/green) must have come on. This indicates that there is no installation with the same configuration as ours.

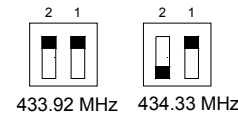
3.2. Position thermostats: Insert the batteries and distribute the thermostats in a significant place in one of the zones to be air conditioned. Place them at a height of approximately 1.5 m., avoiding direct sources of heat (sun, electrical appliances, etc.) and undesired draughts. Avoid placing them close to metal items.

3.3. Programme thermostats: Each thermostat must be allocated the motorised regulation of the zone it controls and the flat and block where it is installed. To do so, following the steps below:

STEP	DISPLAY	FUNCTION	DESCRIPTION
1		Enter in SETUP mode	Press all three buttons indicated for 3 sec. at the same time. The central digit begins to flash.
2		Choose the block N°	Choose a value from 1 to 4. <i>Only programme in the event of adjacent installations that may produce interference. By default, leave block 1. All thermostats from the same installation must have the same block no. assigned.</i>
3		Assign the value and change the level	Assign the block no. and access the next programming level. <u>This block number must be same as that selected in the SW1 of the control board. Sect. 2.1</u>
4		Choose the flat N°	Choose a value from 1 to 8. <i>Only programme in the event of adjacent installations that may produce interference. By default, leave flat 1. All thermostats from the same installation must have the same flat no. assigned.</i>
5		Assign the value and change the level	Assign the flat no. and access the next programming level. <u>This flat number must be same as that selected in the SW1 of the control board. Sect. 2.2</u>
6		Choose the zone N°	Value from 1 to 6. <i>Both the zones and the motorised regulations connected to outlets 1 to 6 of the control board must be assigned. Do not take parallel connections into account. The number of zones assigned must match that selected in switch 2 of the control board.</i>
7		Assign the Zone N°	The motorised regulation controlled must be assigned to each thermostat. <u>It must be the same number as the motorised regulation connection (that controls the thermostat) on the control plate (1 to 8). Sect. 2.3</u>
8	-	Repeat the operation	Repeat this same operation for all thermostats in the installation.

VERY IMPORTANT

If, due to interference problems, the board reception frequency is changed (remove bridge SW3), the Switch (2) located at the rear of all the system thermostats must also be changed.



4. START- UP

4.1. Connect the air conditioning equipment using the diagram supplied.

4.2. Power the control centre at 230 VAC. The centre will implement the opening cycle. At this moment, the grilles must be opening.

Do not continue if the grilles have not opened → change the motor polarity.

Summer mode:

4.2.1. Connect the MASTER thermostat and position in cold mode.



4.2.2. Select an order temperature of 15°C using the keys



4.2.3. Connect all of the thermostats and also select 15°C.

4.2.4. Wait 5 mins. for the air conditioning equipment to start up, check that it is producing cold and that all of the grilles are open. Select 35°C on all thermostats and check that the grilles close and the air conditioning equipment stops.

Winter mode: (only for heat pump):

4.2.5. Connect the MASTER thermostat and position in heat mode.



4.2.6. Select an order temperature of 35°C using the keys



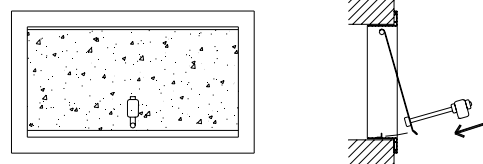
4.2.7. Connect all of the thermostats and also select 35°C.

4.2.8. Wait 5 mins. for the air conditioning equipment to start up, check that all of the grilles are open. Select order temperature 15°C and check that all the zones close and the air conditioning equipment stops.

Adjusting the excess pressure:

4.2.9. Progressively close all zones except for that with the least flow of discharged air.

4.2.10. Position the counterweight on the farthest end from the flap or on the shaft. Move the weight inwards or towards the shaft until the flap opens and the air speed inside the diffusion element is equal to or below 4 m/s or, if no air-flow meter is available, until the passing of air does not produce noise on said element.



The closer the counterweight is to the flap, the greater the by-pass flow and the further away it is the lesser the by-pass air flow.

RADIO TRANSMISSION

Radio transmission does not take place on an exclusive frequency and, therefore, the possibility of interference cannot be excluded. Radio appliances working in a permanent emission mode (wireless headphones and speakers, etc.) and that work on the same frequency band (433 MHz) may disrupt the normal working order of the ZONING SYSTEM. The system is prepared for work on two different frequencies (433.92 and 434.33 MHz) to minimise this type of problem.

5. MOST FREQUENT ERRORS

ERROR	INDICATOR	CAUSE	SOLUTION
1	When the centre is powered by 230 VAC, no LED lights up 	Lack of voltage	1. Check that voltage reaches the centre (230 VAC + 10%) 2. Check that the SW2 dip 8 is OFF.
2	When 230 VAC is supplied, the right-hand LED flashes quickly 	No sensor connection	Check the PT-100 sensor connection or the 100 Ω resistor connection.
3	5 min. after switching the centre on, the red and green LEDs in all zones light up. 	Bad configuration	1. Check thermostat configuration. Incorrect block or flat. 2. Check board configuration. Incorrect block or flat. 3. Antenna not receiving. Modify position.
4	The two motor leds (red/green) light up in 1 zone or more. 	Bad communication (zones 3 and 4)	1. The zone is badly configured in the thermostat SETUP. 2. Interference in the communication. Modify the location of the thermostat. 3. Different frequency between the thermostat and the board. Check the thermostat switch.
5	The equipment generates cold and should generate heat (and vice versa) 	Bad 4-way valve connection	The 4-way valve is badly connected. Change SW1 position. See Sect. 2.4.1/III
6	The equipment gives out cold but not heat (or vice versa) 	Bad 4-way valve connection	The 4-way valve is not connected. See Sect. 2.4.1/III
7	When the grille should open → closes (and vice versa) 	Motors badly connected	Check the motor connection. Polarity (black -, red +)
8	One of the flow regulations does not work 	Zone damper connection	1. Check motor connection. Polarity (black -, red +) 2. Check that the regulator is not obstructed.
9	All of the flow regulations work properly but the air conditioning equipment does not work. 	Air conditioning equipment badly connected	1. Check that the board SW are configured correctly, according to the type of machine (A, B or C) 2. Revise the equipment connection to the board.
10	The equipment switches on and off with the MASTER at a standstill or some zones close or open without any signal from the thermostat 	Interference with neighbouring installations	1. Check that there are no two thermostats with the same configuration. 2. Check whether there is some other Zoning System installed in the neighbouring households. 3. Change the block or flat no. (on the board and the thermostats). 4. Change the board and thermostats to the second working frequency.



R / C SYSTEM

Installation manual (EN)

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CHARACTERÍSTICS

Control board (receiver)

- Power: 230 VAC, 50/60 Hz
- Consumption: 10 VA
- Average scope: 50 m in free field. 20 m in the habitat.
- Inner antenna
- Securing outside of the control casing using screws.
- Size (mm): 240 x 185 x 90
- Carrier frequency: (ISM Band, acc. I-ETS 300-220 standard) 433.92 MHz
 - Optional 434.33 MHz
- Protection level: IP 54
- Protection against electric shock insulation: CATII 300 VAC.
- Compatibility regulations applied: 61000-4-2,3,4 and 55022-B.
- Operating temperature: -10 °C to 50°C. 95 % humidity without condensation.
- Storage temperature: -30 °C to 85 °C.
- This appliance complies with directives CC 89/336 (Electro-magnetic compatibility) and EEC 73/23 (Low voltage)

Thermostats (transmitter)

- Power: 2 x 1.5 V LR06 AA batteries (alkaline). Minimum autonomy 1 year (or more). The batteries are supplied with the equipment.
- Battery wear indicator.
- Carrier frequency: (ISM Band, acc. I-ETS 300-220 standard) 433.92 MHz
 - Optional 434.33 MHz
- Average scope: 50 m in free field. 20 m in the habitat.
- Size (mm): 103 x 74 x 20
- Operating temperature: 10 °C to 40°C.
- Storage temperature: -10 °C to 40 °C.
- Attachment: Wall, using screws (supplied)
- Protection level: IP 30
- Economy Mode (Ordered temp. variation of ± 5°C)