

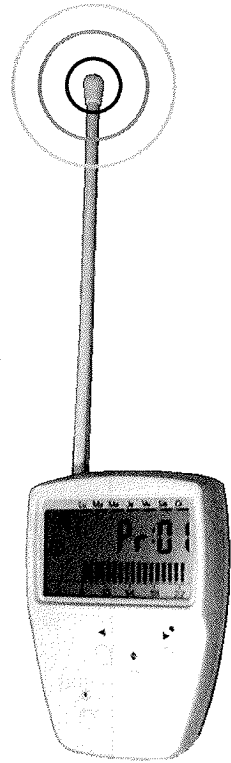
RF-Thermostats



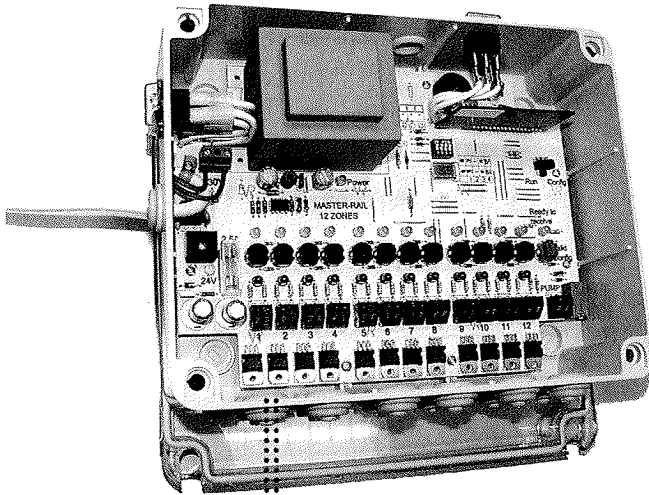
MASTER-RAIL

*Wireless multiple channel receiver
for water heating installations*

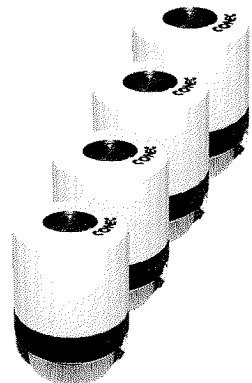
SYSTEM OVERVIEW



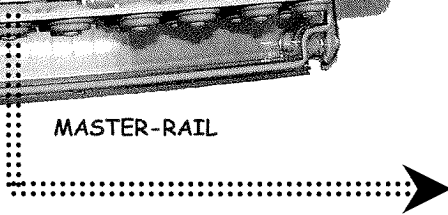
RF-ClockProgrammer



MASTER-RAIL

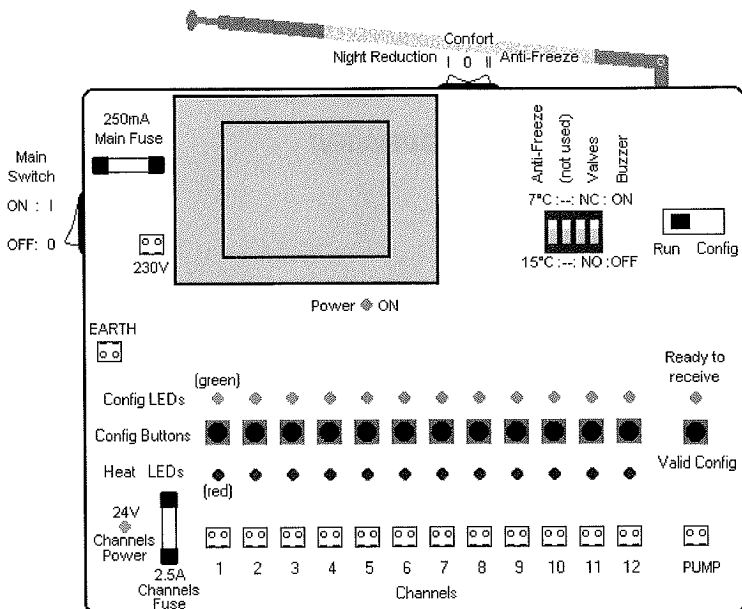


Electric Valves



The **MASTER-RAIL** multiple channel receiver is a wireless system able to control water heating electric valves and receive radio signals from several wireless **RF-Thermostats** and/or from wireless **RF-ClockProgrammers**.

Overview of the MASTER-RAIL multiple channel receiver

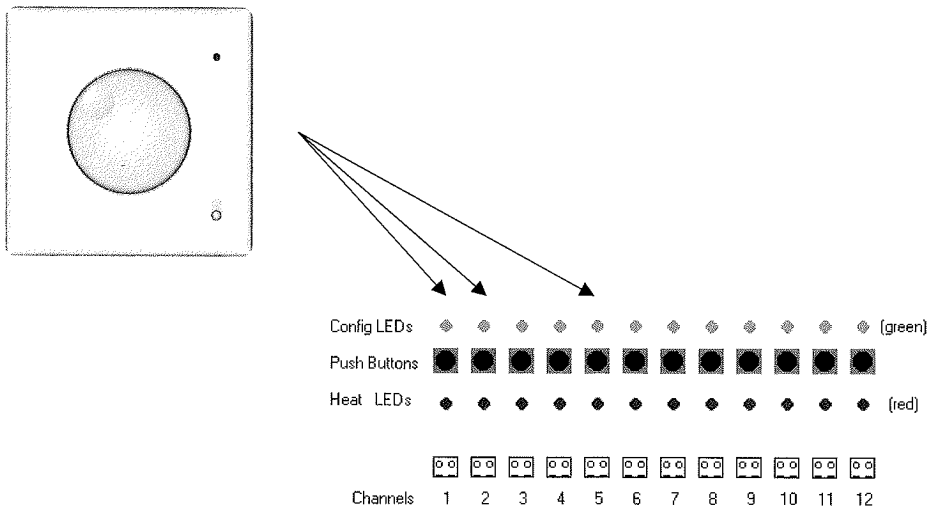


Each output channel of the **MASTER-RAIL** receiver can drive up to 3 electric valves (24V 3VA) simultaneously without exceeding a total of 16 valves. Every channel is independent from one another.

1 Thermostat → multiple channels

It is possible to assign the same **RF-Thermostat** to several channels. The channels associated will then be driven by the same wireless thermostat.

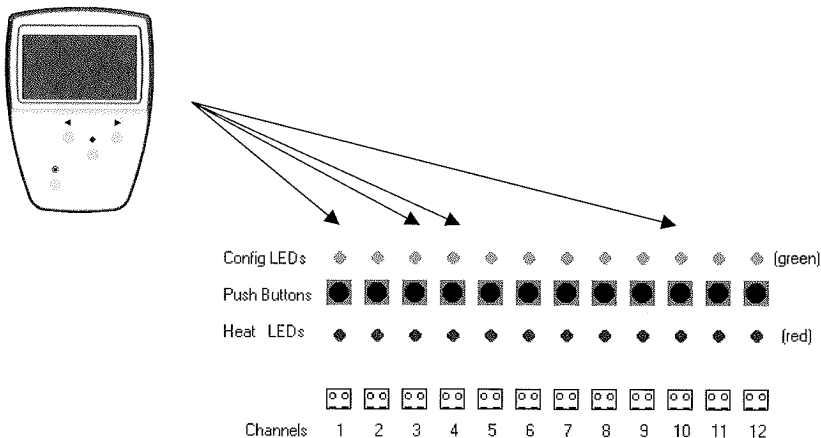
example: channels 1, 2 and 5 are controlled by the same thermostat



1 clock zone → multiple channels

If wireless **RF-ClockProgrammers** are used, several channels can be assigned to an unique zone, in this case all channels associated will have the same thermal mode behaviour.

example: channels 1, 3, 4 and 10 have same thermal behaviour (same zone)



STANDARD WIRED SYSTEM Versus WIRELESS RADIO SYSTEM

STANDARD WIRED SYSTEM

Usually the thermostat is mounted on the wall with wire connection.

The drawbacks of this wired system are:

- Installation more complex.
- Home design due to the connection wires.
- Difficult temperature setting.

WIRELESS RADIO SYSTEM

Now with this wireless system, you can put your wireless **RF-Thermostats** and **RF-ClockProgrammers** on the wall without any connections. The **MASTER-RAIL** multiple channel receiver will be placed near the electric valves connections without any wires to the thermostats or clocks.

The advantages of this wireless radio system are :

- Liberty to mount your thermostat where You want.
- Quick and evolutive installation.
- Respect of home design.
- Better regulation.
- One thermostat can drive many channels.
- Possibility to have different areas of the house.

NORMAL OPERATION (RUN mode)

To switch ON the **MASTER-RAIL** multiple channel receiver choose the 'I position' of the main switch on the left of the box.

Through the transparent front panel of the **MASTER-RAIL** multiple channel receiver, two rows of Electro-luminescent LEDs are visible :

The **red LEDs** indicates if the correspondent channels are activated or not. If the red LED is glowing, this shows that this channel is Heating.

The **green LEDs** indicates if the correspondent channels are receiving correctly the radio signals from the wireless **RF-Thermostats** and from wireless **RF-ClockProgrammers**.

- A permanent lighted green LED indicates a correct reception of the wireless **RF-Thermostat** and **RF-ClockProgrammer** assigned to this channel.
- A blinking green LED indicates that there is no radio signal coming from a RF-ClockProgrammer in order to drive the thermal mode behaviour of this channel. Please note that in the case of a blinking green LED the wireless **RF-Thermostat** is still received correctly, and drives correctly this channel.

Possible cause :

- Perfectly Normal if the channel is not assigned to a zone (Case when wireless **RF-ClockProgrammers** are not used)
 - The correspondent **RF-ClockProgrammer** is too far away
 - The correspondent **RF-ClockProgrammer** is out of battery
- An extinct green LED indicates an incorrect reception of this wireless link between the **RF-Thermostat** and receiver for the correspondent channel.

IMPORTANT : To be sure that the wireless link is really faulty, please wait 20 minutes to see if the green LED is still extinct. (This rare phenomena could appear in case of a repeated radio signal collision)

Possible cause (green LED extinct more than 20 minutes) :

- The correspondent **RF-Thermostat** is too far away
- The correspondent **RF-Thermostat** is out of battery

CONFORT / NIGHT REDUCTION / ANTIFREEZE

By using the 3 position switch on top of the box, **all the channels** can be forced to

- **Night Reduction mode** 'I position' (set temperature on each thermostat - 4°C)
- **Confort mode** '0 position' (set temperature on each thermostat)
- **Anti-Freeze mode** 'II position' (fixed temperature of 7°C or 15°C, see DIP Switch)

Note: To use **RF-ClockProgrammers** please select **Confort mode**.

INSTALLATION

A) Mechanical placement

The **MASTER-RAIL** receiver will be installed near the electric valves main connection.

The external antenna should be straighten up completely and should not be placed in parallel with long metallic obstacles (for example: the antenna receptivity will not be optimal if placed in parallel with the installation metallic pipes). Following theses precautions will improve considerably the radio sensitivity and distance.

In order to mount the **MASTER-RAIL** receiver, the transparent front panel has to be taken away. Then use the 4 screws to hold the box of **MASTER-RAIL** receiver on the wall.

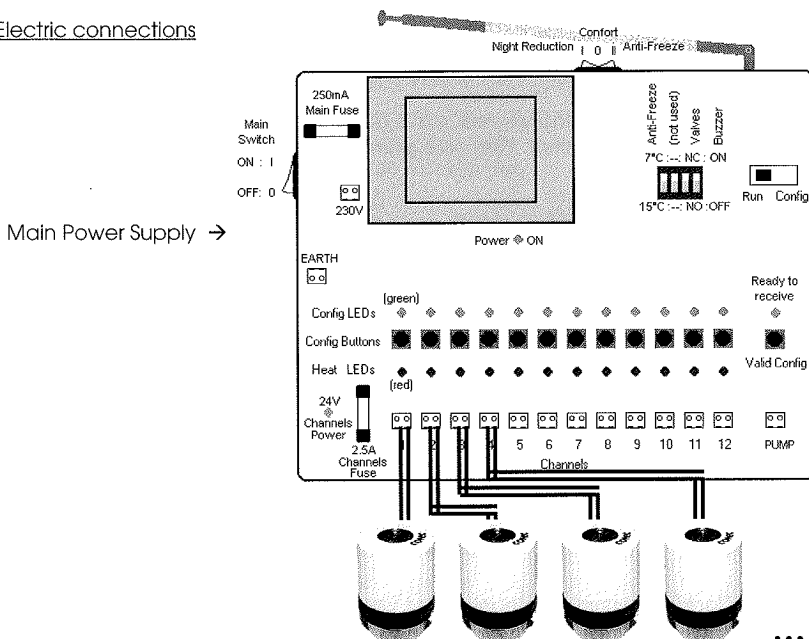
B) Electrical connections

DANGER : be sure to turn off the main power switch - 'O position' before connecting any wires to the **MASTER-RAIL**

Each electric valve will be connected to the desired channel of the **MASTER-RAIL** receiver (maximum 3 valves per channels, and a total of 16 valves maximum). The wires will have to be passed through the correspondent holes on the bottom of the box.

Verify each connection and beware of shorts circuits or overloads that might kill a channel. When every connection is properly wired to the **MASTER-RAIL** multiple channel receiver, it's possible to turn back on the main power switch.

Electric connections



C) Configuration of the **MASTER-RAIL** multiple channel receiver

This configuration sequence will assign each wireless **RF-Thermostat** and/or wireless **RF-ClockProgrammer** to the desired channels. To configure the **MASTER-RAIL** receiver please turn on the main power supply before beginning the configuration sequence described below.

Configuration sequence:

1. Switch off all wireless **RF-Thermostats**, and select the clock screen on all wireless **RF-ClockProgrammers**.
2. Select the CONFIG position on the slide button of the **MASTER-RAIL**.
3. Use the twelve push buttons and green LEDs on the **MASTER-RAIL** multiple channel receiver to select the channels that will be assigned to the next wireless **RF-Thermostat** or **RF-ClockProgrammer**. (By pressing the push buttons it's possible to select on or off the channels)
4. Once the channel selection is correct press the VALID push button to validate and freeze this selection. The VALID green LED will then glow, showing that the selection is ready to be assigned. (If a wrong selection has been entered by mistake, select the NORMAL position on the slide button of the **MASTER-RAIL** receiver and restart the sequence at point 2.)
5. The **MASTER-RAIL** receiver is now waiting for an unique wireless **RF-Thermostat** or **RF-ClockProgrammer** to be turned ON in order to assign it to the selected channels (for an **RF-ClockProgrammer** assignment, enter the desired Zone number to be assigned and then activate the radio transmission).
After turning on a wireless unit, wait a few seconds. When the radio signal is received correctly all the green LEDs should extinct showing that the selection has been correctly assigned to the wireless **RF-Thermostat** or **RF-ClockProgrammer**.
6. When all the green LEDs are off, switch off the last wireless **RF-Thermostat** or **RF-ClockProgrammer** that have been assigned.
7. It's now possible to assign another **RF-Thermostat** or **RF-ClockProgrammer** by restarting the configuration sequence at point 3.)

Please note that when a channel is assigned several times, only the last assignment will be kept. Each channel can be linked only to an unique wireless thermostat and an unique Clock-Zone.

D) DIP Switch configuration

DIP1 : Anti-Freeze temperature	ON = 7°C	OFF = 15°C
DIP2 : (not used)		
DIP3 : Valves Type	ON = Normally Closed	OFF = Normally Open Valves
DIP4 : Buzzer	ON = Buzzer activated	OFF = Buzzer turned OFF


E) Verification of the complete system

Turn on all installed wireless **RF-Thermostats** and **RF-ClockProgrammers**, and select the RUN position on the slide button of the **MASTER-RAIL** multiple channel receiver.

Then wait 20 minutes and leave the system running.

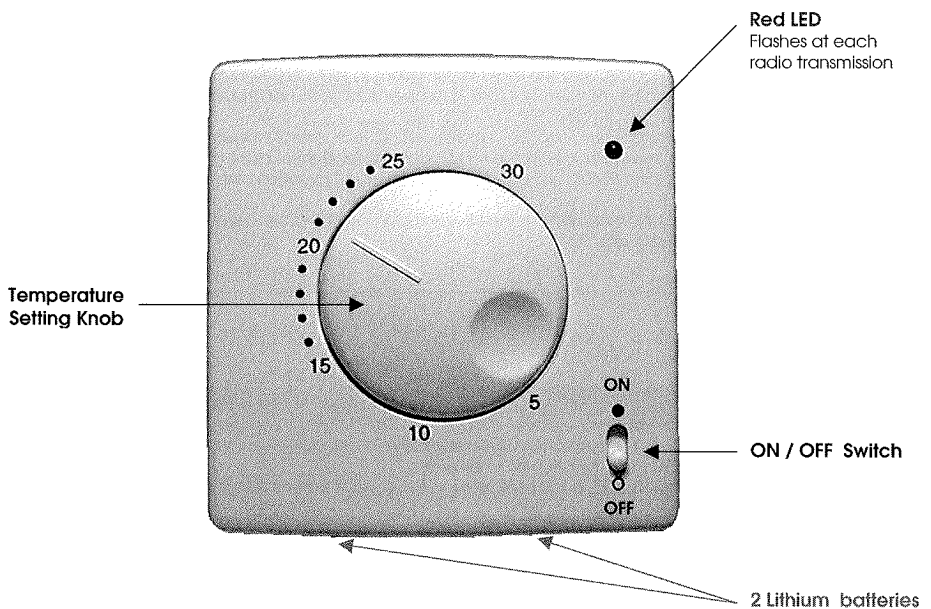
After 20 minutes all the green LEDs of the used channels should be glowing. Please refer to the green LEDs explanation in the NORMAL OPERATION Section for more details.

TECHNICAL SPECIFICATIONS

	Receiver	
Utilisation	Heating driver : <ul style="list-style-type: none">- 12 Channels for driving up to 3 electric valves (24V 3VA) simultaneously without exceeding a total of 12 electric valves.- 24V DC, 600mA maximum per channel (for a matter of power dissipation in free air)	
Regulation	Resolution: 0.2K at 20°C	
Inputs/Outputs	Four wire RS485 bus (bus version only) for central management and future distant products.	
Radio Specifications	Receiver Frequency : 433.92 MHz, without external antenna. Compatible with timer clock * RF-ClockProgrammer * Distance: ≈ 50m open ground for the RF-Thermostats ≈ 80m open ground for the RF-ClockProgrammers	
Code	All the information are coded : <ul style="list-style-type: none">- No interference problem due to installations.- One Thermostat can drive many channels.	
Approval	Agrement ART n° 96 0459 PPL 0 Possibility : NFC 73-251 Cat B Promotelec.	Following Thermostats rules : EN 60 730-9 Classe II construction 
Power Supply	230 VAC, 50 Hz.	
Storage Conditions	Storage temperature : -10 to 75°C	Storage Humidity : 85%
Working Conditions	Working temperature : -10 to 50°C	Working Humidity: 85% at 20°C
Design	GEWISS Box with transparent front panel and wall mounting.	
Sizes-Weight	240 x 190 x 90 mm	approx. 700grs

RF - Thermostat

Wireless Thermostat



Function

RF - Thermostat is based on Radio frequency system. The different information are transmitted with different codes to avoid the interference problems :

- The **Transmitter (RF - Thermostat)** installed on the wall) check the ambient temperature by an internal sensor NTC and the setting temperature by a potentiometer and send them by radio to the receiver.
- The **Receiver** calculates the proportional regulation band according to the transmitter information and drives the Heat element.

Installation

- 1 - Switch Off (O position) the **RF-thermostat** transmitter and insert the two lithium batteries (+ polarity at the back).
- 2 - Follow the configuration sequence in the installation section of the **MASTER-RAIL** user manual.
- 3 - Once the receiver is ready to receive a radio signal assignment Switch On the **RF-Thermostat** (position ●).
- 4 - The LED of the **RF-Thermostat** will then blink very quickly during a few seconds showing the radio transmission of the recognition code that will be assigned to the selected channels on the **MASTER-RAIL** receiver.
- 5 - The radio signal transmitted by the **RF-Thermostat**, containing the recognition code, will then be received by the **MASTER-RAIL** receiver. After a few seconds the channel selection on the **MASTER-RAIL** receiver should extinct (green LED) showing that the assignment was successful. If the **MASTER-RAIL** receiver didn't receive correctly the radio signal (nothing happened on the **MASTER-RAIL** green LEDs), switch Off (O position) the **RF-thermostat** transmitter and restart at point 3.
- 6 - The **RF-Thermostat** will then during a few minutes transmit every 3 seconds the measured and setting temperature (The LED on the RF-Thermostat blinks at each radio transmission). After a few minutes **RF-Thermostat** will slow down drastically the radio transmissions to reduce power consumption; information are send every two minutes if the measured or setting temperature does not change consequently.
- 7 - Mount the **RF-Thermostat** where you want on the wall. Check after 20 minutes if the **MASTER-RAIL** receiver is not too far away and receive correctly the radio signal from this thermostat (the correspondent green LED on the **MASTER-RAIL** receiver should not be extinct, see Normal Operation of the **MASTER-RAIL** user manual).
- 8 - If necessary it is possible to recalibrate the **RF-Thermostat** temperature value by removing and adjusting the position of the setting knob.
- 9 - End of the installation.

Technical Specifications

Transmitter RF-Thermostat	
Utilisation	Setting temperature: from + 5 to + 30 °C by marking step 1°C. Thermal calibration by removable and adjustable setting knob. ON / OFF function by small switch Visible LED, quick blink when radio signal is transmitted
Thermal Resolution	Resolution : 0,2 K at 20°C
Inputs/Outputs	Transmitter information cycle time shown by front Led. Transmit every 2 minutes if the setting temperature has not changed.
Radio Specifications	Transmitter Frequency 433,92 MHz, without external antenna. Radiated Power below 10 mW. Distance : ≈ 50m open ground
Code	All the information are coded : - No interference problem due to installations. - One Thermostat can drive many channels.
Approval	Agreement ART n° 96 0459 PPL 0 Following Thermostats rules : EN 60 730-9 Possibility : NFC 73-251 Cat B Promotelec Classe II construction
Power Supply	2 lithium batteries CR2430 - 3V 270 mAh; autonomy 2 years
Storage Conditions	Storage temperature : -10 to 75°C Storage Humidity : 85%
Working Conditions	Working temperature : -10 to 50°C Working Humidity: 85% at 20°C
Sizes-Weight	ABS plastic white box with wall mounting 75 x 75 x 24 mm - 70 grs.

RF-ClockProgrammer

Wireless Clock and Pilot Wire driver

The **RF-ClockProgrammer** is used to drive the heating behaviour of **MASTER-RAIL** channels in 4 different zones (areas).

TECHNICAL SPECIFICATIONS

Can control the thermal behaviour in 4 zones (areas)

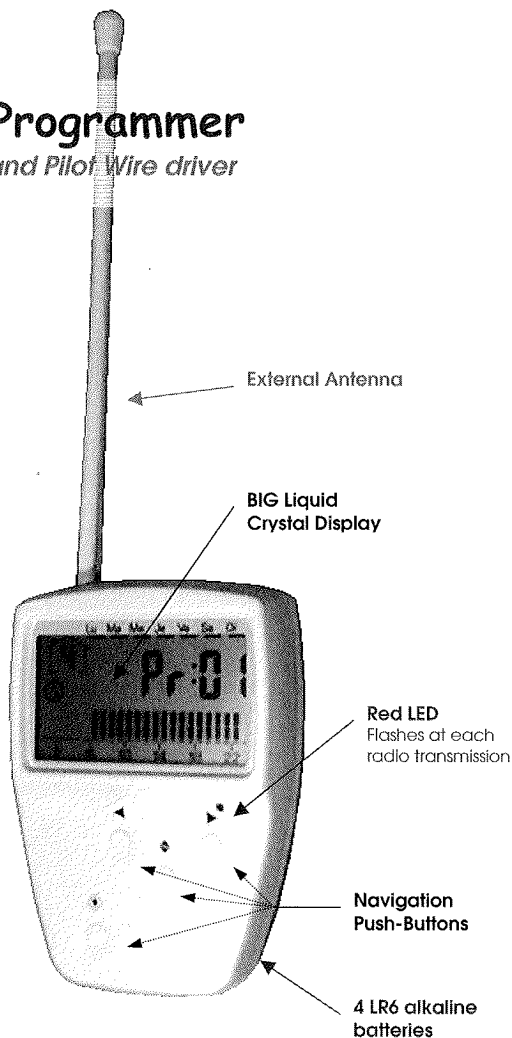
Complete week easy program

Possibility to add an **EASY Cartridge** to auto program it with predefined programs

External antenna increases distance above 50m

Wide LCD display

4 LR6 low cost alkaline batteries for over a year function



ADVANTAGES

You will save on your heating bills while you benefit from electrical heating comfort. Your savings will be obtained by the optimisation of the heating level within your home.