

MCF234 – Distributor for Wired Control System

COMAP proposes a new control system for heating and cooling underfloor. Consisting of a 6 or 10-channels controller (MCF234), analogic (TAF234) or electronic (TEF234) room thermostats and thermal actuators (TE24) to control the various circuits, it enables optimum temperature control, by area or room.



Application

Distribution of the power supply, the positioning signals and a shared time schedule for room devices (analogic or with display) and thermal actuators.

Description

- For easy wiring of up to 6 or 10 zones in a panel heating system
- For transferring switching signals from the unitary controllers for heating or heating/cooling
- Individual forwarding of time commands or night set-back to the appropriate actuators; max. two time channels
- With pump and boiler control
- Pump logic with adjustable follow-on time for actuating the circulation pump
- Integrated valve protection function
- Input for temperature limiter or dew point monitor
- LED status indicator
- Pump control direction switching for NC/NO actuators
- For connecting up to 18 actuators
- Cable guidance, standard-compliant cord grip and screwless terminal connections
- Easy, intuitive wiring and installation

Item code	Description
C412009001	Controller Heat 230-24V 6 channels Biofloor
C412010001	Controller Heat/Cool 230V 10 channels Biofloor
C412011001	Controller Heat/Cool 24V 10 channels Biofloor
C412012001	Control Heat/Cool+option 230V 10 channels Biofloor
C412013001	Control Heat/Cool+option 24V 10 channels Biofloor

Range

	2 zones				
Distributor	6 channels	10 channels			
	24/230V C412009001	230V C412010001	24V C412011001	230V C412012001	24V C412013001
Basic thermostats	230V - heat C411012001			24V - heat C411013001	
Electronic thermostats	230V – heat C411014001	230V – heat/cool C411016001	24V – heat C411015001	24V – heat/cool C411017001	
Actuators	For 9000TP/K9000TP Manifolds 230V - C430042001 24V - C430041001			For V9004 Manifolds 230V - C430044001 24V - C430043001	
Accessories	Transformer 24V – C412014001				
Sensor	External temperature sensor - C422015001 Cable type NTC sensor 1,5m – C422016001 Cable type NTC sensor 3m – C422017001 Dew point monitor on housing – C422018001 Dew point monitor with cable – C422019001				

Functions

	6 channels 24/230V C412009001	10 channels 230V - C412010001 24V - C412011001	10 channels 230V - C412012001 24V - C412013001
Heating	✓	✓	✓
Cooling	-	✓	✓
Pump control	-	✓	✓
Pump control with delay	-	-	✓
Heating/cooling input	-	✓	✓
Pump and valve protection	-	-	✓
LED indicator	-	-	✓
TB or rH% input	-	✓	✓
Boiler control output	-	-	✓
NC/NO switching	-	-	✓

Technical features

- Housing material, ABS plastic, black RAL9005
- Cover: transparent grey plastic
- Fitting: Mounted on wall or DIN rail
- Connection terminals: Automatic, max. 1.5 mm²

	24V	230V
Power supply	+/- 20% - 50...60 Hz	+/-10% - 50...60 Hz
Distributor fuse	T 2 A	T 4 A H
Circuits/zones	6 ou 10	
Time channels/reduction	2	
Admissible ambient temperature	0...50 °C	
Admissible storage temperature	-20...70 °C	
Admissible ambient humidity	< 80 % HR	
Outputs		
Number of actuators	6-channel: Max. 15 10-channel: Max 18.	
Pump connection	6 (2) A max.	
Boiler connection	6 (2) A max.	
Inputs		
Decrease	Potential-free contact input	
Heating/cooling	Potential-free contact input	
TB or dew point	Potential-free NC contact	
Connection terminals	Terminals with spring technology for 0.2 to 1.5 mm ² vertical cable entry	
Power cable	Solid: NYM-J/NYM-O (max. 5 × 1.5 mm ²) Flexible: H03V2V2H2-F / H05V2V2H2-F	
Type of protection	IP 20 (EN 60529)	
Protection class	II (EN 60730)	III (EN 60730)



Distributor	6 channels	10 channels			
	24/230V C412009001	230V C412010001	24V C412011001	230V C412012001	24V C412013001
Weight	482g	515g	515g	550g	534g

Accessories

Transformer 230/24 V, 42 VA



Item code: C412014001

Description of operation

Main functions

The electric distributor (MCF234) is installed in the cabinet of the underfloor heating manifold and serves as a distributor for the power supply, for the individual positioning signals and for a shared time schedule (max. 2 channels). The distributor forwards the room controller command and the decrease signal to the thermal actuators.

- Terminals A and B serve as time channels for decreasing the set temperature.
- The time schedule can be defined using an external timer.
- The corresponding connection can be used to reduce all the other zones depending on the time.
- A pump can be activated directly via the two terminals provided. The pump logic is used to activate the pump according to requirements. The pump starts operating as soon as an actuator is active. So if none of the connected actuators are activated (i.e., the valves are closed), the pump is switched off.
- With some version, the pump logic can be set with a time delay. The factory setting for the lead time is fixed at 2 minutes. The factory setting for the follow-on time is 2 minutes and can be adjusted to 7 minutes, 12 minutes or 17 minutes using the DIP switch.
- A temperature limiter can be connected via the two TB terminals.

Pump function of the Heat/Cool models

- The thermal actuators are switched off when the water temperature is too high or the dew point has been reached. The pump continues running.

Additional functions of the Heat/Cool + options models

Dew point monitoring

- The pump (and the water circuit), the boiler and the thermal actuators are switched off immediately when the water temperature is too high or the dew point has been reached.
- A dew point monitor (with 24V only) can be connected as an alternative to the temperature limiter or in addition to it. It uses condensation in cooling mode.
- As soon as the dew point is reached, the pump and the thermal actuators are switched off.
- If no device is connected to these terminals, the existing jumper must be left where it is, as otherwise the pump logic will not work and the outputs of the thermal actuators will be interrupted.
- If a temperature limiter and a dew point monitor are required, they must be connected in series.

Pump protection function

- If the pump is not actuated by a heating or cooling requirement for 14 days, it is automatically activated for 10 minutes. The boiler relay remains inactive.

Boiler relay output

- If there is a heat requirement from a connected room thermostat on one of the 10 channels, the boiler relay is activated with a delay of 2 minutes (factory setting).
- As soon as there is no longer a heat requirement on any of the 10 channels, the boiler relay is switched off again after a follow-on delay of 2 minutes.
- The boiler relay is always activated at the same time as the pump relay and uses the DIP switch settings of 2, 7, 12 or 17 minutes.
- The boiler relay is not activated during the pump protection function.

Valve protection function

- The valve protection function is always active and is activated for 10 minutes every 14 days. The actuator is activated and opens the valve.
- This is a static function that takes place independently of the actual activation of the actuators.
- The pump relay and the boiler relay are not activated during the valve protection function.

Switching the pump control direction to normally open

You can use the coding switch to change the pump control direction from normally closed (NC) to normally open (NO).

- To ensure this function, room thermostats with direction switching must be used, e.g. TEF 234.
- In this case, the valves on the hydraulic distributor are open when the thermal actuator is not energized.
- To ensure that the pump logic functions, jumpers must be attached between L/L1 and the thermal actuator output (symbol →) on the channels that are not used.

LED indicator

LED	Description
Power LED (green)	When the power is connected, the LED lights up continuously. When the valve protection function is active, the Power LED slowly flashes once per second. The channel LEDs light up continuously.
Red LED	If the control distributor is energized and the fuse is defective or not installed, the red LED lights up continuously.
C/O LED (blue)	When the CO input is closed, the LED lights up continuously.
Pump/boiler LED (green)	The LED is activated at the same time as the pump/boiler relay. When the TB/%H input is open (temperature limit/dew point reached), the pump LED flashes rapidly 8 times per second.
Channel LED (green)	As soon as the output is active, the corresponding channel LED lights up continuously.

Number of connection terminals for thermal actuators

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8	Channel 9	Channel 10
C412009001	5	0	2	0	1	1	0	2	0	4
C412010001 C412011001	5	2	2	1	1	1	1	2	2	4
C412012001 C412013001	5	2	2	1	1	1	1	2	2	4

Depending on the version, there are up to 21 connection terminals. It is possible to connect from 15 up to a maximum of 18 thermal actuators.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section. All related product documents must also be adhered to. Modifying or converting the product is not admissible.

Engineering and fitting notes

Outdoor installation:

The devices are not designed for use outdoors, and are only intended for dry, enclosed indoor rooms.

Cord grip:

Feed the cable through the cord grip into the housing. Make sure the cable jacket is not damaged.

Standards and directives

The electrical distributor is tested to standards – the necessary EU standards are taken into account.

EMC Directive 2004/108/EC

- EN 61000-6-1/EN 61000-6-2
- EN 61000-6-3/ EN 61000-6-4

EMC Directive 2006/95/EC

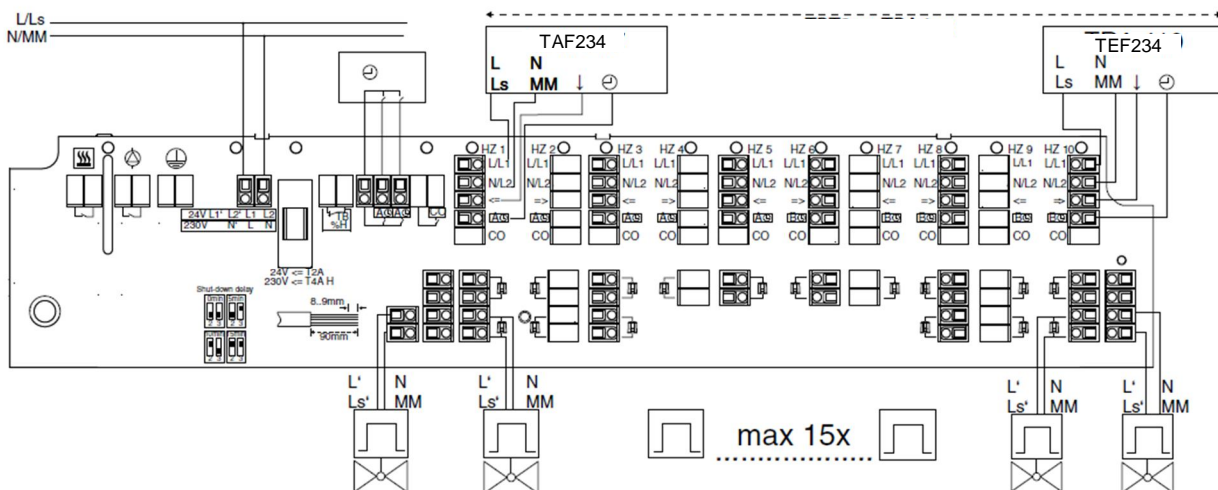
- EN 60730-1

Disposal

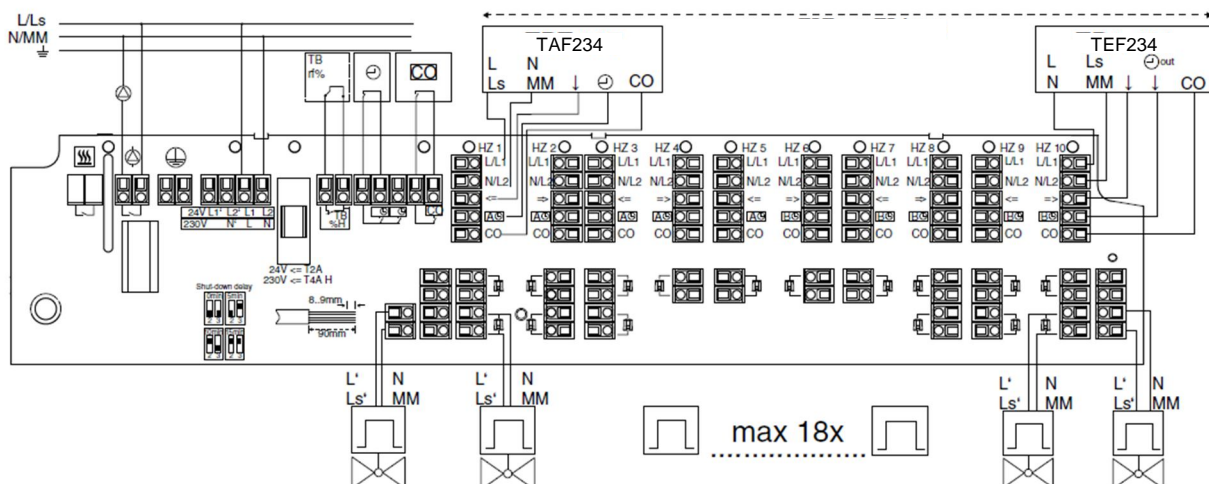
The local, currently valid laws must be observed when disposing of the device.

Connection diagram

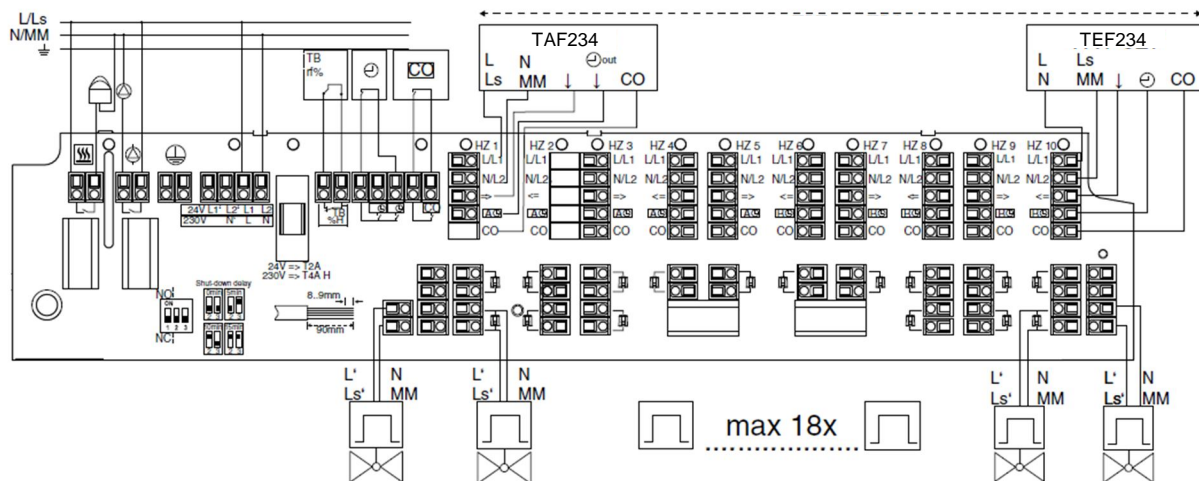
6 Channels – Heat only - C412009001



10 Channels – Heat/Cool - C412010001 and C412011001



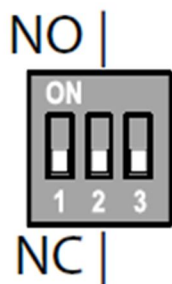
10 Channels – Heat/Cool + Options - C412012001 and C412013001



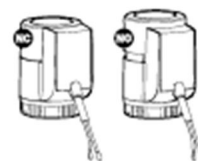
Coding switch

NC/NO switching

Follow-on time for pump



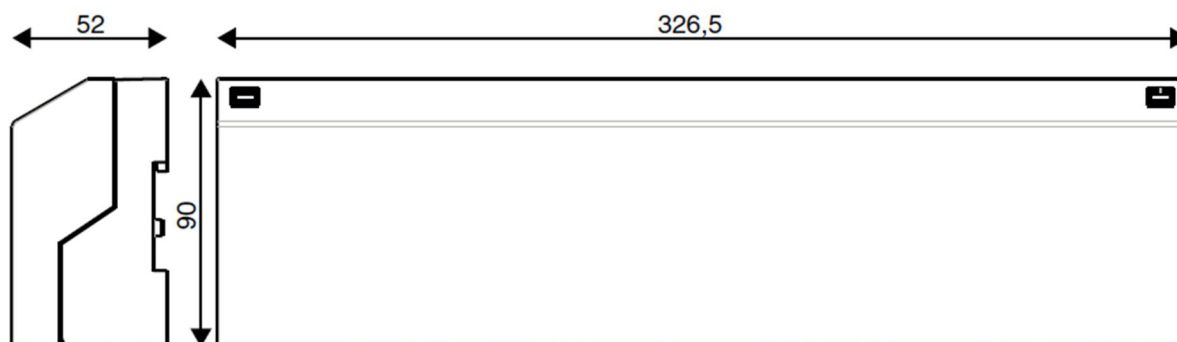
Switch 1 = ON NO
Switch 1 = OFF NC



Switch 2	Switch 2	Time
OFF	OFF	2 min
OFF	ON	7 min
ON	OFF	12 min
ON	ON	17 min

Dimensional drawing

MCF 234 Distributor



Manufacturer reserves the right to change any product specifications without notice.
Reprint, in whole or in part, only with permission of COMAP SA.