C820RQ
DUAL-POWER ROOM THERMOSTAT

- Modern and contemporary design with 3 LED digits and 3 buttons
- Universal installation and flexibility of use thanks to dual battery and 230V power supply, square shape and rectangular base kit
- Suitable for controlling heating or cooling systems also for hospitality applications
- Energy saving and comfort optimisation through the modulating control (TPI technology)

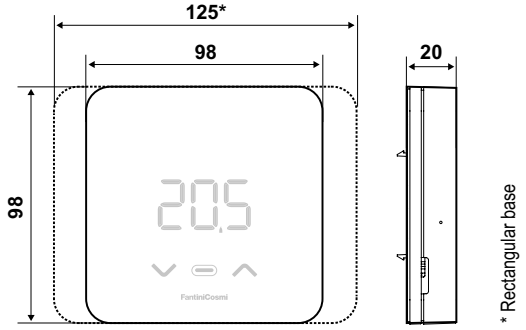
Power supply	2 x 1.5V AA alkaline batteries or 220-230Vac@50/60Hz
Battery life	> 1 year
Relay contact rating	5(3)A 250 Vac
Temperature adjustment range	2 - 40°C, increase 0.1°C
Adjustment differential	STD, 0.3 - 5 K
Thermal gradient of reference	4 K/h

REGULATIONS AND APPROVALS

- Compliant with EN 60730-1 and second parts;
- Compliant with Directive 2014/30/EU (EMC); 2014/35/EU (LVD)
- ErP classification (Reg. EU 811/2013 - 813/2013): Class IV; 2%

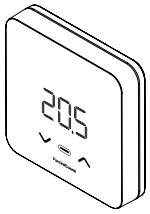
CE EAC

DIMENSIONS mm

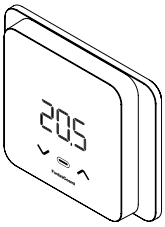


INSTALLATION

- SQUARE BASE: wall-mounting or flush-mounting in 500 and 502 module boxes at a height of approx. 1.5 mt above the floor in a suitable position to correctly detect the room temperature.



- RECTANGULAR BASE: wall-mounting or flush-mounting in 503 module box at a height of approx. 1.5 mt above the floor in a suitable position to correctly detect the room temperature.

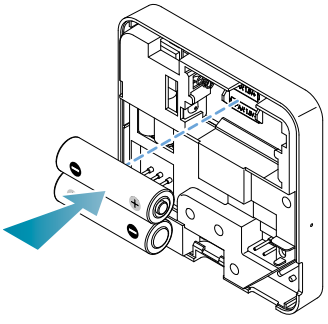


ELECTRICAL CHARACTERISTICS

Power supply	2 x 1.5 V AA alkaline batteries or 220-230Vac@50/60Hz
Maximum input power	1 W
Relay contact rating	5(3)A 250 Vca
Type of action	1 B.U. (micro-disconnection)
Type of output	1 relay for heating/cooling (3 screw terminals, closed + open)
Software	Class A
Electric insulation	Double insulation
Pulse voltage	4000V

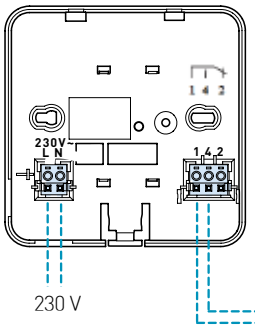
ELECTRICAL CONNECTIONS

BATTERY POWER SUPPLY

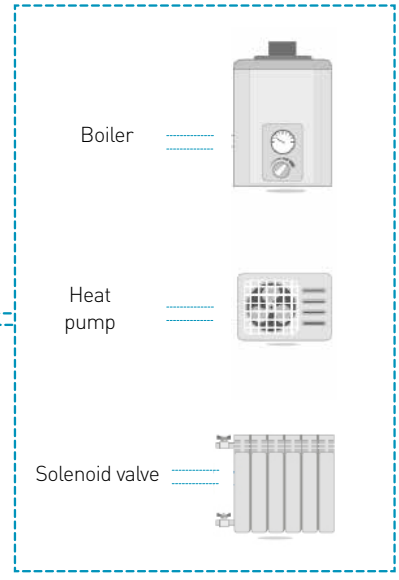


Note: if the device is supplied at 230V, batteries are **not** required.

230V POWER SUPPLY



EXAMPLE OF PLANT CONNECTION



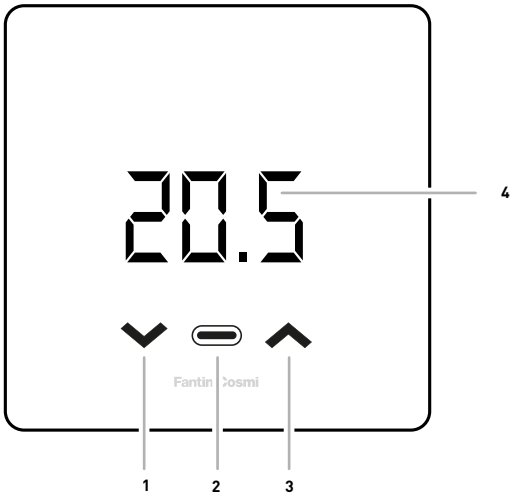
FantiniCosmi

GENERAL CHARACTERISTICS

Temperature adjustment range	2 - 40 °C, increase 0.1°C
Measurement range/room T display	-9 to +50 °C; resolution 0.1 °C
Adjustment differential	STD, 0.3 - 5 K
Thermal gradient of reference	4 K/h
Maximum room temperature	45°C
Adjustment	ON/OFF or TPI
LED switch-off	5 - 10s from last session
	always ON (only with 230V mains supply)
Temperature sensor type	NTC
Storage temperature	-10°C - 60°C
Protection rating	IP32
Degree of pollution	2
Temperature display	Celsius
Display lock	with password
Limit temperature ranges	possibility to set the minimum and maximum setpoint value in summer/winter

OPERATION

- C820RQ thermostat has 3 buttons, suitable to manage the minimal functions. All the advanced modes can be set from the advanced menu.
- C820RQ thermostat allows 3 operating modes:
  - COMFORT - for a comfort-oriented regulation. Adjustable from 2 to 40°C;
  - ECONOMY - for an energy-saving regulation. Adjustable from 2 to 40°C;
  - OFF - switched off system (Summer season) or antifreeze mode, adjustble from 2 to 7°C (Winter season).



1	Down key - Decreases
2	Mode button + heating/cooling LED
3	Up key - Increases
4	Temperature and basic functions display

ADVANCED FUNCTIONS

C820RQ is a room thermostat that allows the temperature setpoint adjustment in ON/OFF or TPI modes.

OPTIMISATION

When the thermostat is set in ON/OFF, the required setpoint temperature can be achieved by acting on the on/off times of the heating/cooling system according to the type of the installed system and the set differential, minimising the energy consumption of the system itself.

TPI LOGIC (Time Proportional & Integral control)

If the thermostat is power supplied at 230V, the special TPI algorithm can be used. In this control mode, the thermostat reaches the setpoint with accuracy and precision to maintain a more constant level of comfort, while guaranteeing the shortest possible switch-on time.

According to a number of settable parameters, such as the energy class of the flat, the type of emission terminal, the proportional band, the regulation period and the room temperature, the C820RQ optimises the system's working time with a proportional and integral action.

The output is always a single contact but controlled over the time. As soon as the room temperature reaches the setpoint temperature, the thermostat switch-on time decreases in every period. In this way the TPI control reduces boiler starts and maintains a more constant comfort level around the required setpoint. This allows a better comfort and cost savings for the end-user.

It is also possible to access two different menus for configuring certain parameters:

- USER MENU
  - Password setting
  - Stand-by time
  - Display light intensity
  - Offset to correct the temperature
  - Season (summer/winter)
  - Firmware release version

- ADVANCED MENU
  - Winter season: minimum and maximum set point value
  - Summer season: minimum and maximum set point value
  - Antifreeze setting
  - Data displayed on the homepage
  - ON/OFF - TPI control function
  - Optimisation for the ON/OFF function
  - Static differential
  - Anti-seize pump
  - Virtual relay
  - Energy class for the TPI function
  - Emission terminal for the TPI function
  - TPI adjustment period
  - TPI proportional band
  - Device reset

SPECIFICATIONS

LED thermostat for room temperature control in heating and cooling systems.

Equipped with TPI adjustment algorithm for a more precise and accurate control of the generator.

Thermostat features: white colour; power supply at 220-230Vac or with batteries (not included).

Operation: Economy, Comfort, Off.

1 relay output for boilers/chillers with ON/OFF or TPI adjustment. Display lock with password.

Setting of minimum and maximum setpoint value in summer/winter; anti-seize function; wall mounting on 500, 502 or 503 module boxes.

Temperature range 2 - 40 °C; regulation differential STD / 0.3 - 5 °C; reference temperature gradient 4K/h.

Antifreeze temperature range 2 °C - 7 °C; protection class IP32.

Compliant with EN 60730-1 and second parts. ErP classification: Class IV; 2% (Reg. EU 811/2013 - 813/2013), Compliant with Directive 2014/30/EU (EMC), Directive 2014/35/EU (LVD).