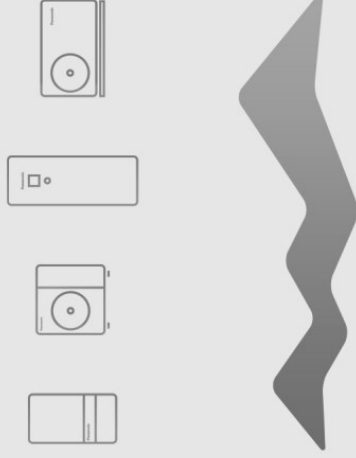


Panasonic

Aquarea Room Solutions: Detailed Introduction



heating & cooling solutions

RAC Solo

- Line-up review
- Installation concept
- Operating and control logic

Aquarea Air Smart Fan Coils

- Line-up review
- Wiring and Connectivity
- Operating and control logic
- Sales Configurations

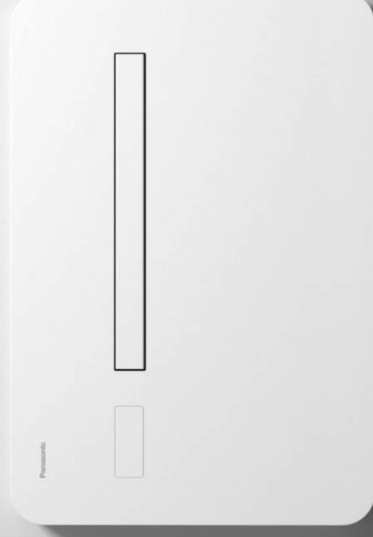
Aquarea Loop

- Line-up review
- Design approach
- Thermal balancing
- Condensation Management

Dedicated Q&A

RAC Solo

A compact AC system, without an outdoor unit.



A discreet AC system all within an elegant indoor unit



Model	16	20	25	30
Refrigerant	R290	R32	R32	R32
Cooling capacity ¹ (kW) Nominal / Max	1,73 / 2,35	2,09 / 2,64	2,33 / 3,10	2,87 / 3,5
Heating capacity ² (kW) Nominal / Max	1,71 / 2,40	2,08 / 2,64	2,31 / 3,05	2,75 / 3,5

4 ¹⁾ Cooling at A35 A27 ²⁾ Heating at A7 A20

RAC Solo – Features and USPs overview

Panasonic

1

Fully Metal Chassis

The body of is made entirely of metal. Premium look with a robust body.

2

Very low sound pressure – down to 27 dba

Minimising any sound disturbance was a priority during the development of this RAC Solo. Through meticulous design the goal was achieved. Allowing the installation of RAC Solo in noise sensitive areas such as hotels and bedrooms.

3

Simple and cost saving installation

RAC Solo is an air-conditioning unit which uses ducts instead of an outdoor unit. Saving outdoor space and installation costs and efforts.

4

Hyper Compact Design

A hyper-compact body includes everything necessary for the perfect functioning of the product thanks to the design and study work with the aim of reducing the size of each component and ensuring its perfect functioning.

Model	16	20	25	30
Width (mm)	810		1010	
Height (mm)	549		549	
Depth (mm)	165		165	



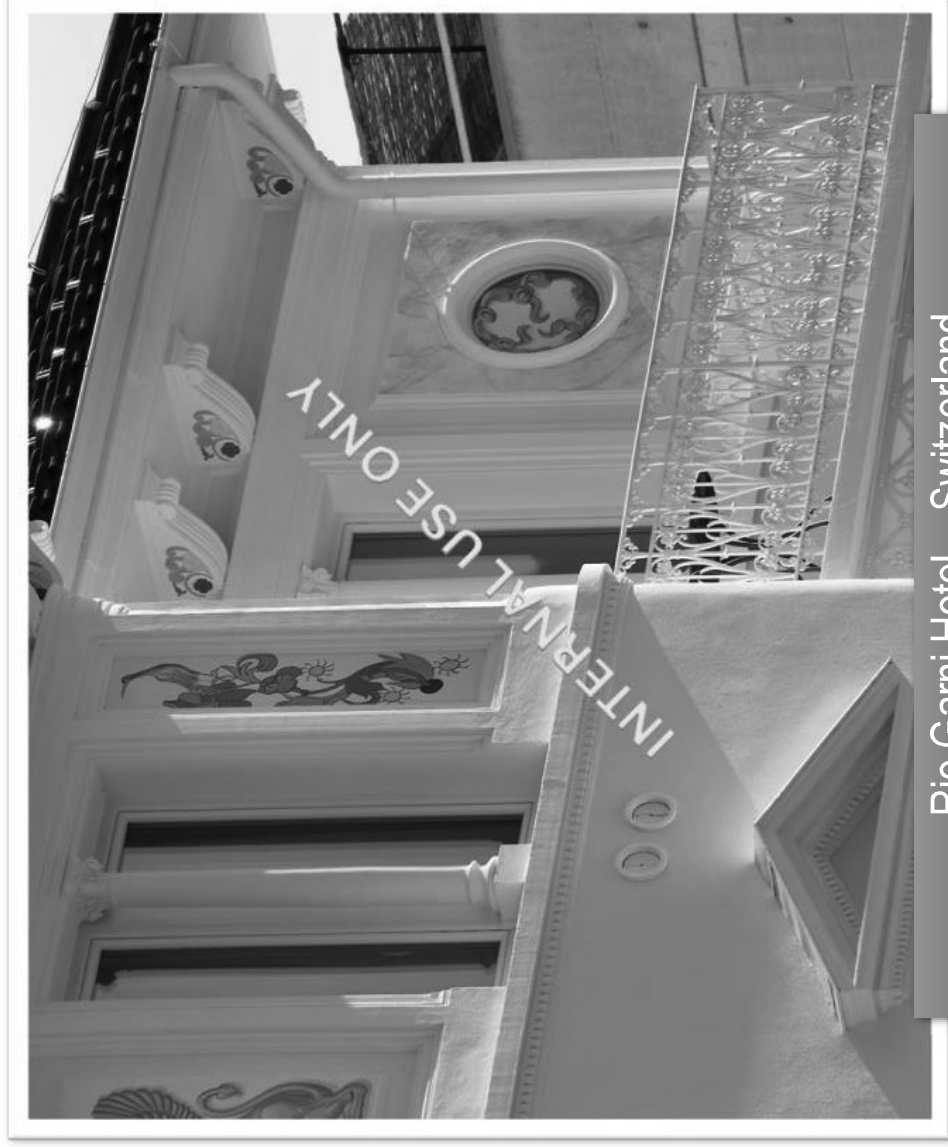
RAC Solo

Panasonic

RAC Solo is a stand-alone, air-to-air heat pump which has been created to **reduce the aesthetic impact** of air conditioning units

The requirement for an outdoor unit is replaced by two small openings applied on an external wall

Saving space and leaving the building facade unspoiled



Rio Garni Hotel – Switzerland

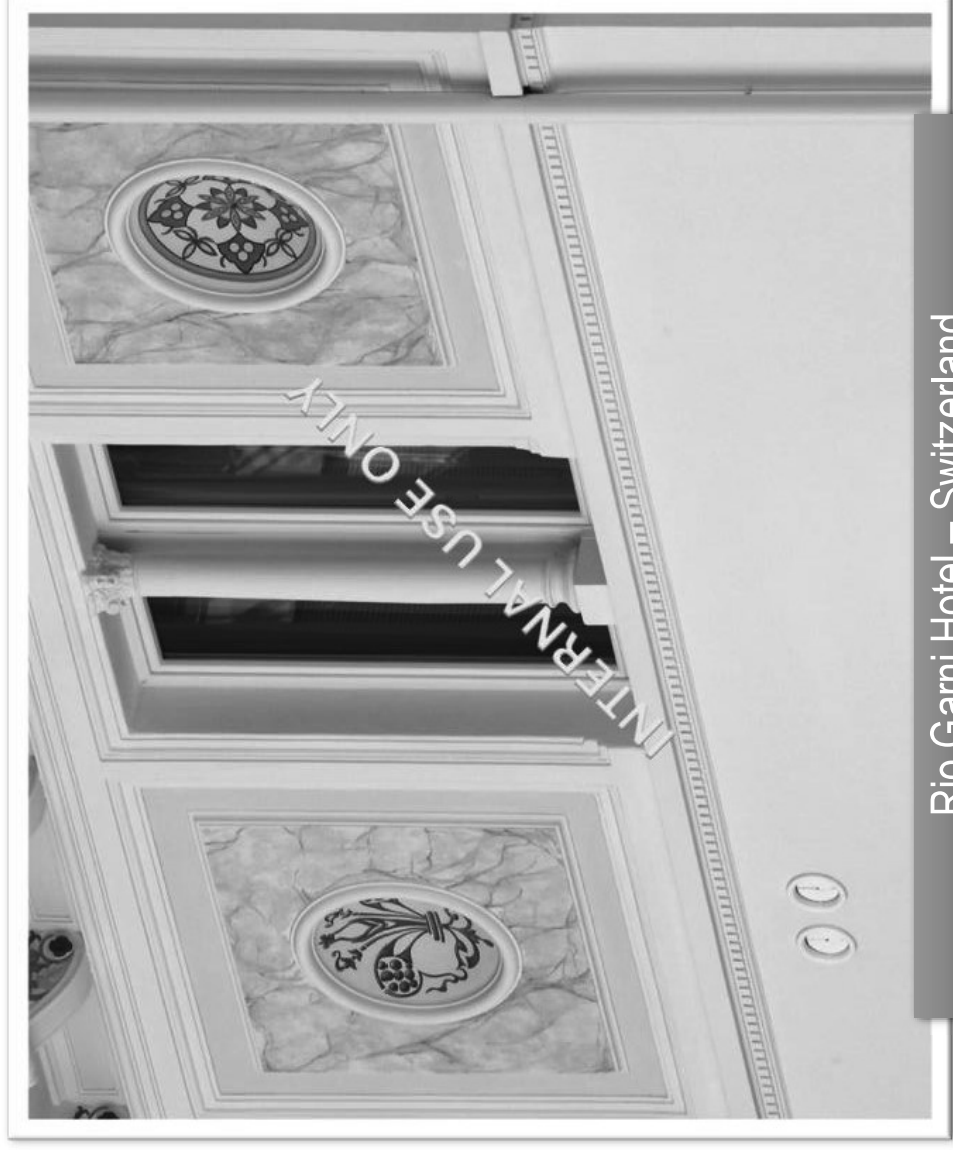
RAC Solo

Panasonic

Rio Garni Hotel is a 19th century villa located in Switzerland.

Recently renovated, it still maintains the original splendour of the structure.

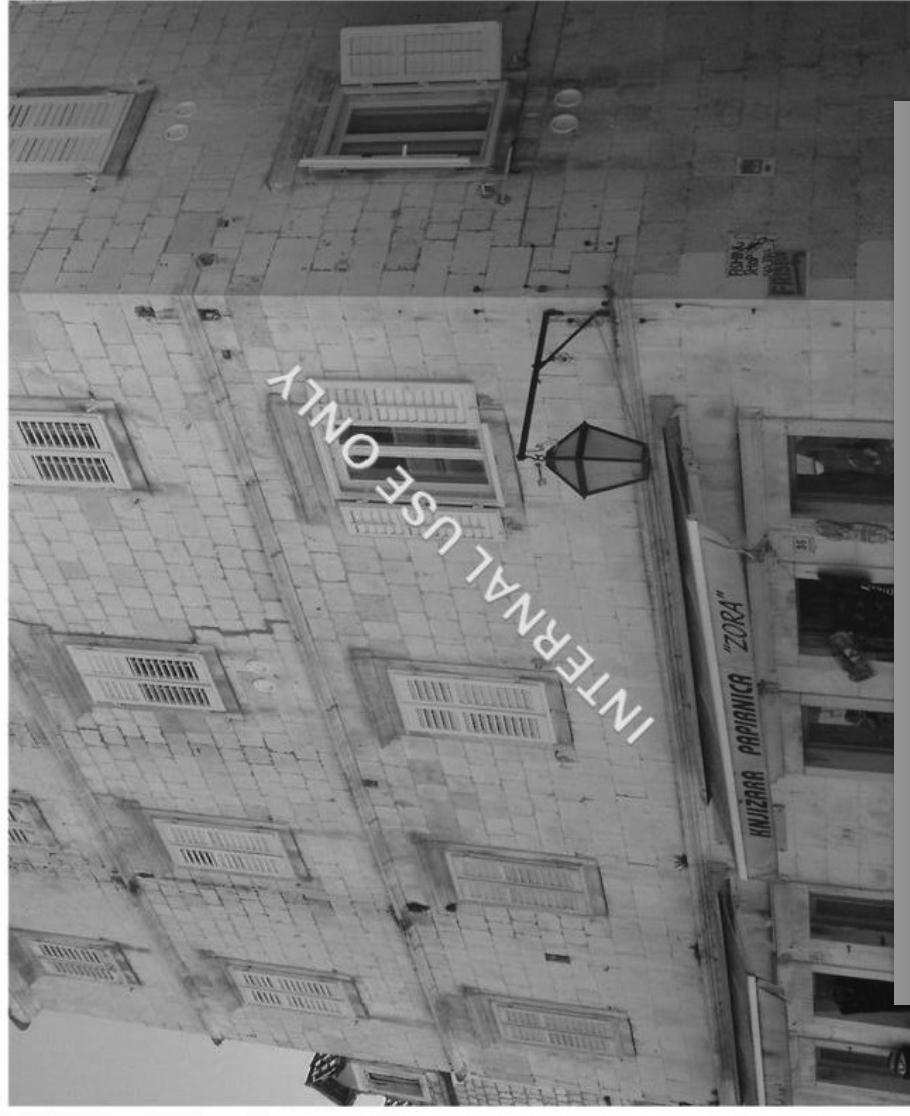
In the 20 rooms of the hotel and in the restaurant, air conditioning in summer and winter is ensured by RAC Solo* and by fan coils.



RAC Solo

Panasonic

On the island of Hvar, in Croatia, in the historic centre and with the prohibition of installing external units to homes, the air conditioning of the new apartments has been entrusted to RAC Solo*, the air conditioner without outdoor unit.



Apartments – Hvar Island, Croatia

RAC Solo

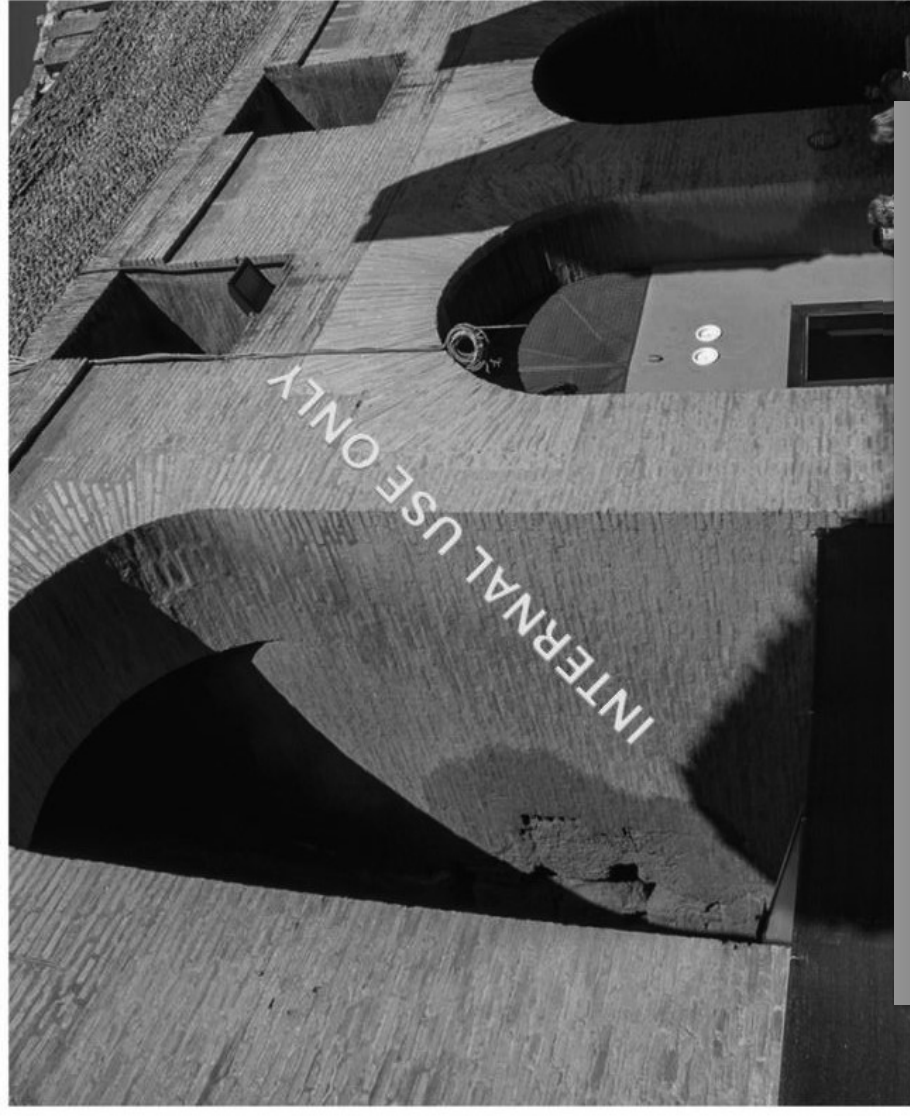
Panasonic

With a depth of only 165 mm, RAC Solo is the thinnest and least bulky in its category, with a minimal aesthetic impact and a perfect fit in the external graphics.

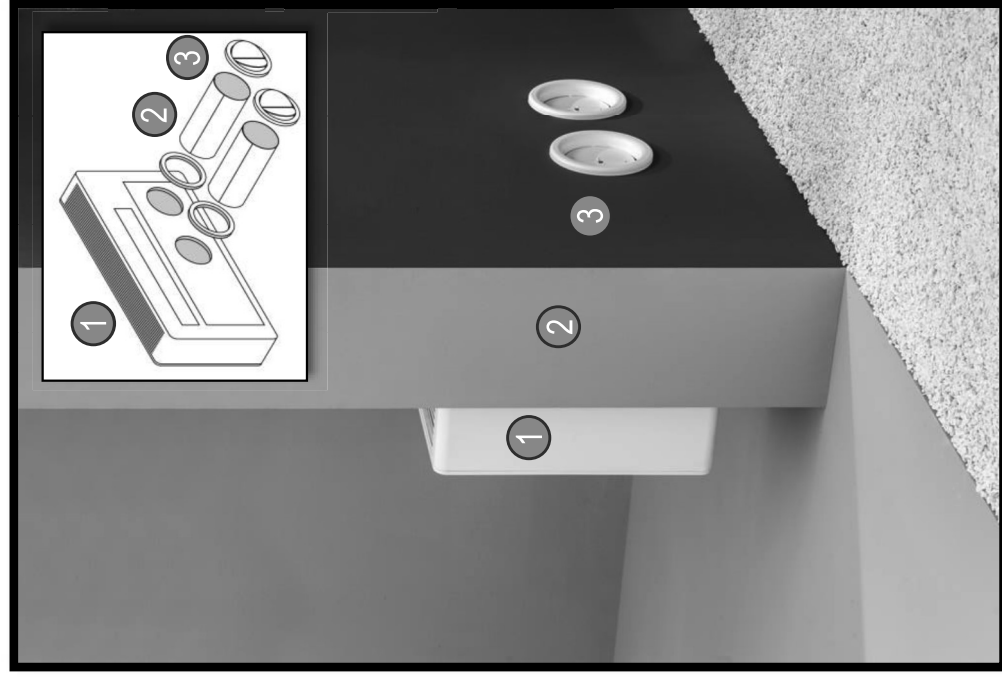


Perri hairdresser – Cosenza

RAC Solo* has proved to be the most effective and least invasive system to air-condition offices of the Colosseum without damaging one of the most famous monuments of Italy, thanks to the minimal impact and its ease of installation.



Colosseum – Rome



Designed for Simple Installation

1: Unit installed on the wall

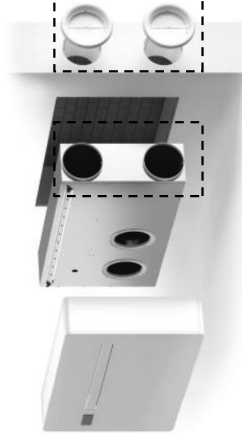
2: Two ducts (max length 1 m)

3: Outdoor self-foldable grills

Diameter is 162 mm*

In case the outside wall is lateral to the unit, installation is possible using the 'Side installation kit'.

In this case, the kit and unit are embedded into the wall.



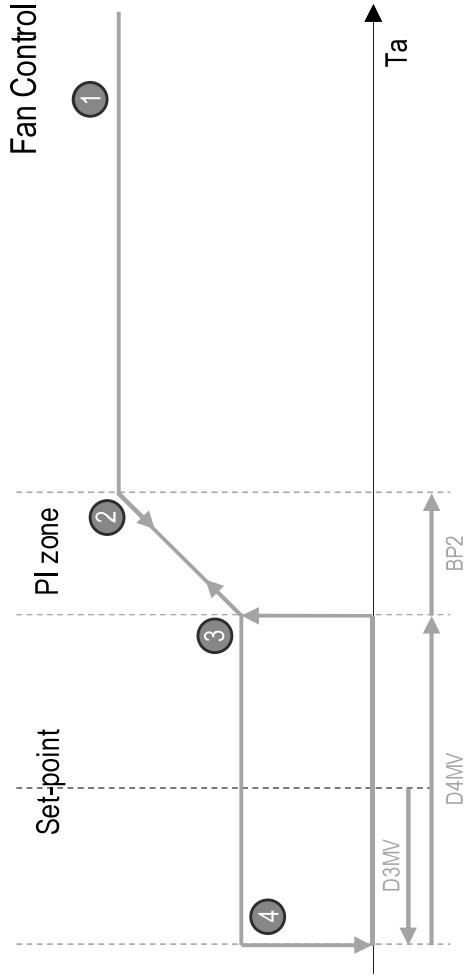
Right side kit: PCZ-L00773

Left side kit: PCZ-L00773

Mode		Operation Details
	Cooling only	- In this mode, the appliance dehumidifies and cools the room. - It is possible to configure the setpoint between 16 and 31°C.
	Heating only	- In this mode, the appliance heats the room. - It is possible to configure the setpoint between 16 and 31 °C.
	Automatic	Depending on the setpoint configured, the air conditioner selects the mode automatically (cooling or heating) according to the temperature set and ventilation speed according to the temperature of the room.
	Dehumidification only	- In this mode, the appliance dehumidifies the room. - This mode ignores both room temperature and ventilation speed settings. The latter is always set to a minimum.
	Ventilation only	- By selecting this function, the compressor is never activated, and the appliance does not intervene on room temperature or humidity. - It is only possible to choose the fan speed and the direction of the air flow.
	Nocturnal well-being	While the appliance is on in the selected cooling or heating mode, it is possible to choose different functions by pressing the key in order to maximise noise reduction, energy saving and nocturnal well-being. - In this mode, ventilation is set on minimum speed. - This mode can be activated before going to sleep

Fan Logic for RAC Solo (example in cooling)

The fan is controlled by **PI logic**. The sequence of operation is also determined by the parameter values which are set on the unit.



1. Fan operating at set speed
2. At [Set-point + 2.5 K] fan operating speed is decided by PI logic
3. At [Set-point + 0.5 K] fan is at minimum speed
4. At [Set-point - 9.2 K] fan switches off

Parameter	BP2	D4MV	D3MV
Value (default)	2 K	9.7 K	9.2 K

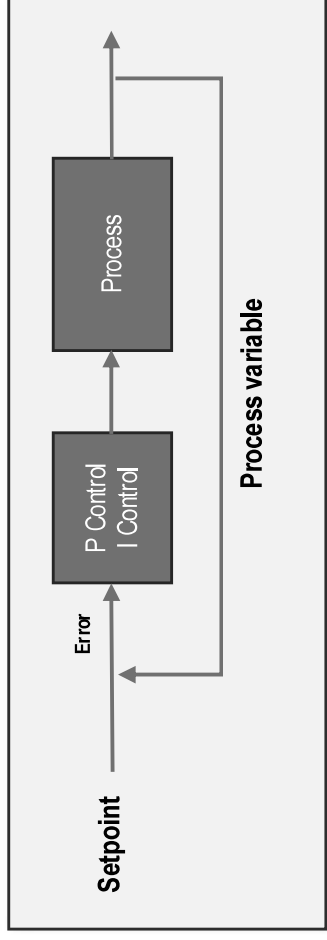
P.I. Control

P - Proportional

I - Integral

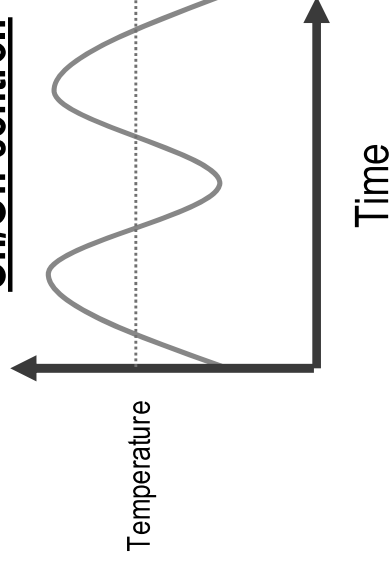
PI control manages the operation of the fan to effectively reach set-point

It is responsible for keeping the room temperature as close to set-point as possible, regardless of disruptions.

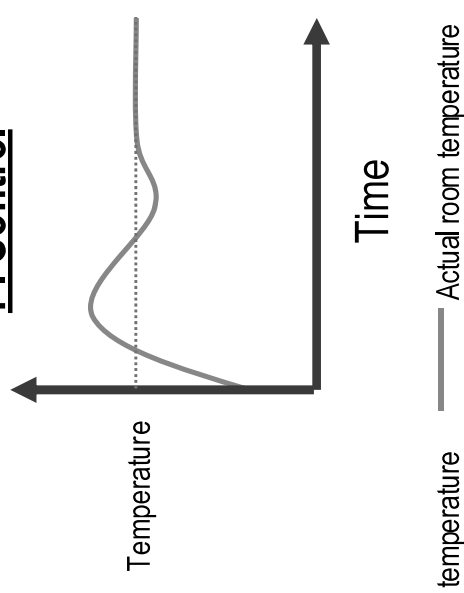


$$\text{Error} = \text{Setpoint} - \text{Process variable}$$

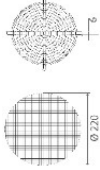
On/Off control:



PI Control



Accessory list for RAC Solo

Description	
	Aluminium external grille (162/202 mm)
	Insect protection kit
	Side exit kit for corner installation (left/right)
	Bottom design cover for overhead installation