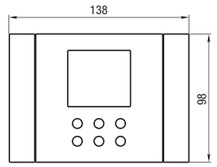
V3IS00560-010

Mod. **Set fancoil**

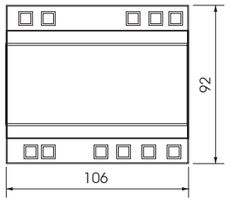
Vemer S.p.A.
I - 32032 Feltre (BL) • Via Camp Lonc, 16
Tel +39 0439 80638 • Fax +39 0439 80619
e-mail: info@vemer.it - web site: www.vemer.it

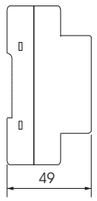
DIMENSIONS

Klio fancoil

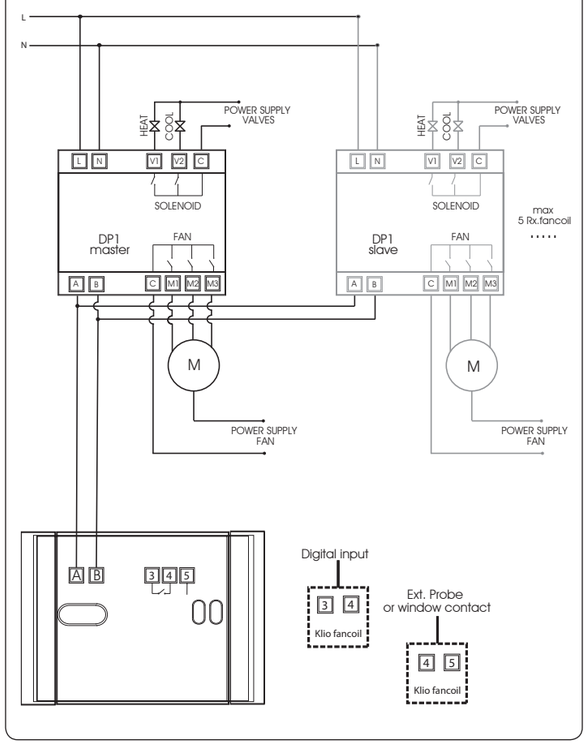


Rx.fancoil





CONNECTION DIAGRAMS



User manual
THERMOSTAT + FANCOIL ACTUATOR KIT
Read all instructions carefully

The **set fancoil** is a system of electronic devices for fancoils with 2 or 4 pipes designed to regulate the temperature both in heating and in cooling mode. The set consists of a wall-mounting thermostat and a remote actuator. For systems consisting of several fancoils, the actuators can be purchased separately. Each thermostat is capable of piloting up to 5 actuators.

SAFETY WARNINGS

During the installation and operation of the instrument it is necessary to comply with the following instructions:

1) The instrument must be installed by a qualified person
2) The appliance must be installed and put into operation in compliance with the current standards regarding electrical systems.
3) After installation, inaccessibility to the connection terminals without appropriate tools must be guaranteed.
6) Do not use the instrument for purposes other than those specified
5) There must be a bipolar cut-off in the power supply network
6) A device to protect against overloads must be installed in the electrical system upstream from the instrument
7) To install the instrument respect the connection diagrams scrupulously
8) Before accessing the connection terminals, verify that the leads are not live.
10) Do not power on or connect the instrument if any part of it is damaged
10) In case of instrument malfunction, do not carry out repair work and contact the terminal services directly
11) The instrument can be used in overvoltage category III and pollution level 2 environments, according to the CEI EN 60730-1 standard.

Code	Model	Description
VE337200	Set fancoil	Kit consisting of Klio fancoil + Rx.fancoil actuator
VE335600	Klio fancoil	Wall-mounting thermostat for 3-speed fancoil
VE336400	Rx.fancoil	Remote actuator for 3-speed fancoil

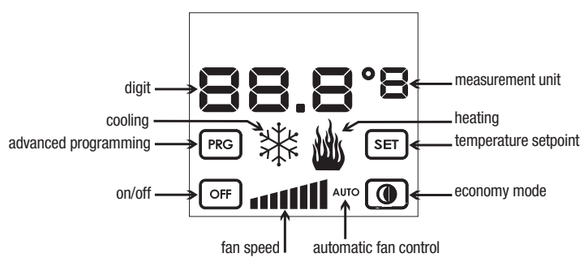
TECHNICAL CHARACTERISTICS

KLIO FANCOIL
- Power supply: 12V supplied by an Rx.fancoil actuator (terminals A, B)
- Possibility of commanding up to 5 Rx.fancoil remote actuators
- LCD display
- Temperature regulation:
  – ON/OFF type on 1 or 2 valves (for systems with 2 or 4 pipes)
  – ON/OFF 3-speed type (fan)
- Hysteresis: adjustable from 0.3 to 2°C centered on the setpoint
- Reading precision: ± 0.5 °C
- Temperature resolution: 0.1 °C
- Regulation range: +2°C ÷ +35°C
- Summer/winter operating modes
- Antifreeze function
- Unit of measurement: °C or °F
- Terminals for connection to external probe and digital input
- Operating temperature: 0 ÷ 50 °C
- Operating humidity: 20÷90% noncondensing
- Storage temperature: -10 ÷ +65°C
- Degree of protection: IP40
- Insulation: reinforced between accessible parts (frontal) and all the other terminals

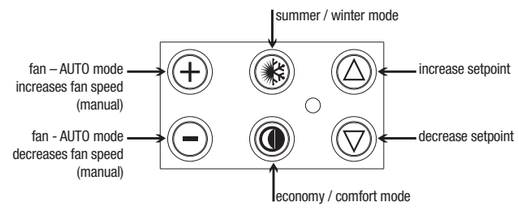
Rx.FANCOIL
- Power supply: 230V AC 50/60 Hz (-15% ÷ +10%)
- Maximum cable cross-section: 0.75 mm²
- Outputs:
  – 3 monostable relay outputs with clean contact 8(5)A / 250V AC for fans
  – 2 monostable relay outputs with clean contact 8(5)A / 250V AC for solenoid valves
  – Contact capacity: 2000VA (240W)
- Operating temperature: 0 - +50°C
- Operating humidity: 20÷90% noncondensing
- Storage temperature: -10 ÷ +65°C
- Container: 6 DIN modules (lowered)

DISPLAY AND KEYPAD DESCRIPTION

Display



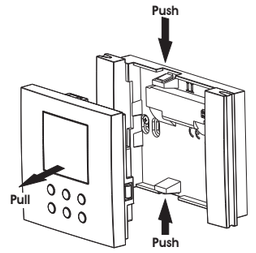
Keypad



INSTALLATION

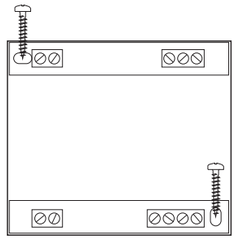
Installing the klio fancoil:

➢ Secure the wall-mounted base horizontally or vertically



Installing the Rx.fancoil actuator:

➢ Secure the Rx.fancoil actuator onto the DIN rail or to the wall by drilling through the purpose-provided slots at the top left and bottom right (see figure).



Connections:

➢ Connect the klio fancoil and Rx.fancoil as shown in the diagram entitled “Connection diagrams”

Note: each klio fancoil can command up to 5 Rx.fancoil actuators connected through two bus cables. For correct operation, the Rx.fancoil actuator connected directly to the klio fancoil should have its DP1 selector configured as master, while all the others should have their DP1 selector configured as slave.
The furthest distance between the klio fancoil and the Rx.fancoil actuator cannot exceed i 100 metres.

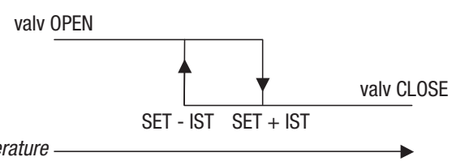
OPERATION

- **SUMMER/WINTER OPERATING MODE**

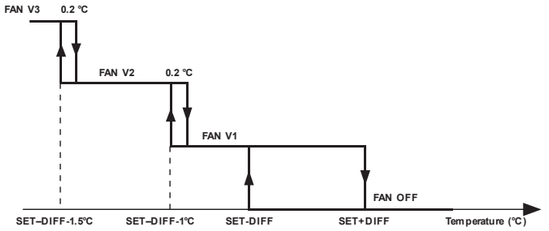
  The klio fancoil features two operating modes: summer, winter.

  Winter mode (heating)

  In this operating mode, the thermostat regulates in such a way that the ambient temperature remains at the winter setpoint value. If the ambient temperature is below the setpoint, the hot water forward flow valve is open and the display shows the icon.
  The operating logic for the control of the water valve and for the regulation of the fan is represented as follows:

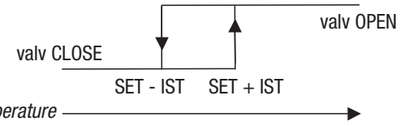


  where SET represents the setpoint temperature set and IST the hysteresis set

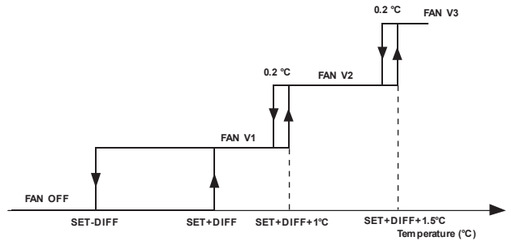


Summer mode (cooling) ❄

In this mode, the thermostat regulates in such a way that the ambient temperature remains at the summer setpoint value. If the ambient temperature is above the setpoint, the cold water forward flow valve is open and the display shows the icon ❄.
The operating logic for the control of the water valve and for the regulation of the fan is represented as follows:



where SET represents the setpoint temperature set and IST the hysteresis set

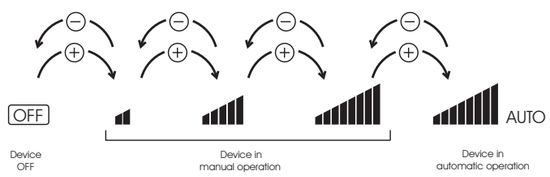


Pressing the key will allow you to switch from summer mode to winter mode and vice versa.
To highlight the chosen operating mode, every time it switches, the related icon (❄ or 🔥) remains lit for approximately 3 seconds.

Caution: if the digital input is enabled and configured as remote summer/ winter, (see Advanced Programming - P05), the operating mode is determined solely by the status of the input and cannot be selected on the keypad.

- **ADJUSTING THE FAN SPEED AND TURNING OFF THE KLIO FANCOIL**

  During normal operation, pressing the “+” and “-“ keys increases or decreases the fan speed, as shown in the figure below:



Instrument off status

In this status, no temperature regulation takes place, both as regards the water valve as well as the fan speed (in the case of winter operating mode, the antifreeze temperature set in advanced programming is maintained).

Attention: if the digital input is enabled and configured as remote on/off (see Advanced Programming - P05), the on/off status is determined solely by the status of the input and the instrument cannot be turned off from the keypad.

Instrument in manual operating mode

In this status, the fan speed regulation occurs in manual mode, according to three possible speed settings.

Instrument in automatic operating mode

In this status, the speed of the fans is controlled automatically by the instrument, which will regulate it according to the difference between the setpoint set and the temperature measured.
The display shows AUTO with the fan speed, if necessary.

- **SETTING THE SETPOINT AND ECONOMY/COMFORT MODE**

For each operating mode (summer/winter), two setpoints can be set: one is comfort and the other economy, according to the following rule:

economy setpoint ≤ comfort setpoint (winter mode - heating)
comfort setpoint ≤ economy setpoint (summer mode - cooling)

The key allows you to switch from comfort mode to economy mode and vice versa.
If the economy mode is enabled, the display shows the symbol

During normal operation, pressing the or keys allows you to increase or decrease the setpoint related to the operating mode currently selected.
Pressing the key causes the value to vary by 0.1 °C; if you keep pressing the key for more than half a second, the increase is faster.
During the setpoint variation phase,
the display shows the symbol SET
If the or keys are not pressed for 2 seconds, the new setpoint is stored and the instrument returns to normal operation.

- **ANTIFREEZE FUNCTION**

In heating mode, it is possible to set a safety temperature value (antifreeze temperature) to be maintained in case the thermostat is turned off (in this case, only the hot water circulation is enabled, without the fan operating).
The antifreeze function can be enabled and configured from the "ADVANCED PROGRAMMING P13" menu.

- **FAN OPERATION**

In autumn or spring, the FAN function may be useful, since it envisages the operation of the fan only (the water valve is always closed). The speed of the fan is set manually using the and keys.

To enable the fan only mode, in normal operating status, press the and keys for three seconds until the display shows **FAn**.
If it is enabled, the display shows the value of the temperature measured and the word Fan alternately every 3 seconds.

To disable the FAN operation, press the and keys for three seconds until the display shows **Fan-**

- **KEYPAD LOCK**

It is possible to lock the keypad by pressing and keys simultaneously for three seconds until the display shows **LOC**.
If any of the keys are pressed subsequently, the display will simply show LOC.

To disable the keypad lock, press the and keys simultaneously for three seconds until the display shows **LOC-**

ADVANCED PROGRAMMING

Using the advanced programming menu, it is possible to customise the operating parameters of the klio fancoil.

To access advanced programming, press the and keys simultaneously for 3 seconds until the display shows the icon PRG.
The parameters are represented on the display by a code (P01, P02…P14).

To modify the value of a parameter:

- scroll through the parameters using keys and
- press the key to enter the modification of the selected parameter
- modify the value using keys and
- press the key to confirm and return to the list of parameters

To quit advanced programming, scroll through the list of parameters using the key until the word **End** is displayed and confirm by pressing key

Once you have quit advanced programming, the thermostat is configured to operate with the new parameters (the segments of the display light up briefly) and then returns to normal operation.
Note: if none of the keys are pressed for 30 seconds, the thermostat automatically quits advanced programming (if at the end of the timeout you are still in parameter modification, the parameter is not stored but the instrument does store any parameter modifications already confirmed with the key.

The various parameters are described below:

P01: Type of system.

2 ➔ system with 2 pipes (default). The thermostat pilots a single valve, whether in heating or in cooling, since the only valve present will control both the hot water and the cold water.
4 ➔ system with 4 pipes. The thermostat pilots a valve dedicated to heating and a second one dedicated to cooling depending on the requirements of the setting.

P02: External probe configuration.

An external probe or a window contact can be connected to terminals 4 and 5. The parameters for the contact are as follows:
0 ➔ disabled (default): the external probe input is not controlled by the thermostat
1 ➔ restored: instead of the thermostat's internal probe, an external probe can be used to read the ambient temperature and perform the heat regulation. Typically, this probe is positioned beneath the fan-coil where the air is aspirated.
2 ➔ window contact/minimum thermostat: when the contact is open, the thermostat performs the heat regulation; when it is closed, it does not perform the heat regulation (valve closed, fan off)
3 ➔ window contact/minimum thermostat inverted: the window contact works with its logic inverted vis-à-vis the previous point

P03: Summer valve type.

nO ➔ normally open. In this case, the flow of water is normally open and is closed when the valve is powered.
nC ➔ normally closed (default). When the valve is excited, it opens the flow of water.
This parameter does not appear in the list if parameter P01 configures a system with two pipes since, in this case, the summer valve is not present.

P04: Winter valve type.

nO ➔ normally open. In this case, the flow of water is normally open and is closed when the valve is powered.
nC ➔ normally closed (default). When the valve is excited, it opens the flow of water

P05: Auxiliary input configuration.

A clean contact (not live) can be connected to the auxiliary input (terminals 3 and 4), which allows you to turn the instrument on/off remotely or to change its operating mode.
The status of the contact is read every second and the parameters are as follows:
0 ➔ disabled (default). The auxiliary input is not controlled by the thermostat
1 ➔ remote off (closed). The auxiliary input is enabled and controls the remote on/off (closed = off)
2 ➔ remote on (closed). The auxiliary input is enabled and controls the remote on/off (closed = on)
3 ➔ remote summer (closed). The auxiliary input is enabled and controls the change in season remotely (closed = summer)
4 ➔ remote winter (closed). The auxiliary input is enabled and controls the change in season remotely (closed = winter)

P06: Temperature measurement unit.

0 ➔ °C (default). The temperature measurement unit displayed and all the temperature parameters set is expressed in degrees Celsius
1 ➔ °F. The temperature measurement unit displayed and all the temperature parameters set is expressed in degrees Fahrenheit

P07: Ambient temperature correction.

Adjustable from -5.0 to +-5.0 °C in 0.1°C steps (default = 0°C).
Thanks to this parameter, it is possible to correct the ambient temperature acquired in the case in which the measurement of the ambient temperature is not satisfactory because of the position of the probe.

P08: winter temperature SP lower limit.

Adjustable from 2.0 to 35.0 °C (default = 2°C).
This is the lower limit for all setpoints (comfort and economy) in heating mode.

P09: winter temperature SP upper limit.

Adjustable from 2.0 to 35.0 °C (default = 35°C).
This is the upper limit for all setpoints (comfort and economy) in heating mode.

P10: summer temperature SP lower limit.

Adjustable from 2.0 to 35.0 °C (default = 5°C).
This is the lower limit for all setpoints (comfort and economy) in cooling mode.

P11: summer temperature SP upper limit.

Adjustable from 2.0 to 35.0 °C (default = 35°C).
This is the upper limit for all setpoints (comfort and economy) in cooling mode.

P12: Hysteresis (band) of temperature referred to the SP.

Adjustable from 0.3 to 2.0 °C (default = 0.3°C).
The lowest values are suitable for systems with slow thermal inertia, whereas the highest ones are ideal for much more reactive systems.

P13: Antifreeze activation and antifreeze threshold.

OFF ➔ disabled. In this case, the thermostat does not control the antifreeze function
2.0 ÷ 10.0°C (default = 2°C) ➔ defines the value of the antifreeze function activation threshold in winter operating mode.

P14: Delay between valve aperture and fan activation.

0 ÷ 120 seconds (default 30 seconds). Allows you to set a delay between the instant at which the water valve is opened and that at which the first ventilation step is enabled, so that the heat exchanger of the fancoil can adjust to the proper heat regulation operating regime before introducing air into the setting.

RESET KLIO FANCOIL

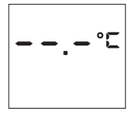
This procedure allows you to reload the default values of the instrument (both the advanced parameters and the 4 setpoints). To perform the reset:

➢ press simultaneously for three seconds keys , , , . The display shows the word **dEF** to indicate reset has been performed.

ERROR SIGNALLING

During normal operation, special conditions may occur that cause the thermostat to display the following error messages.

- **Temperature measurement overflow error**



It applies to the following temperature values:

–40°C < t < 0°C

+40°C < t < +60°C

In this status, the regulation is still enabled and the thermostat continues to pilot the actuator outputs

- **Open/closed probe error**

It applies to the following temperature values:

t < –40°C (or probe open)

t > +60°C (or probe closed)

In the case of a probe error, the regulation is inhibited and the actuator outputs are disabled.

- **Communication bus error**

In the event of a malfunction or failure in the power supply line which also acts as the communication bus, the actuators automatically disable the valves and fans 10 minutes after the last valid data was received.

REFERENCE STANDARDS

Compliance with Community Directives
2006/95/EC (low voltage)
2004/108/EC (E.M.C.)
is declared with reference to the following harmonized standards:
• **EN 60730-2-9**