

## Datasheet

Subject to technical alteration  
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## Application

The fan coil room thermostat has been designed for individual control of temperature in commercial, industrial and residential buildings. It is tailored for two-pipe and four-pipe fan coil with two-wire electric valves. With its flush mounted modern design the device combines digital technology with a large LCD display and additional buttons, which enables the single room controller to be used intuitively.

## Security Advice – Caution



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.



**CAUTION! Risk of electric shock due to live components within the enclosure, especially devices with mains voltage supply (usually between 90..265 V).**

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

## Notes on Disposal



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

## Remarks to Room Sensors

### Location and Accuracy of Room Sensors

The room sensor should be mounted in a suitable location for measuring accurate room temperature. The accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. It is important, that the back plate is completely flush to the wall so that there is sufficient circulation of air through the vents in the cover, otherwise, deviations in temperature measurement will occur due to uncontrolled air circulation. The temperature sensor should not be covered by furniture or other objects. Mounting next to doors (due to draught) or windows (due to colder outside wall) should be avoided.

### Surface and Flush Mounting

The measuring result is influenced by the thermal characteristics of the wall. A solid concrete wall responds to thermal fluctuations within a room in a much slower than a light-weight structure wall. Room temperature sensors installed in flush-mounted boxes have a longer response time to thermal variations. In extreme cases they detect the radiant heat of the wall even if the air temperature in the room is lower for example. The quicker the dynamics of the wall (temperature acceptance of the wall) or the longer the selected inquiry interval of the temperature sensor is the smaller the deviations limited in time are.

## Technical Data

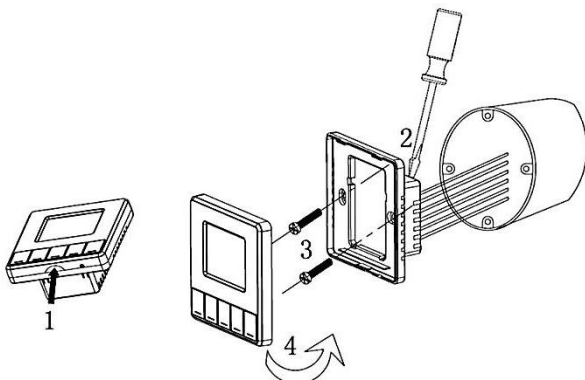
Measuring values	temperature
Output switch contact	5x contact NO (2x heating & cooling, 3x fan stages), 250 V ~ max. load 3 A fan stages switchover pause 0,5 s
Power supply	90..265 V ~
Power consumption	max. 0,9 W
Measuring range temp	+1..+50 °C
Accuracy temperature	±1 K (typ. a 21 °C)
Inputs	input for change-over sensor NTC10k, (optional)
Display	LCD 35,5x48,5 mm, white background lighting
Enclosure	ABS, pure white, scratch resistant acrylic glass
Protection	IP20 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm <sup>2</sup>
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=60 mm)



### Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

## Mounting Advices



For installing or repairing, please make sure the power is disconnected.

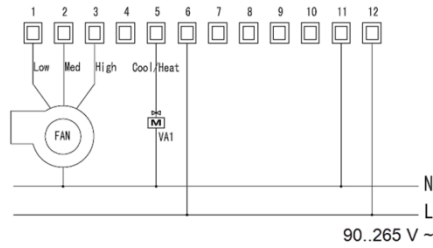
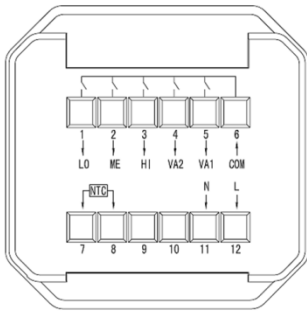
Insert the screw driver in the plastic teeth of thermostat. Clockwise rotation of the screwdriver will separate front cover from base plate. Please follow the wiring diagram to connect the wires.

Fix the thermostat base plate to the wall through the four screw holes with distance between axes of 60 mm.

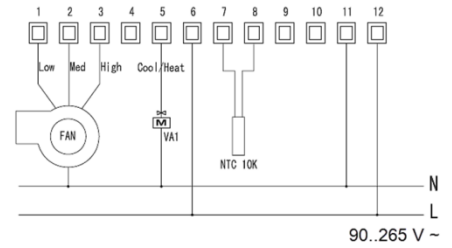
Fasten base plate and front cover. Do not press the panel in order to protect LCD.

## Terminal Connection Plan

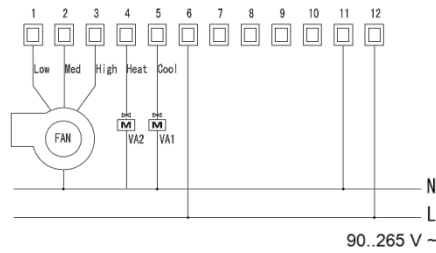
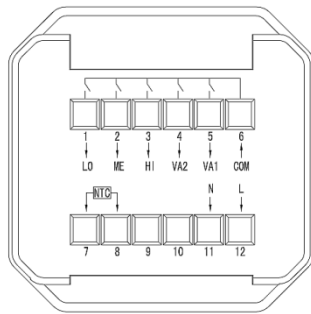
Wiring diagram for 2-pipe fan coil:



with external sensor:



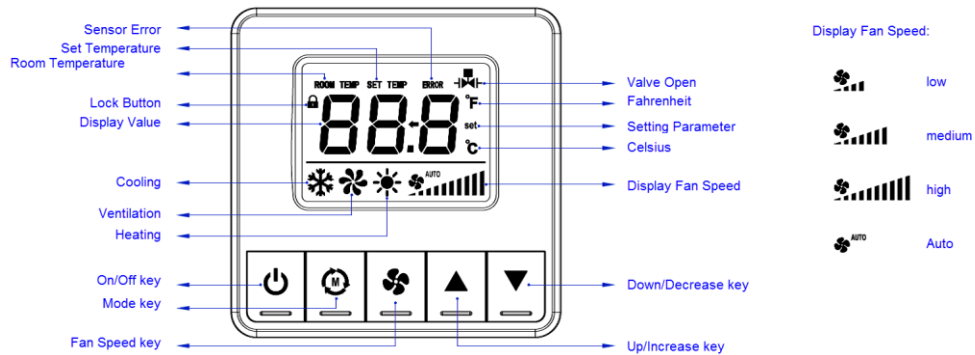
Wiring diagram for 4-pipe fan coil



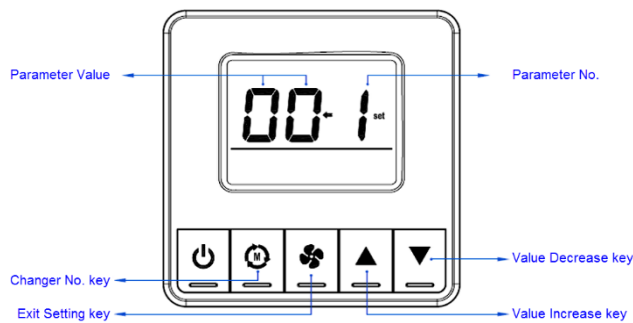
## Configuration

The firmware version is located on a label inside the device.

Display Panel



By pressing the MODE Button for more than 3 seconds, the parameter interface will appear.



No.	Name of parameter	Parameter definition	Default
1	Temp. correction	Range $\pm 10$ °C	0
2	Key-lock	0 – unlocked      1 - lock on/off      2 - lock Mode 3 - lock fan speed    4 - lock temp setting    5 - lock all the keystrokes	0
3	not used		
4	Temp. upper limit	Range: +1..+50 °C	30 °C
5	Temp. lower limit	Range: +1..+50 °C	16 °C
6	LCD backlight	0 - without backlight      1 - with backlight	1
7	Fan chain setting	0 – Independent      1 - Dependent	0
8	Fan coil selective	2 – 2-pipe system      4 – 4-pipe system	2

All parameters are stored within an EEPROM ensuring no data loss if the Thermostat is powered off.

**Hysteresis: 1 K + 1 minute switching delay**

**Commissioning**

Pressing the “▲” and “▼” key at the same time for more than 3 s, the units °C or °F can be selected. Temperature display range is 0..+50 °C or +32..+99 °F. Factory default is °C.

Select 2-pipe or 4-pipe systems (Parameter 8). In both modes the control sequences Cooling – Ventilating – Heating can be selected.

Using Parameter No.1. the temperature offset can be adjusted. This feature should be used if the temperature at the mounting place of the Room Thermostat is not accurate to the average room temperature.

Key lock selection (Parameter 2), LCD backlight (Parameter 6) and set point ranges (Parameter 4 and 5) can be set by parameters. Under Fan operation “INDEPENDENT” (parameter 7) the fan will always run according the selected or automatic selected fan stage; under Fan operation “DEPENDENT” the fan will be tuned off in case the valve is closed. If the valve is open, the fan will run according the selected or automatic selected fan stage. When the fan stages are changed, the fan remains in a no-current switcheover pause (0.5 s).

**Handling**

By pressing “▲” or “▼” button the room temperature set point can be adjusted between +16..+30 °C (+60..+86 °F). See also parameter 4/5.

If an external temperature sensor is used in 2-pipe system to measure the temperature in the pipes, no change of mode is possible via MODE button. The system recognizes automatically, whether current mode is cooling or heating. When temperature is  $\leq 19$  °C cooling is active, when the temperature is  $\geq 30$  °C heating is active. The other mode is not available. A time delay between cooling/heating mode changes is implemented to ensure safe operation and ensures eco-friendly operation.

If no external sensor is used, the functions (heating-ventilation-cooling) can be selected using MODE button. In heating mode the valve will be opened, if temperature is below set point, in cooling mode it will be opened, if the temperature is above set point.

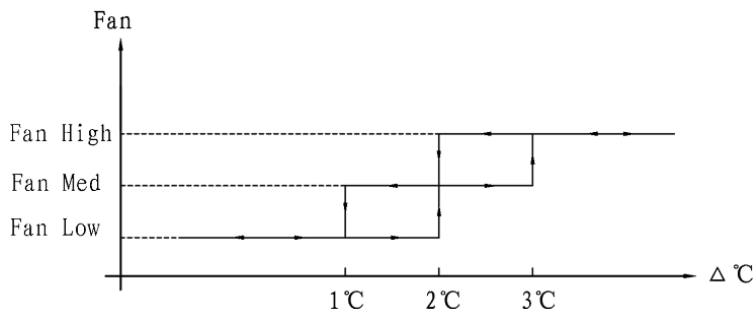
When using a 4-pipe system no sensor is necessary. Both functions (heating and cooling) are available. The function can be selected via MODE button.

If the NTC room temperature sensor is out of range, thermostat will switch off the fan and close the valve, fault code “E01” will be shown.

**Fan Stage selection**

Cooling or Heating mode fan stage options:      Low -> Med -> Hi -> Auto  
 Ventilation mode fan stage options:      Low -> Med -> Hi

**Auto mode:**



### Dimensions (mm)

