GRUNER
ASIA PACIFIC

Technical data sheet

CRW1-T-FC03
Fan Coil Thermostats

Description

This Fan coil thermostats are widely used in all commercial and residential buildings room temperature control, accuracy control provides you comfortable environment, and have the effect of saving energy and reducing up to 30% power consumption.

External Sensor (Change over or remote temprature) (NTC 10k).

The power supply is 24 VAC.

Order Code	2/4 Pipe FCU	Communication	Output	Inputs
• CRW1-T-FC03	2/4 Pipe	NON	Fan 230 VAC / 3 steps Actuator 2x0…10 V	NTC 10k -

Application

This universal thermostats work with :

» 2/4 pipes fan coil unit.
» 3-speed fan.
» 0-10V valve.
» External sensor for air or pipe temperature.

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Technical data

Specification

Power supply	24 VAC±10%, 50/60 Hz
Temperature setting range	5-35°C
Temperature accuracy	± 0.5°C
Temperature control Accuracy	± 1°C
Fan type	3-speed fan
Relay Rating	5A
Valve Control	Up to 2 pcs 0-10V valves
Remote Sensor Type	NTC 10k
Storage temperature	-20C~60C, Operating temperature: 0~50°C
Max Humidity	5~95%
Power consumption	<2W
Grade of protection	IP30
Backlight	White
Installation type	Surface mounting, Hole pitch: 60mm
Dimension	H86XW86XD30 mm

User Guide

ON/OFF: Press power button to switch ON and OFF thermostat.

Temperature Setting: Press "▾" to reduce temperature, press "▴" to raise temperature

Mode: Press "M" to change mode between Cool ❄ Heat ☀ and Ventilation 🌀 , mode will be confirmed by pressing other button or automatically after 6 seconds .

Fan: Press " 🌀 " to change 3-speed 🌀～ 🌀〰 🌀≋ or Auto fan , Auto Low-speed if difference between room-temperature and set-point exceed 1°C, Auto Med-speed When exceed 2°C, Auto Hi-speed When exceed 3°C.

Backlight: Any key press will activate the backlight. Backlights will timeout 6 seconds after last key press.

Keypad Lockout: (ONLY available when Item 11 set to 1/2/3): Press "▾"and "▴" for 3 seconds to lock the buttons and press "▾"and "▴" for 3 seconds to unlock.

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Functional Description

Parameter table

Switch off the thermostat and press "M" and " ▲ " 5 seconds to enter parameter setting menu, press the "M" or " ✿ " to change the item, and press ▼ ▲ to change the value, press power button " ⏻ " or wait 30S to exit and save all settings .

No.	Name of Parameter	Parameter definition
1	System type	0:2-pipe fan coil unit (Default) 1:4-pipe fan coil unit 2: Reserved 3: Reserved
2	Auto Mode	0: manual (Default) 1: auto
3	Sensor type	1: internal sensor only (Default) 2: external sensor only 3: internal sensor & external sensor
4	Fan control	0: fan stop after reach temperature setpoint (Default) 1: fan continuous running after reach setpoint
5	N/A	N/A
6	Temperature Display	0 = show room temperature (Default) , 1 = show setpoint
7	Display Temp. adjust-ment	-4C~4C(Default=0)
8	Dead band	1-4C(Default=1)
9	Auto heat pipe temperature	21~40C (Default value 22C) for 2-pipe auto mode with external sensor only
10	Auto Cool pipe temperature	10~20(Default value 18C) for 2-pipe auto mode with external sensor only
11	Keypad Lockout	0 All keys available(default) 1 All buttons locked out 2 System button Locked out 3 All buttons locked out except System
12	Power Up Status	0: System Off(default) 1: System last state before power off 2: System On
13	N/A	N/A
14	Freeze Protection	0: Disable (Default) 1: Enable
15	Programmable	1: non-programmable 2: Timer on/off (Default) 3: Programmable 4: Timer + Programmable
16	Preheat Temp.	21-50C(Default=38)
17	Minimum setpoint	5-18C (Default value=5C)
18	Cooling Setpoint setback	22-32C(Default=28)
19	Maximum setpoint	20-35C (Default value=35C)
20	Heating Setpoint setback	10-21C(Default=18)
21	Cooling only	0: Cool, Heat & Ventilation (Default) 1: Cool & Ventilation

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Table Explanation

1-Selectable System Type: control 2 pipe fan coil unit only

2-Auto Mode: you can set your 2-pipe system running as manual or autoseason changeover

3-Sensor Type: 1: Internal sensor only. 2: external sensor only 3: the external sensor attaches to water pipe for measuring the water pipe temperature to change mode between Heat and Cool automatically, this function is **only** available under 2-pipe Fan coil (Option 1=0) and auto system (Option 2=1) at the same time System works in cooling mode if the water temperature is less than or equal to certain temperature (Default as18℃ see option 10), and work in heating modeif the water temperature is higher than or equal to certain temperature (Default as 22℃,see option 9).

4-Fan Control: when the room temperature reaches setpoint, you can set the fan stop running or continuous blowing .

7-Display Temperature adjustment: calibrate the room temperature by therange from -4C to 4C.

8-Dead Band: the cool/heat will be only activated if differential temperature between setpoint and room temperature ≥ the dead band. For example, under cooling mode, the setpoint is 25C with dead band=1C, the cool air will be only available if the room temperature ≥ 26C.

9&10- Auto Heat/Cool Mode pipe temperature: Only available when option 01 =0, option 02=1 and option 03 =3 at the same time. means the system will work as auto change over under 2-pipe system. The fan will be only activated if the external sensor measure water in the fan coil pipe is hot or cold enough, this is for anti-freezing air blow under heating mode if the pipe water is not hot enough (temperature set range 21~40C), also for energy saving under cooling mode if the pipe water is not cold enough (temperature set range10~20C) .

11-Keypad lock: can be set to 4 types for different people authorization, the symbol 🔒 will show on the screen .

12-Power Up Status: when the electricity power is failure and back again, the thermostat will follow three types: 0: keep system off; 1: keep the system original status before the power failure. 2: switch the system on automatically .

14-Freezing protection: when thermostat is in OFF mode while the acquired temperature is below 6C, the thermostat will start heat mode until the temperature rises to 8C .
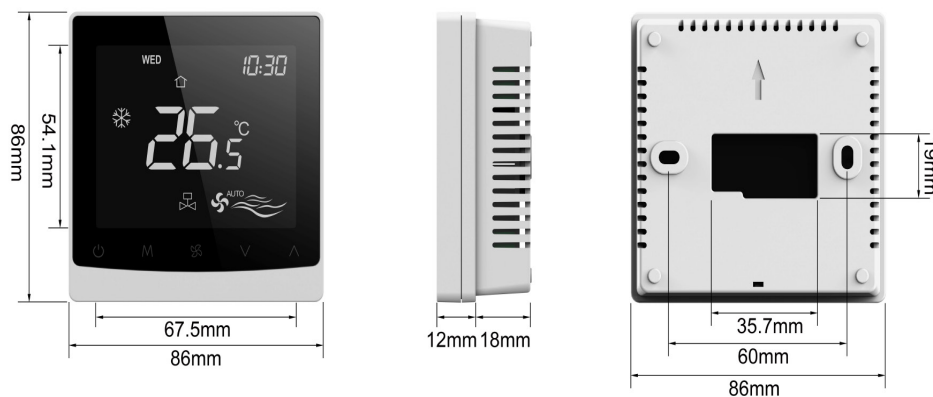
21,22,23 : Not Available for this model, DO NOT CHANGE ANY VALUE!

17&19 Temperature Limited: you can set the Minimum cooling and Maximum heating setpoint to save energy
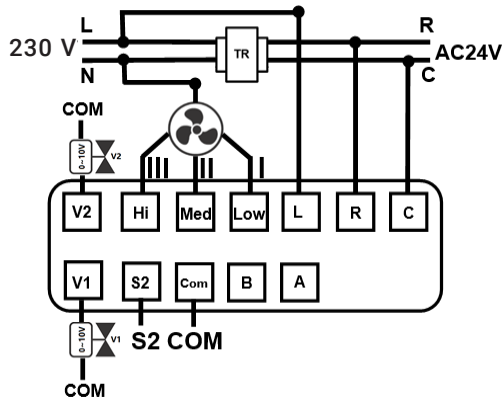
18&20 under Energy saving mode (when option 13 activates), the thermostat will set the setpoint as setback temperature for energy saving.

21- Cooling Only: you can choose if you need heat mode in thermostat.

Dimension

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Wiring Diagram

CRW1-T-FC03

2-pipe:

V1,COM:Cool/Heat 0~10V valve

4-pipe:

V1, COM: 0~10V Cooling valve

V2, COM: 0~10V Heating valve

S2: Remote sensor.

Terminal Definition: 1: C; 2:R; 3:L; 4: Low; 5: Med; 6:Hi; 7: V2; 8: A; 9:B; 10:COM; 11:S2; 12:V1

For example, CRW1-T-FC03, the valves are 230V/24V power supply 3-speed ON/OFF signal . please connect 230V/24V Live to the "L" so that the 24V thermostat can transfer the 230V/24V voltage to the 3-speed Fan.
Which means what voltage you input to L, and the L will give the same voltage to the valves 3-speed Fan.

Mounting and Installation

Mount the room thermostat on the conduit box. Do not mount on a wall in niches or book shelves, behind curtains, above or near heat sources. Mount about 1.5 m above the floor
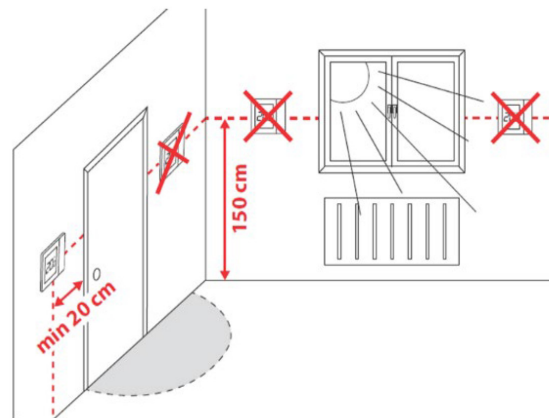

Devices must be mounted on clean, dry indoor place without direct airflow from a heating / cooling device, and not be exposed to dripping or splashing , Before removing the front cover, disconnect the power supply. Wiring, protection and earthing must be installed in compliance with local regulations.
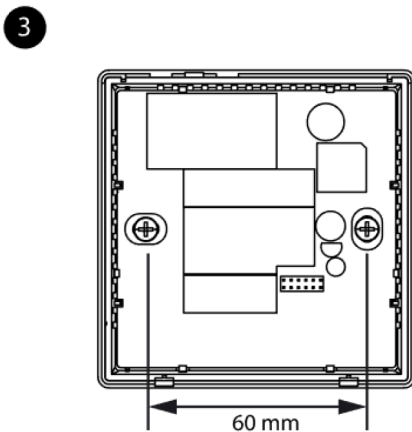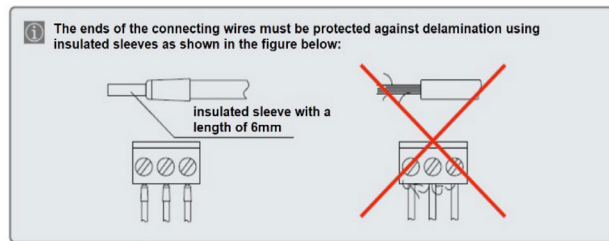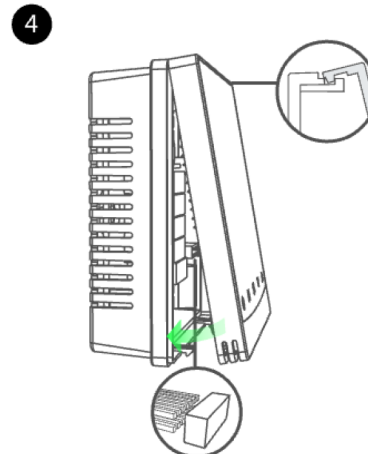
Installation
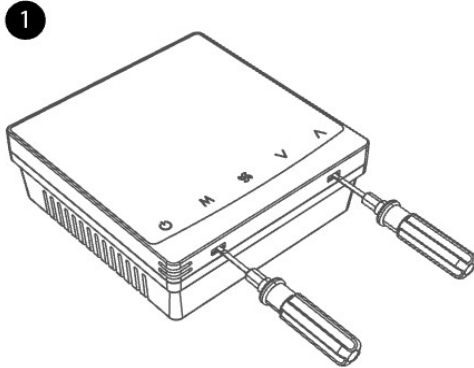
1 Remove the front cover by prying hooks with flat screw driver at the bottom of the front panel
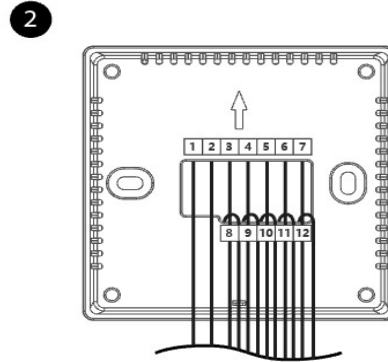
2 Fit the front part of the casing to the top edge and make sure the pins are properly positioned. Push the front of the casing until you hear positive click.

The ends of the connecting wires must be protected against delamination using insulated sleeves as shown in the figure below:

insulated sleeve with a length of 6mm

3 Surface mounting in a 60 mm wall box. Make sure the back cover is in the appropriate position (according to the arrow on it)

60 mm

4 For the convenience of installation, the first step is to wire the volt-free wires, low-voltage wires then high-voltage wires. Check the wires are property connected.

Disposal

The device is considered electronic equipment for disposal in terms of the applicable local Directive and may not be disposed of as domestic garbage.

-- Device disposal through channels provided for this purpose.
-- Comply with all local & currently applicable laws & regulations.