



ThermoB.FC222V, 0-10V output

ELECTRONIC THERMOSTAT

for controlling a Fuji AHU air-conditioning system

SETUP GUIDE

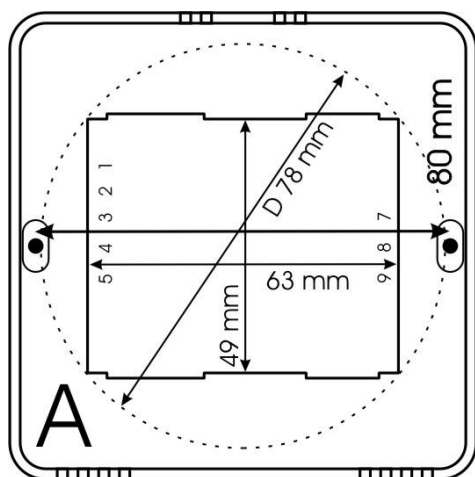
System type		Outputs			Sensors		Sensor NTC.2	Zones
		1 R1	2 R2	AHU demand 0-10V	Built-in NTC.1	Remote NTC.2		
1	AHU 0-10V	Start/Stop	Heating/Cooling	Modulating, PI	Yes	Yes	Alarm Defros Outlet temperature	1 / 2

Tables 1

Features:

FC.222V-C210	
LCD with 4 buttons	2 commands, 0-10V, 1 or 2 zones
Built-in room temperature sensor	Additional temperature sensor NTC.2
Power supply 170-230V / AC / 50Hz (SELV)	Power consumption <2VA
2 relay outputs, switched 230V, ≤4A	AHU demand output - 1 x 0-10V, RL ≥ 5k
Dimensions	
front panel 90x90x17mm	recessed section 62x51x23.5mm
Protection rating IP20	Operating conditions, -5T45, RH80%
Measured temperature -10° .. +45° / 0.5°C	Set temperature range +12°C .. +40°C / 0.5°C
Panel mounting or installation in a D80 wall box	mounting centers 80mm ±1 or 60mm ±3
Transport and storage -20T60, RH90%	
Two user interfaces: Basic and Advanced:	
- Basic: simple operation with 1 set temperature, on/off and heating/ventilation/cooling mode	
- Advanced: up to 2 set temperatures, a weekly schedule, on/off and heating/ventilation/cooling mode	
AHU demand control: PI with adjustable P and I	
Global start/stop	

INSTALLATION:



The device can be mounted on the panel of an existing fan coil or in a wall box for recessed installation, D80mm.

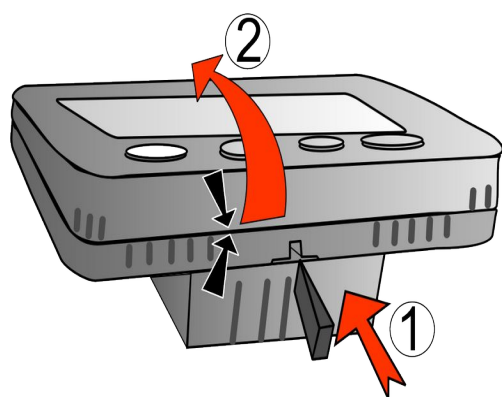
Mounting dimensions are shown in Figure 1.

Use fasteners with a shank diameter of up to 3.5mm.

The correct mounting orientation is marked "A".

Figure 1

To access the mounting holes, open the device by separating the front panel from the rear section.



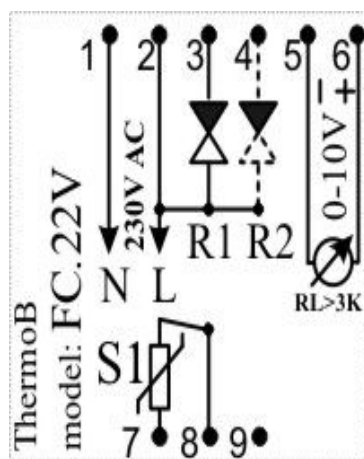
- Gently press the tip of a flat-blade screwdriver into the indicated slot in direction (1) on the underside of the front panel, Figure 2.
- At the same time, separate the upper edge of the panel in direction (2).
- The two sections are connected by a cable. If necessary, unplug the connector from the front-panel side.

Figure 2

Reassemble in reverse order: engage the upper edges first, then press the lower edges together until the two sections lock. Remember to reconnect the connector!

CONNECTION:

Electrical wiring: see Diagram 1



	Terminal				
	1	2	3	4	5
Conventional	N	L	R1 Start/Stop	R2 Heating/ Cooling	0-10V AHU output level
Contact R1 closed			Start		
Contact R2 open			Cooling		
Contact R2 closed			Heating		
AHU defrost			NTC2 (S1) circuit open		
Alarm			NTC2 (S1) input shorted		
NTC1 - built-in			NTC2 (S1) - remote (terminals 7&8)		

Diagram 1

- power supply 230V/AC/50Hz - NTC.2 sensor: terminals 7 and 8

* conductor cross-section 0.5 - 1.5mm²

* connect the other valve terminals together to neutral "N"

Service parameters: hold ON/OFF and M together for about 6 seconds. The combination ▼+M does not open the parameters.

Parameters

Number	Description	Step	Factory value
PR.01.	<i>Hysteresis [0.5°C~3.0°C], not used</i>	0.5°	0.5°
PR.02.	Frost protection. When room temperature <PR02 in heating mode, the system starts to maintain PR02. The setting "--" disables this function [-9°C~12.0°C]	1°	3°
PR.03.	Functionality and Heating/Cooling selection =1: <i>Advanced</i> , Heating - Operation with T.COMF, AUTO =2: <i>Advanced</i> , Cooling - Operation with T.COMF, AUTO =3: <i>Basic</i> , Heating - Operation with T.COMF only =4: <i>Basic</i> , Cooling - Operation with T.COMF only	1	3
PR.04.	AHU demand pause when switching between heating and cooling [10 ~ 240sec]	1 sec	120 sec
PR.05.	<i>Time zone [-12~ +14] in 1h steps, not used</i>	1 h	2
PR.06.	Temperature offset [-5°~ +5°C]	0.5°	0°
PR.07.	PIN lock; 0: no lock; = 1: access to parameters requires the PIN	1	0

	>1: access to parameters requires the PIN; changes to temperature, mode and schedule are disabled		
PR.08.	<i>Not used</i>	1 h	1 h
PR.09.	Minimum set temperature in cooling [12°~40°]	0.5°	15°
PR.10.	Maximum set temperature in cooling [12°~40°]	0.5°	15°
PR.11.	Minimum set temperature in heating [12°~40°]	0.5°	35°
PR.12.	Maximum set temperature in heating [12°~40°]	0.5°	35°
PR.13.	Configuration selection, fixed at =18	1	18
PR.14.	Use of the remote sensor, "Sensor 2 input / NTC.2"	1	0
= 0: only the built-in sensor is used. NTC.2 is used for Alarma / Defrost = 1-99: the measured temperature is a weighted value between the built-in sensor and NTC2, calculated as follows:		Measured temperature = $\text{NTC2} \cdot \text{PR.14} + \text{Built-in} \cdot (100 - \text{PR.14})$ $\text{t.Room} = \frac{\text{Measured temperature}}{100}$ = 100: NTC.2 replaces NTC.1	
PR.15-16	<i>Not used</i>	1°C	45°
PR.17.	Proportional coefficient "P": adds % for each 0.5° difference [1,6% ~ 32%]	1.6%	10%
PR.18.	Integration period, coefficient for "I": adds 1,6% for each 0.5° difference [20 sec ~ 600sec]	10 sec	60
PR.19.	Display of the temperature measured by NTC.2		
PR.20.	<i>Not used</i>		
PR.21.	Alarm delay when NTC.2(S1) is open/shorted; alarm AL2	1 min.	15
PR.22.	Manual AHU output level [0% ~ 100%] At 0: automatic PI control, step 1,6%	1%	0%
PR.23.	Maximum AHU output level [20% ~ 100%], step 1,6%	1%	100%
PR.24.	Fan overrun (Start command) in cooling for dehumidification, if the AHU has been operating. Value in 10 sec steps (12=> 120 sec) [0 ~ 60 x10 sec]	10 sec	12
PR.25.	Manual/automatic output activation = 0 : Automatic = 1 : R1 – off R2 – off = 2 : R1 – on R2 – off = 3 : R1 – off R2 – on = 4 : R1 – on R2 – on	1	0
PR.26.-	<i>Not used</i>	1-247	1
PR.27.	<i>Not used</i>	0-11	2
PR.24.	System type and version	C2.10	-
PR.29.	Filter cleaning interval [0 ~ 999h] in 4-hour steps	4 h	300

CHANGING MODE: HEATING / COOLING / VENTILATION

[M] – brief press: changes the mode:

Heating → Ventilation → Cooling → Ventilation → ...

SWITCHING ON/OFF

[ON/OFF] – hold for about 1 second.

LOCKING/UNLOCKING

[ON/OFF] + [▲]	locks the buttons
[ON/OFF] + [▼]: hold for 10 seconds	unlocks the buttons

DISPLAY

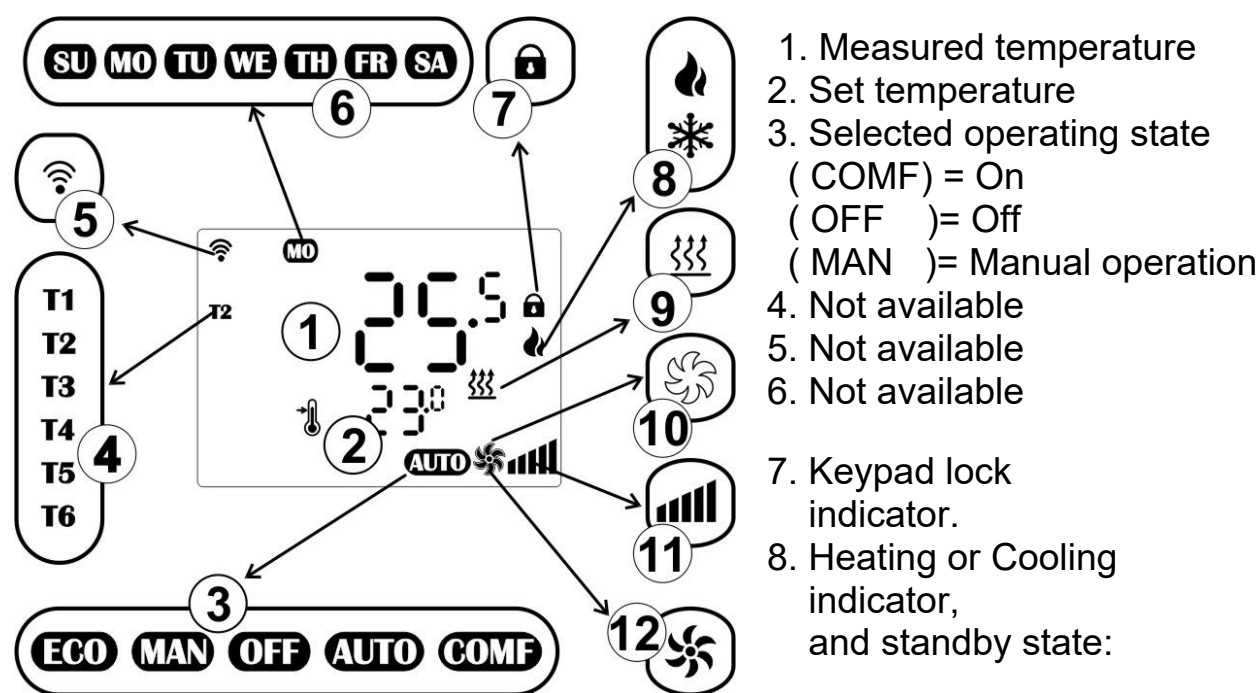
Faucet icon	dirty filter (the set operating hours have elapsed)
AL1	Alarm 1 – NTC.2 shorted
AL2	Alarm 2 – PR21 time elapsed (NTC.2 shorted/open)
dEF	Defrost – NTC.2 open

INFORMATION MENU:

To open the information/diagnostic screen, hold M for about 3 seconds. Use ▲/▼ to browse the readings; press M to exit.

t1	Built-in sensor temperature
t2	NTC2 sensor temperature

dEU%	AHU demand in %
HR	Remaining filter hours



flashing symbol

9. Not available

Figure 4

10/12. Ventilation status:

- outlined fan icon (10): ventilation is off
- solid fan icon (12): ventilation is on

11. AHU output level

Ordering code

Base product code: AHUKIT.

WiFi: No.

Housing: room unit with a white or black housing. Specify the selected color when ordering.

Display: LCD on the room unit.

RF: Not applicable.

Choose the power supply when ordering: 230V AC or 24V AC/DC. There is no separate product code for the two power supplies. The wiring diagram must match the supplied power version.