



ThermoB.FC22xV/P.WiFi, 0-10V/PWM output

ELECTRONIC THERMOSTAT WITH WiFi

for controlling fan coil and floor heating

SETUP GUIDE

System type		Outputs			Fan start		Sensor NTC.2	Zones / contours
		1 R1	2 R2	Fan 0-10V/PWM	time	NTC.2		
1	Standard, 2 pipes	Valve Heat/Cool	-	4 speeds	yes	yes	fan start/stop	1
2	4 pipe system	Heating valve	Valve Cool.	4 speeds	yes	yes	fan start/stop	1
3	Convector + floor	Valve fan coil	Valve floor	4 speeds	yes	-	Floor: start/stop	2
		Valve floor	-		-	yes	Fan: start/stop	
					Option: floor "stop" at “cooling”			

Models:	Relay outputs		Fan		WiFi
	Relay R1	Relay R2	0-10V	PWM	
Thermob.FC.22V.W	Yes	x	Yes	x	Yes
Thermob.FC.22P.W	Yes	x	x	Yes	Yes
Thermob.FC.222V.W	Yes	Yes	Yes	x	Yes
Thermob.FC.222P.W	Yes	Yes	x	Yes	Yes

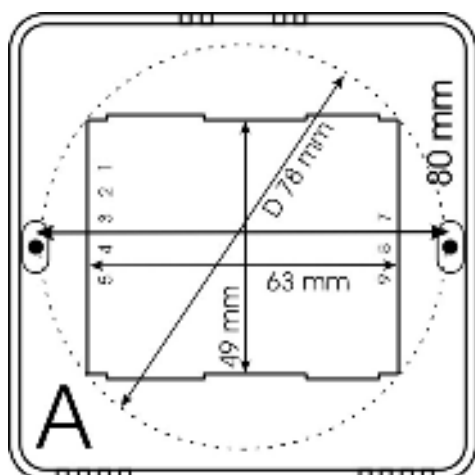
Tables 1 and 2

Features:

FC.22xV/PW	
LCD display with 4 buttons	2 or 4 pipe systems, 1 or 2 zones
Built-in room temperature sensor	Additional temperature sensor NTC.2
Power supply 170-230V / AC / 50Hz (SELV)	Consumption <2VA
Relay outputs 1 or 2; Max 4A, supply "live" potential 230V	Fan output - 1 pcs. 0-10V or PWM @10V/1kHz; RL > 3kΩ
WiFi control for models with "W", Internet system in EU, Mobile application	
Overall dimensions	
on the front panel 90x90x17mm	of the built-in part 62x51x23.5mm
Degree of protection IP20	Operating conditions, -5T45, RH80%
Measured temperature -10° .. +45° / 0.5°C	Set temperature range +15°C .. +45°C / 0.5°C
Panel or socket mounting D80	fastening 80mm ±1 or 60mm ±3
Current time, checking via the Internet	Clock retention in the event of power failure - no
Transport and storage -20T60, RH90%	
WiFi network, WEP/WPA-PSK/WPA2-PSK	2.4GHz/802.11b/g/n
Two types of user interface Basic and Advanced:	
- Basic – simplified operation with 1 set temperature, on/off and setting the fan speed	
- Advanced – full functionality with 2 set temperatures, weekly schedule, on/off and setting the fan speed	
* Fan speed control in AUTO mode - by PID with selectable P and I	
* Global fan start/stop – by hysteresis	

- * Zone 2 (floor) control – by hysteresis, by TPI
* Combined input - sensor 2 + "open window"

INSTALLATION:



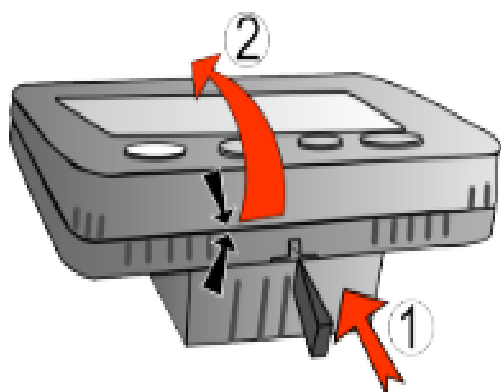
The device is suitable for panel mounting.
existing fan coil in a console
for wall mounting of D80mm.

The mounting dimensions are given on sketch 1

Use fasteners with a diameter of stem up to 3.5mm
The orientation for wall box's fastening and installation
(correct view) is marked with "A"

sketch 1

To access the mounting holes, you need to open the device by separating the front panel from its rear.



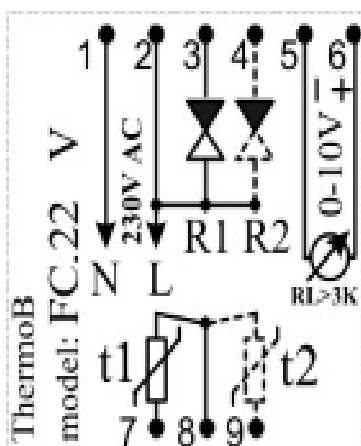
- Press lightly with the tip of the flat screwdriver in the indicated slot and direction (1) of underside of the front panel, sketch 2
- Simultaneously separate upper side on the panel in the indicated direction (2).
- The two parts are connected by a cable, at necessary, disconnect the terminal from the front side

sketch 2

Reassemble in reverse order by first pressing the two parts together at their top sides, then pressing from the bottom until the two parts lock together. Don't forget to reattach the terminal!

CONNECTION:

Electrical connection – see diagram 1



	System type	Terminal				
		1	2	3 R1	4 R2	5(-) / 6 (+) 0-10V/PWM
1	Standard	N	L	valve	-	Fan
2	4 pipe system	N	L	Heating valve	Cooling valve	Fan
3	Fan Coil + floor	N	L	Valve conv.	Floor valve	Fan
4	Fan Coil + floor	N	L	Floor valve	-	Fan

scheme 1

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

- * wire cross-section 0.5 - 1.5mm²
- * at outputs R1 and R2 the device supplies a "live"
- * connect the remaining valve's connection to the neutral "N"

Parameters

Number	Description	step	Fabr.
PR.01.	Hysteresis [0.5°C~3.0°C], at 0 floor control by TPI, with convector only min. hysteresis is 0.5°	0.5°	0.5°
PR.02.	Frost protection [-9°C ~ +15°C]. At Room T < PR02 operation is started, if set to "--" the function is not active [-9°C~12.0°C]	1°	3°
PR.03.	Selection of functionality type and "Heating" / "Cooling"	1	3
= 0: Advanced for 4 pipe system----- Auto. Heating/Cooling and [PR20 > 0] - Heating T.Room <= T.COMF - 0.5°C. - Cool. T.Room >= T.COMF +0.5°C -----for 2/4 pipe system----- Manual. Heating/Cooling and [PR20 = 0] - at T.ECON <= T.COMF : Heating - at T.ECON >= T.COMF : Cool. - Cool. T.ECON >= T.COMF * The value of [PR20] is ignored =1: Advanced, "Heating" - Work on temperatures T.ECON and T.COMF, AUTO, MAN =2:Advanced, "Cooling" - Work on temperatures T.ECON and T.COMF, AUTO, MAN =3:Basic, "Heating" -Work only on T.COMF =4:Basic, "Cooling" -Work only on T.COMF =5:Basic, "Heating", fixed =6:Basic, "Cooling", fixed *in 5 and 6 modes, Heat/Cool is locked			
PR.04.	Pause / Not used		
PR.05.	Time zone [-12~+14]in 1 hour	1 hour	2
PR.06.	Room temperature correction [-5°~+5°C]	0.5°	0°
PR.07.	PIN lock, at 0 – no lock; = 1 access to parameters after entering PIN >1 access to parameters with PIN, access to change temperature, mode, time schedule prohibited	1	0
PR.08.	Duration of MAN mode [0~4h], at 0 does not automatically exits	1 hour	1 hour
PR.09.	Minimum T. setpoint in cooling [12°~40°]	0.5°	15°
PR.10.	Maximum T. setpoint in cooling [12°~40°]	0.5°	15°
PR.11.	Minimum T. setpoint in heating [12°~40°]	0.5°	35°
PR.12.	Maximum T. setpoint in heating [12°~40°]	0.5°	35°
PR.13.	Choice of 2/4 pipe system and zones 1 or 2 (with floor)	1	0

Legend:

VF.H&C = fan coil's valve is used, heating or cooling command
VF.H = fan coil's valve is used, heating command (4 pipe system)
VF.C = fan coils' valve is used, cooling command (4 pipe system)
P1 = fan at speed 1, active in both heating and cooling
P1_COOL= fan at speed 1, active only in cooling mode
UFH = floor output is used, (zone 2)
H&C = zone 2 (floor) operates in both heating and cooling modes
HEAT = zone 2 (floor) operates only in heating mode

N	Output R1	Ouput R2	FAN at PAUSE	FAN Speed	ZONE 2 (floor)	2 / 4 pipe
0	VF.H&C	--	stop	4	--	2
1	VF.H&C	--	P1	4	--	2
2	VF.H&C	UFH	stop	4	H&C	2
3	VF.H&C	UFH	P1	4	H&C	2
4	VF.H	vF.C	stop	4	--	4

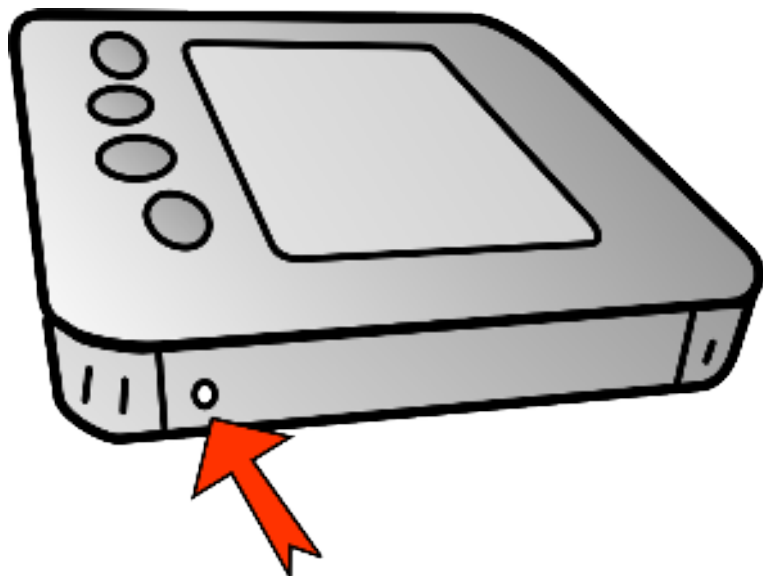
5	VF.H	vF.C	P1	4	--	4
6	VF.H&C	UFH	stop	4	HEAT	2
7	VF.H&C	UFH	P1	4	HEAT	2
8	UFH	--	stop	4	H&C	2
9	UFH	--	P1	4	H&C	2
10	UFH	--	stop	4	HEAT	2
11	UFH	--	P1	4	HEAT	2
12	VF.H&C	--	P1_COOL	4	--	2
13	VF.H&C	UFH	P1_COOL	4	H&C	2
14	VF.H	VF.C	P1_COOL	4	--	4
15	VF.H&C	UFH	P1_COOL	4	HEAT	2
16	UFH	--	P1_COOL	4	H&C	2
17	UFH	--	P1_COOL	4	HEAT	2
PR.14.		Function of Input Sensor 2/ NTC.2			1	0
= 0:- NTC.2 is not used the fan starts with a delay set by [PR18] = 1: NTC.2 – fan enabled /disabled according to fluid temperature: * "Cooling"; enabled if T.NTC.2 < [PR16] * "Heating" ;enabled if T.NTC.2 > [PR15] "Open window" function - sensor interruption = 2: NTC.2 – monitors temp. Zone 2, - controls start/stop zone 2 - the fan starts with a delay set by [PR18]			* "Cooling", when: T.NTC.2 < [PR16] = stop Zone 2 * "Heating", at: T.NTC.2 > [PR15] = stop Zone 2 = 3: Sensor NTC.2 replaces NTC.1 = 4: Heat/Cool switchover - start / stop fan by fluid - T.NTC.2 < [PR16] = cooling mode - T.NTC.2 > [PR15] = heating mode = 5:Sensor 2 = external start/stop "open window", the fan starts with delay [PR18]			
PR.15.		Temp. NTC.2 "to allow operation in Heating [+25°C~+70°C]			1°C	45°
PR.16.		Temp. NTC.2 "to enable operation in Cooling [+1°C~+24°C]			1°C	18°
PR.17.		Hysteresis for changing fan speeds in AUTO [0.5°C~3.0°C] - "P on PID"			0.5°	0.5°
PR.18.		Fan start delay when operating by delay (with PR14 = 0 or 2); * in "Cooling" - drying time; * also used as a time delay for automatic change of fan speeds (in Fan.AUTO) [1~20minutes] * Minimal time between speed change is 90 sec. at "Fan.AUTO", parameter acts as 'I' of a PID"			1 minute	1
PR.19.		Temperature reading of sensor NTC.2				
PR.20.		Internal adjusting of T.ECON based on T.COMF -at 0: T.ECON is freely selectable -at 0.5~ 5 : fixed to T.COMF *in "Heating" T.ECON = T.COMF – [PR20] *in "Cooling" T.ECON = T.COMF + [PR20]			0.5°	0°
PR.21.		Temperature difference Zone 1 / Zone 2 [0°C~5.0°C] in "Cooling", activates the corresponding output when: - zone 1 (fan coil): T.Room > T.Set + [PR21] - zone 2 (floor) : T.Room > T.Set in "Heating", activates the corresponding output when: - zone 1 (fan coil): T.Room < T.Set - [PR21] - zone 2 (floor) : T.Room < T.Set			0.5°	0°
PR.22.		Fan power at Speed 1 [40%~100%]			2%	30%
PR.23.		Fan power at Speed 4 [50%~100%]			2%	86%

** Speeds of 2 and 3 are automatically calculated based on [PR22] and [PR23]			
PR.24.	Ventilation mode in "pause".	0	1
	Sets the duty cycle and waiting period for forced ventilation to equalize the temperature during "pause". The function is active when P1 or P1COOL is selected from [PR13]		
	N	Fan ON.	Period
	0	NONSTOP, Continuous operation	
	1	1.5 minutes	30 minutes.
	2	3 minutes	30 minutes.
	3	5 minutes	30 minutes.
	4	1.5 minutes	20 minutes.
	5	3 minutes	20 minutes.
	6	5 minutes	20 minutes.
	7	1.5 minutes	10 minutes.
	8	3 minutes	10 minutes.
	9	5 minutes	10 minutes.
PR.25.	Inverting the output signals = 0 : R1 – N.O. R2 – N.O. = 1 : R1 – N.C. (Inverted) R2 – N.O. = 2 : R1 – N.O. R2 - NC (Inverted) = 3 : R1 – N.C. (Inverted) R2 – N.C. (Inverted)	1	0
PR.26.	Modbus - Address	1-247	1
PR.27.	ModBus – Communication speed, bit parity 4800bps: =0: Non = 4: Odd = 8: Even 9600bps: =1: Non = 5: Odd = 9: Even 19200bps: =2: Non = 6: Odd =10: Even 38400bps: =3: Non = 7: Odd =11: Even	0-11	2
PR.24.	System type and version	P2.21	-
PR.29.	Backlight intensity in "dark" 0: off; 10 - 100%	0-10	1
PR.30.	Farm floor function: period for activating underfloor heating when the “floor” zone is paused; in minutes; 0: the function is disabled	0-120	0

Note: check version FC22 or FC222 for available outputs.

Pairing with WiFi

The WiFi pairing procedure is started by pressing and holding the hidden button on the right side for 10 seconds.



When the WiFi pairing procedure is started, the hidden LED starts flashing quickly.

(seen through the hull)

To continue pairing, use the additional instructions available in the mobile app or download them additionally.

Mobile application.



Proxel Connect



Instructions for establishing a WiFi connection.
Download from the link or scan the QR code

https://proxel-bg.com/uploads/ThermoB/ThermoB_WiFi_setup_BG.pdf



QUICK INSTRUCTIONS FOR OPERATION

ON / OFF

Press and hold the [3] "On/Off/☼".

- in **off** state shows (OFF).
- when switched **on**, the selected mode (ECO), (COMF), (AUTO) or (MAN).

TEMPERATURE CORRECTION

with system – on!

Press the button [▼] or [▲], the selected temperature will be adjusted.

- to adjust the "ECO" temperature, first select the (ECO) mode
- to adjust temperature for "COMF" first select mode (COMF)
- when the "AUTO" mode is selected, pressing the [▼] or [▲] leads to switching to "MAN" mode and setting a "temporary" temperature.

SELECTION OF OPERATING MODE / TEMPERATURE

with system – on and PR03 = 0~2

Press the [M] button to change sequentially.

(ECO) → (COMF) → (AUTO) → (ECO) ...

- * (AUTO) is displayed when a program is entered.

SELECTION OF FAN SPEED

with system – on

by each press of the button [☼], will be changed sequentially:

- independent convector: → 1 → 2 → 3 → 4 → AUTO → 1....
- fan coil + floor: → 1 → 2 → 3 → 4 → STOP → AUTO → 1....

HEATING / COOLING SWITCHOVER

"Heating" / "Cooling" mode is set / fixed via PR03.

User can switchover (if enabled, PR03≤4)

- hold both buttons [▼] and [M] until the mode changes (for 5-6 seconds)

LOCKING / UNLOCKING THE BUTTONS

The device provides the ability to lock the button actions in the main screen.

- *unlock*: hold both buttons [▼] + [☼] for 10 seconds.
- *lock* : hold both buttons [▲] + [☼] for 1-2 seconds.

ACCESS TO PARAMETERS

- Press and hold both buttons "On/Off/☼" + [M].
- Move between parameters, adjust value with [▼] and [▲]
- Edit parameter/ move along by "On/Off/☼"
- Exit - press [M]

MEANING OF SYMBOLS

	"Heating mode"; fan coil valve: flashing = "off"; lit = "on"
	"Cooling mode"; fan coil valve: flashing = "off"; lit = "on"
	"Floor" output - "on"
	Fan – enabled, not running, waiting for time or conditions to turn on
	Fan – operates at selected level or AUTO

☐	ThermoB.FC22V.W	☐	ThermoB.FC22P.W
☐	ThermoB.FC222V.W	☐	ThermoB.FC222P.W
Color: white black ☐		☐	

Your device:

- ID
- key
- serial number

ThermoB.FC22xV/P.W

www.thermob.eu
www.proxel-bg.com