

EXT-CFU-230-D.. Touch Keypad fan coil unit thermostats are designed to control the room temperature in air-conditioning fan coil unit system or dust pipe channel system. EXT-CFU-230-D.. thermostats with microprocessor and big LCD display.

Basic features:

- LCD with white backlight
- Room temperature setting
- Manual or auto 3-speed changeover
- Defrost (low temperature protection)
- Touch keypad
- Keypad Lock (Option )
- Auto Restart ( Option )
- Energy saving with economy mode (EXT-CFU-230-D2/(D4))



## Models

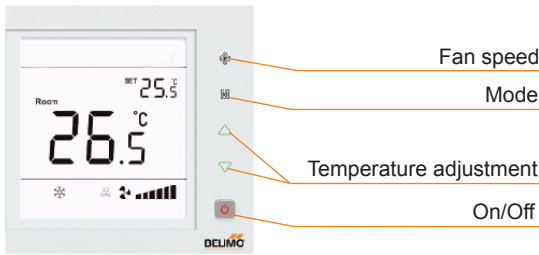
EXT-CFU-230-D series	System	Cooling or heating	Cooling and heating	3 Fan speed	External sensor	Occupancy contact
EXT-CFU-230-D222	2 pipe	●		●		
EXT-CFU-230-D422*	4 pipe		●	●		
EXT-CFU-230-D2	2 pipe	●		●	●	●
EXT-CFU-230-D4*	4 pipe		●	●	●	●

\* EXT-CFU-230-D422 and EXT-CFU-D4 are available on request only

## Technical data

Power supply	AC 85...260V 50/60Hz
Switch current rating	2A (Resistive) 1A (Inductive)
Power consumption	<1W
Display range	0...+55°C
Display accuracy	±0.5°C
Sensing element	Built-in : NTC thermistor EXT-CFU-230-D2/(D4) External: Probe type sensor, NTC 10kΩ@25°C (included) EXT-CFU-230-D2/(D4) Duct type sensor, 01DT-1MN (option)
Wiring	Accepting 2x1.5mm <sup>2</sup> or 1x2.5mm <sup>2</sup> wires
Control accuracy	±1°C
Set-point range	+5...+35°C
Occupancy setpoint	Cooling range: +5...+35°C (factory default: 26°C) Heating range: +5...+35°C (factory default: 18°C)
Occupancy contact	Voltage free contact input
Operation environment	0...+45°C
Protection class	IP30
Humidity	5...95%RH, non-condensing
Key	Touch keypad + soft touch key
Housing	PC+ABS Flame Retardant
Hole pitch	60mm (Standard)
Dimensions (WxHxD)	90x90x14.2mm

Display and touch keypad



It shows following status:

- working status: cool ❄️, heating 🔥 or ventilation 🌀
- fan speed: low 📊, Mid 📊📊, High 📊📊📊, or Auto AUTO
- FCU valve status 🚪
- Room temperature
- Temperature setpoint

For EXT-CFU-230-D2

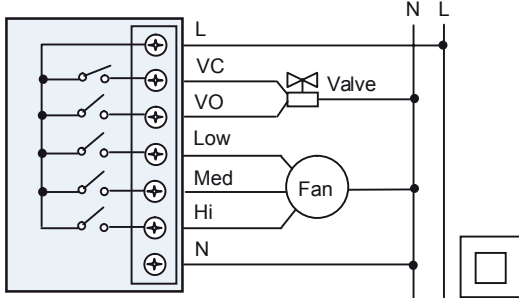
- Economy mode 🔄
- Build-in sensor (display "Room")
- External sensor ("Room" disappear)

Operation instructions

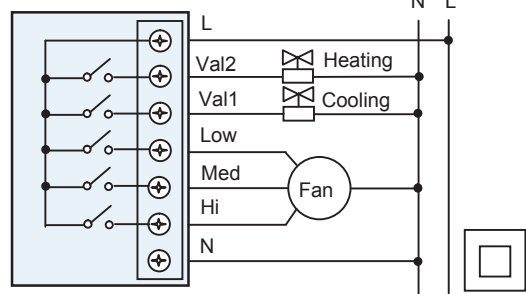
<b>On/Off</b>	Press "⏻" to turn on, press "⏻" again to turn off thermostat and its output.
<b>Setting Temperature</b>	Press "▼" to reduce temperature, press "▲" to raise temperature (0.5°C per step).
<b>Mode Selection</b>	Press "M" to change system working in cooling "❄️", heating "🔥" or ventilation "🌀" mode.
<b>Fan Speed Selection</b>	Press "🌀" to select 📊📊📊 (Hi), 📊📊 (Med), 📊 (Low), AUTO(Auto). In "Auto" mode, the fan-speed changes automatically. When the differential temperature between room temperature and setpoint exceeds 1°C, 2°C and 3°C, thermostat operates at Auto LOW-speed, Auto MED-speed and Auto HI-speed respectively.
<b>Control Motorised Valve Under 2-pipe Configuration</b>	If the differential temperature between room temperature and setpoint exceeds 1°C, FCU valve will be opened; if room temperature and setpoint are equal, the thermostat will close the FCU valve with the fan kept running.
<b>4-pipe Configuration</b>	In cooling, when the room temperature is higher than setpoint, the cooling Valve will be opened. Otherwise it will be closed. Heating valve is always closed. In heating, When the room temperature is lower than setpoint, the heating valve will be opened. Otherwise it will be closed. Cooling valve is always closed.
<b>Low Temperature Protection Function</b>	<b>Turn on:</b> When the room temperature is lower than 5°C, the thermostat will automatically turn on the fan and valve (with "🔥" showing). When the room temperature is increased to 7°C, the thermostat will automatically stop output.
<b>Low Temperature Protection Setting</b>	<b>Turn off:</b> Press "M" and hold for 3 seconds, it will display "OF" or "ON", press "▲" or "▼" button to adjust the parameter. "OF" indicates low temperature protection is turned off, "ON" indicates low temperature protection function is turned on (Factory default setting is "OF").
<b>Offset adjustment of temperature display</b>	In case that the user wants the displayed temperature on the thermostat higher or lower than the real temperature(±5°C), the following operations could be taken: <b>Turn off:</b> Press "▲" and "▼" at the same time for 3 seconds, it will display "XX°C", press "▲" or "▼" to adjust the temperature value, it will be automatically confirmed after 6 seconds.
<b>Alarm</b>	If the sensor has failure, the thermostat will close the fan and valve, displaying "E1" or "E2". E1: Sensor in short circuit alarm E2: Sensor in open circuit alarm It displays "HI" when the temperature is higher than 55°C, displaying "LO" when the temperature is lower than 0°C.
<b>Occupancy Contact EXT-CFU-230-D2</b>	When <b>contact is CLOSE</b> , thermostat runs in Economy mode and displays "🔄". For cooling mode, thermostat runs at LOW fan speed with default temperature setpoint 26 °C. For heating mode, thermostat runs at LOW fan speed with the default temperature setpoint 18°C. During Economy mode, all the buttons become ineffective except the On/Off button. When <b>contact is OPEN</b> , thermostat runs in normal mode and "🔄" disappears. All the buttons resume normal functioning.
<b>External sensor EXT-CFU-230-D2</b>	When build-in sensor is used, thermostat displays "Room". When external sensor is connected, thermostat switches to external sensor automatically and "Room" disappears.

**Wiring Diagram**

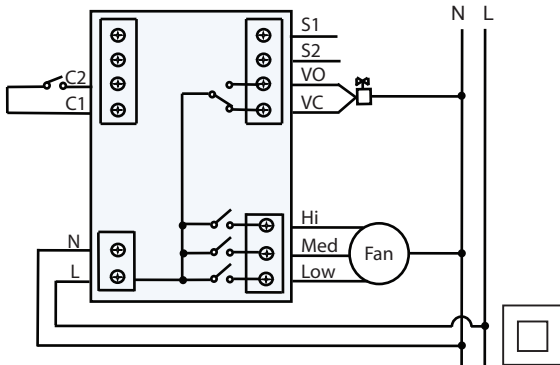
**EXT-CFU-230-D222** AC85~ 260V 50/60Hz



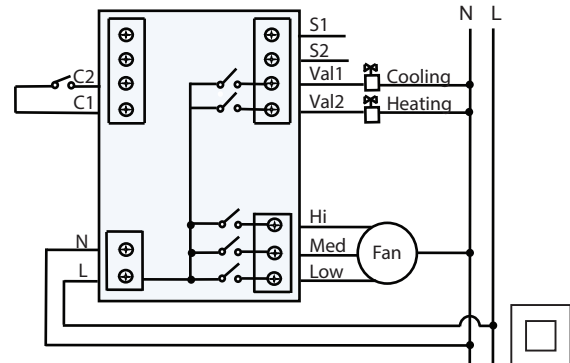
**EXT-CFU-230-D422** AC85~ 260V 50/60Hz



**EXT-CFU-230-D2** AC85~ 260V 50/60Hz

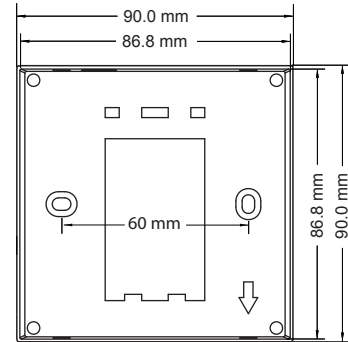
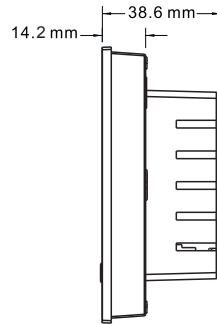
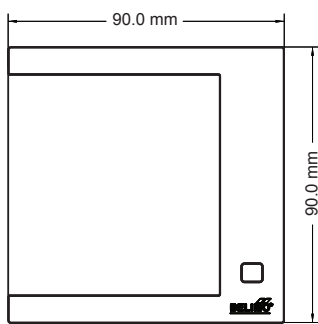


**EXT-CFU-230-D4** AC85~ 260V 50/60Hz

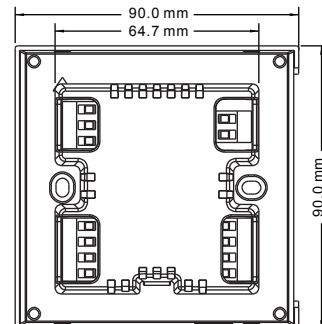
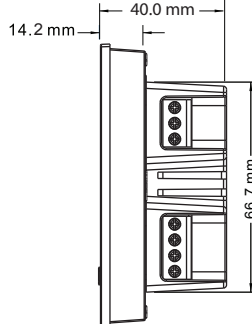
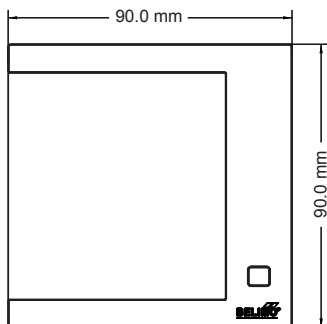


**Dimensions**

**EXT-CFU-230-D222/(D422)**

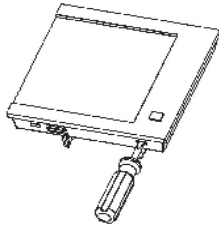


**EXT-CFU-230-D2/(D4)**



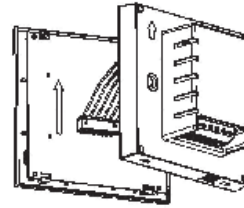
Installation instruction

1.



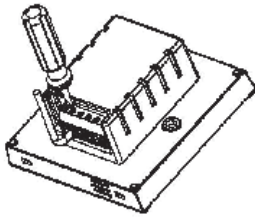
Open the left clip and right clip with screw driver.

2.



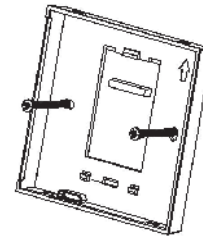
Open the front cover. Take off the wires.

3.



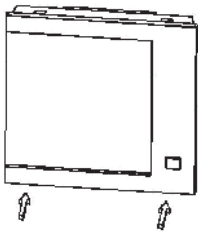
Connect the wire according to the wiring diagram.

4.



Mount the housing to the wall using the two screws in the packing box.

5.



Close the front cover.

**Note:** Make sure the wires are connected per the wiring diagram. Avoid water, mud, paints and other substances from getting into the PCB of thermostat.

**External sensor**

The probe type sensor is included in the EXT-CFU-230-D2/(D4) models.


**Sensor specifications**

Sensing Element	NTC Thermistor, 10 kΩ@25°C, See Table 1 for Characteristics
Range	-40°C...105°C
Maximum Length of Connecting Wires	1.5 m
Ambient / Storage Temperature Limits	-10°C...40°C (avoid air corrosion or sunlight)
Ambient / Storage Humidity	≤75% RH
Dimensions	See Fig. 1: Dimensions in mm

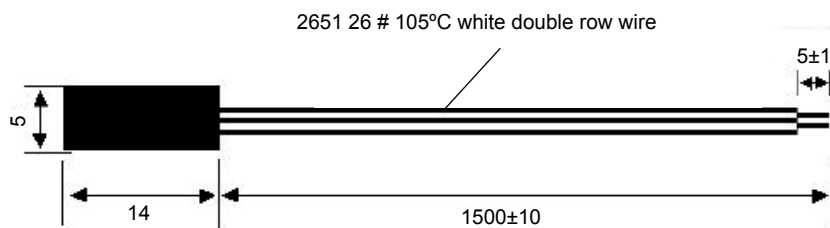


Fig. 1

**Table 1 - Resistance versus Temperature**

Temperature °C	Resistance Ω	Temperature °C	Resistance Ω	Temperature °C	Resistance Ω	Temperature °C	Resistance Ω
0	32116	11	18892	21	11939	31	7716
1	30570	12	18026	22	11418	32	7396
2	29105	13	17204	23	10921	33	7090
3	26399	14	16423	24	10418	34	6798
4	26399	15	15681	25	10000	35	6520
5	25150	16	14976	26	9571	36	6255
6	23965	17	14306	27	9164	37	6002
7	22842	18	13669	28	8775	38	5760
8	21776	19	13063	29	8405	39	5529
9	20764	20	12487	30	8052	40	5309
10	19783						