

## Overview of product

New generation CFU-D series designed for commercial and residential fan coil applications for 2- and 4-pipe system. Modern design suits for all decor and wall box.

## Features

- Large LCD with orange backlight
- Universal voltage input
- Last status memory function
- Temperature display offset
- Setpoint limit adjustable
- Low temperature protection
- Energy saving with economy mode
- Input for external sensor and key card switch
- Suits both US and BS junction box
- Auto or manual 3 fan speed
- Open-close control by 2-wire or 3-wire actuator
- Drive valve to close when switch off



## Model selection

e.g. CFU - D 2 2 2

Fan coil thermostat series	CFU
LCD type with push buttons	D
2-pipe system	2
4-pipe system	4
External sensor and occupancy	2
Cooling only	1
Cooling and/or heating	2

D2 series	Cooling only	Cooling or heating	3 Fan speed	1 Fan speed	External sensor	Occupancy contact
CFU-D221	●		●		●	●
CFU-D222		●	●		●	●
CFU-D221-SS*	●			●	●	●

\*-SS: Single fan speed available on request

D4 series	Cooling only	Cooling and heating	3 Fan speed	1 Fan speed	External sensor	Occupancy contact
CFU-D422		●	●		●	●

## Technical data

Model	CFU-D221-SS CFU-D221 CFU-D222 CFU-D422	Cooling only, 1 fan speed, external sensor and occupancy contact Cooling only, 3 fan speed, external sensor and occupancy contact Cooling or heating, 3 fan speed, external sensor and occupancy contact Cooling and heating auto changeover, 3 fan speed, external sensor and occupancy contact
Nominal voltage	AC 100...240V, 50/60Hz	
Nominal voltage range	AC 85...264V	
Temperature display range	0...40°C, 0.5K per step (< 0°C : LO, > 40°C : HI)	
Sensing element	Built-in : NTC thermistor, 100kΩ@25°C External : NTC10kΩ@25°C, maximum cable length 10m (Probe type sensor, EXT-TN-1072532, cable length 2m, optional)	
Fan speed control	Low ( I ), Middle ( II ), High ( III ) and Auto speed	
Setpoint range	5...35°C (factory default, 22°C)	
Setpoint limit	Adjustable from 5...35°C (factory default, lower setpoint : 5°C, upper setpoint : 35°C) Interlock between lower and upper setpoint limit, LSP < USP by 1K	
Economy setpoint	Cooling range : 25...30°C (factory default : 28°C) Heating range : 15...20°C (factory default : 15°C)	
Switching differential	1K (cooling and heating)	
Deadband	2K (D4 series only)	
Display temperature offset	±3K (-3, -2, -1, 0, +1, +2, +3)	
Load rating	Fan speed output : 3A resistive, 1A inductive, AC 250V, 50/60Hz Relay output : 3A resistive, 1A inductive, AC 250V, 50/60Hz (D4 series 1A)	
Control signal	Open-close control by 3-wire or spring return by 2-wire	
Occupancy contact	Voltage free contact input	
Ambient temperature	Operating : 0...40°C Storage : 0...45°C	

**Technical data (con't)**

Ambient humidity	Max. 90% RH, non-condensing
Wiring connection	Terminal wiring 0.5...1.0 mm <sup>2</sup>
Agency approval	LVD - CE according to 2006/95/EC EMC - CE according to 2004/108/EEC
Material	Fire-retardant PC, self-extinguishing: UL 94-V0
Degree of protection	IP30
Weight	0.16 kg
Dimensions (LxWxH)	110 x 84 x 28mm

**Operation**

<b>Mode</b>	On / off, cooling ❄️ / heating 🔥 Press <b>⏻</b> button once to switch on; press and hold for 2 seconds to switch off. Press <b>M</b> button to switch between cooling or heating mode. *For CFU-D422, auto changeover between cooling and heating according setpoint.
<b>Fan speed</b>	3 fan speed ( Low 🌀, Middle 🌀, High 🌀 ) and Auto 🌀 ( 🌀 ▶ 🌀 ▶ 🌀 ) Auto fan speed is determined by temperature between setpoint and ambient temperature; i.e. 1K - Low 🌀; 2K - Middle 🌀; 3K - High 🌀.
<b>Backlight</b>	Backlight lights for 120 seconds when pressing any button.
<b>Valve output</b>	🌀 icon appears when valve open.
<b>Memory</b>	Last status (e.g. mode, setpoint, fan speed) will be resumed after power failure or switch off.
<b>Occupancy contact</b>	Contact OPEN, thermostat runs in normal mode. Contact CLOSE, thermostat runs in economy mode.
<b>Display selection</b>	Setpoint or ambient temperature, adjustable in p-setting mode.
<b>Temperature offset</b>	Ambient temperature display can offset, from -3K to +3K, in p-setting mode.
<b>Low temperature protection (Defrost)</b>	When thermostat is switched OFF and ambient temperature < 5°C, thermostat automatically starts in heating mode until ambient temperature rise to 7°C.
<b>Sensor select</b>	Built-in or external sensor, adjustable in p-setting mode.
<b>Key lock</b>	Press and hold <b>▲</b> and <b>▼</b> for 5 seconds, all buttons are locked when <b>🔒</b> appears. When key lock is active, no function will perform when any button is pressed. Press and hold <b>▲</b> and <b>▼</b> for 5 seconds to unlock.
<b>Error code</b>	E1 : Built-in sensor short circuit.      E2 : Built-in sensor open circuit. E3 : External sensor short circuit.      E4 : External sensor open circuit.

**Parameter setting mode**

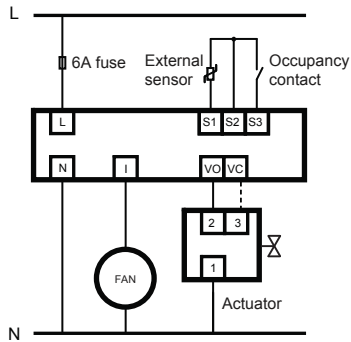
<b>Entering p-setting mode</b>	When thermostat is switched OFF, press and hold <b>▲</b> for 5 seconds, <b>⚙️</b> appears indicating thermostat is in p-setting mode.
<b>Operate in p-setting mode</b>	Press <b>⏻</b> to change setting parameters, press <b>▲</b> and <b>▼</b> to change setting; <i>d1 SP &gt; DSEt &gt; dEFr &gt; USP &gt; LSP &gt; SEn &gt; COOL* &gt; HEAt*</i>
<b>Quit p-setting mode</b>	When no button is pressed over 10 seconds, setting will be saved and quit p-setting mode.

<i>d1 SP</i>	Display selection : ambient temperature "rEt" / setpoint "SP"	( factory default rEt )
<i>DSEt</i>	Temperature offset : -3, -2, -1, 0, 1, 2, 3	( factory default 0 )
<i>dEFr</i>	Defrost - low temperature protection : On / OFF	( factory default OFF )
<i>USP</i>	Upper setpoint limit : 10...35°C	( factory default 35°C )
<i>LSP</i>	Lower setpoint limit : 5...30°C	( factory default 5°C )
<i>SEn</i>	Sensor selection : external "Et" / built-in "i nEt"	( factory default i nEt )
<i>COOL*</i>	Cooling setpoint in economy mode : 25...30°C	( factory default 28°C )
<i>HEAt*</i>	Heating setpoint in economy mode : 15...20°C	( factory default 15°C )

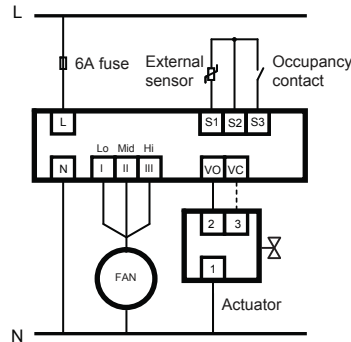
\*Available on corresponding models

Wiring diagram

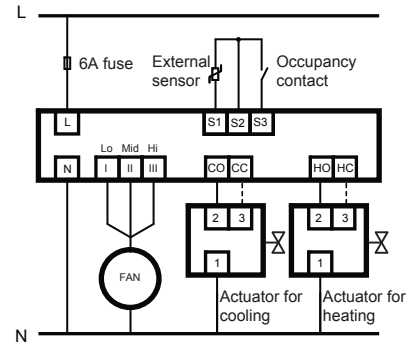
CFU-D221-SS



CFU-D221 / D222



CFU-D422

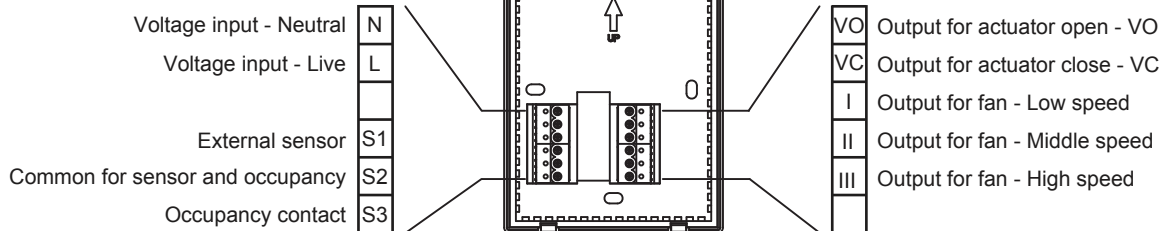


2-wire actuator connection

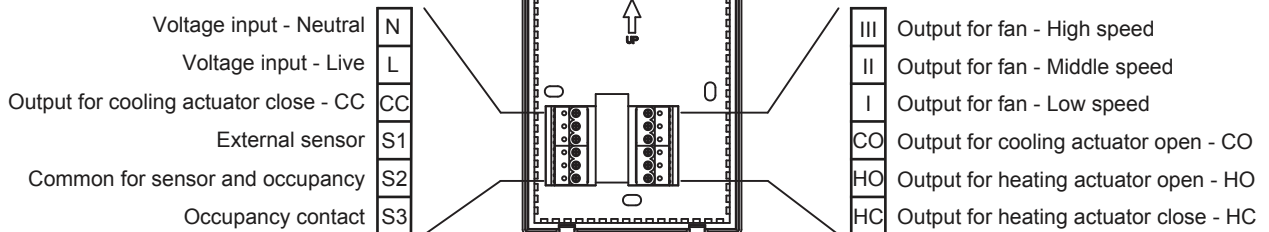
3-wire actuator connection

Terminals

D2 series

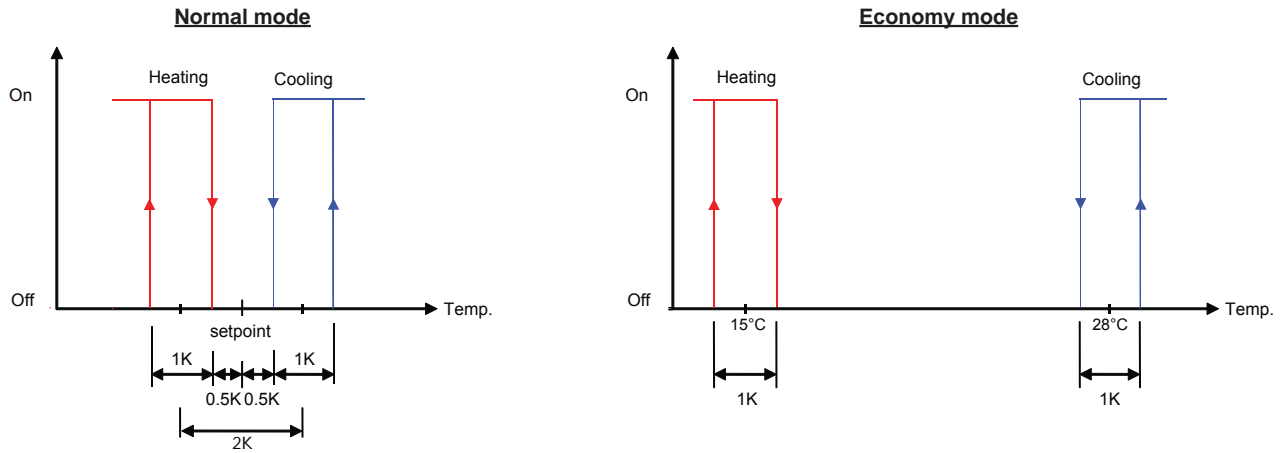


D4 series



Terminals	S1 and S2	S2 and S3
Function	External sensor	Occupancy contact

Auto changeover for D4 series



Auto changeover is determined by setpoint and ambient temperature. When thermostat is in normal mode, auto changeover mechanism is as follows:

Cooling actuator turns on when ambient temperature above 1.5K of setpoint. When ambient temperature reaches 0.5K above setpoint, cooling actuator turns off.

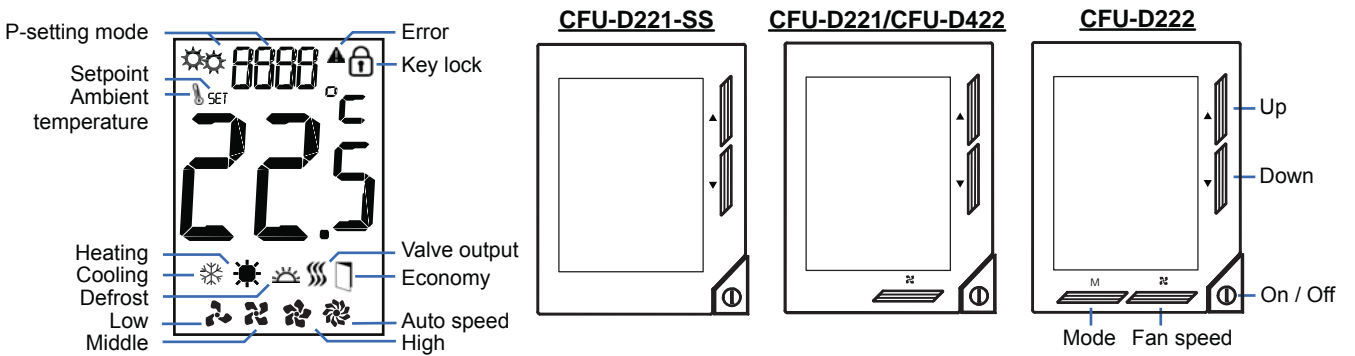
Heating actuator turns on when ambient temperature below 1.5K of setpoint. When ambient temperature reaches 0.5K below setpoint, heating actuator turns off.

The deadband is 2K in normal mode.

When thermostat is in economy mode, cooling setpoint set to 28°C (factory default, adjustable from 25...30°C), heating setpoint set to 15°C (factory default, adjustable from 15...20°C).

\*Auto changeover feature is available in D4 series only

LCD display and buttons



Dimensions (mm)

