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HVAC Controls   Electric Actuators   Actuated Valves
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Fan Coil Controllers:
Selecting the right one for your application

Selecting the right controller requires a certain knowledge of the client's requirements. Some features can be overlooked and discarded, but in most cases, it is required. Here are some of the selection criteria;

- BACnet or Modbus communication, or stand-alone.
- Wall mount or unit mount (usually dictated by the application complexity)
- Schedule
- Humidity Control
- Point count - Enough inputs & outputs - Connected devices along with the signals required.
- Price
- Appropriate control sequence(s)
- Special features required
- Power supply (24Vac or 120/240Vac)

The **TFC wall mount controller series** is ~~are~~ the easiest to configure due to its simple design. This controller does not hold as many options as its peers making it perfect for small, straightforward applications. It is the only stand-alone fan coil controller available which is reflected in the pricing. Unless your goal is to keep it really simple, in the instance where BACnet is required, I suggest using the TUCB series which is slightly more complex, but favourable due to increased capabilities.

The main drawback of the TFC controller is the loss of outputs when configuring. If your application calls for On/Off Cool and On/Off Heat, the modulating outputs for cooling and heating are lost. The TFC only has options for one **or** the other.

There are four (4) models available for stand-alone applications;

- TF**C**24F3XYZ**1**: Temperature Only
- TF**C**24F3XYZ**3**: Temperature Only with Integrated Schedule
- TF**H**24F3XYZ**2**: Temperature & Humidity (Humidity sensor integrated into the thermostat)
- TF**H**24F3XYZ**1**: Temperature & Humidity (Duct humidity sensor supplied)

Note that the TFC24F3XYZ3 is the only fan coil controller with an integrated schedule accessible via the thermostat. The EFCB & TUCB controllers have a BACnet Schedule but require a BMS system to be able to modify the schedule.

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The models with humidity sensors can dehumidify but they cannot humidify.

There are three (3) BACnet models available;
- TF**C**B24F3XYZ**1**: Temperature Only
- TF**H**B24F3XYZ**2**: Temperature & Humidity (Humidity sensor integrated into the thermostat)
- TF**H**B24F3XYZ**1**: Temperature & Humidity (Duct humidity sensor supplied)

The configuration structure is a little different from the TUCB and EFCB series. It is the only controller with 2-pipe or 4-pipe configuration which is equivalent to changeover ramp in other controllers. It is also the only controller that uses Reheat which is equivalent to Heating Ramp 2.

The input options are limited to Remote sensor, Changeover sensor, Humidity sensor (models with remote humidity sensors only) and Occupancy contact

The **TUCB wall mount controller series** has many more options than the TFC series, which usually results in more complex configurations. This controller is identical to the EFCB series controllers with a fewer point count and a few more features & options. The pricepoint is lower than the EFCB series but identical to the BACnet TFCB series controllers.

TUCB controllers have a few features that the EFCB series does not have;
- Heat Pump Option.
- CH1 ramp allows an output to modulate in cooling and one fixed setpoint in heating (adjustable).
- Fan configuration when in night setback (Auto, Low, Medium or High speed).
- Door/Window contact with the option to disable the setpoint or maintain the setpoint.

There are three (3) models available (one of them is not on the website);
- TU**C**B24C6X2: Temperature & Optional External Humidity Sensor
- TU**H**B24C6X2: Temperature & Integrated Humidity Sensor
- TUCB24-**PS1**: Temperature & Optional External Humidity Sensor & Fan modulation based on pressure (pressure units in Pascal).

EFCB unit mount controllers have the largest point count and were designed to fit in the unit control panel to limit wire lengths. The thermostat uses a 3 wire connection to the controller which is the longest run you will have (limited to 50ft). The EFCB series require the TFLH24 to access the humidity features.

The EFCB controller series has a few features that are not available on the other fan coil controllers;
- Line voltage power supply
- Line voltage fan contacts
- Line voltage digital (binary) outputs
- Integrated transformer (line voltage models)
- Two (2) floating signals (does not have to be on changeover)
- Multiple temperature sensor readings (viewed from BACnet)
- Segmented configuration menu rather than linear

There are 18 possible configurations of an EFCB series controller. The main differences between the models are;
- 2 or 4 Digital outputs (outputs use the same type of voltage as the supply)
- 24Vac, 120Vac or 240Vac power supply
- The TFL can be with temperature only, integrated temperature & humidity or integrated temperature sensor & an external duct mount humidity sensor.

Please refer the table below outlining the major differences between controller models.

Note: The functions of the different ramps available are as follows;
- Cooling Ramp 1: Used in the dehumidification process as well as temperature control
- Cooling Ramp 2: Used for temperature control only
- Heating Ramp 1: Used for temperature control only
- Heating Ramp 2: Used in the dehumidification process as well as temperature control

	TFC24F3XYZ1	TFC24F3XYZ3	TFH24F3XYZ1	TFH24F3XYZ2	TFCB24F3XYZ1	TFHB24F3XYZ1	TFHB24F3XYZ2	TUCB24C6X2	TUHB24C6X2	TUCB24-PS1	EFCB10TU2+TFL24	EFCB10TU4+TFL24	EFCB11TU2+TFL24	EFCB11TU4+TFL24	EFCB12TU2+TFL24	EFCB12TU4+TFL24	EFCB10TU2+TFLH24-INT	EFCB10TU4+TFLH24-INT	EFCB11TU2+TFLH24-INT	EFCB11TU4+TFLH24-INT	EFCB12TU2+TFLH24-INT	EFCB12TU4+TFLH24-INT	EFCB10TU2+TFLH24-EXT	EFCB10TU4+TFLH24-EXT	EFCB11TU2+TFLH24-EXT	EFCB11TU4+TFLH24-EXT	EFCB12TU2+TFLH24-EXT	EFCB12TU4+TFLH24-EXT
1 to 3 Speed Fan	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
0-10Vdc ECM Fan (temperature)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
0-10Vdc ECM Fan (pressure)										x																		
Remote Temperature sensor (10kΩ)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Remote Temperature sensor (0-10Vdc)								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Changeover Temperature Sensor (10kΩ)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Occupancy Contact	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Integrated Schedule (via user interface)		x																										
Integrated Schedule (BACnet only)								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Integrated Humidity Sensor			x		x					x							x	x	x	x	x	x						
Remote Humidity Sensor		x		x				x	x	x							x	x	x	x	x	x	x	x	x	x	x	x
Dehumidification Sequence			x	x		x	x	x*	x	x*							x	x	x	x	x	x	x	x	x	x	x	x
Humidification Sequence								x*	x	x*							x	x	x	x	x	x	x	x	x	x	x	x
24Vac Power Supply	x	x	x	x	x	x	x	x	x	x	x	x					x	x					x	x				
120Vac Power Supply													x	x					x	x					x	x		
240Vac Power Supply															x	x					x	x					x	x
120Vac Digital Contact													x	x					x	x					x	x		
240Vac Digital Contact															x	x					x	x					x	x
Floating 2 Pipe (Changeover)	x	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
On/Off Cooling	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 Stage Cooling or more								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modulating Cool	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
On/Off Perimeter Heat (no Fan)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 Stage Heating	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 Stage Heating or more								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pulse Heat	x	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pulse Perimeter Heat (no fan)	x	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modulating Heat	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Direct/Reverse Acting								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Heat Pump Option								x	x	x																		
BACnet Communication					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modbus Communication								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

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