

# ELECTRONIC THERMOSTATS



## Controls Thermostats

### Electronic thermostats:

The Carrier electronic thermostats are designed to control and optimise the operation of hydronic terminal fan coil units. They exist in two versions that match all terminal fan coil configurations:

	Type A	Type B
2-pipe	x	
2-pipe changeover	x	
2-pipe and electric heater		x
2-pipe changeover and electric heater		x
4-pipe		x

### Features

- Fan operation - With the fan speed selector, fan mode can be set either manually or automatically. In the manual mode it is possible to select three fan speeds (low/medium/high) according to personal preference. In the auto mode fan speed is regulated by a microprocessor in the control, based to the temperature chosen.
- Temperature selector - This is designed to maintain the temperature at the desired level. The reference value at the centre of the range is 20°C. By turning the knob towards the symbol (-) the temperature is reduced from the original setting (minimum value is 10°C). By turning the knob towards the symbol (+), the temperature is raised from the original setting (maximum value is 30°C).
- Energy saving mode - This function is especially useful when air conditioning at night or in rooms where the user is likely to be absent for a longer period of time. In this case, pushing the button raises the temperature during cooling by 4°C and lowers it during heating by 4°C.
- Seasonal changeover
  - Manual - Selection of heating/cooling is done manually by pushing the button on the control.
  - Centralised (only for type A control) - Centralised seasonal changeover is possible in two ways:
    - by a switch located on the central control panel that allows heating/cooling mode changeover (to be provided by the installer).
    - by a temperature sensor located in contact with the entering water pipe
  - Automatic, based on air temperature (only for type B control) - The automatic seasonal changeover allows automatic switching of the fan coil operating mode to cooling or heating, depending on the temperature set by the user and on the room temperature.
- External contact - The control has a 230 V input that can be used as window contact or presence detector. When such a signal is activated (presence of line voltage on the terminal block contact) the control is set to OFF mode. As a consequence, all outputs (fan, valves etc.) are disconnected, and only frost protection is active, if switched ON by the appropriate dip-switch.
- Frost-protection - This function keeps the temperature from dropping below 7°C in rooms not used for long periods of time.

Electronic fan coil controllers – quick reference table



	Thermostats	HDB	NTC
<b>Control algorithms</b>			
On-off	x	x	
Proportional-integral			x
<b>Valve management</b>			
Air flow control only (no valve)	x	x	
On-off actuators	x	x	x
Proportional valves			o
<b>Fan control</b>			
Three speeds	x	x	x
Optimum fan speed selection	x	x	x
Variable speed			o
<b>Main functions</b>			
Setpoint control	x	x	x
Occupied/unoccupied mode	x	x	x
Frost protection mode	x	x	x
Window contact input	x	x	x
Measurement of water inlet temperature for automatic seasonal changeover (2 pipes)	Type A	x	x
Automatic seasonal changeover (4 pipes and 2 pipes + electric heater)	Type B	x	x
Manual changeover	x	x	x
Frost protection mode	x	x	x
Continuous ventilation within dead-band	x	x	x
Periodical ventilation within dead-band	x	x	x
Unit grouping		x	x
Louvre control		x	x
On-site configuration		x	x
Supply air temperature monitoring limiting			x
Communication (CCN)			x
Electrical heater loadshed			x
Dirty filter alarm			x
Alarm reporting			x
IAQ control			o
Demand control ventilation (DCV)			o
Free cooling mode			o
<b>User interface</b>			
Digital display		x	x
Automatic or manual fan speed control	x	x	x
Operating mode selection	x	x	x
Occupancy (eco) button	x	x	x