CONTROL SYSTEM FOR SEAT

A control system for use with a ventilated portion of a seat includes a control module and a humidity sensor. The control module is configured to be coupled to at least one of an air mover and a heater of the ventilated portion. The humidity sensor is coupled to the control module and is configured to be located near the occupant when the occupant is seated on the seat. The humidity sensor is configured to send a signal to the control module representative of the humidity level in the area of the humidity sensor. The control module is configured to control the operation of the at least one of the air mover and the heater based at least in part on the signal received from the humidity sensor.
CONTROL SYSTEM FOR SEAT

CROSS-REFERENCE TO RELATED PATENT APPLICATIONS

[0001] This application claims the benefit of, and priority to, U.S. Provisional Patent Application No. 60/667,630, filed Apr. 2, 2005, which is incorporated by reference herein.

BACKGROUND

[0002] The present invention relates generally to the field of seating for vehicles. More particularly, the present invention relates to systems for controlling the operation of ventilated seats.

[0003] Ventilated and similar types of seats that adjust the environment around the occupant of the seat in some manner (hereinafter referred to collectively or individually as “environmental seats”) are being offered as a feature in more of today’s vehicles. The precise manner of operation of environmental seats varies from seat to seat. Many of these seats utilize a system that includes a heater and a fan that blows or moves air through certain portions of the seat. Some systems blow air through the seat and onto the occupant of the seat. Other systems are configured to draw air from around the occupant through the seat and discharge it into the vehicle cabin. Still other systems blow or draw air into one portion of the seat and the air travels through the seat and exits via a discharge opening, typically directed away from the occupant. The primary object of each system is to provide a more comfortable environment for the occupant of the seat. To continuously maintain a comfortable environment for the occupant, the point at which the blower, fan, or heater is activated, the extent to which the blower or heater is activated, and the time during which the blower or heater is activated need to be controlled in some fashion.

[0004] Different techniques have been devised to control the manner in which the blower, fan, and heater operate. For example, in some systems, control of the fan and heater is dictated completely by the occupant, who turns the fan and heater on and off to manually adjust the setting of each feature as desired. Although these systems give the occupant control over the operation of the systems by allowing the occupant to set the output of the fan or heater to given set points, it may become burdensome on the occupant of the seat to continually adjust the output of the fan and/or heater. Other systems utilize a thermal switch or control module that turns the heater and/or the blower on or off when the seat reaches a certain temperature. Still other systems make use of a control module or thermal switch to turn off one of the features of the environmental seat (e.g., the heater) but leave another feature in the complete control of the occupant (e.g., the fan).

[0005] Although temperature is an important factor in the comfort of the occupant, it is not the only factor that affects the comfort of the occupant. Accordingly, those environmental seating systems that control the operation of the fan and/or heater based solely on temperature, such as the temperature at the heating or cooling element, may not be controlling the environmental seating system in a manner that provides the most comfort and convenience for the occupant.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is a schematic illustration of an environmental seat assembly according to one exemplary embodiment.

[0007] FIG. 2 is a schematic illustration of the control system of an environmental seat assembly according to an exemplary embodiment.

[0008] FIG. 3 is a graph illustrating the operation of the fan relative to the humidity levels for a control system according to one exemplary embodiment.

DETAILED DESCRIPTION OF THE EXEMPLARY AND ALTERNATIVE EMBODIMENTS

[0009] How various objects or features of the present inventions are accomplished, individually, collectively or in various subcombinations will be described below in conjunction with the figures. Generally, however, they are accomplished by controlling the operation of an environmental seat with a control system that bases the operation of a portion of the seat that alters the environment on or around the seat at least in part on the level of humidity on, around, or near the occupant of the seat. For simplicity, the portion of the seat that alters the environment on or around the seat will be referred to generally as the “ventilated portion” of the seat, it being understood that the term is not intended to be a term of limitation and that the so-called “ventilated portion” could include any combination of environment altering components (e.g., heaters, air conditioners, blowers, fans, air movers, and/or other components, regardless of whether they are dedicated solely to the seat or used for other purposes as well (e.g., the HVAC system of the vehicle)).

[0010] A typical environmental seat generally includes a ventilated portion that provides the seat with the ability to alter or adjust the environmental parameters on or around the seat and make the occupant more comfortable. The configuration of the ventilated portion of the environmental seat may vary from seat to seat, but according to various exemplary and alternative embodiments includes structure that allows air to move through the seat, a fan or blower to push or pull the air through the seat, a seat heater, and/or other components.

[0011] According to one exemplary embodiment, the control system is configured to control the operation of the fan, the heater, and optionally other components of the ventilated portion of the environmental seat. The control system includes at least one humidity sensor and a control module. The humidity sensor is generally located within the seat, near where the occupant contacts the seat, and is configured to measure the humidity levels around the occupant. The control module monitors the humidity levels sensed by the humidity sensor, and based on a preset or owner-programmed set of operating instructions, controls the operation of the fan, the heater, and/or other components of the ventilated portion of the environmental seat. The control system may optionally include one or more temperature sensors or other sensors that are also monitored by the control module and that also affect how the control module controls the operation of the fan, the heater, and/or the other components of the ventilated portion of the seat.

[0012] The control system may be configured so that the control module automatically operates the ventilated portion
of the seat, without any input or with only minimal input from the occupant of the seat. The control system may alternatively or additionally be configured so that an occupant may interact with an interface of the control system and at least partially dictate the operation of the ventilated portion of the environmental seat through the interface, such as by turning the ventilated portion on or off, by setting a comfort point, etc.

[0013] Referring generally to the figures and in particular to FIG. 1, an environmental seat assembly 10 is shown according to one exemplary embodiment. Environmental seat assembly 10 includes a seat 12 and a control system 14.

[0014] Seat 12 generally includes a backrest portion 16 and a seat cushion portion 18. Backrest portion 16 and seat cushion portion 18 may each take any one of a variety of well known or novel configurations. Generally, however, each of backrest portion 16 and seat cushion portion 18 is constructed primarily of a frame and a foam core that are surrounded by a trim layer of fabric, leather, or other material. One or both of backrest portion 16 and seat cushion portion 18 may include a ventilated portion 20. Ventilated portion 20 includes the structure and components that provide backrest portion 16 and/or seat cushion portion 18 with the ability to change the environmental parameters of seat 12. The structure and components of ventilated portion 20 may be configured to direct air toward or away from an occupant of seat 12, to condition (e.g., heat, cool, filter, etc.) the air that moves through ventilated portion 20, to heat or cool the portions of backrest portion 16 and seat cushion portion 18 that an occupant of seat 12 contacts while seated on seat 12, and/or to otherwise alter the environment around seat 12.

[0015] According to various alternative and exemplary embodiments, the ventilated portion may take any one of a variety of different configurations and may include one of a variety of different components and features. For example, according to various alternative and exemplary embodiments, the ventilated portion may include one or more fans or blowers (e.g., air movers) for pushing or pulling air through the ventilated portion (and/or through other portions of backrest portion 16 and seat cushion portions 18), may include various layers of different materials to allow the ventilated portion to support the weight of an occupant while at the same time allowing air to move through the ventilated portion, may be coupled to the existing heating/ventilation/air conditioning system of the vehicle, may include a device for heating or cooling the air that moves through the ventilated portion or for heating or cooling a portion of the ventilated portion, and may be incorporated into backrest portion 16 and/or seat cushion portion 18 or may be configured to rest upon backrest portion 16 and/or seat cushion portion 18. For example, according to one exemplary embodiment, the ventilated portion may take the configuration described in U.S. patent application Ser. No. 09/755,505, filed Jan. 5, 2001, which is incorporated by reference herein. According to another exemplary embodiment, the ventilated portion may take the configuration described in U.S. patent application Ser. No. 09/755,506, filed Jan. 5, 2001, which is incorporated by reference herein. According to still another exemplary embodiment, the ventilated portion may take the configuration described in U.S. patent application Ser. No. 09/755,637, filed Jan. 5, 2001, which is incorporated by reference herein. According to other various alternative and exemplary embodiments, the ventilated portion may take any one of a variety of different known or novel configurations.

[0016] Referring now to FIGS. 1 and 2, control system 14 is a system of sensors, processors or controllers, interfaces, etc. that controls the operation of ventilated portion 20 based on input from the occupant of seat 12 and/or preset or programmed operating instructions. According to one exemplary embodiment, control system 14 includes a temperature sensor 22, a humidity sensor 24, a control module 26, a power supply 28, and an interface 30.

[0017] Temperature sensor 22 (e.g., detector, sensing element, etc.) is a device that senses the temperature of the surrounding environment and converts the sensed temperature into an input signal that is sent to control module 26. According to one exemplary embodiment, control system 14 includes at least one temperature sensor 22 intended to sense or measure the temperature of ventilated portion 20 or the occupant near where the occupant contacts ventilated portion 20. In order to provide an accurate reading of that temperature, temperature sensor 22 is preferably located within ventilated portion 20 at a position on or near where the occupant contacts ventilated portion 20 (e.g., such as in a portion of the trim layer of seat 12).

[0018] Humidity sensor 24 (e.g., detector, sensing element, moisture sensor, etc.) is a device that senses the humidity of the surrounding environment and converts the sensed humidity into an input signal that is sent to control module 26. According to one exemplary embodiment, control system 14 includes a single humidity sensor 24 intended to sense or measure the humidity of ventilated portion 20 (or the air within ventilated portion 20 or the air around the occupant) near where the occupant contacts ventilated portion 20. In order to provide an accurate reading or estimate of that humidity level, humidity sensor 24 is preferably located within ventilated portion 20 at a position on or near where the occupant contacts ventilated portion 20 (e.g., such as in a portion of the trim layer of seat 12).

[0019] According to various exemplary and alternative embodiments, the control system may include one or more temperature sensors and/or humidity sensors at different locations within the ventilated portion, the backrest portion, and/or the seat cushion portion of the seat. For example, one or more temperature sensors and/or humidity sensors may be provided in both of the backrest and seat cushion portions of the seat, in only one of the backrest and seat cushion portions of the seat, under a perforation in the trim layer of the seat, in a seam between one or more of the different bolsters of the seat, in a baffle of the seat, within or under a membrane applied to the trim layer of the seat, within the path of air flowing through the ventilated portion, within the core of either or both of the backrest and seat cushion portions of the seat, and/or in other locations on, in, or around the seat in order to obtain a reading of the temperature and/or humidity levels of the air, a portion of the seat, or the occupant. According to other various alternative and exemplary embodiments, the temperature sensors and/or the humidity sensors may take one of a variety of different sizes, shapes, and configurations.

[0020] Control module 26 (e.g., processor, microprocessor, computer, controller, electronic control unit, microcontroller, etc.) is an electronic device (or multiple electronic
devices coupled together) that monitors or measures the value or values of one or more variable quantities or conditions and that sends signals to (e.g., output signals), or controls the operation of, one or more components of ventilated portion 20 based on the value of the variable quantities or conditions. According to one exemplary embodiment, control module 26 monitors or measures the state of temperature sensor 22, humidity sensor 24, and interface 30 and controls the operation of one or more components of ventilated portion 20 based on the state of temperature sensor 22, humidity sensor 24, and interface 30. Depending on the precise configuration of ventilated portion 20, control module 26 may be configured to control the speed of any fan or blower, the direction in which the fan or blower blows the air, the operation of any seat heating device, the operation of any vents or valves that control the flow of air that may be provided from a source not dedicated solely to ventilated portion 20 (e.g., the vehicle’s HVAC system); or the operation of other components of ventilated portion 20. According to one exemplary embodiment, control module 26 is programmed with a set of operating instructions that dictate how control module 26 will operate the various components of ventilated portion 20 (e.g., the fan, the heater, etc.) when temperature sensor 22, humidity sensor 24, and interface 30 detect certain conditions.

According to one exemplary embodiment, control module 26 may be configured so that an occupant of seat 12 may program control module 26 to operate ventilated portion 20 in the manner desired by the occupant. According to another exemplary embodiment, control module 26 may be programmed with multiple sets of operating instructions, and an occupant of the vehicle seat may be able to instruct control module 26 to operate in accordance with the particular set of operating instructions most preferred by the occupant. According to various alternative and exemplary embodiments, the control module may monitor or control one of a variety of different variables or conditions, and may control the operation of the ventilated portion of the seat based on one or more different variables, including the temperatures (e.g., of the seat, of the air, of the occupant) at different locations within or around the seat, the humidity levels at different locations within or around the seat or the occupant, the location of an occupant on the seat, the flow rate of the air moving into or out of the ventilated portion, whether the seat is occupied, or one or more of a variety of other variables. According to other various alternative and exemplary embodiments, the control module may take one of a variety of different configurations, and may control or send signals to, receive signals from, or monitor, one or more of a variety of different components of environmental seat assembly 10. According to still other various alternative and exemplary embodiments, the control module may or may not be programmable.

[0021] Power supply 28 provides a source of power that allows control module 26 to operate. According to one exemplary embodiment, power supply 28 is the electrical power supply of the vehicle in which environmental seat assembly 10 is located, such as the battery of the vehicle or the alternator of the vehicle. According to an alternative embodiment, the power supply may be separate from the electrical power supply of the vehicle. According to other various alternative and exemplary embodiments, the power supply may be a portable battery pack, a solar power source, or one or more of a variety of other available power sources. For example, a solar power source may be utilized to provide a source of power to the control module 26 (and to certain components of the ventilated portion such as a fan or heater) while the vehicle is not running and the control module 26 may be configured to control the operation of the ventilated portion of the seat during that time so that the seat will be comfortable for the occupant when the occupant returns to the vehicle.

[0023] Interface 30 (e.g., MMI (man-machine interface), HMI (human-machine interface), switch panel, control panel, other switch or selector device, etc.) is a device that allows an occupant of the vehicle to communicate with control module 26 and thereby adjust the operation of ventilated portion 20 by manipulating interface 30 in a particular manner. According to one exemplary embodiment, interface 30 includes a switch or actuation device that allows the occupant to adjust the speed of a fan or blower of ventilation portion 20 and a switch or actuation device that allows the occupant to adjust the amount of heat generated by a heater of ventilation portion 20. According to various alternative and exemplary embodiments, the interface may include a variety of different switches, knobs, and/or other actuation devices that allow the occupant to control one or more of the different components of environmental seat assembly 10, including ventilation portion 20, backrest portion 16, and seat cushion portion 18.

[0024] For purposes of illustration only, the operation of environmental seat assembly 10 will now be described in connection with a particular embodiment of ventilated portion 20 and control system 14. However, it should be noted that the principles of operation described in connection with these embodiments may be applied to other embodiments of seat assembly 10, ventilated portion 20, and control system 14 and are in no way limited to the particular embodiment described below.

[0025] According to one exemplary embodiment, ventilated portion 20 includes, in addition to structure that allows for the movement of air through ventilated portion 20, a multi-speed fan 32 configured to blow air into and/or out of ventilated portion 20 and a heater 34 configured to heat the surface of ventilated portion 20 in the area the occupant will contact when he or she sits on seat 12. Control system 14 includes temperature sensor 22, humidity sensor 24, control module 26, power supply 28, and interface 30.

[0026] In this particular embodiment, control module 26 generally controls how fan 32 and heater 34 of ventilated portion 20 operate based on the readings or signals control module 26 receives from temperature sensor 22, humidity sensor 24, and/or from interface 30. Depending on the signals control module 26 receives from temperature sensor 22, humidity sensor 24, and on interface 30, and the programming of control module 26, control module 26 may cause fan 32 to shut off, turn on, reverse direction, speed up, or slow down. Similarly, control module 26 may cause heater 34 to shut off, turn on, increase the generation of heat, or decrease the generation of heat.

[0027] How control module 26 causes fan 32 and heater 34 to operate when temperature sensor 22 and/or humidity sensor 24 sense a specific condition or state, or when the vehicle occupant moves interface 30 into a certain position, will depend on the programming or configuration of control module 26. This programming or configuration of control
module 26 may be changed or altered to provide a comfortable seating system in a variety of different climates, surroundings, and situations. Thus, a first control module 26 of a first environmental seat assembly 10 used in a first environment may be configured to operate differently than a second control module 26 in a second environmental seat assembly 10 used in a second environment. 

[0028] According to one exemplary embodiment, control module 26 does not include interface 30 and is configured to operate ventilated portion 20 of seat 12 automatically based solely on the signals received from temperature sensor 22 and/or humidity sensor 24. In this embodiment, the occupant does not need to turn on or off, or in any way adjust the operation of, any component of ventilated portion 20. Instead, control module 26 is configured or programmed to turn the components on or off, or otherwise adjust their operation, based on the signals control module 26 receives from temperature sensor 22 and/or humidity sensor 24. As the signals from temperature sensor 22 and humidity sensor 24 change, control module 26 will cause fan 32 and heater 34 to operate in a manner that maintains a comfortable environment for the occupant of seat 12. FIG. 3 illustrates graphically one example of how control module 26 might control the operation of fan 32 based on humidity readings received from humidity sensor 24. In this example, control module 26 is configured to cause the speed of fan 32 to increase as the humidity levels (which are measured by humidity sensor 34) increase, and to cause the speed of fan 32 to decrease as the humidity levels decrease. According to other various alternative and exemplary embodiments, the manner in which control module 26 directs the operation of fan 32 may be based not only on the humidity levels but also on the temperature levels, and/or other variables.

[0029] According to another exemplary embodiment, the control module 26 may be configured to operate ventilated portion 20 either automatically or in response to user input provided by the user or occupant of the vehicle at interface 30. Accordingly, through interface 30, the user may set control module 26 to automatically control the operation of ventilated portion 20 based on a predefined (or programmed) set of operating instructions, the occupant may choose to dictate the operation of ventilated portion 20 by interacting with interface 30, or the occupant may choose to set control module 26 to automatically control one function of ventilated portion 20 (e.g., the operation of the heater) and to dictate the operation of another function of ventilated portion 20 (e.g., the operation of the air mover) by interacting with interface 30. To allow the occupant to dictate the operation of ventilated portion 20 from interface 30, interface 30 may include a switch, knob, or other control device that allows the occupant to adjust the speed of fan 32, a switch, knob, or other control device that allows the occupant to adjust the amount of heat generated by heater 34, and/or one or more other switches, knobs, or other control devices that allow the occupant to control the operation of one or more other components of ventilated portion 20. According to various alternative and exemplary embodiments, one control device of the interface may control more than one component of the ventilated portion of the seat. 

[0030] Individuals may differ with respect to the environment they find most comfortable. To account for this, control module 26 may be programmed to operate differently for different individuals. For example, when a vehicle has two regular drivers, driver A and driver B, driver A may prefer ventilated portion 20 to operate in a slightly different manner than driver B. As just one example, driver A may prefer a slightly hotter and more humid seat environment than driver B. According to one exemplary embodiment, control module 26 may be provided with memory capability and may be programmed with more than one set of operating instructions that correspond to the preferences of different users of seat 12. In this configuration, control module 26 could be programmed to operate in accordance with a first set of operating instructions that are based on the preferences of driver A or in accordance with a second set of operating instructions that are based on the preferences of driver B. Thus, when driver A or driver B is using the vehicle, she instructs control module 26, via interface 30, to operate in accordance with the set of operating instructions that correspond to her driver A preferences, which are stored in a memory device in control module 26 or elsewhere, similar to how multiple seating position preferences of a seat may be stored and recalled. Similarly, when driver B is using the vehicle, she instructs control module 26 to operate according to the set of operating instructions that correspond to her driver B preferences. According to various alternative and exemplary embodiments, the control module may be programmed with three, four, or more than four sets of operating instructions. According to other various alternative and exemplary embodiments, each set of operating instructions may be programmed by a user of the seat, or the control module may be constructed or preprogrammed with several different sets of operating instructions form which a user of the seat may select. 

[0031] According to various alternative and exemplary embodiments, the control system may be configured to control the ventilated portion(s) of seats having one or more of a variety of different components or combinations of components, including one or more fans, one or more seat heaters or cooling devices, one or more air control valves, or one or more of a variety of other devices. Thus, the control system may be used to control the operation of ventilated portions having just one or more fans, ventilated portions having just one or more seat heaters, ventilated portions having both fans and heaters, or ventilated portions having different combinations of fans, blowers, heaters, air conditioners, and other components. According to other various alternative and exemplary embodiments, the control system may include one or more of the same type of sensor, one or more different types of sensors, or various combinations of the same and different types of sensors, and the manner in which the control module controls the operation of the components of the ventilated portion of the seat may be based on the readings or signals the control module receives from any one or more of the sensors. Thus, the control system may include a single humidity sensor, multiple humidity sensors, one or more humidity and temperature sensors, or one or more different combinations of humidity sensors, temperature sensors, pressure sensors, air flow sensors or meters, and other sensors or meters.

[0032] By incorporating at least one humidity sensor 34 into control system 14 and basing the operation of various components of ventilated portion 20 at least in part on the humidity levels, control system 14 is able to dictate the operation of ventilated portion 20 based on humidity levels, which is a factor that influences the level of comfort experienced by the occupant of seat 12. Moreover, locating at
least one humidity sensor 34 near the occupant of seat 12 allows for a more accurate reading of the humidity that is affecting the comfort of the occupant, and thereby allows environmental seat assembly 10 to provide a more comfortable environment for the occupant. Furthermore, a control system that operates ventilated portion 20 based not only on temperature readings, but also on humidity readings will be able to more closely adapt the environment of seat 12 to a state that is the most comfortable for the particular occupant than would a control system that operates ventilated portion 20 based on temperature readings alone. A control system that dictates the operation of ventilated portion 20 based on humidity readings, either alone or in combination with temperature readings, is able to automatically adjust the operation of ventilated portion 20 in a manner that maintains a comfortable environment for the occupant, without the need for any occupant input. Moreover, such a control system may be configured so that it can easily be adapted to the particular comfort requirements of different occupants.

It is important to note that the term “seat” is intended to be a broad term and not a term of limitation. According to various alternative and exemplary embodiments, the control system may be used with any of a variety of seats, stools, beds, couches, furniture, tables, counters, assemblies, arrangements, or other structures into which it may be desirable to incorporate climate control features, and is not intended to be limited to use with automobiles or other vehicles. For example, the seat may be vehicle seating or any of a variety of seat arrangements or other arrangements used in airplanes, trains, buses, homes, offices, theaters, or anywhere a person may wish to maintain or adjust his or her environment. According to other various alternative and exemplary embodiments, the control system may be used with structures other than seats and may be coupled to, or incorporated into, other systems of the vehicle, building, office, etc.

It is also important to note that the construction and arrangement of the elements of the control system as shown in the exemplary and alternative embodiments are illustrative only. Although only a few embodiments of the present inventions have been described in detail in this disclosure, those skilled in the art who review this disclosure will readily appreciate that many modifications are possible (e.g., variations in sizes, dimensions, structures, operating parameters, shapes and proportions of the various elements, values of parameters, mounting arrangements, materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter recited in the claims. For example, a variety of configurations may be provided for the control system, the humidity sensors, the temperature sensors, the ventilated portion of the seat, and/or the seat. Accordingly, all such modifications are intended to be included within the scope of the present invention as defined in the appended claims. The order or sequence of any process or method steps may be varied or re-sequenced according to alternative embodiments. In the claims, any means-plus-function clause is intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Other substitutions, modifications, changes and omissions may be made in the design, operating conditions and arrangement of the preferred and other exemplary embodiments without departing from the spirit of the present inventions as expressed in any appended claims.

What is claimed is:

1. A seat assembly for use by an occupant, comprising:
   a seat having a backrest portion and a seat cushion portion, at least one of the backrest portion and the seat cushion portion including a ventilated portion, the ventilated portion including at least one of an air mover and a heater; and
   a control system including:
   a control module coupled to the at least one of the air mover and the heater; and
   a humidity sensor coupled to the control module and located near an area of the seat an occupant contacts when the occupant is seated on the seat, the humidity sensor being configured to send a signal to the control module representative of the humidity level in the area of the humidity sensor,

wherein the control module controls the operation of the at least one of the air mover and the heater based at least in part on the signal received from the humidity sensor.

2. The seat assembly of claim 1, wherein the control system further comprises a temperature sensor coupled to the control module, the temperature sensor being configured to send a signal to the control module representative of the temperature in the area of the temperature sensor.

3. The seat assembly of claim 2, wherein the control module controls the operation of the at least one of the air mover and the heater based at least in part on the signals received from the humidity sensor and from the temperature sensor.

4. The seat assembly of claim 3, wherein the control module controls the operation of both the air mover and the heater based at least in part on the signals received from the humidity sensor and from the temperature sensor.

5. The seat assembly of claim 2, wherein the temperature sensor is a plurality of temperature sensors.

6. The seat assembly of claim 1, wherein the humidity sensor is a plurality of humidity sensors.

7. The seat assembly of claim 1, wherein the at least one of the air mover and the heater is part of an HVAC system of a vehicle.

8. The seat assembly of claim 1, wherein the humidity sensor is located within the seat and proximate a surface of the seat.

9. The seat assembly of claim 1, wherein the humidity sensor is configured to send a signal to the control module representative of the humidity level of the air in the area around the occupant when the occupant is seated on the seat.

10. The seat assembly of claim 1, wherein the control system further comprises a user interface coupled to the control module, the user interface configured to send a signal to the control module representative of commands provided by the occupant.

11. The seat assembly of claim 11, wherein the control module controls the operation of the at least one of the air mover and the heater based at least in part on the signals received from the humidity sensor and from the user interface.

12. A control system for use with a ventilated portion of a seat configured to receive an occupant, the ventilated
portion including at least one of an air mover and a heater, the control system comprising:

a control module configured to be coupled to the at least one of the air mover and the heater; and

a humidity sensor coupled to the control module and configured to be located near the occupant when the occupant is seated on the seat, the humidity sensor being configured to send a signal to the control module representative of the humidity level in the area of the humidity sensor;

wherein the control module is configured to control the operation of the at least one of the air mover and the heater based at least in part on the signal received from the humidity sensor.

14. The control system of claim 13, wherein the control system further comprises a temperature sensor coupled to the control module, the temperature sensor being configured to send a signal to the control module representative of the temperature in the area of the temperature sensor.

15. The control system of claim 14, wherein the control module is configured to control the operation of the at least one of the air mover and the heater based at least in part on the signals received from the humidity sensor and from the temperature sensor.

16. The control system of claim 15, wherein the control module is configured to control the operation of both the air mover and the heater based at least in part on the signals received from the humidity sensor and from the temperature sensor.

17. The control system of claim 13, wherein the humidity sensor is configured to be located within the seat and proximate a surface of the seat.

18. The control system of claim 13, further comprising a user interface coupled to the control module, the user interface configured to send a signal to the control module representative of commands provided by the occupant.

19. The control system of claim 18, wherein the control module is configured to control the operation of the at least one of the air mover and the heater based at least in part on the signals received from the humidity sensor and from the user interface.

20. A method for controlling the operation of a seat assembly having a ventilated portion, the seat assembly including an occupant contact area configured to receive an occupant, the ventilated portion including at least one of an air mover and a heater, the method comprising the steps of:

- detecting a humidity level at a location near the occupant contact area;
- generating a signal representative of the humidity level; and
- controlling the operation of the at least one of the air mover and the heater based at least in part on the signal representative of the humidity level.

21. The method of claim 20, further comprising the step of measuring the temperature at a location proximate the occupant contact area.

22. The method of claim 21, further comprising the step of controlling the operation of the at least one of the air mover and the heater based at least in part on the measured humidity level and the measured temperature.