[0053] According to a further aspect of this disclosure there is provided a respiratory support apparatus configured to provide a gases flow to a patient, the respiratory support apparatus comprising:

a flow generator configured to generate the gases flow;

a humidifier configured to humidify the gases flow, the humidifier comprising a humidifier heater;

a controller, the apparatus being controlled by the controller to function in at least two modes, being a normal mode and a high-temperature mode, wherein when in the high-temperature mode, the temperature of gases delivered to the patient is higher than the temperature of gases delivered to the patient in the normal mode;

the apparatus further being controlled by the controller in a further mode, being a cool-down mode, the cool-down mode being operative after the high-temperature mode, such that when in the cool-down mode, any one or more of:

a) the flow rate is controlled to a flow rate set point, wherein the rate of change of the flow rate from the flow rate used during high-temperature mode to the flow rate set point is controlled to be below a predetermined threshold;
b) the electrical power supplied to the humidifier heater is reduced from that used during normal and/or high-temperature mode; and/or
c) a temperature set point of the gases flow delivered to the patient is reduced from that during high-temperature mode;
d) the flow rate, and/or the rate of change of the flow rate from the flow rate used during high-temperature mode, is controlled according to a predetermined flow-time curve/relationship.

[0054] The cool-down mode may be automatically selected by the controller, in response to one or more predetermined conditions of operation of the apparatus.

[0055] The one or more predetermined conditions of operation may be selected from any one or more of:

a) a predetermined period of time, as determined by a timer;
b) a predetermined number of counts, as determined by a counter;
c) a gases flow dew-point being exceeded;
d) a gases flow enthalpy being exceeded;
e) the user exiting high-temperature mode.