Claims:

1. An energy saver device intended for use with a heating or cooling system having an apparatus for changing the temperature of a working medium, the device comprising contacts for providing an on/off signal to the apparatus, a timer having an adjustable timer value and providing a signal for opening or closing the contacts, a temperature sensor for measuring temperature the working medium, and a controller arranged to adjust the adjustable timer value in response to changes in temperature of the working medium.

2. An energy saver device intended for use with an air-conditioner or refrigeration system having a compressor for compressing a supply of a refrigerant and an evaporator in which the compressed refrigerant expands for cooling a stream of cold supply air, the device comprising contacts for providing an on/off signal to the compressor, a timer having an adjustable timer value and providing a signal for opening or closing the contacts, a temperature sensor for measuring the cold supply air, and a controller arranged to adjust the adjustable timer value in response to a measured cold supply air temperature.

3. The energy saver device of claim 1 or 2 wherein the timer is arranged to open the contacts and the controller is arranged to activate the time and to closes the contacts.

4. The energy saver device of any preceding claims wherein the controller comprises a microprocessor or electronic circuit adapted to detect signals from the temperature sensor representing a minimum cold supply air temperature and a high cold supply air temperature.

5. An heating or cooling system, comprising a apparatus for changing the temperature of a working medium, a temperature sensor located to measure temperature of the working medium and a controller for turning the apparatus on and off in response to a sensed temperature of the working medium.

6. An air-conditioner or refrigeration system, comprising a compressor apparatus for compressing a supply of a refrigerant, an evaporator in which the compressed refrigerant

expands for cooling a stream of cold supply air, a temperature sensor located to measure temperature of the cold supply air and a controller for turning the compressor on and off in response to a sensed temperature of the cold supply air.

7. The system of claims 5 or 6 wherein the controller comprises a timer having an adjustable timer value, the timer provided to turn the apparatus off at the end of the adjustable timer value.

8. The system of any one of claims 5 to 7 wherein the controller comprises a microprocessor or electronic circuit adapted to detect signals from the temperature sensor representing a maximum temperature and a minimum temperature and to calculate a timer value.

9. The system of any one of claims 5 to 7 further comprising a second temperature sensor located to measure ambient temperature of a space to be heated or cooled such that the apparatus can also be turned on and off in response to a sensed temperature of the space.

1.
~~10.~~ A method of controlling a heating or cooling system having an apparatus for changing the temperature of a working medium, the method comprising:

providing a temperature sensor for measuring a temperature of the working medium,

determining when the temperature reaches a steady state value and stopping the apparatus after a delay time T,

determining when the temperature reaches a threshold value and staring the apparatus,

determining a loading on the hearing or cooling system, and

calculating a new delay time T based on the loading.

2.
~~11.~~ A method of controlling the compressor of an air-conditioner or refrigeration system having a compressor for compressing a supply of a refrigerant and an evaporator

in which the compressed refrigerant expands for cooling a stream of cold supply air, comprising:

providing a temperature sensor for measuring a temperature of the stream of cold supply air,

determining when the temperature of the stream of cold supply air reaches a desired minimum value and stopping the compressor after a delay time T,

determining when the temperature of the stream of cold supply air reaches a desired maximum threshold value and staring the compressor,

determining a loading on the air-conditioner or refrigeration system, and

calculating a new delay time T based on the loading.

3. ~~12.~~ The method of claim 2 ~~11~~ wherein the desired minimum value of the stream of cold supply air temperature is a minimum steady state temperature.

4. ~~13.~~ The method of claim 2 ~~11~~ wherein the desired maximum value of the stream of cold supply air temperature is lower than a desired ambient room temperature.

5. ~~14.~~ The method of claims 1 ~~10~~ or 2 ~~11~~ wherein determining a loading on the system comprises measuring an overshoot of the temperature past the threshold value.

6. ~~15.~~ The method of claim 4 ~~13~~ wherein calculating a new delay time T based on the overshoot comprises increasing the delay time T if the overshoot exceeds a desired overshoot value and reducing the delay time T if the overshoot is less than a desired overshoot value.

7. ~~16.~~ The method of claims 1 ~~10~~ or 2 ~~11~~ wherein determining a loading on the system comprises measuring a rate of change in the temperature.