parameter associated with flow perturbations and/or pressure perturbations for at least one portion of the retrieved at least one first signal; and determine the presence of liquid water in the respiratory conduit based on the measure(s) of the at least one first parameter meeting a first threshold.

[0006] According to an aspect of this disclosure there is provided a respiratory therapy system configured to detect the presence of liquid water in a breathing gases respiratory conduit for use in respiratory treatment of a patient, the system comprising a controller configured to:

a) retrieve at least one first signal associated with or indicative of a gases flow and/or pressure in the respiratory conduit,

b) determine a measure of at least one first parameter associated with gases flow perturbations and/or pressure perturbations for at least one portion of the retrieved at least one first signal,

c) determine the presence of liquid water in the respiratory conduit based at least in part on the measure(s) of the at least one first parameter meeting a first threshold, and

d) upon determination of the presence of liquid water in the respiratory conduit, increase the temperature within the respiratory conduit by controlling one or more operation setting(s) of components of the respiratory therapy system, so as to reduce the presence of liquid water.

[0007] 'Liquid' as used herein means any single liquid, or mixture or combination of liquids. The liquid may simply comprise water. The liquid may comprise a mixture of water and medicament e.g. from a nebuliser. Alternatively the system may detect the presence of liquid condensate of the humidification fluid within the conduit. Humidification fluid could be, or include, water, but may also be or comprise other substances.

[0008] The controller may be further configured to:

a) determine at least one further first parameter associated with flow perturbations and/or pressure perturbations for at least one further portion of the received at least one first signal, and

b) determine the presence of liquid water in the respiratory conduit further based at least in part on the at least one further first parameter meeting the first threshold.

[0009] The controller may be configured to identify the gases flow perturbations and/or pressure perturbations for the associated portion of the retrieved at least one first signal based at least in part on a comparison between that at least one portion of the retrieved signal and a reference.