WHAT IS CLAIMED IS:

1. A medical humidifier configured to provide a flow of gases to a patient, the medical humidifier comprising:

a heater plate, and

a controller configured to determine a condition of the medical humidifier by the steps of:

reducing power to a heater wire of a breathing tube coupled to the medical humidifier,;

measuring a condensate metric;

determining whether the measured condensate metric satisfies an expected condensate metric; and

outputting the condition of the medical humidifier in response to the measured condensate metric not satisfying the expected condensate metric.

2. The medical humidifier of Claim 1, wherein reducing the power to the heater wire of the breathing tube comprises disabling the power to the heater wire.

3. The medical humidifier of any one of Claims 1 or 2, wherein the power to the heater wire of the breathing tube is reduced for a predetermined period of time.

4. The medical humidifier of any of Claims 1 to 3, wherein:

the condensate metric is a condensate level, and

determining whether the measured condensate metric satisfies the expected condensate metric comprises comparing a condensate level in the breathing tube to a predetermined threshold.

5. The medical humidifier of any of Claims 1 to 3, wherein the condition comprises a reverse flow condition.

6. The medical humidifier of Claim 5, wherein determining whether the measured condensate metric does not satisfy the expected condensate metric comprises determining whether condensate level of a dryline connected to the medical humidifier and a gases source is greater than a condensate level of the breathing tube.

7. The medical humidifier of any of Claims 1 to 3, wherein the condition of the medical humidifier includes no presence of flow or water out.

8. The medical humidifier of Claim 7, wherein the controller is configured to confirm the determination by performing a flow test or a water out test.

9. The medical humidifier of Claim 7 or 8 wherein the condensate metric comprises a moisture and/or a humidity.

10. The medical humidifier of any one of Claim 7 to 9 wherein the controller is configured to:

detect the condensate metric in normal use, and

determine a decrease in the condensate metric over time.

11. The medical humidifier of claim 10 wherein the controller is configured, in response to determining the decrease:

increase an operating parameter of the medical humidifier,

monitor for an increase in the condensate metric in a component of the medical humidifier, and

determine a water out condition if no increase is detected.

12. The medical humidifier of any of Claims 1 to 3, wherein the condition is an orientation of the breathing tube.

13. The medical humidifier of Claim 12, wherein determining whether the measured condensate metric does not satisfy the expected condensate metric comprises determining whether the measured condensate metric at a patient end of the breathing tube is greater than the measured condensate metric at an outlet of a humidification chamber of the medical humidifier.

14. The medical humidifier of Claim 12 or 13, wherein determining whether the measured condensate metric does not satisfy the expected condensate metric comprises determining whether the measured condensate metric at the patient end of the breathing tube is greater than the measured condensate metric at a region between the patient end and the outlet.

15. A method of determining a condition of a medical humidifier configured to provide gases to a patient, the method comprising:

reducing power to a heater wire of a breathing tube coupled to the medical humidifier, wherein the medical humidifier comprises a heater plate;

measuring a condensate metric;

determining whether the measured condensate metric satisfies an expected condensate metric; and

outputting the condition of the medical humidifier to a controller of the medical humidifier in response to the measured condensate metric not satisfying the expected condensate metric.