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(54) Title: INTEGRATED HEATER AND TEMPERATURE MEASUREMENT

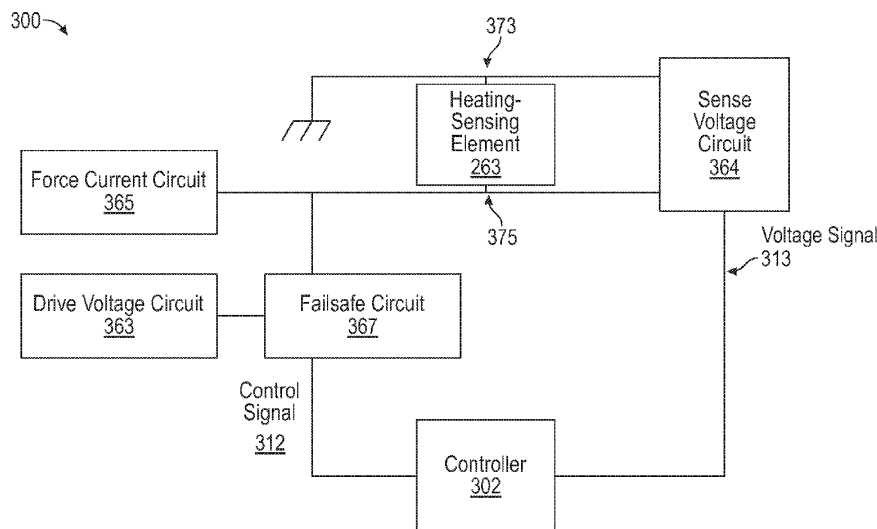


FIG. 3

(57) Abstract: Disclosed herein is an integrated heater and measurement (IHM) device comprising heating- sensing element(s) and heating-sensing circuit(s). A heating-sensing element generates heat and determines the temperature of the IHM device. In some embodiments, the heating-sensing element may operate in a plurality of modes: heating mode, sensing mode, and/or off mode. A controller may dynamically adjust the properties of the operation mode and/or time periods based on the determined temperature. The adjusted properties may include the duration of the heating mode, the ON time for a heating-sensing element, etc. The controller may adjust the duration of heating mode based on the temperature difference between the determined temperature and a set point temperature, such as decreasing the duration of the heating mode when there is a low temperature difference, and increasing the duration of the heating mode when there is a high temperature difference.

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