

With tankless:

There are flow sensors plus incoming and outgoing temperature sensors.

There are also gas pressure and gas flow and possibly gas quality sensors, plus an outgoing flue sensor.

My understanding is all sensors operate within parameters to activate and deactivate burner.

When you turn on water faucet, water begins to flowing through tankless.

If water flow is large enough, and sensors are working, the burner is activated to heat water flowing through heat exchanger.

When water flow stops, then burner shuts off.

If incoming water is too cold, and thermostat is set too high, and volume of water is too great, then tankless burner cannot keep up, and will shut down.

This is one reason why ordinary household tankless cannot be set to high temperatures.

If gas pressure is too low, or venting is restricted, then tankless will also shut down.

Main circuit board monitors irregular sensor readings, and when those errors exceed specific parameter, then error code is issued and displays on remote control.

Dependence on so many sensor inputs to a main chip board causes me to call tankless a computer that heats water.

There are many internet resources promoting tankless, but few links that actually get into the nuts-and-bolts.

<http://waterheatertimer.org/Troubleshoot-Rheem-Tankless-water-heater.html>

<http://hometips.me/TIs/SVC810-Rheem-Ruud-Tankless-Service-manual-2008.pdf>

<http://hometips.me/TIs/American-On-Demand-Service.pdf>