

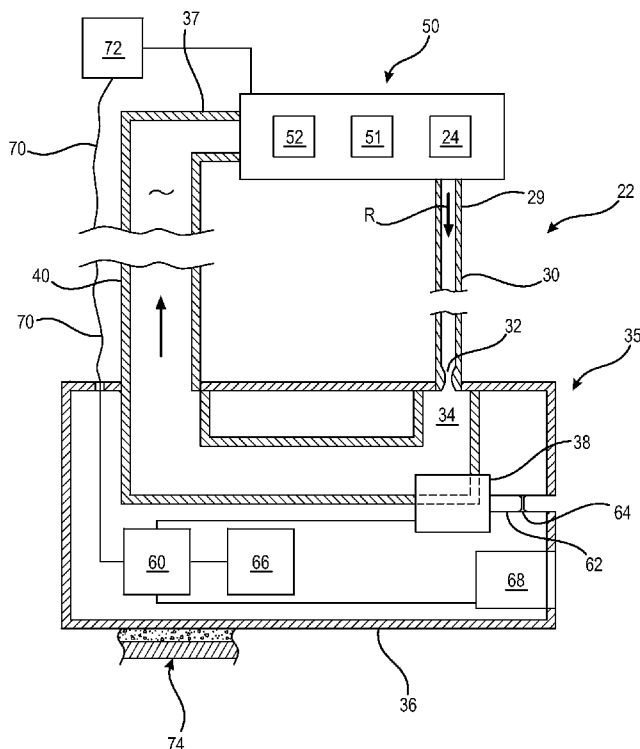


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- (54) Title:** METHOD AND APPARATUS FOR USE OF ELECTRONIC PRESSURE GAUGE IN EXTREME HIGH TEMPERATURE ENVIRONMENT



- (57) Abstract:** Methods and apparatus for use of an electronic pressure gauge at high temperatures is presented. An electronic pressure sensor is exposed to wellbore pressure at a location having high-temperatures. A pressurized fluid, preferably a refrigerant, is flowed into a chamber proximate the pressure sensor and cools it sufficiently to preclude damage from the high wellbore temperatures. Preferably, the pressurized fluid is expanded, from liquid to gaseous phase, in the chamber. In another method, an electronic pressure gauge is positioned uphole, where temperature is not expected to damage the sensor, and a pressure chamber is positioned downhole at a location where pressure is to be sensed. The pressure chamber communicates downhole pressure to the uphole pressure gauge by way of a pressure conduit filled with pressurized fluid, such as an inert gas. The system is isolated from pressure during run-in by a temporary pressure isolation device such as a rupture disk.