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(54) Title: **BURNER SYSTEMS**

(57) Abstract

Fault detection apparatus for a boiler system (10) comprises a first pressure sensor (24) in air supply line (16), downstream of fan and damper (17); and a second pressure sensor (26) in the fuel supply line (14), downstream of the valve (15). Pressures P_1 and P_2 sensed respectively by sensors (24, 26) are fed to microprocessor (30), together with an indication from sensor (28) of the temperature T_1 of the air supply. The microprocessor (30) stores a range of pressure values across a range of temperatures which are indicative of optimum combustion conditions. Having selected the reference values appropriate for the temperature sensed, microprocessor (30) compares them with P_1 and P_2 and produces a measured response in dependence upon the results of the comparison, and ranging from further monitoring (slight deviation between stored and sensed valves) to emergency shutdown (major deviation between stored and sensed valves).

