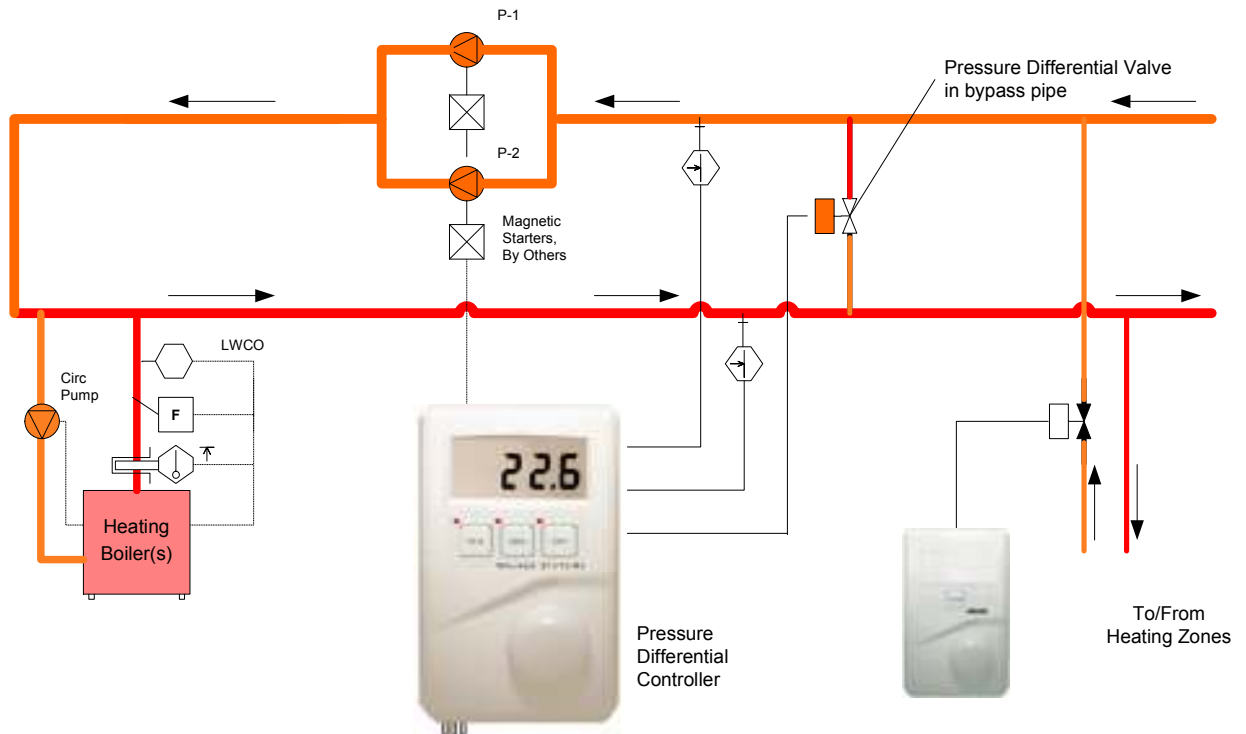


Pressure Differential Control System



Description

Electronically controlled modulating valve to bypass hot water supply to prevent pumps from dead heading and generating excessive pressures during low load conditions when two way heating valves are closed. Controller also provides lead/lag rotational control of one duplex of heating pumps. Controller can be integrated into an Empire Controls DDC system, either at time of installation or at a later date.

Guide Specification

Products

2.x Differential Pressure Valve & Controller

Differential pressure control kit, BNR-PDV complete with two way valve assembly and electronic pressure differential controller complete with pressure sensors, lead/lag pump control and liquid crystal display as manufactured by Empire Controls Limited of Woodbridge, Ph 905-264-7282, Fax 905-850-8564, empire@empirecontrols.com

Execution - Sequence of Operations

3.4.x Differential Pressure Valve & Controller

Controller continuously monitors water pressure on supply and return sides of heating system, calculates the pressure difference, and through proportional + integral control process, modulates bypass valve as required to prevent differential pressure from exceeding 20 psi. LCD, as a default, continuously displays differential pressure in pounds per square inch. Setpoint and controller tuning variables are operator adjustable, password protected.

Controller also controls a duplex set of heating pumps in 24 hour lead/lag rotation. Should the lead pump fail to start, the controller shall automatically command the lag pump to start. Monitor pump statuses by means of auxiliary contacts provided by starter manufacturer. If auxiliary switches do not exist, monitoring shall be by means of current relays.

Mount controller enclosure on wall, and provide 120 volt power from nearest panel. Connect pressure sensors and valve actuator and pump starters to terminal strip in controller enclosure. Check operation of starters, sensors and actuator, and with pump running, tune controller loop.

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