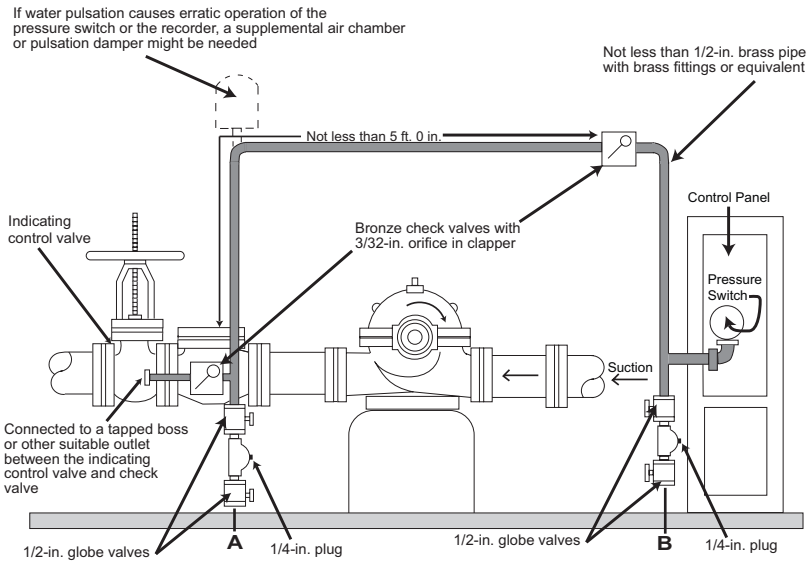

Figure A.10.5.2.1(a) Piping Connection for Each Automatic Pressure Switch (for Electric Fire Pump and Jockey Pumps).

Test connection at A or B

Notes:
1) Solenoid drain valve used for engine-driven fire pumps can be at A, B, or inside controller enclosure.
2) If water is clean, ground-faced unions with noncorrosive diaphragms drilled for 3/32 in. orifices can be used in place of the check valves.

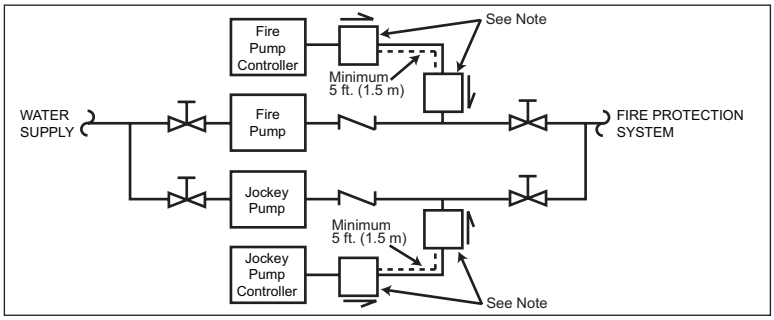

Figure A.10.5.2.1(b) Piping Connection for Pressure-Sensing Line (Electric Fire Pumps).

Note: Check valves or ground-face unions complying with 10.5.2.1.

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***10.5.2.1* Water Pressure Control.**

10.5.2.1.1.1 Unless the requirements of 10.5.2.1.1.2 are met, there shall be provided a pressure-actuated switch having adjustable high and low calibrated set points as part of the controller.

10.5.2.1.1.2 The requirements of 10.5.2.1.1.1 shall not apply in a nonpressure-actuated controller, where the pressure-actuated switch shall not be required.

10.5.2.1.2 There shall be no pressure snubber or restrictive orifice employed within the pressure switch.

10.5.2.1.3 This switch shall be responsive to water pressure in the fire protection system.

10.5.2.1.4 The pressure-sensing element of the switch shall be capable of withstanding a momentary surge pressure of 400 psi (27.6 bar) or 133 percent of fire pump controller rated operating pressure, whichever is higher, without losing its accuracy.

10.5.2.1.5 Suitable provision shall be made for relieving pressure to the pressure-actuated switch to allow testing of the operation of the controller and the pumping unit. (See figure A.10.5.2.1(a) and Figure A.10.5.2.1(b)).

10.5.2.1.6 Water pressure control shall be in accordance with 10.5.2.1.6.1 through 10.5.2.1.6.5.

10.5.2.1.6.1 Pressure switch actuation at the low adjustment setting shall initiate pump starting sequence (if pump is not already in operation).

10.5.2.1.6.2 A listed pressure recording device shall be installed to sense and record the pressure in each fire pump controller pressure-sensing line at the input to the controller.

10.5.2.1.6.3 The recorder shall be capable of operating for at least 7 days without being reset or rewound.

10.5.2.1.6.4 The pressure-sensing element of the recorder shall be capable of withstanding a momentary surge pressure of at least 400 psi (27.6 bar) or 133 percent of fire pump controller rated operating pressure, whichever is greater, without losing its accuracy.

10.5.2.1.6.5 For variable speed pressure limiting control, a 1/2 in. (15mm) nominal size inside diameter pressure line shall be connected between the pump discharge flange and the discharge control valve, as appropriate.

A.10.5.2.1 Installation of the pressure-sensing line between the discharge check valve and the control valve is necessary to facilitate isolation of the jockey pump controller (and sensing line) for maintenance without having to drain the entire system (See figure A.10.5.2.1(a) and figure A.10.5.2.1(b)).

A.10.5.2.1.6.2 The pressure recorder should be able to record a pressure at least 150 percent of the pump discharge pressure under no-flow conditions. In a high-rise building, this requirement can exceed 400 psi (27.6 bar). This pressure recorder should be readable without opening the fire pump controller enclosure. This requirement does not mandate a separate recording device for each controller. A single multi-channel recording device can serve multiple sensors.