

HYDRONIC PRESSURISATION SYSTEM

SPECIFICATIONS

The Pressure Maintaining Station shall be capable of

- Maintaining the system pressure within +/-0.5 bar of the design value
- Providing isolation between air and water
- Deaerating the system water when the return flow temperature is less than 70°C.

It shall consist of following components

- Unpressurized bladder tank
- Pressurized bladder tank
- Hydraulic module
- Control unit

Bladder tanks

A pressurized bladder tank of approx. 5% of the total expansion shall be provided to take care of small changes in water volume and smoothen the pressure undulations. The tank shall be of steel construction manufactured to IS:2825-1969 standards for non fired pressure vessels or equivalent international code.

The bladder shall be made of EPDM/BUTYL to keep the air permeation at minimum.

The tank shall be coated with corrosion protective paint.

The unpressurized tank shall also be similar in construction and shall also be provided with an automatic air vent, for deaeration, level transducer, for measuring water volume in tank, and swan neck (anti-vacuum).

Tanks shall be of vertical type with steel feet.

Pressure Maintaining Station

The Pressure Maintaining Station shall be compactly designed with ease of access to components and duty protected against corrosion with paint.

It shall have two multistage high-pressure pumps with vibration isolation, duty/standby/assist and automatic run time changeover sequence. Both the pumps shall be provided with adjustable soft start/stop function.

The pumps shall operate in conjunction with two parallel spill-lines. These shall include two Y-strainers and two electrically actuated fail safe ball valves with duty/standby/assist function and automatic changeover sequence.

A separate, additional, manual reset, pressure protection safety device shall be provided to shut the spill lines down when system pressure falls below minimum pressure. This shall be done via a pressure limiter switch and solenoid valve. A safety relief valve shall also be provided.

An electrically operated 3 way motorised valve shall be provided to add make-up water from pressurized water line.

Control Unit

The control unit shall be housed in a plastic/metal box, IP 54 protection, suitable for on-site built-in or wall mounting. The control unit shall be factory installed on the hydraulic module and wired ready for operation.

The microprocessor based controller shall be freely programmable with built-in real time clock. The plain text LCD display shall indicate system pressure, and all other relevant operating and error messages, including function diagram. It shall have soft-start & soft-stop feature for pump operation. It shall be possible to transfer operation information to BMS via an RS485 cable interface.

It shall ensure pressure maintenance within the limits +/-0.5 bar, pressure dependent tandem operation and automatic error alteration of pumps and spill valves, monitored water make-up with automatic interruption and error message if the runtime and/or the number of cycles are exceeded.

It shall also ensure degassing of a partial flow of the system water according to an optimized time schedule with selectable degassing programmes - a period of continuous, adjustable and depending on the installation volume, at start-up and automatic switch-over to economic, interval degassing, mode.