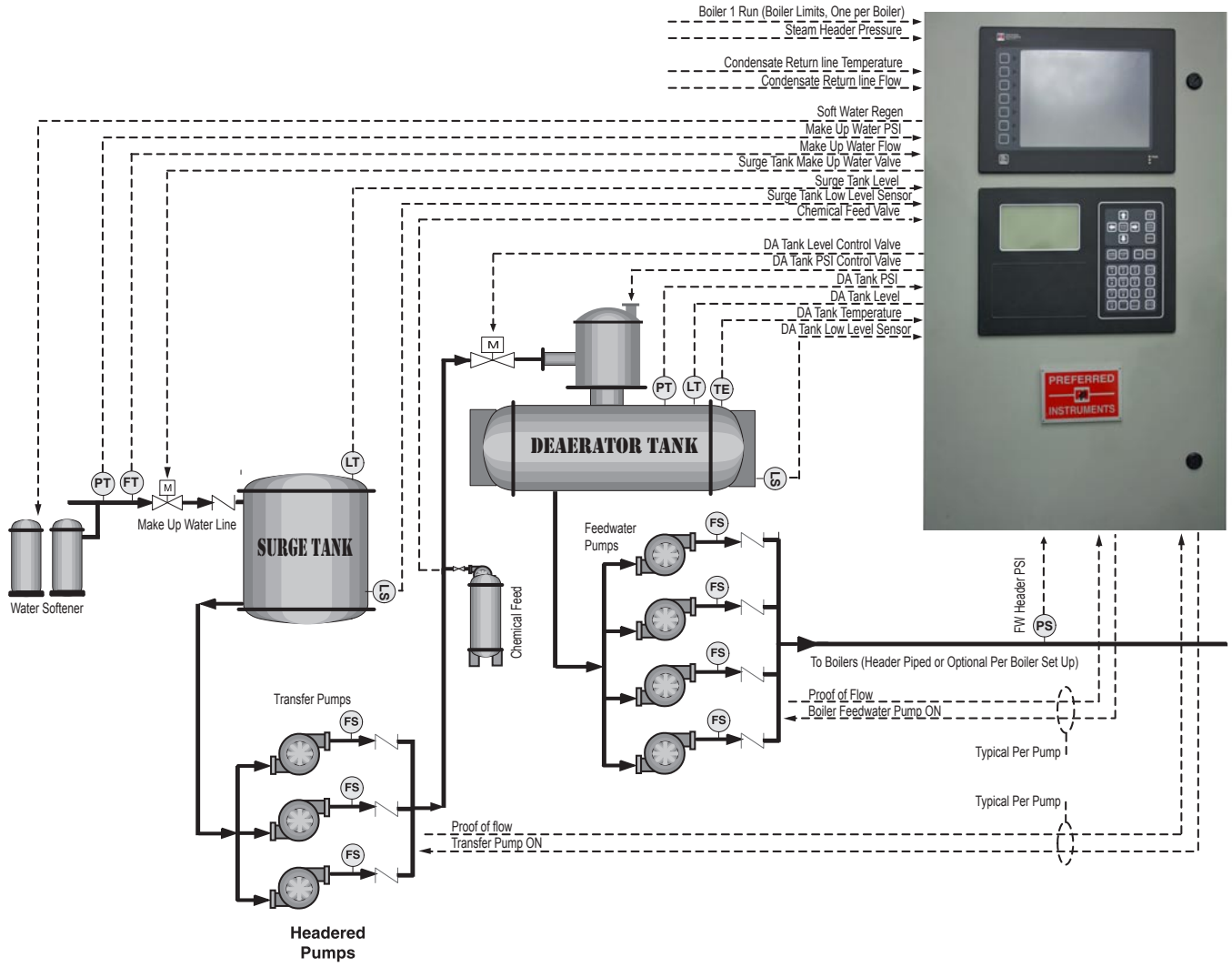
FEEDWATER CENTER MODEL JC-FWC-NV

Feedwater Delivery Controller



JC-FWC-NV, Full Control for pumps without VSDs

Application

The Feedwater Center **Model JC-FWC-NV** includes all available features and capabilities required to control feedwater delivery systems including DA level and pressure control, surge tank level control, transfer pump control, feedwater pump control, chemical feed pump control and water softener regeneration.

Up to Four Feedwater Pumps

Pumps use “smart” sequencing to ensure the proper number of pumps are running to satisfy the feedwater demand.

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Feedwater Delivery Controller - Specification

1. Application

Supply a fully integrated Feedwater Control system to coordinate the operation of (up to) four Feedwater pumps, Daearator Level and Pressure Control, (up to) three Transfer Pumps, Water Softener Regeneration and Chemical Feed. The control system shall be microprocessor-based and suitable for wall mounting.

2. Headered Feedwater Pressure Setpoint

The Feedwater Pressure setpoint must be field selectable between Steam Header based or manual. In steam header based mode, the Feedwater Pressure setpoint must be calculated based on an adjustable deviation from the actual Steam Header Pressure. In manual, the operator may set the Feedwater Header Pressure Setpoint via a front panel display.

3. Pump Sequence

The control system shall utilize Feedwater Header Pressure (Deaerator Level for Transfer Pumps) to start and stop the pumps and minimize the total number of pumps in operation. The controller shall start and stop pumps when the Feedwater Header Pressure is outside an adjustable pressure limit band for longer than an adjustable short time delay. The control system shall monitor each pump's flow switch and shall rapidly and automatically replace any pump that fails to prove flow. The lead pump shall either automatically rotate on a time of day / day of week (or month) schedule, or shall be manually selected by the operator. The control system shall be field adjustable to "per boiler" mode which would run one feedwater pump per boiler. Additionally, the control system shall be field adjustable to choose between headered or boiler specific piping to determine which pumps should be started. A 120 VAC Discrete input is to be provided as a Deaerator low level signal that disables all Feedwater Pumps. A 120 VAC Discrete input is to be provided as a Surge Tank low level signal that disables all Transfer Pumps.

4. Deaerator Control

The control system shall output a demand signal based on DA Level. When used with transfer pumps, this is the speed at which the transfer pumps must run. Without transfer pumps, this would drive a level control valve. The control system shall drive a Deaerator pressure control valve based on Deaerator Pressure.

5. Surge Tank Control

The control system shall output a command to a fresh water makeup valve based on surge tank level. Field adjustable level for valve at 0% open and valve at 100% open shall be provided.

6. Chemical Feed Control

The control system shall monitor Makeup Water Flow and send that flow signal to a Chemical feed pump.

7. Soft Water Regeneration Control

The control system shall initiate a soft water regeneration cycle based on time, or upon receiving a soft water alarm. The operator shall also be able to initiate the soft water regeneration cycle manually.

8. Monitor Points

The control system shall monitor Deaerator Temperature, Fresh Water Makeup Pressure, Condensate Return Flow and Condensate Return Temperature for display purposes.

9. Operator Controls, Trends, Indications and Alarms

The control system shall include a 16 line x 40 character (or greater) LCD display for boiler sequence control and status, alarm and event summaries, and setup menus for easy operation, tuning and troubleshooting. Alarms, events and operator actions shall be logged with Time/Date stamp and English language description. The control system shall include a minimum of 200-point memory. The control system shall include a minimum 100 x 150 pixel historical trending display or a paperless chart recorder or other videographic hardware to permit logging of at least 32 data points for at least 45 days. Provide a minimum of 4 "pens" per chart with 8-minute through 24-hour chart "width" selections available.

10. Communication

The Control System shall have the ability of simultaneously communicating to a Data Acquisition System (DAS), Building Automation System (BAS) or Building Management System (BMS) via RS485 Modbus protocol and to a Personal Computer and an alphanumeric pager via standard telephone lines. The individual boiler limits, lockout, start/stop, warm standby, and firing rate status shall be readable. Header setpoint, plant firing rate, boiler quantity called to start, boiler selected as lead and all setup parameters shall be readable and writable.

11. Quality Assurance

The control system shall be manufactured and labeled in accordance with UL508 requirements (CSA C22.2 #14 for use in Canada). Inspection and labeling shall be supervised by UL or other OSHA approved Nationally Recognized Test Lab (NRTL). The control system shall be a Preferred Instruments, Danbury, CT, **Model JC-FWC-NV**.