BOILER PROPORTIONAL FEED WATER SYSTEM

rev.0519

AYVAZ®

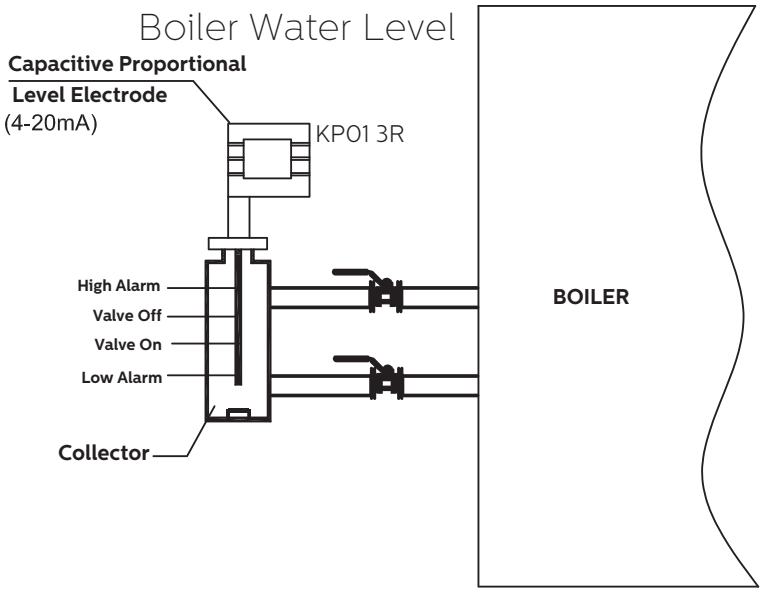
BOILER PROPORTIONAL FEED WATER SYSTEM

PRODUCT FEATURES

Level Device	KP01 3R	**Level Control Valve**	Stevi 35.448-E Premio Plus 5kN
Body	Stainless Steel	**Body**	1.0619+N Cast Iron
Electrodes	Staineless Steel	**Max. Working Temp.**	450 °C
Case	Aluminium	**Pressure Class**	PN 40
Injection Connection	3/4" BSP Threaded	**Actuator Type**	2.2 KN, 5 KN, 12 KN...
Max. Working Temp.	238 °C	**Connection**	Flanged
Max. Working Pres.	32 bar	**Controller**	Ayvaz ADK-100

In modern boilers, level control and feeding of boiler water are carried out with the help of sensitive and safe sensor systems.

BOILER WATER LEVEL



It is not possible to read a certain water level in the boiler during steam production by the classical water level indicator. When the steam is produced, the water level is composed of bubbles of steam-water mixture and the water level cannot be detected due to the fact that the water level is in motion. The water level outside the boiler is lower than the actual water level in the boiler. The water level outside the boiler is lower than the actual water level in the boiler. The reason for this is that, the water density is higher at outside level indicator.

Factors affecting the difference between the actual water level and the water level read from the outside indicator:

1- Boiler steam capacity
2- Height of boiler level indicator according to the boiler
3- Chemical properties of boiler water
4- Length of the sensor casing below the water level

The operation of the feed pump and the control of low and high water levels are only possible with the level control sensors immersed in the boiler.

The advantages of systems are:
1- Measuring sensors measure the actual level due to their presence in the boiler.
2- Self-test level sensors eliminate the need to test the system every day.
3- The systems of these sensors are safe because they are composed of moving elements and no maintenance is required.

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PROPORTIONAL SYSTEMS

The water level falling at the rate of steam generation is reinforced by a proportionally controlled valve.

The amount of water supplied to the boiler is much less than the amount of water in the boiler, there is no fluctuation in

the amount of steam production and boiler pressure.

Proportional control ensures that the vapor in the boiler is constant at a constant pressure. In this system, the feed pump operates continuously and the unused water is returned to the feed water tank with the by-pass line.

The closing pressure of the actuator to be selected must be at least equal to the pump discharge pressure.

Note 1: Boiler Feed Water Amount (kg/h)
Boiler Feed Water Flow = The sum of boiler max. steam capacity and boiler blowdown amounts.

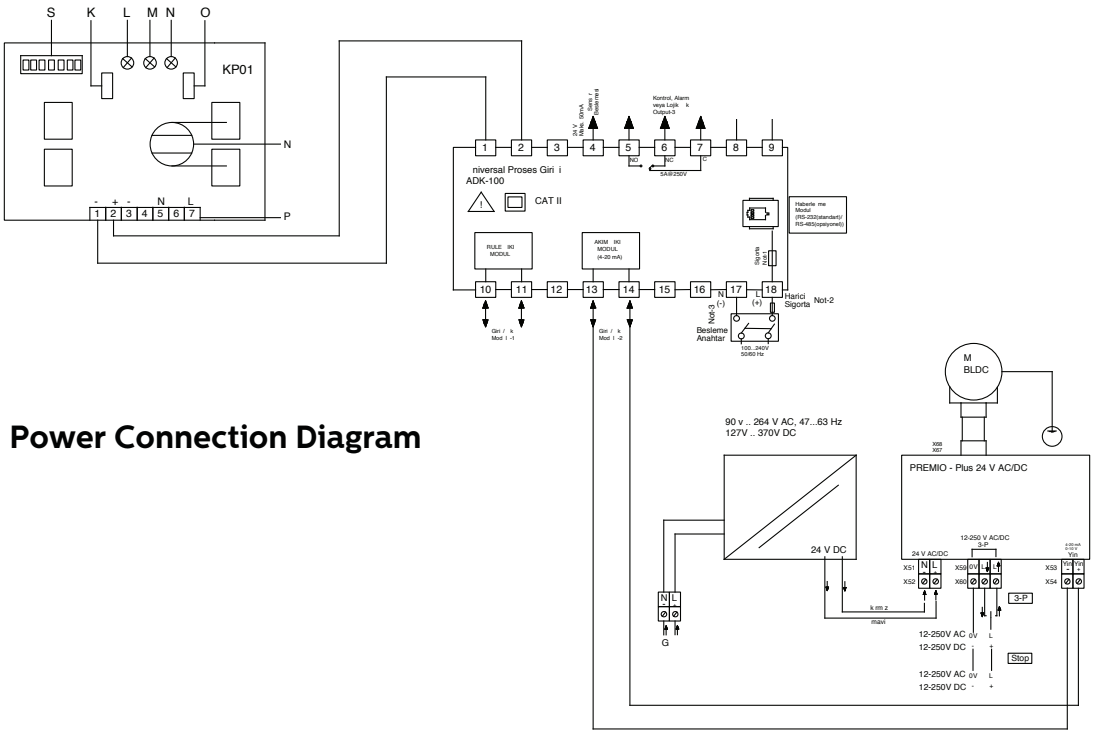
Note 2: Boiler pressure difference (bar) the pressure difference in the valve is the difference between the pump pressure at the maximum flow and the boiler.

SYSTEM SPECIFICATIONS

a) Advantages

- Constant steam flow rate and constant pressure
- Efficient operation of the burner
- Less thermal stresses in the boiler housing
- Low steam humidity
- Possibility of a central feed pumping station
- Reduced wear and long life on the pump and burner

In this system, the valve is switched on and off and the low alarm levels are controlled via the controller. The controller detects the height of the water in the boiler according to the current intensity from the sensor. Sensors 500-600-900 etc. different lengths.



Power Connection Diagram

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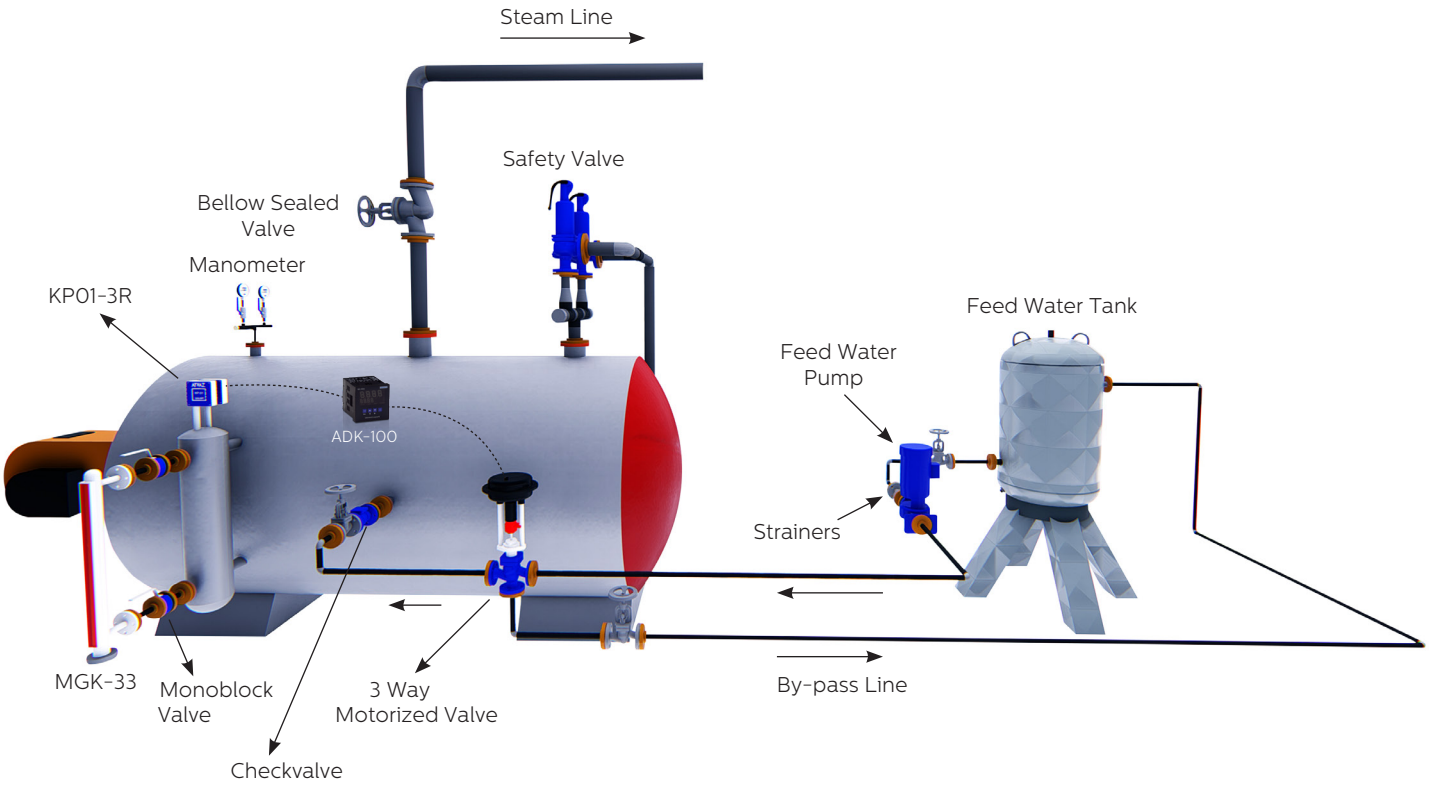
3D APPLICATION SAMPLE



The pump in the proportional feed water system operates continuously and sends the required feed water to the boiler. The KP01-3R sends a signal to 3 way motorized valve to open or shutdown signal when not needed. When the boiler reaches the sufficient water level, it sends a shut-off signal to the valve and sends the feed water to the tank by the by-pass line. It is a system that continues in this way continuously. A two-way motorized valve can also be used as an alternative to the replacement of the three-way motorized valve.

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