

BWS

Pressure Booster
Systems

General

- The series of intelligent pressure boosting system BWS-HY is developed based on PID control the pump pressure within a certain range according to the water consumption with features of complete functions, reliable quality, stable operating and easy maintenance.

General

- BWS, the abbreviation of Building Water System or Best Water System, implies the LEO's ambition to build up the image of the best quality product range for water supply systems in the market.
- BWS series includes WG Non-Negative Water Supply System, WX Water Non-negative Supply System, and ZY Boosting Water Supply System. together with WQ sewage pumps. XBD firefighting pumps. LPP in-line pumps and LEN end suction pumps, we have a full range to satisfy the applications of secondary water supply, drainage, fire-fighting, and HVAC.

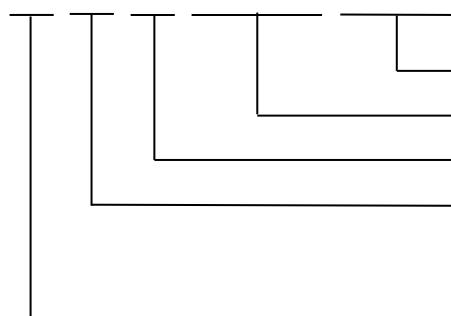
Product Composition

- The Complete device is composed from a pump unit, a pressure tank, PID and accessories. If necessary, auxiliary pumps or pressure tanks can be added in the device.



Identification Codes

BWS-HY - (E) - 2LVS15-8 / LVS3-10



Model of the auxiliary pump

Pump qty & pump model

Integrated inverter, control box without E

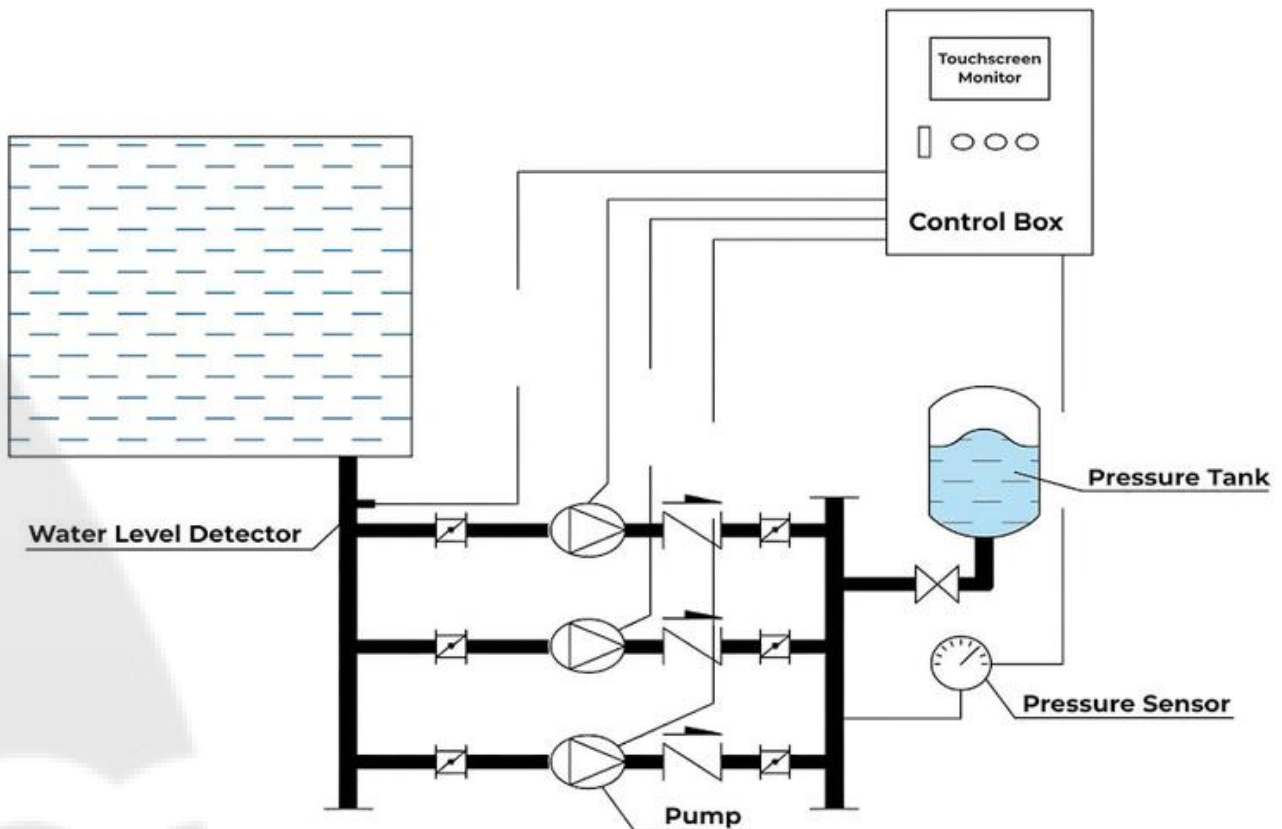
HY: Constant voltage water supply

WG: Non-Negative water supply with tank

WX: Non-negative water supply with control box,

ZY: Boosting water supply

LEO Building Water System



Product Overview

The pressure value on the pump outlet is set as a parameter in the water supply equipment. The output frequency is controlled by PID inverter, and the rotating speed of the pump motor is consequently adjusted to keep the water system pressure constant as the preset value. When the water consumption reduces the frequency is decreased to reduce the pump speed. In this way, a sufficient pressure (Same as the preset value) and water supply (which fluctuates according to the water consumption of the users) in the entire network is guaranteed.

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Product Features

This device features stable pressure, non-frequent operating, high efficiency, energy saving, and slow noise, which can be used to replace traditional high-positioned water tanks or water towers.

- 24 hours constant pressure and automatic activation of auxiliary pumps according to pressure features
- Smooth start which eliminates water hammer and extends the service life of motors and pumps
- Protection against under or over voltage, overcurrent, overheat, overpressure as well as no-load of water
- Optional functions available on customers' demand, such as motors
- Digital PID control, which is better than PLC logical control
- Stable operating and easy handling due to high automation and intelligence level
- 100% factory tested with very low failure rate

Applications

- Communities, villas, office buildings, hotels, restaurants, etc.
- Boilers (cold, and hot water)
- Pressure boosting in water plant
- Industrial production
- Cooling water circulation system
- Fire fighting

Operating Conditions

- Power: 380 V, 50 HZ (60 Hz on request)
- Ambient temperature: 0 - 40 °C, relative humidity up to 90%, no condensation
- Medium: Clean Water or liquids similar to water in physical and chemical properties
- PH value: 5 - 9
- Liquid temperature: 0 - 70°C
- Altitude: up to 1000 m, slope of the base up to 5 degree

Product Functions

- **Constant pressure water supply**

The pressure of the pipe network is controlled within a certain range.

- **Alternative operating**

The pumps work by turns according to the present timing. The operating time for each pump is roughly equal to prolonging the service life of the device.

- **Timing function**

Working pressure values at different times can be set to meet the demand of the water supply.

- **Sleep mode**

The device goes into sleep mode for energy-saving during the night, or the water consumption is very low.

- **Automatic wake-up**

When the pressure of the water network reduces to the preset value. The device will be woken up automatically and start to operate.

- **Automatic reset**

In the event of an inverter failure, the controller will reset the inverter automatically. If the reset time is more than the preset number, a display of inverter failure will be generated by the system. Maintenance of the inverter is necessary.

- **Automatic operating at power frequency**

In the event of a malfunction of the inverter or pressure sensor, the device will operate at power frequency automatically to ensure water supply and sound an alarm.

- **Manual/Automatic operating**

The device has two operating modes (manual and automatic) for selection.

- **Automatic start/stop**

In case of a low water level in the water source, the device will stop the working pumps and sound an alarm. When the water level recovers, the device will restart automatically.

- **Overload protection**

When the current of the motor exceeds the preset value for a specific period of time, the controller will shut down the related pump and sound an alarm.

- **Water-load protection**

If the device has no water or high gas content for a specific period of time, the controller will shut down the entire device. The device runs automatically again when the water is recovered, and the gas inside is exhausted.

- **Overpressure protection**

When the pressure is higher than the preset value for some reason during operating, the device will be shut down automatically to avoid any damage to the pipelines.

- **Low-pressure protection**

When the pressure of the pipelines is lower than the preset value, the device will judge it as a leakage in the pipe network and will be shut down automatically to save water.

- **Alarm function**

Any fault during operation will be alarmed and displayed on the LCD screen automatically.

- **Information storage**

All alarm information can be saved in the controller for inspection.

- **Password setting**

The device is protected by a password. Only the administrator is authorized to change the parameter.

- **Reset of parameter values**

In case of abnormal operating due to a change of parameter values by users, the values can be reset to the factory default settings for safe operating.

- **Overvoltage & Undervoltage protection**

If the voltage is 10% higher or lower than the normal voltage, the device will stop working to avoid any damage to the components.

- **Phase sequence and phase-lacking protection**

In case of wrong phase sequence or lack of phase at the power supply, the inner control components will protect the device and ensure its normal operation.

- **Remote monitoring**

The device can be equipped with a remote monitoring system.

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Main Parts

A standard BWS-HY system is composed of 2 -6 pcs of pumps which are stalled on the same base in parallel and necessary accessories as well as a control box (A pressure tank must be included during installation).

No.	Description	Q'ty
1	Vertical Multistage Pump	2 - 6 pcs
2	PID Control Box	1 pc
3	Base	1 pc
4	Main Inlet Pipe	1 pc
5	Main Outlet Pipe	1 pc
6	Non Return Valve	1 pc per pump
7	Ball Valve or Butterfly Valve	2 pcs per pump
8	Water Level Detector	1 pc
9	Pressure Sensor	1 pc
10	Pressure Tank	1 pc



Pump unit

The key operating part of the water supply system. Stainless steel pipelines, flanges, valves, and pumps are assembled by unique swing welding technology.



PID Control Box

The key control part of the water supply system. The inverter, circuit breaker, relay, contactor, alarm device, signal indicator, and remote monitoring device are integrated with a reasonable layout inside the control box.



Pressure tank

A sealed pressure vessel made of SS 400 or STS 307 for water storage and elimination of water hammer. The membrane is from BUTYL or EPDM. The tank has the effect of compensation of water and pressure when the system shuts down, or the flow becomes small.