# BLUE RIBBON Sales & Services Corp.

# BB4000 4-PUMP CONTROLLER

With the accuracy of pressure-sensing level transmitters and the simplicity of float inputs, the BB4000 is the ideal controller for your application. This quad pump controller is easily configured for either analog sensors of float discrete inputs.

## STANDARD FEATURES:

- Field configured for floats or analog sensor inputs, including 20VDC loop power.
- Optional 4 analog sensor inputs or 18 discrete (float switches).
- Alternates pumps and performs lag pump delay(s).
- Provides high and low alarms with full front panel.
- Adjustable parameter values.
- Optional VFD speed control output.
- Pump up (fill) or pump down (empty) control.
- 6 Amp pump relay outputs and alarm outputs.
- Display up to 255 feet.
- Full front panel setup for all control options and menu items.
- 120 VAC input power. Line rate and transient protection.
- Isolated and transient protected (4-20mA) analog level input.
- RS-232 serial port. Modbus Protocol. RTU or ASCII mode.
- First ON - First OFF, or First ON - Last OFF alternation.
- Alternator logic skips disabled pumps, remembers lead pump position during outage.
- Timed (1 minute) level simulation.
- Security code protected parameter setup.
- Status of discrete inputs may be viewed from front of control.
- Phoenix-style connectors used.
- Adjustable lag pump(s) delay.
- High and Low level alarm relays and alarm indication.
- Wet well level analog input zero and span adjustments.
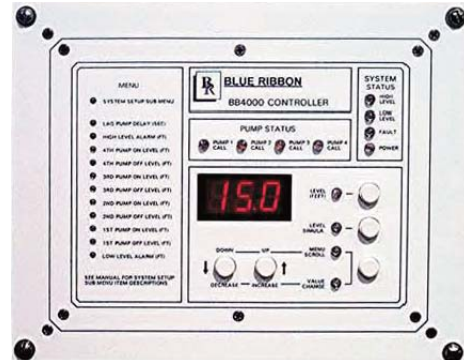


- Alternation Schemes (menu selectable):
    - Standard alternation
    - Pump 1 always lead - stays ON with other pumps
    - Pump 1 always lead - turns OFF with other pumps ON
    - Split alternation - pumps 1 & 2 and pumps 3 & 4
    - Fixed sequence - pump always lead
    - Stepped ON/OFF - only one pump runs at a time

- 18 discrete inputs, programmable for the following functions:
    - Pump disable with HOA in OFF, or pump fault
    - External alternator selector switch
    - All pump disable (for connection to Phase Monitor)
    - Limit number of pumps called while on emergency power
    - Alternation by external time clock
    - Freeze wet well level during a bubbler tube purge
    - Call pump last
    - Float switch backup
    - A variety of telemetry functions

A5BR-BB4000.00

**Standard Specifications listed below.**
**Consult factory for further options, which may change the overall dimensions.**

| | |
|---|---|
| Input Power | 120 VAC (±10%, 13 VA max), metal oxide varistor transient protection |
| EMI Line Filter | Pie type |
| Agency Approvals | UL508, CAN/CSA |
| Ambient Operating Temperature | Without analog outputs: -20ºC to +65ºC (-4ºF to 149ºF)<br>With analog outputs:    -20ºC to +50ºC (-4ºF to 122ºF) |
| Level Display | 3 digit, 7 segment LED, 0-255 ft range (decimal point position is selectable) |
| Indicators | LED |
| Color | White with Blue silk screening |
| Relays | 6A @ 250 VAC. 6A @ 30 VDC. |
| Loop Powered Supply | Isolated +24 VDC @ 50 mA, regulated |
| Level Analog Input | Isolated 4-20 mA, 250 Ohms load, transient protected |
| Discrete Inputs | Optically isolated and transient protected. Each input draws 7mA at 24 Vdc |
| Power for Discrete Inputs | Unregulated 24 VDC. Transient protected. |
| Power for Analog Inputs | Regulated 20 VDC ± 1V. Transient protected. |
| Analog Outputs | Isolated 4-20 mA. Maximum load resistance: 600 Ohms.<br>Each output may be configured as a speed reference for any of the pumps, or set to follow the well level input. |
| Auxiliary Analog Inputs | 4 isolated 4-20 mA. 250 Ohms load, transient protected. |
| Variable Frequency | • VFD speed reference: the controller must be ordered with an analog output Drive Control for speed control of each pump that will be on a VFD.<br>• Three setup parameters are provided to establish a linear wet level v/s pump speed curve.<br>• Pump speed clamp logic: will not allow VFD speed reference to drop below the "VFD Minimum Speed" setup parameter value.<br>• Pump start speed boost logic: if enabled, will temporarily ramp pump speed to 100% to give the check valve a chance to open.<br>• Call pump last logic: the controller will call pumps in the Bypass Mode last (external circuitry must be connected to discrete inputs on the controller, to signal when a pump is in the Bypass Mode). |

## ORDERING GUIDE:    BB4000 - XX

Part No.

0 = No Analog Output, 18 Discrete Inputs

1 = One Analog Output, 18 Discrete Inputs

2 = Two Analog Outputs, 18 Discrete Inputs

3 = Three Analog Outputs, 18 Discrete Inputs

4 = Four Analog Outputs, 18 Discrete Inputs

0 = No Auxiliary Analog Inputs

1 = One Auxiliary Analog Input

2 = Two Auxiliary Analog Inputs

3 = Three Auxiliary Analog Inputs

4 = Four Auxiliary Analog Inputs