BL Series – Latching Valve

- 3-Way or 2-Way Valves
- Low Power Requirements
- MOPD: 240 PSI (12.4 bar)
- Dual Diode Protection Optional

The BL series latching valve allows the user to pulse the valve and have it change state. The voltage does not need to be constantly applied in order to hold it in a state. These valves are ideal for controlling larger pneumatic valves in remote applications where power is limited or when the temperature of the media cannot be impacted as it flows through the valve. The larger pneumatic valves can close and open large pipes and these latching valves control them. The term Latch refers to the valve in the open state where supply pressure goes to the external valve. The unlatched state is when the supply is cut off and the external valve is exhausted to ambient.

Typical Applications
- Natural Gas Plunger Lifts
- Natural Gas Separators
- Gas Chromatography
- Irrigation Systems

Reference
3-Way Valve

2-Way Valve

How To Order
Valve Part Numbers are built from a series product codes. Use the Bold product codes from the choices listed on the following page to construct a complete Part Number.

Product Description from Example Shown Above:

BL311-01LC-18B-VBX-GPBD-2

BL311 = BL Series with 3-Way Latching Valve Function (Orifice Body/Stop: 1/32” / 3/64”);
-01LC = 303 SS Body Material; 1/8” FNPT Body Port;
-18B = 303 SS 1-piece Guide Construction; 1/8” Barb Stop Port;
-VBX = Viton® Plunger Seal; Nitrile (Buna-N) Internal O-Ring;
-GPBD = Grommet Housing Construction; Positive Pulse, Black Common Electrical Interface; With Diodes;
-2 = 12 VDC Supply Voltage
### BL Series – Part Number Build

Build a Valve Part Number by filling in the boxes below using the related code numbers on this page.

#### Valve Function and Orifice Size

<table>
<thead>
<tr>
<th>Valve Function</th>
<th>Code</th>
<th>Body</th>
<th>Orifice</th>
<th>MOPD psi</th>
<th>MOPD bar</th>
<th>$C_p$</th>
<th>$K_v$</th>
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<tbody>
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<td>3-WAY Normally Closed</td>
<td>311</td>
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<td>3-WAY Normally Closed</td>
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<td>3.97</td>
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<td>—</td>
<td>50</td>
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<td>4.76</td>
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</tbody>
</table>

### Additional Ordering Details

#### 2 Body Material
- 01: 303 Stainless Steel
- 03: Brass
- 05: 316 Stainless Steel

#### 3 Body Port
- LC: 1/8˝ Female NPT
- LB: 1/4˝ Female NPT
- M3: Manifold Mount – 5/16˝ Thread Stud
- OB: Omit Body (Operator Style)

#### 4 Guide Construction
- 1: 303 Stainless Steel 1-Piece

#### 5 Stop Port
- BS: #10-32 Internal (Recommended for Free Venting)
- SB: 1/8˝ Brass Barb Fitting
- AC: 1/8˝ Female NPT Adaptor
- AB: 1/4˝ Female NPT Adaptor
- XX: Not Applicable (All 2-Way Valves)

#### 6 Plunger Seal Material
- H: Hydrin®
- V: Viton®
- P: Perfluoroelastomer

#### 7 O-Ring Material (Internal)
- B: Nitrile (Buna-N)
- V: Viton®
- P: Perfluoroelastomer

#### 8 O-Ring Material (Manifold Mount External)
- B: Nitrile (Buna-N)
- V: Viton®
- P: Perfluoroelastomer
- X: Not Applicable

#### 9 Housing Construction
- C: Conduit
- G: Grommet

#### 10 Electrical Interface
- PB: Positive Pulse, Black Common
- NB: Negative Pulse, Black Common
- NW: Negative Pulse, White Common

#### 11 Diodes
- N: No Diode
- D: Diode

#### 12 Supply Voltage
- Unlatch voltage should not exceed 25% rated voltage to ensure change of state.
- 2: 12 VDC, 9 Watts Latching, 7 Watts Unlatching
- 4: 24 VDC, 7 Watts Latching, 9 Watts Unlatching
- 6: 6 VDC, 7 Watts Latching, 5 Watts Unlatching

Additional ordering details on following pages.
**BL Series – Additional Component Details & Dimensions**

**3 Body Port**

### 1/8” NPT Port (LC)

- **Valve Type** | **Dim. “A”**
  - 3-Way | .900 (22.9)
  - 2-Way | .795 (20.2)

### 1/4” NPT Port (LB)

- **Valve Type** | **Dim. “B”**
  - 3-Way | .980 (24.9)
  - 2-Way | .875 (22.2)

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**Manifold Mount Body (M3)**

### Valve Type | **Dim. “C”**
- 3-Way | .610 (15.5)
- 2-Way | .550 (13.9)

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**Manifold Preparation**

- **A A**

  - **Ø.097 MAX. ON A Ø.620 BOLT CIRCLE FOR OVERSEAT PORT**
  - (MULTIPLE HOLES MAY BE REQUIRED TO MEET OR EXCEED ORIFICE DIAMETER/FLOW RATE)

  - **Ø.319 × .007 MAX. X 90° C’SINK**

  - **Ø1.00 MIN. FINISH AREA**

  - **5/16-24 UNF-2B X .28 MIN. FULL TH’D UNDERSEAT PORT**

  - **Ø.620 B.C.**

  - **(R.310 ±.003)**

  - **OVERSEAT PORT**

  - **UNDERSEAT PORT**

  - **SECTION A-A**

<table>
<thead>
<tr>
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<th>Overseat Port</th>
<th>Underseat Port</th>
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<td>OUT</td>
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<tr>
<td>3-Way N.C.</td>
<td>CYL</td>
<td>IN</td>
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*IF THE TOTAL AREA OF OVERSEAT PORT IS LESS THAN THE ORIFICE DIAMETER, THEN THE OVERSEAT IS THE RESTRICTOR.*
Omit Body Manifold Mount (OB)

### 2-Way

Note: All diameters to be concentric to datum -A- within .003 T.I.R.

**Dimensions**

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### 3-Way

Note: All diameters to be concentric to datum -A- within .003 T.I.R.

**Dimensions**

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<td>.078</td>
<td>.1126</td>
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</table>
BL Series – Additional Component Details & Dimensions, Cont.

5 Stop Port (3-Way Only)

* Dimension is same for 2-way valves.

9 Housing Construction

10 Electrical Interface 11 Diodes

Positive

PB

Diodes

With

Without

Negative

NB

NW

Diodes

With

Without

Positive Diodes

PB

NW

Negative Diodes

NB

NW

* Lead Wires
- #20 AWG PTFE
- 18” Length

Grommet

Conduit

Lead Wires*