½” Monitored Pneumatic Valves
On Series Ported Manifold

Patented Technology

SUITABLE FOR RISK CATEGORY 4 APPLICATIONS
As per AS4024.1-Part 1502 & 1502
SIL 3 as per IEC 61508 & EN ISO 13849-1

Applications Include:

- Pneumatic Presses
- Pneumatic Guillotines
- Automated Fixtures
- Palletising Equipment
- Packaging Machinery
- Robot & Automated Cells
- Pneumatic Pushers & Ejectors
- Guard Access Preconditions
- Pneumatic Strapping Machines

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**Fluidsentry™**

**VALVE SPECIFICATIONS**

**Description:** Directional control valves for pneumatic safety applications in five port two position sliding spool type with static seals, mounted on a safety manifold configured for three port two position operation. Each valve incorporates a two-pole positive opening plunger type switch with positive opening contact. The two models offered have certification to meet Australian & European machinery safety standards. Valves are supplied with 24VDC solenoid coils as standard unless otherwise specified.

**Model:**
- Dual series ported manifold valves: PBS-412M (Suitable for Risk Category 4 applications)
- Single manifold mounted valve: PBS-411M (Suitable for Risk Category 2 applications)

**Materials:**
- Main body, extension housing: Aluminium
- Pilot housing: Plastic
- Spool: Aluminium
- Return spring: Steel
- Seals: Nitrile rubber
- Screws: Cap Screws
- Lubricant: Diamond Grease

**Switch:**
- Make: Bernstein
- Model: I88-U1Z w (608.6103.008)
- Type: Plunger
- Approvals: EN 1088, EN 60947-5-1, EN 292, EN 60204-1
- Contacts: 1 x Normally Closed (Safety Contact), 1 x Normally Open (Non Safe Contact)

**Wiring:**
- Switch Terminals: 11 - 12 White – Black (NC), 21 - 22 Brown – blue (NO)

**Coil:**
- Voltages available: 240vac, 110vac, 24vac, 24vde, 12vde
- Power Consumption DC: 1.8W
- Indicator light and surge suppression: -15% to + 10% Rated Voltage
- Inrush: 5.6VA / 50Hz, 5.0VA / 60Hz
- Holding: 3.4VA (2.1W) 50Hz, 2.3VA (1.5W) 60Hz

**Plugs Wiring:**
- Pin 1: Positive / Active
- Pin 3: Negative / Neutral
- Earth: Earth

**Performance:**
- Valve working pressure range: 250 – 1000 kPa
- Port connection: ½” BSP
- Medium: Compressed air filtered to 5 micron and/or lubricated
- Operating temperature range: Max +50 Celsius
- Cv (flow factor): P to A 3.7
- Maximum Operating Frequency: 5Hz
- Activation time: 19 Milliseconds
- Deactivation time: 65 Milliseconds

**Rating:**
- Protection: IP 62

**Approvals:**
- Low Voltage Directive: File No: R 9250033
- EMC Directive: File No: H/EMC 95000251-3
- Machinery Directives: 98/37/EC – EN 292-1, EN 292-2, EN 983, EN 954-1, EN 1050

**Manual:**
- Manual Override: Disabled Internally

**Silencers:**
- Pilot Exhaust: 1/8” BSP SMC Part No: AN101-01
- Main Exhaust: 1/2” BSP SMC Part No: AN403-04
CAUTION – IMPORTANT: The above drawings are a conceptual example and are intended for guidance purposes only. They have not been specifically drawn in relation to your plant. Failing to ensure professional installation of Fluidsentry equipment which has regard to the specific circuit design and operation of the plant on which it is being installed may create a safety hazard. Accordingly Fluidsentry is not liable for loss or injury, whether direct or indirect, resulting from the incorrect installation of this product.
### EN ISO 13849 Data Sheet

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>PBS-41, PBS-411M, PBS-412M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>April 2011</td>
</tr>
<tr>
<td>Revision</td>
<td>A</td>
</tr>
<tr>
<td>MTTFd</td>
<td>30 Years</td>
</tr>
<tr>
<td>Vibration</td>
<td>Vibration in line with spool axis &lt; 5g</td>
</tr>
</tbody>
</table>

**Note**

The products must be used in accordance with the installation instructions and operating conditions in the relevant data sheet, which has been produced to support the requirements of the harmonized standard EN ISO 13849.

Additionally, for products intended to be sold in European Economic Area:

“Safety devices” or other safety functions mentioned in any product literature are not necessarily “safety components” as defined by the Machinery Directive 2006/42/EC, unless otherwise stated together with the CE Mark and specific reference to said directive.
DECLARATION OF CONFORMITY
For Safety Components in accordance with Annex IIC (Machinery Directive)

Valves manufactured by FLUIDSENTRY Pty Ltd conform to the requirements of the following Directives and European Standards.


EMC Directive: 89/336/EEC – EN 55014, EN 50081-2, EN 50082-1, EN 50082-2


Fluidsentry herewith declares that the supplied Fluidsentry™ models of:

VALVES: MODELS PBS-412M (Dual Valve System)
PB-411M (Single Valve System)

TYPE: SINGLE & DUAL MONITORED PNEUMATIC VALVES MOUNTED ON A SERIES PORTED MANIFOLD

Comply with all applicable Directives and Harmonized Standards for Pneumatic Fluid Power Systems and their components and are qualified to bear the CE mark as assessed by RISK PLANT CONSULTANTS Pty Ltd (EC Conformity Assessment Body No. 929) Melbourne Australia 2nd October 2005.

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Email: sales@fluidsentry.com

Murray Andrew Hodges
Name and signature of Authorized person.

Valve Serial No. …………………….
Valve Serial No. …………………….
Manifold Serial No. …………………….

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EC MACHINERY DIRECTIVE 98/37/EC
ASSESSMENT OF CONFORMITY
FOR SAFETY COMPONENT IN ACCORDANCE WITH ANNEX II C

Report No. : 021005
Machine/equipment : Fluidsentry pneumatic monitored valves
Models : PBS412M (suitable for up to Category 4)
PBS411M (suitable for up to Category 2)
Manufacturer : Fluidsentry Pty Ltd
Assessment Date : September 2005
Relevant Standards : Essential Health and Safety Requirements,
EN 292-1, EN 292-2, EN 1050, EN 60204
EN 954-1, EN 983.

Based on the inspection of the valve and evidence presented in the Technical Construction File, RiskPlant Consultants Pty Ltd (EC Conformity Assessment Body No. 929) certify that the valve identified above conforms with the requirements for safety components in accordance with Annex II C of the EC Machinery Directive 98/37/EC.

NATA Authorised signatory:

ROGER LIM, MIE Aust CEng MISIA
Principal Consulting Engineer

NATA Accredited (No. 141255)
Inspection Service
EC Designated Conformity Assessment Body (No. 929)

Issued date: 2 October 2005
PBS-412M Dual Valve System Dimensions
**PBS-411M Single Valve System Dimensions**
Safety Instructions

These safety instructions are general in nature, and intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard by labeling 'Caution' 'Warning' or 'Danger'. To ensure safety, be sure to observe ISO4414 Note 1, JIS B 8370 Note 2 and other safety practices.

The person who designs the pneumatic system or decides its specification must also refer to the specific Safety Instructions supplied for individual components which can be found in each Product Series brochure.

<table>
<thead>
<tr>
<th></th>
<th>Caution:</th>
<th>Operator error could result in injury or equipment damage.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warning:</td>
<td>Operator error could result in serious injury or loss of life.</td>
</tr>
<tr>
<td></td>
<td>Danger:</td>
<td>In extreme conditions, there is a possibility if serious injury or loss of life.</td>
</tr>
</tbody>
</table>

**Warning**

1. **The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**
   Since the products specified here are used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

2. **Only trained personnel should operate pneumatically operated machinery and equipment.**
   Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair or pneumatic systems should be performed by trained and experienced operators.

3. **Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
   1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
   2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for the equipment and exhaust all residual compressed air in the system.
   3. Before machinery/equipment is re-started, take measures to prevent quick extensions of the cylinder piston rod etc.(Bleed air into the system gradually to create back pressure)

4. **Contact Fluidsentry if the product is to be used in any of the following conditions:**
   1. Conditions and environments beyond the given specifications, or if product is used outdoors.
   2. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Note 1) ISO4414: Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems.
Note 2) JIS B 8370: Pneumatic systems axiom.

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Precautions

⚠️ Selection
⚠️ Warning
1. Confirm specifications
Products represented in this catalogue are designed for use in compressed air applications only, unless otherwise indicated. Do not use the products outside their design parameters.

⚠️ Installation
⚠️ Warning
1. Do not install unless the safety instructions have been read and understood.
Keep this catalogue on file for future reference.
2. Maintenance
When installing the products, please allow access for maintenance.
3. Tightening Torque
When installing the products, please follow the listed torque specifications

⚠️ Piping
⚠️ Caution
1. Before Piping
Make sure that all debris, cutting oil, dust, etc. are removed from the piping.
2. Sealant Tape
When installing piping or fitting into a port, ensure that sealant material does not clog up the pressure port. When using sealant tape, leave the first 1.5 to 2 thread turns exposed at the end of the pipe/fitting.

⚠️ Air Supply
⚠️ Warning
1. Operation fluid
Compressed Air
2. Install an air dryer, aftercooler etc.
Excessive condensate in a compressed air system may cause valves and other pneumatic equipment to malfunction. Installation of an air dryer, after cooler, etc. is recommended.
3. Drain
If condensate in the drain bowl is not emptied on a regular basis, the bowl will overflow and allow the condensate to enter the compressed air lines. If the drain is difficult to check and remove, it is recommended that a drain bowl with the autodrain option be installed.
4. Use clean air
If the compressed air supply is contaminated with chemicals, synthetic materials, corrosive gas, etc., damage to the pneumatic equipment may occur.

⚠️ Environment
⚠️ Warning
1. Do not use in an environment where the product is directly exposed to corrosive gases, chemicals, salt water, water or steam.
2. Do not expose the product to direct sunlight for an extended period of time. If the product has to be mounted in an area where exposure to direct sunlight cannot be avoided, the use of a protective cover is recommended.
3. Do not mount the product in a location where it is subject to strong vibrations and/or shock.
4. Do not mount the product in a location where it is exposed to radiant heat

⚠️ Maintenance
⚠️ Warning
1. Maintenance
If handled improperly, compressed air can be dangerous. Assembly, handling and repair of pneumatic systems should be performed by qualified personnel only.
2. Drain
Remove condensate from the filter bowl on a regular basis.
3. Shut-down before maintenance
Before attempting any kind of maintenance make sure the supply pressure is shut off and all residual air pressure is released from the system to be worked on.
4. Start-up after maintenance
Apply operating pressure and power to the equipment and check for proper operation and possible air leaks. If operation is abnormal, please verify product set-up parameters.
5. Do not make any modification to the product
6. Do not take the product apart

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