**Type Y & Z**

**Class I (≤ 2 ft³) and Class II (≤ 10 ft³)**

---

### Description

Model 1001A is an enclosure pressurization or purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed (protected) enclosure(s), in order to prevent combustible dust accumulation or remove and prevent flammable gas or vapor accumulations. In Class II areas, the system maintains a "safe" (1.0") pressure. In Class I areas, the system accomplishes four air exchanges and maintains a "safe" (0.25") pressure. These processes reduce the hazardous (classified) area rating within the enclosure(s), in accordance with the NEC - NFPA 70, Article 500, NFPA 496 and ISA 12.4.

### Operation

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. In Class II areas, all dust must be removed from the enclosure(s). The enclosure protection vent (if used) must be tested and enclosure(s) must be sealed. The enclosure pressure control regulator is then used to set a safe reading on the enclosure pressure gauge. In Class II areas, power can be energized when safe pressure is stable. In Class I areas, the user must perform an exchange cycle (determined by the safe pressure flow rate—five minutes minimum) before power can be energized. Loss of safe pressure in Class I or II areas requires immediate attention, unless power is deenergized. WPS style systems include an explosion-proof differential pressure switch with form "C" contacts for audible or visual alarm systems.

### Standard Model Applications

- **Model Number:** 1001A-CI Type Y  
  **Designation:** Purging System  
  **Enclosure Volume:** 2 ft³ max.  
  - **LPS Style**  
    - UL & FM Certified: Cl. I, Div. 1, Group A-D  
    - Rating Reduction: Div. 1 to Div. 2  
  - **WPS Style**  
    - UL & FM Certified: Cl. I, Div. 1, Group C&D  
    - Rating Reduction: Div. 1 to Div. 2  
  - **WPS Style**  
    - UL & FM Certified: Cl. I, Div. 1, Group A-D  
    - Rating Reduction: Div. 1 to Div. 2

- **Model Number:** 1001A-CII Type Y  
  **Designation:** Purging System  
  **Enclosure Volume:** 2 ft³ max.  
  - **LPS Style**  
    - UL & FM Certified: Cl. II, Div. 1, Group F&G  
    - Rating Reduction: Div. 1 to Div. 2  
  - **WPS Style**  
    - UL & FM Certified: Cl. II, Div. 1, Group F&G  
    - Rating Reduction: Div. 1 to Div. 2

- **Model Number:** 1001A-CI Type Z  
  **Designation:** Purging System  
  **Enclosure Volume:** 2 ft³ max.  
  - **LPS Style**  
    - UL & FM Certified: Cl. I, Div. 2, Group A-D  
    - Rating Reduction: Div. 2 to Nonhazardous  
  - **WPS Style**  
    - UL & FM Certified: Cl. I, Div. 2, Group C&D  
    - Rating Reduction: Div. 2 to Nonhazardous  
  - **WPS Style**  
    - UL & FM Certified: Cl. I, Div. 2, Group A-D  
    - Rating Reduction: Div. 2 to Nonhazardous

- **Model Number:** 1001A-CII Type Z  
  **Designation:** Pressurization System  
  **Enclosure Volume:** 10 ft³ max.  
  - **LPS Style**  
    - UL & FM Certified: Cl. II, Div. 2, Group F&G  
    - Rating Reduction: Div. 2 to Nonhazardous  
  - **WPS Style**  
    - UL & FM Certified: Cl. II, Div. 2, Group F&G  
    - Rating Reduction: Div. 2 to Nonhazardous

---

### System Specifications

- **System Dimensions:** See page 10  
- **Shipping Weight:**  
  - LPS - 5 lb / WPS - 10 lb  
- **Temp. Range:** -20°F to +120°F  
- **Supply Pressure Range:** *5 - 120 psig  
- **Supply Requirements:** Clean air or inert gas  
- **Safe Press. (Cl/CII):** 0.25/1.0"  
- **Safe Press. Flow Rate:** **0.1 - 3.5 SCFH  
- **System Supply Fitting:** 1/4" tube fitting  
- **Enclosure Reference Fitting:** 1/4" tube fitting  
- **Switch Setting (Cl/CII, Decr):** 0.15"/0.5" ± 0.02"  
- **Switch Contact Rating:**  
  - **WPS Style:** 120 VAC, 15 A  
  - **WPSA Style:** 120 VAC, 10 A, 28 - 125 VDC

---

*With EPV-1 Vent - 120 psi max. to 5 psi min. Systems installed without Vent must be equipped with redundant regulator set to 5 psi max.*  
**Enclosure integrity determines actual flow rate**  
***Supply voltages 24 VDC and 240 VAC available upon request.*
**Type Y & Z**

**Material Specifications**

- **Regulator Body:** Zinc w/Enamel Finish
- **Regulator Handle:** Polycarbonate
- **Enclosure Pressure Gauge:** Alum. w/Enamel Finish
- **Tube Fittings:** 316 SS Forged Body
- **Tubing:** 316 SS 1/4" .035 Welded
- **System Nameplates:** Silk screened Lexan®
- **Fastener Hardware:** Alum. & Stainless Steel
- **Mounting Plate:** 316 14 Ga #8 Brush SS
- **EXP Pressure Switch Body:** Anodized Cast Alum.
- **Enclosure Warning Nameplate:** Silk screened SS Lexan®

*Lexan® is a registered trademark of the General Electric Company*

---

**Model Number Designations**

<table>
<thead>
<tr>
<th>1001A</th>
<th>LPS</th>
<th>CI</th>
<th>YZ</th>
<th>LH</th>
<th>##</th>
</tr>
</thead>
</table>

- **Series Model Number**
- **System Style**
  - LPS - less pressure switch
  - WPS - with pressure switch
  - WPSA - with pressure switch
- **Area Classification**
  - CI - Class I Area
  - CII - Class II Area
- **System Type**
  - YZ - Div. 1 to Div. 2, Div. 2 to Nonhazardous

---

**Model 1001A System Accessories** (See accessories page for complete details)

**FACTORY INSTALLED FITTINGS**

- **ECK-1001A:** Enclosure Connection Kit
- **EFC-4:** 1/4" Flush Connector
- **EBC-4:** 1/4" Bulkhead Connector
- **EPC-10:** 1/2" Pipe Connector

**ADDITIONAL ITEMS**

- **ILF-4:** 1/4" Filter
- **SMK-1, -4 or -6:** System Mounting Kit
- **EPSK-1 or -2:** Explosion Proof Switch Kit

---

**Optional Hex Key Regulator Handle**

- **TR-10G:** Tamper Proof Regulator

**Warning Nameplates**

- **EWN-1:** Class I Enclosure Warning
- **EWN-2:** Class II Enclosure Warning
- **ETW:** Enclosure Temperature Warning

**Installation & Operation Manual**

- **129-0197:** Inst. & Operation Manual

---

**Overall System Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>LPS</th>
<th>WPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Height:** 7/12 in.
- **Width:** 8/8 in.
- **Depth:** 5.5/7.25 in.

**Dimensions in inches. Mounting dimensions available upon request. FM & PM panel cutout dimensions: LPS - 8 x 9 w. WPS - 13 x 9 w. Height & Width dimensions reflect mounting plate measurements. Depth dimension reflects overall measurement of system, including components.**

Protected under U.S. Patent #5,101,710
**Description**

Model 1002 is a Rapid Exchange® purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed (protected) enclosure(s), in order to remove and prevent flammable gas or vapor accumulations. The system accomplishes four air exchanges and maintains a "safe" (0.25") pressure. A Pepperl+Fuchs Model EPV-2 Enclosure Protection Vent is required for proper operation. This process reduces the hazardous (classified) area rating within the enclosure(s), in accordance with the NEC - NFPA 70, Article 500, NFPA 496 and ISA 12.4.

**Operation**

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. The enclosure protection vent must be tested and the enclosure(s) must be sealed. The enclosure pressure control valve is then used to set a safe reading on the enclosure pressure indicator. When safe pressure is stable, the Rapid Exchange® control valve must be fully engaged. Upon completion of the Rapid Exchange® cycle, (five minutes minimum) the Rapid Exchange® control valve must be disengaged to return to a safe enclosure pressure. Power can then be energized to the protected enclosure(s). Loss of safe pressure requires immediate attention, unless power is deenergized. WPS style systems include an explosion proof differential pressure switch with form "C" contacts for audible or visual alarm systems.

**System Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>LPS Style</th>
<th>WPS/WPSA Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Dimensions:</td>
<td>See page 16</td>
<td></td>
</tr>
<tr>
<td>Shipping Weight:</td>
<td>LPS - 10 lb / WPS - 15 lb</td>
<td></td>
</tr>
<tr>
<td>Temp. Range:</td>
<td>-20°F to +120°F</td>
<td></td>
</tr>
<tr>
<td>Supply Pressure Range:</td>
<td>80 - 120 psi</td>
<td></td>
</tr>
<tr>
<td>Capacity &amp; Filtration:</td>
<td>1.5 oz @ 20 Micron</td>
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<tr>
<td>Supply Requirements:</td>
<td>clean air or inert gas</td>
<td></td>
</tr>
<tr>
<td>Safe Press. Setpoint:</td>
<td>0.25&quot;</td>
<td></td>
</tr>
<tr>
<td>Safe Press. Flow Rate:</td>
<td>* 0.1 - 3.5 SCFH</td>
<td></td>
</tr>
<tr>
<td>Exchange Pressure:</td>
<td>** 3&quot; - 5&quot;</td>
<td></td>
</tr>
<tr>
<td>Exchange Flow Rate:</td>
<td>** 4 SCFM / 240 SCFH</td>
<td></td>
</tr>
<tr>
<td>Exchange Time:</td>
<td>1 min/ft³</td>
<td></td>
</tr>
<tr>
<td>System Supply Port:</td>
<td>1/4&quot; FPT</td>
<td></td>
</tr>
<tr>
<td>Enclosure Supply Fitting:</td>
<td>1/4&quot; tube fitting</td>
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</tr>
<tr>
<td>Enclosure Reference Fitting:</td>
<td>1/4&quot; tube fitting</td>
<td></td>
</tr>
<tr>
<td>Switch Setting (Decr):</td>
<td>0.15&quot; ± 0.02&quot;</td>
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</tr>
<tr>
<td>Switch Conduit Port Size:</td>
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</tr>
<tr>
<td>Switch Contact Rating:</td>
<td></td>
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</tr>
<tr>
<td>WPS Style:</td>
<td>120 VAC, 15 A</td>
<td></td>
</tr>
<tr>
<td>WPSA Style:</td>
<td>*** 120 VAC, 10 A, 28 - 125 VDC</td>
<td></td>
</tr>
</tbody>
</table>

* Enclosure integrity determines actual flow rate

**Standard Model Applications**

<table>
<thead>
<tr>
<th>Model Number:</th>
<th>1002 Type Y</th>
<th>Designation: Purging System</th>
<th>Enclosure Volume: 15 ft³ max.</th>
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</thead>
<tbody>
<tr>
<td>LPS Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 1, Group A-D</td>
<td>Rating Reduction: Div.1 to Div.2</td>
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</tr>
<tr>
<td>WPS Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 1, Group C&amp;D</td>
<td>Rating Reduction: Div. 1 to Div.2</td>
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</tr>
<tr>
<td>WPSA Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 1, Group A-D</td>
<td>Rating Reduction: Div. 1 to Div.2</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number:</th>
<th>1002 Type Z</th>
<th>Designation: Purging System</th>
<th>Enclosure Volume: 15 ft³ max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPS Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 2, Group A-D</td>
<td>Rating Reduction: Div. 2 to Nonhazardous</td>
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</tr>
<tr>
<td>WPS Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 2, Group C&amp;D</td>
<td>Rating Reduction: Div.2 to Nonhazardous</td>
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</tr>
<tr>
<td>WPSA Style</td>
<td>UL &amp; FM Certified: Cl. I, Div. 2, Group A-D</td>
<td>Rating Reduction: Div. 2 to Nonhazardous</td>
<td></td>
</tr>
</tbody>
</table>

* Enclosure integrity determines actual flow rate

**With regulator set to 60 psi min. during exchange Rapid Exchange® is a Registered Trademark of Pepperl+Fuchs, Inc.

*** Supply voltages 24 VDC and 240 VAC available upon request.
Model 1002 System Accessories (See accessories page for complete details)

**CONNECTION FITTINGS**

- NC-4: 1/4" Ninety Connector
- SC-4: 1/4" Straight Connector
- EFC-4: 1/4" Flush Connector
- EBC-4: 1/4" Bulkhead Connector
- EPC-12: 3/4" Pipe Connector

**ADDITIONAL ITEMS**

- SMK-2 or -8: System Mounting Kit
- EPSK-1: Explosion Proof Switch Kit
- GPSK-1: General Purpose Switch Kit

**RAH** Remote Alarm Horn

**RAB-1** Div. 1 Remote Alarm Beacon

**RAB-2** Div. 2 Remote Alarm Beacon

**LCK** L Fitting Conduit Kit

**TCK** T Fitting Conduit Kit

**ENCLOSURE PROTECTION VENTS**

ONE VENT REQUIRED WITH EACH SYSTEM

- EPV-2-SA-00: Straight w/Spark Arrester
- EPV-2-SA-90: Rt Angle w/Spark Arrester

**WARNING NAMEPLATES**

- EWN-1: Class I Enclosure Warning
- ETW: Enclosure Temperature Warning

INSTALLATION & OPERATION MANUAL

129-0196 Inst. & Operation Manual

One (1) ENCLOSURE WARNING NAMEPLATE & ONE (1) INSTALLATION & OPERATION MANUAL ARE PROVIDED WITH EACH SYSTEM

<table>
<thead>
<tr>
<th>LPS / WPS</th>
<th>LH - left hand</th>
<th>RH - right hand</th>
<th>TM - top mount</th>
<th>BM - bottom mount</th>
<th>WM - wall mount</th>
<th>FM or PM - flat panel</th>
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</thead>
<tbody>
<tr>
<td>Height</td>
<td>10 / 15</td>
<td>10 / 15</td>
<td>10 / 10</td>
<td>10 / 10</td>
<td>10 / 15</td>
<td>12 / 17</td>
</tr>
<tr>
<td>Depth</td>
<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>7.75 / 9.25</td>
<td>5 / 6.5</td>
</tr>
</tbody>
</table>

Dimensions in inches. Mounting dimensions available upon request. FM & PM panel cutout dimensions: LPS - 11h x 12w WPS - 16h x 12w

Height & Width dimensions reflect mounting plate measurements. Depth dimension reflects overall measurement of system, including components.

Protected under U.S. Patent #5,101,710

**Material Specifications**

- Filter Regulator Body: Zinc w/Enamel Finish
- Regulator Handle & Bowl: Polycarbonate
- Enclosure Pressure Gauge: Alum. w/Enamel Finish
- Rapid Exchange Gauge: Poly Case & Brass Tube
- Tubing: 316 SS 1/4" .035 Welded
- System Nameplates: Silk screened Lexan® & SS
- Fastener Hardware: Alum. & Stainless Steel
- Mounting Plate: 316 14 Ga #3 Brush SS
- EXP Pressure Switch Body: Anodized Cast Alum.
- Enclosure Warning Nameplate: Silk screened SS

Lexan® is a registered trademark of the General Electric Company
**Description**

Model 1003 is a Rapid Exchange® purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed (protected) enclosure(s), in order to remove and prevent flammable gas or vapor accumulations. The system accomplishes four air exchanges and maintains a "safe" (0.25") pressure. A Pepperl+Fuchs Model EPV-3 Enclosure Protection Vent is required for proper operation. This process reduces the hazardous (classified) area rating within the enclosure(s), in accordance with the NEC - NFPA 70, Article 500, NFPA 496 and ISA 12.4.

**Operation**

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. The enclosure protection vent must be tested and the enclosure(s) must be sealed. The enclosure pressure control valve is then used to set a safe reading on the enclosure pressure indicator. When safe pressure is stable, the Rapid Exchange® control valve must be fully engaged. Upon completion of the Rapid Exchange® cycle, (five minutes minimum) the Rapid Exchange® control valve must be disengaged to return to a safe enclosure pressure. Power can then be energized to the protected enclosure(s). Loss of safe pressure requires immediate attention, unless power is deenergized. WPS style systems include an explosion proof differential pressure switch with form "C" contacts for audible or visual alarm systems.

**System Specifications**

- **Model Number:** 1003 Type Y & Z
- **Designation:** Purging System
- **Enclosure Volume:** 75 ft³ max.

<table>
<thead>
<tr>
<th>LPS Style</th>
<th>WPS/WPSA Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Number: 1003 Type Y</td>
<td>Model Number: 1003 Type Z</td>
</tr>
<tr>
<td>Designation: Purging System</td>
<td>Designation: Purging System</td>
</tr>
<tr>
<td>Enclosure Volume: 75 ft³ max.</td>
<td>Enclosure Volume: 75 ft³ max.</td>
</tr>
</tbody>
</table>

**UL & FM Certified**
- **Class I:**
  - **Div. 1:** Group A-D
  - **Div. 2:** Nonhazardous
- **Div. 2:** Group A-D
- **Div. 2:** Nonhazardous
- **Div. 2:** Group A-D
- **Div. 2:** Nonhazardous

**System Supply Port:**
- 3/8" FPT

**Enclosure Supply Fitting:**
- 3/8" tube fitting

**Enclosure Reference Fitting:**
- 1/4" tube fitting

**Switch Setting (Decr):**
- 0.15" ± 0.02"

**Switch Conduit Port Size:**
- 1/2" FPT

**WPS Style:**
- UL & FM Certified: Cl. I, Div. 1, Group A-D
- Rating Reduction: Div. 1 to Div. 2

**WPSA Style:**
- UL & FM Certified: Cl. I, Div. 1, Group A-D
- Rating Reduction: Div. 1 to Div. 2

---

* Enclosure integrity determines actual flow rate
** With regulator set to 60 psi min. during exchange Rapid Exchange® is a Registered Trademark of Pepperl+Fuchs, Inc.
*** Supply voltages 24 VDC and 240 VAC available upon request.
### Model Number Designations

<table>
<thead>
<tr>
<th>1003</th>
<th>LPS</th>
<th>CI</th>
<th>YZ</th>
<th>LH</th>
<th>##</th>
</tr>
</thead>
</table>

**Series Model Number**
- **LPS** - less pressure switch
- **WPS** - with pressure switch
- **WPSA** - with pressure switch

**System Style**
- **LPS** - LPS Style
- **WPS** - WPS/WPSA Style
  - With Pressure Switch

**Area Classification**
- **CI** - Class I Area

**System Type**
- **YZ** - Div. 1 to Div. 2, Div. 2 to Nonhazardous

**Mounting Configuration**
- **LH** - left hand
- **RH** - right hand
- **TM** - top mount
- **BM** - bottom mount
- **WM** - wall mount
- **FM** - frame mount
- **PM** - panel mount

**LPS / WPS**
- **LH** - left hand
- **RH** - right hand
- **BM** - bottom mount
- **WM** - wall mount
- **FM or PM** - flat panel

**WARNING NAMEPLATES**
- **ETW** - Enclosure Temperature Warning

**INSTALLATION & OPERATION MANUAL**
- **129-0195** - Inst. & Operation Manual

---

### Material Specifications

- **Filter Regulator Body**: Zinc w/Enamel Finish
- **Regulator Handle & Bowl**: Polycarbonate
- **Enclosure Pressure Gauge**: Alum. w/Enamel Finish
- **Rapid Exchange® Body**: 316 SS Forged Body
- **System Nameplates**: Silkscreened Lexan® & SS
- **Fastener Hardware**: Alum. & Stainless Steel
- **EXP Pressure Switch Body**: Anodized Cast Alum.
- **Enclosure Warning Nameplate**: Silkscreened SS

Lexan® is a registered trademark of the General Electric Company.

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### System Accessories Diagram

![Diagram of System Accessories](image-url)

**Pressurized Enclosure**
- Supply Inlet Fitting: SC-6 or NC-6
- 3/8" Supply Tubing: 1/4" tubing reference

**Enclosure Supply Fitting**
- EFC-4 (3/8" Flush Connector)
- EFC-6 (1/4" Flush Connector)
- EBC-6 (3/8" Bulkhead Connector)
- EPC-13 (1" Pipe Connector)

**Connection Points**
- NC-6: 3/8" Ninety Connector
- SC-6: 3/8" Straight Connector
- EFC-4: 1/4" Flush Connector
- EFC-6: 3/8" Flush Connector
- EBC-6: 3/8" Bulkhead Connector
- EPC-13: 1" Pipe Connector

**System Mounting Kit**
- SMK-2 or -8

**Expansion Proof Switch Kit**
- EPSK-1

**General Purpose Switch Kit**
- GPSK-1

**Remote Alarm Horn**
- RAH

**Remote Alarm Beacon**
- RAB-1 (Div. 1), RAB-2 (Div. 2)

**L Fitting Conduit Kit**
- LCK

**T Fitting Conduit Kit**
- TCK

**Enclosure Protection Vents**
- EPV-3-SA-00: Straight w/Spark Arrestor
- EPV-3-SA-90: Rt Angle w/Spark Arrestor

---

### Overall System Dimensions

<table>
<thead>
<tr>
<th></th>
<th>LPS / WPS</th>
<th>LH - left hand</th>
<th>RH - right hand</th>
<th>TM - top mount</th>
<th>BM - bottom mount</th>
<th>WM - wall mount</th>
<th>FM or PM - flat panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td></td>
<td>12 / 12</td>
<td>12 / 12</td>
<td>11.5 / 15.25</td>
<td>11.5 / 15.25</td>
<td>11.5 / 15.25</td>
<td>14 / 17</td>
</tr>
<tr>
<td>Width</td>
<td></td>
<td>11.5 / 11.5</td>
<td>11.5 / 11.5</td>
<td>6.75 / 7.75</td>
<td>6.75 / 7.75</td>
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<tr>
<td>Depth</td>
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<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>6 / 7.5</td>
<td>7.75 / 9.25</td>
<td>5.75 / 7.25</td>
</tr>
</tbody>
</table>

Dimensions in inches. Mounting dimensions available upon request. FM & PM panel cutout dimensions: LPS - 13h x 12.5w, WPS - 16h x 12.5w. Height & Width dimensions reflect mounting plate measurements. Depth dimension reflects overall measurement of system, including components.
Type Y & Z

Description

Model 1004 is a Rapid Exchange® purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed (protected) enclosure(s), in order to remove and prevent flammable gas or vapor accumulations. The system accomplishes four air exchanges and maintains a "safe" (0.25") pressure. A Pepperl+Fuchs Model EPV-4 Enclosure Protection Vent is required for proper operation. This process reduces the hazardous (classified) area rating within the enclosure(s), in accordance with the NEC - NFPA 70, Article 500, NFPA 496 and ISA 12.4.

Operation

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. The enclosure protection vent must be tested and the enclosure(s) must be sealed. The enclosure pressure control valve is then used to set a safe reading on the enclosure pressure indicator. When safe pressure is stable, the Rapid Exchange® control valve must be fully engaged. Upon completion of the Rapid Exchange® cycle, (five minutes minimum) the Rapid Exchange® control valve must be disengaged to return to a safe enclosure pressure. Power can then be energized to the protected enclosure(s). Loss of safe pressure requires immediate attention, unless power is deenergized. WPS style systems include an explosion proof differential pressure switch with form "C" contacts for audible or visual alarm systems.

System Specifications

| System Dimensions: | See page 20 |
| Shipping Weight: | LPS - 15 lb / WPS - 23 lb |
| Temp. Range: | -20°F to +120°F |
| Supply Pressure Range: | 80 - 120 psi |
| Capacity & Filtration: | 8.5oz @ 40 Micron |
| Supply Requirements: | clean air or inert gas |
| Safe Press. Setpoint: | 0.25" |
| Safe Press. Flow Rate: | * 0.1 - 3.5 SCFH |
| Exchange Pressure: | 3" - 5" |
| Exchange Flow Rate: | ** 30 SCFM / 1800 SCFH |
| Exchange Time: | 1 min / 7.5 ft³ |
| System Supply Port: | 1/2" FPT |
| Enclosure Supply Fitting: | 1/2" tube fitting |
| Enclosure Reference Fitting: | 1/4" tube fitting |
| Switch Setting (Decr): | 0.15" ± 0.02" |
| Switch Conduit Port Size: | 1/2" FPT |
| Switch Contact Rating: | WPS Style: 120 VAC, 15 A | WPSA Style: *** 120 VAC, 10 A, 28 - 125 VDC |

Standard Model Applications

| Model Number: | 1004 Type Y |
| Designation: | Purging System |
| Enclosure Volume: | 200 ft³ max. |
| LPS Style |
| UL & FM Certified: | Cl. I, Div. 1, Group A-D |
| Rating Reduction: | Div. 1 to Div. 2 |
| WPS Style |
| UL & FM Certified: | Cl. I, Div. 1, Group C&D |
| Rating Reduction: | Div. 1 to Div. 2 |
| WPSA Style |
| UL & FM Certified: | Cl. I, Div. 1, Group A-D |
| Rating Reduction: | Div. 1 to Div. 2 |

| Model Number: | 1004 Type Z |
| Designation: | Purging System |
| Enclosure Volume: | 200 ft³ max. |
| LPS Style |
| UL & FM Certified: | Cl. I, Div. 2, Group A-D |
| Rating Reduction: | Div. 2 to Nonhazardous |
| WPS Style |
| UL & FM Certified: | Cl. I, Div. 2, Group C&D |
| Rating Reduction: | Div. 2 to Nonhazardous |
| WPSA Style |
| UL & FM Certified: | Cl. I, Div. 2, Group A-D |
| Rating Reduction: | Div. 2 to Nonhazardous |

* Enclosure integrity determines actual flow rate
** With regulator set to 80 psi min. during exchange Rapid Exchange® is a Registered Trademark of Pepperl+Fuchs, Inc.
*** Supply voltages 24 VDC and 240 VAC available upon request.

Protected under U.S. Patent #5,101,710
Type Y & Z

Material Specifications
Filter Regulator Body: Zinc w/Enamel Finish
Regulator Handle & Bowl: Polycarbonate
Enclosure Pressure Gauge: Alum. w/Enamel Finish
Rapid Exchange Gauge: Poly Case & Brass Tube
Tube Fittings & Valves: 316 SS Forged Body
Tubing: 316 SS 1/4" & 1/2" .035 Welded
System Nameplates: Silk screened Lexan® & SS
Fastener Hardware: Alum. & Stainless Steel
Mounting Plate: 316 Ga 14 SS
EXP Pressure Switch Body: Anodized Cast Alum.
Enclosure Warning Nameplate: Silk screened SS
Lexan® is a registered trademark of the General Electric Company

Model Number Designations
Series Model Number: 1004 - LPS - CI - YZ - LH - ##
System Style: LPS - less pressure switch
WPS - with pressure switch
WPSA - with pressure switch
Area Classification: CI - Class I Area
System Type: YZ - Div. 1 to Div. 2, Div. 2 to Nonhazardous
Mounting Configuration: LH - left hand, left side of enclosure
RH - right hand, right side of enclosure
BM - bottom mount, bottom of enclosure
WM - wall mount, wall surface
FM - frame mount, external frame or rack
PM - panel mount, enclosure surface cutout
## - See Accessories Page 116 for additional factory installed accessories

Model 1004 System Accessories (See accessories page for complete details)

CONNECTION FITTINGS
NC-8 1/2" Ninety Connector
SC-8 1/2" Straight Connector
EFC-4 1/4" Flush Connector
EFC-8 1/2" Flush Connector
EBC-8 1/2" Bulkhead Connector
EPC-14 1 1/2" Pipe Connector
ADDITIONAL ITEMS
SMK-2 or 8 System Mounting Kit
EPSK-1 Explosion Proof Switch Kit
GPSK-1 General Purpose Switch Kit
RAH - Remote Alarm Horn
RAB-1, 2 Div. 1 Remote Alarm Beacon
LCK - L Fitting Conduit Kit
TCK - T Fitting Conduit Kit
ENCLOSURE PROTECTION VENTS
EPV-4-SA-00 Straight w/Spark Arrestor
EPV-4-SA-90 Rt Angle w/Spark Arrestor

ONE (1) ENCLOSURE WARNING NAMEPLATE & ONE (1) INSTALLATION & OPERATION MANUAL ARE PROVIDED WITH EACH SYSTEM

Overall System Dimensions

<table>
<thead>
<tr>
<th></th>
<th>LPS / WPS</th>
<th>LH - left hand</th>
<th>RH - right hand</th>
<th>TM - top mount</th>
<th>BM - bottom mount</th>
<th>WM - wall mount</th>
<th>FM or PM - flat panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>12 / 16.25</td>
<td>12 / 16.25</td>
<td>12 / 12</td>
<td>12 / 12</td>
<td>12 / 12</td>
<td>12 / 15</td>
<td>14 / 18.25</td>
</tr>
<tr>
<td>Width</td>
<td>13.5 / 13.5</td>
<td>13.5 / 13.5</td>
<td>13.5 / 16.75</td>
<td>13.5 / 16.75</td>
<td>13.5 / 16.75</td>
<td>13.5 / 13.5</td>
<td>15.5 / 15.5</td>
</tr>
</tbody>
</table>

Dimensions in inches. Mounting dimensions available upon request. FM & PM panel cutout dimensions: LPS - 13h x 14.5w WPS - 17.25h x 14.5w Height & Width dimensions reflect mounting plate measurements. Depth dimension reflects overall measurement of system, including components.

Protected under U.S. Patent #5,101,710
**Description**

Model 3003 is a Rapid Exchange® purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed protected enclosure(s), in order to remove and prevent flammable gas or vapor accumulations. The Model 3003 consists of three major components: (1) a pneumatic manifold assembly, (2) a differential enclosure pressure indicator and (3) a stainless steel face plate with mounting flange, or a Lexan® system start up instruction nameplate. Model 3003 is offered in three distinct variations, identified as “VM” (Vertical Mount), “HM” (Horizontal Mount), both available in WPS & WPSA styles, and “CK” (Component Kit) mounting configurations. The VM configuration features a filter regulator and face plate with a flange for mounting to a vertical surface. The HM configuration features a regulator and face plate with a flange for mounting on a horizontal surface. Finally, the CK configuration is a kit of parts including the pneumatic manifold assembly, the enclosure pressure indicator and a start-up instruction nameplate. The VM and HM configurations are intended for flange or frame mounting to a solid surface on or near the protected enclosure(s), while the CK configuration is intended for frame mounting through cutouts in a panel on or near the enclosure(s). With the addition of a Model GCK gauge conversion kit, all configurations can be mounted through the surface of a protected enclosure. The CK configuration provides a seal that withstands type 4 hose down testing. Model 3003 accomplishes the required volume exchanges and maintains a safe pressure. Pepperl+Fuchs Model EPV-3 enclosure protection vent is required for proper operation. This process reduces the hazardous (classified) area rating within protected enclosure(s), in accordance with the NEC - NFPA 70, NFPA 496, ISA 12.4 and IEC 600 79-15 EN 50021.

**Operation**

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. The enclosure protection vent must be tested and enclosure(s) must be sealed. After transferring the valve key, locked into the pneumatic manifold’s Rapid Exchange® control valve stem, the enclosure pressure control valve is used to set a safe reading on the enclosure pressure indicator. When safe pressure is stable, the valve key is transferred and locked into the Rapid Exchange® control valve stem and the Rapid Exchange® control valve is then fully engaged. Upon completion of the Rapid Exchange® cycle, (five minutes minimum) the Rapid Exchange® control valve is disengaged to return to a safe enclosure pressure. Power can then be energized to the protected enclosure(s). Loss of safe pressure requires immediate attention, unless power to the protected enclosure(s) is deenergized. WPS and WPSA style systems include an explosion proof differential pressure switch with form "C" contacts for audible or visual alarm systems.

Rapid Exchange® is a Registered Trademark of Pepperl+Fuchs, Inc. Lexan® is a registered trademark of the General Electric Company.
**Model 3003 VM Configuration - The Vertical Mount System**

**LPS (Less Pressure Switch)**

- Filter Regulator
- Pneumatic Manifold Body
- System Supply Inlet
- Enclosure Supply Outlet
- Enclosure Pressure Indicator
- Venturi Orifice
- Atmospheric Reference

**Important Notes**

1. The HM configuration is supplied with a mounting flange for right-angled attachment to a horizontal surface external to the protected enclosure.
2. The VM configuration can also be frame mounted external to the protected enclosure through a 5" (127mm) W x 9" (229mm) H cutout in a suitable mounting surface.
3. Model GCK gauge conversion kit is required to panel mount the VM configuration through a 5" (127mm) W x 9" (229mm) H cutout in the protected enclosure surface.
4. See page 36 for Model GCK kit description and conversion procedure.

**WPS / WPESA (With Pressure Switch)**

- Filter Regulator
- Pneumatic Manifold Body
- System Supply Inlet
- Enclosure Supply Outlet
- Enclosure Pressure Indicator
- Atmospheric Reference
- Venturi Orifice

**CONNECTION POINTS SHOWN ABOVE IN BOLD TEXT ON SYSTEM DIAGRAM**

Protected under U.S. Patent #5,101,710
**Model 3003 HM Configuration - The Horizontal Mount System**

**LPS (Less Pressure Switch)**

1. **Enclosure Pressure Control Valve Stem**
2. **System Start-Up Instructions**
3. **System Model & Ratings**
4. **Valve Key**
5. **Rapid Exchange® Control Valve Stem w/Valve Key in locked position**
6. **Rapid Exchange® Injection Pressure Indicator**

**Front View**

**Rear View**

**Important Notes**

1) The HM configuration is supplied with a mounting flange for right-angled attachment to a horizontal surface external to the protected enclosure.

2) The HM configuration can also be frame mounted external to the protected enclosure through a 10.25" (260mm) W x 5" (127mm) H cutout in a suitable mounting surface.

3) Model GCK gauge conversion kit is required to panel mount the HM configuration through a 10.25" (260mm) W x 5" (127mm) H cutout in the protected enclosure surface.

4) See page 36 for Model GCK kit description and conversion procedure.

**WPS / WPSA (With Pressure Switch)**

1. **Enclosure Pressure Indicator**
2. **System Start-Up Instructions**
3. **System Model & Ratings**
4. **Valve Key**
5. **Rapid Exchange® Control Valve Stem w/Valve Key in locked position**
6. **Rapid Exchange® Injection Pressure Indicator**

**Front View**

**Rear View**

**connection points shown above in bold text on system diagram**
**Model 3003 CK Configuration - The Component Kit System**

1. **Enclosure Pressure Indicator**
   - Front View

2. **Pneumatic Manifold Assembly**
   - Front View
   - Typical 3 Mounting Screws
   - Enclosure Pressure Control Valve Stem
   - Rapid Exchange® Control Valve Stem
   - Valve Key in locked position

3. **Rapid Exchange® Injection Pressure Indicator**
   - Front View
   - Regulator
   - Pneumatic Manifold Body
   - Rapid Exchange® Injection Pressure Indicator Connection

4. **Start Up Instruction Nameplate**
   - Front View

---

**Important Notes**

1. The CK configuration is four discrete parts suitable for mounting through a set of cutouts in a vertical surface external to the protected enclosure.
2. A Model GCK gauge conversion kit is required to panel mount the CK configuration through a set of cutouts in the protected enclosure surface.
3. See page 36 for Model GCK kit description and conversion procedure.

---

**CK Configuration System & Optional Remote Cube Filter Dimensions in Inches (mm)**

**Pneumatic Manifold**

- Side View
- Front View

**Enclosure Pressure Gauge**

- Panel Cutout 4.5 (114.3) Ø

**Side View Model RCF-4**

- 1.63 (41.3) square

---

**Helpful Hint**

Note: Two optional Enclosure Pressure Gauge positions are shown on the Model 3003 CK System Panel Cutout Pattern to the left. The optional positions center gauge to the right or bottom side of System Nameplate.

Cut only one 4.5" (114.3mm) Ø hole in panel.

---

Protected under U.S. Patent #5,101,710
Model 3003 WPS VM Configuration & Flange Dimensions in Inches (mm)

LPS (Less Pressure Switch)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value (in)</th>
<th>Value (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Cutout</td>
<td>5 (127)</td>
<td>5.5 (139.7)</td>
</tr>
<tr>
<td>VM Configuration Front View</td>
<td>9.5 (241.3)</td>
<td>14.5 (368.3)</td>
</tr>
<tr>
<td>WPS/WPSA VM Configuration Front View</td>
<td>8 (203.2)</td>
<td>13.5 (342.9)</td>
</tr>
<tr>
<td>VM Configuration Side View</td>
<td>4.0 (101.6)</td>
<td>4.0 (101.6)</td>
</tr>
<tr>
<td>Vertical Mount Flange Front View</td>
<td>3.5 (88.9)</td>
<td>3.5 (88.9)</td>
</tr>
</tbody>
</table>

WPS/WPSA (With Pressure Switch)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value (in)</th>
<th>Value (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Cutout</td>
<td>7.5 (190.5)</td>
<td>14 (356)</td>
</tr>
<tr>
<td>VM Configuration Front View</td>
<td>13.5 (342.9)</td>
<td>14 (356)</td>
</tr>
<tr>
<td>WPS/WPSA VM Configuration Front View</td>
<td>4.0 (101.6)</td>
<td>4.0 (101.6)</td>
</tr>
<tr>
<td>VM Configuration Side View</td>
<td>3.5 (88.9)</td>
<td>3.5 (88.9)</td>
</tr>
<tr>
<td>Vertical Mount Flange Front View</td>
<td>0.25 (6.4) O.D.</td>
<td>0.25 (6.4) O.D.</td>
</tr>
</tbody>
</table>

Model 3003 HM Configuration & Flange Dimensions in Inches (mm)

LPS (Less Pressure Switch)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value (in)</th>
<th>Value (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Cutout</td>
<td>10.25 (260.4)</td>
<td>10.75 (272.3)</td>
</tr>
<tr>
<td>LPS HM Configuration Front View</td>
<td>5.5 (139.7)</td>
<td>8.5 (215.9)</td>
</tr>
<tr>
<td>LPS HM Configuration Side View</td>
<td>10.75 (273.1)</td>
<td>14.25 (361.9)</td>
</tr>
<tr>
<td>LPS Horizontal Mount Flange Front View</td>
<td>0.25 (6.4) O.D.</td>
<td>0.25 (6.4) O.D.</td>
</tr>
</tbody>
</table>

WPS/WPSA (With Pressure Switch)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value (in)</th>
<th>Value (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Cutout</td>
<td>14.5 (368.3)</td>
<td>15.25 (387.4)</td>
</tr>
<tr>
<td>WPS/WPSA HM Configuration Front View</td>
<td>8 (203.2)</td>
<td>15 (381)</td>
</tr>
<tr>
<td>WPS/WPSA HM Configuration Side View</td>
<td>14.25 (361.9)</td>
<td>15.25 (387.4)</td>
</tr>
<tr>
<td>WPS/WPSA Horizontal Mount Flange Front View</td>
<td>0.25 (6.4) O.D.</td>
<td>0.25 (6.4) O.D.</td>
</tr>
</tbody>
</table>

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Typical Model 3003 System Installation Details

External to the Protected Enclosure

**Flange Mount HM Configuration with Model SMK-1 Fastener Kit**

- Enclosure Reference Tubing, Customer Supplied
- System Supply Inlet Fitting SC-6-4 or NC-6-4
- Enclosure Supply Inlet Fitting SC-6-8 or NC-6-8
- System Supply Tubing, Customer Supplied
- Enclosure Reference Fitting EFC-4
- Enclosure Supply Fitting EFC-6
- System Mounting Kit SMK-1
- Required Enclosure Protection Vent EPV-3

Internal to the Protected Enclosure

**Panel Mount CK Configuration with Model RCF-4 Remote Cube Filter & Model GCK Gauge Conversion Kit**

- Required Enclosure Protection Vent EPV-3
- Enclosure Pressure Indicator w/GCK Installed
- Start-up Instruction Nameplate
- System Pneumatic Manifold
- Optional Enclosure Supply Outlet Fitting SC-6-8 or NC-6-8
- Enclosure Supply Tubing, customer supplied, used to direct protective gas to the extreme opposite corner from the enclosure protection vent

Standard and Panel Mount Pneumatic Installation Diagram

**Standard Pneumatic Installation Diagram**

See panel mounting conversion procedure on page 36

- System Supply
- Inlet
- Regulator
- Sintered Vent
- Rapid Exchange® Pressure Gauge
- Enclosure Pressure Gauge
- Rapid Exchange® Control Valve
- Supply
- Enclosure Pressure Control Valve
- Enclosure

**Panel Mount Installation Diagram**

- System Supply
- Venturi Orifice
- Rapid Exchange® Pressure Gauge
- WPS Style EXP Pressure Switch
- Sintered Vent
- Enclosure Pressure Gauge
- Reference
- Supply
- Warning Nameplate
- Enclosure

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VM Configuration Mounting Options

Model 3003-LPS-CI-YZ-VML
Flange Mounted to Flat Vertical Surface with Model SMK-1 Fastener Kit

Model 3003-LPS-CI-YZ-VML
Flange Mounted to Vertical 2" Pipe Stand with Model PMK-1 Fastener Kit

Model 3003-LPS-CI-YZ-VM
Frame or Panel Mounted Through Cutout in Suitable Surface with Model SMK-6m Fastener Kit

HM Configuration Mounting Options

Model 3003-LPS-CI-YZ-HMT
Flange Mounted to Flat Horizontal Surface with Model SMK-1 Fastener Kit

Model 3003-LPS-CI-YZ-HMB
Flange Mounted to Horizontal 2" Pipe Stand with Model PMK-1 Fastener Kit

Model 3003-LPS-CI-YZ-HM
Frame or Panel Mounted Through Cutout in Suitable Surface with Model SMK-6m Fastener Kit

CK Configuration Mounting Options

Model 3003-LPS-CI-YZ-CK
Rear View of Frame or Panel* Mount Through Cutout in Suitable Surface with supplied fasteners

* PANEL MOUNTED SYSTEMS REQUIRE A PEPPERL+FUCHS MODEL GCK FOR PROPER OPERATION - SEE PAGE 36
Model 3003 Panel Mount Conversion

1. Secure one Model GCK Conversion Kit. Kit includes a PRB-4 & SC-2 Fitting & Enclosure Pressure Gauge
gasket.
2. Remove venturi orifice and run tee from the high port of the gauge and discard.
3. Remove sintered vent from low port.
4. Reinstall sintered vent into high port.
5. Install Model SC-2 fitting into low port.
6. Install Gauge gasket between gauge & mounting surface.
7. Install Model PRB-4 fitting through enclosure surface (ventend out) and
connct tubing (customer supplied) between SC-2 & PRB-4.

Material Specifications

Regulator Body:
Regulator Handle & Bowl:
Enclosure Pressure Gauge:
Rapid Exchange* Gauge:
Tube Fitting:
Tubing:
Fastener Hardware:
System Face Plate:
System Mounting Flange:
Manifold Body:
Manifold Valves:
Mfr. ID Nameplate:
Enclosure Warning Nameplate:
EXP Pressure Switch Body:

System Specifications

System Dimensions: See pages 32-33
Shipping Weight:
LPS - 10 lb (4.5 kg)
WPS - 15 lb (6.8 kg)
Temp. Range: -20°F to +120°F (-29ºC to +49ºC)
Supply Pressure Range: 80 - 120 psi (5.5 - 8.3 bar)
Capacity & Filtration: 1.5 oz @ 20 Micron
Supply Requirements: clean air or inert gas
Safe Press. Setpoint: 0.25" (6.35mm)
Safe Press. Flow Rate: * 0.1 - 3.5 SCFH (2.8 - 99 lit/min)
Exchange Pressure: * 3" - 5" (76.2 mm - 127 mm)
Exchange Flow Rate: ** 12 SCFM /720 SCFH

Exchange Time:
4 Volume Exchange Rate: 1 min / 3.0 ft³ (85 l/min)
5 Volume Exchange Rate: 1 min / 2.4 ft³ (68 l/min)
System Supply Port: 1/2" FPT
Enclosure Supply Port: 1/2" FPT
Enclosure Reference Fitting: 1/4" Tube
Switch Setting (WPS & WPSA Only):
WPS Style: 0.15" ± 0.02" 3.81mm ± 0.51mm
WPSA Style: 0.25" ± 0.05" 6.35mm ± 0.13mm

Switch Contact Ratings:
WPS Style: 120 VAC, 15 A
WPSA Style: *** 120 VAC, 10 A, 28 - 125 VDC

Model Number Designations

Series Model Number
System Style
LPS - less pressure switch
WPS - with pressure switch
WPSA - with pressure switch
Area Classification
CI - Class I Area
System Type
YZ - Div. 1 to Div. 2
Div. 2 / Zone 2 to Nonhazardous
Mounting Configuration
VML - vertical mount left
VMR - vertical mount right
HMT - horizontal mount top
HMB - horizontal mount bottom
CK - Component Kit - LPS style only
#

Model 3003 System Accessories (See accessories page for complete details)

Connection Fittings

NC-6-4 3/8" T x 1/4" P Ninety Connector
SC-6-4 3/8" T x 1/4" P Straight Connector
NC-6-8 3/8" T x 1/2" P Ninety Connector
SC-6-8 3/8" T x 1/2" P Straight Connector
EFC-4 1/4" Flush Connector
EBC-4 1/4" Bulkhead Connector
EFC-6 3/8" Flush Connector
EBC-6 3/8" Bulkhead Connector
EPC-13 1 1/4" Pipe Connector

Additional Items

SMK-1 System Mounting Kit - Flange
SMK-6m System Mounting Kit - Frame/Panel
PMK-1 Pipe Mounting Kit
GCK Gauge Conversion Kit
ILF-4 1/4" In-Line Filter Kit
RCF-4 1/4" Remote Cube Filter
EPSK-1 Explosion Proof Switch Kit (GRP C, D)
EPSK-1A Explosion Proof Switch Kit (GRP A-D)
GPSK-1 General Purpose Switch Kit
RAH Remote Alarm Horn
RAB-1 Div. 1 Remote Alarm Beacon
RAB-2 Div. 2 Remote Alarm Beacon

Enclosure Protection Vents

ONE VENT REQUIRED WITH EACH SYSTEM
EPV-3-SA-00 Straight w/Spark Arrestor
EPV-3-SA-90 Rt Angle w/Spark Arrestor

Warning Nameplates

EWN-1 Class I Enclosure Warning
ETW Enclosure Temperature Warning

Installation & Operation Manual
129-0198 Inst. & Operation Manual

ONE (1) ENCLOSURE WARNING NAMEPLATE & ONE (1) INSTALLATION & OPERATION MANUAL ARE PROVIDED WITH EACH SYSTEM

Protected under U.S. Patent #5,101,710
Description

Model 3004 is a Rapid Exchange® purging system that operates on a supply of compressed instrument air or inert gas. It regulates and monitors pressure within sealed protected enclosure(s), in order to remove and prevent flammable gas or vapor accumulations. The Model 3004 consists of three major components: (1) a pneumatic manifold assembly, (2) a differential enclosure pressure indicator and (3) a stainless steel face plate with mounting flange, or a Lexan® system start up instruction nameplate. Model 3003 is offered in three distinct variations, identified as “VM” (Vertical Mount), “HM” (Horizontal Mount), both available in WPS & WPSA styles, and “CK” (Component Kit) mounting configurations. The VM configuration features a filter regulator and face plate with a flange for mounting to a vertical surface. The HM configuration features a regulator and face plate with a flange for mounting on a horizontal surface. Finally, the CK configuration is a kit of parts including the pneumatic manifold assembly, the enclosure pressure indicator and a start-up instruction nameplate. The VM and HM configurations are intended for flange or frame mounting to a solid surface on or near the protected enclosure(s), while the CK configuration is intended for frame mounting through cutouts in a panel on or near the enclosure(s). With the addition of a Model GCK gauge conversion kit, all configurations can be mounted through the surface of a protected enclosure. The CK configuration provides a seal that withstands type 4 hosesdown testing. Model 3004 accomplishes the required volume exchanges and maintains a safe pressure. Pepperl+Fuchs Model EPV-3 enclosure protection vent is required for proper operation. This process reduces the hazardous (classified) area rating within protected enclosure(s), in accordance with the NEC - NFPA 70, NFPA 496, ISA 12.4 and IEC 600 79-15 EN 50021.

Operation

In accordance with system instructions, start-up requires air supply to be engaged and enclosure power to be deenergized. The enclosure protection vent must be tested and enclosure(s) must be sealed. After transferring the valve key, locked into the pneumatic manifold’s Rapid Exchange® control valve stem, the enclosure pressure control valve is used to set a safe reading on the enclosure pressure indicator. When safe pressure is stable, the valve key is transferred and locked into the Rapid Exchange® control valve stem and the Rapid Exchange® control valve is then fully engaged. Upon completion of the Rapid Exchange® cycle, (five minutes minimum) the Rapid Exchange® control valve is disengaged to return to a safe enclosure pressure. Power can then be energized to the protected enclosure(s). Loss of safe pressure requires immediate attention, unless power to the protected enclosure(s) is deenergized. WPS and WPSA style systems include an explosion proof differential pressure switch with form “C” contacts for audible or visual alarm systems.

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Model 3004 VM Configuration - The Vertical Mount System

LPS (Less Pressure Switch)

- System Model & Ratings
- System Start-Up Instructions
- Enclosure Pressure Control Valve Stem
- Valve Key
- Rapid Exchange® Control Valve Stem w/Valve Key in locked position
- Rapid Exchange® Injection Pressure Indicator
- System Face Plate
- Enclosure Pressure Indicator

Front View

Rear View

Important Notes

1) The VM configuration is supplied with a mounting flange for right angle-attachment to a vertical surface external to the protected enclosure.
2) The VM configuration can also be frame mounted external to the protected enclosure through a 5" (127mm) W x 10.75" (273mm) H cutout in a suitable mounting surface.
3) Model GCK gauge conversion kit is required to panel mount the VM configuration through a 5" (127mm) W x 10.75" (273mm) H cutout in the protected enclosure surface.

WPS / WPSA (With Pressure Switch)

- System Model & Ratings
- System Start-Up Instructions
- Enclosure Pressure Control Valve Stem
- Valve Key
- Rapid Exchange® Control Valve Stem w/Valve Key in locked position
- Rapid Exchange® Injection Pressure Indicator
- System Face Plate
- Enclosure Pressure Indicator
- EXP Pressure Loss Alarm Switch

Front View

Rear View

CONNECTION POINTS SHOWN ABOVE IN BOLD TEXT ON SYSTEM DIAGRAM
1) The HM configuration is supplied with a mounting flange for right-angled attachment to a horizontal surface external to the protected enclosure.

2) The HM configuration can also be frame mounted external to the protected enclosure through a 10.25" (260mm) W x 5.5" (140mm) H cutout in a suitable mounting surface.

3) Model GCK gauge conversion kit is required to panel mount the HM configuration through a 10.25" (260mm) W x 5.5" (140mm) H cutout in the protected enclosure surface.

4) See page 44 for Model GCK kit description and conversion procedure.
Type Y, Z & Ex [nP]

Model 3004 CK Configuration - The Component Kit System

Important Notes
1) The CK Configuration is four discrete parts suitable for mounting through a set of cutouts in a vertical surface external to the protected enclosure.
2) A Model GCK gauge conversion kit is required to panel mount the CK configuration through a set of cutouts in the protected enclosure surface.
3) See page 44 for Model GCK kit description and conversion procedure.

CK Configuration System & Optional Remote Cube Filter Dimensions in Inches (mm)

Helpful Hint
Note: Two optional Enclosure Pressure Gauge positions are shown on the Model 3004 CK System Panel Cutout Pattern to the left. The optional positions center gauge to the right or bottom side of System Nameplate. Cut only one 4.5" (114.3mm) Ø hole in panel.

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Model 3004 WPS VM Configuration & Flange Dimensions in Inches (mm)

VM Configuration
Front View

LPS (Less Pressure Switch)

Vertical Mount Flange
Front View

WPS/WPSA (With Pressure Switch)

WPS/WPSA Vertical Mount Flange
Front View

Model 3004 HM Configuration & Flange Dimensions in Inches (mm)

LPS (Less Pressure Switch)

LPS Horizontal Mount Flange
Front View

WPS/WPSA (With Pressure Switch)

WPS/WPSA Horizontal Mount
Flange Front View

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Typical Model 3004 System Installation Details

External to the Protected Enclosure

**Flange Mount HM Configuration with Model SMK-1 Fastener Kit**

- Enclosure Reference Tubing, Customer Supplied
- System Supply Inlet Fitting SC-8 or NC-8
- Enclosure Supply Inlet Fitting SC-8 or NC-8
- System Supply Tubing, Customer Supplied
- Enclosure Reference Fitting EFC-4
- Enclosure Supply Fitting EFC-8
- System Mounting Kit SMK-1
- Required Enclosure Protection Vent EPV-4

Internal to the Protected Enclosure

**Panel Mount CK Configuration with Model RCF-8 Remote Cube Filter & Model GCK Gauge Conversion Kit**

- Required Enclosure Protection Vent EPV-4
- Enclosure Pressure Indicator w/GCK Installed
- Start-up Instruction Nameplate
- System Pneumatic Manifold
- Optional Enclosure Supply Outlet Fitting SC-8 or NC-8
- Enclosure Supply Tubing, customer supplied, used to direct protective gas to the extreme opposite corner from the enclosure protection vent

### Standard and Panel Mount Pneumatic Installation Diagram

**Standard Pneumatic Installation Diagram**

- System Supply
  - Inlet
    - Regulator
    - Rapid Exchange® Control Valve
    - Sintered Vent
    - Pressure Gauge
  - Supply
    - System Supply
- Enclosure Pressure Gauge
- Rapid Exchange® Control Valve
- Enclosure Pressure Control Valve
- Required Enclosure Protection Vent

**Panel Mount Installation Diagram**

- System Supply
  - Inlet
    - Regulator
    - WPS Style EXP Pressure Switch
    - Sintered Vent
    - Reference
      - Sintered Vent
    - Venturi Orifice
    - Rapid Exchange® Pressure Gauge
  - Supply
    - System Supply
- Enclosure Pressure Gauge
- Rapid Exchange® Control Valve
- Enclosure Pressure Control Valve
- Required Enclosure Protection Vent
- Warning Nameplate
- Required Enclosure Protection Vent

See panel mounting conversion procedure on page 44

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**VM Configuration Mounting Options**

Model 3004-LPS-CI-YZ-VML  
Flange Mounted to Flat Vertical Surface with Model SMK-1 Fastener Kit

Model 3004-LPS-CI-YZ-VML  
Flange Mounted to Vertical 2" Pipe Stand with Model PMK-1 Fastener Kit

Model 3004-LPS-CI-YZ-VM  
Frame or Panel* Mounted Through Cutout in Suitable Surface with Model SMK-6m Fastener Kit

**HM Configuration Mounting Options**

Model 3004-LPS-CI-YZ-HMT  
Flange Mounted to Flat Horizontal Surface with Model SMK-1 Fastener Kit

Model 3004-LPS-CI-YZ-HMB  
Flange Mounted to Horizontal 2" Pipe Stand with Model PMK-1 Fastener Kit

Model 3004-LPS-CI-YZ-HM  
Frame or Panel* Mounted Through Cutout in Suitable Surface with Model SMK-6m Fastener Kit

**CK Configuration Mounting Options**

Model 3004-LPS-CI-YZ-CK  
Rear View of Frame or Panel* Mount Through Cutout in Suitable Surface with supplied fasteners

*PANEL MOUNTED SYSTEMS REQUIRE A PEPPERL+FUCHS MODEL GCK FOR PROPER OPERATION - SEE PAGE 44
Model 3004 System Accessories (See accessories page for complete details)

**Model 3004 Panel Mount Conversion**

1. Secure one Model GCK Conversion Kit, kit includes a PRB-4 & SC-2 Fitting & Enclosure Pressure Gauge gasket.
2. Remove venturi orifice and run tee from the high port of the gauge and discard.
3. Remove sintered vent from low port.
4. Reinstall sintered vent into high port.
5. Install Model SC-2 fitting into low port.
6. Install Gauge gasket between gauge & mounting surface.
7. Install Model PRB-4 fitting through enclosure surface (vent end out) and connect tubing (customer supplied) between SC-2 & PRB-4.

**Material Specifications**

Regulator Body:
- Polycarbonate
- Alum. w / Enamel Finish
- Poly & Nickel Plated
- 316 SS Forged Body
- 316 SS .14" .035 Welded
- Alum. & Stainless Steel
- 316 Ga #3 Brush SS
- 316 SS Tumble Finish
- Anodized Aluminum
- 316 Stainless Steel
- Silkscreen Lexan®
- Enclosure Warning Nameplate: Silk screened SS
- Enclosure Pressure Gauge: Alum. w / Enamel Finish
- Regulator Handle & Bowl*: Polycarbonate
- Regulator Body: Zinc w/Enamel Finish
- Manifold Valves: 316 Stainless Steel
- Manifold Body: Anodized Aluminum
- System Mounting Flange: 316 SS Tumble Finish
- System Mounting Kit - Flange: 316 14 Ga #3 Brush SS
- System Face Plate: 316 14 Ga #3 Brush SS
- Fastener Hardware: Alum. & Stainless Steel
- Tubing: 316 SS 1/4" .035 Welded
- Tube Fitting: 316 SS Forged Body

**System Specifications**

- **System Dimensions:** See pages 40-41
- **Shipping Weight:** LPS-12 lb (5.4 kg) WPS-17 lb (7.7 kg)
- **Temp. Range:** -20°F to +120°F (-29ºC to +49ºC)
- **Supply Pressure Range:** 80 - 120 psi (5.5 - 8.3 bar)
- **Capacity & Filtration:** 8.5 oz @ 40 Micron
- **Supply Requirements:** clean air or inert gas
- **Safe Press. Setpoint:** 0.25" (6.35mm)
- **Safe Press. Flow Rate:** * 0.1 - 3.5 SCFH (2.8 - 99
  l/hr)
- **Exchange Pressure:** * 3" - 5" (76.2mm - 127mm)
- **Exchange Flow Rate:** ** 30 SCFM /1800 SCFH
  (850 l /m / 50976 l/hr)
- **Exchange Time:**
  - 4 Volume Exchange Rate: 1 min / 7.5 ft³ (212.4 l/m)
  - 5 Volume Exchange Rate: 1 min / 6.0 ft³ (169.9 l/m)
- **System Supply Port:** 1/2" FPT
- **Enclosure Supply Port:** 1/2" FPT
- **Enclosure Pressure Gauge:**
  - 1/4" Tube
  - Switch Setting (WPS & WPSA Only): 0.15" ± 0.02"
  - (3.81mm ± 0.51mm)
- **Switch Conduit Port Size:** 1/2"FPT
- **Switch Contact Ratings:**
  - WPSA Style: *** 120 VAC, 10 A, 28 - 125 VDC
  - WPS Style: 120 VAC, 15 A
- **Switch Setting (WPS & WPSA Only):** 0.15" ± 0.02" (3.81mm ± 0.51mm)
- **Enclosure Integrity:** Determines actual flow rate
- **WPS Style:** *** 120 VAC, 10 A, 28 - 125 VDC
- **WPSA Style:** WPS Style + pressure switch
- **Area Classification:**
  - CI - Class I Area
- **System Type:**
  - YZ - Div. 1 to Div. 2
  - HMT - Div. 0 to Zone 2 to Nonhazardous
- **Mounting Configuration:**
  - VML - vertical mount left left of enclosure
  - VRM - vertical mount right right of enclosure
  - HMT - horizontal mount top top of enclosure
  - HMB - horizontal mount bottom bottom of enclosure
- **Component Kit:** LPS style only

**Model Number Designations**

- **Series Model Number:**
  - **System Style:**
    - LPS - less pressure switch
    - WPS - with pressure switch
    - WPSA - with pressure switch
  - **Area Classification:**
    - CI - Class I Area
  - **System Type:**
    - YZ - Div. 1 to Div. 2
    - HMT - Div. 0 to Zone 2 to Nonhazardous
  - **Mounting Configuration:**
    - VML - vertical mount left left of enclosure
    - VRM - vertical mount right right of enclosure
    - HMT - horizontal mount top top of enclosure
    - HMB - horizontal mount bottom bottom of enclosure
  - **#C - Component Kit:** LPS style only
  - **See Accessories Page 117 for additional factory installed accessories**
  - † Does not have ATEX certification

- **ONE VENT REQUIRED WITH EACH SYSTEM**

- **ENCLOSURE PROTECTION VENTS**

- **ENCLOSURE WARNING NAMEPLATES**

- **INSTALLATION & OPERATION MANUAL**

- **NOTE:** One (1) enclosure warning nameplate & one (1) installation & operation manual are provided with each system

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