

CLASS I APPLICATIONS
90 Cubic Feet Maximum

Description

Model 3003 is a Rapid Exchange® purging system which operates on a supply of compressed instrument air or inert gas. It is designed to regulate and monitor pressure within one or more protected enclosures, in order to rapidly remove and prevent flammable vapor accumulation within the enclosure(s). 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, and the CK configuration will provide a seal that withstands NEMA 4 hose-down testing. Model 3003 accomplishes the required volume exchanges and maintains a safe pressure on one or more enclosures not exceeding a volume of 250 cubic feet. A Bebc0 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 RP12.4. and IEC 50016.

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 (EXP) differential pressure switch with form "C" contacts for audible or visual alarm systems.

MODEL 3003
TYPE Y OR Z
RAPID EXCHANGE® PURGING SYSTEM



Model 3003-LPS-CI-Z-VM
Vertical Mount Configuration



Model 3003-WPS-CI-Z-HM
Horizontal Mount Configuration



Model 3003-LPS-CI-Z-CK
Component Kit Configuration

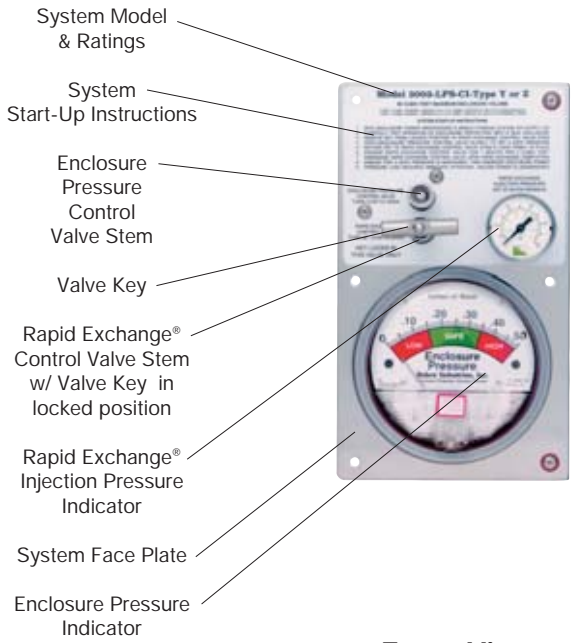


Standard Model Applications

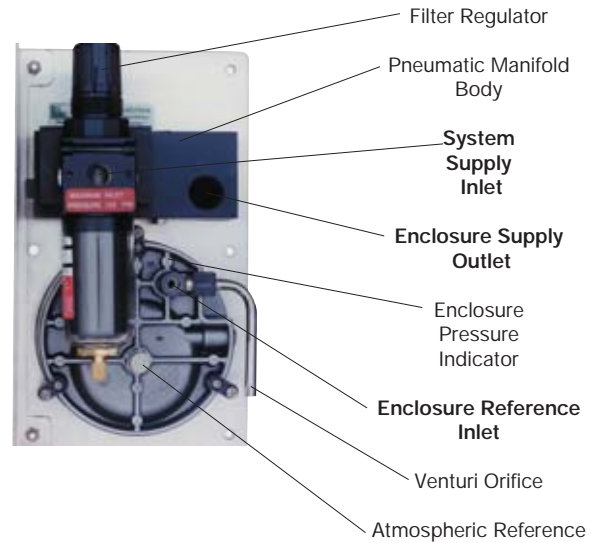
<p>Model Number: 3003 Type Y System Designation: Rapid Exchange® Purging Enclosure Volume: 90 Cubic Feet Maximum</p> <p>LPS Style UL & FM Approval: Cl. I, Div. 1, Group A-D Ex Approval: Zone 1, Group IIC Rating Reduction: Division 1 to Division 2 Zone 1 to Zone 2</p> <p>WPS Style UL & FM Approval: Cl. I, Div. 1, Group C-D Ex Approval: Zone 1, Group IIB Rating Reduction: Division 1 to Division 2 Zone 1 to Zone 2</p> <p>WPSA Style UL & FM Approval: Cl. I, Div. 1, Group A-D Ex Approval: Zone 1, Group IIB+H₂ Rating Reduction: Division 1 to Division 2 Zone 1 to Zone 2</p>	<p>Model Number: 3003 Type Z System Designation: Rapid Exchange® Purging Enclosure Volume: 90 Cubic Feet Maximum</p> <p>LPS Style UL & FM Approval: Cl. I, Div. 2, Group A-D Ex Approval: Zone 2, Group IIC Rating Reduction: Division 2 to Nonhazardous Zone 2 to Nonhazardous</p> <p>WPS Style UL & FM Approval: Cl. I, Div. 2, Group C-D Ex Approval: Zone 2, Group IIB Rating Reduction: Division 2 to Nonhazardous Zone 2 to Nonhazardous</p> <p>WPSA Style UL & FM Approval: Cl. I, Div. 2, Group A-D Ex Approval: Zone 2, Group IIB+H₂ Rating Reduction: Division 2 to Nonhazardous Zone 2 to Nonhazardous</p>
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Model 3003 VM Configuration - The Vertical Mount System

LPS (Less Pressure Switch)



Front View

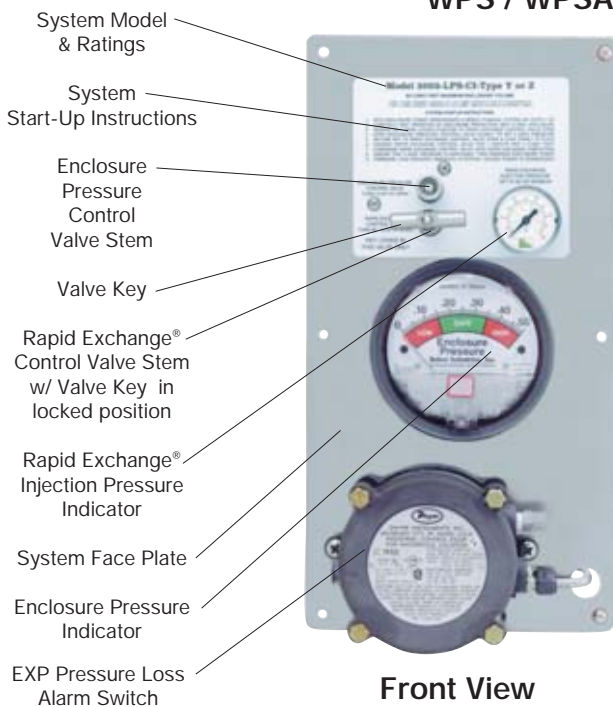


Rear View

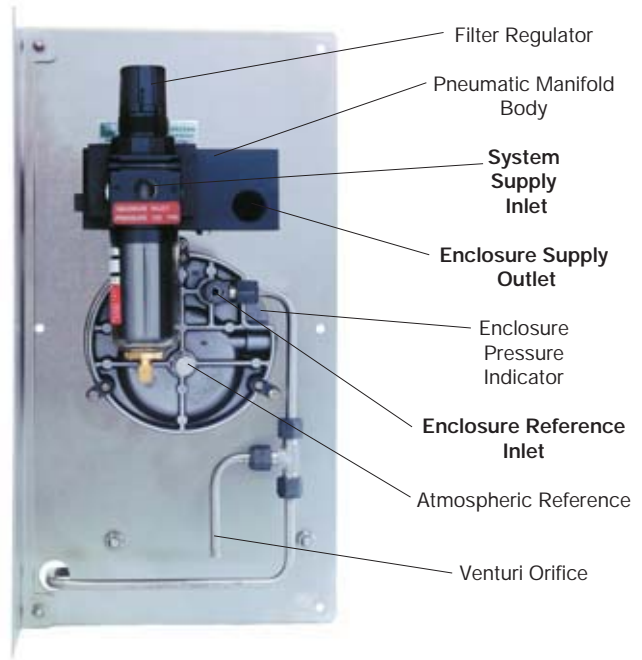
Important Notes

- 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" W x 9" H cutout in a suitable mounting surface.
- 3) Model GCK Gauge Conversion Kit is required to panel mount the VM Configuration through a 5" W x 9" H cutout in the protected enclosure surface.
- 4) See page 8 for Model GCK kit description and conversion procedure.
- 5) Connection points shown in bold text.

WPS / WPSA (With Pressure Switch)



Front View

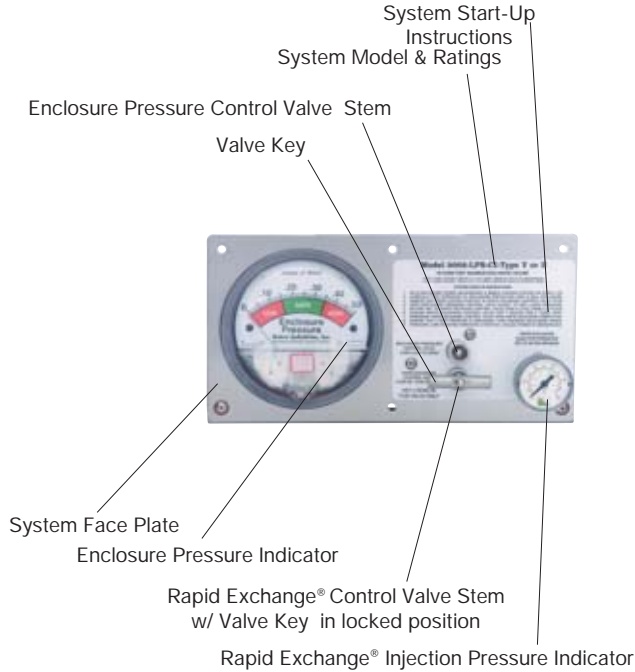


Rear View

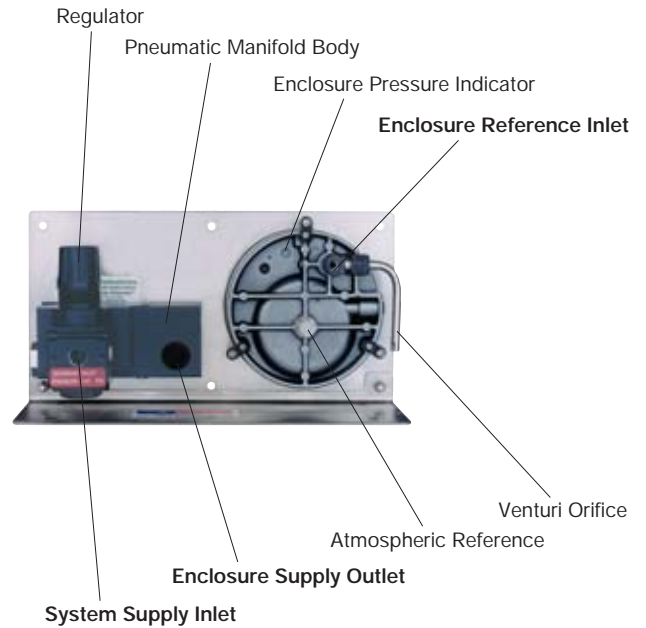
Model 3003 HM Configuration - The Horizontal Mount System

LPS (Less Pressure Switch)

Front View



Rear View

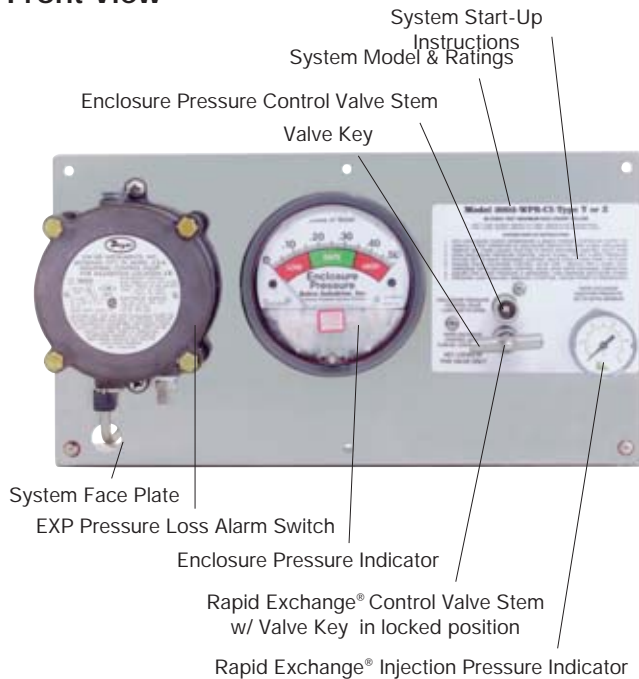


Important Notes

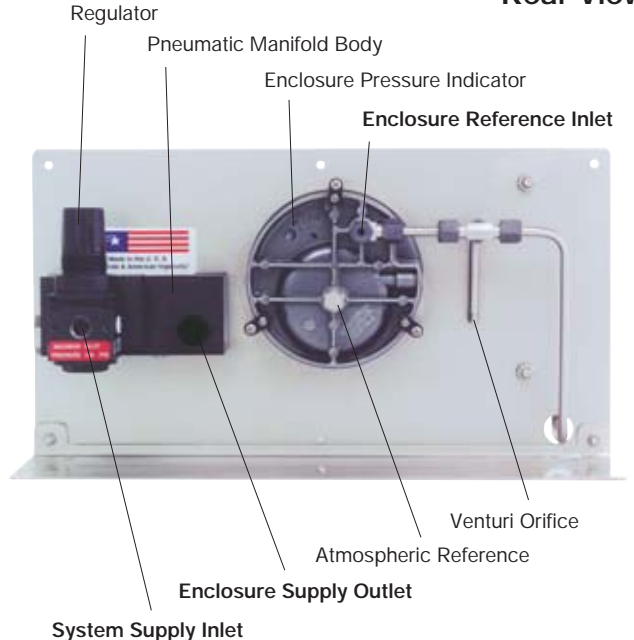
- 1) The HM Configuration is supplied with a mounting flange for right angle attachment to a horizontal surface external to the protected enclosure.
- 2) The HM Configuration can also be frame mounted external to the protected enclosure through a 10.25" W x 5" H cutout in a suitable mounting surface.
- 3) Model GCK Gauge Conversion Kit is required to panel mount the HM Configuration through a 10.25" W x 5" H cutout in the protected enclosure surface.
- 4) See page 8 for Model GCK kit description and conversion procedure.
- 5) Connection points shown in bold text.

WPS/WPSA (With Pressure Switch)

Front View



Rear View



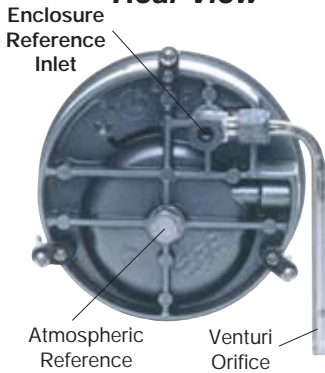
Model 3003 CK Configuration - The Component Kit System

Part #1 Enclosure Pressure Indicator

Front View

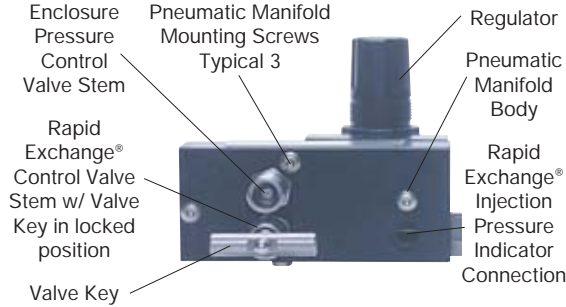


Rear View

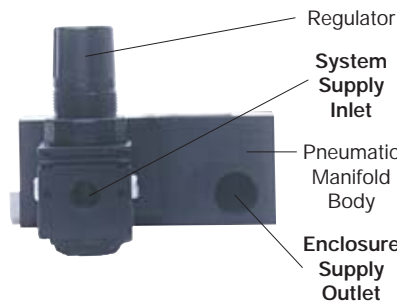


Part #2 Pneumatic Manifold Assembly

Front View



Rear View



Part #3 Rapid Exchange Injection Pressure Indicator

Front View



Side View



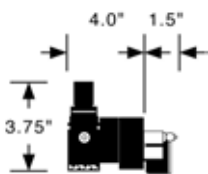
Part #4 Start Up Instruction Nameplate



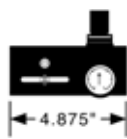
Important Notes

- 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 8 for Model GCK kit description and conversion procedure.
- 4) Connection points shown in bold text.

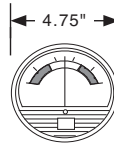
CK Configuration System & Optional Remote Cube Filter Dimensions



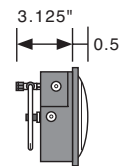
Side View
Pneumatic Manifold



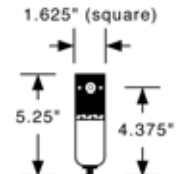
Front View
Pneumatic Manifold



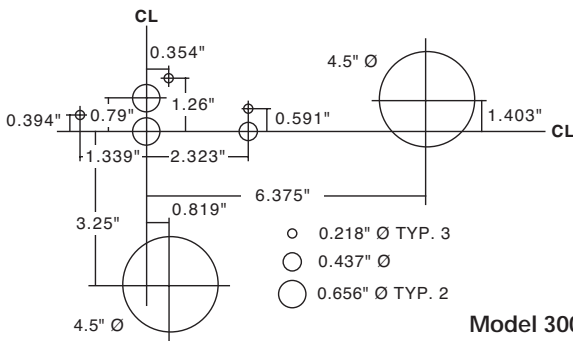
Front View
Enclosure Pressure Gauge



Side View
Enclosure Pressure Gauge



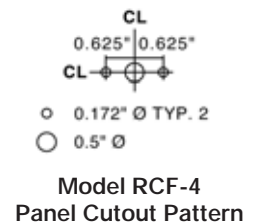
Side View
Model RCF-4



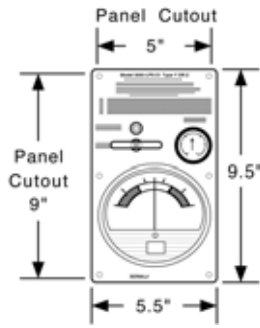
Helpful Hint

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.

ONLY CUT ONE 4.5" Ø HOLE IN PANEL.

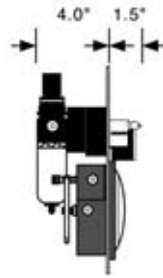


Model 3003 WPS VM Configuration & Flange Dimensions

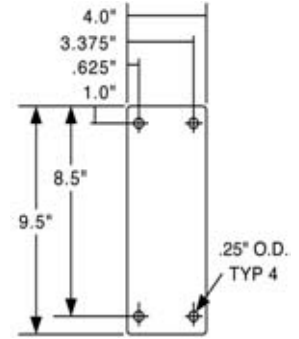


VM Configuration
Front View

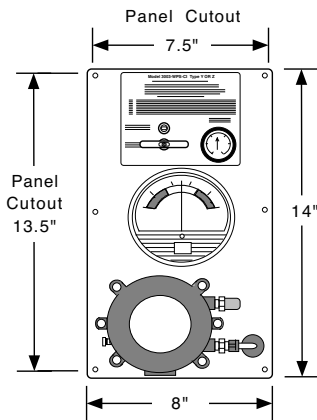
LPS (Less Pressure Switch)



VM Configuration
Side View

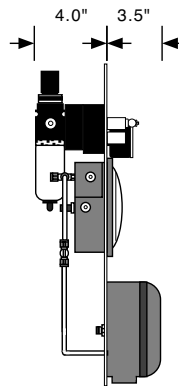


Vertical Mount Flange
Front View

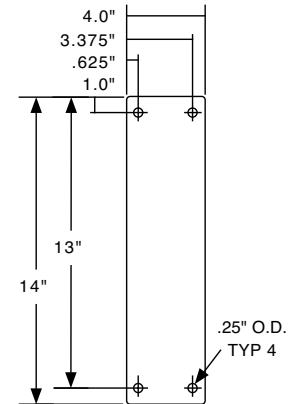


WPS/WPSA VM Configuration
Front View

WPS/WPSA (With Pressure Switch)

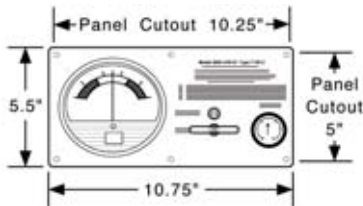


WPS/WPSA VM Configuration
Side View



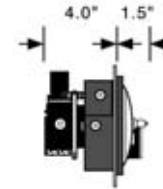
WPS/WPSA Vertical Mount
Flange Front View

Model 3003 HM Configuration & Flange Dimensions

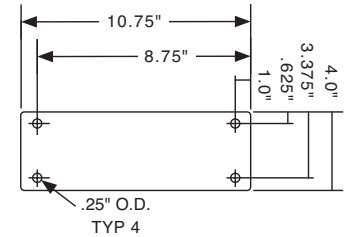


LPS HM Configuration
Front View

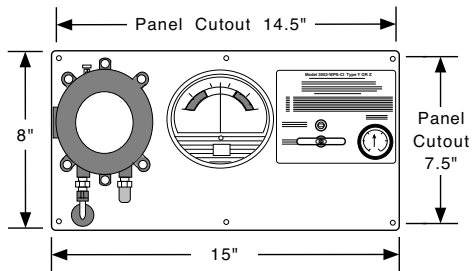
LPS (Less Pressure Switch)



LPS HM Configuration
Side View

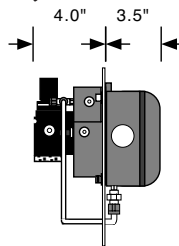


LPS Horizontal Mount Flange
Front View

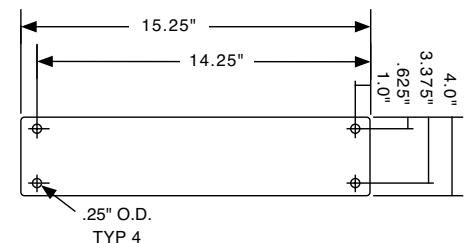


WPS/WPSA HM Configuration
Front View

WPS/WPSA (With Pressure Switch)



WPS/WPSA HM Configuration
Side View

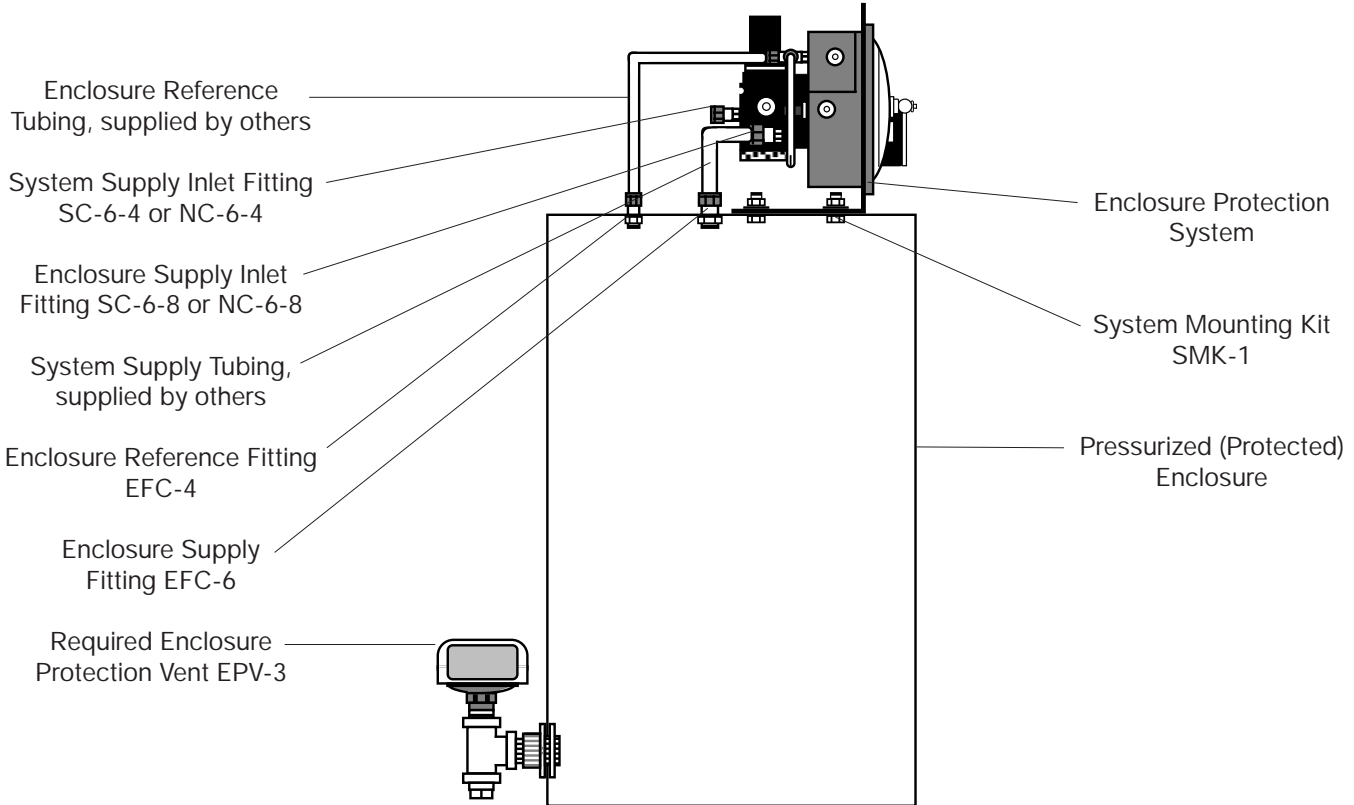


WPS/WPSA Horizontal Mount
Flange Front View

Typical Model 3003 System Installation Details

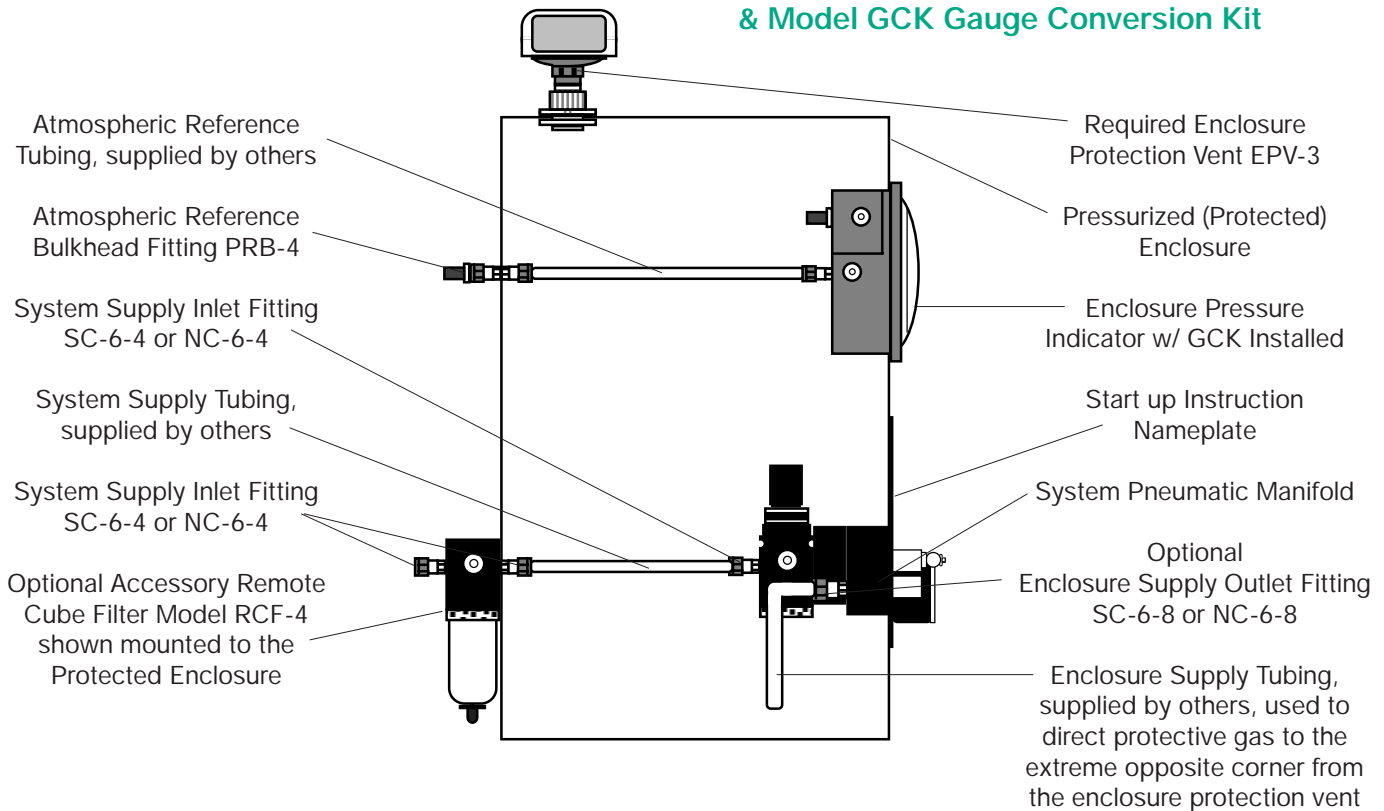
- External to the Protected Enclosure -

Flange Mount HM Configuration with Model SMK-1 Fastener Kit



- Internal to the Protected Enclosure -

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



VM Configuration Mounting Options



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



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



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

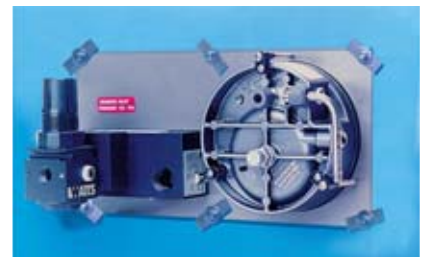
HM Configuration Mounting Options



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



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



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

CK Configuration Mounting Options



Front View



Rear View

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

* PANEL MOUNTED SYSTEMS REQUIRE A BEBCO MODEL GCK FOR PROPER OPERATION - SEE PAGE 8

Model 3003 System Accessories

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

ADDITIONAL ITEMS	
RAH	Remote Alarm Horn
RAB-1	Div. 1 Remote Alarm Beacon
RAB-2	Div. 2 Remote Alarm Beacon
PIAD	Purgeable Instrument Access Door

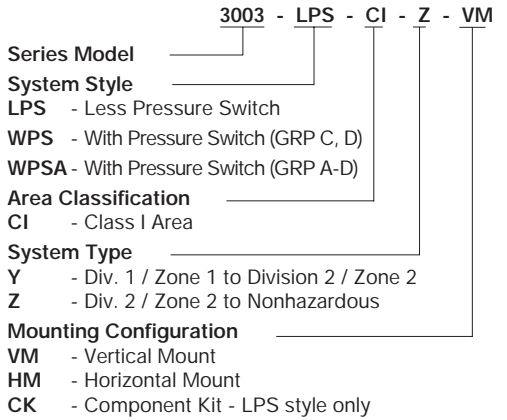
ENCLOSURE PROTECTION VENTS
ONE VENT REQUIRED WITH EACH SYSTEM
 EPV-3-SA-00 Straight w/ Spark Arrestor
 EPV-3-SA-90 Rt Angle w/ Spark Arrestor

WARNING NAMEPLATES	
EWN-1	Class I Enclosure Warning
ETW	Enclosure Temperature Warning

INSTALLATION & OPERATION MANUAL
 3003-IOM Installation & Operation Manual

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

Model Number Designations



System Specifications

System Dimensions:	See Pages 4 & 5
Shipping Weight (Lbs.):	LPS-10 / WPS-15
Operating Temp. Range:	-20° F - 120° F
Supply Pressure Range:	80 - 120 PSI max.
Capacity & Filtration:	1.5 Oz. @ 20 Microns
Supply Requirements:	Clean Air or Inert Gas
Safe Press. Setpoint:	0.25"
Safe Press. Flowrate:	* 0.1 - 3.5 SCFH / Cu Ft
Exchange Pressure:	* 3" - 5"
Exchange Flowrate:	** 12 SCFM / 720 SCFH
Exchange Time:	
4 Volume Exchange Rate:	1 Minute / 3.0 Cubic Ft.
5 Volume Exchange Rate:	1 Minute / 2.4 Cubic Ft.
System Supply Port:	1/2" FPT
Enclosure Supply Port:	1/2" FPT
Enclosure Reference Fitting:	1/4" Tube
Switch Setting (WPS & WPSA Only):	0.15" ± 0.02"
Switch Conduit Port Size:	1/2"

Switch Contact Ratings:	
WPS Style:	120 VAC, 15 Amps
WPSA Style:	*** 120/240 VAC, 10 Amps, 28 - 125 VDC
* Enclosure integrity determines actual flow rate	
** With regulator set to 60 PSI min. during exchange	
*** WPSA style switch requires 120/240 VAC supply voltage	

Material Specifications

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

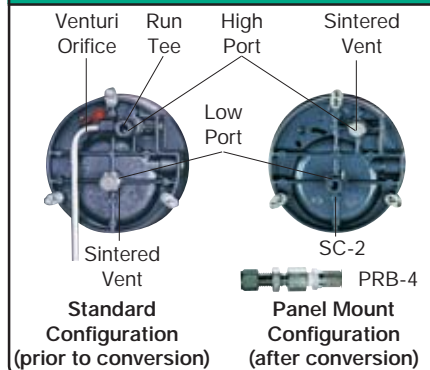
* Refers to filter bowl supplied with VM mounting configuration.
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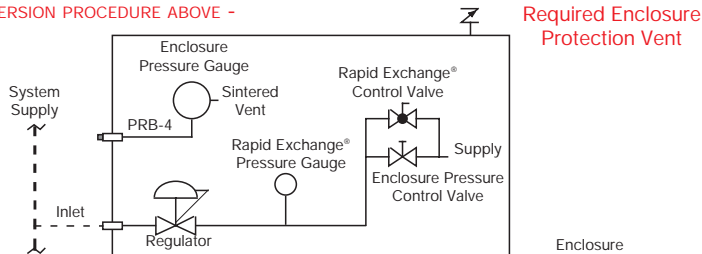
Model 3003 Panel Mount Conversion



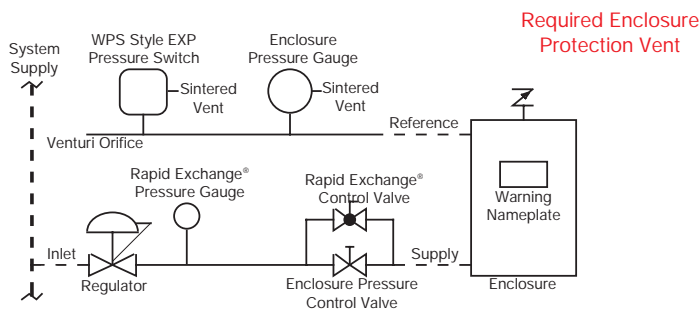
1. Secure one Model GCK Conversion Kit, kit includes a PRB-4 & SC-2 Fitting & Enclosure Pressure Gauge gasket.
2. Remove venturi orifice and run tee from the high port of the gauge and discard.
3. Remove sintered vent from low port.
4. Reinstall sintered vent into high port.
5. Install Model SC-2 fitting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

Panel Mount Pneumatic Installation Diagram

- SEE CONVERSION PROCEDURE ABOVE -



Standard Pneumatic Installation Diagram



IMPORTANT NOTE:

All specifications subject to change without notice. Warranty & Liability policies available upon request. One (1) Enclosure Protection Vent must be purchased with each system specified above, at time of order.