

General Information

System Specifications

System Dimensions:	See Pages 10 & 11
Shipping Weight (Lbs.):	LPS - 10 / WPS - 15
Operating Temperature 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 Pressure Setpoint:	0.25"
Safe Pressure Flowrate:	* 0.1 - 3.5 SCFH / Cu Ft
Exchange Pressure:	* 3" - 5"
Exchange Flowrate:	** 4 SCFM / 240 SCFH
Exchange Time:	1 Minute / Cubic Ft.
System Supply Port:	1/4" FPT
Enclosure Supply Fitting:	1/4" Tube Fitting
Enclosure Reference Fitting:	1/4" Tube Fitting
Switch Setting (WPS & WPSA Only):	0.15" ± 0.02"
WPS & WPSA Pressure Switch Wiring:	1/2" FPT
Switch Contact Ratings:	
WPS Style:	120 VAC, 15 Amps
WPSA Style:	*** 120/240 VAC, 10 Amps, 28 - 125 VDC

* Enclosure integrity determines actual flow and pressure

** With regulator set to 60 PSI min. during exchange

*** WPSA style switch requires 120/240 VAC supply voltage

Exchange Flow rating is based on safety factors considered after extensive factory testing and does not reflect actual flow. Flow was measured upstream of System with an electronic flowmeter on a five cubic feet enclosure. The System was installed with tubing that exceeded the maximum allowable linear length and quantity of bends listed in this manual for System supply, enclosure supply and enclosure reference connections. The System was tested in conjunction with a Bebcos Model EPV-2-SA-00 Enclosure Protection Vent, mounted directly on the test enclosure.

ABS Traceable Certified Exchange Flow Measurements with System regulator set at 60 psi, ambient temperature of 75° F

100 psi supply pressure:	6.90 scfm / 414.00 scfh
80 psi supply pressure:	6.71 scfm / 402.60 scfh

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" .035 Welded
System Nameplates:	Silkscreened Lexan® & SS
Fastener Hardware:	Aluminum & Stainless Steel
Mounting Plate:	316 14 Ga #3 Brush SS
EXP Pressure Switch Body:	Anodized Cast Alum.
Enclosure Warning Nameplate:	Silkscreened SS

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Recommended Spare Parts

Qty	Description	Part Number
1	Enclosure Pressure Indicator-CI	001000
1	System Filtered Regulator	002040
1	Rapid Exchange® Pressure Gauge	002300
1	Enclosure Pressure Control Valve Body	003440
1	Rapid Exchange® Control Valve Body	003460
1	Installation & Operation Manual	IOM 1002
1	Group C - D Pressure Switch-CI	001080
1	Group A - D Pressure Switch-CI	001085
1	Enclosure Warning Nameplate-CI	EWN-1

Please call and reference the part number above for current spare parts pricing. Immediate pricing is available to all confirmed customers.

Installation Tools & Testing Equipment

1/2" chuck drill
 Complete set of drill bits
 3/4" conduit knockout punch or 1.125" hole saw
 Complete set of tubing, conduit bending, instrument fitting and electrical craftsman hand tools
 0-10" differential pressure indicator or manometer (connected to the protected enclosure to measure maximum pressure)

Model 1002 System Accessories

Enclosure Protection Vents

ONE REQUIRED WITH EACH SYSTEM

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

Additional Items

SMK-2 or -8	System Mounting Kit
EPSK-1	Class I, Group C - D Pressure Switch Kit
EPSK-1A	Class I, Group A - D Pressure Switch Kit
GPSK-1	Class I, General Purpose Switch Kit
RAH	Div. 1 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
PIAD	Purgeable Instrument Access Door

Electrical Supply Requirements

General Wiring Requirements

WARNING

THIS DEVICE CONTAINS ELECTRICAL PARTS WHICH CAN CAUSE SHOCK OR INJURY

All electrical connections, conduit and fittings on the protected enclosure must be suitable for the hazardous location in which they are installed. In addition, all conduit and wire must be installed in accordance with NEC articles 500-1, 500-2 or 500-3 as required and all relevant plant and local codes.

Note: Do not use seals on conduit used as a protected "wireway" to supply protective gas to adjacent protected enclosures. The same conduit can be utilized for both electrical and pneumatic service to an adjacent protected enclosure(s), provided the conduit is oversized to allow a minimum free clearance equal to or larger than the pipe size required between multiple enclosures as stated on page 7, "Getting Started".

Enclosure Power Requirements

The protected enclosure(s) electrical power source must originate from a circuit breaker or fused disconnect suitable for the hazardous location in which it is installed. The switch must be located within fifty (50) feet of the protected enclosure(s) and the protection system and be properly marked.

Alarm Signal Requirements

The WPSA style pressure switch requires a 120 VAC power supply in addition to the alarm signal. The WPS and WPSA Style systems alarm signal may originate from the protected enclosure if the alarm signal is disconnected by the protected enclosure's circuit breaker or fused disconnect as stated in Enclosure Power Requirements above.

The protected enclosure(s) alarm signal power may also originate from outside of the protected enclosure. In this application, the protected enclosure may be used as a "wireway" to pass alarm signal wiring from the power source to the alarm device, if the wiring is isolated and properly labeled. In addition, appropriate conduit seals must be provided outside of the protected enclosure separately.

IMPORTANT NOTE

NFPA 496 requires the use of an alarm or an indicator to detect the loss of safe enclosure pressure. In addition, the NFPA 496 requires that if an indicator alone is utilized, a protective gas supply alarm must also be installed between the last valve in the protective gas supply and the protected enclosure. Therefore, the protective gas supply to all LPS Style systems must be equipped with the above mentioned protective gas supply alarm. Exception: Systems utilizing a model EPSK or GPSK enclosure pressure loss alarm switch accessory will satisfy the above mentioned NFPA requirement.

Typical Enclosure Wiring Methods

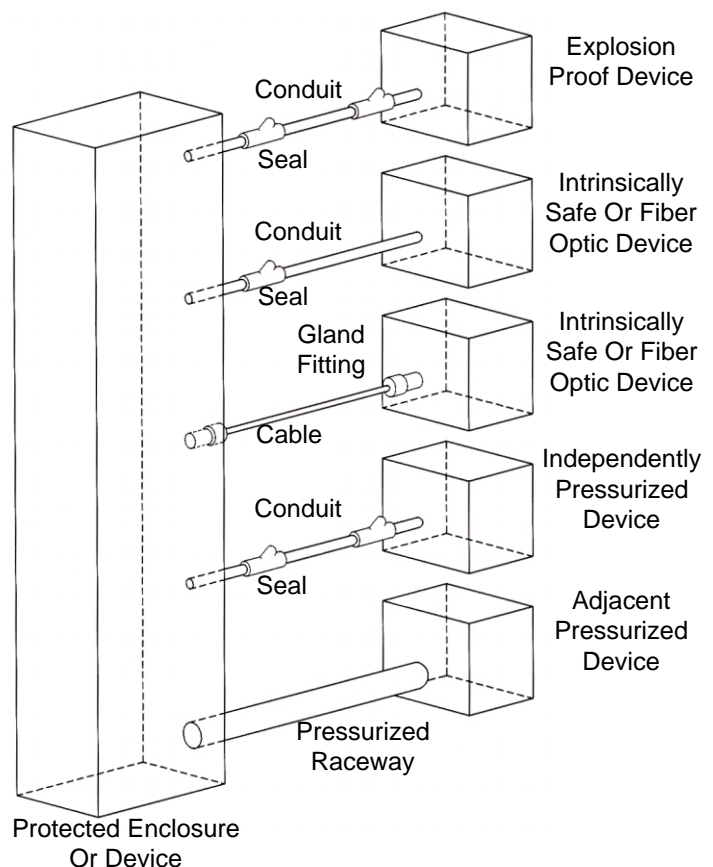
Protected enclosures must be wired similar to explosion proof enclosures, in accordance with **Article 501-504** of the 1993 National Electric Code - **NFPA 70**.

Single conductor wiring must be placed in rigid metal conduit, seal-flex conduit or other mediums approved for use in the hazardous location surrounding the protected enclosure. Although the 1998 edition of NFPA 496 does not require conduit seals on pressurized enclosures in a division 2 area, BebcO strongly recommends the use of a conduit seal as the most practical way to prevent excessive leakage through conduit connections.

While explosion proof enclosures require conduit seals on all cable entries, in accordance with **NFPA 70, Sections 501-5**, protected enclosure cable entries can be sealed in accordance with **Section 501-5** which permits the use of compression gland fittings or other sealed cable entry fittings, as opposed to approved conduit seals, if the wiring method is otherwise suitable for the hazardous location.

In conclusion, there are two primary goals. First, the installer should ensure all associated wiring and cable is protected by pressurization or other means, such as explosion proof conduit or intrinsic safety barriers. Secondly, the installer must ensure all associated conduit and wireways are sealed to conserve protective gas, unless they are used to supply protective gas to other enclosures or devices.

Typical Enclosure Wiring Connections



Conduit Installation

Electrical Conduit

1. Choose the location for the enclosure's electrical conduit connection(s) based on the requirements on page 15, "Electrical Supply Requirements".
2. Drill and deburr enclosure conduit fitting holes in the protected enclosure. Mount the fittings.
3. Determine appropriate route for the enclosure electrical and power alarm signal conduit.
4. Measure, cut and thread conduit, check conduit fit to insure proper seating. Fully ream all conduit.
5. Install conduit and tighten all fittings to fitting manufacturers specifications. Secure conduit to appropriate structural supports as required.
6. Seal all conduit with an approved compound prior to operation of the protection system.

HELPFUL HINT

Bebco recognizes it may be impractical to pour all electrical conduit seals prior to installation in the field. However, all conduit connections must be sealed for proper testing and operation of the Enclosure Protection System. Therefore, Bebco recommends the use of temporary seals such as duct seal or masking tape for bench or shop testing, prior to final field installation.

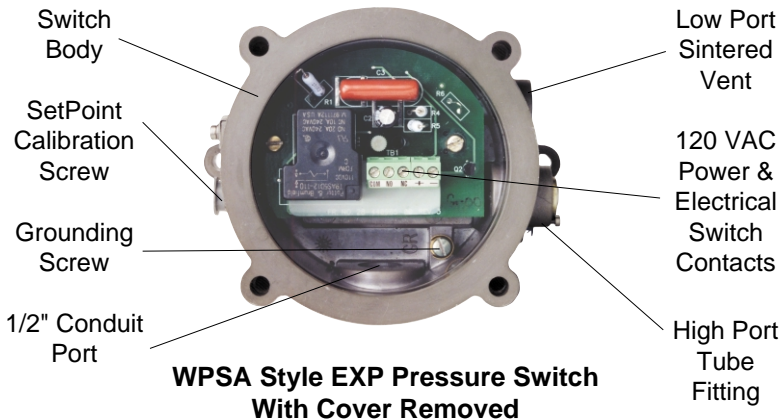
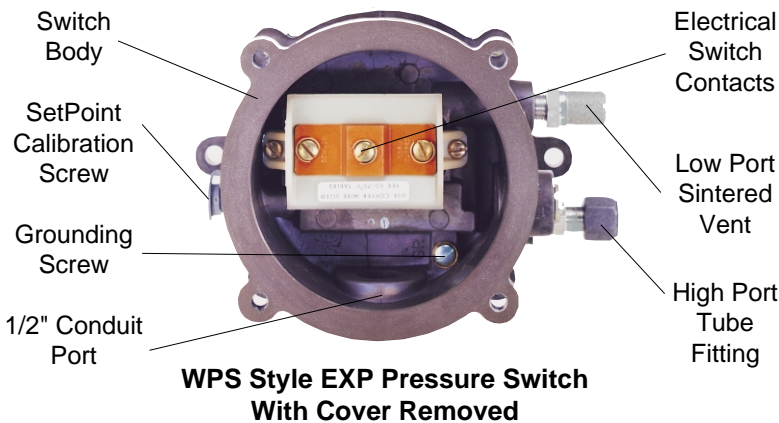
WPS & WPSA Style Conduit

WPS and WPSA style systems provide electrical contacts for audible or visual alarm devices that signal a loss of protected enclosure pressure. WPS and WPSA style systems are calibrated to alarm at 0.15" for Class I applications. The switches are suitable for hazardous (classified) outdoor locations. Wiring must be installed with a seal and conduit fittings suitable for the area. Alarm circuit power may be derived from the protected enclosure power source or an intrinsically safe alarm signal source. All associated alarm devices must be protected by suitable means (explosion proof, purged or intrinsically safe).

WPS & WPSA Style Conduit Connection Parts

Fitting Kits Can Be Bebco Furnished

1. For WPS and WPSA Style EXP pressure loss alarm switch connected to an enclosure mounted alarm, one (1) Bebco Model LCK (L fitting Conduit Kit) or equivalent conduit elbow, coupling and seal fittings.
2. For WPS and WPSA Style EXP pressure loss alarm switch connected to a remote mounted alarm, one (1) Bebco Model TCK (T fitting Conduit Kit) or equivalent conduit tee, coupling and seal fittings.
3. One (1) lot 150# rating 1/2" galvanized or aluminum pipe.

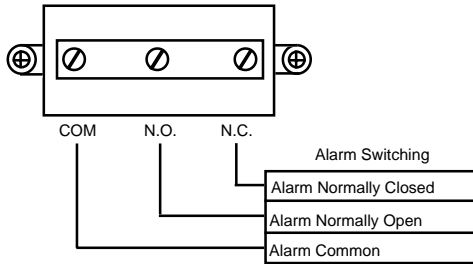


TCK "T" Fitting Conduit Kit

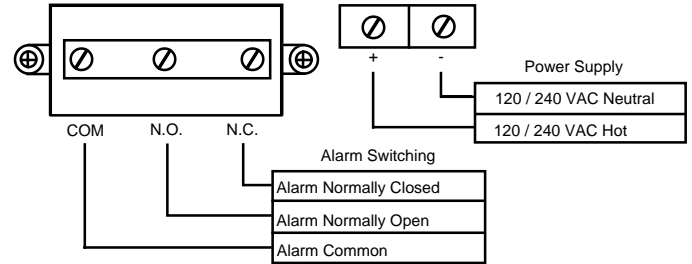


LCK "L" Fitting Conduit Kit

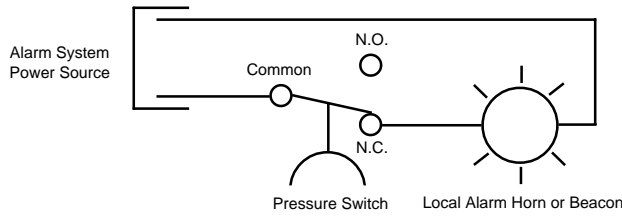
GPSK, EPSK & WPS Terminal Block Connections



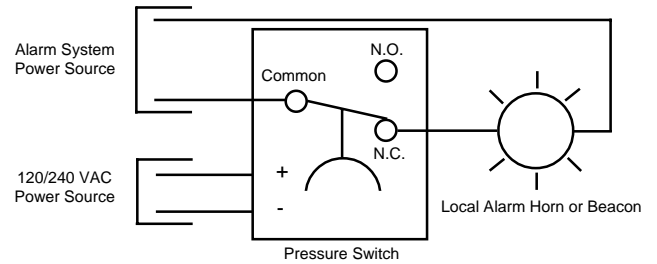
EPSK-1A & WPSA Terminal Block Connections



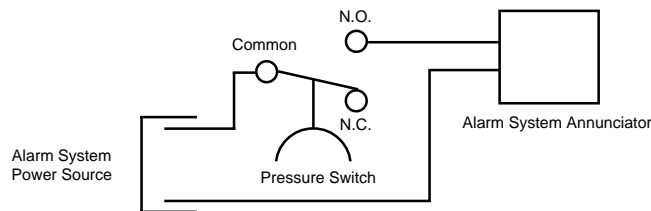
GPSK, EPSK & WPS "Normally Closed" Wiring Configuration



EPSK-1A & WPSA "Normally Closed" Wiring Configuration



GPSK, EPSK & WPS "Normally Open" Fail Safe Wiring Configuration



EPSK-1A & WPSA "Normally Open" Fail Safe Wiring Configuration

