

Choosing a Purge and Pressurization System

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Six Questions to Answer before Choosing a Purge and Pressurization System

Purge and pressurization is a safe, economical, and reliable solution for protecting equipment in hazardous locations.

For hazardous gas applications, purge and pressurization systems first purge the hazardous gas from the enclosure that equipment is installed in. Once hazardous gas has been purged, the system then provides a positive pressure with clean, dry air or inert gas to prevent the hazardous gas atmosphere from entering the enclosure.

For hazardous dust applications, there is no purge cycle. You must manually remove any hazardous dust from the enclosure. The system then provides a positive pressure with clean, dry air or inert gas to prevent the hazardous dust atmosphere from entering the enclosure.

If you are unfamiliar with purge and pressurization systems, choosing the correct system for your application can be confusing. Answer these six questions to help simplify the selection process:

What is the volume of the enclosure that you will be pressurizing, in cubic feet?

Most purge and pressurization systems are rated for specific enclosure sizes. For instance, a purge and pressurization system can be rated for an enclosure that has a volume of 0 to 15 cubic feet, while another system can be rated for an enclosure that is 0 to 450 cubic feet. To select the proper system, you must know the volume of the enclosure that you will be protecting.

What hazardous atmosphere is present?

You need to know what hazardous atmosphere will be present in the area in which the enclosure is located. Will a hazardous dust or gas be present? Some systems are certified for gas, some are certified for dust, and some are certified for gas or dust.



3000 Series—Batch control station for Class I, Div. 2 areas



What is the classification of the area in which the enclosure will be located (Class/Div, Zone), and what is the rating of the equipment that will be installed in the protected enclosure?

Purge and pressurization systems are listed as one of the following: Type X, Y, Z, Ex pxb, Ex pyb, or Ex pzc. The type of system chosen is based on the classification of the area in which the enclosure is located and the rating of the equipment installed in the enclosure. The types of purge systems are defined as follows:

- Type X: Used when general purpose equipment is located in an enclosure in a Division 1 location.
- Type Y: Used when Division 2 rated equipment is located in an enclosure in a Division 1 location.
- Type Z: Used when general purpose equipment is located in an enclosure in a Division 2 location.
- Type Ex pxb: Used when general purpose equipment is located in an enclosure in a Zone 1 or Zone 21 location.
- Type Ex pyb: Used when Zone 2 equipment is located in an enclosure in a Zone 1 or Zone 21 location.
- Type Ex pzc: Used when general purpose equipment is located in an enclosure in a Zone 2 or Zone 22 location.

Do you need a pressure switch included with the purge and pressurization system?

If you are using a Type Y, Z, Ex pyb, or Ex pzc purge and pressurization system, you must use a pressure switch to activate an alarm or indicator if positive pressure is lost. Most purge and pressurization systems come with an optional pressure switch. If you are monitoring the pressure of the enclosure with a separate sensor or pressure switch, you can select a purge and pressurization system without a pressure switch.

What is your air supply rated for?

You must make sure that the air supply available for your purge and pressurization system satisfies the requirements for the system.

How do you want the system mounted on your enclosure?

There are many different ways that purge and pressurization systems can mount onto enclosures. They can be mounted externally to the enclosure—on either side or on the top or bottom—and some systems can even be mounted remotely to the enclosure. Some purge systems can also be mounted internally to the enclosure via panel mount.

Choosing a purge and pressurization system for your application can be a daunting task, but it doesn't have to be. Answering these six questions will put you on the right path when searching for the appropriate system.



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