

## Technical Information

### The Use of Encoder and Cam Switches in Hazardous Atmospheres

Occasionally there is the need to use an Electro Cam Corp. encoder or electronic cam switch in a hazardous atmosphere. This is considered a Class I, II or III Atmosphere, as defined by the National Electrical Code (NFPA 70).

The problem with trying to use Electro Cam encoders or cam switches in a classified location is that the enclosures are not listed for these type atmospheres. To use our products, they must be enclosed within a listed enclosure, or have either a purge or pressurizing system used along with the device.

The illustration to the right shows the types of systems that can be used in classified locations.

The top system would be used if the Electro Cam Corp. device was installed in an enclosure listed for this type of atmosphere. This type installation requires a costly enclosure that must be modified to accept a shaft through the sidewall, and still maintain the classification integrity. Electro Cam Corp. has information available on a shaft and bearing assembly that threads into a tapped hole in the sidewall of the enclosure.

At the bottom is a system like the Bebcos. This type system uses the standard NEMA enclosure (see note below) with positive pressure, either instrument grade compressed air or inert gas, to ensure that no dusts, vapors or liquids can enter the enclosure.

The Bebcos systems consist of a pressure regulator, pressure gage, and a pressure switch used to set off an alarm if the internal pressure of the enclosure falls below or rises above preset limits.

Specific information and pricing are available directly from Bebcos:  
Bebco Industries, 600 Golf Freeway, Texas City, TX 77591  
Phone: 409-935-5743 Fax: 409-938-4189

The Bebcos systems are not being sold by Electro Cam Corp., but are recommended for these types of applications. There are several other manufacturers of similar types of systems for this purpose, however their suitability for use with Electro Cam Corp. products has yet to be determined.

NOTE: At this time standard resolvers are not included in this category, even though they have a NEMA rating. The structure of the enclosure doesn't permit their use in this application. If a resolver needs to be used in a classified atmosphere, you must still use it in a rated type enclosure.

Because of the type of enclosures used for our packaged programmable systems, an entire encoder based system could be used in a classified atmosphere when used with one of the Bebcos systems.

As with any installation that has special considerations or requirements, you should check with the authority having jurisdiction (as per the NEC) prior to final purchases or installation.

