



Electric Motors Suitable for Operation in

CLASS I

GROUP B

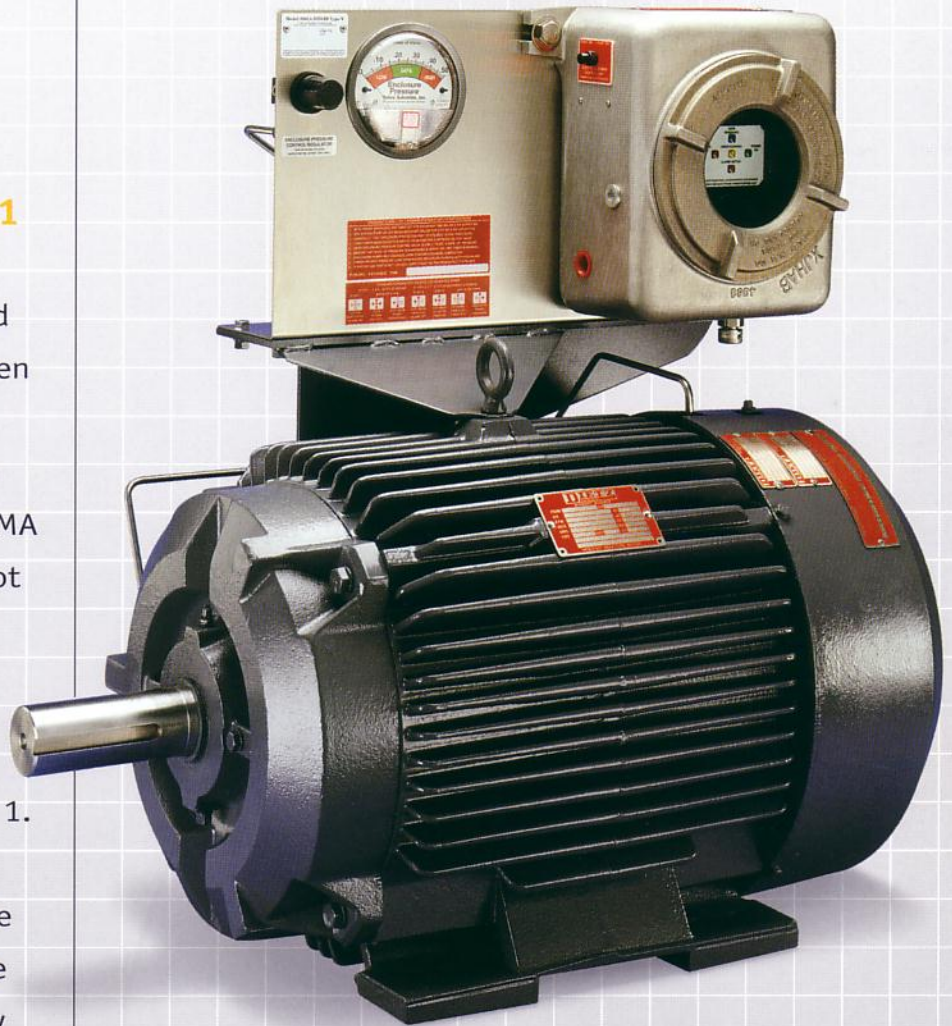
DIVISION 1

HAZARDOUS LOCATIONS

Electric motors suitable for operation in Class I, Group B, Division 1 hazardous locations.

These purged motors are designed to operate in areas where hydrogen is present (or gases or vapors equivalent in hazard to hydrogen gas). They are available in all NEMA and IEC frame sizes with both foot and flange mountings.

These electric motors are constructed to the requirements of U.L. Class I, Group D, Division 1. Then, they are modified so they can be purged using a Bebcos Type "X" purging system. The complete motor and purge system assembly complies with NFPA 496 Type "X" which reduces the classification within the motor from Division 1 to non-hazardous.



- **30HP – 1800RPM motor-mounted Bebcos purging unit**
- **1/4 to 100 horsepower available**

Symbols apply to purging unit only



CSA Approval applies to Electrical Power Control Unit Only

Electric Motors Suitable for Operation in

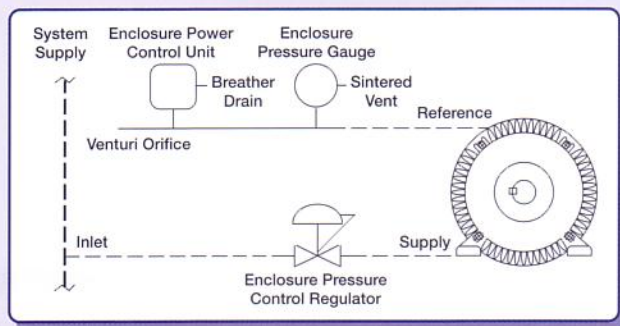
CLASS I

GROUP B

DIVISION 1

HAZARDOUS LOCATIONS

Pneumatic Installation

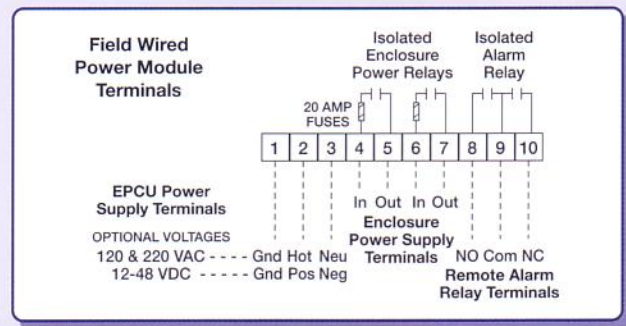


The Bebcu purge unit can be mounted on the motor in a number of configurations and can be customized to each application. The purging unit is connected to the motor and terminal box using 0.25" OD fully reamed stainless steel tubing. Inlet is at the bottom of one end of the motor and terminal box. The exit is at the top of the opposite end of the motor and terminal box.

The Bebcu Type "X" purging system can be mounted on the motor, or wall mounted within five feet.

The sizes of the motors that can be used are limited by the area to be purged. The motor and terminal box gaseous volume combined must be less than two cubic feet.

Electrical Wiring

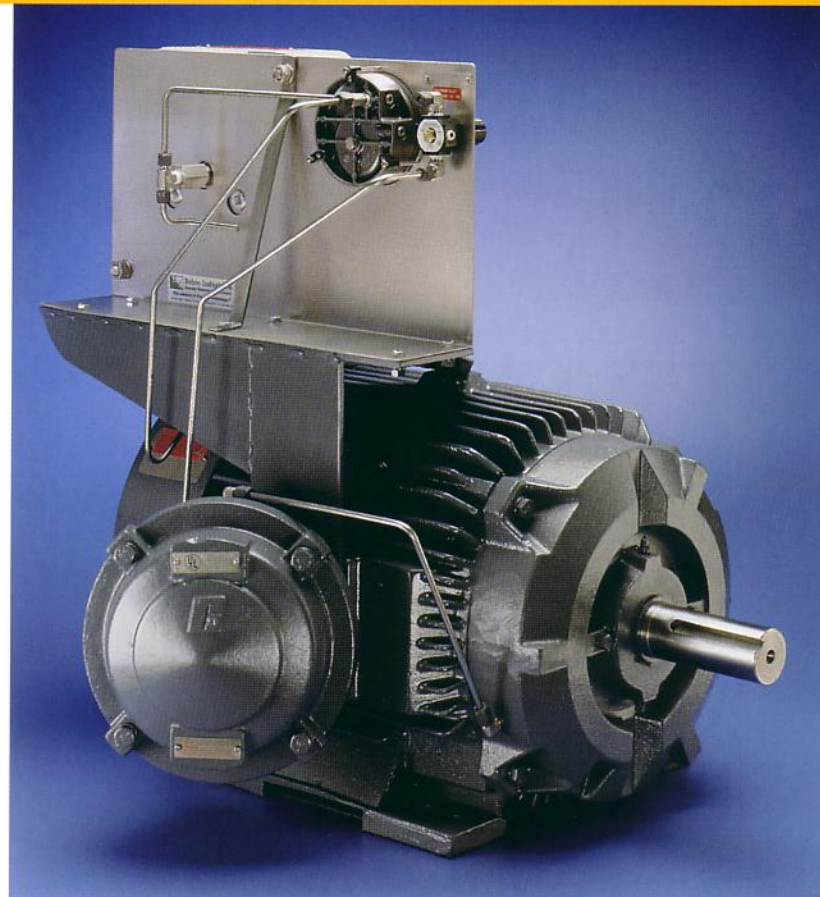


When the power is "off," the power supply and alarm relays are open. For Class I, Group B, Division 1 areas, the EPCU must detect 0.15" pressure to energize the alarm relay and begin the exchange cycle. When the cycle is complete, the isolated power relays energize. The power supply relay is connected to the start interlock on the motor starter.

The Bebcu Type "X" purging system operates on a supply of compressed instrument grade air or inert gas. It is designed to regulate and monitor the pressure within the motor and terminal box in order to remove and prevent flammable vapor or gas accumulation. The motor must complete 10 exchanges of air before it will start and maintain a positive pressure of .25" of water during operation.



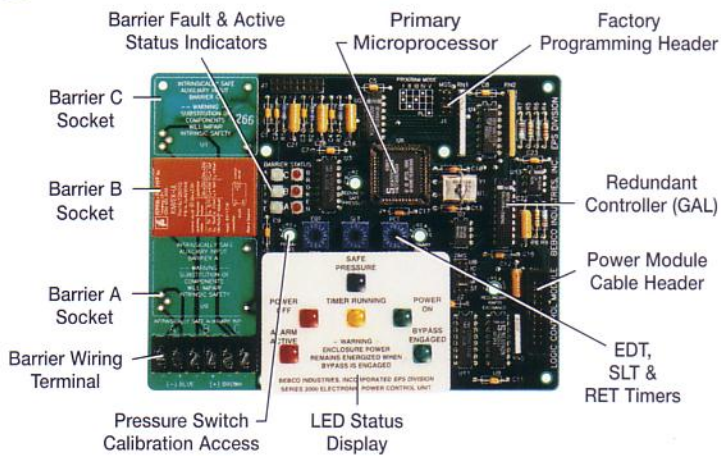
The system also includes an Electrical Power Control Unit (EPCU) that monitors the system operation and controls motor power. All start-up requirements must be satisfied before the EPCU allows power to the motor. After the motor is running, if pressure is lost or reduced, the motor will be shut down by the EPCU. In addition, form "C" contacts will close to initiate an alarm. These processes reduce the hazardous (Classified) area rating within the motor and terminal box in accordance with NEC – NFPA 70, Article 500, NFPA 496 and ISA ds 12.4.



- 30HP
- 1800RPM
- 326T frame with motor mounted Bebcu purging unit

Dietz supplies the motor and Type "X" purging system as a complete unit. The motor has stainless steel nameplates indicating the system is suitable for operation in Class I, Group B, Division 1 hazardous locations. Additional stainless steel nameplates are also attached to the motor explaining the operation and warnings associated with purged electric motors.

These motors are available in many sizes and mounting configurations. Please contact one of our engineers to get details on specific applications and your requirements. Acceptance of our system is subject to the approval by the authority having jurisdiction at the installation location.



BEBCO INDUSTRIES, INCORPORATED EPS DIVISION
SERIES 2000 ELECTRONIC POWER CONTROL UNIT

NORTH AMERICAN STANDARDS

Explosion-proof Motors for Operation in

CLASS I

GROUP B

DIVISION 1

HAZARDOUS LOCATIONS

Electrical equipment for use in Class I hazardous (Classified) locations, as defined in the National Electric Code, is tested with respect to acceptability of the operation in the presence of flammable and explosive mixtures of specific vapors and gases with air. For purposes of area classification, such mixtures have been grouped on the basis of their characteristics as follows:

Class I, Group B Atmospheres such as Acrolein (inhibited), Butadiene, Ethylene Oxide, Hydrogen (or gases or vapors equivalent in hazard to Hydrogen Gas) or Propylene Oxide

The National Fire Protection Association (NFPA) determines safe practices and established standards for all areas of commercial, industrial and residential construction. The NFPA publishes many documents including NFPA code 70 – better known as the National Electric Code – and NFPA 496, the document that outlines the practices for purging the motors and controls offered by Dietz.



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NATIONAL ELECTRIC CODE 501-8, MOTORS AND GENERATORS

Class I, Division 1. In locations within this class, motors, generators and other rotating electrical machinery shall be:

Approved for Class I, Division 1 locations.

Note: Approval authorities such as Underwriters Laboratories and Factory Mutual Research does not offer standards on Class I, Group B, Division 1 electric motors.

Of the totally enclosed type motors supplied with positive pressure ventilation from a source of clean air with discharge to a safe area so arranged to prevent energizing of the machine until ventilation has been established and the enclosure has been purged with at least 10 volumes of air and also arranged to automatically de-energize the equipment when the air supply fails.

Totally enclosed motors of Type 2 shall have no external surface with an operating temperature in degrees Celsius in excess of 80 percent of the ignition temperature of the gas or vapor involved. Appropriate devices shall be provided to automatically de-energize the motor or provide adequate alarm if there is any increase in temperature of the motor beyond the design limits. Auxiliary equipment shall be of a type approved for the location in which it is installed.

For more information, please call Dietz at **1-800-466-6398**, or visit our web site at **dietzelectric.com**.

