Instruction Bulletin No.
111970
Rev. BE

65800 Series
Single Channel Zener Barrier

GEMS 65800 Series, shunt diode, safety barriers are one channel devices which pass a unidirectional signal (D.C.) and limit the energy to a level that cannot ignite an explosive atmosphere. **Approvals include UL, CSA.**

*****WARNING: To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.**

Installation Requirements

Location: Barriers must be installed and grouped in a **non-hazardous location. If necessary to locate in a hazardous area,** barriers must be mounted in a suitable enclosure which, along with its installation, must be suitable for the location.

Environment: The operating temperature range of these barriers is -40°F to +140°F. They should be mounted in a **clean, dry environment and well ventilated,** so that the maximum temperature is not exceeded. If an enclosure is used, it must be suitable for the location.

Earth Connection: The bracket on which the barriers is mounted must be connected to an earth ground. Grounding should be adequate for conduction of line-generated fault currents and should have an impedance of less than one ohm. **See Figs. 1 and 2.**

Safe Area Apparatus: Safe area apparatus must not generate, or be connected to, sources having **voltages greater than 250 Vrms or VDC.**

Installation

It is expected that the installation will be in accordance with ISA RP-12.6, NEC Chapters 5 and 7. The following specific points should be kept in mind:

1. Check that the barrier is of **specified type and polarity.**

2. **For multiple barrier installation,** the barrier's safe area sides should face one side of the enclosure and the I.S. sides should face the opposite side **(Fig 1).** Wiring must be channeled and segregated as shown, so that no mis-wiring can occur during servicing, testing or replacement.

3. **Connect the hazardous area equipment** to terminals marked "3" and "2" (Fig. 3). Hazardous area field wiring will store energy due to distributed capacitance and inductance in proportion to its length. Common, commercially available signal wire may be used; provided the capacitance and inductance are below the following maximum values:

Fig. 3: Installation Diagram

Note: Positive signal channel shown. Sensor switch may be any non-voltage producing, essentially resistive device; containing no energy storing components. Flow and level switches, temperature switches, pressure switches or resistive transducers or transmitters are typical.

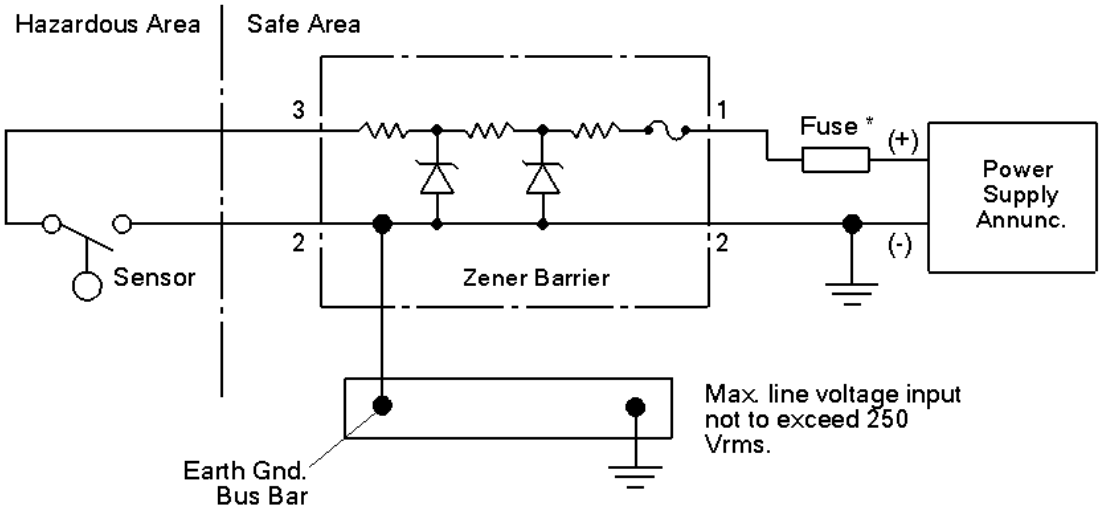
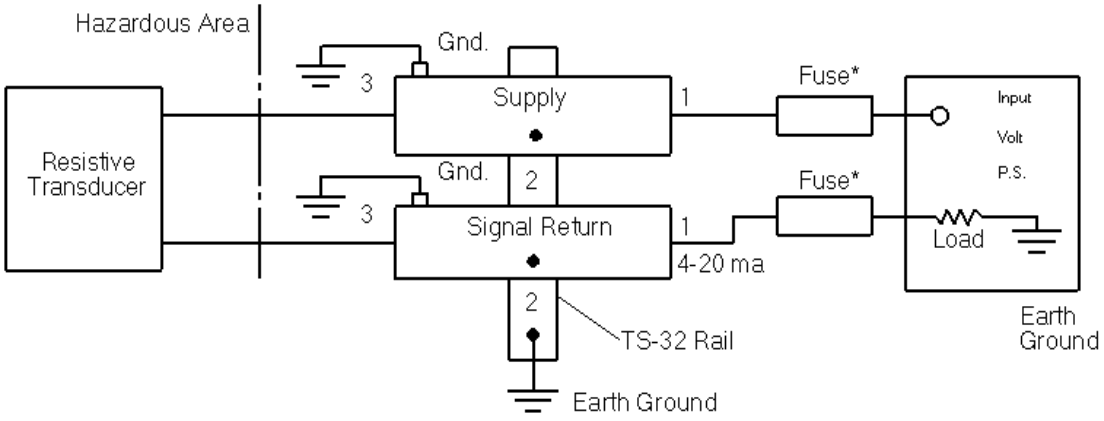


Fig. 4 :

Supply and Signal Return Barrier Installation

(4-20 ma Transducer with Both Leads Floating & Neg. Signal Common)

Note: Redundant grounding required by CSA.



*Little fuse type 3AG or equal (optional). External fuses are recommended to protect barrier from incorrect wiring or equipment faults at start-up.