65800 Series Single Channel Zener Barriers Render Switches or Signal Conditioners Intrinsically Safe

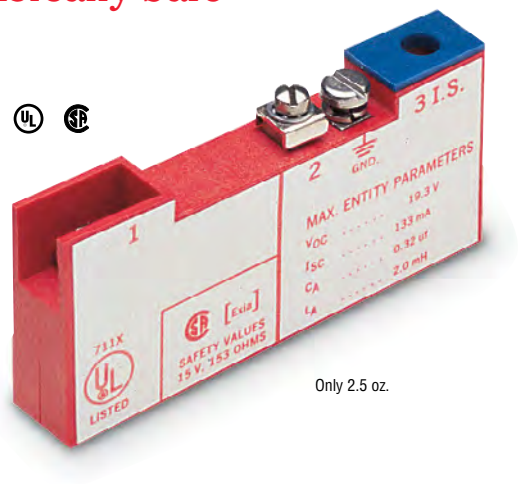
Limits D.C. voltage and current to the hazardous area and provides a path for fault current

- Intrinsic safety with solid-state reliability
- Compact size streamlines installation
- Space-saving in multiples
- Encapsulated construction is impervious to dust and moisture

The exceptionally compact design of GEMS 65800 Series units saves space and simplifies installation; especially in multiples on a common mounting plate. They provide great economy as well since no explosion-proof enclosures are needed for sensor wiring. Encapsulated construction is impervious to dust and moisture. Single-screw mounting is standard, but units can be supplied with an optional clip for rail mounting. The single through-mounting screw also provides electrical connection to ground through the earth-grounded mounting surface.

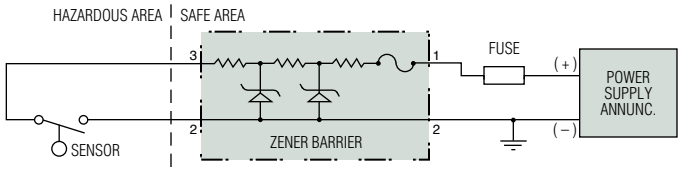
Any non-voltage-producing sensor or switch is rendered intrinsically safe for hazardous locations when properly connected to the output of these Zener Barriers.

See table on Page L-2 for specific approval information.



Only 2.5 oz.

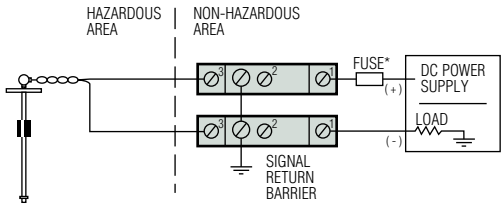
Typical Wiring Diagram



Positive single-channel Zener Barrier with negative ground.

For most non-voltage-producing devices located in a hazardous area, a single Zener Barrier that is negative-earth-ground can be used for intrinsic safety. Instrumentation that produces an output (signal conditioners) usually requires two barriers, one for each "floating" lead. In this case, a dual channel barrier can be provided (see L-10 and L-11).

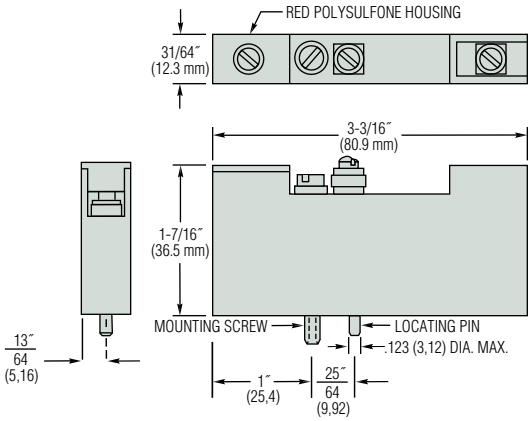
Or, for applications where the instrument signal return level cannot be reduced, a supply barrier and a low resistance return barrier can be supplied (shown below).



For floating leads: 65800 Series supply and return barriers for signal conditioners.

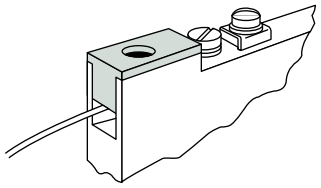
Installation and maintenance must be in accordance with the National Electrical Code and the applicable Gems INSTRUCTION, INSTALLATION and SERVICE bulletin available at www.gemssensors.com

Dimensions



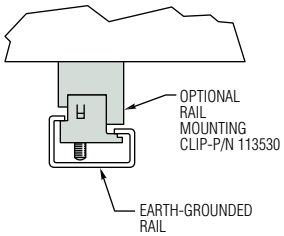
Protective Cover

Protective cover over the output terminal (3) assures intrinsic safety of sensor wiring.



Optional Rail Mounting

Gems Single Channel Zener Barriers can be supplied on special order with a clip for rail mounting. Clip attaches to barrier with standard mounting screw.



Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - 800-352-6265 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

Specify Part Number based on Barrier Type and Input Power requirements.

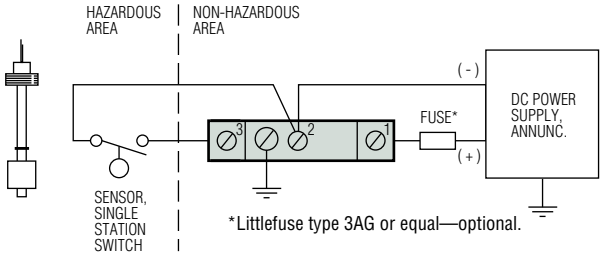
Zener Barrier Type	DC Input to Barrier, Max.		Signal Polarity	Series Resistance ohms	Application Group	Reactive Limits		Part Number
	Voltage	Current				Capacitance µf	Inductance mh	
Supply	+15	250 mA	Positive	183	A, B, C, D, E, G	0.32	2.0	**111950** ⚡
	+20	125 mA		303		0.18	4.1	**111952**
	+24	62 mA		390		0.12	3.0	**111954**
	+30	62 mA		750		0.07	1.8	**111956**
	+18	125 mA		183	C, D, E, G	0.72	3.6	**114074**
	+24	62 mA		234		0.33	3.1	**114072**
	+27	62 mA		276		0.24	3.3	**114175**
	+30	250 mA		303		0.20	3.0	**113000** ⚡
Signal Return	+30	250 mA		33.9	A, B, C, D, E, G	0.07	.35	**114166** ⚡
Optional Rail Clip								**113530** ⚡

Notes:
1. All models shown are for Class I and II, Division 1 and 2. Specific Application Groups are tabulated.
2. Ambient operating temperatures for all models shown is -40°F to +140°F (-40°C to +60°C).

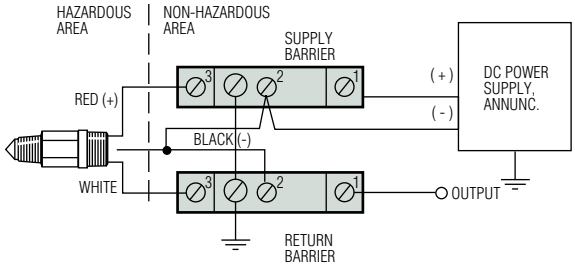
⚡ – Stock Items.

Typical Application Examples

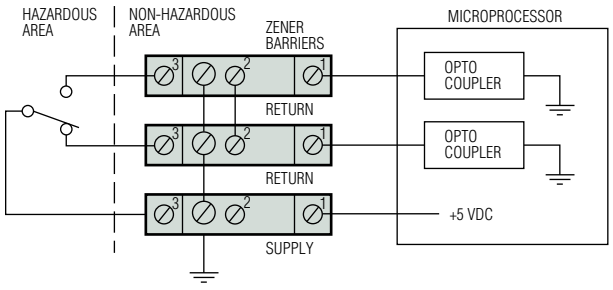
Sensors or Switches may be any non-voltage-producing device. Typical are: flow and level switches, temperature switches (thermostats), pressure switches or passive resistive transducers or transmitters. Below are typical examples.



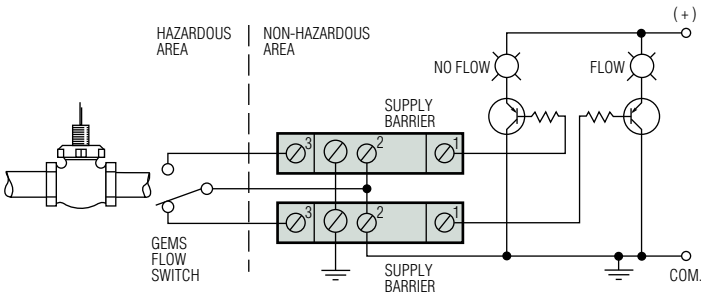
With GEMS level switch or any other non-voltage-producing device located in a hazardous area.



Supply and Return Zener Barriers used with GEMS ELS-1100 Series electro-optical level switch.



For optically coupled microprocessor. 65800 Series supply with two return barriers for SPDT switch.



Used with GEMS flow switch located in a hazardous area for flow/ no flow indication.

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54800 Series Dual Channel Zener Barriers Provide Intrinsic Safety to Signal Producing Sensors

- Intrinsic safety with solid-state reliability
- Since no explosion-proof enclosures are needed for sensor wiring, these units further provide economical installation
- With encapsulated construction, 54800 Series Barriers are impervious to dust and moisture
- Optional clip available for rail mounting

For most non-voltage-producing devices located in a hazardous area, a single zener barrier that is negative-earth-grounded (see preceding two pages) can be used for intrinsic safety.

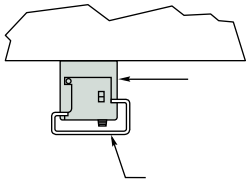
Instrumentation that produces an output (signal conditioners) usually requires two barriers, one for each "floating" lead. In this case, select one of the 54800 Series dual channel barriers shown here.

Any non-voltage-producing sensor or switch is rendered intrinsically safe for hazardous locations when properly connected to the output of these Zener Barriers.

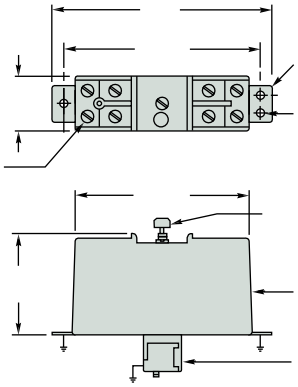
See table on Page L-2 for specific approval information.

Optional Rail Mounting

Gems SAFE-PAK Relays can be supplied on special order with a clip for rail mounting. Clip is in addition to standard mounting tabs.

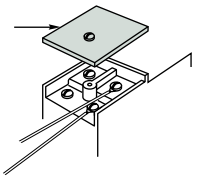


Dimensions



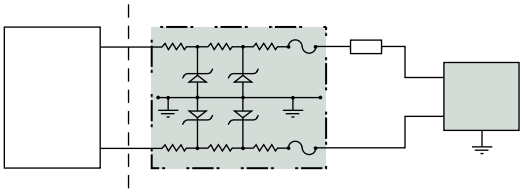
Protective Cover

Assures intrinsic safety integrity of sensor terminals and wiring.



Typical Wiring Diagram

Positive dual-channel Zener Barrier with floating leads.



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How To Order

Specify Part Number based on the specifications tabulated below.

DC Input to Barrier, Max.	Signal Polarity	Total Series Resistance Per Channel	Application Group	Reactive Limits		Part Numbers
				Capacitance µf	Inductance mh	
15 VDC, 200 mA	Positive	65	D	5.6	0.7	**54801**
20 VDC, 100 mA	Positive	270	A, B	0.4	0.9	**54803**
			C	1.2	5.0	
			D	3.2	10.0	
20 VDC, 100 mA (Full Ref. Sw.)	Positive	270	A, B	0.4	0.9	**54805**
			C	1.2	5.0	
			D	3.2	10.0	
30 VDC, 60 mA	Positive	275	D	2.4	6.0	**54806** ⚡
Optional Rail Mounting Clip						**61783**

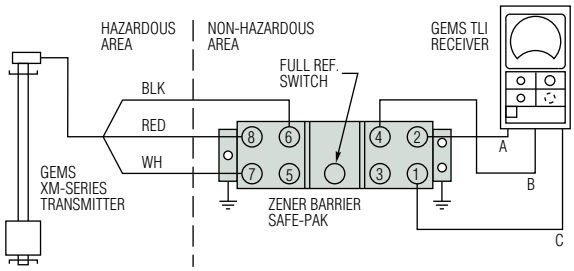
Notes:
1. These barriers are internally fused. If a "fault" or abnormal signal level continues for a sustained period of time, the internal fusing within the barrier will open, disconnecting the barrier. External fuses (Littlefuse Type 3AG or equal) are recommended to protect the Barrier from incorrect wiring at start-up, or from other equipment fault.
2. Housing material is blue Lexan®.
3. All models shown are for Class I and II, Division 1 and 2. Specific Application Groups are tabulated.
4. Ambient operating temperature for all models shown is -40°F to +140°F (-40°C to +60°C).
5. Terminals 3, 4, 5 and 6 are common and are bonded to the mounting tabs for positive redundant grounding.

⚡ – Stock Items.

Installation and maintenance must be in accordance with the National Electrical Code and the applicable GEMS INSTRUCTION, INSTALLATION and SERVICE Bulletin available at www.gemssensors.com

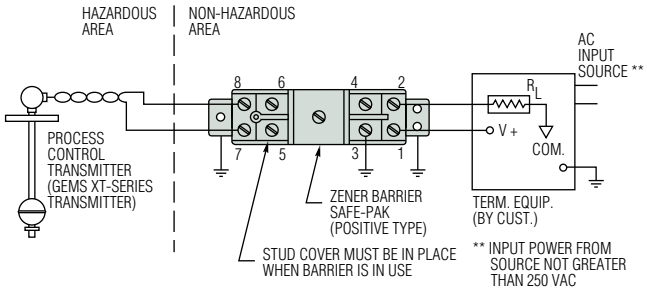
Typical Application Examples

Sensor switch may be any non-voltage-producing device. Typical are: flow and level switches, temperature switches (thermostats), pressure switches or passive, resistive transducers or transmitters. Below are typical examples.



P/N 54805 in a continuous liquid level monitoring system.

Note: Terminals 3, 4, 5 and 6 are common and are bonded to the mounting tabs for positive redundant grounding.



P/N 54806 in process control system.

To Determine Loop Resistance:

$$R\ Loop = \frac{V_A^* - 10}{.02};\ R\ Loop = R_{SUPPLY\ BARRIER} + R_{RETURN\ BARRIER} + R_{MONITORING\ EQUIPMENT}$$

*V_A must be less than 28 VDC (30 Volt Barriers)

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