

## 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

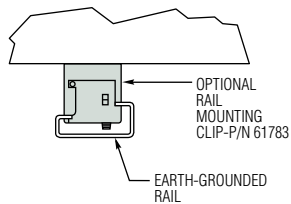
For most non-voltage-producing devices located in a hazardous area, a single zener barrier that is negative-earth-grounded (see preceding two pages) can be used for intrinsic safety.

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.

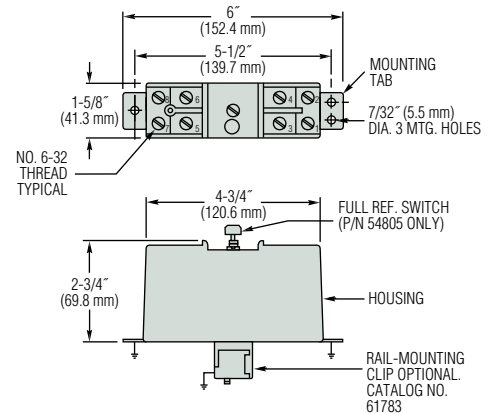
Any non-voltage-producing sensor or switch is rendered intrinsically safe for hazardous locations when properly connected to the output of these Zener Barriers. See table on Page L-2 for specific approval information.

### 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.

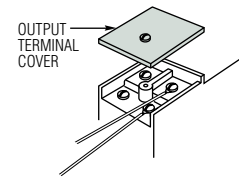


### Dimensions



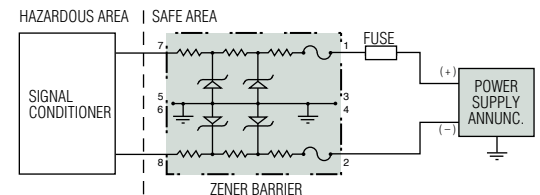
### Protective Cover

Assures intrinsic safety integrity of sensor terminals and wiring.



### Typical Wiring Diagram

Positive dual-channel Zener Barrier with floating leads.



## 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 $\mu$ f	Inductance mh	
15 VDC, 200 mA	Positive	65	D	5.6	0.7	<b>54801</b>
20 VDC, 100 mA	Positive	270	A, B	0.4	0.9	<b>54803</b>
			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	<b>54805</b>
			C	1.2	5.0	
			D	3.2	10.0	
30 VDC, 60 mA	Positive	275	D	2.4	6.0	<b>54806</b> ⚡
Optional Rail Mounting Clip						<b>61783</b>

### Notes:

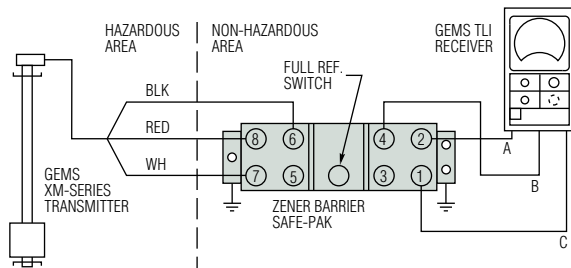
- These barriers are internally fused. If a "fault" or abnormal signal level continues for a sustained period of time, the internal fusing within the barrier will open, disconnecting the barrier. External fuses (Littlefuse Type 3AG or equal) are recommended to protect the Barrier from incorrect wiring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

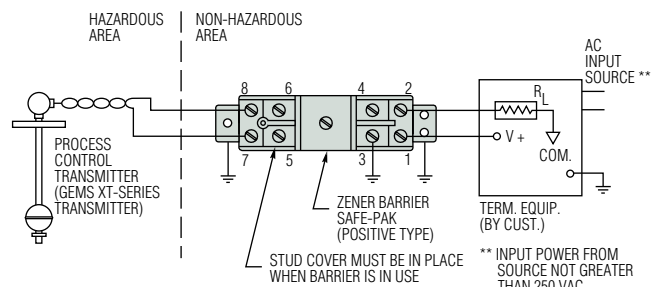
## Typical Application Examples

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)