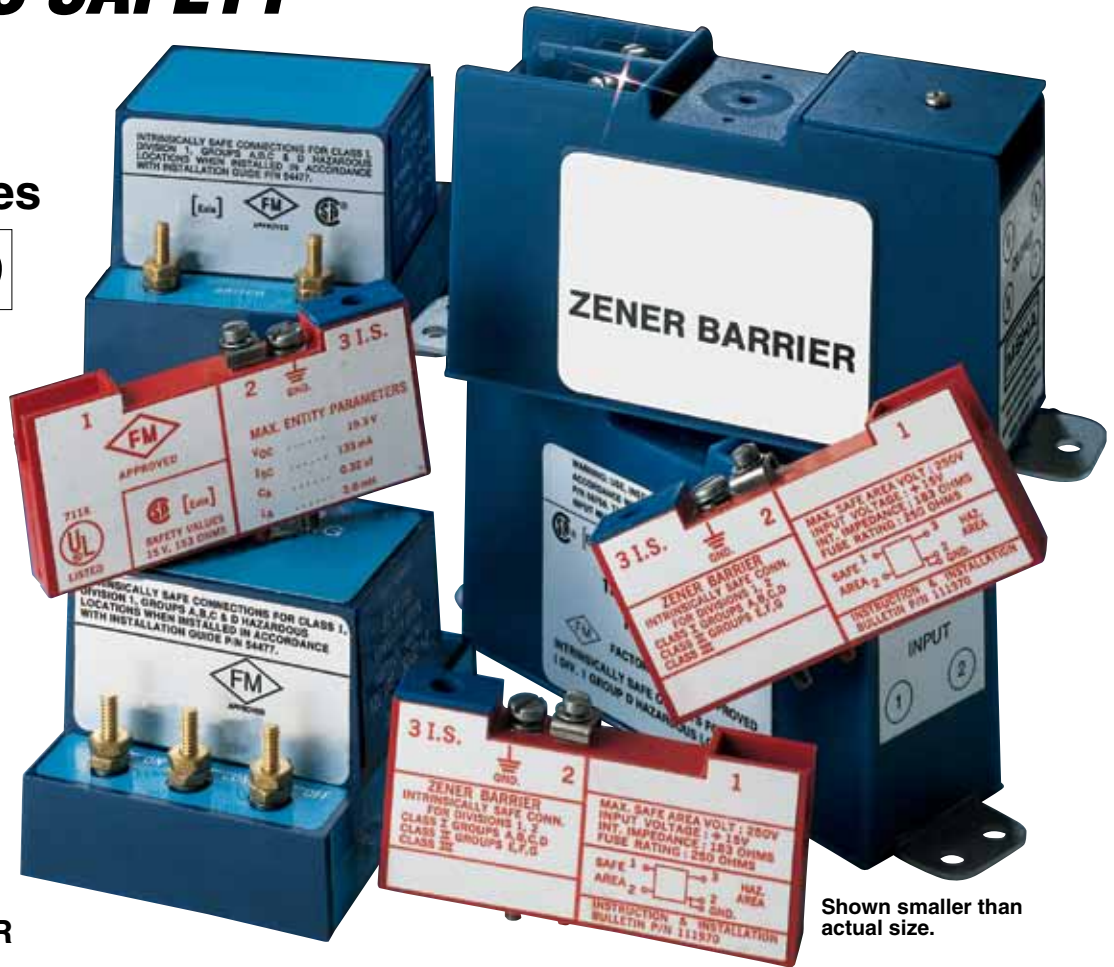


SELECTION GUIDE FOR OMEGA[®] SOLID-STATE RELAYS FOR INTRINSIC SAFETY

SBG Series



Shown smaller than actual size.

OMEGA SOLID STATE RELAYS FOR INTRINSIC SAFETY

The maximum energy possible at the switch terminals of the OMEGA Solid-State Relays is far below the explosive point of the most volatile surrounding gas conditions. The type of non-voltage-producing switch or sensor best fitted for the application can be utilized, since the entire switching circuit is rendered intrinsically safe by the OMEGA Solid-State Relay. As the switching circuit is low voltage, there is no shock hazard to operating or maintenance personnel.

OMEGA zener barriers must be installed in conformance with the National Electrical Code and the Instruction, Installation and Service Bulletin supplied with all units. Periodic checks of ground bonding and cleanliness of units and terminals constitute the only maintenance required.

Installation and Maintenance

OMEGA Solid-State Relays units are normally installed in a safe area and connected to the sensor in a hazardous location; no explosion-proof or protective housings of any kind are

are needed. Units install singly in any position, or can be grouped on a common earth-grounded plate with mounting tabs to provide electrical grounding. No. 6-32 threaded electrical terminals are conveniently placed atop the unit housings.

	Model No.	Approval					Hazardous Locations					
		UL	FM	CSA	Class	Division	Group					
							A	B	C	D	E	F
Solid-State Relay	SBG25872A	X	X	X	I, II	1, 2	X	X	X	X	X	X
	SBG25873A	X	X	X	I, II	1, 2	X	X	X	X	X	X
Latching Solid-State Relay	SBG41705A	X	X		I, II	1, 2	X	X	X	X	X	X

Note: Zener barrier model numbers **SBG54803A** and **SBG54806A** are certified by CSA for mounting inside a suitable enclosure in Div. 2 or non-hazardous locations and must be connected by means of the 2 studs provided to a grounded copper busbar or equivalent.

SOLID STATE RELAYS FOR INTRINSIC SAFETY

SBG Series



Advantages of OMEGA® Solid State Relays

- ✓ Rapid, Arc-Free Response for Positive, Non-Mechanical Operation
- ✓ Solid State Reliability Ensures Consistent Performance
- ✓ Low-Power Switching where a Few Milliamps of Current Control High-Power Loads
- ✓ Encapsulated Construction—Impervious to Dust, Moisture, and Foreign Material
- ✓ Standardized, Modular Housings for Easier Installation
- ✓ Exceptionally Long, Trouble-Free Service Life



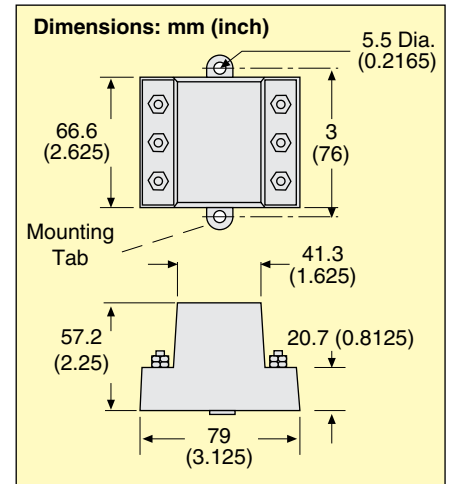
SBG22445A shown smaller than actual size.

Solid State Relay:

Less than 100 μ A at 14 Vdc actuates the unit to control AC loads to 5 A at 120 Vac. Resistive (up to 400,000 Ω) or short-circuiting sensors operate the unit. There are 115 Vac and 230 Vac models.

Latching Solid State Relay:

The 115 Vac model has momentary actuation, “start-stop” or differential control switching for resistive loads to 0.3 A. OMEGA solid state relays for intrinsic safety allow non-voltage producing switches mounted in the hazardous area to safely control higher-power AC loads in the



non-hazardous area. Typical applications include flow, level, and pressure switches, which may be inputs to an alarm or control system.

To Order

Model No.	Description	Line & Load Voltage Range (Vac)	Load Current Max	Turn-On Sensitivity (Typical)	Turn-Off Sensitivity (Typical)	Voltage Loss	Operating Temperature Range	Output Leakage Current Max	Switching Operation
SBG22445A	SSR for Intrinsic safety	95 to 135	5A	≤ 400 k Ω	1 M Ω	2 Vac	-17.8 to 48.9°C (0 to 120°F)	6 mA @ 120 Vac	SPST NO
SBG25872A		100 to 135						6 mA @ 120 Vac	SPST NC
SBG25873A		200 to 250						12 mA @ 250 Vac	SPST NO
SBG41705A	Latching SSR for intrinsic safety	105 to 125	0.3A steady state	≤ 25 k Ω	1 M Ω	2 Vac	32 to 120°F	3 mA @ 120 Vac	SPST NO

Note 1: For typical wiring diagrams, see next page.

Note 2: All AC voltage and current specifications are RMS values unless otherwise stated.

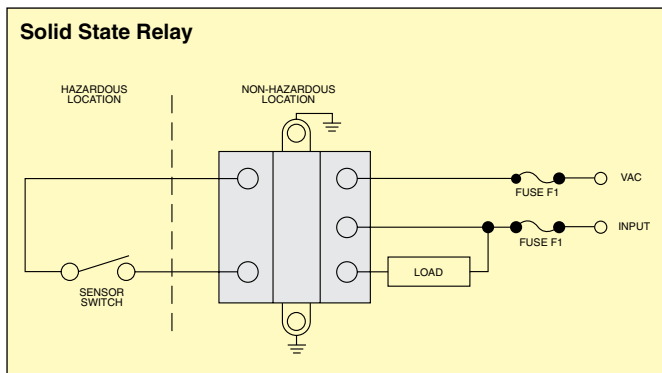
Note 3: Housing material is polysulfone.

Comes complete with operator's manual.

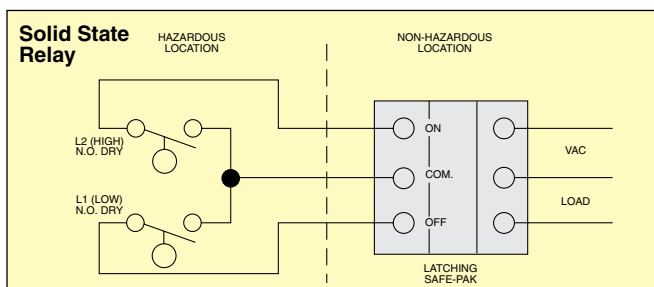
Ordering Example: SSBG22445A, intrinsic safety SSR.

WIRING SOLID STATE RELAYS FOR INTRINSIC SAFETY

Solid state relays are typically used with non-powered sensor switches in the hazardous area.



Solid state relays SBG22445A, SBG25872A, and SBG25873A have a sensor switch for hazardous locations.



Latching solid state relay SBG41705A handles high and low sensors located in a hazardous location.

Warning

Product must be maintained and installed in strict accordance with the National Electrical Code and the applicable OMEGA® operator's manual. Failure to observe this warning could result in serious injuries or damages.

INTRINSICALLY SAFE RELAYS FOR LEVEL CONTROL SYSTEMS

Intrinsically safe relay electronics are designed for use with OMEGA® LVC-E conductivity level switches and LVC-S, LVC-N, and LVC-F mounting assemblies. They can also be used with other non-powered mechanical relays to provide an intrinsically safe switch in a hazardous area. Relay electronics must be mounted in the non-hazardous area.

The sensor switches can be mounted in the hazardous area and are intrinsically safe only when connected to an approved intrinsically safe relay. Consult Flow Engineering for additional information.



LVC551 shown smaller than actual size.

To Order					
Model No.	Description	Function	Max Media Resistance	Approvals	Hazardous Locations
LVC551	8 A resistive @ up to 120 Vac	Field selectable high/low, latching/non-latching, pump up/pump down	470,000 Ω	FM	Class I, II, Division 1, Groups A, B, C, D, E, F, G
LVC552	8 A resistive @ up to 120 Vac		100,000 Ω	UL	

Comes complete with operator's manual.

Ordering Example: LVC551, SPDT relay output.