

# Safety Relay Unit G9SB

CSM\_G9SB\_DS\_E\_5\_1

## Ultra Slim Safety Relay Unit

- Models of width 17.5 mm available with 2 or 3 poles. Models of width 22.5 mm with 3 poles also available.
- Conforms to EN standards. (TÜV approval)
- DIN track mounting possible.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Be sure to read the "Safety Precautions" on page 9.

## Model Number Structure

### Model Number Legend

**Note:** Please see "Ordering Information" below for the actual models that can be ordered.

G9SB-□□□□□□-□

1 2 3 4 5 6

#### 1. Function

None: Emergency stop

#### 2. Contact Configuration (Safety Output)

2: DPST-NO

3: 3PST-NO

#### 3. Contact Configuration (OFF-delay Output)

0: None

#### 4. Contact Configuration (Auxiliary Output)

0: None

1: SPST-NC

#### 5. Input Configuration

None: 1-channel or 2-channel input possible

0: None (direct breaking)

2: 2-channel input

#### 6. Miscellaneous

A: Auto-reset, inverse input

B: Auto-reset, + common input

C: Manual reset, inverse input

D: Manual reset, + common input

## Ordering Information

Main contacts	Auxiliary contact	Number of input channels	Reset mode	Input type	Rated voltage	Model
DPST-NO	None	2 channels	Auto-reset	Inverse	24 VAC/VDC	G9SB-2002-A
		1 channel or 2 channels		+ common		G9SB-200-B
		2 channels	Manual reset	Inverse		G9SB-2002-C
		1 channel or 2 channels		+ common		G9SB-200-D
3PST-NO	SPST-NC	None (direct breaking)	Auto-reset	---	24 VDC	G9SB-3010 *
		2 channels		Inverse	24 VAC/VDC	G9SB-3012-A
		1 channel or 2 channels	+ common	G9SB-301-B		
		2 channels	Manual reset	Inverse		G9SB-3012-C
		1 channel or 2 channels		+ common		G9SB-301-D

**Note 1.** Relays with inverse inputs are used mainly when inputting signals from two mechanical switches.

**2.** Relays with positive commons are used mainly when inputting signals from a safety sensor or from one mechanical switch.

\* The G9SB-3010 can be applied to Safety Category 3 of the EN954-1 if double breaking is used.

## Specifications

### Ratings

#### Power Input

Item	Model	G9SB-200□-□	G9SB-3010	G9SB-301□-□
Power supply voltage		24 VAC/VDC: 24 VAC, 50/60 Hz, or 24 VDC 24 VDC: 24 VDC		
Operating voltage range		85% to 110% of rated power supply voltage		
Power consumption		1.6 VA/1.4 W max.	1.7 W max.	2.0 VA/1.7 W max.

#### Inputs

Item	Model	G9SB-200□-□	G9SB-3010	G9SB-301□-□
Input current		25 mA max.	60 mA max. *	30 mA max.

\* Indicates the current between terminals A1 and A2.

#### Contacts

Item	Model	G9SB-200□-□	G9SB-3010	G9SB-301□-□
	Load	Resistive load		
Rated load		250 VAC, 5 A 30 VDC, 5 A		
Rated carry current		5 A		

### Characteristics

Item	Model	G9SB-200□-□	G9SB-3010	G9SB-301□-□
Contact resistance *1		100 mΩ		
Operating time *2		30 ms max.		
Response time *3		10 ms max.		
Insulation resistance *4		100 MΩ min. (at 500 VDC)		
Dielectric strength	Between different outputs	2,500 VAC, 50/60 Hz for 1 min		
	Between inputs and outputs			
	Between power inputs and outputs			
Vibration resistance		10 to 55 to 10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude)		
Shock resistance	Destruction	300 m/s <sup>2</sup>		
	Malfunction	100 m/s <sup>2</sup>		
Durability *5	Mechanical	5,000,000 operations min. (at approx. 7,200 operations/hr)		
	Electrical	100,000 operations min. (at approx. 1,800 operations/hr)		
Failure rate (P level) (reference value)		5 VDC, 1 mA		
Ambient operating temperature		-25 to 55°C (with no icing or condensation)		
Ambient operating humidity		35% to 85%		
Terminal tightening torque		0.5 N·m		
Weight		Approx. 115 g	Approx. 135 g	Approx. 120 g

\*1. The contact resistance was measured with 1 A at 5 VDC using the voltage-drop method.

\*2. Not including bounce time.

\*3. The response time is the time it takes for the main contact to open after the input is turned OFF. Includes bounce time.

\*4. The insulation resistance was measured with 500 VDC at the same places that the dielectric strength was checked.

\*5. The durability is for an ambient temperature of 15 to 35°C and an ambient humidity of 25% to 75%.