OMRON

Safety Relay Unit

G9D

Ideal for Door Switches and Emergency Switches for Machines Used in European Countries

- Meeting the requirements of TÜV EN60204-1, IEC204-1, and VDE0113.
- Under application for SUVA and BIA.
- Incorporating safety relays.
- Incorporating operation indicators with which the operation of the built-in relays can be monitored.
- Finger protect construction conforms to VDE0106.

Ordering Information

Rated voltage	Main contact	Auxiliary contact	Model
24 VAC/VDC	3PST	SPST-NO	G9D-301

Specifications

Contact Ratings

Load	Inductive load (cosϕ = 0.4)
Rated load	6 A at 250 VAC
Rated carry current	6 A
Max. switching capacity	1,500 VA

Characteristics

Input voltage/frequency	24 VDC/24 VAC, 50/60 Hz
Rated current	At 24 VDC: 120 mA±20% At 24 VAC, 60 Hz: 285 mA±20%
Rated power consumption	At 24 VDC: Approx. 3 W At 24 VAC, 60 Hz: Approx. 6.8 VA
Insulation resistance (at 500 VDC)	100 MΩ min. between control circuit and the safety and auxiliary circuits; 100 MΩ min. between the safety circuits and auxiliary circuits; 100 MΩ min. between safety circuits
Dielectric strength	2,500 VAC between control circuit and the safety and auxiliary circuits; 2,500 VAC between the safety circuits and auxiliary circuits; 2,500 VAC between safety circuits
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm double amplitude Malfunction: 10 to 40 Hz, 0.75-mm double amplitude
Shock resistance	Destruction: 500 m/s^2 (approx. 50G) Malfunction: 50 m/s^2 (approx. 5G)
Ambient temperature	Operating: –25 to 55 °C Storage: –25 to 55 °C
Ambient humidity	Operating: 35% to 85% Storage: 35% to 85%
Life expectancy	Mechanical: 1,000,000 operations min. (at 1,800 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Terminal strength	10 kgf • cm (0.98 N • m)
Weight	Approx. 550 g

■ Approved Standards

TÜV

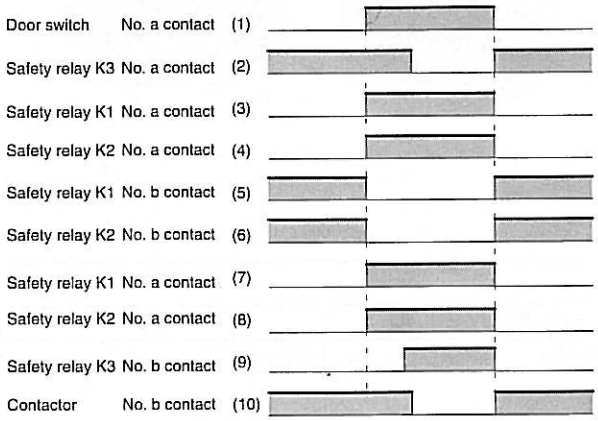
EN60204-1/June 1993 (IEC204-1, VDE0113-1), VDE0106-100/March 1983
(TÜV File No.: E 9311585E01)

Model	Source	Rating (safety and auxiliary contact)	Degree of construction
G9D-301	24 VDC⎓/24 VAC∿	250 VAC∿, 6 A, cosϕ = 0.4	IP40 (I/O Block to IP20)

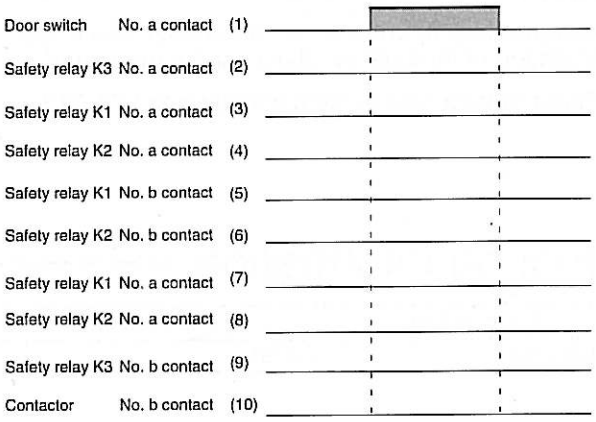
Operation

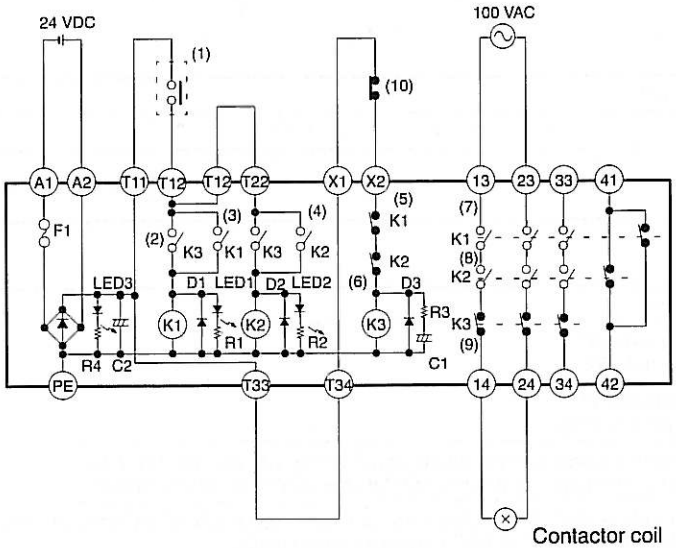
■ Timing Chart

Normal Operation



Emergency Case

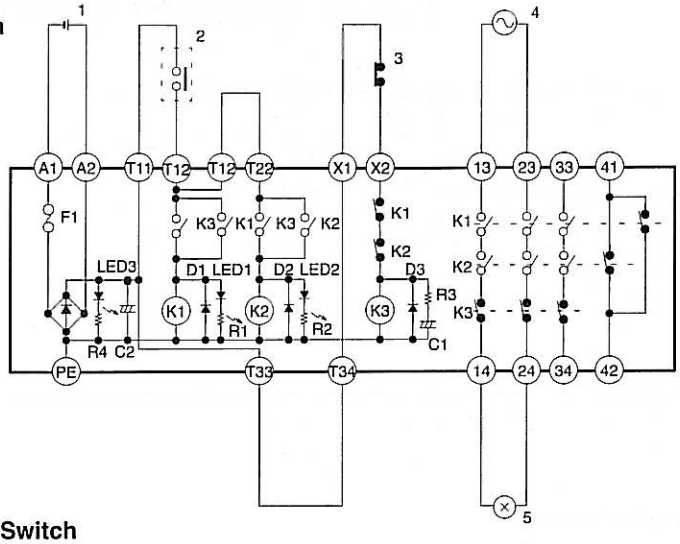




If the normally open contact is welded, contact b (10) will be open. This means no voltage will be imposed on safety relay K3, and because safety relay K3 does not operate, the relay sequence will not operate if door switch 1 is ON.

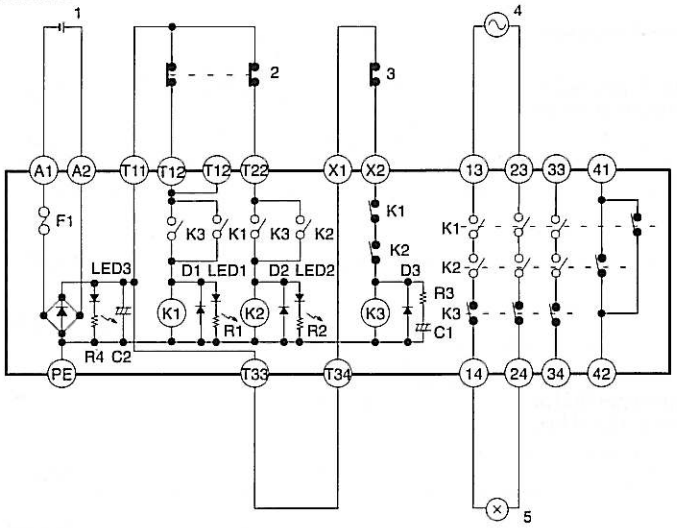
■ Application Examples

Door Switch



1. 24 VDC power supply
2. Normally open contact of the door switch (D4BS)
3. Normally closed contact
4. AC load power supply
5. Load: Contactor coil

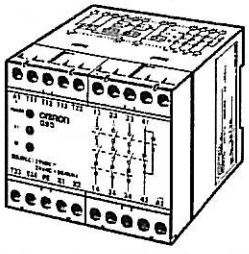
Emergency Switch

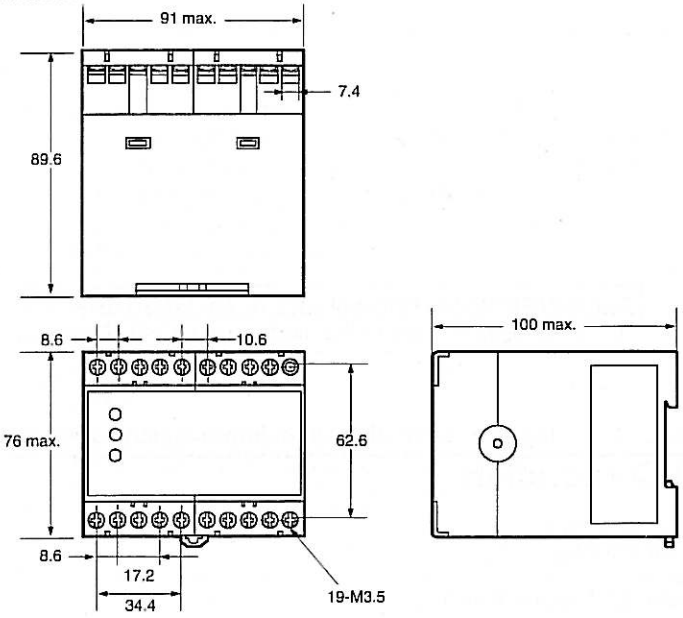


1. 24 VDC power supply
2. Normally closed contact of the emergency switch
3. Normally closed contact
4. AC load power supply
5. Load: Contactor coil

Dimensions

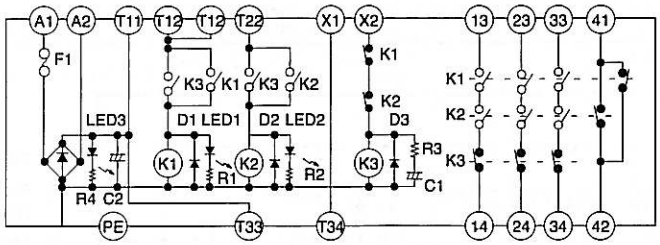
Note: All units are in millimeters unless otherwise indicated.





Installation

■ Internal Circuit



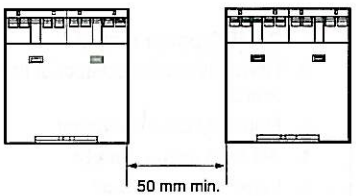
Precautions

Use either one of the following wires for the G9D.
Multi-strand wire: 0.75 to 1.5 mm^2
Single steel wire: 1.0 to 1.5 mm^2

The power input circuitry of the G9D incorporates a built-in fuse for safety purposes. This fuse is not replaceable.

The G9D has a seal on the side. Do not peel off the seal, otherwise the G9D will not meet the European standards.

If more than one G9D Unit is installed side by side and operated at an input of 24 VAC, provide a space of 50 mm minimum between each G9D Unit.



If more than one G9D Unit is installed side by side and operated at an input of 24 VDC, no space is required between each G9D Unit.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. J96-E1-1 **In the interest of product improvement, specifications are subject to change without notice.**

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