



V23048 series

ZW Safety Relay - PCB, neutral, monostable relay with six forcibly guided contacts.

File E48393

File Nr. 945/EL 10001

Features

- 4 NO and 2 NO or 3 NO and 3 NC contacts.
- Dust protected.
- Ideal for emergency shut-off, machine control, elevator and escalator control, light barrier control.

Contact Data @ 23°C

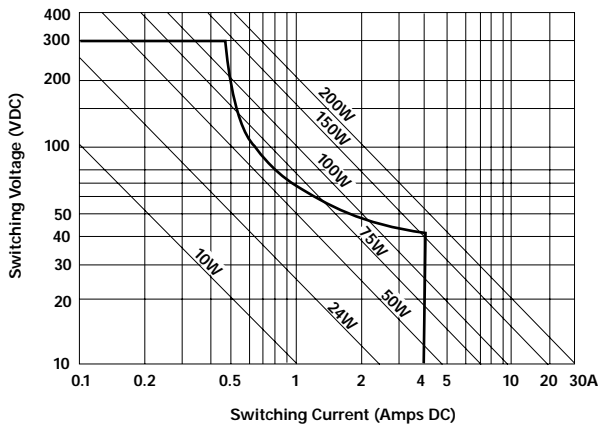
Type: Single button contacts, forcibly guided.
Arrangements: 3 NO and 3 NC or 4 NO and 2 NC.
Material: Silver, gold flashed.
Max. Continuous Current at Max. Amb. Temp.: 4A
Max. Switched Current: See Expected Electrical Life chart.
Max. Switched Voltage: 400VAC/VDC.
Max. Switched Power: 1,000VA. (See Fig. 1, Limit. Curve for DC Power).
Max. Switching Rate: 30 operations/min. at rated load.
 120 operations/min. at minimum load.
Minimum Load: >500mW.
Initial Contact Resistance: ≤100 mΩ - 100mA/6VDC.
Expected Mechanical Life: 10⁷ operations.

Expected Electrical Life

Contact Material	UL/CSA Ratings	Type	Operations
Ag, gold flashed	4A @ 250VAC	Resistive	>500,000
	4A @ 12VDC	Resistive	>5,000,000
	1A @ 12VDC	Resistive	>10,000,000
	4A @ 24VDC	Resistive	>600,000
	1A @ 24VDC	Resistive	>1,000,000
	1A @ 48VDC	Resistive	>300,000
	0.5A @ 48VDC	Resistive	>8,000,000

Electrical endurance is tested at one single pole make (NO) and 23°C ambient temperature.

Figure 1 - Limiting Curve For DC Power Load



Initial Dielectric Strength

Between Open Contacts: 2,000VAC rms.
Between Adjacent Contacts: 2,000VAC rms.
Between Coil and Contacts: 4,000VAC rms.

Initial Insulation Resistance

Between Mutually Insulated Elements: ≥ 10⁶ ohms.

Coil Data @ 23°C

Voltage: 12 to 110VDC.
Nominal Power: 1.25W.
Max. Coil Temperature: 115°C.
Duty Cycle: Continuous.

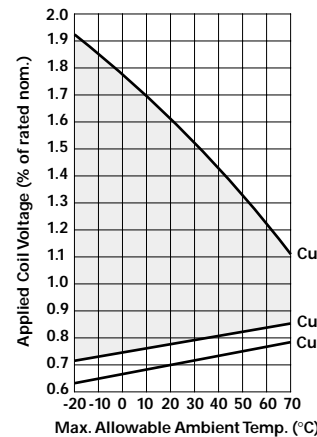
Coil Data @ 23°C

Rated Coil Voltage (VDC)	Coil Resistance (Ohms)	Must Operate Voltage (VDC)	Nominal Coil Current (mA)
12	115 ± 11.5	8.7	105
24	460 ± 46	17.0	53
48	1,870 ± 187	34.0	26
110	9,700 ± 1,455	77.0	12

Operate Data @ 23°C

Operate Time: 25 ms (excluding bounce).
Release Time (wo/w parallel diode, typ.): 8 ms/28 ms (excluding bounce).
Bounce Time: 7 ms.
Must Release Voltage: 10% of nominal voltage.

Max. Allowed Ambient Temp. vs. Applied Coil Voltage



Operating

Curve 1 - Must operate voltage when the coil is not pre-energized.
Curve 2 - Operate voltage raises due to a pre-energizing with 1.1 x V_{nom}.
Curve 3 - Maximum allowable voltage.

Release

The must release voltage may fall to ≥ 5% of V_{nom} during operation life of the relay.

Denotes recommended operation area.

Environmental Data

Temperature Range: -25°C to +70°C.
Vibration, Operational: 5g, 10 - 55Hz.
Shock, Operational: 30g.
Solder Bath Temp./Max. Duration: 260°C/5s.

Mechanical Data

Termination: Printed circuit terminals.
Enclosure (94V-0 Flammability Ratings): Plastic dust cover.
Weight: 2.67oz. (80g).

Ordering Information

Typical Part Number ▶

V23048

A1

001

A

1

33

1. Basic Series:

V23048 = ZW power relay.

2. Enclosure:

A1 = Sealed.

3. Coil Voltage:

001 = 12VDC 003 = 24VDC 005 = 48VDC 002 = 110VDC

4. Contact Type:

A = Single button, forcibly guided.

5. Contact Material:

1 = Silver, gold flashed.

6. Contact Arrangement:

01 = 4 NO and 2 NC.

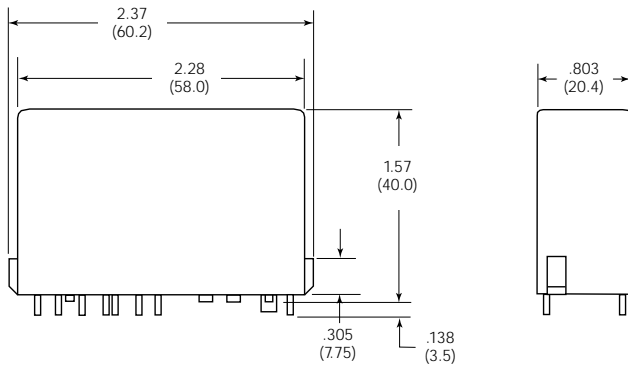
33 = 3 NO and 3 NC.

Stock Items – The following items are maintained in stock.

V23048A1001A101
V23048A1001A133

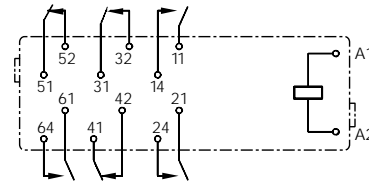
V23048A1003A101
V23048A1003A133

Outline Dimensions

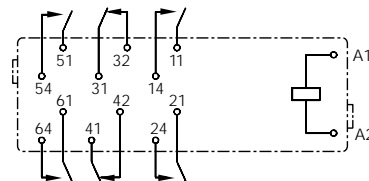


Wiring Diagrams (Bottom Views)

3 NO and 3 NC



4 NO and 2 NC



Suggested PC Board Layouts (Bottom View)

