Special-purpose Basic Switch

DZ

DPDT Basic Switch for Two Independent Circuit Control

- Ideal for switching the circuits operating on two different voltages, and for controlling two independent circuits.
- Interchangeable with OMRON Z Basic Switches, as both switches are identical in mounting hole dimensions, mounting pitch and pin plunger position.

Be sure to read Safety Precautions on page 7 and Safety Precautions for All Basic Switches.

Model Number Structure

Model Number Legend

DZ-10G 1
(1) (2)(3) (4)(5)

(1) Ratings
10 : 10 A (250 VAC)

(2) Contact Gap
G : 0.5 mm

(3) Actuator
None : Pin plunger

V : Hinge lever

V22 : Short hinge roller lever

V2 : Hinge roller lever

W : Hinge lever

W22 : Short hinge roller lever

W2 : Hinge roller lever

(4) Contact Form
1 : DPDT

(5) Terminals
A : Solder terminal

B : Screw terminal

Ordering Information

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Terminal</th>
<th>Solder terminal (-1A)</th>
<th>Screw terminal (-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin plunger</td>
<td>Model</td>
<td>Model</td>
<td></td>
</tr>
<tr>
<td>Hinge lever</td>
<td>High OT</td>
<td>DZ-10GW-1A</td>
<td>DZ-10GW-1B</td>
</tr>
<tr>
<td></td>
<td>Low OT</td>
<td>DZ-10GV-1A</td>
<td>DZ-10GV-1B</td>
</tr>
<tr>
<td>Short hinge roller lever</td>
<td>High OT</td>
<td>DZ-10GW22-1A</td>
<td>DZ-10GW22-1B</td>
</tr>
<tr>
<td></td>
<td>Low OT</td>
<td>DZ-10GV22-1A</td>
<td>DZ-10GV22-1B</td>
</tr>
<tr>
<td>Hinge roller lever</td>
<td>High OT</td>
<td>DZ-10GW2-1A</td>
<td>DZ-10GW2-1B</td>
</tr>
<tr>
<td></td>
<td>Low OT</td>
<td>DZ-10GV2-1A</td>
<td>DZ-10GV2-1B</td>
</tr>
</tbody>
</table>

Specifications

Ratings

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Non-inductive load (A)</th>
<th>Inductive load (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resistive load</td>
<td>Lamp load</td>
</tr>
<tr>
<td>Non</td>
<td>NO</td>
<td>NC</td>
</tr>
<tr>
<td>125 VAC</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>250 VAC</td>
<td>10</td>
<td>1.5</td>
</tr>
<tr>
<td>8 VDC</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>14 VDC</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>30 VDC</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>125 V DC</td>
<td>0.5</td>
<td>0.25</td>
</tr>
<tr>
<td>250 VDC</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

Certified Standard Ratings

Ask your OMRON representative for information on certified models.

UL/CSA

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>DZ-10G</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 VAC</td>
<td>10 A 1/8 HP</td>
</tr>
<tr>
<td>250 VAC</td>
<td>10 A 1/4 HP</td>
</tr>
<tr>
<td>480 VAC</td>
<td>2 A</td>
</tr>
<tr>
<td>125 VDC</td>
<td>0.5 A</td>
</tr>
<tr>
<td>250 VDC</td>
<td>0.25 A</td>
</tr>
</tbody>
</table>

Note: 1. The above values are for steady-state current.
2. Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
3. Lamp load has an inrush current of 10 times the steady-state current.
4. Motor load has an inrush current of 6 times the steady-state current.
5. The ratings values apply under the following test conditions:
   (1) Ambient temperature: 20±2°C
   (2) Ambient humidity: 65±5%RH
   (3) Operating frequency: 20 operations/min
Structure
Contact Form (DPDT)

Dimensions
Termsinals
Solder Terminals (-1A)

Screw Terminals (-1B)

Dimensions and Operating Characteristics
The solder terminal model has a suffix "-1A" in its model number and its omitted dimensions are the same as the corresponding dimensions of the pin plunger model.

Pin Plunger
DZ-10G-1B

Engineering Data
Mechanical Durability (DZ-10G-1B)

Electrical Durability (DZ-10G-1B)
Note: Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.
Accessories (Order separately)

A Terminal Protective Cover, Actuators, and a Separator are available.

**Terminal Covers (Sold Separately)**

The Terminal Covers can be attached to Z, A, X, and DZ Switches. The Terminal Cover is secured with mounting screws and protects the casing and terminal wires from dust, vibration, or fingers, thus preventing terminal short-circuiting, ground faults, wire disconnection or improper connection, and electric shock accidents. Terminal Covers made of phenol resin have five or six thin wall sections. These sections can be torn open for providing holes for lead cables at desired points. A terminal cover can’t be used in the case of using an actuator sold separately.

**Operation Information**

<table>
<thead>
<tr>
<th>Material</th>
<th>Application</th>
<th>Soldering terminal use</th>
<th>Screw terminal use</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol resin</td>
<td>Side mounting</td>
<td>AP-A</td>
<td>AP-B</td>
<td></td>
</tr>
<tr>
<td>Metal press mold</td>
<td>Side mounting</td>
<td>AP1-A</td>
<td>AP1-B</td>
<td>Used for AP-A and AP-B</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>Side mounting</td>
<td>AP-Z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Use a Terminal Cover for screw terminals for DZ-series Switches with soldering terminals.

**Dimensions (Unit: mm)**

**Terminal Covers**

**AP-A**

Soldering Terminal Use (Phenol Resin)

Note: The Cover has five thin, easy-to-separate portions for easy lead wire connections.

**AP-B**

Screw Terminal Use (Phenol Resin)

Note: The Cover has six thin, easy-to-separate portions for easy lead wire connections.

**AP1-A**

Soldering Terminal Use (Metal Press Mold)

Note: The Cover has five holes for easy lead wire connections.

**AP1-B**

Screw Terminal Use (Metal Press Mold)

Note: The Cover has six holes for easy lead wire connections.

**AP-Z**

Soldering or Screw Terminal Use (Vinyl Chloride)

Note: Each dimension has a tolerance of ±0.4 mm unless otherwise specified. (±0.8 mm for the AP-Z)

**Separator (Sold Separately)**

Use a Separator when it is difficult to provide a sufficient insulation distance or when using the Switch near metal parts or copper wires.

**Operation Information**

**Separator (Sold Separately)**

Model

<table>
<thead>
<tr>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPARATOR FOR Z</td>
</tr>
</tbody>
</table>

**Cable Pull-out Dimension**

A-A’ cross-section

B-B’ cross-section

Note: A 6-dia. or 8-dia. cable can be used by cutting the cable pull-out hole to the size of the cable to be used.

**Note:**

1. Each dimension has a tolerance of ±0.4 mm unless otherwise specified.
2. The material is EAVTC (Epoxide Alkyd Varnished Tetron Cloth) and its heat-resisting temperature is 130°C.
A Switch can be actuated by a cam or an appropriate object, in which case, use one of the following Actuators according to the application.

### Ordering Information

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinge lever</td>
<td>XAA-1</td>
</tr>
<tr>
<td>Hinge roller lever</td>
<td>ZAA-2</td>
</tr>
<tr>
<td>Panel mount plunger</td>
<td>ZAQ-3</td>
</tr>
<tr>
<td>Panel mount roller plunger</td>
<td>ZAQ-22</td>
</tr>
</tbody>
</table>

### Dimensions (Unit: mm) and Operating Characteristics

#### Hinge Lever

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Model</th>
<th>Operating characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>XAA-1</td>
<td>Z-15G-B</td>
<td>Operating force (OF) max. 4.90 N, Release force (RF) min. 1.67 N, Overtravel (OT) min. 12.7 mm, Movement Differential (MD) max. 2.2 mm, Free Position (FP) max. 32.9 ± 1.6 mm, Operating Position (OP) 28.9 ± 1.6 mm</td>
</tr>
<tr>
<td></td>
<td>X-10G-B</td>
<td>Operating force (OF) max. 4.90 N, Release force (RF) min. 1.67 N, Overtravel (OT) min. 12.7 mm, Movement Differential (MD) max. 3.3 mm, Free Position (FP) max. 44.5 ± 1.6 mm, Operating Position (OP) 40.4 ± 1.6 mm</td>
</tr>
</tbody>
</table>

#### Hinge Roller Lever

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Model</th>
<th>Operating characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZAA-2</td>
<td>Z-15G-B</td>
<td>Operating force (OF) max. 4.90 N, Release force (RF) min. 1.67 N, Overtravel (OT) min. 12.7 mm, Movement Differential (MD) max. 2.2 mm, Free Position (FP) max. 5.39 N, Operating Position (OP) 1.12 mm</td>
</tr>
<tr>
<td></td>
<td>X-10G-B</td>
<td>Operating force (OF) max. 4.90 N, Release force (RF) min. 1.67 N, Overtravel (OT) min. 12.7 mm, Movement Differential (MD) max. 4.5 mm, Free Position (FP) max. 0.15 mm, Operating Position (OP) 0.2 mm</td>
</tr>
</tbody>
</table>

#### Short Panel Mount Plunger

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Model</th>
<th>Operating characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZAQ-3</td>
<td>Z-15E-B</td>
<td>Operating force (OF) max. 8.34 N, Release force (RF) min. 1.12 N, Overtravel (OT) min. 2.6 mm, Movement Differential (MD) max. 1.05 mm, Free Position (FP) max. 27.8 ± 1.6 mm, Operating Position (OP) 13.5 mm</td>
</tr>
<tr>
<td></td>
<td>X-10G-B</td>
<td>Operating force (OF) max. 5.39 N, Release force (RF) min. 1.12 N, Overtravel (OT) min. 2.6 mm, Movement Differential (MD) max. 1.05 mm, Free Position (FP) max. 27.8 ± 1.6 mm, Operating Position (OP) 13.5 mm</td>
</tr>
</tbody>
</table>

Note: Each dimension has a tolerance of ±0.4 mm unless otherwise specified.
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Safety Precautions

Refer to Safety Precautions for All Basic Switches.

Precautions for Safe Use

Terminal Connection
When soldering lead wires to the Switch, make sure that the capacity of the soldering iron is 60 W maximum. Do not take more than 5 s to solder any part of the Switch. The characteristics of the Switch will deteriorate if a soldering iron with a capacity of more than 60 W is applied to any part of the Switch for 5 s or more.

Operation
- Make sure that the switching frequency or speed is within the specified range.
  1. If the switching speed is extremely slow, the contact may not be switched smoothly, which may result in a contact failure or contact welding.
  2. If the switching speed is extremely fast, switching shock may damage the Switch soon. If the switching frequency is too high, the contact may not catch up with the speed.
- The rated permissible switching speed and frequency indicate the switching reliability of the Switch.
- The life of a Switch is determined at the specified switching speed. The life varies with the switching speed and frequency even when they are within the permissible ranges. In order to determine the life of a Switch model to be applied to a particular use, it is best to conduct an appropriate durability test on some samples of the model under actual conditions.
- Make sure that the actuator travel does not exceed the permissible OT position. The operating stroke must be set to 70% to 100% of the rated OT.

Precautions for Correct Use

Mounting Location
- Do not use the switch alone in atmospheres such as flammable or explosive gases. Arcing and heat generation associated with switching may cause fires or explosions.
- Switches are generally not constructed with resistance against water. Use a protective cover to prevent direct spraying if the switch is used in locations subject to splashing or spurting oil or water, dust adhering.

Wiring
- Use wire sizes that are suitable to the applied voltage and carried current.
- If you use a soldering iron to solder the wires, do not allow the tip of the soldering iron to exceed 380°C. If a Switch is used with insufficient soldering, abnormal heat and burning may occur.
- Solder for no more than 5 s at 350°C and for no more than 3 s at 380°C. If heat is applied for too long, the case may melt, the lead wire coverings may be scorched, and other characteristics of the Switch may deteriorate.
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