Tactile Switch B3W

Tactile Switch with Sealed Construction for Automatic Soldering

- Sealed construction conforming to IP67 (IEC-60529) provides high reliability in locations exposed to dust or water.
- Available in two sizes: 6 mm square and 12 mm square
- Dome-shaped contact mechanism assures short key stroke and a sharp click to confirm actuation
- Ground terminal available to protect against static electricity
- Projected plunger types that allow the installation of B32-series Special Key Tops are available.
- RoHS Compliant

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Plunger</th>
<th>Switch height</th>
<th>Operating force</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Without ground terminal</td>
<td>With ground terminal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bags</td>
<td>Bags</td>
</tr>
<tr>
<td>Standard 6x6 mm</td>
<td>Flat</td>
<td>4.3 mm</td>
<td>General-purpose: 160 g</td>
<td>B3W-1000</td>
</tr>
<tr>
<td>Standard 6x6 mm</td>
<td>Flat</td>
<td>4.3 mm</td>
<td>High-force: 230 g</td>
<td>B3W-1002</td>
</tr>
<tr>
<td>Standard 12x12 mm</td>
<td>Projected</td>
<td>7.3 mm</td>
<td>General-purpose: 160 g</td>
<td>B3W-1050</td>
</tr>
<tr>
<td>Standard 12x12 mm</td>
<td>Projected</td>
<td>7.3 mm</td>
<td>High-force: 230 g</td>
<td>B3W-1052</td>
</tr>
</tbody>
</table>

Note: Bulk Packaged, 100 switches per bag. Order in multiples of the package quantity.

Important Note: Switches cannot be water-washed.

■ Accessories

See “B32” Tactile Switch Key Top data sheet for keycaps that fit projected plunger B3W models.

■ Plunger Identification Table

Use this table to determine keyswitch type by plunger color.

<table>
<thead>
<tr>
<th>Plunger color</th>
<th>Operating force</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>160 g</td>
<td>B3W-1000, 1050, 1100, 1150</td>
</tr>
<tr>
<td>White</td>
<td>200 g</td>
<td>B3W-4000, 4050, 4100, 4150</td>
</tr>
<tr>
<td>Yellow</td>
<td>230 g</td>
<td>B3W-1002, 1052, 1102, 1152</td>
</tr>
<tr>
<td>Yellow</td>
<td>350 g</td>
<td>B3W-4005, 4055, 4105, 4155</td>
</tr>
</tbody>
</table>
Specifications

■ Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>B3W-1&lt;sup&gt;++&lt;/sup&gt;</th>
<th>B3W-4&lt;sup&gt;++&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact form</td>
<td>SPST-NO</td>
<td></td>
</tr>
<tr>
<td>Switching capacity</td>
<td>1 to 50 mA, 5 to 24 VDC (resistive load)</td>
<td></td>
</tr>
<tr>
<td>Contact resistance</td>
<td>100 mΩ max. (rated: 1 mA, 5 VDC)</td>
<td></td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>100 MΩ min. (at 250 VDC)</td>
<td></td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>500 VAC, 50/60 Hz for 1 min.</td>
<td></td>
</tr>
<tr>
<td>Bounce time</td>
<td>5 ms max.</td>
<td></td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>Malfunction: 10 to 55 Hz, 1.5-mm double amplitude</td>
<td></td>
</tr>
<tr>
<td>Shock resistance</td>
<td>Destruction: 1,000 m/s² (approx. 100 G) max.</td>
<td>Malfunction: 100 m/s² (approx. 10 G) max.</td>
</tr>
<tr>
<td>Ambient operating temperature</td>
<td>-25° to 70°C (at 60% RH max.) with no icing or condensation</td>
<td></td>
</tr>
<tr>
<td>Ambient operating humidity</td>
<td>35% to 85% (at 5 to 35°C)</td>
<td></td>
</tr>
<tr>
<td>Service life</td>
<td>General purpose: 1,000,000 operations min.</td>
<td>High force: 3,000,000 operations min.</td>
</tr>
<tr>
<td>Weight</td>
<td>B3W-1&lt;sup&gt;++&lt;/sup&gt;: Approx. 0.30 g</td>
<td>B3W-4&lt;sup&gt;++&lt;/sup&gt;: Approx. 1.00 g</td>
</tr>
</tbody>
</table>

■ Operating Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>B3W-1&lt;sup&gt;++&lt;/sup&gt;</th>
<th>B3W-4&lt;sup&gt;++&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating force (OF) max.</td>
<td>160 g</td>
<td>230 g</td>
</tr>
<tr>
<td>Release force (RF) min.</td>
<td>20 g</td>
<td>50 g</td>
</tr>
<tr>
<td>Pretravel (PT)</td>
<td>0.25 +0.2/-0.1 mm</td>
<td>0.3 +0.2/-0.1 mm</td>
</tr>
</tbody>
</table>

■ Construction

- Plunger
- Cover
- Spacer
- Sealed rubber
- Contact dome
- Fixed contact

■ Engineering Data

■ Operating Force vs. Stroke (Typical Example)
Dimensions

Note: 1. Unless otherwise specified, all units are in millimeters and a tolerance of ± 0.4 mm applies to all dimensions.
2. Terminal numbers are not indicated on this switch. With the switch turned over so that the logo mark “OMRON” is visible on the upper part of the rear side of the switch base, the terminal on the right of the logo mark is numbered “1” and that on the bottom right is “3.” Accordingly, two terminals on the left side are numbered “2” and “4” respectively.

6 x 6 mm Models

Flat Plunger Type (without Ground Terminal)
B3W-1000
B3W-1002

Flat Plunger Type (with Ground Terminal)
B3W-1100
B3W-1102

Projected Plunger Type (without Ground Terminal)
B3W-1050
B3W-1052

Projected Plunger Type (with Ground Terminal)
B3W-1150
B3W-1152
Precautions

Be sure to read the precautions common to all Tactile Switches, contained in the Technical User's Guide, “Tactile Switches, Technical Information” for correct use.
Omron Electronic Components, LLC
Terms and Conditions of Sales

I. GENERAL

1. Definitions: The words used herein are defined as follows.
(a) Terms: These terms and conditions
(b) Seller: Omron Electronic Components LLC and its subsidiaries
(c) Buyer: The buyer of Products, including any end user in section III through VI
(d) Products: Products and/or services of Seller
(e) Including: Including without limitation

2. Offer; Acceptance; These Terms and conditions are part of all quotations, acknowledgments, invoices, purchase orders and other documents, whether electronic or in writing, relating to the sale of Products by Seller. Seller hereby objects to any Terms proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.

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II. SALES

1. Prices: Payment: All prices stated are current, subject to change without notice by Seller. Buyer agrees to pay the price in effect at the time the purchase order is accepted by Seller. Payments for Products received are due net 30 days unless otherwise stated in the invoice. Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice.

2. Discounts: All discounts, if any, will apply only to the net amount of invoices sent to Buyer after deducting transportation charges, taxes, and duties, and will be allowed only if (a) the invoice is paid according to Seller's payment terms and (b) Buyer has no past due amounts owing to Seller.

3. Interest: Seller, at its option, may charge Buyer 1.5% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.

4. Orders: Seller will accept no order less than 200 U.S. dollars net billing.

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6. Governmental Approvals: Buyer shall be responsible for all costs involved in obtaining any government approvals regarding the importation or sale of the Products.

7. Taxes: All taxes, duties and other governmental charges (other than general real property and personal property taxes), including any interest penalties thereon, imposed directly or indirectly on Seller or required to be collected directly or indirectly by Seller for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Seller.

8. Financial: If the financial position of Buyer at any time becomes unsatisfactory to Seller, Seller shall not be responsible for the Buyer's programming of the information on Seller's website or in other documentation. IT IS THE BUYER'S SOLE RESPONSIBILITY TO ENSURE THAT ANY INFORMATION ON SELLER'S WEB SITE OR IN OTHER DOCUMENTATION IS ACCURATE.

9. Change In Specifications: Buyer may not assign its rights hereunder without Seller's written consent.

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2. Use with Attention: The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible use of any Product, nor to imply that any use listed may be suitable for any Product:
(a) Outdoor use, use involving potential chemical contamination or electrical interference.
(b) Use in consumer Products or any use in significant quantities.
(c) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
(d) Systems, machine, and equipment that could present a risk to life or property.

3. Prohibited Use: Never use the Product for an application involving serious risk to life or property without ensuring that the system as a whole has been designed to address the risks, and that the product is properly designed and installed for the intended use within the overall equipment system.

4. Motorized Vehicle Application: USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY SELLER.

5. Programmable Products: Seller shall not be responsible for the Buyer's programming of a programmable Product.

IV. WARRANTY AND LIMITATION

1. Warranty: Seller's exclusive warranty is that the Products will be from defects in materials and workmanship for a period of twelve months from the date of sale by Seller (or such other period expressed in writing by Seller). SELLER MAKES NO WARRANTY OR REPRESENTATION, EXCEPT AS PROVIDED ABOUT ALL OTHER WARRANTIES, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS.

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4. Change in Specifications: Product specifications and descriptions may be changed at any time based on improvements or other reasons. It is Seller's practice to change part numbers and specifications, including but not limited to, size and weight. It is Seller's policy to change part numbers and specifications, including but not limited to, size and weight. It is Seller's policy to provide or feature changes, or if significant engineering changes are made. However, some specifications of the Product may be changed without any notice.

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2. Assignment: Buyer may not assign its rights hereunder without Seller's written consent.

3. Law: These Terms are governed by Illinois law (without regard to conflict of laws).

4. Amendments: These Terms constitute the entire agreement between Buyer and Seller relating to the Products, and no provision may be changed or waived unless in writing and signed by the parties.

5. Severability: If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision.
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   (ii) Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
   (iii) Use in consumer products or any use in significant quantities.
   (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this product.

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4. Change in Specifications. Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Seller representative at any time to confirm actual specifications of purchased Product.

5. Errors and Omissions. The information in this publication has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors, or omissions.

6. RoHS Compliance. Where indicated, our products currently comply, to the best of our knowledge as of the date of this publication, with the requirements of the European Union's Directive on the Restriction of certain Hazardous Substances ("RoHS"), although the requirements of RoHS do not take effect until July 2006. These requirements may be subject to change. Please consult our website for current information.

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