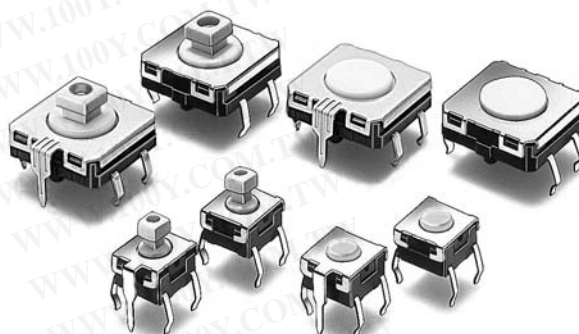






# Tactile Switch B3W

## 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

| Type                 | Plunger  | Switch height | Operating force        | Model                   |                      |
|----------------------|--|---------------|------------------------|-------------------------|----------------------|
|                      |  |               |                        | Without ground terminal | With ground terminal |
|                      |  |               |                        | Bags                    | Bags                 |
| Standard<br>6x6 mm   | Flat<br>       | 4.3 mm        | General-purpose: 160 g | <b>B3W-1000</b>         | <b>B3W-1100</b>      |
|                      |  |               | High-force: 230 g      | <b>B3W-1002</b>         | <b>B3W-1102</b>      |
|                      | Projected<br> | 7.3 mm        | General-purpose: 160 g | <b>B3W-1050</b>         | <b>B3W-1150</b>      |
|                      |  |               | High-force: 230 g      | <b>B3W-1052</b>         | <b>B3W-1152</b>      |
| Standard<br>12x12 mm | Flat<br>      | 4.3 mm        | General-purpose: 200 g | <b>B3W-4000</b>         | <b>B3W-4100</b>      |
|                      |  |               | High-force: 350 g      | <b>B3W-4005</b>         | <b>B3W-4105</b>      |
|                      | Projected<br> | 7.3 mm        | General-purpose: 200 g | <b>B3W-4050</b>         | <b>B3W-4150</b>      |
|                      |  |               | High-force: 350 g      | <b>B3W-4055</b>         | <b>B3W-4155</b>      |

**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.

| Plunger color | Operating force | Type                       |
|---------------|-----------------|----------------------------|
| White         | 160 g           | B3W-1000, 1050, 1100, 1150 |
| White         | 200 g           | B3W-4000, 4050, 4100, 4150 |
| Yellow        | 230 g           | B3W-1002, 1052, 1102, 1152 |
| Yellow        | 350 g           | B3W-4005, 4055, 4105, 4155 |

# Specifications

## Characteristics

|                               |   |                                      |                                      |
|-------------------------------|---|--------------------------------------|--------------------------------------|
| Contact form                  | SPST-NO   |                                      |                                      |
| Switching capacity            | 1 to 50 mA, 5 to 24 VDC (resistive load)  |                                      |                                      |
| Contact resistance            | 100 mΩ max. (rated: 1 mA, 5 VDC)  |                                      |                                      |
| Insulation resistance         | 100 MΩ min. (at 250 VDC)  |                                      |                                      |
| Dielectric strength           | 500 VAC, 50/60 Hz for 1 min.  |                                      |                                      |
| Bounce time                   | 5 ms max.   |                                      |                                      |
| Vibration resistance          | Malfunction: 10 to 55 Hz, 1.5-mm double amplitude   |                                      |                                      |
| Shock resistance              | Destruction: 1,000 m/s <sup>2</sup> (approx. 100 G) max.<br>Malfunction: 100 m/s <sup>2</sup> (approx. 10 G) max. |                                      |                                      |
| Ambient operating temperature | -25° to 70°C (at 60% RH max.) with no icing or condensation   |                                      |                                      |
| Ambient operating humidity    | 35% to 85% (at 5 to 35°C)   |                                      |                                      |
| Service life                  | General purpose   | B3W-1□□□ : 1,000,000 operations min. | B3W-4□□□ : 3,000,000 operations min. |
|                               | High force  | 300,000 operations min.              | 1,000,000 operations min.            |
| Weight                        | B3W-1□□□ : Approx. 0.30 g   | B3W-4□□□ : Approx. 1.00 g            |                                      |

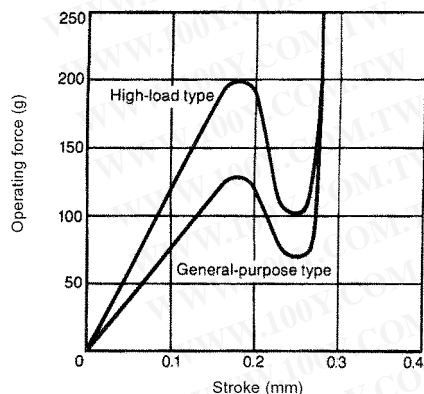
## Operating Characteristics

| Characteristics           | B3W-1□□□                                  |            | B3W-4□□□                                 |            |
|---------------------------|---|------------|--|------------|
|                           | General-purpose                           | High-force | General-purpose                          | High-force |
| Operating force (OF) max. | 160 g                                     | 230 g      | 200 g                                    | 350 g      |
| Release force (RF) min.   | 20 g                                      | 50 g       | 30 g                                     | 50 g       |
| Pretravel (PT)            | 0.25 <sup>+0.2</sup> / <sub>-0.1</sub> mm |            | 0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm |            |

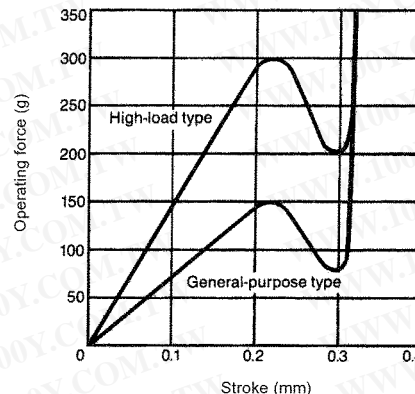
# Engineering Data

## Operating Force vs. Stroke (Typical Example)

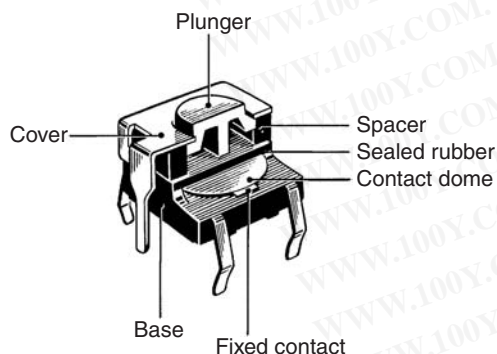
B3W-1□□□ series



B3W-4□□□ series



## Construction

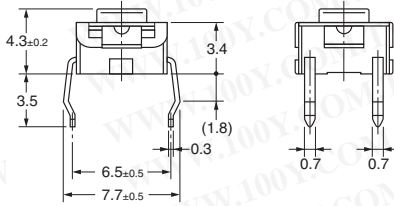
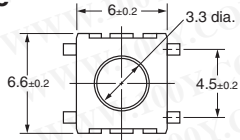


# Dimensions

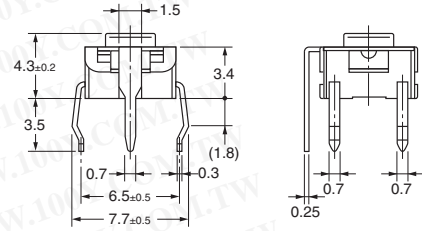
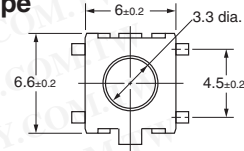
- Note:** 1. Unless otherwise specified, all units are in millimeters and a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
 2. Terminal numbers are not indicated on this switch. With the switch turned over so that the logo mark "OMRON" is visible on the upper part of the rear side of the switch 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

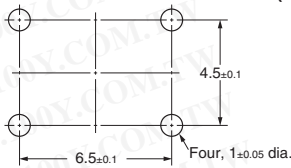
**Flat Plunger Type  
 (without Ground  
 Terminal)**  
**B3W-1000  
 B3W-1002**



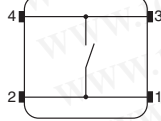
**Flat Plunger Type  
 (with Ground  
 Terminal)**  
**B3W-1100  
 B3W-1102**



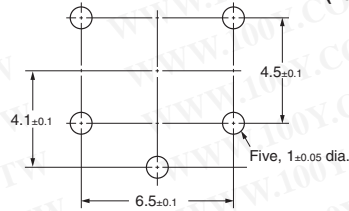
**PCB Mounting (Top View)  
 (Single-sided PCB, t=1.6)**



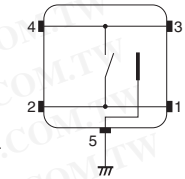
**Terminal Arrangement  
 /Internal Connections  
 (Top View)**



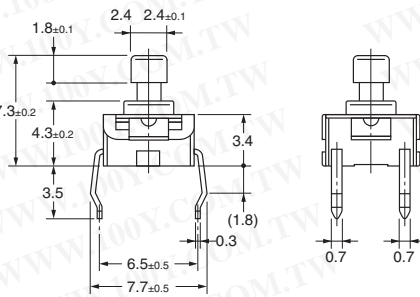
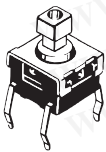
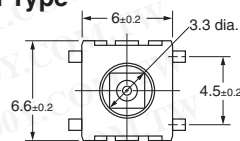
**PCB Mounting (Top View)  
 (Single-sided PCB, t=1.6)**



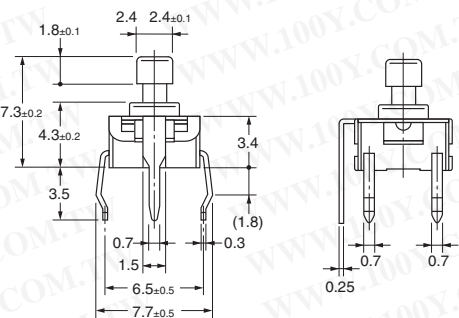
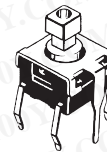
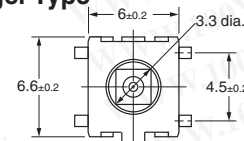
**Terminal Arrangement  
 /Internal Connections  
 (Top View)**



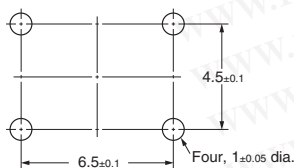
**Projected Plunger Type  
 (without Ground  
 Terminal)**  
**B3W-1050  
 B3W-1052**



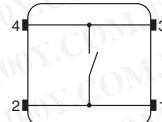
**Projected Plunger Type  
 (with Ground  
 Terminal)**  
**B3W-1150  
 B3W-1152**



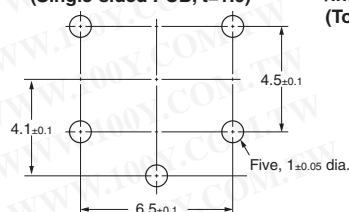
**PCB Mounting (Top View)  
 (Single-sided PCB, t=1.6)**



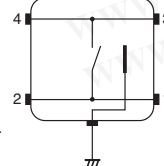
**Terminal Arrangement  
 /Internal Connections  
 (Top View)**



**PCB Mounting (Top View)  
 (Single-sided PCB, t=1.6)**



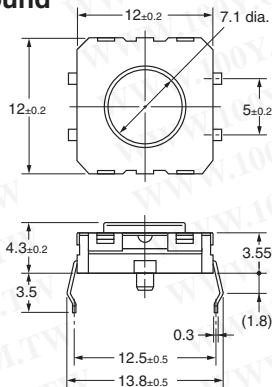
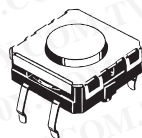
**Terminal Arrangement  
 /Internal Connections  
 (Top View)**



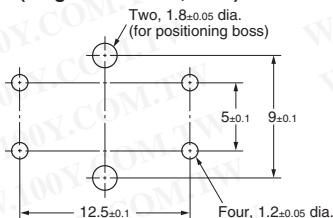
12 x 12 mm Models

Flat Plunger Type  
(without Ground Terminal)

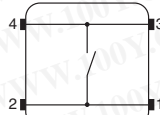
B3W-4000  
B3W-4005



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)

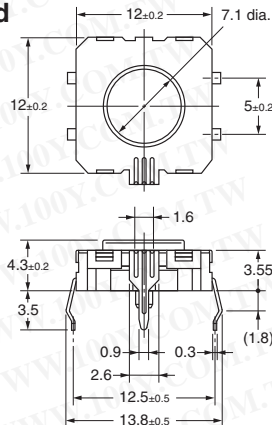
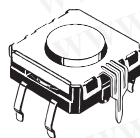


Terminal Arrangement  
/Internal Connections  
(Top View)

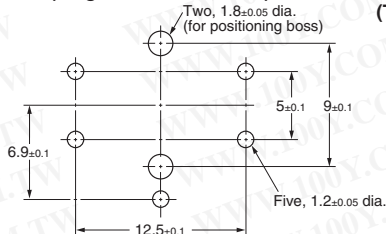


Flat Plunger Type  
(with Ground Terminal)

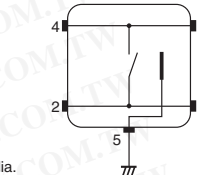
B3W-4100  
B3W-4105



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)

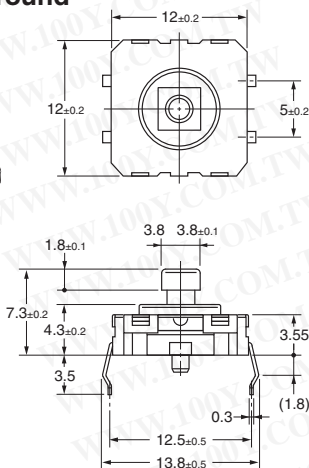
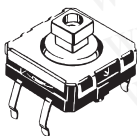


Terminal Arrangement  
/Internal Connections  
(Top View)

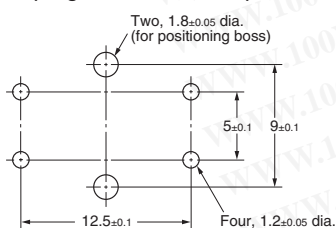


Projected Plunger Type  
(without Ground Terminal)

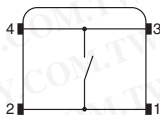
B3W-4050  
B3W-4055



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)

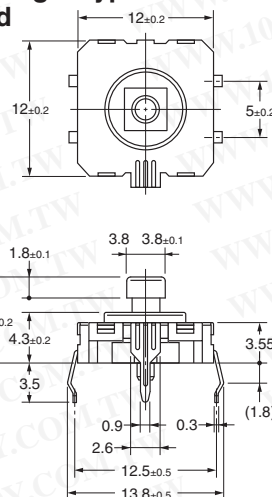
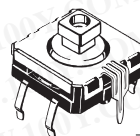


Terminal Arrangement  
/Internal Connections  
(Top View)

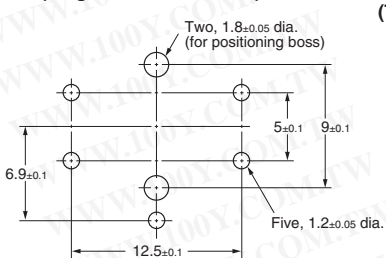


Projected Plunger Type  
(with Ground Terminal)

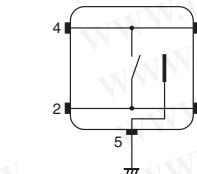
B3W-4150  
B3W-4155



PCB Mounting (Top View)  
(Single-sided PCB, t=1.6)



Terminal Arrangement  
/Internal Connections  
(Top View)



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.