OMRON

Tactile Switch (Sealed Type)

B3W

Allows Cleaning After Soldering with Alcohol Solvents

- Internal sealed construction allows immersion cleaning with alcohol solvents after soldering.
- Thin, compact construction in both 12 x 12 mm and 6 x 6 mm sizes.
- Snap-action contact construction for a positive click action.
- Available with ground terminals for protection against static electricity.
- Sealed construction also provides high reliability in dusty environments.



Ordering Information

Model Number Legend:

B3W-□□□□□

1 2 3 4 5

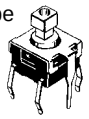
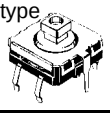
1. Size
- 1: 6 mm x 6 mm
- 4: 12 mm x 12 mm

2. Ground terminal
- 0: Without ground terminal
- 1: With ground terminal

3. Plunger
- 0: Flat
- 5: Projected

4. Operating force (OF)
- 0: B3W-1□□□ models: 1.57 N {160 gf}
B3W-4□□□ models: 1.96 N {200 gf}
- 2: 2.25 N {230 gf}
- 5: B3W-4□□□ models: 3.43 N {350 gf}

5. Shipment package
- None: Bag
- S: Stick

Type	Plunger	Operating force (OF)		Without ground terminal		With ground terminal	
				Bags	Sticks*	Bags	Sticks*
6 x 6 mm B3W-1□□□	Flat type 	Standard force	1.57 N {160 gf}	B3W-1000	B3W-1000S	B3W-1100	B3W-1100S
		High-force	2.25 N {230 gf}	B3W-1002	B3W-1002S	B3W-1102	B3W-1102S
	Projected type 	Standard force	1.57 N {160 gf}	B3W-1050	B3W-1050S	B3W-1150	B3W-1150S
		High-force	2.25 N {230 gf}	B3W-1052	B3W-1052S	B3W-1152	B3W-1152S
12 x 12 mm B3W-4□□□	Flat type 	Standard force	1.96 N {200 gf}	B3W-4000	B3W-4000S	B3W-4100	B3W-4100S
		High-force	3.43 N {350 gf}	B3W-4005	B3W-4005S	B3W-4105	B3W-4105S
	Projected type 	Standard force	1.96 N {200 gf}	B3W-4050	B3W-4050S	B3W-4150	B3W-4150S
		High-force	3.43 N {350 gf}	B3W-4055	B3W-4055S	B3W-4155	B3W-4155S

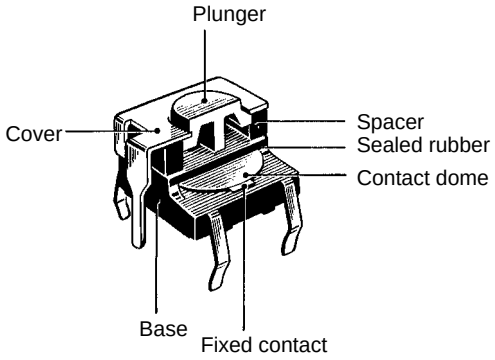
*Orders must be made in multiples of the quantity per stick as shown below.

Size	Without ground termial	With ground terminal
6 x 6 mm	80/stick	75/stick
12 x 12 mm	45/stick	40/stick

■ Accessories (Order Separately)

Special Key Tops are available for projected Switch models. See page 52.

Nomenclature



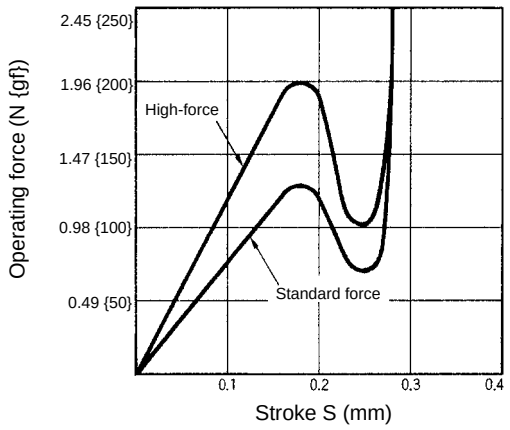
Specifications

■ Ratings/Characteristics

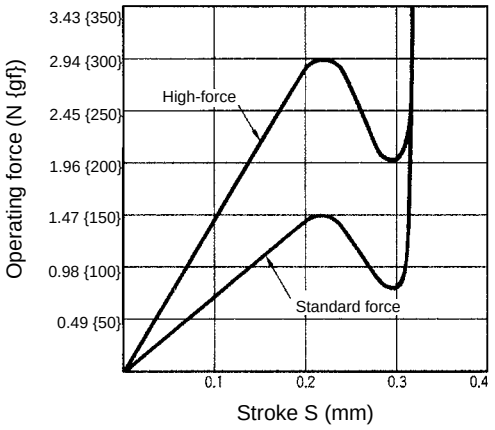
Switching capacity	1 to 50 mA, 5 to 24 VDC (resistive load)
Contact configuration	SPST-NO
Contact resistance	100 mΩ max. (initial value) (rated: 1 mA, 5 VDC)
Insulation resistance	100 MΩ min. (at 250 VDC)
Dielectric strength	500 VAC, 50/60 Hz for 1 min
Bounce time	5 ms max.
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5 mm double amplitude
Shock resistance	Destruction: 1,000 m/s^2 {approx. 100 G} max. Malfunction: 100 m/s^2 {approx. 10 G} max.
Life expectancy	B3W-1□□□: Standard force: 1,000,000 operations min. High-force: 300,000 operations min. B3W-4□□□: Standard force: 3,000,000 operations min. High-force: 1,000,000 operations min.
Ambient temperature	-25°C to 70°C (with no icing)
Ambient humidity	35% to 85%
Weight	6 x 6 mm: approx. 0.3 g, 12 x 12: approx. 1.00 g

Engineering Data

Operating Force vs. Stroke (Typical)
B3W-1□□□



B3W-4□□□



Dimensions

Note: 1. All units are in millimeters unless otherwise indicated. Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

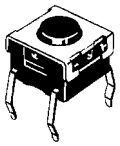
2. No terminal numbers are indicated on the Switches. The numbers used for terminals in the following graphics are indicated in the "Bottom View" diagram below. In this diagram, the Switch is rotated so that the terminals are on the right and left-hand sides, and the OMRON logo appears the right way up.

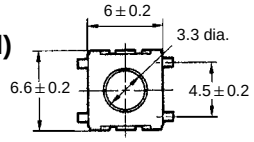


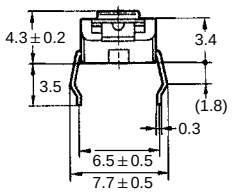
(Bottom View)

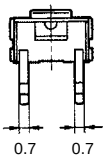
■ 6 x 6 mm Models

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

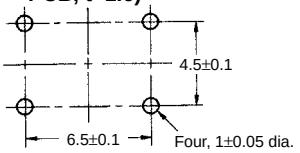




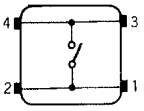




PCB Mounting
(Top View)
(Single-sided
PCB, t=1.6)

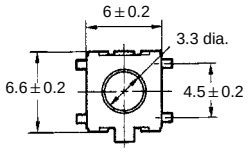


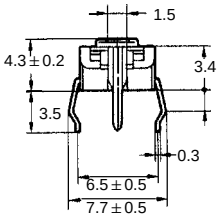
Terminal Arrangement
/Internal Connections
(Top View)

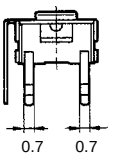


Flat Plunger Type
(with Ground Terminal)
B3W-1100, -1102

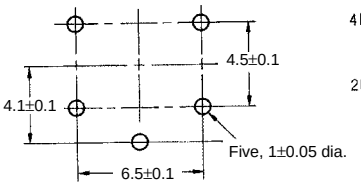




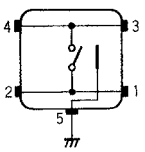




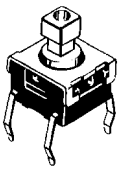
PCB Mounting
(Top View)
(Single-sided
PCB, t=1.6)

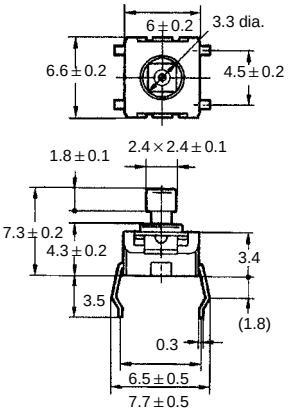


Terminal Arrangement
/Internal Connections
(Top View)

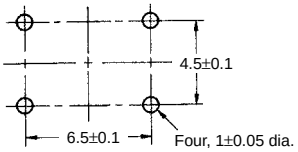


Projected Plunger Type (without Ground Terminal) B3W-1050, -1052

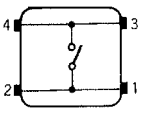




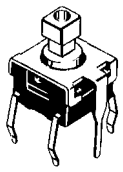
PCB Mounting (Top View) (Single-sided PCB, t=1.6)

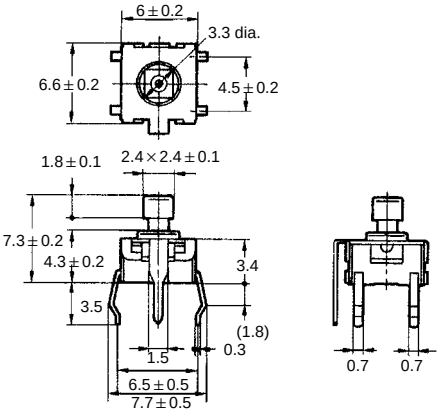


Terminal Arrangement /Internal Connections (Top View)

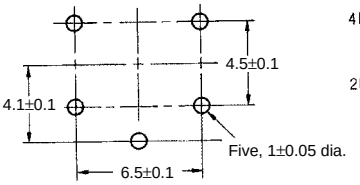


Projected Plunger Type (with Ground Terminal) B3W-1150, -1152

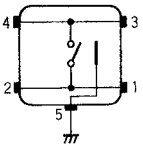




PCB Mounting (Top View) (Single-sided PCB, t=1.6)



Terminal Arrangement /Internal Connections (Top View)

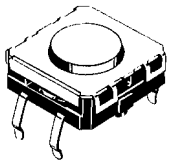


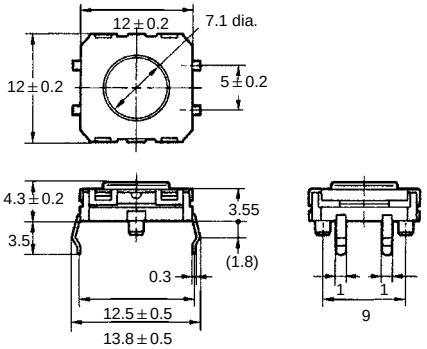
■ Operating Characteristics

Item	B3W-1□□0	B3W-1□□2
Operating force (OF)	1.57 N {160 gf} max.	2.25 N {230 gf} max.
Releasing force (RF)	0.2 N {20 gf} min.	0.49 N {50 gf} min.
Pretravel (PT)	$0.25^{+0.2}/_{-0.1}$ mm	

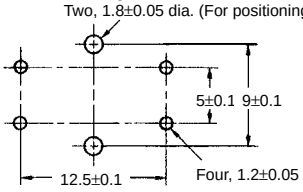
■ 12 x 12 mm Models

Flat Plunger Type (without Ground Terminal) B3W-4000, -4005

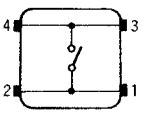




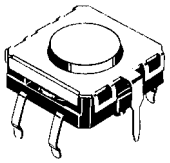
PCB Mounting (Top View) (Single-sided PCB, t=1.6)

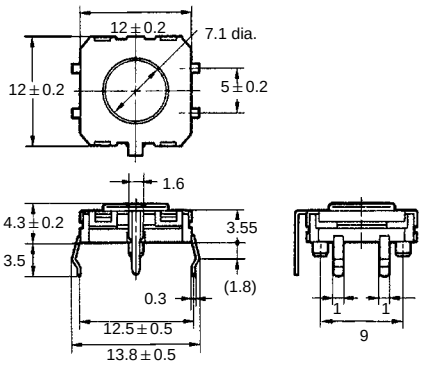


Terminal Arrangement /Internal Connections (Top View)

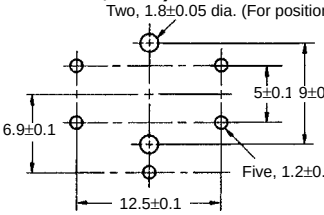


Flat Plunger Type (with Ground Terminal) B3W-4100, -4105

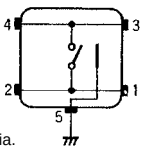




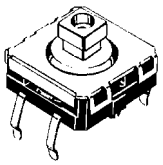
PCB Mounting (Top View) (Single-sided PCB, t=1.6)

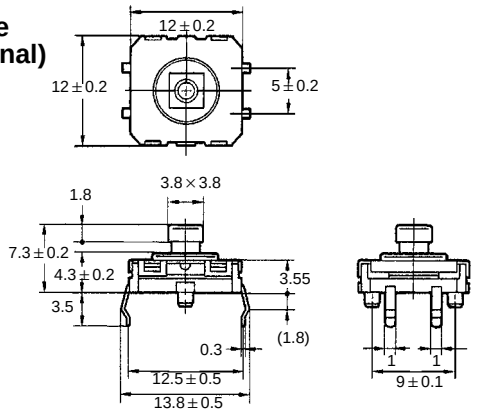


Terminal Arrangement /Internal Connections (Top View)

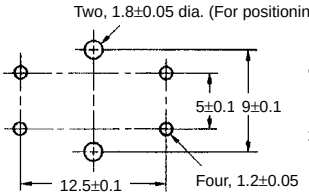


Projected Plunger Type (without Ground Terminal) B3W-4050, -4055

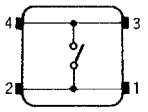




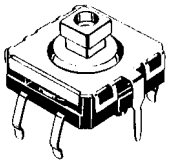
PCB Mounting (Top View) (Single-sided PCB, t=1.6)

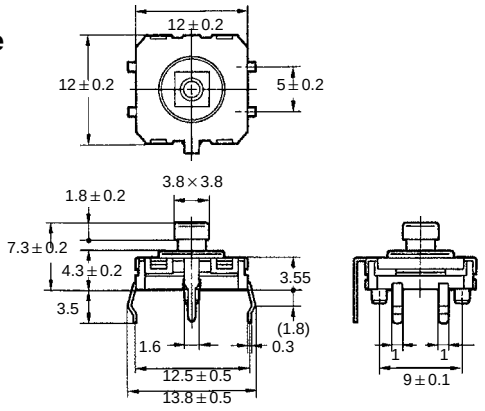


Terminal Arrangement /Internal Connections (Top View)

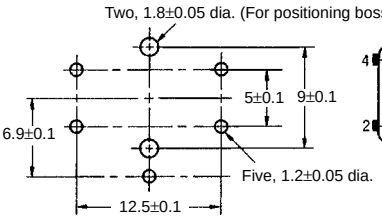


Projected Plunger Type (with Ground Terminal) B3W-4150, -4155

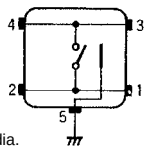




PCB Mounting (Top View) (Single-sided PCB, t=1.6)



Terminal Arrangement /Internal Connections (Top View)



■ Operating Characteristics

Item	B3W-4□□0	B3W-4□□5
Operating force (OF)	1.96 N {200 gf} max.	3.43 N {350 gf} max.
Releasing force (RF)	0.29 N {30 gf} min.	0.49 N {50 gf} min.
Pretravel (PT)	$0.3^{+0.2}/_{-0.1}$ mm	

Precautions

Operation

Do not apply additional force to the plunger once it has stopped.

PCB

The Switch is designed for a 1.6-mm-thick, single-sided PCB. Using PCBs that are different in thickness or using double-sided, through-hole PCBs may result in loose mounting, improper insertion, or poor heat resistance in soldering. Whether these problems arise or not will be depend on the type of holes, patterns, etc. Therefore, it is recommended that a verification test is conducted before use.

Soldering

The Switch can be soldered automatically or manually.

The automatic soldering of the Switch on a 1.6-mm-thick, single-sided PCB must be completed within five seconds at a soldering temperature of 260°C maximum.

The manual soldering of the Switch on a 1.6-mm-thick, single-sided PCB must be completed within three seconds at a soldering iron tip temperature of 350°C maximum.

Cleaning

Clean with alcohol solvents. Do not use chlorine solvents or water.

When cleaning in multiple-tank systems, do not clean for more than 1 minute at a time or for more than 3 minutes total.

Do not apply external force to the Switch during cleaning.

Do not clean immediately after soldering. Allow components to stand for at least 3 minutes before cleaning if possible.

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. A075-E1-3A