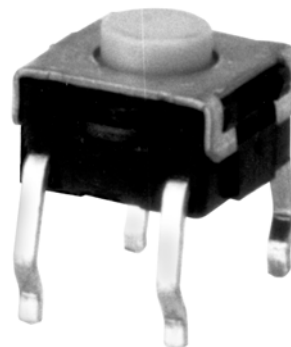






# Tactile Switch B3W

## Tactile Switch with Sealed Construction for Automatic Soldering

- 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
- Ideal for applications such as audio, office and communications equipment, measuring instruments, industrial robots, VCRs, TVs, and vending machines
- Stick packaging style available
- Sealed for cleaning with alcohol based solutions
- RoHS Compliant



## Ordering Information

Type	Plunger	Switch height x pitch	Operating force	Part number	
				Without ground terminal	With ground terminal
				Bags	Bags
Standard 6x6 mm	Flat 	4.3 x 6.5 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 	7.3 x 6.5 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 12x12mm	Flat 	4.3 x 6.5 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 	7.3 x 6.5 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>

\* Bulk Packaged, 100 switches per bag

**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	<b>B3W-1000, 1050, 1100, 1150</b>
White	200 g	<b>B3W-4000, 4050, 4100, 4150</b>
Yellow	230 g	<b>B3W-1002, 1052, 1102, 1152</b>
Yellow	350 g	<b>B3W-4005, 4055, 4105, 4155</b>

## Specifications

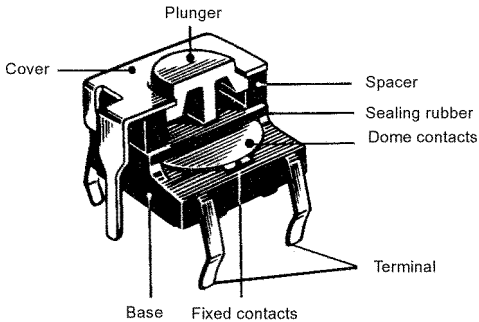
### ■ Characteristics

<b>Switching capacity</b>		50 mA 24 VDC (resistive load)	
<b>Contact form</b>		SPST-NO	
<b>Minimum permissible load</b>		1 mA 5 VDC min. (resistive load)	
<b>Contact resistance</b>		100 MΩ max. (initial value, rated: 1 mA, 5 VDC)	
<b>Insulation resistance</b>		100 MΩ min. (at 250 VDC)	
<b>Dielectric strength</b>		500 VAC, 50/60 Hz for 1 min.	
<b>Bounce time</b>		5 ms max.	
<b>Vibration</b>	<b>Malfunction durability</b>	10 to 55 Hz, 1.5-mm double amplitude	
<b>Shock</b>	<b>Destruction durability</b>	1,000 m/s <sup>2</sup> (approx. 100 G)	
	<b>Malfunction durability</b>	100 m/s <sup>2</sup> (approx. 10 G)	
<b>Ambient temperature</b>		-25° to 70°C	
<b>Humidity</b>		35% to 85% RH	
<b>Service life</b> [mechanical/electrical]	<b>General-purpose type</b>	B3W-1□□□ : 1,000,000 operations min.	B3W-4□□□ : 3,000,000 operations min.
	<b>High-load type</b>	300,000 operations min.	1,000,000 operations min.
<b>Weight</b>		B3W-1□□□ : Approx. 0.30 g	B3W-4□□□ : Approx. 1.00 g

## Operating Characteristics

Characteristics	Part number			
	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	0.25 <sup>+0.2</sup> / <sub>-0.1</sub> mm	0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm	0.3 <sup>+0.2</sup> / <sub>-0.1</sub> mm

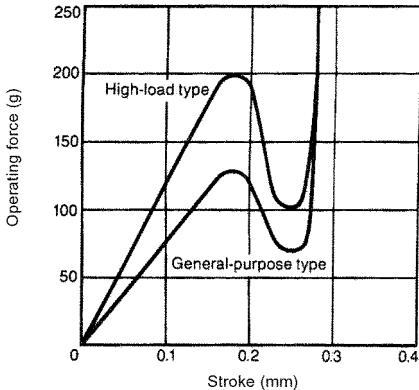
## Construction



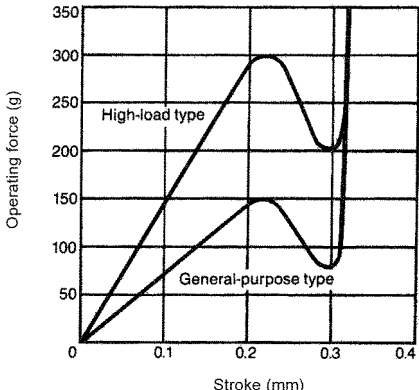
## Engineering Data

### Operating Force vs. Stroke (Typical Example)

B3W-1□□□ series



B3W-4□□□ series



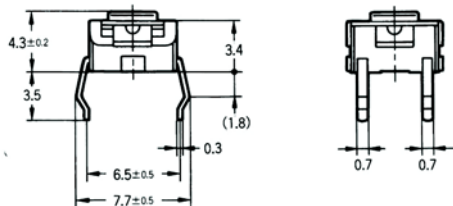
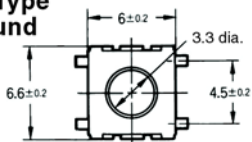
# Dimensions

Unit: mm

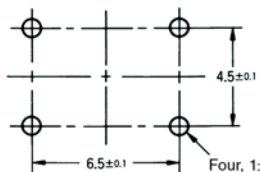
## ■ 6 mm Square Types

**Flat Plunger Type  
(without Ground Terminal)**

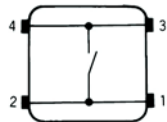
**B3W-1000  
B3W-1002**



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

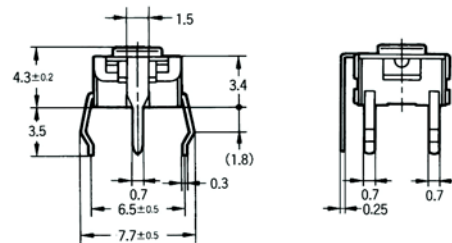
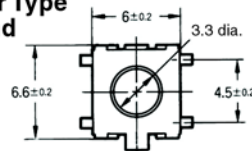


**Terminal Arrangement  
/Internal Connections  
(Top View)**

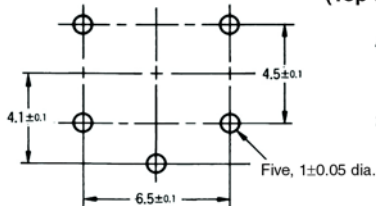


**Flat Plunger Type  
(with Ground Terminal)**

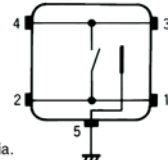
**B3W-1100  
B3W-1102**



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



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

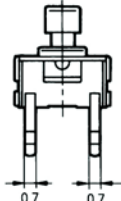
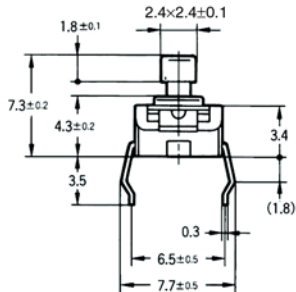
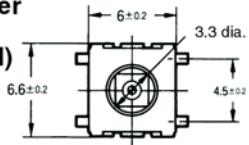


**Note:** Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

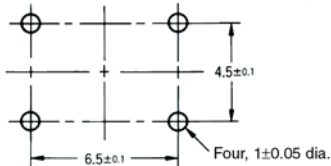
# 6 mm Square Types

**Projected Plunger Type (without Ground Terminal)**

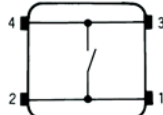
**B3W-1050  
B3W-1052**



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

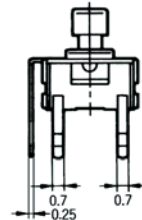
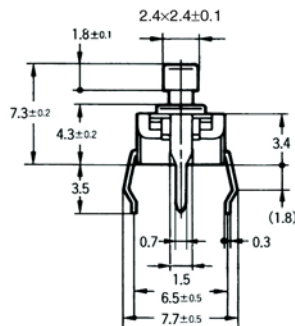
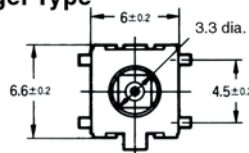


**Terminal Arrangement / Internal Connections (Top View)**

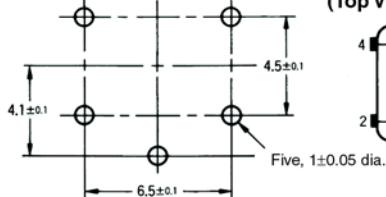


**Projected Plunger Type (with Ground Terminal)**

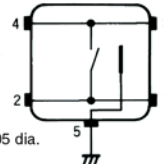
**B3W-1150  
B3W-1152**



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



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



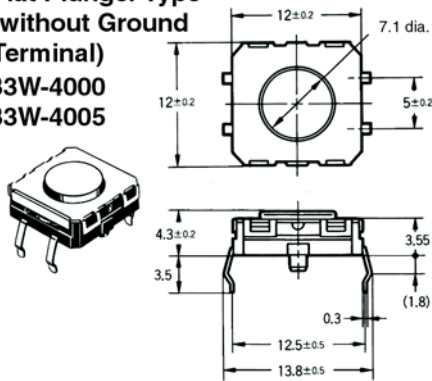
**Note:** Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

Unit: mm

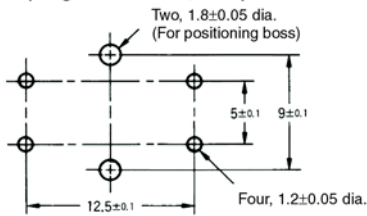
## ■ 12 mm Square Types

### Flat Plunger Type (without Ground Terminal)

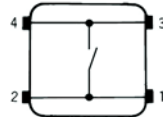
B3W-4000  
B3W-4005



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

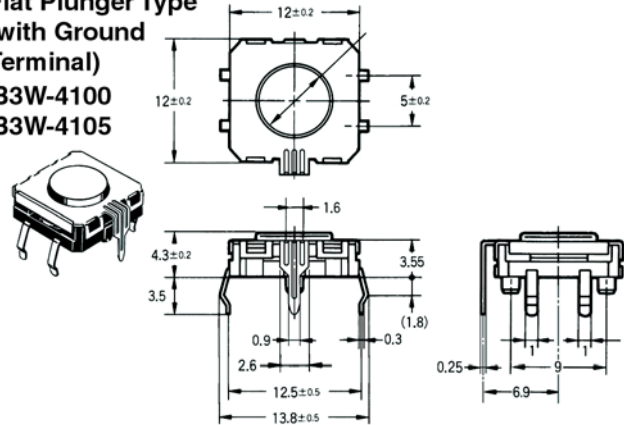


#### Terminal Arrangement /Internal Connections (Top View)

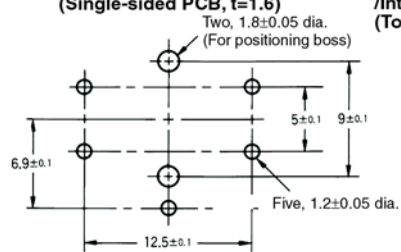


### Flat Plunger Type (with Ground Terminal)

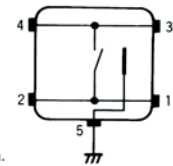
B3W-4100  
B3W-4105



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



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

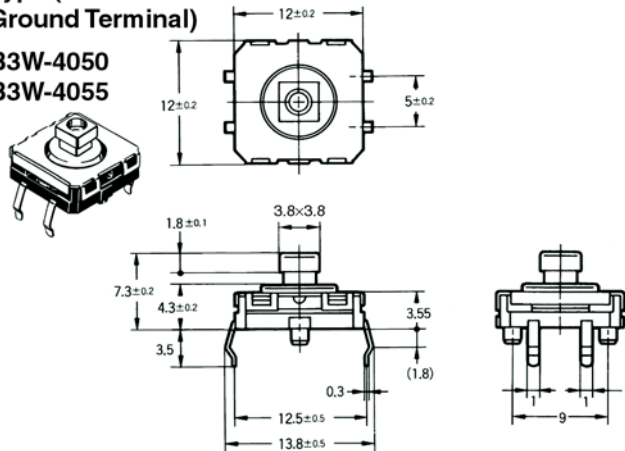


**Note:** Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

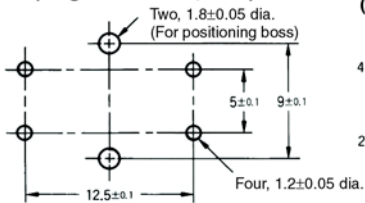
## ■ 12 mm Square Types

### Projected Plunger Type (without Ground Terminal)

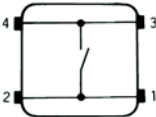
B3W-4050  
B3W-4055



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

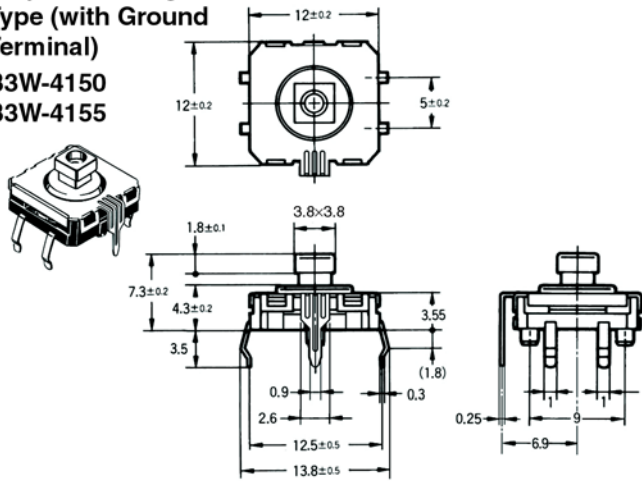


Terminal Arrangement  
/Internal Connections  
(Top View)

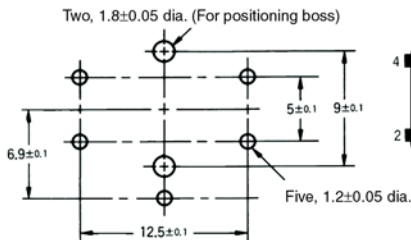


### Projected Plunger Type (with Ground Terminal)

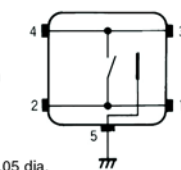
B3W-4150  
B3W-4155



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



Terminal Arrangement  
/Internal Connections  
(Top View)



Note: Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Hints on Correct Use

See the Tactile Switch User's Guide, "Tactile Switches - Technical Information" for information regarding processing and handling.

# Omron Electronic Components, LLC

## Terms and Conditions of Sales

### I. GENERAL

- Definitions:** The words used herein are defined as follows.
  - Terms:** These terms and conditions
  - Seller:** Omron Electronic Components LLC and its subsidiaries
  - Buyer:** The buyer of Products, including any end user in section III through VI
  - Products:** Products and/or services of Seller
  - Including:** Including without limitation
- Offer/Acceptance:** These Terms are deemed 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.
- Distributor:** Any distributor shall inform its customer of the contents after and including section III of these Terms.

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- Prices/Payment:** All prices stated are current, subject to change without notice by Seller. Buyer agrees to pay the price in effect at time of shipment. 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.
- Discounts:** Cash discounts, if any, will apply only on 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.
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- Orders:** Seller will accept no order less than 200 U.S. dollars net billing.
- Currencies:** If the prices quoted herein are in a currency other than U.S. dollars, Buyer shall make remittance to Seller at the then current exchange rate most favorable to Seller; provided that if remittance is not made when due, Buyer will convert the amount to U.S. dollars at the then current exchange rate most favorable to Seller available during the period between the due date and the date remittance is actually made.
- Governmental Approvals:** Buyer shall be responsible for all costs involved in obtaining any government approvals regarding the importation or sale of the Products.
- Taxes:** All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or 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.
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- Force Majeure:** Seller shall not be liable for any delay or failure in delivery resulting from causes beyond its control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delay in or lack of transportation or the requirements of any government authority.
- Shipping/ Delivery:** Unless otherwise expressly agreed in writing by Seller:
  - All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Seller), at which point title to and all risk of loss of the Products shall pass from Seller to Buyer, provided that Seller shall retain a security interest in the Products until the full purchase price is paid by Buyer;
  - Delivery and shipping dates are estimates only; and
  - Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- Claims:** Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier must be presented in detail in writing to Seller within 30 days of receipt of shipment.

### III. PRECAUTIONS

- Suitability:** IT IS THE BUYER'S SOLE RESPONSIBILITY TO ENSURE THAT ANY OMRON PRODUCT IS FIT AND SUFFICIENT FOR USE IN A MOTORIZED VEHICLE APPLICATION. BUYER SHALL BE SOLELY RESPONSIBLE FOR DETERMINING APPROPRIATENESS OF THE PARTICULAR PRODUCT WITH RESPECT TO THE BUYER'S APPLICATION INCLUDING (A) ELECTRICAL OR ELECTRONIC COMPONENTS, (B) CIRCUITS, (C) SYSTEM ASSEMBLIES, (D) END PRODUCT, (E) SYSTEM, (F) MATERIALS OR SUBSTANCES OR (G) OPERATING ENVIRONMENT. Buyer acknowledges that it alone has determined that the Products will meet their requirements of the intended use in all cases. Buyer must know and observe all prohibitions of use applicable to the Products/s.
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  - Outdoor use, use involving potential chemical contamination or electrical interference.
  - Use in consumer Products or any use in significant quantities.

- 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.
  - Systems, machines, and equipment that could present a risk to life or property.
- 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 RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
  - Motorized Vehicle Application:** USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY SELLER.
  - Programmable Products:** Seller shall not be responsible for the Buyer's programming of a programmable Product.

### IV. WARRANTY AND LIMITATION

- Warranty:** Seller's exclusive warranty is that the Products will be free 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, EXPRESS OR IMPLIED, ABOUT ALL OTHER WARRANTIES, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS.
- Buyer Remedy:** Seller's sole obligation hereunder shall be to replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product or, at Seller's election, to repay or credit Buyer an amount equal to the purchase price of the Product; provided that there shall be no liability for Seller or its affiliates unless Seller's analysis confirms that the Products were handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Seller before shipment.
- Limitation on Liability:** SELLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. FURTHER, IN NO EVENT SHALL LIABILITY OF SELLER OR ITS AFFILIATES EXCEED THE INDIVIDUAL PRICE OF THE PRODUCT ON WHICH LIABILITY IS ASSERTED.
- Indemnities:** Buyer shall indemnify and hold harmless Seller, its affiliates and its employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, litigation or proceeding (whether or not Seller is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Products.

### V. INFORMATION; ETC.

- Intellectual Property:** The intellectual property embodied in the Products is the exclusive property of Seller and its affiliates and Buyer shall not attempt to duplicate it in any way without the written permission of Seller. Buyer (at its own expense) shall indemnify and hold harmless Seller and defend or settle any action brought against Seller to the extent that it is based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party.
- Property/ Confidentiality:** Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Seller. All information and materials supplied by Seller to Buyer relating to the Products are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
- Performance Data:** Performance data is provided as a guide in determining suitability and does not constitute a warranty. It may represent the result of Seller's test conditions, and the users must correlate it to actual application requirements.
- Change In Specifications:** Product specifications and description may be changed at any time based on improvements or other reasons. It is Seller's practice to change part numbers when published ratings or features are changed, or when significant engineering changes are made. However, some specifications of the Product may be changed without any notice.
- Errors And Omissions:** The information on Seller's website or in other documentation has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.
- Export Controls:** Buyer shall comply with all applicable laws, regulations and licenses regarding (a) export of the Products or information provided by Seller; (b) sale of Products to forbidden or other proscribed persons or organizations; (c) disclosure to non-citizens of regulated technology or information.

### VI. MISCELLANEOUS

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- Assignment:** Buyer may not assign its rights hereunder without Seller's written consent.
- Law:** These Terms are governed by Illinois law (without regard to conflict of laws). Federal and state courts in Illinois have exclusive jurisdiction for any dispute hereunder.
- Amendment:** 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 signed by the parties.
- Severability:** If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision.



## Certain Precautions on Specifications and Use

1. **Suitability for Use.** Seller shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in Buyer's application or use of the Product. At Buyer's request, Seller will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given:
  - (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
  - (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.

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 OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
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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.

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