

Plateau Head Pushbutton Switch A3U

Connector enables quick assembly and less wiring

- Highly reliable Omron basic switch, model SS built in.
- Possible cross over wiring on circuit construction.
- Easy one push to connect the Operation and Switch Units.
- 22 dia of the push button head size is suitable for operation.



Model Number Structure

Model Number Legend....For information on combinations, refer to Ordering Information.

A3U (1) **-T** (2) (3) **-** (4) **A** (5) **C-** (6) **M**

(1) Lighted/Non-lighted

Symbol	Type
No symbol	Non-lighted
L	Lighted

(2) Bezel

Symbol	Color
B	Black
M	Metallic

(3) Color of Pushbutton and Light

Symbol	Color	Lighted (Cap type/Color)	Non-Lighted (Cap type/Color)
W	White	Transparent Cap/White	Non-Transparent Cap/White
S	White	-	Transparent Cap/White
R	Red	Transparent Cap/Red	Transparent Cap/Red
Y	Yellow	Transparent Cap/Yellow	Transparent Cap/Yellow
G	Green	Transparent Cap/Green	Transparent Cap/Green
U	Umber	Transparent Cap/White	-
A	Blue	Transparent Cap/Blue	Transparent Cap/Blue
B	Black	-	Non-Transparent Cap/Black
K	Black	-	Transparent Cap/Black

(4) Voltage Used (LED)

Symbol	Operating Voltage
No symbol	Non-lighted
1	5 VDC
2	12 VDC
3	24 VDC

(5) Contact Configuration

Symbol	Type
1	SPDT
2	DPDT

(6) Degree of Protection

Symbol	Protection
None	IP40
5	IP65 (Oil-proof type)

Ordering Information

Plateau Head Pushbutton Switches

Degree of Protection: IP40

Black Bezel

Lighting	Output	LED Voltage	Model	Pushbutton color symbol	
LED	SPDT	5 VDC	A3UL-TB□-1A1C-M	W, A	
		12 VDC	A3UL-TB□-2A1C-M		
		24 VDC	A3UL-TB□-3A1C-M		
	DPDT	5 VDC	A3UL-TB□-1A2C-M		G
		12 VDC	A3UL-TB□-2A2C-M		
		24 VDC	A3UL-TB□-3A2C-M		
	SPDT	5 VDC	A3UL-TBG-1A1C-M	G	
			A3UL-TBG-2A1C-M		
			A3UL-TBG-3A1C-M		
		12 VDC	A3UL-TBU-1A1C-M-S	U	
			A3UL-TBU-2A1C-M-S		
			A3UL-TBU-3A1C-M-S		
DPDT	5 VDC	A3UL-TBG-1A2C-M	G		
		A3UL-TBG-2A2C-M			
		A3UL-TBG-3A2C-M			
	12 VDC	A3UL-TBU-1A2C-M-S	U		
		A3UL-TBU-2A2C-M-S			
		A3UL-TBU-3A2C-M-S			
SPDT	5 VDC	A3UL-TB□-1A1C-M	R, Y		
		12 VDC		A3UL-TB□-2A1C-M	
		24 VDC		A3UL-TB□-3A1C-M	
	5 VDC	A3UL-TB□-1A2C-M		R, Y	
		12 VDC			A3UL-TB□-2A2C-M
		24 VDC			A3UL-TB□-3A2C-M
Non-lighted	SPDT	-	A3U-TB□-A1C-M	W, S, R, Y, G, A, B, K	
	DPDT	-	A3U-TB□-A2C-M		

Metallic Bezel

Lighting	Output	LED Voltage	Model	Pushbutton color symbol	
LED	SPDT	5 VDC	A3UL-TM□-1A1C-M	W, A	
		12 VDC	A3UL-TM□-2A1C-M		
		24 VDC	A3UL-TM□-3A1C-M		
	DPDT	5 VDC	A3UL-TM□-1A2C-M		G
		12 VDC	A3UL-TM□-2A2C-M		
		24 VDC	A3UL-TM□-3A2C-M		
	SPDT	5 VDC	A3UL-TMG-1A1C-M	G	
			A3UL-TMG-2A1C-M		
			A3UL-TMG-3A1C-M		
		12 VDC	A3UL-TMU-1A1C-M-S	U	
			A3UL-TMU-2A1C-M-S		
			A3UL-TMU-3A1C-M-S		
DPDT	5 VDC	A3UL-TMG-1A2C-M	G		
		A3UL-TMG-2A2C-M			
		A3UL-TMG-3A2C-M			
	12 VDC	A3UL-TMU-1A2C-M-S	U		
		A3UL-TMU-2A2C-M-S			
		A3UL-TMU-3A2C-M-S			
SPDT	5 VDC	A3UL-TM□-1A1C-M	R, Y		
		12 VDC		A3UL-TM□-2A1C-M	
		24 VDC		A3UL-TM□-3A1C-M	
	5 VDC	A3UL-TM□-1A2C-M		R, Y	
		12 VDC			A3UL-TM□-2A2C-M
		24 VDC			A3UL-TM□-3A2C-M
Non-lighted	SPDT	-	A3U-TM□-A1C-M	W, S, R, Y, G, A, B, K	
	DPDT	-	A3U-TM□-A2C-M		




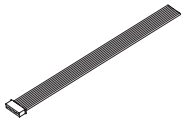
Degree of Protection: IP65 (Oil-proof Type) Black Bezel

Lighting	Output	LED Voltage	Model	□ Pushbutton color symbol		
LED	SPDT	5 VDC	A3UL-TB□-1A1C-5M	W, A		
		12 VDC	A3UL-TB□-2A1C-5M			
		24 VDC	A3UL-TB□-3A1C-5M			
	DPDT	5 VDC	A3UL-TB□-1A2C-5M		G	
		12 VDC	A3UL-TB□-2A2C-5M			
		24 VDC	A3UL-TB□-3A2C-5M			
	SPDT	5 VDC	A3UL-TBG-1A1C-5M			U
		12 VDC	A3UL-TBG-2A1C-5M			
		24 VDC	A3UL-TBG-3A1C-5M			
		5 VDC	A3UL-TBU-1A1C-5M-S	G		
		12 VDC	A3UL-TBU-2A1C-5M-S			
		24 VDC	A3UL-TBU-3A1C-5M-S			
	DPDT	5 VDC	A3UL-TBG-1A2C-5M	U		
		12 VDC	A3UL-TBG-2A2C-5M			
		24 VDC	A3UL-TBG-3A2C-5M			
		5 VDC	A3UL-TBU-1A2C-5M-S	G		
		12 VDC	A3UL-TBU-2A2C-5M-S			
		24 VDC	A3UL-TBU-3A2C-5M-S			
	SPDT	5 VDC	A3UL-TB□-1A1C-5M	R, Y		
		12 VDC	A3UL-TB□-2A1C-5M			
		24 VDC	A3UL-TB□-3A1C-5M			
	DPDT	5 VDC	A3UL-TB□-1A2C-5M		W, S, R, Y, G, A, B, K	
		12 VDC	A3UL-TB□-2A2C-5M			
		24 VDC	A3UL-TB□-3A2C-5M			
Non-lighted	SPDT	–	A3U-TB□-A1C-5M			
	DPDT	–	A3U-TB□-A2C-5M			

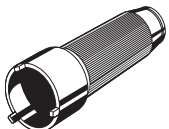
Metallic Bezel

Lighting	Output	LED Voltage	Model	□ Pushbutton color symbol		
LED	SPDT	5 VDC	A3UL-TM□-1A1C-5M	W, A		
		12 VDC	A3UL-TM□-2A1C-5M			
		24 VDC	A3UL-TM□-3A1C-5M			
	DPDT	5 VDC	A3UL-TM□-1A2C-5M		G	
		12 VDC	A3UL-TM□-2A2C-5M			
		24 VDC	A3UL-TM□-3A2C-5M			
	SPDT	5 VDC	A3UL-TMG-1A1C-5M			U
		12 VDC	A3UL-TMG-2A1C-5M			
		24 VDC	A3UL-TMG-3A1C-5M			
		5 VDC	A3UL-TMU-1A1C-5M-S	G		
		12 VDC	A3UL-TMU-2A1C-5M-S			
		24 VDC	A3UL-TMU-3A1C-5M-S			
	DPDT	5 VDC	A3UL-TMG-1A2C-5M	U		
		12 VDC	A3UL-TMG-2A2C-5M			
		24 VDC	A3UL-TMG-3A2C-5M			
		5 VDC	A3UL-TMU-1A2C-5M-S	G		
		12 VDC	A3UL-TMU-2A2C-5M-S			
		24 VDC	A3UL-TMU-3A2C-5M-S			
	SPDT	5 VDC	A3UL-TM□-1A1C-5M	R, Y		
		12 VDC	A3UL-TM□-2A1C-5M			
		24 VDC	A3UL-TM□-3A1C-5M			
	DPDT	5 VDC	A3UL-TM□-1A2C-5M		W, S, R, Y, G, A, B, K	
		12 VDC	A3UL-TM□-2A2C-5M			
		24 VDC	A3UL-TM□-3A2C-5M			
Non-lighted	SPDT	–	A3U-TM□-A1C-5M			
	DPDT	–	A3U-TM□-A2C-5M			

Accessories and Tools (Sold Separately) Accessories

Accessory	Appearance	Type	Model number	Remarks
Panel Plug		Round	A22Z-3530	Used to plug a panel cutout hole for future expansion. Do not use it on a panel cutout hole that will be used to position a Switch and ensure that the Switch will not rotate. Use this Plug for a 25-dia. panel cutout hole. Refer to page 6 for information on panel cutout holes. The color is black.
25-dia. Ring			A22Z-R25	Used together with a Panel Plug.
Cap Removal Suction Cup			A3UZ-3010	Used to remove a cap.
Wiring Harness			A3UZ-5010-10	Used to connect the switch to a control board connector. Lead length: 1 m

Tools

Tool	Appearance	Type	Model number	Remarks
Tightening Tool		–	A22Z-3905	Used to tighten nuts from the back of the panel and to replace caps on Lighted Emergency Stop Switches.

Specifications

Approved Standard Ratings

Certification Authority	UL (See Note: 1 and Note: 2)	CSA (See Note: 1 and Note: 2)	TÜV (See Note: 3)
Certification no.	UL508 CSA C22.2 No.14	CSA C22.2 No. 14	EN60947-5-1
Rating	30 VDC 0.1 A	30 VDC 0.1 A	12 30 VDC 0.1 A
File no.	E41515	2650068	J50236157

Note: 1. Only Switch Blocks are recognized by UL/CSA. (Surrounding air Temperature: 55 °C)
Note: 2. Please use the power supply specified in UL/CSA class 2.
Note: 3. Use 4A 250V as short-circuit protective device when using under EN-compliant rating standard (IEC60127-2 SS1).

Ratings

Contacts
 30 VDC, 0.1 A (Resistive load)
 Minimum applicable load: 1 mA at 5 VDC

Rated values are obtained from tests conducted under the following conditions.

1. Load: Resistive load
2. Mounting conditions: No vibration and no shock
3. Temperature: 20 ± 2 °C
4. Operating frequency: 20 operations/min

Super-bright LED

Rated voltage	Rated current	Operating voltage
5 VDC	15 mA	5 VDC ± 5 %
12 VDC		12 VDC ± 5 %
24 VDC		24 VDC ± 5 %

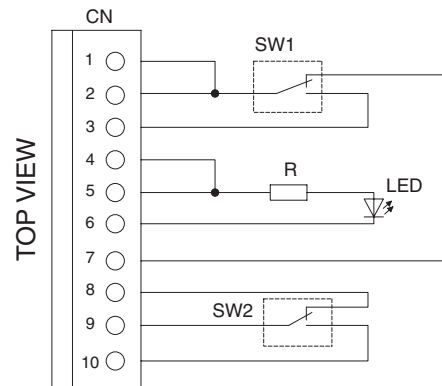
Characteristics

Item		Pushbutton Switch
Allowable operating frequency	Mechanical	60 operations/minute max.
	Electrical	30 operations/minute max.
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance		250 mΩ max. (initial value)
Dielectric strength	Between terminals of same polarity	500 VAC, 50/60 Hz for 1 minute
	Between terminals of different polarity	500 VAC, 50/60 Hz for 1 minute
	Between each terminal and ground	1,500 VAC, 50/60 Hz for 1 minute
	Between all LED terminals and all the other terminals	500 VAC, 50/60 Hz for 1 minute
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (malfunction within 1 ms)
Shock resistance	Malfunction	300 m/s ² max. (malfunction within 1 ms)
Durability	Mechanical	1,000,000 operations min.
	Electrical	200,000 operations min.
Connector holding force		40 N max.
Rated insulation voltage (Ui)		30 V (EN60947-5-1)
Electric shock protection class		Class II
Degree of contamination		3 (EN60947-5-1)
Impulse withstand voltage	Between terminals of same polarity	800 V (EN60947-5-1)
	Between terminals of different polarity	
	Between each terminal and ground	
Conditional short-circuit current		100A (EN60947-5-1)
Conventional enclosed thermal current (Ithe)		0.1A (EN60947-5-1)
Weight		Approx. 30 g
Degree of protection		IP40, IP65 (Oil-proof type)
Ambient operating temperature		-20 °C to 70 °C (Non-lighted type) -20 °C to 70 °C (lighted type) (with no icing or condensation)
Ambient operating humidity		35 % to 85 % RH
Ambient storage temperature		-40 °C to 70 °C (with no icing or condensation)
Ambient storage humidity		35 % to 85 % RH

Operating Characteristics

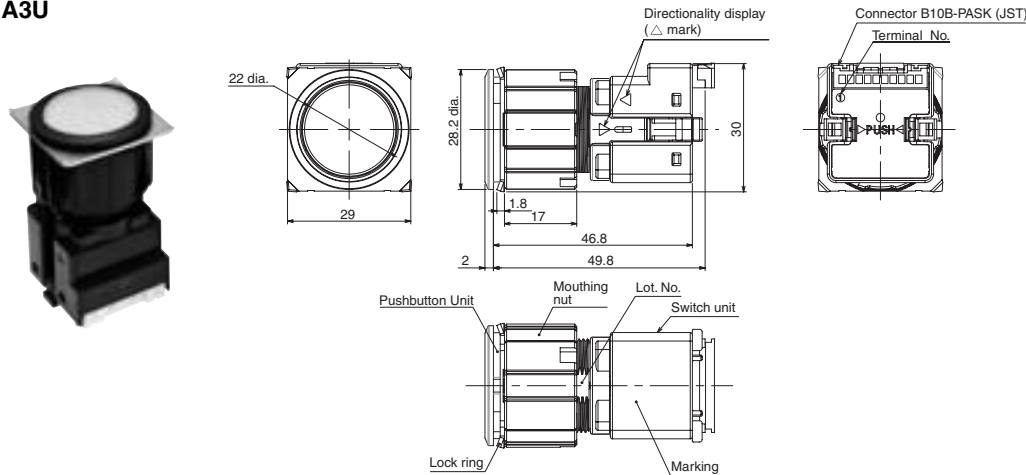
Features	A3U
Operating force (OF) max.	4.5 N
Pretravel (PT) max.	3.3 mm
Total travel (TT) max.	3.7 mm

Circuit Diagram



Note:
 1. This circuit shows the lighted/bipolar type.
 2. SW2 isn't mounted on 1 pole type.
 3. An LED and R aren't mounted on the non-lighted type.

A3U



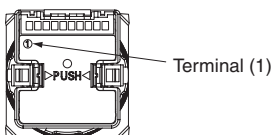
Safety Precautions

Refer to Safety Precautions for All Pushbutton Switches/Indicators.

Precautions for Safe Use

- Do not disassemble or modify the Switch under any circumstances. Doing so may cause malfunction.
- Do not drop or subject the Switch to extreme shock or force. This may prevent the Switch from functioning to its full capability.
- The durability of the Switch varies considerably depending on the switching conditions. Always test the switch under actual working conditions before application and use the Switch only for the number of switching operations allowed.
- Do not allow the load current to exceed the rated value. This may damage or burn out the Switch.
- Refer to the Circuit Diagram and make sure to wire correctly. Only the terminal (1) is printed and the right end of the terminal is read as (10).

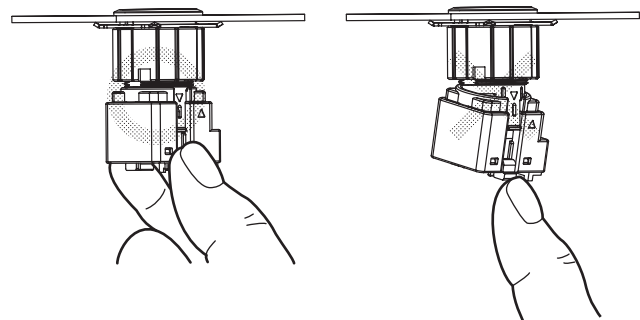
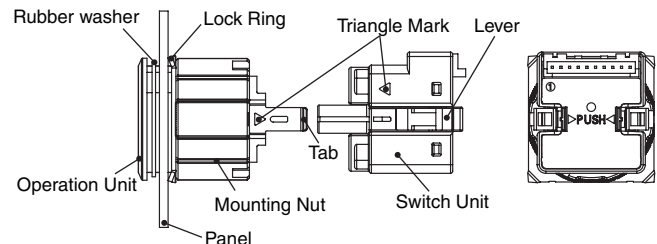
The switch back



- Do not use the Switch in locations where explosive or flammable gases or liquid may be present or scattered. The electric arc or the heat caused by switching contacts may trigger off a fire or explosion.
- Do not use the Switch in locations where toxic gases, such as H₂S, SO₂, NH₃, HNO₃, and Cl₂, may be present, or in locations subject to high temperature or humidity. Doing so may damage the Switch due to contact failure or corrosion.
- Do not let the Switch submerged in oil or water, or use in locations continuously subject to splashes of oil/water. Doing so may result in oil or water entering the Switch.
- Do not use the Switch in the following locations;
 - subject to severe temperature changes.
 - subject to high humidity or condensation.
 - subject to severe vibration or shock.
 - where direct rays of the sun strike.
 - where sea breeze may be present.
- When the Switch is exposed to the environment that are not required, or stored in locations where condensation presents, or damaged by fall out, or stored for more than an year, please test it under the usage conditions before application.
- Mounting and Removing the Switch
 1. Insert the Operation Unit from the front of the panel, insert the Lock Ring and Mounting Nut from the back of the panel, and tighten the Mounting Nut. Then, attach the Switch Unit to the

Operation Unit.

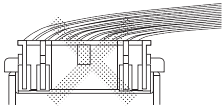
2. For a Switch with IP65 protection, make sure that the rubber washer is in place between the Operation Unit and the panel.
3. Align the Lock Ring with the slot on the case and insert it so that the edge is flush with the panel.
4. Tighten the Mounting Nut to between 0.98 and 1.96 N·m.
5. To mount the Switch Unit to the Operation Unit, align the the triangle marks on the Operation Unit and Switch Unit and insert the Switch Unit until it locks securely in place.
6. The push marks on both sides are only for removal. Do not push them when you insert the Switch Unit into the Pushbutton Unit. Otherwise, the Pushbutton Unit will be hooked incorrectly.
7. To remove the Switch, press the levers on both sides in the direction indicated by PUSH marks. Applying too much force may damage the Switch.
8. Remove the Switch Unit before you remove the Pushbutton Unit. If you loosen the mounting nut while the Switch Unit is still attached, you will damage the Pushbutton Unit.



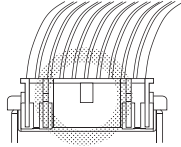
• Wiring

1. Do not wire the Switch while power is being supplied. Doing so may result in electric shock.
2. Make sure to insert the connector to the end. This may prevent the Switch from functioning to its full capability.
3. Do not subject the Switch to an excessive force when wiring. Fix the cables first to avoid the connector and cables from being pulled with. Otherwise, the connector may be disassembled or damaged, resulting in the contact damages.

Too much tension to the cables.



Appropriate force to the cables.



4. Refer to specification of each connector or catalogue for details of installing or wiring the terminal side of the connector.

Recommended connector;

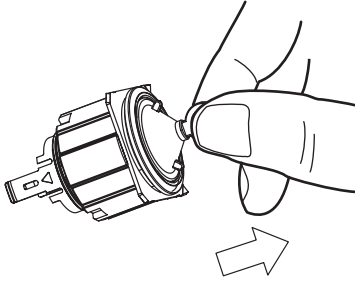
Manufacture	Name	Model	Applicable lead wire
J.S.T. Mfg Co.	Contact	SPHD-002T-P0.5	AWG#26 to 22
		SPHD-001T-P0.5	AWG#28 to 24
	Housing	PAP-10V-S	AWG#28 to 22

- Choose the applicable contact to the wire.

Precautions for Correct Use

• Attaching and Removing Caps and Legend Plungers Removal

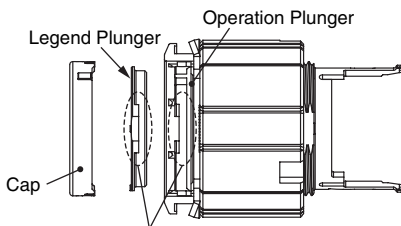
- 1) Use the A3UZ-3010 Cap Removal Suction Cup (sold separately) to remove the cap.



- 2) After you remove the cap, you can remove the legend plunger and engrave it. You cannot remove the legend plungers from Switches with IP65 protection.

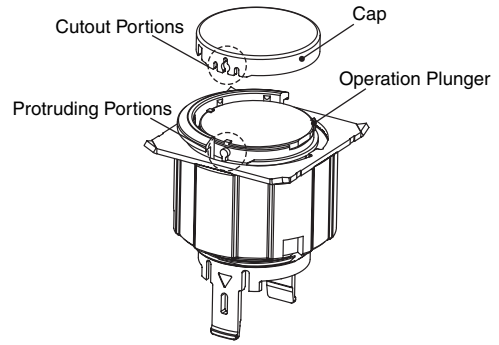
Attachment

- 1) The legend plunger fits in only one direction. Align the tabs on the legend plunger with the slots on the operation plunger and press the cap onto the operation plunger.



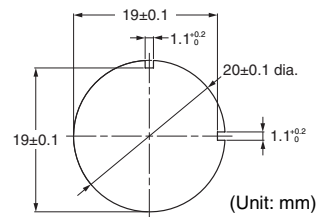
Insert the legend plunger so that the groove widths are lined up.

- 2) Attach the cap, aligning the slots on the slot on the cap with the tab on the operation plunger.



• Character Films

- 1) In addition to engraving characters on legend plungers, you can insert a character film to display characters. Applicable Character Film Size

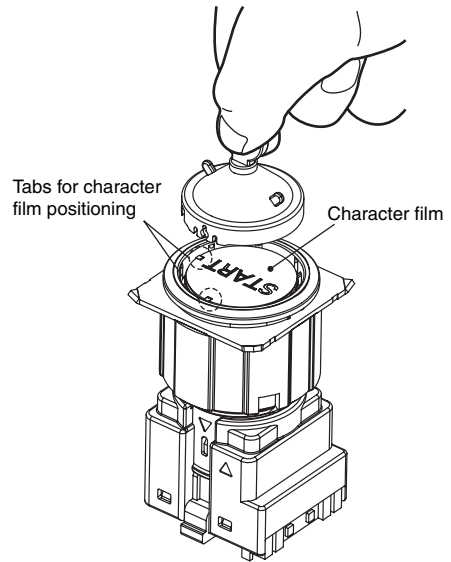


Thickness: 0.2 mm max.

Recommended material: Polyethylene

Note: A Character Film is not included with the product.

- 2) The following figure shows the tabs on the legend plunger that are used to position the character film.



Terms and Conditions of Sale

1. **Offer; Acceptance.** These terms and conditions (these "**Terms**") are deemed part of all quotes, agreements, purchase orders, acknowledgments, price lists, catalogs, manuals, brochures and other documents, whether electronic or in writing, relating to the sale of products or services (collectively, the "**Products**") by Omron Electronics LLC and its subsidiary companies ("**Omron**"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
2. **Prices; Payment Terms.** All prices stated are current, subject to change without notice by Omron. Omron reserves the right to increase or decrease prices on any unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice.
3. **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 (i) the invoice is paid according to Omron's payment terms and (ii) Buyer has no past due amounts.
4. **Interest.** Omron, at its option, may charge Buyer 1-1/2% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.
5. **Orders.** Omron will accept no order less than \$200 net billing.
6. **Governmental Approvals.** Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Products.
7. **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 Omron or required to be collected directly or indirectly by Omron 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 Omron.
8. **Financial.** If the financial position of Buyer at any time becomes unsatisfactory to Omron, Omron reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Omron may (without liability and in addition to other remedies) cancel any unshipped portion of Products sold hereunder and stop any Products in transit until Buyer pays all amounts, including amounts payable hereunder, whether or not then due, which are owing to it by Buyer. Buyer shall in any event remain liable for all unpaid accounts.
9. **Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.
10. **Force Majeure.** Omron 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.
11. **Shipping; Delivery.** Unless otherwise expressly agreed in writing by Omron:
 - a. Shipments shall be by a carrier selected by Omron; Omron will not drop ship except in "break down" situations.
 - b. Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer;
 - c. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Omron), at which point title and risk of loss shall pass from Omron to Buyer; provided that Omron shall retain a security interest in the Products until the full purchase price is paid;
 - d. Delivery and shipping dates are estimates only; and
 - e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
12. **Claims.** Any claim by Buyer against Omron for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Omron within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.
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