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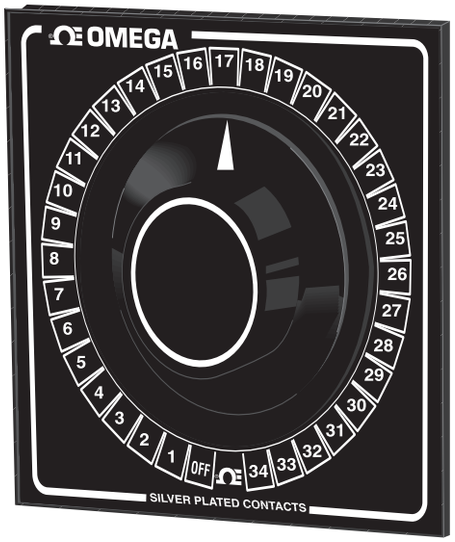

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1/4 DIN
96 x 96 mm (3.78")

OSW SERIES
76 x 76 mm (3.0")
127 x 127 mm (5.0")

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2. Model and serial number of the product, and
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When you receive the shipment, inspect the container and equipment for signs of damage. Note of any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

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The following items are supplied in the box:

- Rotary Selector Switch
- Mounting Hardware (hex nuts, lock washers, flat washers)
- Terminal Screws
- Terminal Washers
- Template
- Extension Bezel
- User's Guide

TABLE OF CONTENTS

SW14 1/4 DIN Series and OSW Series Rotary Selector Switches

SW14 Series

OSW Series

1 SW14 Series Introduction

1.1 General Description

The SW14 Series rotary selector switches are designed to provide isothermal, low-resistance switching in your temperature measuring circuits. The isothermal design minimizes temperature gradients between the input and the output thermocouple wiring to avoid the generation of thermal EMF's that add error to your thermocouple temperature measuring circuits. Temperature-sensitive resistance transducers such as RTD's and thermistors can be switched with confidence, knowing that the low contact resistance will not add any appreciable error to the measurement.

The SW14 models are 1/4DIN size and offer 2 to 34 positions in two, three or four-pole versions.

The SW14 selector switch can be mounted into an existing 1/4 DIN panel cutout.

To allow matching of a readout device in all switch positions, the "off" position of each switch may be shorted or left as an open circuit. Each pole is fully isolated. For quick and easy wiring, the terminals located at the rear of the switch are clearly marked.

All switches are available with the standard round knob, or a pistol-grip handle, and gold or silver plated contacts.

SW14 Series Switch Selection Guide

		Contact Action			
		Make Before Break		Break Before Make	
Number of Poles	Number of Positions	Silver-Plated Contacts Model Number	Gold-Plated Contacts Model Number	Silver-Plated Contacts Model Number	Gold-Plated Contacts Model Number
2	2	SW142-2-M	SW14G-2-M	SW142-2-B	SW14G-2-B
	4	SW142-4-M	SW14G-4-M	SW142-4-B	SW14G-4-B
	6	SW142-6-M	SW14G-6-M	SW142-6-B	SW14G-6-B
	8	SW142-8-M	SW14G-8-M	SW142-8-B	SW14G-8-B
	10	SW142-10-M	SW14G-10-M	SW142-10-B	SW14G-10-B
	12	SW142-12-M	SW14G-12-M	SW142-12-B	SW14G-12-B
	16	SW142-16-M	SW14G-16-M	SW142-16-B	SW14G-16-B
	18	SW142-18-M	SW14G-18-M	SW142-18-B	SW14G-18-B
	20	SW142-20-M	SW14G-20-M	SW142-20-B	SW14G-20-B
	24	SW142-24-M	SW14G-24-M	SW142-24-B	SW14G-24-B
	30	SW142-30-M	SW14G-30-M	SW142-30-B	SW14G-30-B
	34	SW142-34-M	SW14G-34-M	SW142-34-B	SW14G-34-B
3	2	SW143-2-M	SW14G3-2-M	SW143-2-B	SW14G3-2-B
	4	SW143-4-M	SW14G3-4-M	SW143-4-B	SW14G3-4-B
	6	SW143-6-M	SW14G3-6-M	SW143-6-B	SW14G3-6-B
	8	SW143-8-M	SW14G3-8-M	SW143-8-B	SW14G3-8-B
	10	SW143-10-M	SW14G3-10-M	SW143-10-B	SW14G3-10-B
	12	SW143-12-M	SW14G3-12-M	SW143-12-B	SW14G3-12-B
	16	SW143-16-M	SW14G3-16-M	SW143-16-B	SW14G3-16-B
	18	SW143-18-M	SW14G3-18-M	SW143-18-B	SW14G3-18-B
	20	SW143-20-M	SW14G3-20-M	SW143-20-B	SW14G3-20-B
	24	SW143-24-M	SW14G3-24-M	SW143-24-B	SW14G3-24-B
	30	SW143-30-M	SW14G3-30-M	SW143-30-B	SW14G3-30-B
	34	SW143-34-M	SW14G3-34-M	SW143-34-B	SW14G3-34-B
4	2	SW144-2-M	SW14G4-2-M	SW144-2-B	SW14G4-2-B
	4	SW144-4-M	SW14G4-4-M	SW144-4-B	SW14G4-4-B
	6	SW144-6-M	SW14G4-6-M	SW144-6-B	SW14G4-6-B
	8	SW144-8-M	SW14G4-8-M	SW144-8-B	SW14G4-8-B
	10	SW144-10-M	SW14G4-10-M	SW144-10-B	SW14G4-10-B
	12	SW144-12-M	SW14G4-12-M	SW144-12-B	SW14G4-12-B
	16	SW144-16-M	SW14G4-16-M	SW144-16-B	SW14G4-16-B
	18	SW144-18-M	SW14G4-18-M	SW144-18-B	SW14G4-18-B
	20	SW144-20-M	SW14G4-20-M	SW144-20-B	SW14G4-20-B
	24	SW144-24-M	SW14G4-24-M	SW144-24-B	SW14G4-24-B
	30	SW144-30-M	SW14G4-30-M	SW144-30-B	SW14G4-30-B
	34	SW144-34-M	SW14G4-34-M	SW144-34-B	SW14G4-34-B

*To order with optional pistol grip handle add suffix '-**PG**' to model number.*

2 SW14 Series Wiring Procedure

2.1 Wiring Procedure

When a switch is used for thermocouple circuitry, it is important that the switch terminals are in a uniform temperature environment. For example, cool or hot air drafts should be avoided. Environmental temperature gradients can introduce errors in thermocouple readings in spite of the switch's isothermal design.

The switch input wiring connections are housed in a circular base unit defined as a single pole. Standard pole configurations consist of two, three, or four poles. The end user determines which pole is "+" and "-". The terminal at the "contact rings" is used to connect to the readout instrument.

Connect the inputs to each pole while maintaining a uniform color code. Thermocouple circuits use red for the negative, and in RTD circuits, red indicates positive. It does not matter which terminals are used as long as the output is wired in the same manner as the input. As the selector is rotated, each pole will be connected in turn to the output without crossing the circuit wires.

The quick wire ring acts to guide the stripped lead directly under the head of the terminal screws. At that point the screw can be Lowered t fasten the wire securely (see diagram, page 2-2).

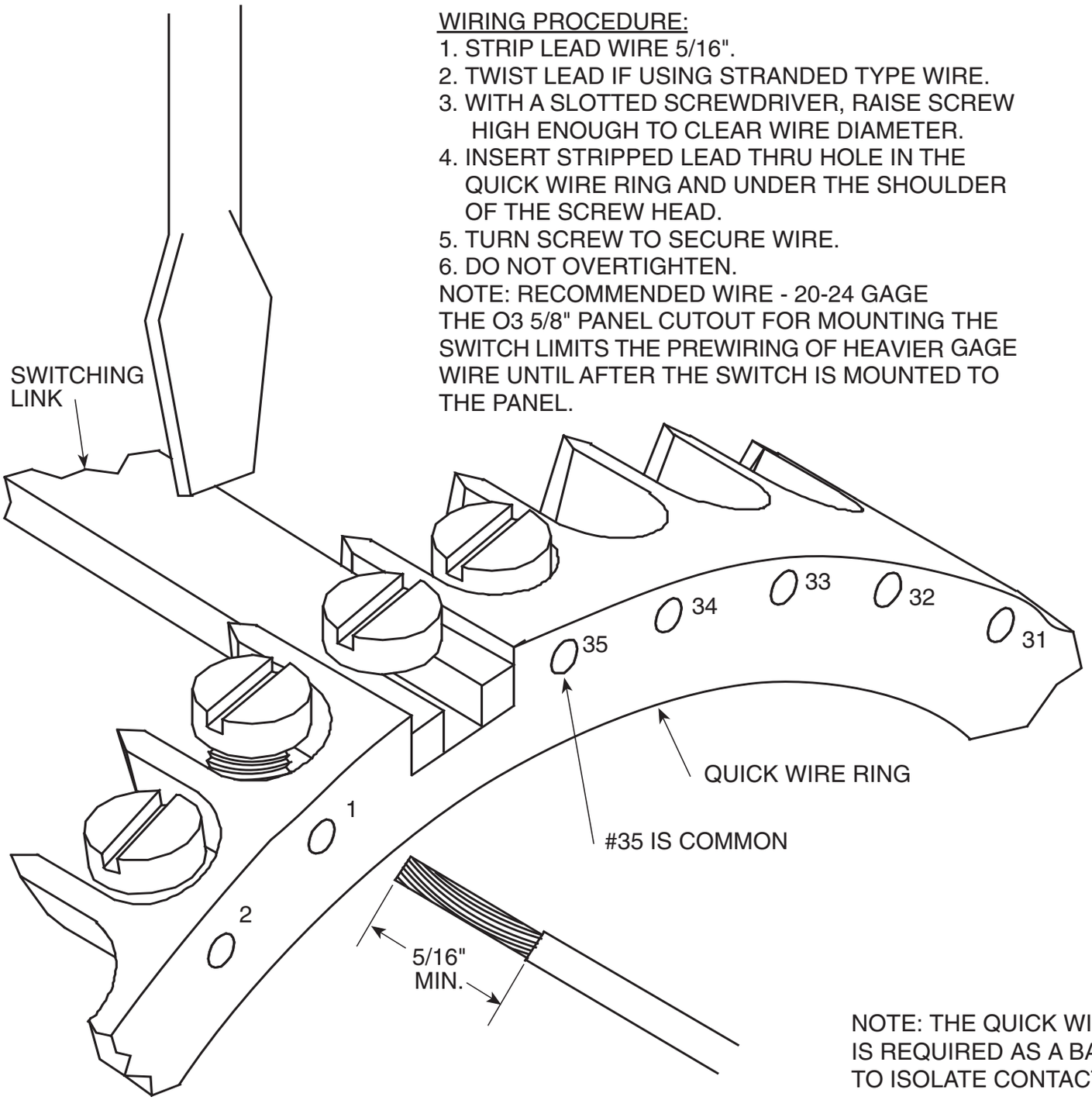
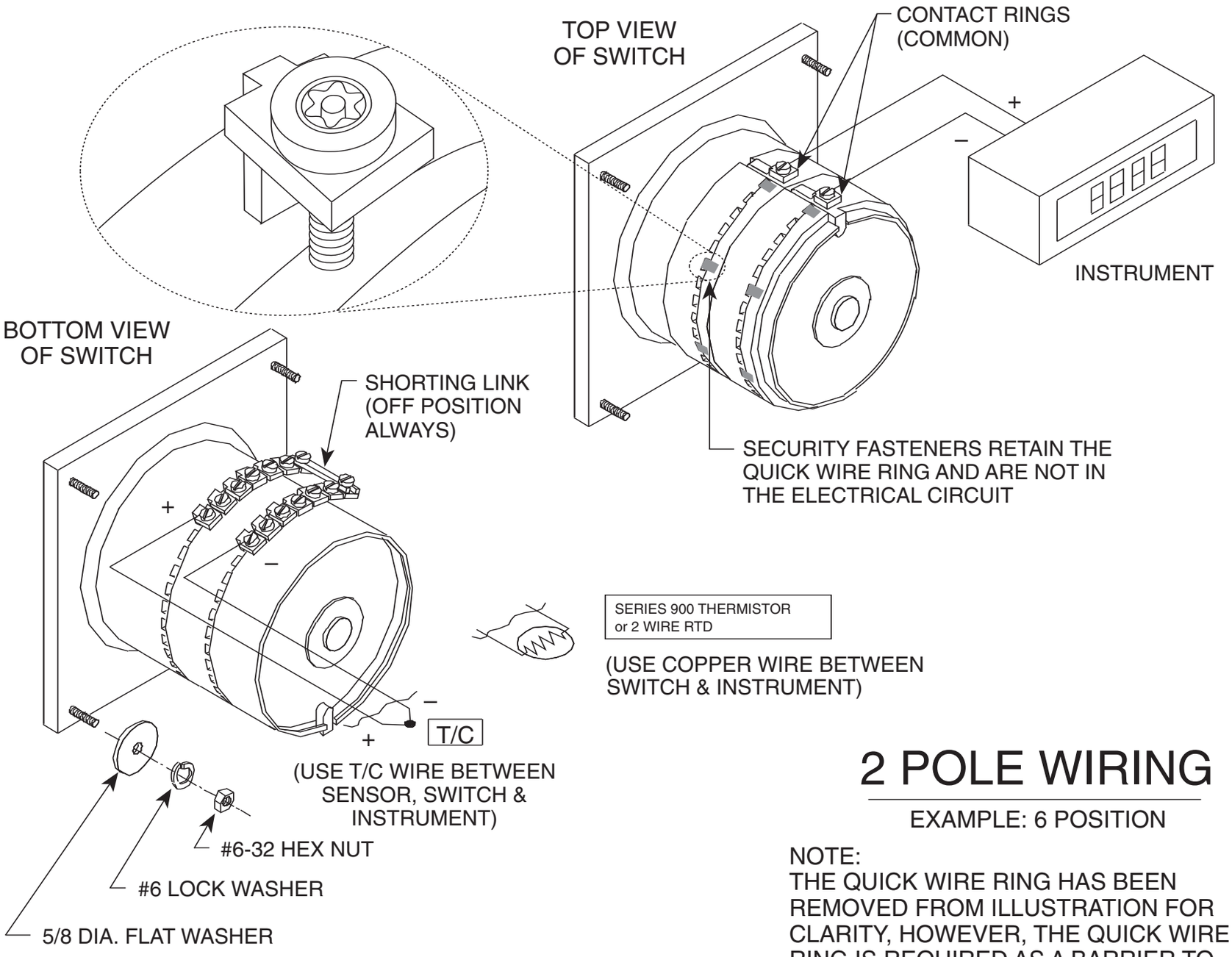


Figure 2-1. SW14 Series Wiring Procedure

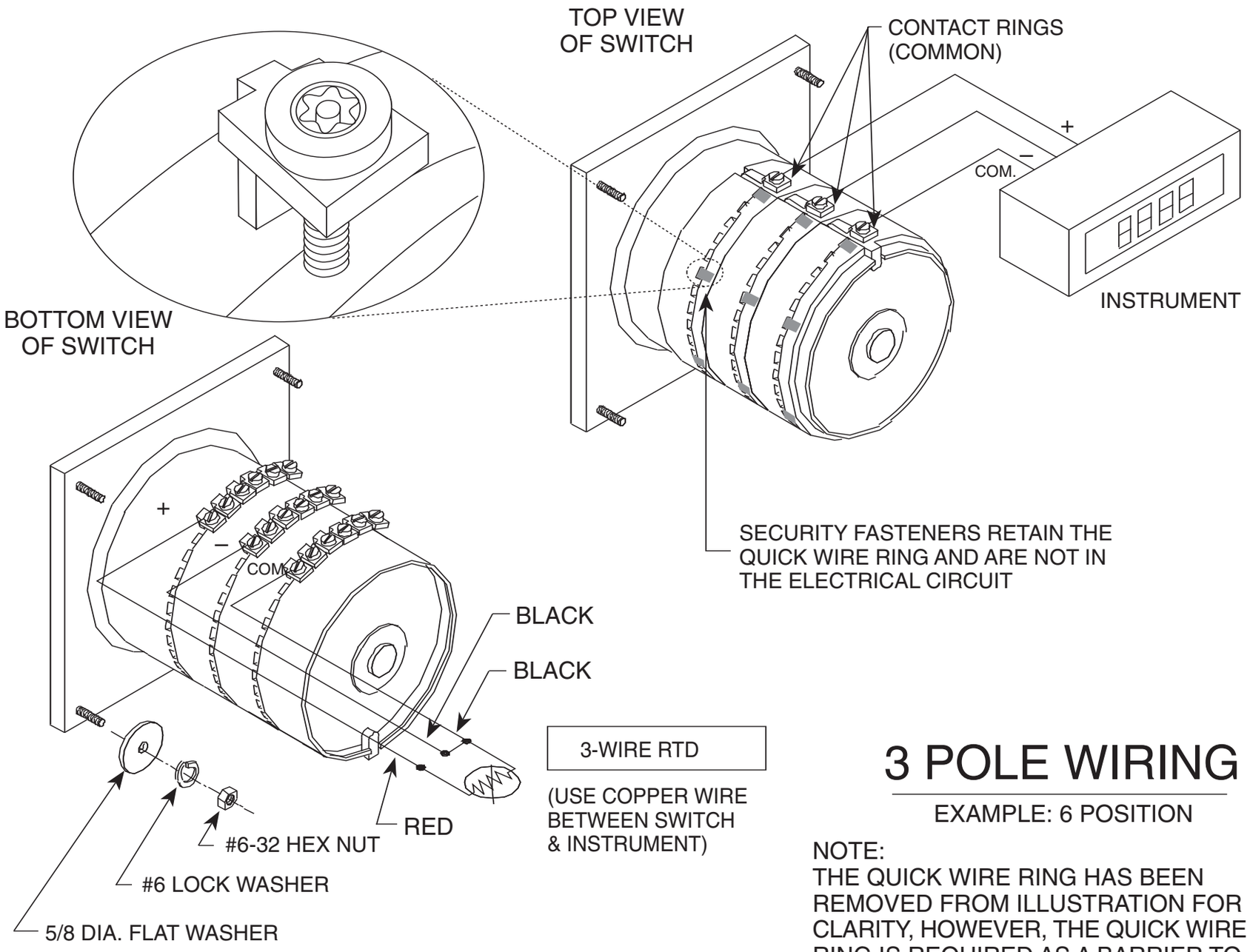


2 POLE WIRING

EXAMPLE: 6 POSITION

NOTE:
THE QUICK WIRE RING HAS BEEN REMOVED FROM ILLUSTRATION FOR CLARITY, HOWEVER, THE QUICK WIRE RING IS REQUIRED AS A BARRIER TO ISOLATE CONTACTS.

Figure 2-2. SW14 Series 2 Pole Wiring

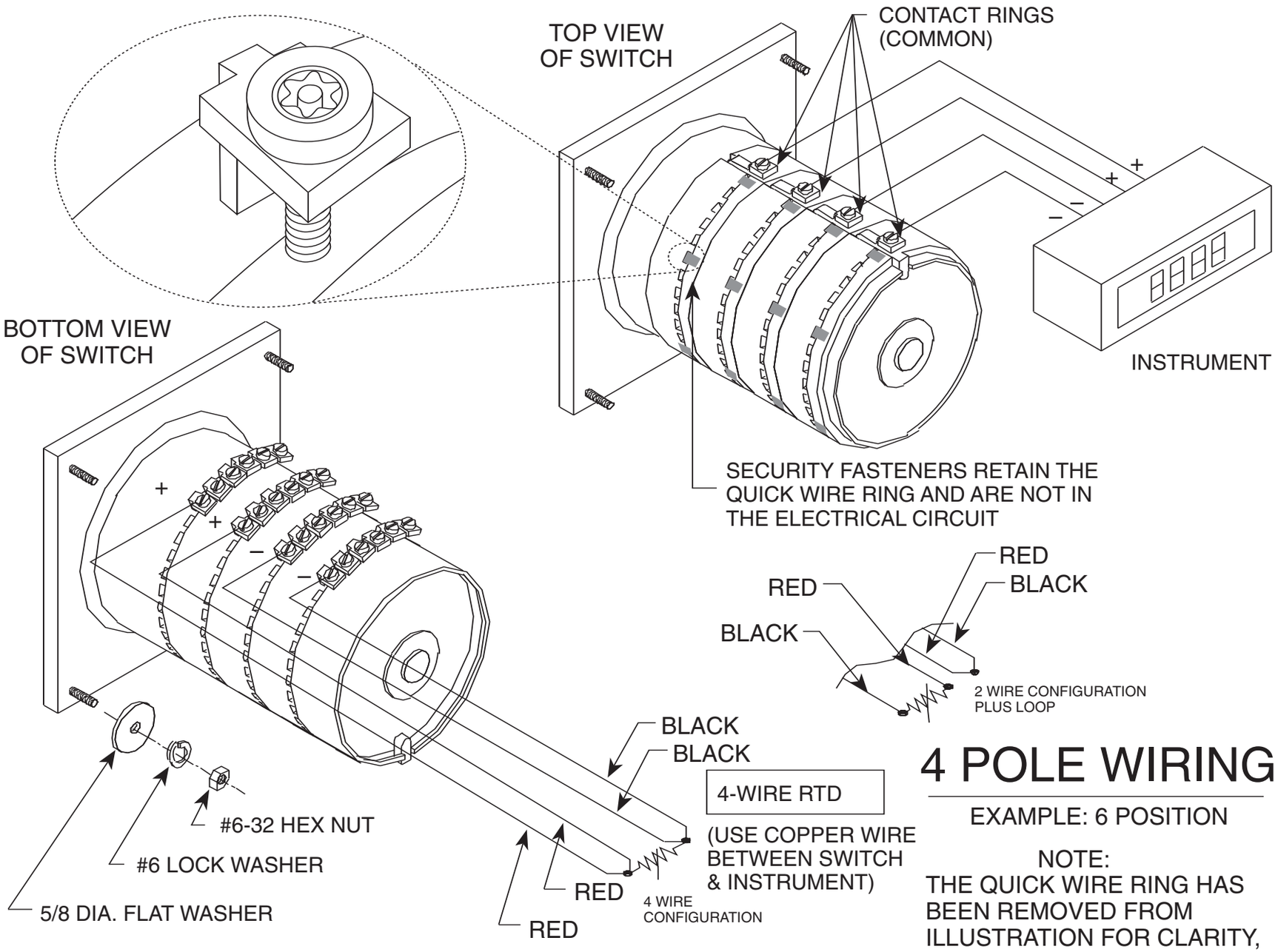


3 POLE WIRING

EXAMPLE: 6 POSITION

NOTE:
THE QUICK WIRE RING HAS BEEN REMOVED FROM ILLUSTRATION FOR CLARITY, HOWEVER, THE QUICK WIRE RING IS REQUIRED AS A BARRIER TO ISOLATE CONTACTS.

Figure 2-3. SW14 Series 3 Pole Wiring



4 POLE WIRING

EXAMPLE: 6 POSITION

NOTE:
THE QUICK WIRE RING HAS BEEN REMOVED FROM ILLUSTRATION FOR CLARITY, HOWEVER, THE QUICK WIRE RING IS REQUIRED AS A

Figure 2-4. SW14 Series 4 Pole Wiring

3.1 Mounting the switch into a 1/4 DIN Panel Cutout

1. Cut out jack panel to 3.622" x 3.622" (92mm x 92 mm dimensions.
2. Pass the switch through the panel cutout.
3. Apply the hardware provided in the order shown in Figure 3-1.
4. Tighten nuts.

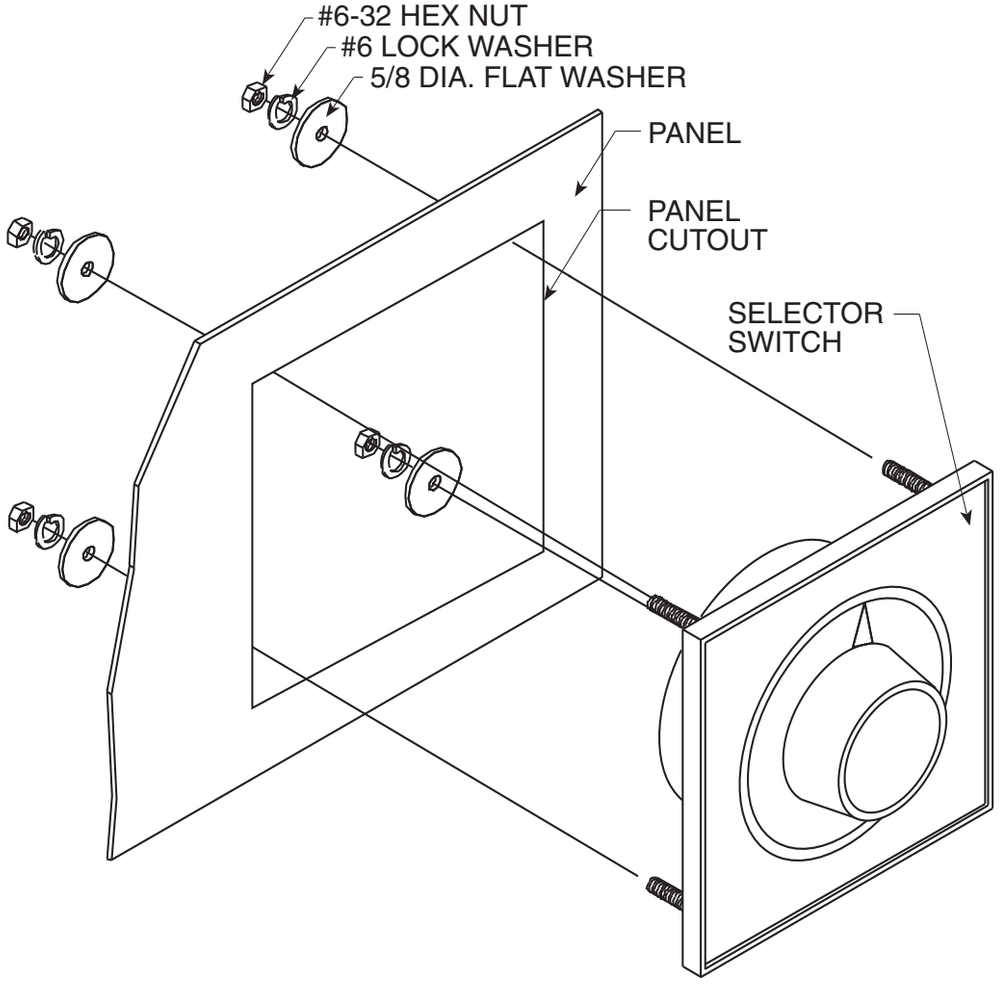


Figure 3-1. 1/4 DIN Panel Mounting

3.2 Standard Panel Mounting

1. Use the template provided to make a panel cut.
2. Pass the switch through the panel cutout, aligning the mounting studs through the holes.
3. Apply the hardware provided in the order shown in Figure 3-2.
4. Tighten nuts.

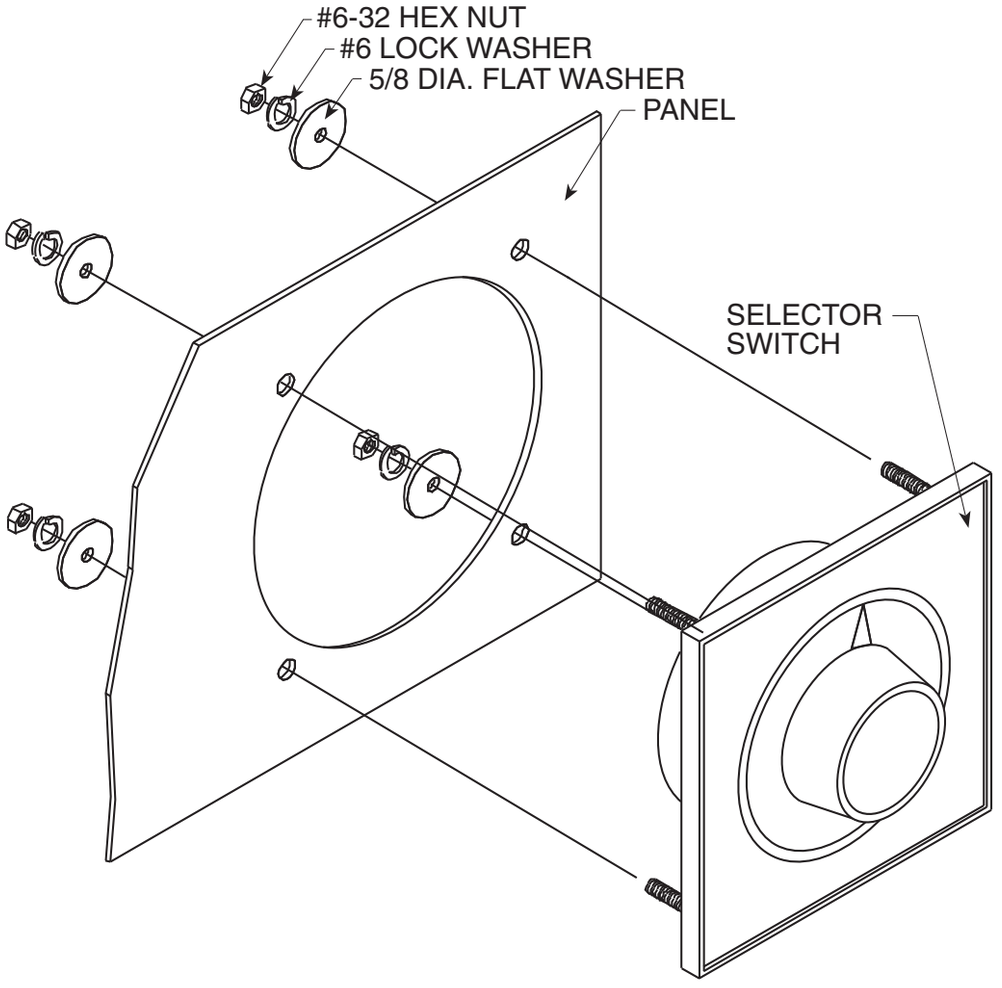
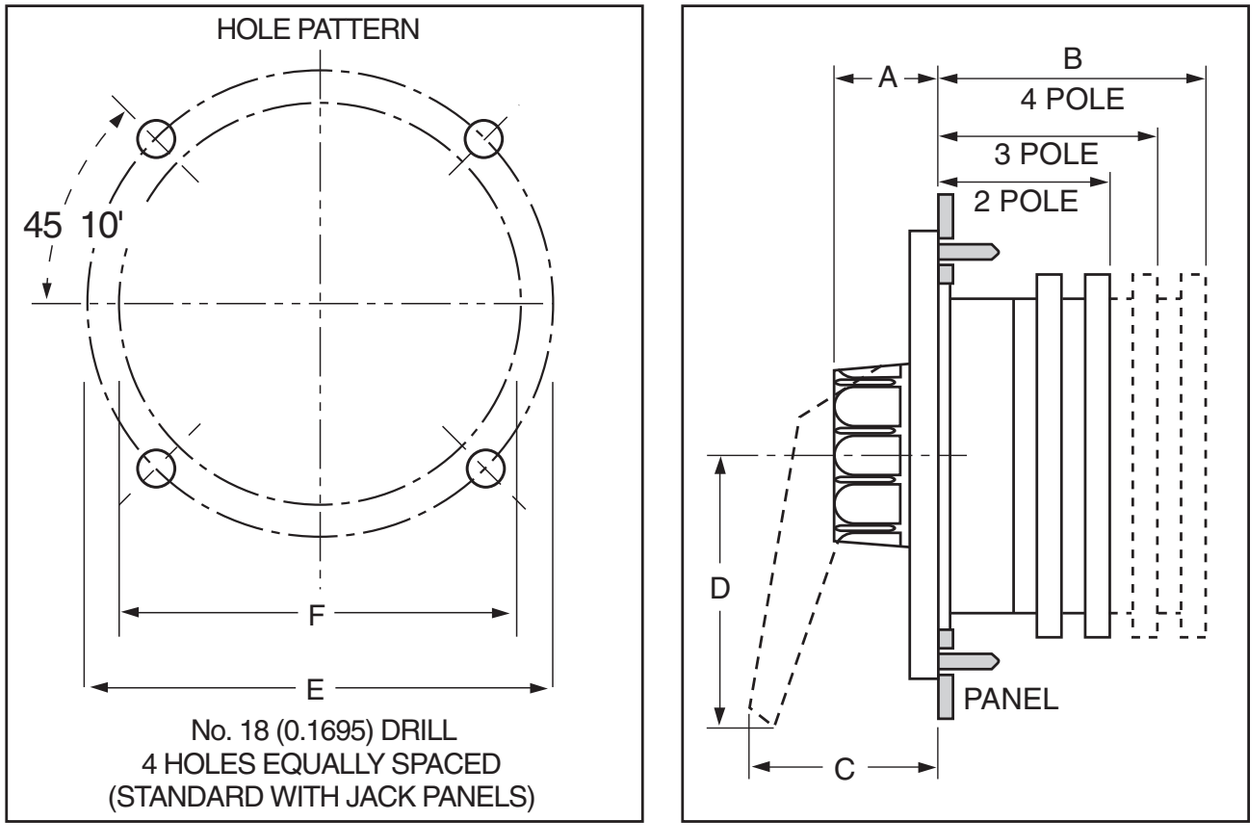


Figure 3-2. Selector Switch Standard Panel Mounting



Switch Size	Dim. A mm (in)	Dim. B mm (in)	Dim. C mm (in)	Dim. D mm (in)	Dim. E mm (in)	Dim. F mm (in)	Bezel Size mm (in)
¼ DIN 2 Pole	28 (1 3/32")	63 (2 13/32")	43 (1.71")	67 (2 5/8")	4.812 Dia	3 5/8" Dia	96 (3.78")
¼ DIN 3 Pole	28 (1 3/32")	82 (3 5/32")	43 (1.71")	67 (2 5/8")	4.812 Dia	3 5/8" Dia	96 (3.78")
¼ DIN 4 Pole	28 (1 3/32")	101 (3 29/32")	43 (1.71")	67 (2 5/8")	4.812 Dia	3 5/8" Dia	96 (3.78")

Figure 3-3. Standard Dimensions

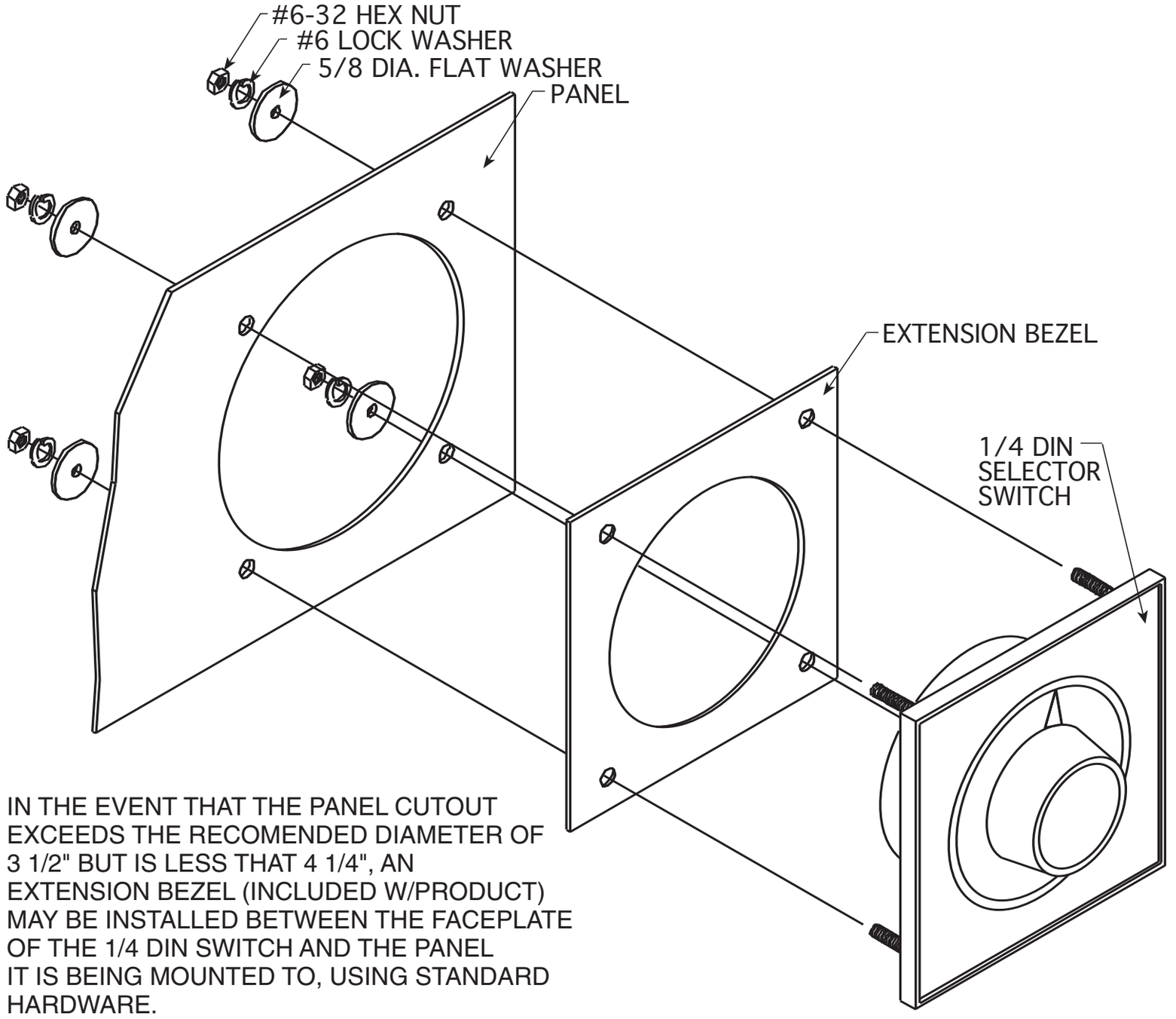


Figure 3-4. Installing an Extension Bezel

4 SW14 Series Specifications

Insulation Resistance:	**20MΩ at 300 volts dc**
Contact Resistance:	**0.004Ω or less**
Case Material:	**Noryl SPN-420**
Weight:	
2-pole switch:	**3/4 lbs.**
3-pole switch:	**1 lb.**
4-pole switch:	**1 1/4 lb.**
Hardware and box:	**3/4 lbs.**
Continuous Use Temperature:	**110°C**

5 OSW Series Introduction

5.1 General Description

The OSW Series rotary selector switches are designed to provide isothermal, low-resistance switching in your temperature measuring circuits. the isothermal design minimizes temperature gradients between the input and the output thermocouple wiring to avoid the generation of thermal EMF's that add error to your thermocouple temperature measuring circuits. Temperature-sensitive resistance transducers such as RTD's and thermistors can be switched with confidence, knowing that the low contact resistance will not add any appreciable error to the measurement.

The OSW two-pole switches are available in either 3" or 5" diameter housing, depending on the number of positions (refer to Selection Guides on page 5-2). All of the three-pole versions have a 5" diameter housing. Two to 40 positions, in addition to OFF, are available in a designer style unbreakable Noryl case. (Note that the 3-pole version has no OFF position).

To allow matching of a readout device in all switch positions, the "off" position of each switch may be shorted of left as an open circuit. Each pole is fully isolated. For quick and easy wiring, the terminals located at the rear of the switch are clearly marked.

All switches are available with the standard round knob, or a pistol-grip handle, and gold or silver plated contacts.

OSW/OSWG Switch Selection Guide

No. of Poles	Number of Positions	Contact Action	Size (mm)	Silver Plated Contacts Model Number	Gold Plated Contacts Model Number
2 POLE	2	Break Before Make	3" (76.2)	OSW3-2	OSWG3-2
	3			OSW3-3	OSWG3-3
	4			OSW3-4	OSWG3-4
	5			OSW3-5	OSWG3-5
	6			OSW3-6	OSWG3-6
	8			OSW3-8	OSWG3-8
	9			OSW3-9	OSWG3-9
	10			OSW3-10	OSWG3-10
	12	Make Before Break	3" (76.2)	OSW3-12	OSWG3-12
	14			OSW3-14	OSWG3-14
	16			OSW3-16	OSWG3-16
	18			OSW3-18	OSWG3-18
	20			OSW3-20	OSWG3-20
	24		5" (127)	OSW5-24	OSWG5-24
	28			OSW5-28	OSWG5-28
	30			OSW5-30	OSWG5-30
	32			OSW5-32	OSWG5-32
	36			OSW5-36	OSWG5-36
	40			OSW5-40	OSWG5-40
3 POLE	6	Make Before Break	5" (127)	OSWT-6	OSWGT-6
	10			OSWT-10	OSWGT-10
	12			OSWT-12	OSWGT-12
	18			OSWT-18	OSWGT-18
	20			OSWT-20	OSWGT-20
	24			OSWT-24	OSWGT-24
	28			OSWT-28	OSWGT-28
	30			OSWT-30	OSWGT-30
	32			OSWT-32	OSWGT-32
	36			OSWT-36	OSWGT-36
	40			OSWT-40	OSWGT-40

To order with optional pistol grip, add suffix '-PG' to model no.

Ordering Example: *OSWG3-20-PG, 76.2 mm (3") switch, 20 positions, gold contacts, with optional pistol grip.*

6 OSW Series Wiring Procedure

6.1 Wiring Procedure

In most cases, the switches are used to connect one of several Alternative sensor inputs to a single instrument. The instructions that follow apply to this usual case. However, the rotary switch is bi-directional and can also connect a single input to one of several outputs.

When an OSW switch is used for thermocouple circuitry, make sure that the switch terminals are in a uniform temperature environment. Avoid hot or cool air drafts. Environmental temperature gradients can introduce error in thermocouple readings in spite of the switch's isothermal design.

The switch input wiring connections are at the rear of the housing, arranged in concentric rings. The outermost ring is labeled "+", the next is "-", and in three-pole models, the innermost ring is labeled "COM". The output terminals are inside the concentric rings of terminals and are labeled "+,-,COM" to match the inputs.

Attach the input and output leads to the terminals with the screws and washers supplied in a separate package with each rotary switch.

The switches are also supplied with a screw and nut to provide a short circuit for the OFF position, if desired. Figure 6-1 shows the terminal configuration of the two-pole models as well as the attachment hardware. Figure 6-2 shows the wiring configuration for two-pole models. Figures 6-3 and 6-4 show the terminal configuration and wiring for three-pole switches.

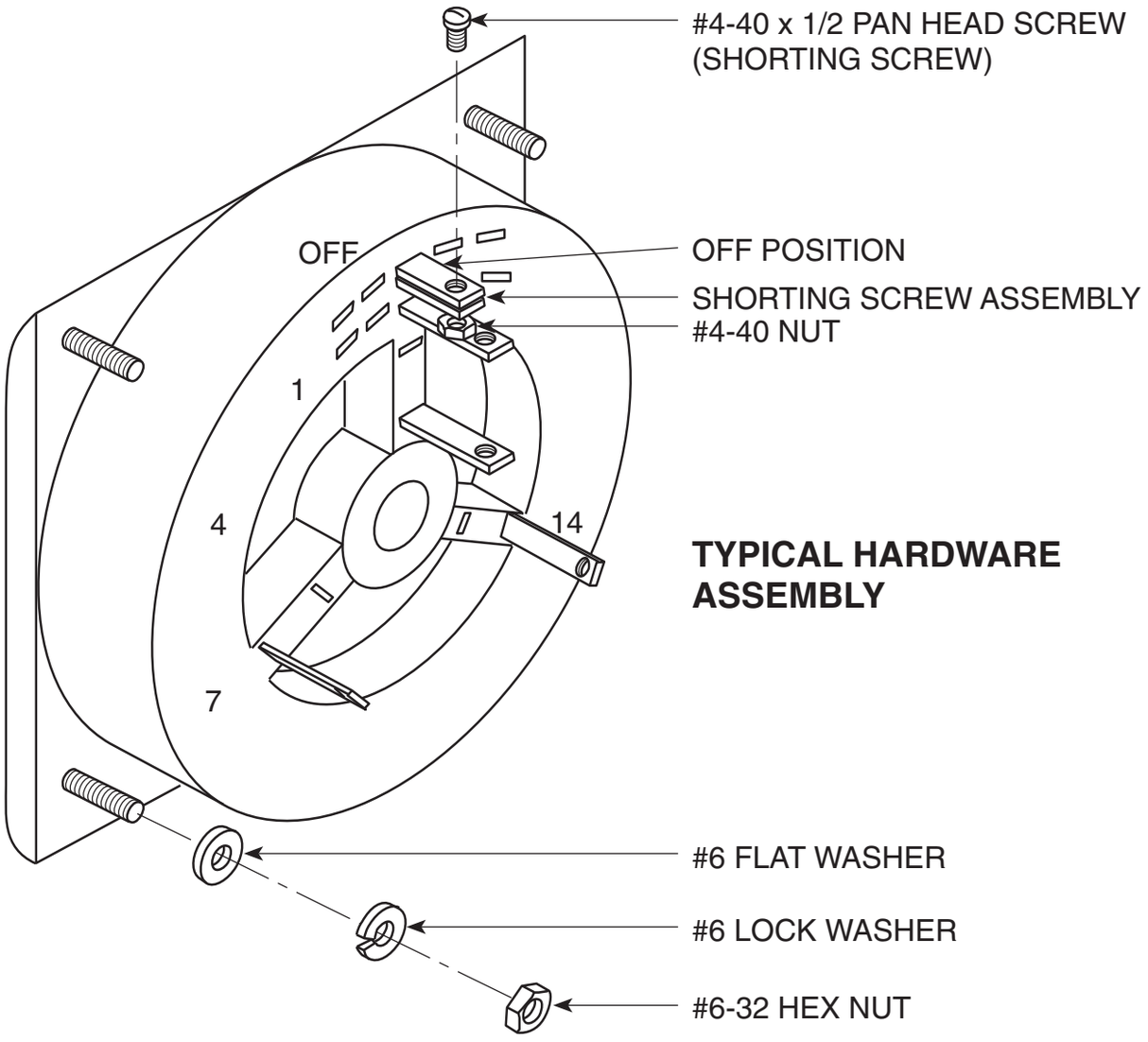


Figure 6-1. OSW Two-Pole Switch and Hardware - Rear View

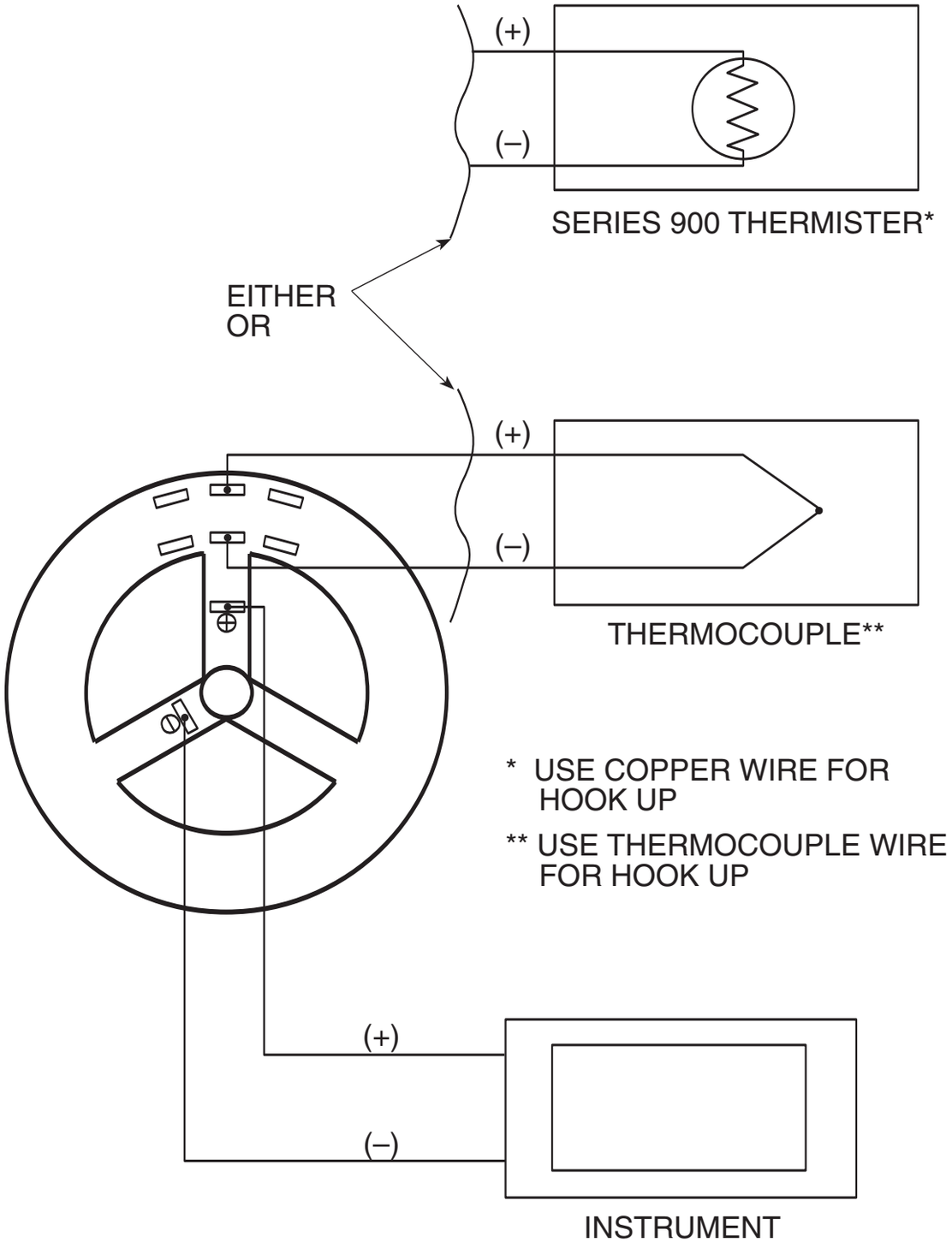


Figure 6-2. OSW Two-Pole Switch and Hardware - Rear View

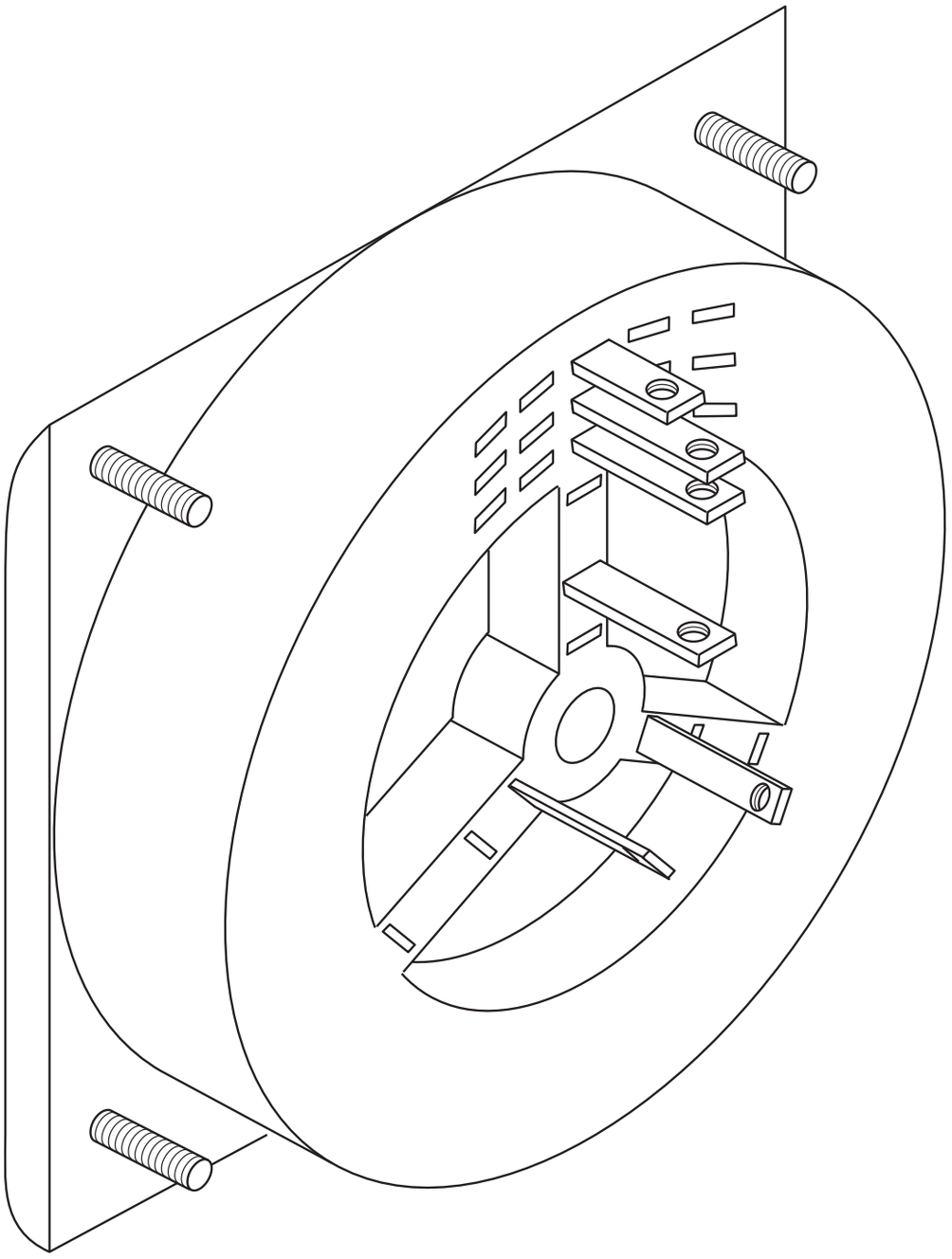


Figure 6-3. OSW Three-Pole Switch (hardware not shown) Rear View

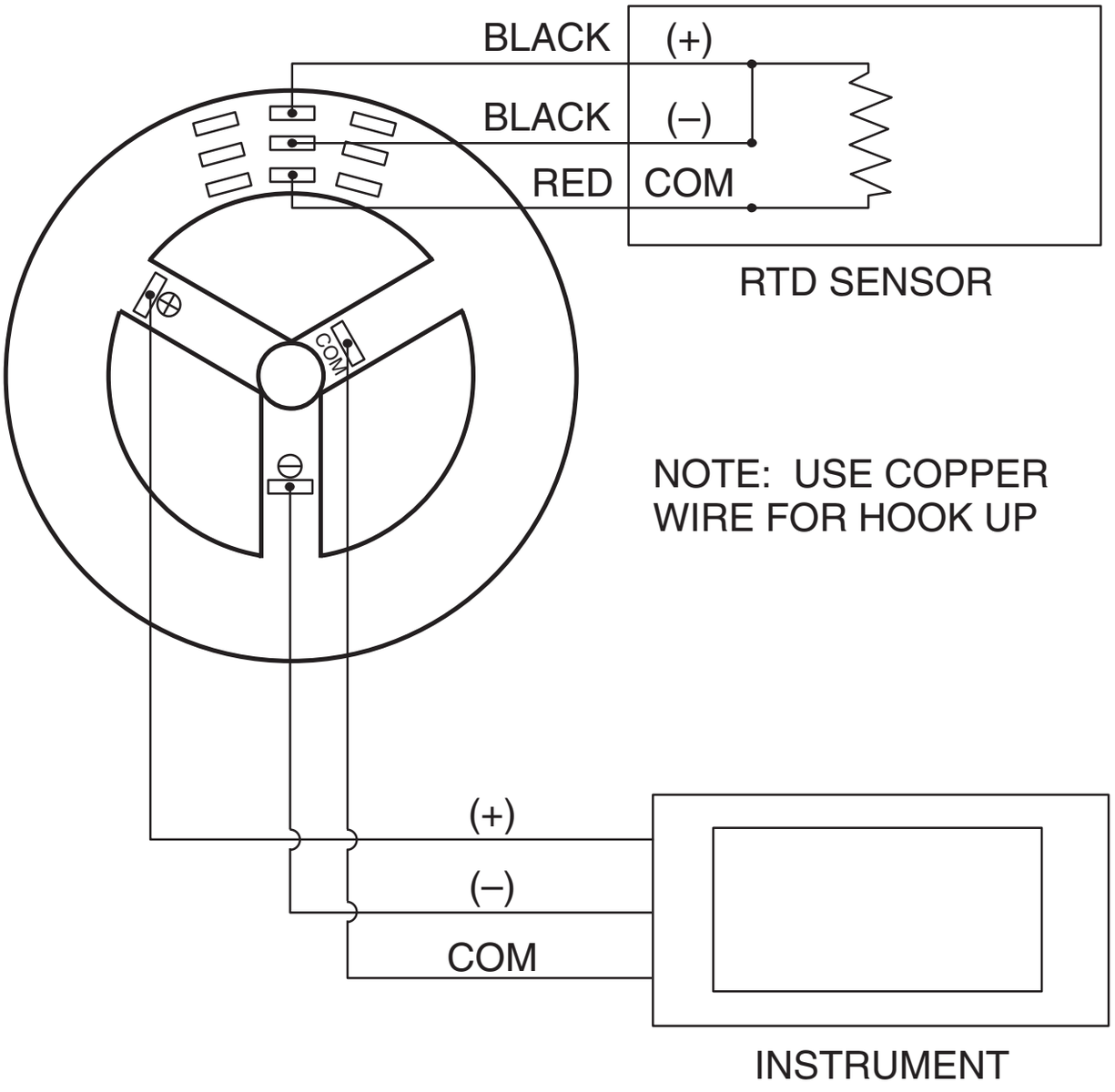


Figure 6-4. OSW Three-Pole Wiring

7 OSW Series Mounting Procedure

1. Use the template provided to make a panel cutout.

2. Pass the switch through the panel cutout, aligning the mounting studs through the holes.

3. Apply the hardware provided in the order shown in Figure 7-1.

4. Tighten nuts.

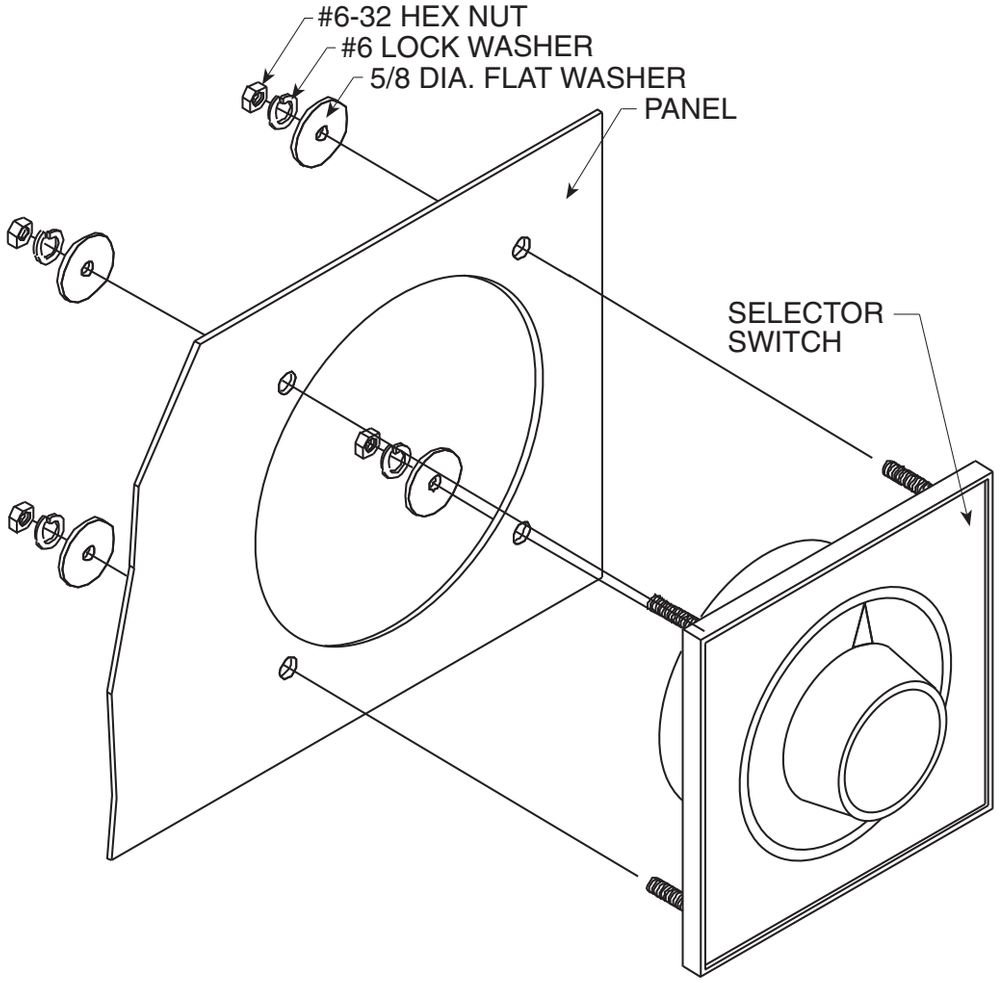
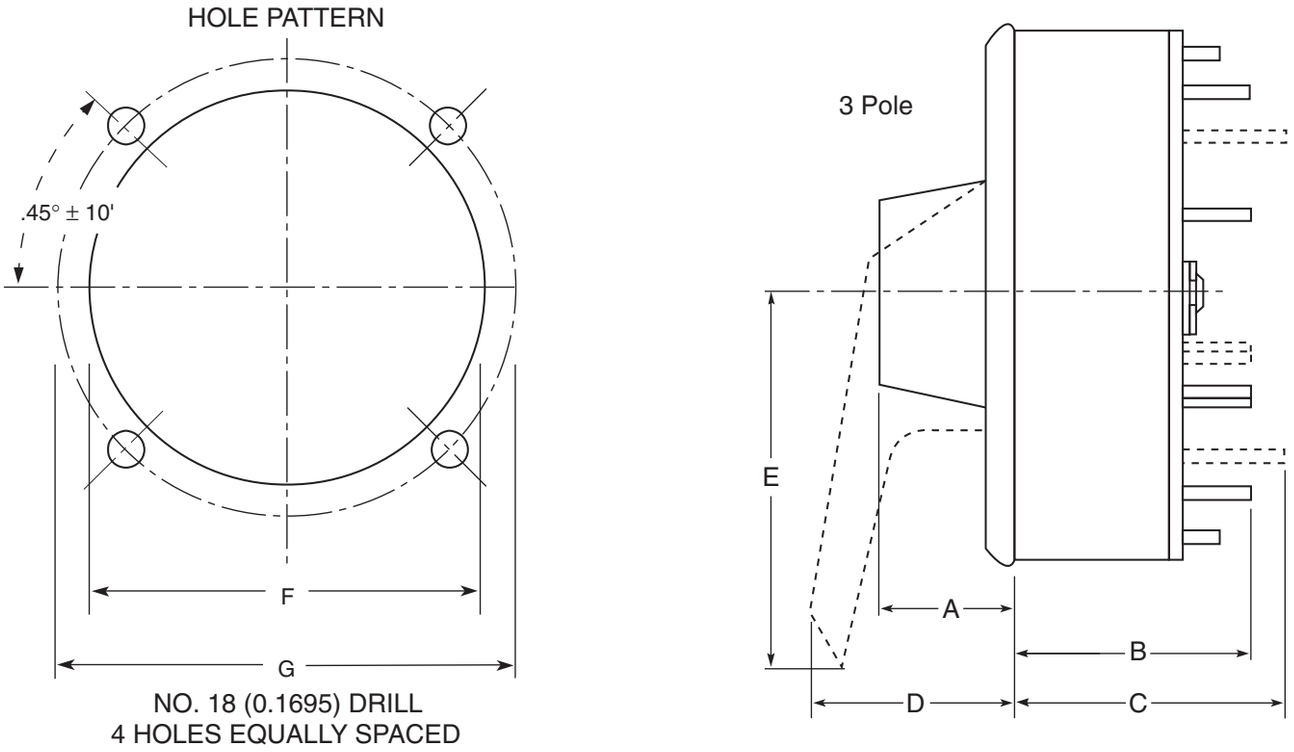
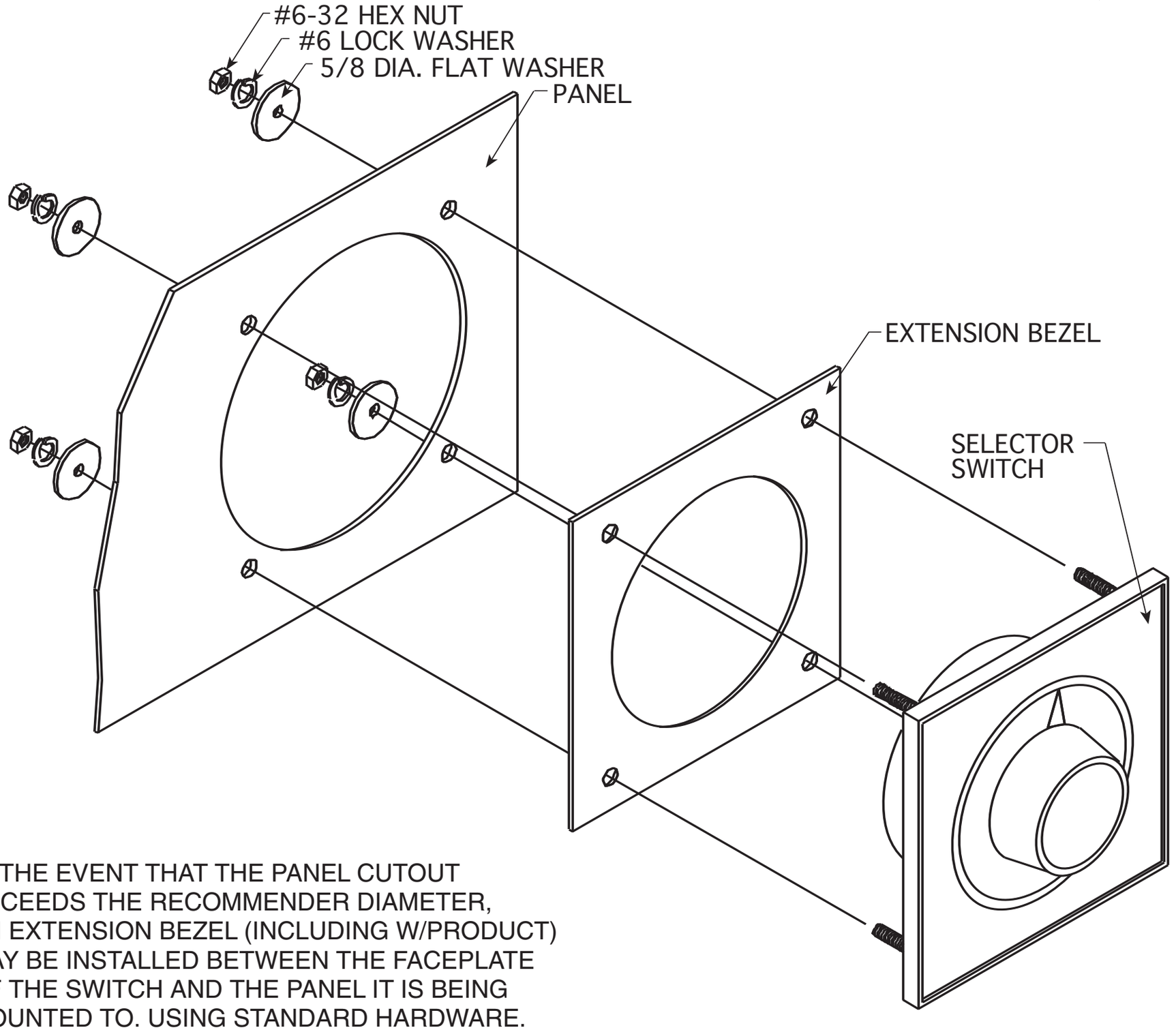


Figure 7-1. Mounting the Selector Switch



Switch Size	Dim. A mm (in)	Dim. B* mm (in)	Dim. C mm (in)	Dim. D mm (in)	Dim. E mm (in)	Bezel Size mm (in)	Dim. F mm (in)	Dim. G mm (in)
76 mm (3")	28.6 (1⅛")	54 (2⅛")	62 (2⁷⁄₁₆")	44.4 (1¾")	66.7 (2⅝")	82.55 (3¼")	80.9 (3.187")	94.2 (3.71")
127 mm (5")	38.1 (1½")	54 (2⅛")	62 (2⁷⁄₁₆")	58.7 (2⁵⁄₁₆")	92.07 (3⅝")	133.35 (5¼")	131.75 (5.187")	166.12 (6.54")

Figure 7-2. OSW Series Dimensions



IN THE EVENT THAT THE PANEL CUTOUT EXCEEDS THE RECOMMENDER DIAMETER, AN EXTENSION BEZEL (INCLUDING W/PRODUCT) MAY BE INSTALLED BETWEEN THE FACEPLATE OF THE SWITCH AND THE PANEL IT IS BEING MOUNTED TO. USING STANDARD HARDWARE.

Figure 7-3. Installing an Extension Bezel

8 OSW Series Specifications

Insulation Resistance:	**20MΩ at 300 volts dc**
Contact Resistance:	**0.004Ω or less**
Case Material:	**Noryl 731**
Weight:	
3" switch:	**3/4 lbs.**
5" switch:	**1 1/4 lbs.**
Hardware and box:	**3/4 lbs.**
Continuous Use Temperature:	**110°C**

NOTES

MADE IN USA

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

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