

UP TO 3 POSITIONS WITH 3 OPTIONAL, INDEPENDENT LED LIGHT POSITIONS

Used in the heavy equipment, marine, process control and instrumentation markets, the R2 rotary switch is an excellent replacement for rocker switches, offering improved visual position indication, additional lighting options and different styling opportunities on front panels. The R2 is a sealed, lighted rotary switch which snaps into a 1.475" x 0.875" industry standard rocker switch panel opening. The rotary knob snaps onto a shaft and can be installed by the panel builder for those desiring that flexibility. The R2 rotary switch provides up to three positions in all combinations of momentary and maintained action. It is capable of handling loads from logic level up to 20 amps resistive. Sealing is to IP68S via a shaft O-ring seal in front and a potted base in the back. Termination options include 0.250" faston or a snap-on modular connector. The R2 offers unique lighting options including up to three independent LED light positions which illuminate a lens on the rotary knob. This design provides more lighting options than traditional rocker switches, handles the full range of electrical loads and is robust enough to survive in the most demanding applications.



## Features:

- **Sealed watertight per IP68S**
- **Snap-in panel mounting into industry standard 1.475" x 0.875" panel cutout**
- **Unique lighting options—up to 3 independent LED light positions**
- **Plastic or Soft Touch knob options available**
- **2 or 3 positions in all combinations of momentary & maintained action**
- **Termination can be used as 0.250" faston or with snap-on modular connector**



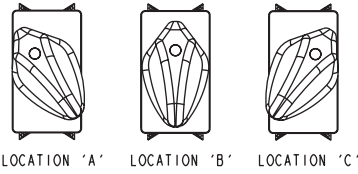
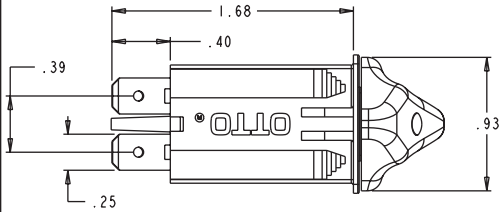
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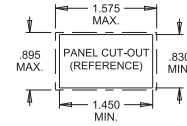
Standard Characteristics/Ratings:		
<b>ELECTRICAL RATINGS:</b>		
Load	Sea Level @ 12/28VDC	Sea Level @ 125VAC
Resistive	20A	16A
Inductive	15A	15A
Lamp	4A	4A
Motor	0.5HP @ 110VAC	
DWV	1000Vrms except across light terminals	
Logic Level	10mA @ 5VDC, max D.C. logic level ratings (void if logic level load(s) exceeded at any time)	
<b>Electrical Life:</b>	25,000 cycles at full load	
<b>Lighting:</b>	LED 2V, 6V, 12V, 24V (VDC)	
<b>Mechanical Life:</b>	100,000 cycles	
<b>Seal:</b>	IP68S	
<b>Operating Temp Range:</b>	-40°C to +85°C	
<b>MATERIALS:</b>		
<b>Case:</b>	Thermoplastic	
<b>Knob:</b>	Thermoplastic	
<b>Lens:</b>	Thermoplastic, clear	
<b>Terminals:</b>	Copper, silver plate, gold plate for logic level	
<b>Contacts:</b>	Silver alloy, gold plate for logic level	
<b>Terminal Hardware:</b>	R2 recommended Quick Connect terminals: AMP 60253-2 for 12-16 AWG AMP 42100-2 for 14-18 AWG	
<b>Mounting Hardware:</b>	None provided	

# ROTARY SWITCH

UP TO 3 POSITIONS WITH 3 OPTIONAL, INDEPENDENT LED LIGHT POSITIONS

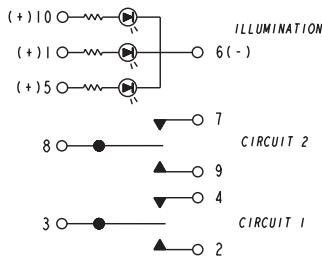


PANEL THICKNESS RANGE OF .025 - .105 A GASKET IS RECOMMENDED  
 PANEL THICKNESS RANGE OF .105 - .187 W/O GASKET  
 PANEL OPENING: MIN. TYP. MAX.  
 WIDTH .830 .853 .895  
 LENGTH 1.450 1.513 1.575

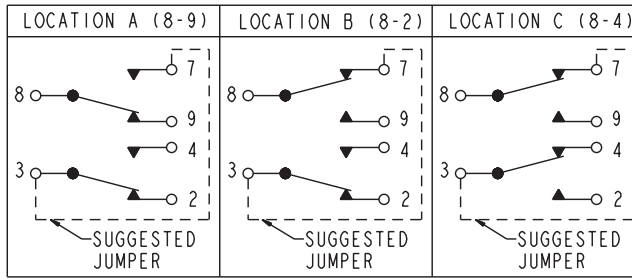


KNOB LOCATION DETAILS

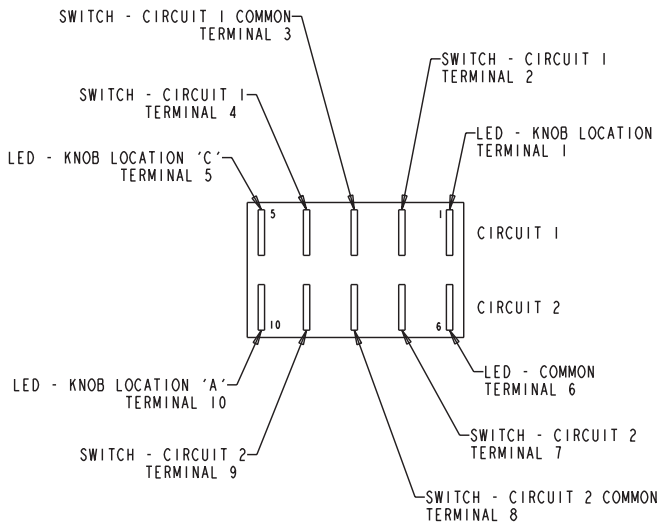
## ELECTRICAL SCHEMATICS



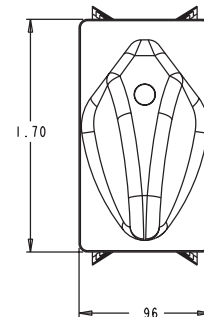
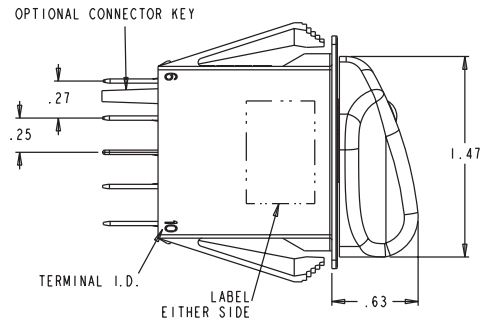
GENERIC SWITCH SCHEMATIC  
 USE TERMINALS AS APPLICABLE  
 TO PART NUMBER



SPIT SCHEMATIC  
 USE R2XXXX7XXXX FOR (8-9),(8-2),(8-4)  
 USE R2XXXX74XXXX FOR (OFF),(8-2),(8-4)  
 USE R2XXXX67XXXX FOR (8-9),(8-2),(OFF)



TERMINAL LOCATION AS VIEWED  
 FROM THE BOTTOM OF THE SWITCH



• R2 panel plugs available as shown in Panel Plugs (PP) section.

# ROTARY SWITCH

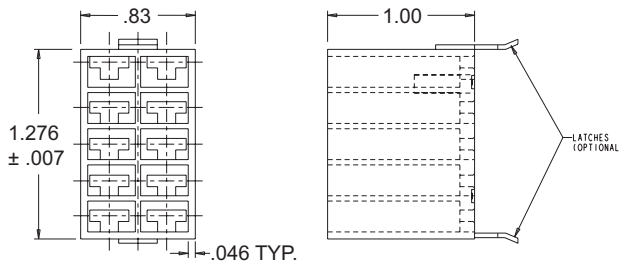
**R2**  
LIGHTED  
ROTARY

UP TO 3 POSITIONS WITH 3 OPTIONAL, INDEPENDENT LED LIGHT POSITIONS

## R2 SERIES PART NUMBER CODE

R2	X	X	XX	X	X	X	X	X	X	X				
Terminal Style/ Switch Rating	Knob Color & Texture	Switch Action			Switch Circuit 1 Terminals 2, 3, 4			Switch Circuit 2 Terminals 7, 8, 9			LED Light Source Voltage*	Light Source Color		
		Knob Location "A"	Knob Location "B"	Knob Location "C"	Knob Location "A"	Knob Location "B"	Knob Location "C"	Knob Location "A"	Knob Location "B"	Knob Location "C"	N. NONE A. 2V B. 6V C. 12V D. 24V	Location "A"	Location "B"	Location "C"
<b>A.</b> Without Terminal Barriers, With Connector Keying Pin, Standard Rating	<b>A.</b> Black Plastic	<b>2-Position Switch, Knob Locations A/B</b>			<b>2-Position Switch, Knob Locations A/B</b>			<b>N. NONE (Single Pole)</b>				<b>1.</b> Red	<b>1.</b> Red	<b>1.</b> Red
<b>B.</b> Without Terminal Barriers, Without Connector Keying Pin, Standard Rating	<b>B.</b> Black Soft Touch	<b>11.</b> Maintain	Maintain	N/A	<b>1.</b> 3-2	OFF	N/A	<b>1.</b> 8-9	OFF	N/A	<b>2.</b> Green	<b>2.</b> Green	<b>2.</b> Green	
<b>C.</b> Without Terminal Barriers, With Connector Keying Pin, Logic Level Rating	<b>C.</b> White Touch	<b>12.</b> Maintain	Momentary	N/A	<b>2.</b> OFF	3-4	N/A	<b>2.</b> OFF	8-7	N/A	<b>3.</b> Amber	<b>3.</b> Amber	<b>3.</b> Amber	
<b>D.</b> Without Terminal Barriers, Without Connector Keying Pin, Logic Level Rating	<b>D.</b> White Soft Touch	<b>13.</b> Momentary	Maintain	N/A	<b>3.</b> 3-2	3-4	N/A	<b>3.</b> 8-9	8-7	N/A				
	<b>E.</b> Red Plastic	<b>2-Position Switch, Knob Locations A/C</b>			<b>2-Position Switch, Knob Locations A/C</b>			<b>2-Position Switch, Knob Locations A/C</b>						
	<b>F.</b> Red Soft Touch	<b>21.</b> Maintain	N/A	Maintain	<b>1.</b> 3-2	N/A	OFF	<b>1.</b> 8-9	N/A	OFF				
		<b>22.</b> Maintain	N/A	Momentary	<b>2.</b> OFF	N/A	3-4	<b>2.</b> OFF	N/A	8-7				
		<b>23.</b> Momentary	N/A	Maintain	<b>3.</b> 3-2	N/A	3-4	<b>3.</b> 8-9	N/A	8-7				
		<b>2-Position Switch, Knob Locations B/C</b>			<b>2-Position Switch, Knob Locations B/C</b>			<b>2-Position Switch, Knob Locations B/C</b>						
		<b>31.</b> N/A	Maintain	Maintain	<b>1.</b> N/A	3-2	OFF	<b>1.</b> N/A	8-9	OFF				
		<b>32.</b> N/A	Maintain	Momentary	<b>2.</b> N/A	OFF	3-4	<b>2.</b> N/A	OFF	8-7				
		<b>33.</b> N/A	Momentary	Maintain	<b>3.</b> N/A	3-2	3-4	<b>3.</b> N/A	8-9	8-7				
		<b>3-Position Switch, Knob Locations A/B/C</b>			<b>3-Position Switch</b>			<b>3-Position Switch</b>						
		<b>44.</b> Maintain	Maintain	Maintain	<b>4.</b> OFF	3-4	3-4	<b>4.</b> OFF	8-7	8-7				
		<b>45.</b> Momentary	Maintain	Momentary	<b>5.</b> 3-2	OFF	3-4	<b>5.</b> 8-9	OFF	8-7				
		<b>46.</b> Maintain	Maintain	Momentary	<b>6.</b> 3-2	3-2	OFF	<b>6.</b> 8-9	8-9	OFF				
		<b>47.</b> Momentary	Maintain	Maintain	<b>7.</b> 3-2	3-2	3-4	<b>7.</b> 8-9	8-7	8-7				
					<b>8.</b> 3-2	OFF	OFF	<b>8.</b> 8-9	OFF	OFF				
					<b>9.</b> OFF	OFF	3-4	<b>9.</b> OFF	OFF	8-7				

\*See appendix for complete voltage/ratings table



### R2 Connector

P/N C801775-2A Without Latches

P/N C801775-2B With Latches

### Recommended Quick Connect Terminals

AMP C60253-2 for 12-16 AWG

AMP C42100-2 for 14-18 AWG

### Panel Seal Gasket

P/N C807109

## K1 THROUGH K5 & R2 PANEL PLUGS

**K1-PA Panel Plug**  
One Piece Molded

**OPTIONAL PANEL GASKET:**  
0.062" THICKNESS = P/N 807039-1  
0.031" THICKNESS = P/N 807039-2

MOUNTING HOLE

RECOMMENDED PANEL THICKNESS: RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET

Panel Opening:	Min.	Typ.	Max.
Width	0.480	0.515	0.550
Length	1.072	1.099	1.125

**K2-PB Panel Plug**  
Assembled Plug

**OPTIONAL PANEL GASKET:**  
0.062" THICKNESS = P/N 807038-1  
0.031" THICKNESS = P/N 807038-2

MOUNTING HOLE

RECOMMENDED PANEL THICKNESS: RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET

Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	1.00
Length	1.072	1.099	1.125

**K4-PB Panel Plug**  
Assembled Plug

**OPTIONAL PANEL GASKET:**  
0.062" THICKNESS = P/N 807038-1  
0.031" THICKNESS = P/N 807038-2

MOUNTING HOLE

RECOMMENDED PANEL THICKNESS: RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET

Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	1.00
Length	1.072	1.099	1.125

**K3-PB Panel Plug**  
Assembled Plug

**OPTIONAL PANEL GASKET:**  
P/N C807037

MOUNTING HOLE

RECOMMENDED PANEL THICKNESS: RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED  
RANGE 0.102 - 0.187 WITHOUT GASKET

Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	0.950
Length	1.730	1.768	1.805

**K5-PA / R2-PA Panel Plug**  
One Piece Molded

**OPTIONAL PANEL GASKET:**  
P/N C807109

MOUNTING HOLE

RECOMMENDED PANEL THICKNESS: RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET

Panel Opening:	Min.	Typ.	Max.
Width	0.830	0.863	0.895
Length	1.450	1.513	1.575

### PANEL PLUG PART NUMBER CODE

X - X X X X

Series	Plug	Style	Plug Color <sup>③</sup>	Button Insert <sup>③</sup>
K1 ①	P	A. One Piece Molded	1. Red	1. Red*
K2 ②		B. Assembled Plug	2. Black	2. Black*
K3 ②			9. White	9. White*
K4 ②				Z. NONE**
K5 ①				
R2 ①				

\*K3 series only.  
\*\*Molded plug only.

- ① Available in Style A only.
- ② Available in Style B only.
- ③ Additional colors available. Contact factory.

# LED VOLTAGE/CURRENT RATINGS TABLE

## ROCKER AND ROTARY SWITCH VOLTAGE/CURRENT RATINGS TABLES

### K1, K2, K3P and K4 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	1.9 VDC	2.5 VDC
	GREEN	20 mA	2.15 VDC	2.5 VDC
	AMBER	20 mA	1.95 VDC	2.5 VDC
	BLUE	20 mA	3.5 VDC	4.0 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### K3/K5 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### R2 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

\*Intended for use with external resistor. The "2 volt" switches are intended to have a resistor added in series into the lighting circuit by the customer. To determine the approximate value of the resistor, use the equation below:

$$\text{RESISTOR SIZE} = \frac{\text{POWER SUPPLY VOLTAGE} - \text{LED FORWARD VOLTAGE}}{\text{LED FORWARD CURRENT}}$$

# LED VOLTAGE/CURRENT RATINGS TABLE

## ILLUMINATED PUSHBUTTON SWITCH & INDICATOR LIGHTS VOLTAGE/CURRENT RATINGS TABLES

### LP3, LP5 AND LPL SERIES LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE (DC)	MAX. FORWARD VOLTAGE DC
2V* PRODUCTS	RED	20 mA	1.9V	2.5V
	GREEN	20 mA	2.2V	2.6V
	AMBER			
	BLUE	20 mA	3.3V	4V
	DEEP GREEN			
6V PRODUCTS	ALL COLORS	20 mA	6V	8V
12V PRODUCTS	ALL COLORS	20 mA	12V	14.5V
24V PRODUCTS	ALL COLORS	20 mA	24 V	28.6 V

### LP3S LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V* PRODUCTS	RED	20 mA	2 V	2.5 V
	GREEN			
	AMBER			
	BLUE	20 mA	3.2 V	4 V
	DEEP GREEN			
12V PRODUCTS	ALL COLORS	20 mA	12V	14V
24V PRODUCTS	ALL COLORS	20 mA	24 V	28.6 V

### LP7-D and LP9 SERIES LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V LIGHTPIPE STYLE	RED (631)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
2V, TRANSLUCENT FULLY ILLUMINATED STYLE	RED (630)	20 mA	1.95V	2.5V
	GREEN (525)	20 mA	3.3V	4.1V
	AMBER (601)	20 mA	2.1V	2.5V
	BLUE (465)	20 mA	3.3V	4V
	WHITE	5 mA	2.85V	3.1V
12V ALL PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

LP9L SERIES LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS				
LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V PRODUCTS	RED (631)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
12V PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

\*Intended for use with external resistor. The "2 volt" switches are intended to have a resistor added in series into the lighting circuit by the customer. To determine the approximate value of the resistor, use the equation below:

$$\text{RESISTOR SIZE} = \frac{\text{POWER SUPPLY VOLTAGE} - \text{LED FORWARD VOLTAGE}}{\text{LED FORWARD CURRENT}}$$