## 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 |
| 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 |

# SEALED, ILLUMINATED ROCKER SWITCHES

LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS

The K series rockers are rugged, high performance sealed switches designed for use under severe conditions found in marine, appliance, heavy equipment and industrial control applications.

The K1 and K2 series are sealed to IP68S and IP69K and panel sealed with an optional panel gasket.

The K1 series is offered in single pole configuration and the K2 series is available in both single and double pole configurations. Both series offer illuminated models. Illumination can be independent or dependent of the switch position or a combination of both. A choice of red, green, clear or amber colored lenses are offered in illuminated models. Illumination options include incandescent, LED or neon light sources.

Mounting is simple and quick; snaps into panel from the front. The OTTO snap-in design supports a variety of panel thicknesses with just one cutout size.

A choice of models are offered to handle high power levels and logic level electronic switching applications.

Custom colors are available upon request. Value-added assemblies with wire leads are also available. Please contact our factory for assistance.

K1 Series
Single Pole

K2 Series
Single & Double Pole

## Features:

- **Sealed to IP68S and IP69K**
- **Fits industry standard panel openings for drop-in replacement of panel sealed & unsealed switches**
- **Snap-in feature accommodates a wide range of panel cutouts**
- **UV & solvent resistant**
- **Withstands extreme shock & vibration**
- **Custom legends available**
- **2 & 3-position, momentary & maintained action**
- **Incandescent, LED & neon illumination with independent & dependent light source options**
- **UL recognized**
- **Ignition protected**
- **Optional one-piece connector**
- **Optional panel gasket available**
- **RoHS compliant**

**Standard Characteristics/Ratings:**

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 28VDC | Sea Level @ 125/250 VAC, 60/400Hz | Cycles |
|---|---|---|---|
| Resistive | 16A | 5A | 25,000 |
| Resistive | 10A | N/A | 50,000 |
| Inductive | 7A | 2A | 25,000 |
| 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) | | |
| **Electrical Life:** | See Rating Chart | | |

**LIGHTING:**

| | |
|---|---|
| **Light Source** | Rating (see appendix for complete voltage/current ratings table) |
| Incandescent | (VDC) 6V, 12V, 24V |
| Neon | (VAC) 125V, 250V |
| LED | (VDC) 2V, 6V, 12V, 24V |
| **Mechanical Life:** | 100,000 cycles |
| **Seal:** | IP68S and IP69K |
| **Operating Temp Range:** | -30°C to +85°C |

**MATERIALS:**

| | |
|---|---|
| **Case:** | Thermoplastic |
| **Button:** | Thermoplastic |
| **Base:** | Thermoplastic |
| **Terminals/Contact:** | Brass, silver alloy with silver plate, gold flash for logic level |
| **Terminal Hardware:** | Screws and lockwashers provided when applicable<br>K1/K2 series recommended Quick Connect terminals:<br>AMP 60253-2 for 12-16 AWG<br>AMP 42100-2 for 14-18 AWG |
| **Mounting Hardware:** | None provided |

# SEALED, ILLUMINATED ROCKER SWITCHES

LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS

## K1 PART NUMBER CODE

**K1** **X** **X** **X** **X**

**Part Number Code Continued Below**

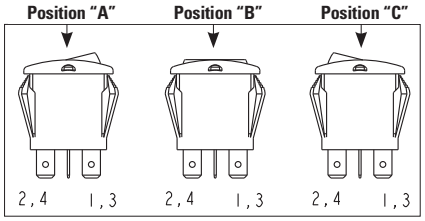
**Terminal Style/ Switch Rating**
- **A.** Q.C./Std.
- **B.** Screw/Std.
- **C.** Solder/Std.
- **D.** Q.C./Logic Level
- **E.** Screw/Logic Level
- **F.** Solder/Logic Level
- **G.** PC Pin/Std.
- **H.** PC Pin/Logic Level

**Actuator Color/Style**
- **A.** Red/Rocker
- **B.** Black/Rocker
- **C.** White/Rocker
- **D.** Red/Paddle
- **E.** Black/Paddle
- **F.** White/Paddle
- **G.** Red/Rocker Pinned
- **H.** Black/Rocker Pinned
- **J.** White/Rocker Pinned
- **K.** Red/Short Paddle Pinned
- **L.** Black/Short Paddle Pinned
- **M.** White/Short Paddle Pinned
- **N.** Red/Standard Paddle Pinned
- **P.** Black/Standard Paddle Pinned
- **R.** White/Standard Paddle Pinned
- **T.** Red/Short Paddle
- **U.** Black/Short Paddle
- **V.** White/Short Paddle

**Switch Action/Circuit**

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **A.** | 1-C | NONE | OFF | SPST |
| **B.** | 1-C | NONE | 2-C | SPDT |
| **C.** | (1-C) | NONE | OFF | SPST |
| **D.** | (1-C) | NONE | 2-C | SPDT |
| **E.** | (1-C) | OFF | (2-C) | SPDT |
| **F.** | 1-C | OFF | 2-C | SPDT |
| **G.** | (1-C) | OFF | 2-C | SPDT |
| **H.** | OFF | NONE | 2-C | SPST |

NOTE: ( ) denotes momentary action.




**Light Type***
- **A.** No Light
- **B.** 6V Incandescent
- **C.** 12V Incandescent
- **D.** 24V Incandescent
- **E.** 125VAC Neon
- **F.** 250VAC Neon
- **G.** 2V Red LED
- **H.** 2V Green LED
- **J.** 2V Amber LED
- **K.** 6V Red LED
- **L.** 6V Green LED
- **M.** 6V Amber LED
- **N.** 12V Red LED
- **P.** 12V Green LED
- **Q.** 12V Amber LED
- **R.** 24V Red LED
- **S.** 24V Green LED
- **T.** 24V Amber LED

***See appendix for complete voltage/ratings table**

## K1 PART NUMBER CODE CONTINUED FROM ABOVE

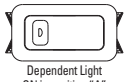
**K1 Continued** **X** **X** **X** **X**

**Lens Color**

| Position "A" | Position "C" |
|---|---|
| **A.** No Lens | **A.** No Lens |
| **B.** Red | **B.** Red |
| **C.** Green | **C.** Green |
| **D.** Amber | **D.** Amber |
| **E.** Clear | **E.** Clear |

**Light/Circuit Location**

**A.** No Light

**B.**

Dependent Light
ON in position "A"
Wired to terms **1** & 3

**C.**

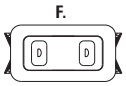
Dependent Light
ON in position "C"
Wired to terms **2** & 4

**D.**

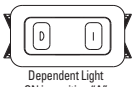
Independent Light
at position "A"
Wired to terms 3 & **4**

**E.**

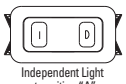
Independent Light
at position "C"
Wired to terms 3 & **4**

**F.**

Dependent Light
ON in position "A"
Wired to terms **1** & 3

Dependent Light
ON in position "C"
Wired to terms **2** & 4

**G.**

Dependent Light
ON in position "A"
Wired to terms **1** & 3

Independent Light
ON in position "C"
Wired to terms 3 & **4**

**H.**

Independent Light
at position "A"
Wired to terms **3** & 4

Dependent Light
ON in position "C"
Wired to terms **2** & 4

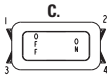
**D** = Dependent Light
**I** = Independent Light

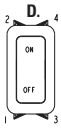
NOTES:
- LED anode (+) terminal number shown in **bold.**
- Light on OFF side must be independent.
- Contact factory for multiple light types in the same switch.

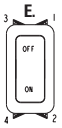
**Legend & Orientation**

**A.** None

**B.**

**C.**


**D.**



**E.**
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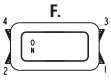
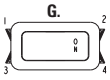
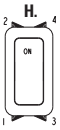
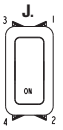
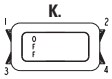
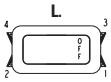


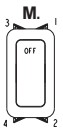
**G.**


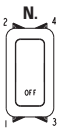
**H.**


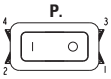

**J.**


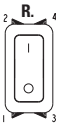

**K.**


**L.**


**M.**



**N.**



**P.**


**R.**


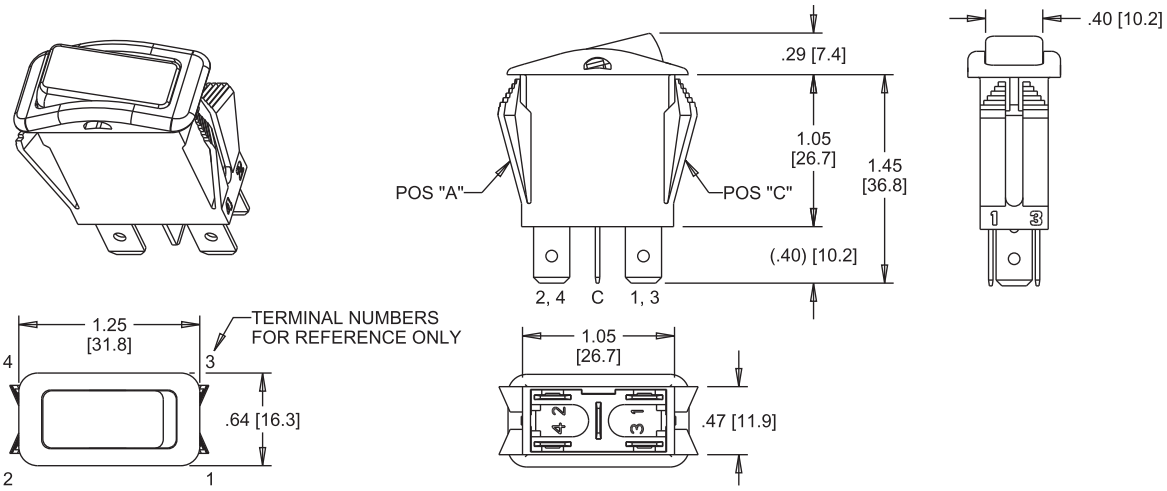
NOTES:
- No momentary switches with dependent lights.
- Neon lamps only to be coded with clear or amber lenses.
- LED lenses must be clear or same color as LED.
- No dependent light in OFF position.
- All legends printed on actuators without lens(es) will be white except actuator codes C, F, J, M & R.
- All legends printed on lenses will be white except on clear lens(es) will be black.

- **K1 panel plugs available as shown in Panel Plugs (PP) section.**



Specifications Subject To Change Without Notice

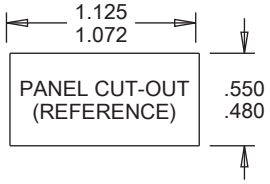
LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS




PANEL THICKNESS AND MOUNTING OPENING GUIDELINES:

PANEL THICKNESS RANGE OF .025 - .105
(GASKET RECOMMENDED)

PANEL THICKNESS RANGE OF .105 - .187
(GASKET NOT REQUIRED)

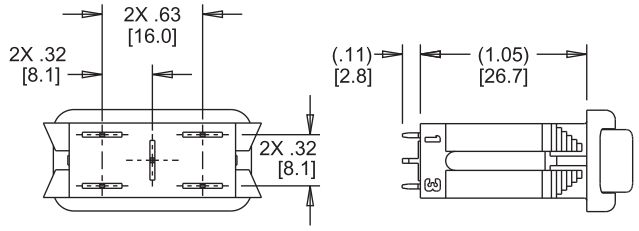



OPTIONAL PANEL GASKET:

0.062" THICKNESS = P/N C807039-25-1

0.031" THICKNESS = P/N C807039-25-2

P.C. PIN LAYOUT




PADDLE STYLES

| SHORT PADDLE ROCKER | STANDARD PADDLE ROCKER | STANDARD ROCKER |
|---|---|---|
| .46 [11.7] | .72 [18.3] | .20 [5.1] |

TERMINAL STYLES (.032 [.81] THICK)

| SCREW | QUICK CONNECT | SOLDER | P.C. PIN |
|---|---|---|---|
| #6-32 THD, .25 [6.4] | Ø .08 [Ø 2.0], .25 [6.4] | Ø .11 [Ø 2.8], .25 [6.4] | .030 SQ. [.76 SQ.], .25 [6.4], .10 [2.5] |

## K1 AND T71 CONNECTOR PART NUMBER CODE

**C405041 - XX XXXX**

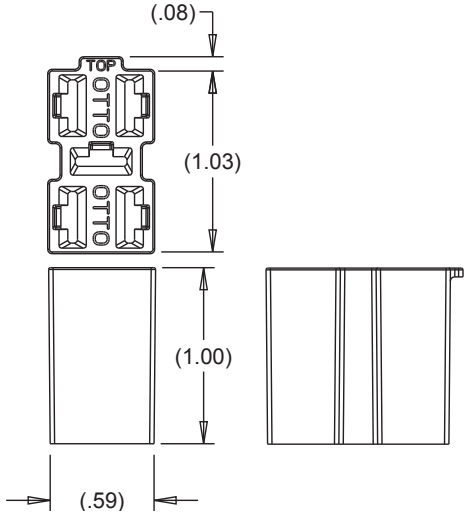
**Connector Color**

**01.** Red
**02.** Black
**03.** Orange*
**04.** Yellow*
**05.** Green*
**06.** Blue*
**07.** Violet*
**08.** Gray*
**09.** White

* Contact Factory

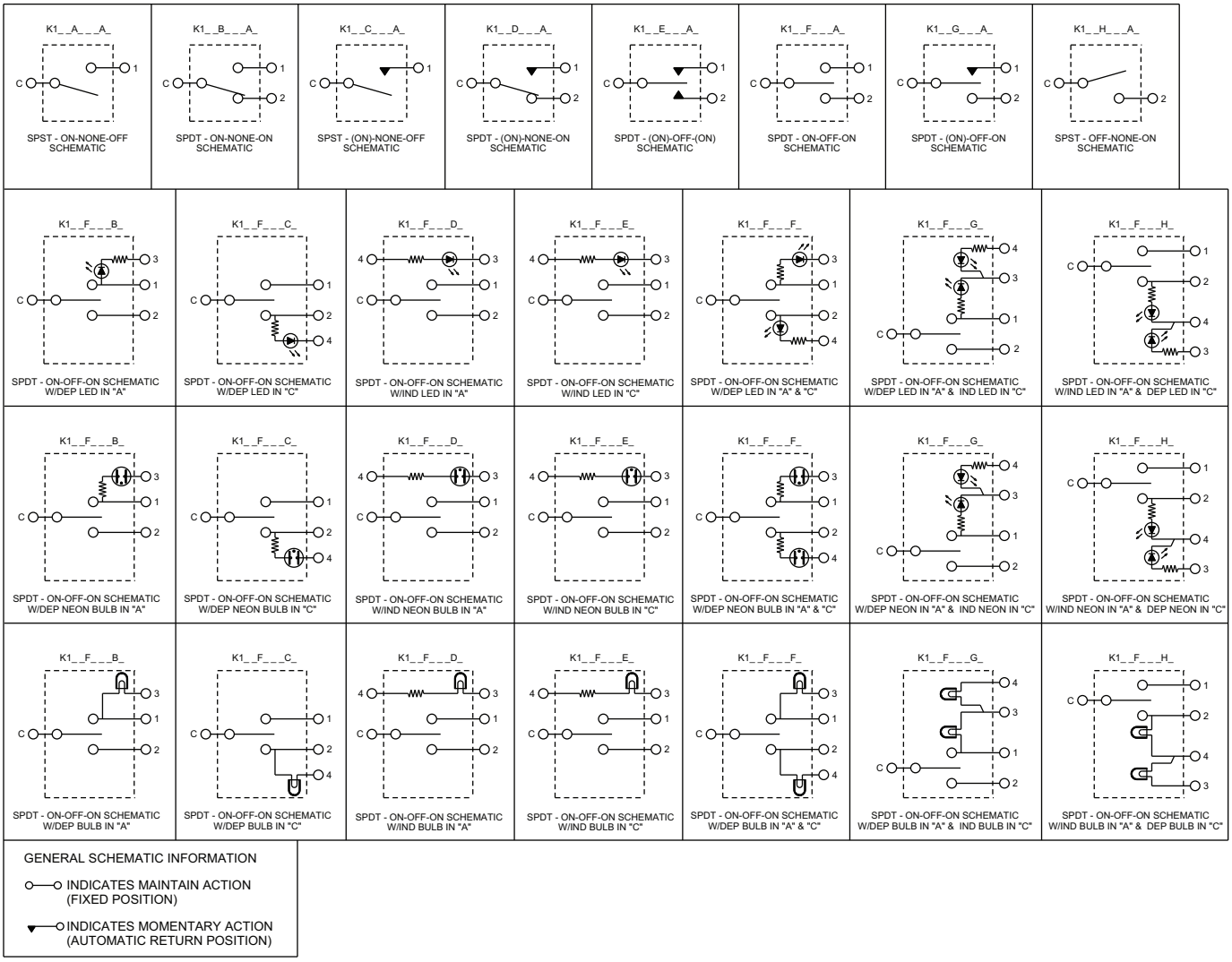
**Packaging Quantity**

**0025** - 25 Pcs per Package
**0050** - 50 Pcs per Package
**0100** - 100 Pcs per Package



# SEALED, ILLUMINATED ROCKER SWITCHES

## LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS




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

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

*** See Appendix for complete Voltage/Ratings Table.**



Specifications Subject To Change Without Notice

PRODUCT BULLETIN

# K1S Sealed, True ON-ON-ON Rocker

The industry's smallest sealed, logic-level rocker is rated up to 1 million cycles and comes in a short behind-panel, snap-in package. The K1S is available as a true ON-ON-ON rocker that is ideal for use as a Forward-Neutral-Reverse (FNR) switch.

Choose from two rocker style and size options for user comfort, both of which fit into the same industry-standard panel opening. The double-pole version offers redundancy for each switch state, providing increased safety.

## Product Features

- True ON-ON-ON triple-throw switch options
- Switch contacts sealed to IP68S. With the optional boot, the standard switch is panel sealed to IP68S.
- Tested up to 1 million cycles
- Maintained or momentary action, single or double pole
- Logic level only
- Molex connector and wire lead termination options
- Standard and large rocker style sizes
- Many standard or custom legend options
- RoHS compliant

Standard Rocker with Optional FNR Legend

Standard Rocker Side Front View

Standard Rocker Top View

Large Rocker with FNR Legend

Two K1S Rocker Switches and a P9 Pushbutton Switch in a G3-C Grip with a Custom Faceplate Style

One K1S Rocker Switch and two P9 Pushbutton Switch in a G3-M Grip

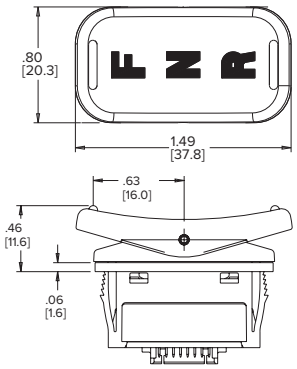
Optional Rubber Boots in Clear and Black for Standard Size Only

2 East Main Street
Carpentersville, IL, 60110
847.428.7171

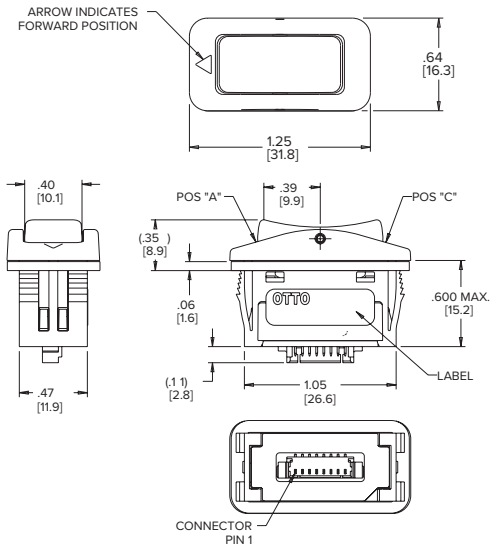
OTTO

# PRODUCT BULLETIN

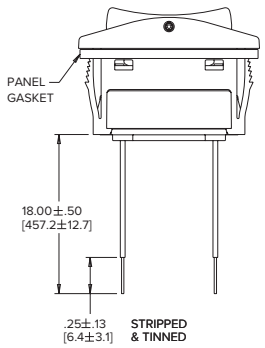
## K1S D RAWINGS



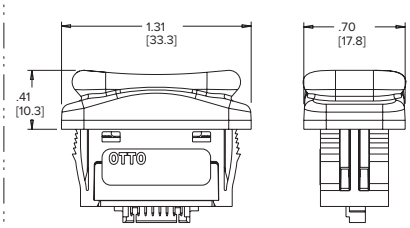

LARGE ROCKER VERSION
"F N R" LEGEND SHOWN




STANDARD ROCKER




K1S WIRED
26 AWG WIRE




IP68S PANEL SEAL WITH
OPTIONAL RUBBER BOOT

## K1S PART NUMBER CODE

**K1S X**

**Connection Style**

① **A.** 6 PIN Connector
② **B.** 8 PIN Connector
③ **E.** 18" Wires 26 AWG
③ **G.** 18" Wires 24 AWG

**X**

**Rocker Color/Style**

**A.** Red Rocker
**B.** Black Rocker
**C.** White Rocker
④ **D.** Large Red Rocker
④ **E.** Large Black Rocker
④ **F.** Large White Rocker
**G.** Yellow Rocker
④ **H.** Large Yellow Rocker
⑤ **J.** Large Black Rocker with FNR Legend (White)
⑤ **K.** Large Yellow Rocker with FNR Legend (Black)
**M.** Red Rocker with Translucent Boot
**N.** Black Rocker with Black Boot
**P.** Black Rocker with Translucent Boot
**T.** White Rocker with Translucent Boot
**V.** Yellow Rocker with Translucent Boot
⑤ **W.** Large Orange Rocker with FNR Legend (Black)

**X**

**Switch Action / Circuit**

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **A.** | ON | NONE | OFF | SPST |
| **B.** | ON | NONE | ON | SPDT |
| **C.** | *(ON) | NONE | OFF | SPST |
| **D.** | *(ON) | NONE | ON | SPDT |
| **E.** | ON | OFF | ON | SPDT |
| **F.** | *(ON) | OFF | *(ON) | SPDT |
| **G.** | *(ON) | OFF | ON | SPDT |
| **H.** | ON | ON | ON | SPTT |
| **J.** | ON | NONE | OFF | DPST |
| **K.** | ON | NONE | ON | DPDT |
| **L.** | *(ON) | NONE | OFF | DPST |
| **M.** | *(ON) | NONE | ON | DPDT |
| **N.** | ON | OFF | ON | DPDT |
| **P.** | *(ON) | OFF | *(ON) | DPDT |
| **R.** | *(ON) | OFF | ON | DPDT |
| **T.** | ON | ON | ON | DPTT |
| **U.** | *(ON) | ON | *(ON) | SPTT |
| **V.** | *(ON) | ON | *(ON) | DPTT |

**Part Number Code Continues Below**

**XX** **XX** **XX**

**Legend Style**

| Position "A" | Position "B" | Position "C" |
|---|---|---|
| **ZZ.** No Legend | **ZZ.** No Legend | **ZZ.** No Legend |

NOTE: For all other Legend Options, refer to Standard SAE Legends.

## Attributes:

Mating Connector:
MOLEX 51021-0600

Mating Connector:
MOLEX 51021-0800

Unless otherwise specified, all dimensions are in inch [metric]. In the event of a conflict, the inch nominal value and tolerance will take precedence.

Rubber boot not available.

Legend Styles are not available, fixed at Legend Orientation #4.

*( ) Denotes Momentary Action

* Legend color cannot be same color as button color. (i.e. Red Button color cannot have Red Legend color).

## K1S PART NUMBER CODE -

**Continued From Above**

**XXX**

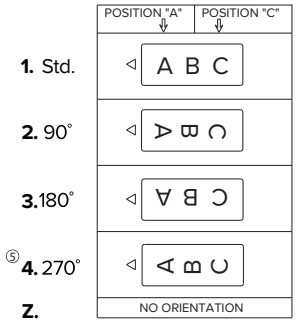
**Legend Color***

**Position A / B / C**

**1.** Red
**2.** Black
**9.** White
**Z.** No Legend

**X**

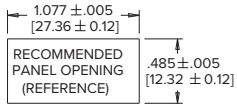
**Legend Orientation**




## PANEL THICKNESS AND MOUNTING OPENING GUIDELINES

PANEL THICKNESS: .086 ±.003 [2.18 ±0.08]

PANEL OPENING:




GASKET INCLUDED

## OPTIONAL BOOT PART NUMBER

C405810-25-12 (Translucent)
C405810-25-2 (Black)


2 East Main Street
Carpentersville, IL, 60110
847.428.7171


www.otto-controls.com

# HIGH CYCLE LIFE, SEALED ROCKER SWITCHES

SNAP-IN PANEL MOUNTING, MOMENTARY OR MAINTAINED ACTION, 1 AND 2 POLES

The industry's smallest sealed, logic level rocker offering a 1M cycle life in a short, behind panel, snap-in package. Available in both single and double pole configurations, with maintained or momentary action, in either two or three positions. In addition the K1S is available as a true ON-ON-ON rocker that is perfect for use as a Forward-Neutral-Reverse (FNR) switch. The double pole version offers redundancy for each switch state providing increased safety. Termination options include a Molex connector or wire leads.

The K1S contact system is sealed to IP68S and uses a flow-thru design. With an optional boot, the switch is panel sealed to IP68S. The rugged K1S is shorter behind panel than OTTO's K1 rocker series, making it an ideal choice for use in grips and panels. The K1S also consists of two rocker button style/size options for best user comfort. Only one panel opening size is required, regardless of button size. Choose from a set of 73 standard legend choices which are offered with both normal and large-size rocker top styles, or add a custom logo, lettering or legend.

## Features:

- **Shorter behind panel depth**
- **High cycle life, 1,000,000 cycles**
- **Switch contacts sealed to IP68S (panel sealed to IP68S with optional rubber boot for standard rocker only)**
- **Maintained or momentary action**
- **Single or double pole**
- **True ON-ON-ON switch throw options**
- **Fits industry standard panel openings**
- **Logic level only**
- **2 sizes of rocker styles, standard and large**
- **2 termination types, connector and wire leads**
- **Choose from 73 standard legends per SAE or create your own**
- **RoHS compliant**

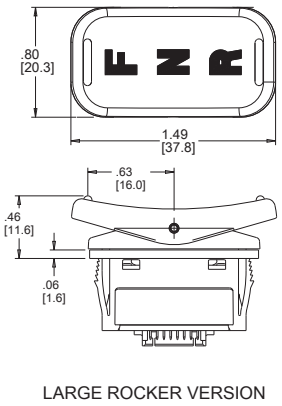
Standard
Rocker Top View

Larger Rocker
with FNR Legend

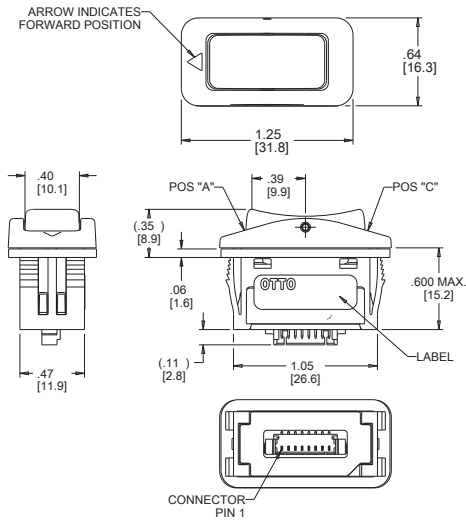
Standard Rocker
Side Front View

Optional Rubber Boots
in Clear and Black

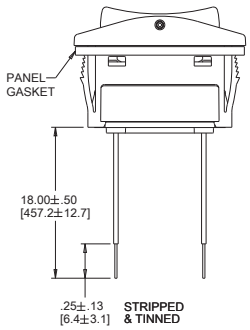
| Standard Characteristics/Ratings: | |
|---|---|
| **ELECTRICAL:** | |
| **Electrical Ratings:** | 10mA @ 5VDC max. Logic Level |
| **Electrical Life:** | 1,000,000 cycles |
| **Max Power:** | 0.5 VA |
| **Max Voltage:** | 32VDC |
| **Min Voltage:** | 20mV |
| **Max Current:** | 50mA |
| **Min Current:** | 1mA |
| **DWV:** | 250 Vrms |
| **MECHANICAL:** | |
| **Mechanical Life:** | 1,000,000 cycles |
| **Switch Contact Seal:** | IP68S (Panel Seal IP68S with Optional Boot) |
| **ENVIRONMENTAL:** | |
| **Temperature Range:** | -40°C to +85°C |
| **MATERIALS:** | |
| **Base:** | Black Thermoplastic |
| **Button:** | Black Thermoplastic |
| **Bezel:** | Black Thermoplastic |
| **Wire:** | 26 AWG UL 11028 Wire |
| **Gasket:** | EPDM |



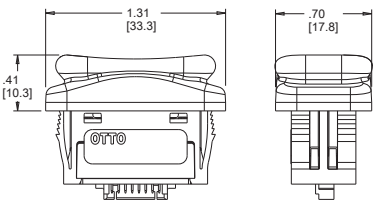

LARGE ROCKER VERSION
"F N R" LEGEND SHOWN




STANDARD ROCKER




K1S WIRED
26 AWG WIRE




IP68S PANEL SEAL WITH
OPTIONAL RUBBER BOOT

# HIGH CYCLE LIFE, SEALED ROCKER SWITCHES

SNAP-IN PANEL MOUNTING, MOMENTARY OR MAINTAINED ACTION, 1 AND 2 POLES

## K1S PART NUMBER CODE

**Part Number Code Continues Below**

K1S **X** **X** **X** **XX** **XX** **XX**

### Connection Style

- **A.** 6 PIN Connector ①*
- **B.** 8 PIN Connector ②
- **E.** 18" Wires 26 AWG ③
- **G.** 18" Wires 24 AWG ③

### Rocker Color/Style

- **A.** Red Rocker
- **B.** Black Rocker
- **C.** White Rocker
- **D.** Large Red Rocker ④
- **E.** Large Black Rocker ④
- **F.** Large White Rocker ④
- **G.** Yellow Rocker
- **H.** Large Yellow Rocker ④
- **J.** Large Black Rocker with Embossed FNR (White) ④⑤⑥
- **K.** Large Yellow Rocker with Embossed FNR (Black) ④⑤⑥
- **M** Red Rocker with Translucent Boot
- **N.** Black Rocker with Black Boot ⑤⑦
- **P.** Black Rocker with Translucent Boot
- **T.** White Rocker with Translucent Boot
- **V.** Yellow Rocker with Translucent Boot
- **W.** Large Orange Rocker with Embossed FNR (Black) ④⑤⑥

### Switch Action / Circuit

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **A.** | ON | NONE | OFF | SPST |
| **B.** | ON | NONE | ON | SPDT |
| **C.** | (ON) | NONE | OFF | SPST |
| **D.** | (ON) | NONE | ON | SPDT |
| **E.** | ON | OFF | ON | SPDT |
| **F.** | (ON) | OFF | (ON) | SPDT |
| **G.** | (ON) | OFF | ON | SPDT |
| **H.** | ON | ON | ON | SPTT |
| **J.** | ON | NONE | OFF | DPST |
| **K.** | ON | NONE | ON | DPDT |
| **L.** | (ON) | NONE | OFF | DPST |
| **M.** | (ON) | NONE | ON | DPDT |
| **N.** | ON | OFF | ON | DPDT |
| **P.** | (ON) | OFF | (ON) | DPDT |
| **R.** | (ON) | OFF | ON | DPDT |
| **T.** | ON | ON | ON | DPTT |
| **U.** | (ON) | ON | (ON) | SPTT |
| **V.** | (ON) | ON | (ON) | DPTT |

NOTE: ( ) denotes momentary action

### Position "A"
**ZZ.** No Legend

### Legend Style

### Position "B"
**ZZ.** No Legend

### Position "C"
**ZZ.** No Legend

NOTE: For all other Legend Options, refer to Standard Legend Table below. Find the two digit code and enter the code in the appropriate positions

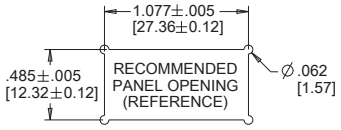
## GASKET PART NUMBER (INCLUDED)

C807039-25-1

## PANEL THICKNESS AND MOUNTING OPENING GUIDELINES③

PANEL THICKNESS: .086±.003 [2.18±0.08]
RECOMMENDED PANEL THICKNESS REQUIRES EITHER THE PANEL GASKET OR THE OPTIONAL RUBBER BOOT FOR PROPER FITMENT.

PANEL OPENING:



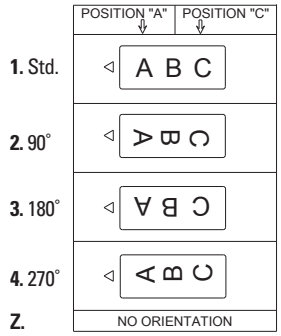

## K1S PART NUMBER CODE - Continued From Above

XXX **X**

### Legend Color**

**Position A / B / C**
- **1.** Red
- **2.** Black
- **9.** White
- **Z.** No Legend

### Legend Orientation




① Mating Connector: MOLEX 51021-0600

② Mating Connector: MOLEX 51021-0800

③ Unless otherwise specified, all dimensions are in inch [metric]. In the event of a conflict, the inch nominal value and tolerance will take precedence.

④ Rubber boot not available

⑤ Legend is not available. Legend Style is ZZ and Legend Color is Z

⑥ Legend Orientation is 4

⑦ Legend Orientation is Z

* 6 PIN Connector only available with A, B, C, D, J, K, L, M

** Legend color cannot be same color as button color (i.e. Red Button color cannot have Red Legend color)

## OPTIONAL BOOT PART NUMBER

C405810-25-12 (Translucent)
C405810-25-2 (Black)

| STANDARD LEGENDS PER SAE SPECIFICATIONS | | | | | |
|---|---|---|---|---|---|
| A1 | ANCHOR | H2 | HORN REAR | P4 | BILGE PUMP |
| B1 | BATTERY | K1 | LOCK | P5 | BILGE BLOWER |
| B2 | ELECTRIC POWER | K2 | UNLOCK | R1 | LIFT |
| C1 | AC/COOLING SYSTEMS | L1 | LIGHT | R2 | LOWER |
| C2 | DEHUMIDIFIER | L2 | MASTER LIGHTING SWITCH | R3 | UP |
| C3 | HEATER/INTERIOR HEATING | L3 | HEADLIGHTS | R4 | DOWN |
| D1 | WINDSHIELD DEFROSTER | L4 | HEADLIGHTS-LOW / DIPPED BEAM | R5 | RIGHT |
| D2 | REAR WINDOW DEFROSTER | L5 | HEADLIGHTS-HIGH / UPPER BEAM | R6 | LEFT |
| D3 | MIRROR DEFROSTER | L6 | PARKING LIGHT | R7 FWD | FORWARD |
| E1 | ENGINE/START | L7 | WORK LAMP | R8 REV | REVERSE |
| E2 | ENGINE/STOP | L8 | WORK LAMP | S1 | RADIO |
| E3 | ON/START | L9 | INTERIOR DOME LIGHT | S2 | MUTE |
| E4 | OFF/STOP | M1 | BEACON | T1 | FAST |
| E5 ON | ON | M2 | HAZARD/POSITION LIGHTS | T2 | SLOW |
| E6 OFF | OFF | M3 | CLEARANCE LIGHTS | T3 | TRIM TAB / TRIMMING OPERATION |
| E7 | ENGINE ELECTRIC PREHEAT | M4 | SIDE MARKER LIGHT | T4 | TRANSMISSION |
| E8 | ENGINE-GAS INJECTION | M5 | RUNNING LIGHTS (UNDER POWER) | V1 | VENTILATING / AC FAN |
| E9 | POWER | M6 | ANCHOR LIGHT | W1 | WINDSHIELD WIPER |
| F1 | FRONT FOG LIGHTS | M7 | RUNNING/ANCHOR LIGHTS | W2 | WINDSHIELD-WASHER |
| F2 | REAR FOG LIGHTS | M8 | SEARCH LIGHT | W3 | WINDSHIELD-WASHER/WIPER |
| F3 F | FORWARD | M9 | LEFT TURN SIGNAL | W4 | REAR WINDOW WIPER |
| F4 N | NEUTRAL | MA | RIGHT TURN SIGNAL | W5 | REAR WINDOW-WASHER |
| F5 R | REVERSE | P1 | BILGE PUMP #1 | W6 | REAR WINDOW-WASHER/WIPER |
| G1 | FUEL | P2 | BILGE PUMP #2 | ZZ | NO LEGEND |
| H1 | HORN | P3 | BILGE PUMP #3 | | |

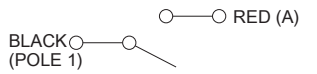


Specifications Subject To Change Without Notice

SNAP-IN PANEL MOUNTING, MOMENTARY OR MAINTAINED ACTION, 1 AND 2 POLES

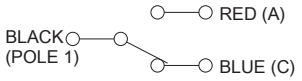
## WIRED CIRCUIT DIAGRAM

### K1S E _ A _ _ _ _ _



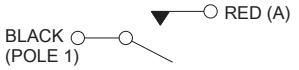

SPST - ON-NONE-OFF
WIRED SCHEMATIC

### K1S E _ B _ _ _ _ _



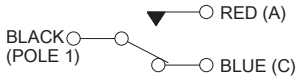

SPDT - ON-NONE-ON
WIRED SCHEMATIC

### K1S E _ C _ _ _ _ _



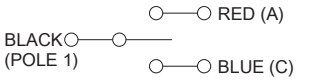

SPST - (ON)-NONE-OFF
WIRED SCHEMATIC

### K1S E _ D _ _ _ _ _



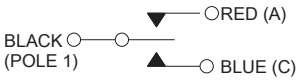

SPDT - (ON)-NONE-ON
SCHEMATIC

### K1S E _ E _ _ _ _ _



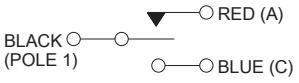

SPDT - ON-OFF-ON
WIRED SCHEMATIC

### K1S E _ F _ _ _ _ _



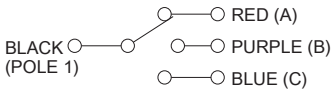

SPDT - (ON)-OFF-(ON)
WIRED SCHEMATIC

### K1S E _ G _ _ _ _ _



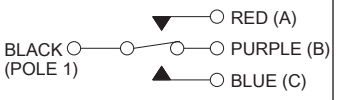

SPDT - (ON)-OFF-ON
WIRED SCHEMATIC

### K1S E _ H _ _ _ _ _



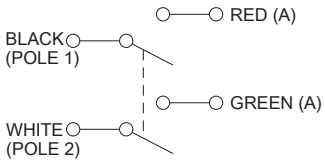

SPTT - ON-ON-ON
WIRED SCHEMATIC

### K1S E _ U _ _ _ _ _



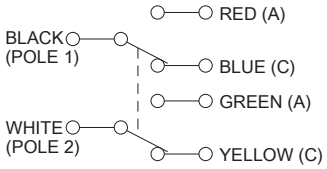

SPTT - (ON)-ON-(ON)
WIRED SCHEMATIC

### K1S E _ J _ _ _ _ _



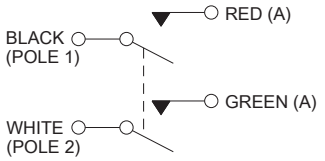

DPST - ON-NONE-OFF
WIRED SCHEMATIC

### K1S E _ K _ _ _ _ _



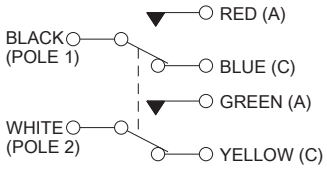

DPDT - ON-NONE-ON
WIRED SCHEMATIC

### K1S E _ L _ _ _ _ _



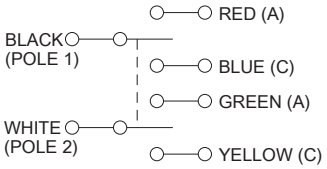

DPST - (ON)-NONE-OFF
WIRED SCHEMATIC

### K1S E _ M _ _ _ _ _



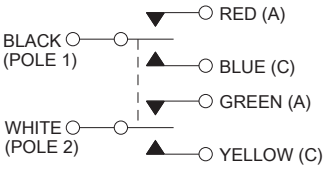

DPDT - (ON)-NONE-ON
WIRED SCHEMATIC

### K1S E _ N _ _ _ _ _



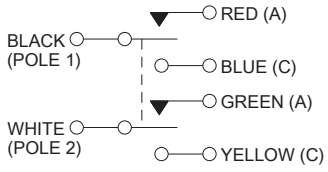

DPDT - ON-OFF-ON
WIRED SCHEMATIC

### K1S E _ P _ _ _ _ _



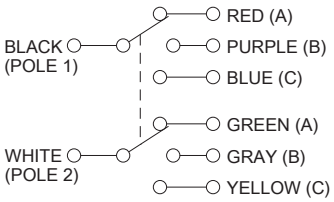

DPDT - (ON) -OFF-(ON)
WIRED SCHEMATIC

### K1S E _ R _ _ _ _ _



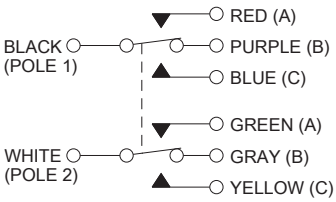

DPDT - (ON)-OFF-ON
WIRED SCHEMATIC

### K1S E _ T _ _ _ _ _




DPTT - ON-ON-ON
WIRED SCHEMATIC

### K1S E _ V _ _ _ _ _



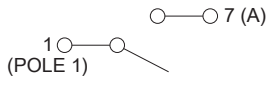

DPTT - (ON)-ON-(ON)
WIRED SCHEMATIC

# HIGH CYCLE LIFE, SEALED ROCKER SWITCHES

SNAP-IN PANEL MOUNTING, MOMENTARY OR MAINTAINED ACTION, 1 AND 2 POLES

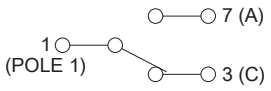
## CONNECTOR CIRCUIT DIAGRAM

### K1S B _ A _ _ _ _ _



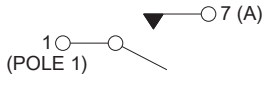

SPST - ON-NONE-OFF
SCHEMATIC

### K1S B _ B _ _ _ _ _



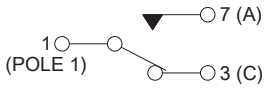

SPDT - ON-NONE-ON
SCHEMATIC

### K1S B _ C _ _ _ _ _



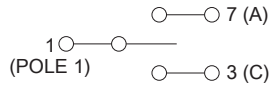

SPST - (ON)-NONE-OFF
SCHEMATIC

### K1S B _ D _ _ _ _ _



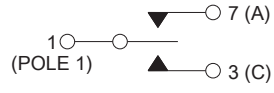

SPDT - (ON)-NONE-ON
SCHEMATIC

### K1S B _ E _ _ _ _ _



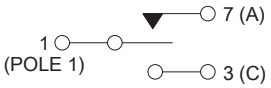

SPDT - ON-OFF-ON
SCHEMATIC

### K1S B _ F _ _ _ _ _



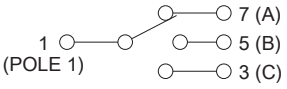

SPDT - (ON)-OFF-(ON)
SCHEMATIC

### K1S B _ G _ _ _ _ _



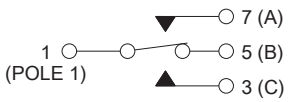

SPDT - (ON)-OFF-ON
SCHEMATIC

### K1S B _ H _ _ _ _ _



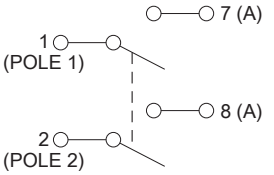

SPTT - ON-ON-ON
SCHEMATIC

### K1S B _ U _ _ _ _ _



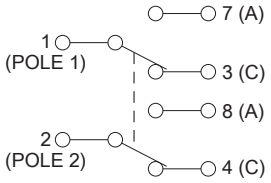

SPTT - ON-ON-ON
SCHEMATIC

### K1S B _ J _ _ _ _ _



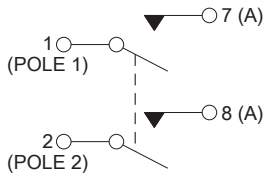

DPST - ON-NONE-OFF
SCHEMATIC

### K1S B _ K _ _ _ _ _



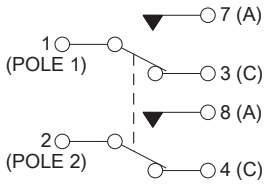

DPDT - ON-NONE-ON
SCHEMATIC

### K1S B _ L _ _ _ _ _



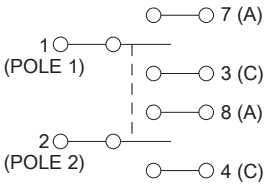

DPST - (ON)-NONE-OFF
SCHEMATIC

### K1S B _ M _ _ _ _ _



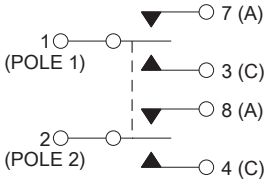

DPDT - (ON)-NONE-ON
SCHEMATIC

### K1S B _ N _ _ _ _ _



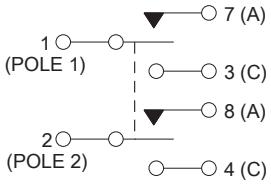

DPDT - ON-OFF-ON
SCHEMATIC

### K1S B _ P _ _ _ _ _



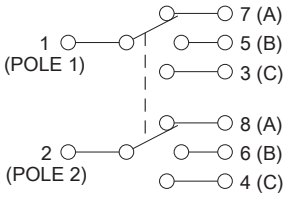

DPDT - (ON)-OFF-(ON)
SCHEMATIC

### K1S B _ R _ _ _ _ _



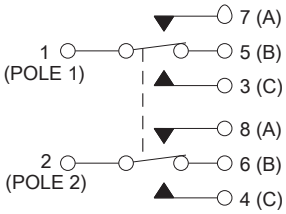

DPDT - (ON)-OFF-ON
SCHEMATIC

### K1S B _ T _ _ _ _ _




DPTT - ON-ON-ON
SCHEMATIC

### K1S B _ V _ _ _ _ _




DPTT - (ON)-ON-(ON)
SCHEMATIC



Specifications Subject To Change Without Notice

# SEALED, ILLUMINATED ROCKER SWITCHES

LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS

The K series rockers are rugged, high performance sealed switches designed for use under severe conditions found in marine, appliance, heavy equipment and industrial control applications.

The K1 and K2 series are sealed to IP68S and IP69K and panel sealed with an optional panel gasket.

The K1 series is offered in single pole configuration and the K2 series is available in both single and double pole configurations. Both series offer illuminated models. Illumination can be independent or dependent of the switch position or a combination of both. A choice of red, green, clear or amber colored lenses are offered in illuminated models. Illumination options include incandescent, LED or neon light sources.

Mounting is simple and quick; snaps into panel from the front. The OTTO snap-in design supports a variety of panel thicknesses with just one cutout size.

A choice of models are offered to handle high power levels and logic level electronic switching applications.

Custom colors are available upon request. Value-added assemblies with wire leads are also available. Please contact our factory for assistance.

K1 Series
Single Pole

K2 Series
Single & Double Pole

## Features:

- **Sealed to IP68S and IP69K**
- **Fits industry standard panel openings for drop-in replacement of panel sealed & unsealed switches**
- **Snap-in feature accommodates a wide range of panel cutouts**
- **UV & solvent resistant**
- **Withstands extreme shock & vibration**
- **Custom legends available**
- **2 & 3-position, momentary & maintained action**
- **Incandescent, LED & neon illumination with independent & dependent light source options**
- **UL recognized**
- **Ignition protected**
- **Optional one-piece connector**
- **Optional panel gasket available**
- **RoHS compliant**

**Standard Characteristics/Ratings:**

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 28VDC | Sea Level @ 125/250 VAC, 60/400Hz | Cycles |
|---|---|---|---|
| Resistive | 16A | 5A | 25,000 |
| Resistive | 10A | N/A | 50,000 |
| Inductive | 7A | 2A | 25,000 |
| 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) | | |
| **Electrical Life:** | See Rating Chart | | |

**LIGHTING:**

| | |
|---|---|
| **Light Source** | Rating (see appendix for complete voltage/current ratings table) |
| Incandescent | (VDC) 6V, 12V, 24V |
| Neon | (VAC) 125V, 250V |
| LED | (VDC) 2V, 6V, 12V, 24V |
| **Mechanical Life:** | 100,000 cycles |
| **Seal:** | IP68S and IP69K |
| **Operating Temp Range:** | -30°C to +85°C |

**MATERIALS:**

| | |
|---|---|
| **Case:** | Thermoplastic |
| **Button:** | Thermoplastic |
| **Base:** | Thermoplastic |
| **Terminals/Contact:** | Brass, silver alloy with silver plate, gold flash for logic level |
| **Terminal Hardware:** | Screws and lockwashers provided when applicable<br>K1/K2 series recommended Quick Connect terminals:<br>AMP 60253-2 for 12-16 AWG<br>AMP 42100-2 for 14-18 AWG |
| **Mounting Hardware:** | None provided |

LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES

## K2 PART NUMBER CODE

**Part Number Code Continued Below**

**K2** **X** **X** **X**

**Terminal Style/ Switch Rating**

- **A.** Quick Connect/ Standard
- **B.** Screw/Standard
- **C.** Solder/Standard
- **D.** Quick Connect/ Logic Level
- **E.** Screw/Logic Level
- **F.** Solder/Logic Level
- **G.** PC Pin/Standard
- **H.** PC Pin/Logic Level

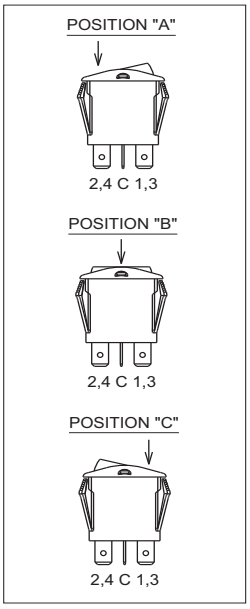
**Actuator Color/Style**

- **A.** Red Standard
- **B.** Black Standard
- **C.** White Standard
- **D.** Red Standard Paddle
- **E.** Black Standard Paddle
- **F.** White Standard Paddle
- **G.** Red Short Paddle Pinned
- **H.** Black Short Paddle Pinned
- **J.** White Short Paddle Pinned
- **K.** Red Standard Paddle Pinned
- **L.** Black Standard Paddle Pinned
- **M.** White Standard Paddle Pinned
- **N.** Red Standard Pinned
- **P.** Black Standard Pinned
- **R.** White Standard Pinned

NOTE: For custom colors, contact factory.

**Switch Action/Circuit**

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **A.** | 1-C1 | NONE | OFF | SPST |
| **B.** | 1-C1 | NONE | 2-C1 | SPDT |
| **C.** | (1-C1) | NONE | OFF | SPST |
| **D.** | (1-C1) | NONE | 2-C1 | SPDT |
| **E.** | (1-C1) | OFF | (2-C1) | SPDT |
| **F.** | 1-C1 | OFF | 2-C1 | SPDT |
| **G.** | (1-C1) | OFF | 2-C1 | SPDT |
| **H.** | 1-C1/3-C2 | NONE | OFF | DPST |
| **J.** | 1-C1/3-C2 | NONE | 2-C1/4-C2 | DPDT |
| **K.** | (1-C1)/(3-C2) | NONE | OFF | DPST |
| **L.** | (1-C1)/(3-C2) | NONE | 2-C1/4-C2 | DPDT |
| **M.** | (1-C1)/(3-C2) | OFF | (2-C1)/(4-C2) | DPDT |
| **N.** | 1-C1/3-C2 | OFF | 2-C1/4-C2 | DPDT |
| **P.** | (1-C1)/(3-C2) | OFF | 2-C1/4-C2 | DPDT |
| **Q.** | 1-C1 | NONE | (2-C1) | SPDT |
| **R.** | OFF | NONE | (2-C1) | SPST |
| **S.** | 1-C1/3-C2 | NONE | (2-C1)/(4-C2) | DPDT |
| **T.** | OFF | NONE | (2-C1)/(4-C2) | DPST |
| **U.** | 1-C1 | OFF | (2-C1) | SPDT |
| **V.** | 1-C1/3-C2 | OFF | (2-C1)/(4-C2) | DPDT |




## K2 PART NUMBER CODE - CONTINUED FROM ABOVE

**X**

**Light Type***

- **A.** No Light
- **B.** 6V Incandescent
- **C.** 12V Incandescent
- **D.** 24V Incandescent
- **E.** 125 VAC Neon
- **F.** 250 VAC Neon
- **G.** 2V Red LED
- **H.** 2V Green LED
- **J.** 2V Amber LED
- **K.** 6V Red LED
- **L.** 6V Green LED
- **M.** 6V Amber LED
- **N.** 12V Red LED
- **P.** 12V Green LED
- **Q.** 12V Amber LED
- **R.** 24V Red LED
- **S.** 24V Green LED
- **T.** 24V Amber LED

**X** **X**

**Lens Color**

| Position "A" | Position "C" |
|---|---|
| **A.** No Lens | **A.** No Lens |
| **B.** Red | **B.** Red |
| **C.** Green | **C.** Green |
| **D.** Amber | **D.** Amber |
| **E.** Clear | **E.** Clear |

***See appendix for complete voltage/ratings table**

**X**

**Light/Circuit Location**

**A.** No Light

**B.** Dependent Light ON in position "A" Wired to terms **1** & 7

**C.** Dependent Light ON in position "C" Wired to terms **2** & 8

**D.** Independent Light at position "A" Wired to terms **8** & 7

**E.** Independent Light at position "C" Wired to terms **8** & 7

**F.** Dependent Light ON in position "A" Wired to terms **1** & 7
Dependent Light ON in position "C" Wired to terms **2** & 8

**G.** Dependent Light ON in position "A" Wired to terms **1** & 7
Independent Light at position "C" Wired to terms **8** & 7

**H.** Independent Light ON in position "A" Wired to terms **7** & 8
Dependent Light ON in position "C" Wired to terms **2** & 8

**J.** Independent Light ON in position "A" Wired to terms **7** & 3
Independent Light ON in position "C" Wired to terms **8** & 4
Not available in DP

**D** = Dependent Light
**I** = Independent Light

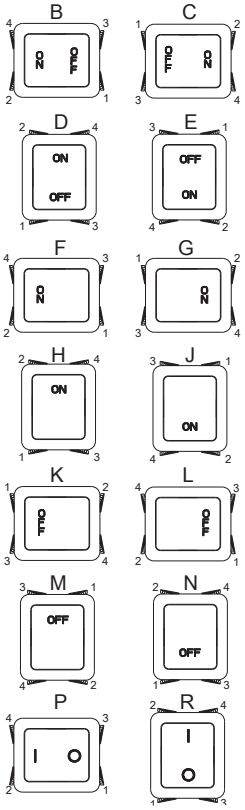
NOTES:

- LED anode (+) terminal number shown in **bold.**
- Light on OFF side must be independent.
- Contact factory for multiple light types in the same switch.

**X**

**Legend & Orientation**

**A.** None



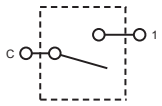

NOTES:

- No momentary switches with dependent lights.
- Neon lamps only to be coded with clear or amber lenses.
- LED lenses must be clear or same color as LED.
- **K2 connector P/N C801765. (See Connector page in Hardware & Accessories Section)**
- Recommended Quick Connect Terminals:
  AMP 60253-2 for 12-16 AWG wire with 0.160" -0.210" insulation OD
  AMP 42100-2 for 14-18 AWG wire with 0.100" -0.170" insulation OD
- No dependent light in OFF position.
- All legends printed on actuators without lens(es) will be white except actuator codes C, F, J, M & R.
- All legends printed on lenses will be white except on clear lens(es) will be black.
- **K2 panel plugs available as shown in Panel Plugs (PP) section.**

# SEALED, ILLUMINATED ROCKER SWITCHES

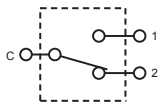
## LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES

K2__A___A_



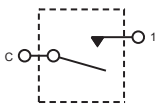

SPST -
ON-NONE-OFF SCHEMATIC

K2__2___A_



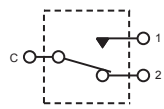

SPDT -
ON-NONE-ON SCHEMATIC

K2__C___A_



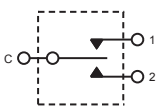

SPST -
(ON)-NONE-OFF SCHEMATIC

K2__D___A_



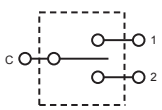

SPDT -
(ON)-NONE-ON SCHEMATIC

K2__E___A_



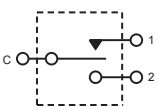

SPDT -
(ON)-OFF-(ON) SCHEMATIC

K2__F___A_



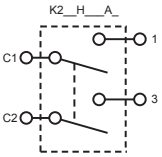

SPDT -
ON-OFF-ON SCHEMATIC

K2__G___A_



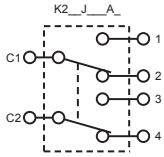

SPDT -
(ON)-OFF-ON SCHEMATIC

K2__H___A_



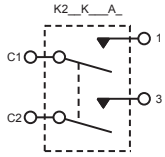

DPST -
ON-NONE-OFF SCHEMATIC

K2__J___A_



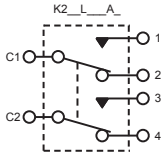

DPDT -
ON-NONE-ON SCHEMATIC

K2__K___A_



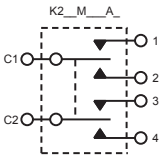

DPST -
(ON)-NONE-OFF SCHEMATIC

K2__L___A_



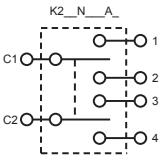

DPDT -
(ON)-NONE-ON SCHEMATIC

K2__M___A_



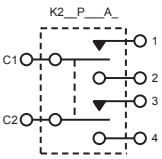

DPDT -
(ON)-OFF-(ON) SCHEMATIC

K2__N___A_



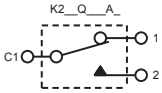

DPDT -
ON-OFF-ON SCHEMATIC

K2__P___A_



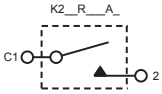

DPDT -
(ON)-OFF-ON SCHEMATIC

K2__Q___A_



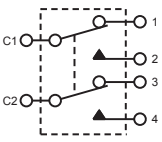

SPDT -
ON-NONE-(ON) SCHEMATIC

K2__R___A_




SPST -
OFF-NONE-(ON) SCHEMATIC

K2__S___A_




DPDT -
ON-NONE-(ON) SCHEMATIC

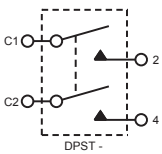
DIMENSIONS ARE IN INCHES.

TOLERANCES

| | |
|---|---|
| .XX | ±.03 |
| .XXX | ±.010 |
| ANGLES | ±2° |

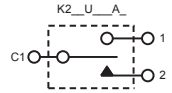
DO NOT SCALE DRAWING

K2__T___A_



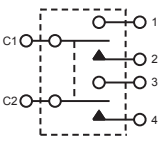

DPST -
OFF-NONE-(ON) SCHEMATIC

K2__U___A_



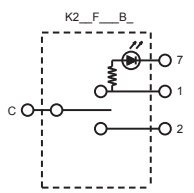

SPDT -
ON-OFF-(ON) SCHEMATIC

K2__V___A_



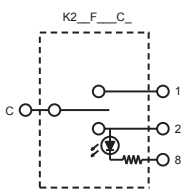

DPDT -
ON-OFF-(ON) SCHEMATIC

K2__F___B_



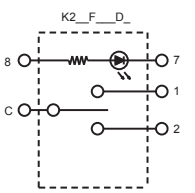

SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A"

K2__F___C_



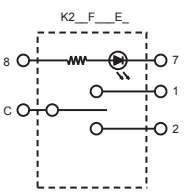

SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "C"

K2__F___D_



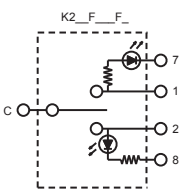

SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A"

K2__F___E_



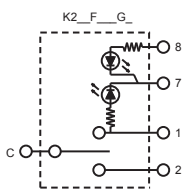

SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "C"

K2__F___F_



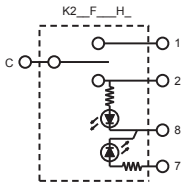

SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A" & "C"

K2__F___G_



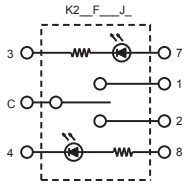

SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A" & IND LED IN "C"

K2__F___H_




SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A" & DEP LED IN "C"

K2__F___J_



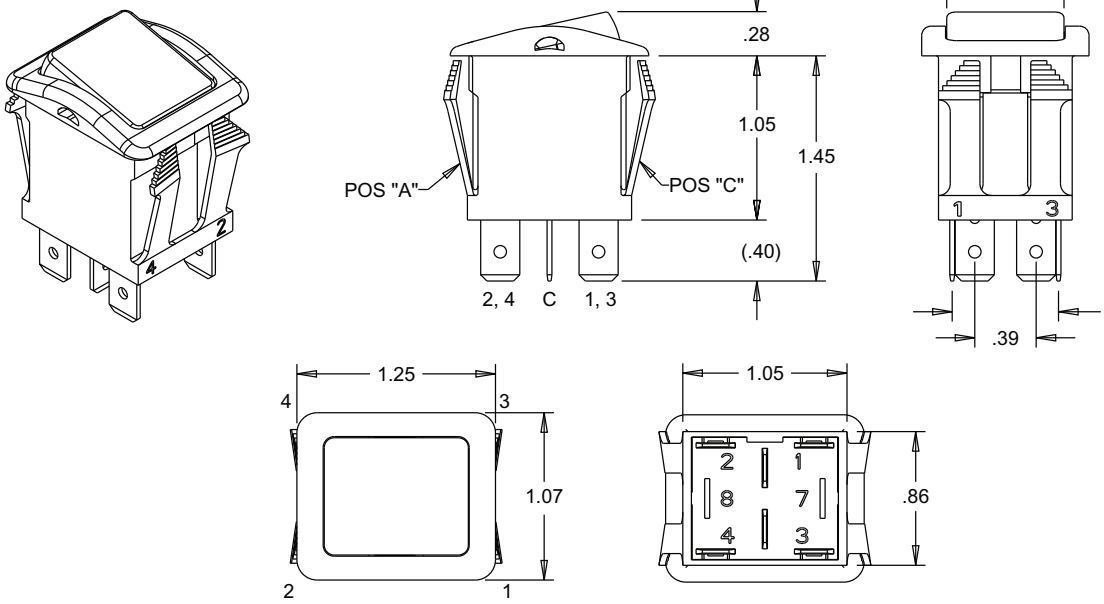

SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A" & IND LED IN "C"



Specifications Subject To Change Without Notice

# SEALED, ILLUMINATED ROCKER SWITCHES

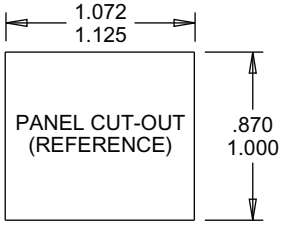
LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES




PANEL THICKNESS AND MOUNTING OPENING GUIDELINES:

PANEL THICKNESS RANGE OF .025 - .105
(GASKET RECOMMENDED)

PANEL THICKNESS RANGE OF .105 - .187
(GASKET NOT REQUIRED)




OPTIONAL PANEL GASKET:

0.062" THICKNESS = P/N C807038-25-1

0.031" THICKNESS = P/N C807038-25-2

ROCKER STYLES

| SHORT PADDLE ROCKER | STANDARD PADDLE ROCKER | STANDARD ROCKER |
|---|---|---|
| 1.25 [31.8] | 1.45 [36.8] | .20 [5.1] |

TERMINAL STYLES (.032 THICK)

| SCREW | QUICK CONNECT | SOLDER | P.C. PIN |
|---|---|---|---|
| #6-32 THD, .25 | Ø .04, .25 | Ø .06, .25 | .030 SQ., .25, .10 |

## K2 AND K4 AND T7 CONNECTOR PART NUMBER CODE

**C801765 -** **XX** **XXXX**

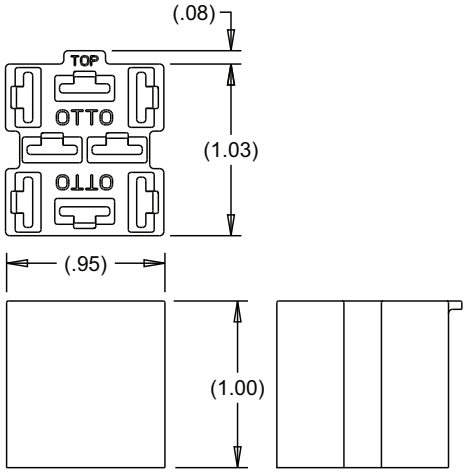
**Connector Color**

**01.** Red
**02.** Black
**03.** Orange*
**04.** Yellow*
**05.** Green*
**06.** Blue*
**07.** Violet*
**08.** Gray*
**09.** White

* Contact Factory

**Packaging Quantity**

**0025** - 25 Pcs per Package
**0050** - 50 Pcs per Package
**0100** - 100 Pcs per Package



# ILLUMINATED PANEL PLUG INDICATORS

SNAP-IN PANEL MOUNTING, ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

Sealed to IP68S, the K3P series of panel plugs with LED indicator lights provides reliable visual feedback to control operators. The K3P panel plugs and OTTO's K3 rocker switches share the same panel cutout size and snap-in front panel mounting method. This allows you to create a uniform panel appearance in your applications. Choose up to 70 different standard legends, 6 lens colors, 5 legend colors and 4 LED colors with 4 voltage options.

| Standard Characteristics/Ratings: | |
|---|---|
| **Seal:** | IP68S |
| **Operating Temp Range:** | -40°C to +85°C |
| **MATERIALS:** | |
| **Case and Base:** | Black Thermoplastic |
| **Button:** | Black Thermoplastic |
| **Terminals:** | Brass Alloy |

## K3P PART NUMBER CODE

**K3P – X X X X X**

**Light Source Position "A"**
**1.** Red
**2.** Green
**3.** Amber
**4.** Blue
**Z.** No Illumination

**Light Source Position "C"**
**1.** Red
**2.** Green
**3.** Amber
**4.** Blue
**Z.** No Illumination

**Lens Color Position "A"**
**1.** Transparent Red
**2.** Transparent Green
**3.** Transparent Amber
**4.** Clear
**5.** Translucent White
**6.** Transparent Blue
**Z.** No Lens

**Lens Color Position "C"**
**1.** Transparent Red
**2.** Transparent Green
**3.** Transparent Amber
**4.** Clear
**5.** Translucent White
**6.** Transparent Blue
**Z.** No Lens

**LED DC Voltage***
**1.** 2V
**2.** 6V
**3.** 12V
**4.** 24V

**STOP HERE** for lighted indicator without legends.

For legends, continue with part number code below.

***See appendix for complete voltage/current ratings table.**

## K3P PART NUMBER CODE - CONTINUED FOR LIGHTED INDICATORS WITH LEGENDS

**– XX XX X X X**

**Legend Style**

**Position "A"**
**ZZ.** No Legend

**Position "C"**
**ZZ.** No Legend

NOTE: For all other legend options, refer to the legend table in the appendix, find the two digit code and enter the code in the appropriate position(s).

**Legend Color**

**Position "A"**
**1.** Red
**2.** Black
**9.** White
**B.** Backlight/ Daylight White ①
**D.** Backlight/ Deadfront ①
**Z.** No Legend

**Position "C"**
**1.** Red
**2.** Black
**9.** White
**B.** Backlight/ Daylight White ①
**D.** Backlight/ Deadfront ①
**Z.** No Legend

① Legend colors "B" and "D" use lens color "Z" for each position.

**Legend Orientation**

| | Position "A" | Position "C" |
|---|---|---|
| **1.** Std. | A | C |
| **2.** 90° | A | C |
| **3.** 180° | A | C |
| **4.** 270° | A | C |

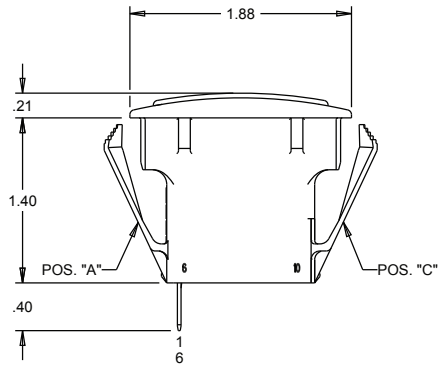


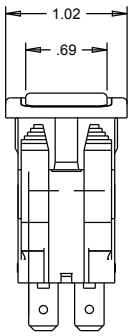
Specifications Subject To Change Without Notice

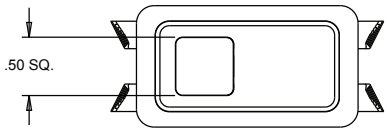
# PANEL PLUG WITH INDICATOR LIGHTS

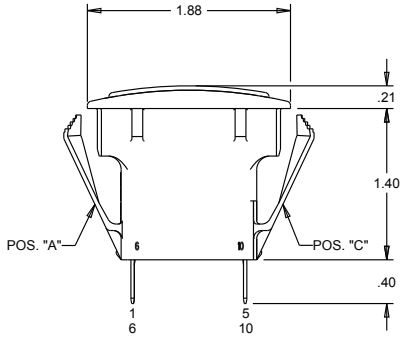


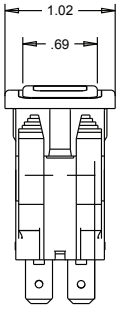
SNAP-IN PANEL MOUNTING, ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

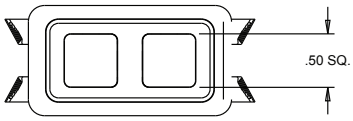


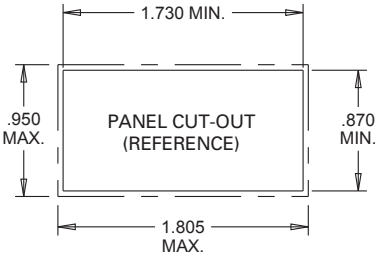



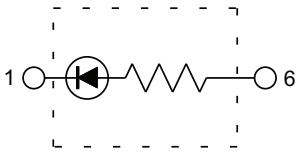




MOUNTING OPENING:
PANEL THICKNESS RANGE OF .025 - .105 PANEL SEAL GASKET P/N C807037-25 IS RECOMMENDED

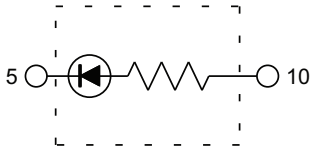
PANEL THICKNESS RANGE OF .105 - .187 W/O GASKET

| PANEL OPENING: | MIN. | TYP. | MAX. |
|---|---|---|---|
| WIDTH | .870 | .937 | .950 |
| LENGTH | 1.730 | 1.768 | 1.805 |

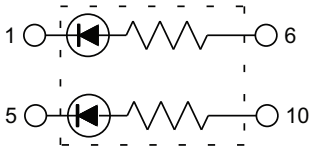



IND. LIGHT IN "A"
SCHEMATIC




IND. LIGHT IN "C"
SCHEMATIC




DUAL IND. LIGHT
SCHEMATIC

# SEALED, ILLUMINATED ROCKER SWITCHES

ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS



Sealed to IP68S and IP69K, the OTTO K3 rocker switch is a quality, precision switch designed to comply with standards established for appliance, marine (ignition protection) and off-road vehicles along with other demanding applications where rugged rocker switches are required.

K3 sealed rocker switches snap into industry-standard panel cutouts. Choose illuminated and printed legends, thru-panel drain option and switching compatibility from logic level to 20 amps.

The K3 offers a choice of LED, incandescent and neon illumination. Legends can be stamped onto a non-illuminated button, stamped onto an illuminated lens or laser etched into the lens and backlit.

Available in standard and logic level contact ratings, the K3 rockers will fit a wide range of applications. Expect a minimum of 25,000 cycles at a full rated load of 20 amps resistive or 15 amps inductive. 100,000 cycles mechanical. A full complement of switch operation is available including momentary and maintained action in 2 or 3-position switches in SPST, SPDT, SPTT, DPST and DPDT circuit arrangements.

OTTO can provide custom colors upon request. Value-added assemblies with wire leads are also available. Please consult the factory for assistance.

## Features:

- **Sealed watertight per IP68S and IP69K**
- **Snap-in panel mounting into industry standard panel cutout**
- **Optional panel seal gasket**
- **Thru-panel drain option**
- **LED, neon & incandescent lighting**
- **0.250" Quick Connect terminals**
- **Optional one-piece connector**
- **Optional terminal barriers**
- **Logic level up to 20 amp switch**
- **Configurable Single Pole Triple Throw (SPTT) with external jumpers**
- **RoHS compliant**

**Standard Characteristics/Ratings:**

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 12/28VDC | Sea Level @ 125VAC, 60Hz |
|---|---|---|
| Resistive | 20A | 16A |
| Inductive | 15A | 15A |
| Lamp | 5A | 5A |
| Motor | 0.5HP @ 110VAC | |
| DWV | 1050Vrms except across light terminals | |
| Logic Level | 10mA @ 5VDC, max D.C. logic level ratings (void if logic level load(s) exceeded at any time) | |
| **Electrical Life:** | 25,000 cycles | |

**LIGHTING:**

| | |
|---|---|
| **Light Source** | Rating (see appendix for complete voltage/current ratings table) |
| Incandescent | (VDC) 6V, 12V, 24V |
| Neon | (VAC) 125V, 250V |
| LED | (VDC) 2V, 6V, 12V, 24V |
| **Mechanical Life:** | 100,000 cycles |
| **Seal:** | IP68S and IP69K |
| **Operating Temp Range:** | -40°C to +85°C |

**MATERIALS:**

| | |
|---|---|
| **Case:** | Thermoplastic, black |
| **Button:** | Thermoplastic |
| **Terminals/Contact:** | Brass, silver alloy with silver plate, gold flash for logic level |
| **Terminal Hardware:** | K3 series recommended Quick Connect terminals:<br>AMP 60253-2 for 12-16 AWG<br>AMP 42100-2 for 14-18 AWG |
| **Mounting Hardware:** | None provided |

# SEALED, ILLUMINATED ROCKER SWITCHES

## K3 SERIES PART NUMBER CODE

Part Number Code Continued Below

K3 X X XX X X

### Base Options

**A.** With Keying Pin Only
Standard Rating
Silver Plate
**B.** Without Barriers or Pin
Standard Rating
Silver Plate
**C.** With Terminal Barriers Only
Standard Rating
Silver Plate
**D.** With Keying Pin Only
Logic Level Rating
Gold Plate
**E.** Without Barriers or Pin
Logic Level Rating
Gold Plate
**F.** With Terminal Barriers Only
Logic Level Rating
Gold Plate
**G.** With Keying Pin Only
Standard Rating
No Plate
**H.** Without Barriers or Pin
Standard Rating
No Plate
**J.** With Terminal Barriers Only
Standard Rating
No Plate

### Case Style/Button Color

**A.** Case With Drain Holes
Button Color: Black
**B.** Case Without Drain Holes
Button Color: Black
**C.** Case With Drain Holes
Button Color: Red
**D.** Case Without Drain Holes
Button Color: Red
**E.** Case With Drain Holes
Button Color: White
**F.** Case Without Drain Holes
Button Color: White

NOTE: Switch case is black for all options below:
**1.** Case With Drain Holes
Button Not Included
**2.** Case Without Drain Holes
Button Not Included

### Switch Action/Circuit

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **1A.** | 3-4 | NONE | OFF | SPST |
| **2A.** | 3-4/8-9 | NONE | OFF | DPST |
| **1B.** | 3-4 | NONE | 3-2 | SPDT |
| **2B.** | 3-4/8-9 | NONE | 3-2/8-7 | DPDT |
| **1C.** | (3-4) | NONE | OFF | SPST |
| **2C.** | (3-4)/(8-9) | NONE | OFF | DPST |
| **1D.** | (3-4) | NONE | 3-2 | SPDT |
| **2D.** | (3-4)/(8-9) | NONE | 3-2/8-7 | DPDT |
| **1E.** | (3-4) | OFF | (3-2) | SPDT |
| **2E.** | (3-4)/(8-9) | OFF | (3-2)/(8-7) | DPDT |
| **1F.** | 3-4 | OFF | 3-2 | SPDT |
| **2F.** | 3-4/8-9 | OFF | 3-2/8-7 | DPDT |
| **1G.** | (3-4) | OFF | 3-2 | SPDT |
| **2G.** | (3-4)/(8-9) | OFF | 3-2/8-7 | DPDT |

### Special Circuits

| | Position "A" | Position "B" | Position "C" | Special Circuits |
|---|---|---|---|---|
| **1H.** | 3-4/8-9 | 8-9 | OFF | ON/ON/OFF |
| **1J.** | 3-4/8-9 | 8-9 | NONE | ON/ON/NONE |
| **1K.** | (3-4)/(8-9) | 8-9 | OFF | (ON)/ON/OFF |
| **1L** | (3-4)/(8-9) | 8-9 | NONE | (ON)/ON/NONE |
| **1M.** | 3-4/8-9 | 3-2/8-9 | 3-2/8-7 | ON/ON/ON |
| **1N.** | (3-4)/(8-9) | 3-2/8-9 | 3-2/8-7 | (ON)/ON/ON |
| **1P.** | (3-4)/(8-9) | 3-2/8-9 | (3-2)/(8-7) | (ON)/ON/(ON) |
| **2R.** | 3-4/8-9 | OFF/8-9 | OFF/OFF | ON/OFF/OFF<br>ON/ON/OFF |
| **2S.** | (3-4)/8-9 | OFF/8-9 | OFF/OFF | (ON)/OFF/OFF<br>ON/ON/OFF |

NOTE: ( ) denotes momentary action.

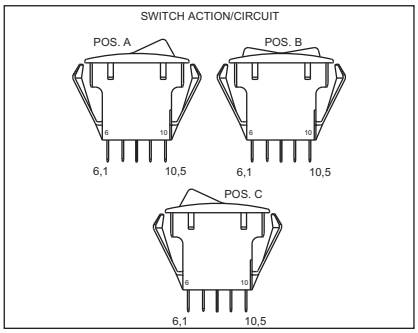
### Light Source Type*

**A.** No Illumination
**B.** 6V Incandescent
**C.** 12V Incandescent
**D.** 24V Incandescent
**E.** 125VAC Neon
**F.** 250VAC Neon
**G.** 2V Red LED
**H.** 2V Green LED
**J.** 2V Amber LED
**K.** 6V Red LED
**L.** 6V Green LED
**M.** 6V Amber LED
**N.** 12V Red LED
**P.** 12V Green LED
**Q.** 12V Amber LED
**R.** 24V Red LED
**S.** 24V Green LED
**T.** 24V Amber LED

### Light Circuit

| | Circuit | Terminal Connections |
|---|---|---|
| **A.** | None | None |
| **B.** | Dep. in "A" | 1(-) & 4(+) |
| **C.** | Dep. in "C" | 2(+) & 5(-) |
| **D.** | Ind. in "A" | 1(-) & 6(+) |
| **E.** | Ind. in "C" | 5(-) & 10(+) |
| **F.** | Dep. in "A"<br>Dep. in "C" | 1(-) & 4(+)<br>2(+) & 5(-) |
| **G.** | Dep. in "A"<br>Ind. in "C" | 1(-) & 4(+)<br>5(-) & 10(+) |
| **H.** | Ind. in "A"<br>Dep. in "C" | 1(-) & 6(+)<br>2(+) & 5(-) |
| **J.** | Ind. in "A"<br>Ind. in "C" | 1(-) & 6(+)<br>5(-) & 10(+) |

NOTE: Polarity only applies to LED circuits.




***See appendix for complete voltage/current ratings table.**

## K3 PART NUMBER CODE - CONTINUED FROM ABOVE

– X X XX XX X X X

### Lens Color

| Position "A" | Position "C" |
|---|---|
| **1.** Transparent Red | **1.** Transparent Red |
| **2.** Transparent Green | **2.** Transparent Green |
| **3.** Transparent Amber ① | **3.** Transparent Amber ① |
| **4.** Clear ① | **4.** Clear ① |
| **5.** Translucent White ② | **5.** Translucent White ② |
| **Z.** No Lens ③ | **Z.** No Lens ③ |

NOTE: It is not recommended to use green LEDs with translucent white lenses. This will reduce light intensity. Use clear lenses with green LEDs for maximum light intensity.

① Recommended for neon lamps.
② Special Order: Ultra bright green LED to be used with translucent white lenses.
③ Legend colors "B" & "D" are only available on lens color "Z".

**STOP HERE** for unlighted switches without legends.

Example: K3AAIFAA

### Legend Style

| Position "A" | Position "C" |
|---|---|
| **ZZ.** No Legend | **ZZ.** No Legend |

NOTE: For all other legend options, refer to the legend table in the appendix, find the two digit code and enter the code in the appropriate position(s).

**STOP HERE** for lighted switches without legends.

Example: K3AAIFNH-44

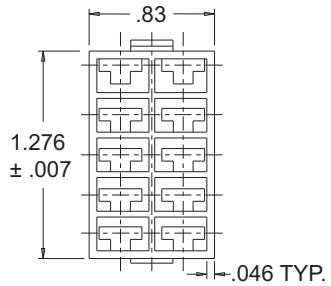
### Legend Color

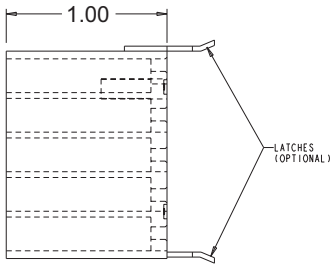
| Position "A" | Position "C" |
|---|---|
| **1.** Red | **1.** Red |
| **2.** Black | **2.** Black |
| **9.** White | **9.** White |
| **B.** Backlight/ Daylight White ④ | **B.** Backlight/ Daylight White ④ |
| **D.** Backlight/ Deadfront ④ | **D.** Backlight/ Deadfront ④ |
| **Z.** No Legend | **Z.** No Legend |

④ For legend color "B" and "D", please use button color "A" & "B" and lens color "Z" for each position.

### Legend Orientation

| | Position "A" | Position "C" |
|---|---|---|
| **1.** Std. | A | C |
| **2.** 90° | A | C |
| **3.** 180° | A | C |
| **4.** 270° | A | C |




**• K3 panel plugs available as shown in Panel Plugs (PP) section.**

Recommended Quick Connect Terminals:
AMP 60253-2 for 12-16 AWG
AMP 42100-2 for 14-18 AWG

### K3 Connector
**P/N C801775-2A Without Latches**
**P/N C801775-2B With Latches**

### Panel Seal Gasket
**P/N C807037-25**
Order separately for use with switches without drain holes.

### Panel Plug
See Panel Plug (PP) page.

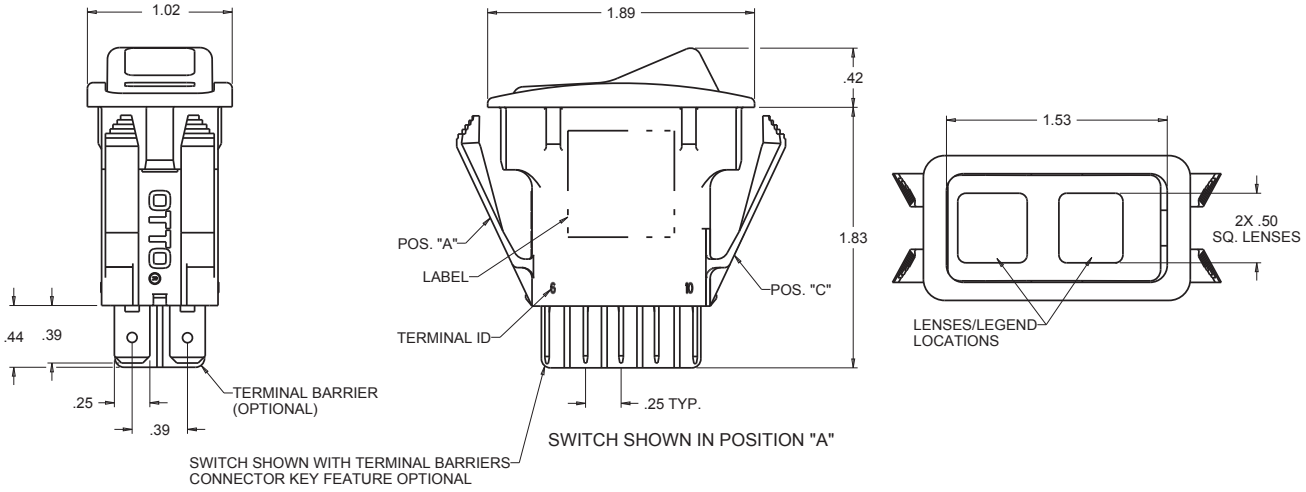


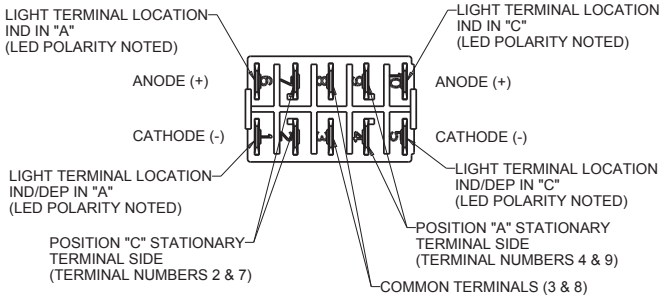
Specifications Subject To Change Without Notice

# SEALED, ILLUMINATED ROCKER SWITCHES



## SNAP-IN PANEL MOUNTING, ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

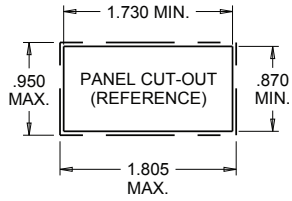


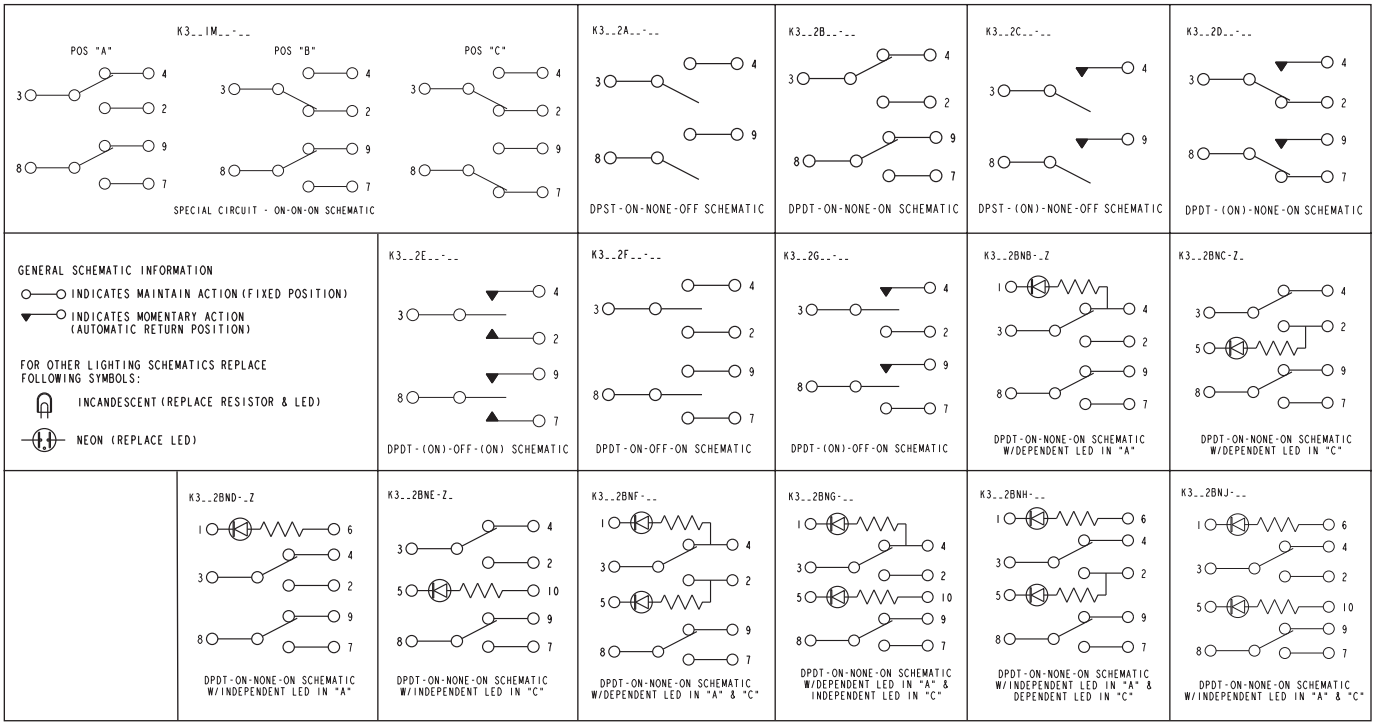




TERMINAL LOCATIONS AS VIEWED FROM
BOTTOM OF SWITCH (CASE REMOVED FOR CLARITY)
CONTACT MADE IN OPPOSITE DIRECTION OF ROCKER TRAVEL

MOUNTING OPENING:
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 | .870 | .937 | .950 |
| LENGTH | 1.730 | 1.768 | 1.805 |



# SEALED, ILLUMINATED SNAP-IN TOGGLE

LOW COST, SNAP-IN TOGGLE FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES

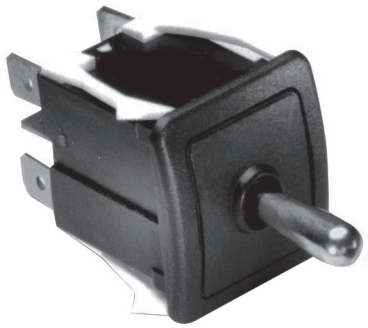
The K4 series snap-in toggle switches are rugged, high performance sealed switches designed for use under severe conditions found in marine, appliance, heavy equipment and industrial control applications. They are totally sealed to IP68S and IP69K so the switch can withstand direct water spray and submersion. With the optional panel seal gasket, the K4 is also panel sealed.

The K4 series is offered in single and double pole configurations. Toggle action includes 2 and 3-position, momentary and maintained operation in a combination of 13 variations.

Mounting is simple and quick; snaps into panel from the front. The OTTO snap-in design supports a variety of panel thicknesses with just one cutout size specified.

Existing unsealed applications are easily upgraded to sealed functionality because the K series drops into existing panel cutouts.

A choice of models are offered to handle current from 16 amps to logic level electronic switching levels.



Single & Double Pole

LED, Neon or
Incandescent Illumination

## Features:

- **Withstands direct water spray**
- **Sealed to IP68S and IP69K**
- **Fits industry standard panel openings for drop-in replacement of panel sealed & unsealed switches**
- **Snap-in feature accommodates a wide range of panel cutouts**
- **Switches up to 16 amps**
- **UV & solvent resistant**
- **Withstands extreme shock & vibration**
- **Legends & illuminated function indicators available**
- **2 & 3-position, momentary, maintained action & center OFF**
- **RoHS compliant**

**Standard Characteristics/Ratings:**

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 28VDC | Sea Level @125VAC, 60Hz | Cycles |
|---|---|---|---|
| Resistive | 16A | 5A | 25,000 |
| Resistive | 10A | N/A | 50,000 |
| Inductive | 7A | 2A | 25,000 |
| 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) | | 100,000 |
| **Electrical Life:** | See Rating Chart | | |

**LIGHTING:**

| Light Source | Rating |
|---|---|
| Incandescent | (VDC) 6V, 12V, 24V |
| Neon | (VAC) 125V, 250V |
| LED | (VDC) 2V, 6V, 12V, 24V |
| **Mechanical Life:** | 100,000 cycles |
| **Seal:** | IP68S and IP69K |
| **Operating Temp Range:** | -30°C to +85°C |

**MATERIALS:**

| | |
|---|---|
| **Case:** | Thermoplastic |
| **Toggle:** | Stainless steel |
| **Terminals/Contact:** | Brass, silver alloy with silver plate, gold plate for logic level |
| **Terminal Hardware:** | Screws and lockwashers provided when applicable<br>K4 series recommended Quick Connect terminals:<br>AMP 60253-2 for 12-16 AWG<br>AMP 42100-2 for 14-18 AWG |
| **Mounting Hardware:** | None provided |

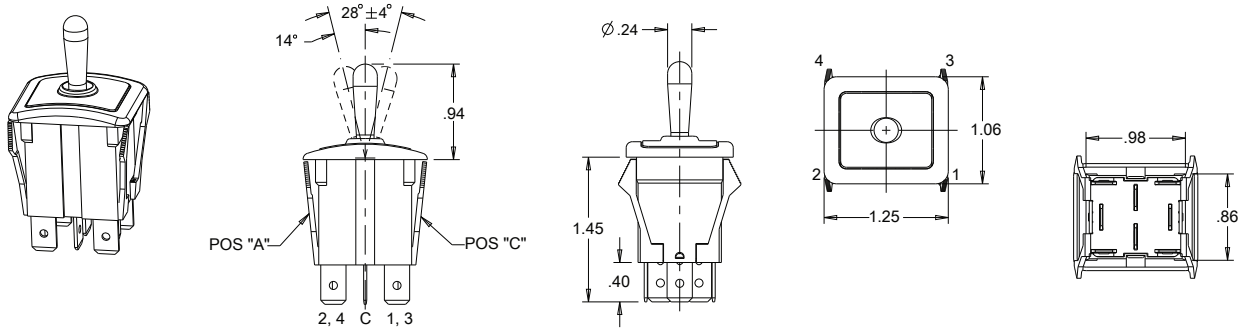


Specifications Subject To Change Without Notice

# SEALED, ILLUMINATED SNAP-IN TOGGLE



LOW COST, SNAP-IN TOGGLE FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES

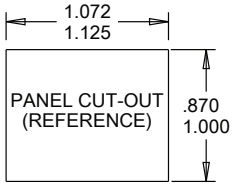



| TERMINAL STYLES (.032 THICK) | | | |
|---|---|---|---|
| SCREW | QUICK CONNECT | SOLDER | P.C. PIN |
| #6-32 THD, .25 | Ø .08, .25 | Ø .11, .25 | .030 SQ. .10, .25 |

PANEL THICKNESS AND MOUNTING OPENING GUIDELINES:

PANEL THICKNESS RANGE OF .025 - .105 (GASKET RECOMMENDED)

PANEL THICKNESS RANGE OF .105 - .187 (GASKET NOT REQUIRED)




## K4 SERIES PART NUMBER CODE

K4 X X X X X X X

**Terminal Style/ Switch Rating**
- **A.** Quick Connect/ Standard
- **B.** Screw/Standard
- **C.** Solder/Standard
- **D.** Quick Connect/ Logic Level
- **E.** Screw/Logic Level
- **F.** Solder/Logic Level
- **G.** P.C. Pin/Standard
- **H.** P.C. Pin/Logic Level

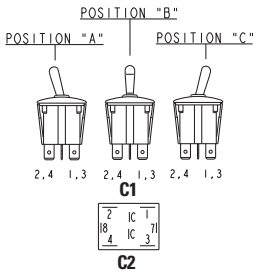
NOTE: Contact factory for panel recommendations on switches with potting cups.

**Rocker Style**
- **A.** Bat Handle

**Switch Action/Circuit**

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **A.** | 1-C1 | NONE | OFF | SPST |
| **B.** | 1-C1 | NONE | 2-C1 | SPDT |
| **C.** | (1-C1) | NONE | OFF | SPST |
| **D.** | (1-C1) | NONE | 2-C1 | SPDT |
| **E.** | (1-C1) | OFF | (2-C1) | SPDT |
| **F.** | 1-C1 | OFF | 2-C1 | SPDT |
| **G.** | (1-C1) | OFF | 2-C1 | SPDT |
| **H.** | 1-C1/3-C2 | NONE | OFF | DPST |
| **J.** | 1-C1/3-C2 | NONE | 2-C1/4-C2 | DPDT |
| **K.** | (1-C1)/(3-C2) | NONE | OFF | DPST |
| **L.** | (1-C1)/(3-C2) | NONE | 2-C1/4-C2 | DPDT |
| **M.** | (1-C1)/(3-C2) | OFF | (2-C1)/(4-C2) | DPDT |
| **N.** | 1-C1/3-C2 | OFF | 2-C1/4-C2 | DPDT |
| **P.** | (1-C1)/(3-C2) | OFF | 2-C1/4-C2 | DPDT |

NOTE: ( ) denotes momentary action.




**Optional Panel Gasket:**

**P/N C807038-25-1 0.062" thickness**

**P/N C807038-25-2 0.031" thickness**

**K4 connector P/N C801765 (See Connector page in Hardware & Accessories section)**

- **K4 panel plugs available as shown in Panel Plugs (PP) section.**

**Light Type***
- **A.** No Light
- **B.** 6V Incandescent
- **C.** 12V Incandescent
- **D.** 24V Incandescent
- **E.** 125VAC Neon
- **F.** 250VAC Neon
- **G.** 2V Red LED
- **H.** 2V Green LED
- **J.** 2V Amber LED
- **K.** 6V Red LED
- **L.** 6V Green LED
- **M.** 6V Amber LED
- **N.** 12V Red LED
- **P.** 12V Green LED
- **Q.** 12V Amber LED
- **R.** 24V Red LED
- **S.** 24V Green LED
- **T.** 24V Amber LED

**Lens Color**

| Position "A" | Position "B" |
|---|---|
| **A.** No Lens | **A.** No Lens |
| **B.** Red | **B.** Red |
| **C.** Green | **C.** Green |
| **D.** Amber | **D.** Amber |
| **E.** Clear | **E.** Clear |

NOTES:
- No momentary switches with dependent lights.
- Neon lamps only to be coded with clear or amber lenses.
- LED lenses must be clear or same color as LED.
- No legends on lamp side of switch.
- No dependent light in OFF positions.
- All legends printed on actuators without lens(es) will be white except actuator codes C, F, J, M & R.
- All legends printed on lenses will be white except on clear lens(es) will be black.

**Light/Circuit Location**

**A.** No Light

**B.** Dependent Light ON in position "A" Wired to terms **1** & 7

**C.** Dependent Light ON in position "C" Wired to terms **2** & 8

**D.** Independent Light at position "A" Wired to terms 7 & **8**

**E.** Independent Light at position "C" Wired to terms 7 & **8**

**F.** Dependent Light ON in position "A" Wired to terms **1** & 7
Dependent Light ON in position "C" Wired to terms **2** & 8

**G.** Dependent Light ON in position "A" Wired to terms **1** & 7
Independent Light at position "C" Wired to terms 7 & **8**

**H.** Independent Light at position "A" Wired to terms **7** & 8
Dependent Light ON in position "C" Wired to terms **2** & 8

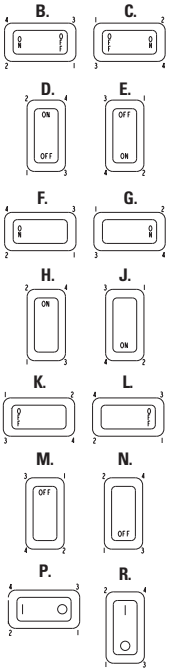
**J.** Independent Light at position "A" Wired to terms 3 & **7**
Independent Light at position "C" Wired to terms 4 & **8**
Not available in DP

NOTE: LED anode (+) terminal number shown in **bold.**

**D** = Dependent Light
**I** = Independent Light

**Legend & Orientation**

**A.** No Legend




① All legends are white. Legend cannot be on the same side as the lens.

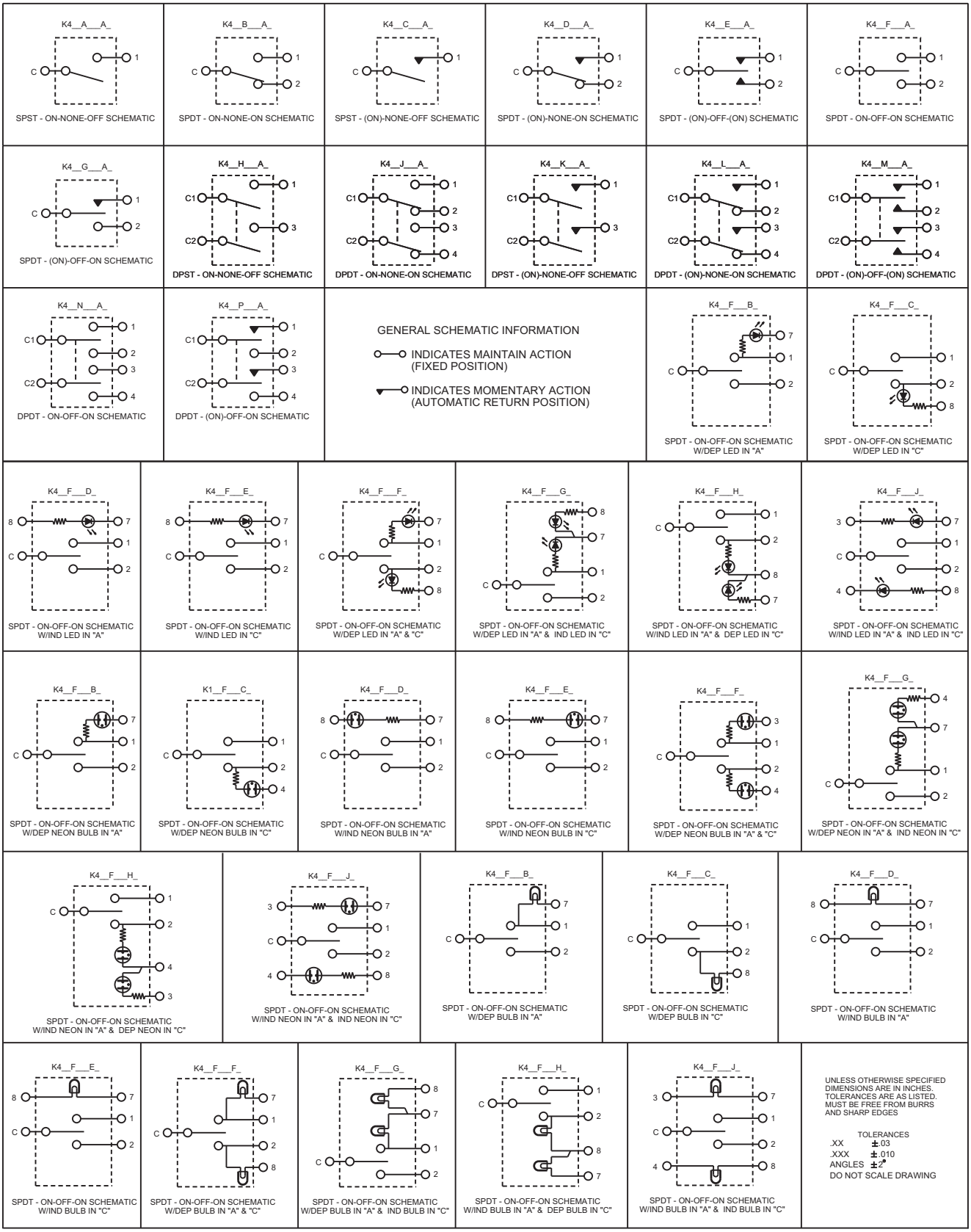
## ORDERING INFORMATION

**Example:** K4AAKEEABA specifies Q.C. terminals, standard rating; bat handle; DPST two position momentary ON, maintained OFF; 125VAC neon light; clear lens in positions "A", no lens in position "C"; dependent light ON in position "A", wired to terminals 1 & 7; no legend.

***See Appendix for complete voltage/current ratings table.**

# SEALED, ILLUMINATED SNAP-IN TOGGLE

## K4 SCHEMATICS






Specifications Subject To Change Without Notice

# SEALED, ILLUMINATED ROCKER SWITCHES

ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS



The OTTO K5 series is a quality, precision switch designed to comply with standards established for appliance, marine (ignition protection) and off-road vehicles along with other demanding applications where rugged rocker switches are required.

K5 series sealed rocker switches snap into industry-standard panel cutouts. Choose illuminated and printed legends, thru-panel drain option and switching compatibility from logic level up to 20 amps.

The K5 series offers a choice of LED, incandescent and neon illumination. Legends can be stamped onto a non-illuminated button, stamped onto an illuminated lens or laser etched into the lens and backlit.

Available in standard and logic level contact ratings, the K5 rockers will fit a wide range of applications. Expect a minimum of 25,000 cycles at a full rated load of 20 amps resistive or 15 amps inductive. 100,000 cycles mechanical. A full complement of switch operation is available including momentary and maintained action in 2 or 3-position switches in SPST, SPDT, SPTT, DPST and DPDT circuit arrangements.

OTTO can provide custom colors upon request. Value-added assemblies with wire leads are also available. Please consult the factory for assistance.

## Features:

- **Sealed watertight per IP68S and IP69K**
- **Snap-in panel mounting into industry standard panel cutout**
- **Optional panel seal gasket**
- **LED, neon & incandescent lighting**
- **0.250" Quick Connect terminals**
- **Optional one-piece connector**
- **Optional terminal barriers**
- **Logic level up to 20 amp switch**
- **Configurable Single Pole Triple Throw (SPTT) with external jumpers**
- **Soft Touch button available**
- **RoHS compliant**

Raised Bars Shown

**Standard Characteristics/Ratings:**

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 28VDC | Sea Level @ 125VAC, 60/400Hz |
|---|---|---|
| Resistive | 20A | 16A |
| Inductive | 15A | 15A |
| Lamp | 5A | 5A |
| 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) | |
| **Electrical Life:** | 25,000 cycles | |

**LIGHTING:**

| Light Source | Rating |
|---|---|
| Incandescent | (VDC) 6V, 12V, 24V |
| Neon | (VAC) 125V, 250V |
| LED | (VDC) 2V, 6V, 12V, 24V |
| **Mechanical Life:** | 100,000 cycles |
| **Seal:** | IP68S and IP69K |
| **Operating Temp Range:** | -40°C to +85°C |

**MATERIALS:**

| | |
|---|---|
| **Case:** | Thermoplastic |
| **Button:** | Thermoplastic |
| **Terminals/Contact:** | Brass, silver alloy with silver plate, gold flash for logic level |
| **Terminal Hardware:** | K5 series recommended Quick Connect terminals:<br>AMP 60253-2 for 12-16 AWG<br>AMP 42100-2 for 14-18 AWG |
| **Mounting Hardware:** | None provided |

# SEALED, ILLUMINATED ROCKER SWITCHES

SNAP-IN PANEL MOUNTING

## K5 SERIES PART NUMBER CODE

**Part Number Code Continued Below**

**K5 X X X X XX X X**

### Base Options

- **A.** With Keying Pin Only Standard Rating Silver Plate
- **B.** Without Barriers or Pin Standard Rating Silver Plate
- **C.** With Terminal Barriers Only Standard Rating Silver Plate
- **D.** With Keying Pin Only Logic Level Rating Gold Plate
- **E.** Without Barriers or Pin Logic Level Rating Gold Plate
- **F.** With Terminal Barriers Only Logic Level Rating Gold Plate
- **G.** With Keying Pin Only Standard Rating No Plate
- **H.** Without Barrier or Pin Standard Rating No Plate
- **J.** With Terminal Barriers Only Standard Rating No Plate

NOTE: All code combinations are not feasible. Consult factory for product availability.

### Rocker Color*/Style

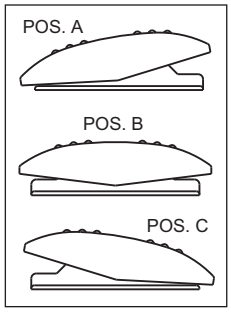
- **A.** Black Plastic Rocker
- **B.** Black "Soft Touch" Rocker
- **C.** Red Plastic Rocker
- **D.** Red "Soft Touch" Rocker
- **E.** White Plastic Rocker
- **F.** White "Soft Touch" Rocker
- **H.** Green Plastic Rocker
- **J.** Orange Plastic Rocker
- **K.** Blue Plastic Rocker
- **L.** Gray "Soft Touch" Rocker
- **M.** Gray Plastic Rocker

*Additional colors available. Contact factory.

### Rocker Features

| Position "A" | Position "C" |
|---|---|
| **1.** No Feature | **1.** No Feature |
| **2.** Lens | **2.** Lens |
| **3.** Raised Bars | **3.** Raised Bars |
| **4.** Raised Lit Bars | **4.** Raised Lit Bars |

NOTE: Raised Lit Bars are available with the Soft Touch rocker styles. Soft Touch rockers require same color lenses/ lit bars for both positions.




### Switch Action/Circuit

| | Position "A" | Position "B" | Position "C" | Circuit |
|---|---|---|---|---|
| **1A.** | 3-4 | NONE | OFF | SPST |
| **2A.** | 3-4/8-9 | NONE | OFF | DPST |
| **1B.** | 3-4 | NONE | 3-2 | SPDT |
| **2B.** | 3-4/8-9 | NONE | 3-2/8-7 | DPDT |
| **1C.** | (3-4) | NONE | OFF | SPST |
| **2C.** | (3-4)/(8-9) | NONE | OFF | DPST |
| **1D.** | (3-4) | NONE | 3-2 | SPDT |
| **2D.** | (3-4)/(8-9) | NONE | 3-2/8-7 | DPDT |
| **1E.** | (3-4) | OFF | (3-2) | SPDT |
| **2E.** | (3-4)/(8-9) | OFF | (3-2)/(8-7) | DPDT |
| **1F.** | 3-4 | OFF | 3-2 | SPDT |
| **2F.** | 3-4/8-9 | OFF | 3-2/8-7 | DPDT |
| **1G.** | (3-4) | OFF | 3-2 | SPDT |
| **2G.** | (3-4)/(8-9) | OFF | 3-2/8-7 | DPDT |

### Special Circuits

| | Position "A" | Position "B" | Position "C" | Special Circuits |
|---|---|---|---|---|
| **1H.** | 3-4/8-9 | 8-9 | OFF | ON/ON/OFF |
| **1J.** | 3-4/8-9 | 8-9 | NONE | ON/ON/NONE |
| **1K.** | (3-4)/(8-9) | 8-9 | OFF | (ON)/ON/OFF |
| **1L.** | (3-4)/(8-9) | 8-9 | NONE | (ON)/ON/NONE |
| **1M.** | 3-4/8-9 | 3-2/8-9 | 3-2/8-7 | ON/ON/ON |
| **1N.** | (3-4)/(8-9) | 3-2/8-9 | 3-2/8-7 | (ON)/ON/ON |
| **1P.** | (3-4)/(8-9) | 3-2/8-9 | (3-2)/(8-7) | (ON)/ON/(ON) |
| **2R.** | 3-4/8-9 | OFF/8-9 | OFF/OFF | ON/OFF/OFF ON/ON/OFF |
| **2S.** | (3-4)/8-9 | OFF/8-9 | OFF/OFF | (ON)/OFF/OFF ON/ON/OFF |

NOTE: ( ) denotes momentary action.

### Light Source Type*

- **A.** No Illumination
- **B.** 6V Incandescent
- **C.** 12V Incandescent
- **D.** 24V Incandescent
- **E.** 125VAC Neon
- **F.** 250VAC Neon
- **G.** 2V Red LED
- **H.** 2V Green LED
- **J.** 2V Amber LED
- **K.** 6V Red LED
- **L.** 6V Green LED
- **M.** 6V Amber LED
- **N.** 12V Red LED
- **P.** 12V Green LED
- **Q.** 12V Amber LED
- **R.** 24V Red LED
- **S.** 24V Green LED
- **T.** 24V Amber LED

### Light Circuit

| | Circuit | Terminal Connections |
|---|---|---|
| **A.** | NONE | NONE |
| **B.** | Dep. in "A" | 1(-) & 4(+) |
| **C.** | Dep. in "C" | 2(+) & 5(-) |
| **D.** | Ind. in "A" | 1(-) & 6(+) |
| **E.** | Ind. in "C" | 5(-) & 10(+) |
| **F.** | Dep. in "A" Dep. in "C" | 1(-) & 4(+) 2(+) & 5(-) |
| **G.** | Dep. in "A" Ind. in "C" | 1(-) & 4(+) 5(-) & 10(+) |
| **H.** | Ind. in "A" Dep. in "C" | 1(-) & 6(+) 2(+) & 5(-) |
| **J.** | Ind. in "A" Ind. in "C" | 1(-) & 6(+) 5(-) & 10(+) |

NOTE: Polarity only applies to LED circuits.

***See appendix for complete voltage/ratings table**

## K5 PART NUMBER CODE - CONTINUED FROM ABOVE

**X X XX XX X X X**

### Lens Color

| Position "A" | Position "C" |
|---|---|
| **1.** Transparent Red | **1.** Transparent Red |
| **2.** Transparent Green | **2.** Transparent Green |
| **3.** Transparent Amber ① | **3.** Transparent Amber ① |
| **4.** Clear ① | **4.** Clear ① |
| **5.** Translucent White ② | **5.** Translucent White ② |
| **Z.** No Lens | **Z.** No Lens |

NOTE: It is not recommended to use green LEDs with translucent white lenses. This will reduce light intensity. Use clear lenses with green LEDs for maximum light intensity.

① Recommended for neon lamps.
② Special Order: Ultra bright green LEDs to be used with translucent white lens.

**STOP HERE** for lighted switches without legends.

Example: K5AA331FNH-44

### Legend Style

| Position "A" | Position "C" |
|---|---|
| **ZZ.** No Legend | **ZZ.** No Legend |

NOTE: For all other legend options, refer to the legend table in the appendix, , find the two digit code and enter the code in the appropriate position(s).

### Legend Color

| Position "A" | Position "C" |
|---|---|
| **1.** Red | **1.** Red |
| **2.** Black | **2.** Black |
| **9.** White | **9.** White |
| **B.** Backlight/ Daylight White ③ | **B.** Backlight/ Daylight White ③ |
| **D.** Backlight/ Deadfront ③ | **D.** Backlight/ Deadfront ③ |
| **Z.** No Legend | **Z.** No Legend |

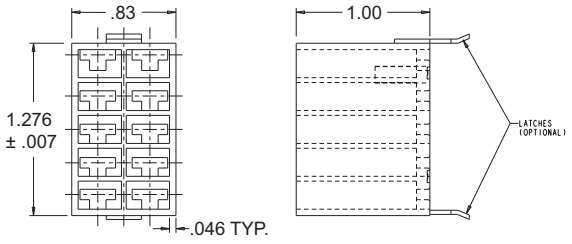
③ Only available on Rocker Style "A" & Rocker Features "1" and lens color "Z" for each position.

### Legend Orientation

| | Position "A" | Position "C" |
|---|---|---|
| **1.** Std. | A | C |
| **2.** 90° | A | C |
| **3.** 180° | A | C |
| **4.** 270° | A | C |

**STOP HERE** for unlighted switches without legends.

Example: K5AA331BAA




### K5 Connector

**P/N C801775-2A Without Latches**
**P/N C801775-2B With Latches**

### Recommended Quick Connect Terminals

**AMP 60253-2 for 12-16 AWG**
**AMP 42100-2 for 14-18 AWG**

### Panel Seal Gasket

**Silicone: P/N C807109-25-1**
**Buna-N: P/N C807618-25-1**

- **K5 panel plugs available as shown in Panel Plugs (PP) section.**

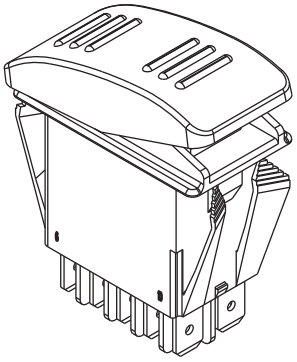


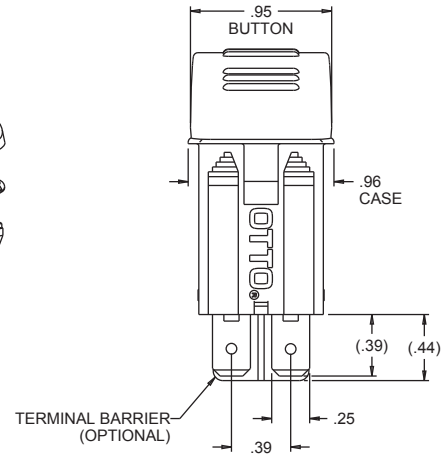
Specifications Subject To Change Without Notice

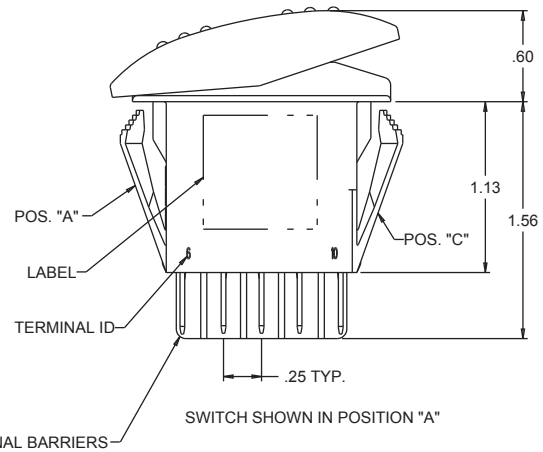
# SEALED, ILLUMINATED ROCKER SWITCHES

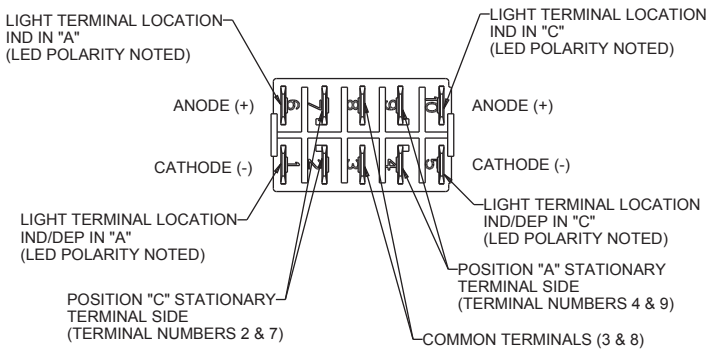


## ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

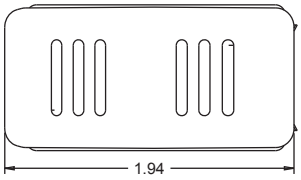




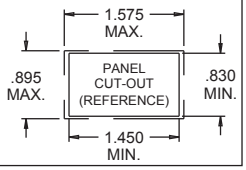

TERMINAL LOCATIONS AS VIEWED FROM BOTTOM OF SWITCH
(CASE REMOVED FOR CLARITY)
CONTACT MADE IN OPPOSITE DIRECTION OF ROCKER TRAVEL

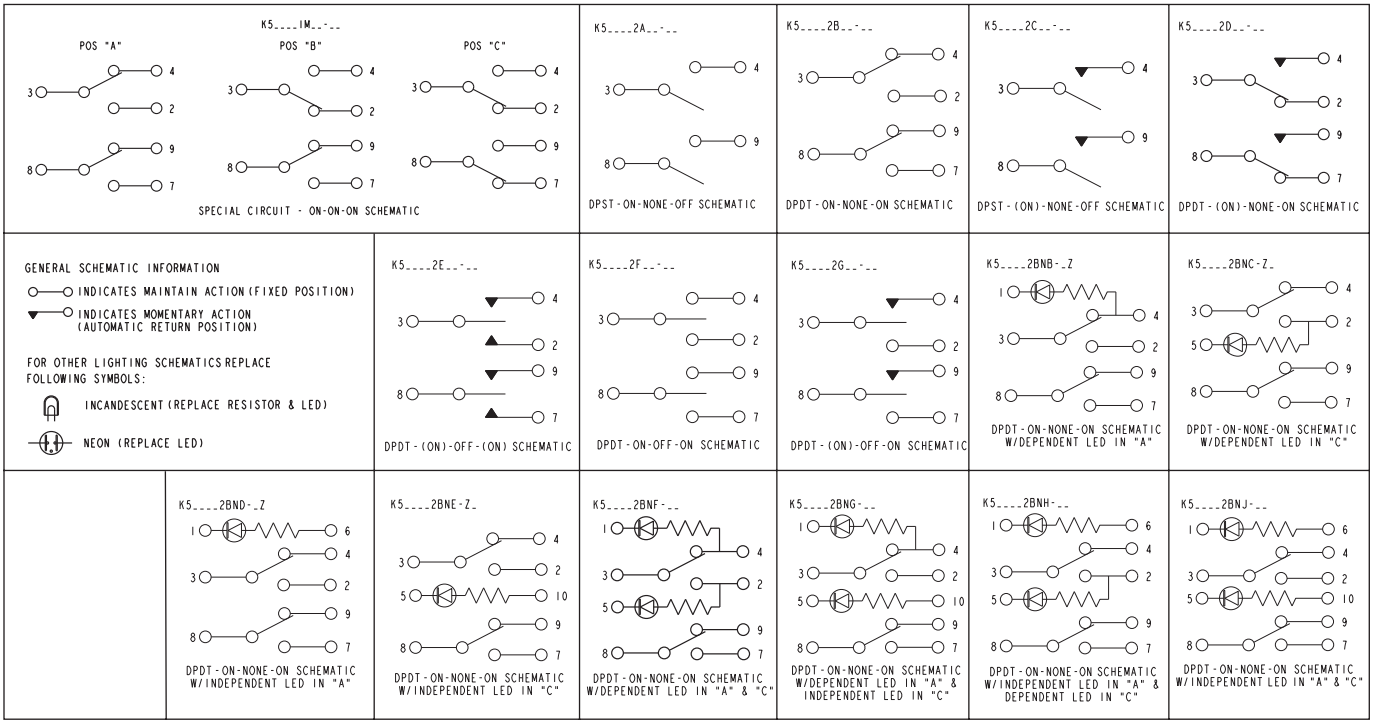



MOUNTING OPENING:

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 | .863 | .895 |
| LENGTH | 1.450 | 1.513 | 1.575 |



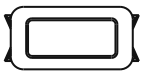



| OTTO STANDARD LEGENDS PER SAE SPECIFICATIONS | | |
|---|---|---|
| A1 ANCHOR | H2 HORN REAR | P4 BILGE PUMP |
| B1 BATTERY | K1 LOCK | P5 BILGE BLOWER |
| B2 ELECTRIC POWER | K2 UNLOCK | R1 LIFT |
| C1 AC/COOLING SYSTEMS | L1 LIGHT | R2 LOWER |
| C2 DEHUMIDIFIER | L2 MASTER LIGHTING SWITCH | R3 UP |
| C3 HEATER/INTERIOR HEATING | L3 HEADLIGHTS | R4 DOWN |
| D1 WINDSHIELD DEFROSTER | L4 HEADLIGHTS-LOW / DIPPED BEAM | R5 RIGHT |
| D2 REAR WINDOW DEFROSTER | L5 HEADLIGHTS-HIGH / UPPER BEAM | R6 LEFT |
| D3 MIRROR DEFROSTER | L6 PARKING LIGHT | R7 FWD FORWARD |
| E1 ENGINE/START | L7 WORK LAMP | R8 REV REVERSE |
| E2 ENGINE/STOP | L8 WORK LAMP | S1 RADIO |
| E3 ON/START | L9 INTERIOR DOME LIGHT | S2 MUTE |
| E4 OFF/STOP | M1 BEACON | T1 FAST |
| E5 ON ON | M2 HAZARD/POSITION LIGHTS | T2 SLOW |
| E6 OFF OFF | M3 CLEARANCE LIGHTS | T3 TRIM TAB / TRIMMING OPERATION |
| E7 ENGINE ELECTRIC PREHEAT | M4 SIDE MARKER LIGHT | T4 TRANSMISSION |
| E8 ENGINE-GAS INJECTION | M5 RUNNING LIGHTS (UNDER POWER) | V1 VENTILATING / AC FAN |
| E9 POWER | M6 ANCHOR LIGHT | W1 WINDSHIELD WIPER |
| F1 FRONT FOG LIGHTS | M7 RUNNING/ANCHOR LIGHTS | W2 WINDSHIELD-WASHER |
| F2 REAR FOG LIGHTS | M8 SEARCH LIGHT | W3 WINDSHIELD-WASHER/WIPER |
| F3 F FORWARD | M9 LEFT TURN SIGNAL | W4 REAR WINDOW WIPER |
| F4 N NEUTRAL | MA RIGHT TURN SIGNAL | W5 REAR WINDOW-WASHER |
| F5 R REVERSE | P1 BILGE PUMP #1 | W6 REAR WINDOW-WASHER/WIPER |
| G1 FUEL | P2 BILGE PUMP #2 | ZZ NO LEGEND |
| H1 HORN | P3 BILGE PUMP #3 | |

# PANEL PLUGS FOR ROCKER & R2 SERIES

## K1 THROUGH K5 & R2 PANEL PLUGS

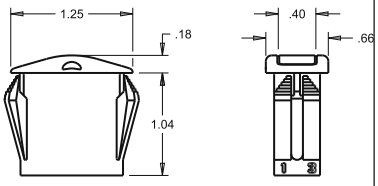
### K1-PA Panel Plug
**One Piece Molded**



**OPTIONAL PANEL GASKET:**

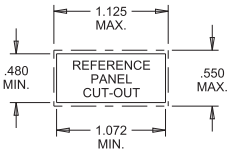
**0.062" THICKNESS = P/N 807039-1**

**0.031" THICKNESS = P/N 807039-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

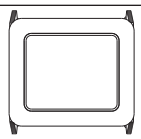



RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED

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 |

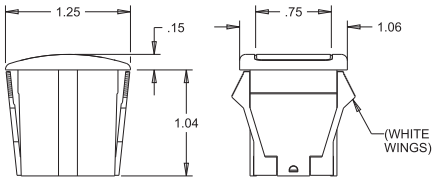
### K2-PB Panel Plug
**Assembled Plug**



**OPTIONAL PANEL GASKET:**

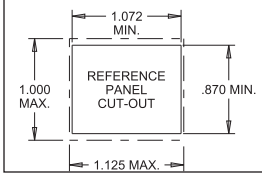
**0.062" THICKNESS = P/N 807038-1**

**0.031" THICKNESS = P/N 807038-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

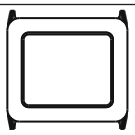



RANGE 0.025 – 0.105 OPTIONAL PANEL GASKET RECOMMENDED

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 |

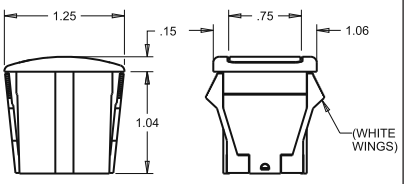
### K4-PB Panel Plug
**Assembled Plug**



**OPTIONAL PANEL GASKET:**

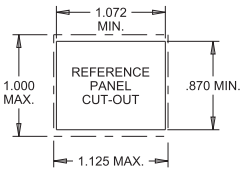
**0.062" THICKNESS = P/N 807038-1**

**0.031" THICKNESS = P/N 807038-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

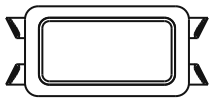



RANGE 0.025 – 0.105 OPTIONAL PANEL GASKET RECOMMENDED

RANGE 0.105 – 0.187 WITHOUT GASKET

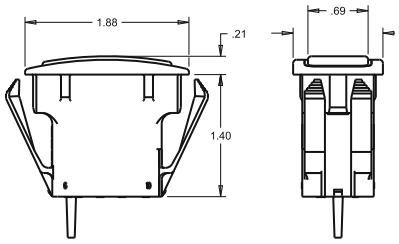
| Panel Opening: | Min. | Typ. | Max. |
|---|---|---|---|
| Width | 0.870 | 0.937 | 1.00 |
| Length | 1.072 | 1.099 | 1.125 |

### K3-PB Panel Plug
**Assembled Plug**



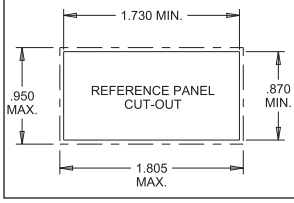
**OPTIONAL PANEL GASKET:**

**P/N 807037**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

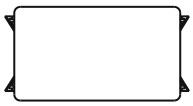



RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED

RANGE 0.102 - 0.187 WITHOUT GASKET

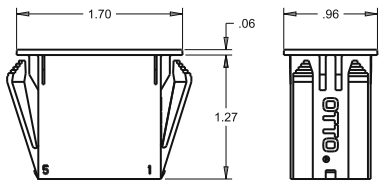
| Panel Opening: | Min. | Typ. | Max. |
|---|---|---|---|
| Width | 0.870 | 0.937 | 0.950 |
| Length | 1.730 | 1.768 | 1.805 |

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



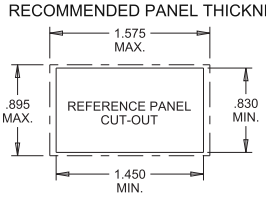
**OPTIONAL PANEL GASKET:**

**P/N 807109**




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 ③ | Button Insert ③ |
|---|---|---|---|---|
| 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.

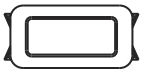
③ Additional colors available. Contact factory.

# PANEL PLUGS FOR ROCKER & R2 SERIES



## K1 THROUGH K5 & R2 PANEL PLUGS

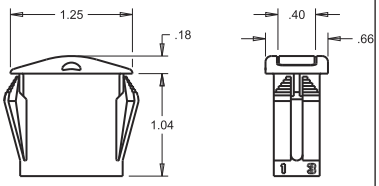
### K1-PA Panel Plug
**One Piece Molded**



**OPTIONAL PANEL GASKET:**

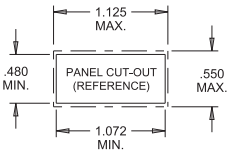
**0.062" THICKNESS = P/N C807039-25-1**

**0.031" THICKNESS = P/N C807039-25-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

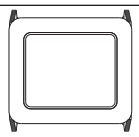



RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED

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 |

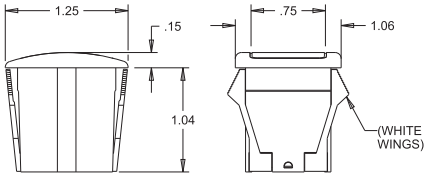
### K2-PB Panel Plug
**Assembled Plug**



**OPTIONAL PANEL GASKET:**

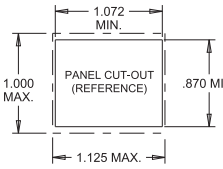
**0.062" THICKNESS = P/N C807038-25-1**

**0.031" THICKNESS = P/N C807038-25-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:




RANGE 0.025 – 0.105 OPTIONAL PANEL GASKET RECOMMENDED

RANGE 0.105 – 0.187 WITHOUT GASKET

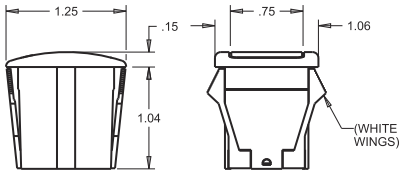
| Panel Opening: | Min. | Typ. | Max. |
|---|---|---|---|
| Width | 0.870 | 0.937 | 1.00 |
| Length | 1.072 | 1.099 | 1.125 |

### K4-PB Panel Plug
**Assembled Plug**

**OPTIONAL PANEL GASKET:**

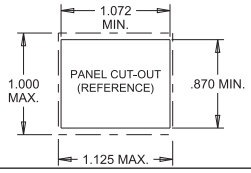
**0.062" THICKNESS = P/N C807038-25-1**

**0.031" THICKNESS = P/N C807038-25-2**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

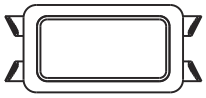



RANGE 0.025 – 0.105 OPTIONAL PANEL GASKET RECOMMENDED

RANGE 0.105 – 0.187 WITHOUT GASKET

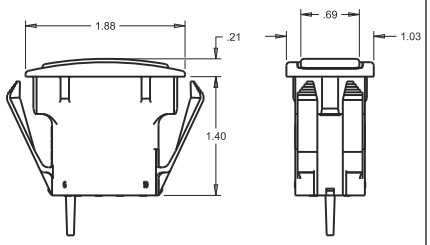
| Panel Opening: | Min. | Typ. | Max. |
|---|---|---|---|
| Width | 0.870 | 0.937 | 1.00 |
| Length | 1.072 | 1.099 | 1.125 |

### K3-PB Panel Plug
**Assembled Plug**



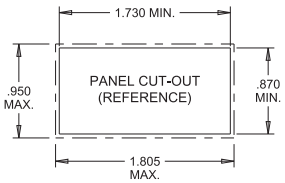
**OPTIONAL PANEL GASKET:**

**P/N C807037-25**




MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:




RANGE 0.025 - 0.105 OPTIONAL PANEL GASKET RECOMMENDED

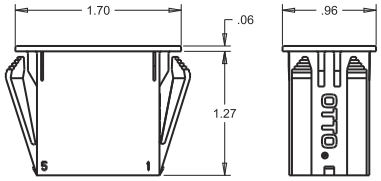
RANGE 0.102 - 0.187 WITHOUT GASKET

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

### K5-PA Panel Plug
**One Piece Molded**
**Also Fits R2 Rotary Switches**

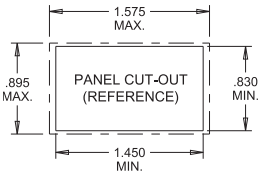
**OPTIONAL PANEL GASKET:**

**P/N C807109-25-1**




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 ③ | Button Insert ③ |
|---|---|---|---|---|
| **K1.** K1 ① | **P.** | **A.** One Piece Molded | **1.** Red | **1.** Red* |
| **K2.** K2 ② | | **B.** Assembled Plug | **2.** Black | **2.** Black* |
| **K3.** K3 ② | | | **9.** White | **9.** White* |
| **K4.** K4 ② | | | | **Z.** NONE** |
| **K5.** K5 & 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.

# Rocker Switches

| SERIES | FEATURE | MAX RATING (Resistive@ 28VDC) | SEAL RATING | APPROVALS | MOUNTING (Panel Opening) | CIRCUITRY |
|---|---|---|---|---|---|---|
| K1 | Sealed, Illuminated Single Pole | 16A | IP68S & IP69K | UL (E61705), (UL1500), Ignition Protected, RoHS Compliant | 1.115" x 0.515" | SPST, SPDT |
| K1S | Sealed, ON-ON-ON, Single or Double Pole | 10mA @ 5VDC | IP68S | RoHS Compliant (based on configuration) | 1.077" x 0.485" | SPTT, DPTT |
| K2 | Sealed, Illuminated Double Pole | 16A | IP68S & IP69K | UL (E61705), (UL1500), Ignition Protected, RoHS Compliant | 1.115" x 0.900" | SPST, SPDT DPST, DPDT |
| K3 | Sealed, Illuminated | 20A | IP68S & IP69K | RoHS Compliant | 1.750" x 0.915" | SPST, SPDT DPST, DPDT, SPTT |
| K3P | Panel Plug Indicators | 20mA | IP68S | RoHS Compliant | 1.750" x 0.915" | Lighting: Ind A, Ind C, Ind A & C |
| K4 | Snap-in Toggle, Sealed, Illuminated | 16A | IP68S & IP69K | RoHS Compliant | 1.115" x 0.900" | SPST, SPDT DPST, DPDT |
| K5 | Sealed, Illuminated | 20A | IP68S & IP69K | RoHS Compliant | 1.475" x 0.875" | SPST, DPDT SPDT, DPDT, SPTT |
| U2 | Sealed, High Cycle Life | 10A (10mA @ 5VDC logic level) | IP64 or IP68S | RoHS Compliant | 1.125" X 0.690" | SPST |



Specifications Subject To Change Without Notice

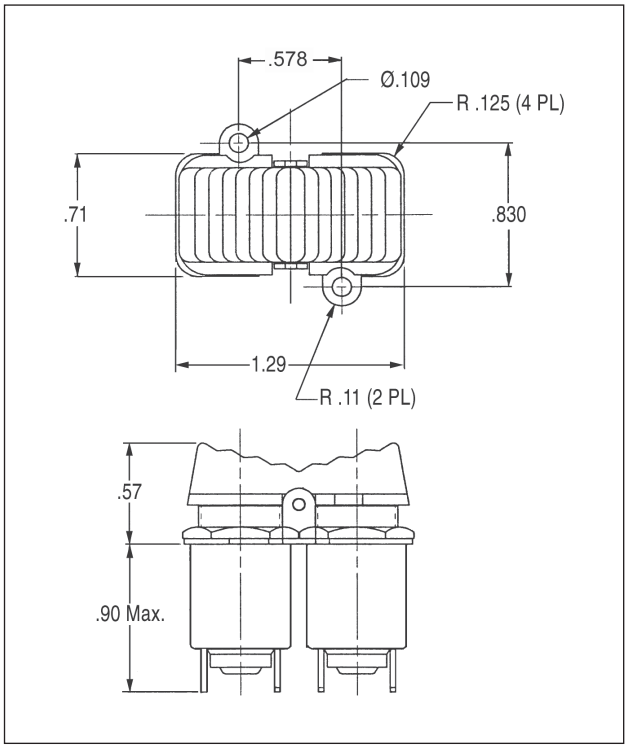
# SEALED ROCKER SWITCHES

## ONE MILLION CYCLE SEALED ROCKER SWITCH

The U2-277 (logic level) and U2-278 rocker switches are designed to run a minimum of one million mechanical cycles and withstand extreme environmental conditions. Ideal for use in material handling, heavy equipment, off-road and construction equipment, and other outdoor applications where severe conditions are typically encountered. These momentary action, ON-OFF-ON switches provide crisp tactile feedback and are moistureproof and dusttight to IP64. Watertight to IP68S option is also available. The optional watertight seal will withstand direct water spray and the durable construction provides protection against extreme shock and vibration.

## Features:

- **One million cycle life**
- **Moistureproof & dusttight to IP64**
- **Optional IP68S watertight seal available**
- **Momentary action (ON-OFF-ON)**
- **Crisp tactile feedback**
- **Vibration & shock resistant**
- **Logic level up to 10 amps switching capability**
- **RoHS compliant**




| Standard Characteristics/Ratings: | |
|---|---|
| **ELECTRICAL RATINGS:** | |
| **Load** | **Sea Level @ 28VDC or 115VAC** |
| Resistive | 10A |
| Inductive | 5A |
| Lamp | 3A |
| Logic Level | 10mA @ 5VDC |
| **Electrical Life:** | 100,000 cycles |
| **Mechanical Life:** | 1,000,000 cycles |
| **Seal:** | IP64 or IP68S |
| **Operating Temp Range:** | -55°C to +85°C |
| **Operating Force:** | 2.5 +0.5/-1.0 lb. |
| **Reset Force:** | 0.75 lb. min |
| **Total Travel:** | 0.140 inches max |
| **Overtravel:** | 0.012 inches min |
| **MATERIALS:** | |
| **Button:** | Nylon black |
| **Bracket:** | Stainless steel |
| **Contacts:** | Silver, standard<br>Silver, gold for logic level |
| **Terminal Hardware:** | None provided |
| **Mounting Hardware:** | None provided |



Specifications Subject To Change Without Notice