Rocker Switches

SERIES	FEATURE	MAX RATING (Resistive @ 120VAC, 28VDC)	SEAL RATING	APPROVALS	MOUNTING (Panel Opening)	CIRCUITRY
K1	Sealed, Illuminated	16A	IP68S	UL (E61705), CSA (LR43865), DEMKO (97-01807), (UL1500), Ignition Protected, RoHS & WEEE Compliant	1.115″ x 0.515″	SPST, SPDT
K2	Sealed, Illuminated	16A	IP68S	UL (E61705), CSA (LR43865), DEMKO (97-01807), (UL1500), Ignition Protected, RoHS & WEEE Compliant	1.115″ x 0.900″	SPST, SPDT DPST, DPDT
K3	Sealed, Illuminated	20A	IP68S	RoHS & WEEE Compliant	1.750″ x 0.915″	SPST, SPDT DPST, DPDT, SPTT
K4	Snap-In Toggle, Illuminated	16A	IP68S	RoHS & WEEE Compliant	1.115″ x 0.900″	SPST, SPDT DPST, DPDT
K5	Sealed, Illuminated	20A	IP68S	RoHS & WEEE Compliant	1.475″ x 0.875″	SPST, DPDT SPDT, DPDT, SPTT

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. Sealed to IP68S with an optional panel gasket available.

The K1 series is offered in single pole configuration while the K2 series is available in 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 specified.

A choice of models are offered to handle power levels to 16 amps, 1/2 HP and low level electronic switching applications.

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

K1 Series
Single Pole

K2 Series
Single & Double Pole

Features:

- **Withstands direct water spray**
- **Watertight to IP68S**
- **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**
- **Custom legends available**
- **2 & 3-position, momentary & maintained action**
- **Incandescent, LED & neon illumination with independent & dependent light source options**
- **UL recognized & CSA certified**
- **Ignition protected**
- **RoHS/WEEE/Reach compliant**

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC or 125/250VAC, 60Hz	Cycles
Resistive	16A	25,000
Resistive	10A	50,000
Inductive	10A	25,000
Lamp	5A	25,000
Motor	0.5HP	25,000
DWV	1050Vrms except across light terminals	
Low Level	10mA @ 30mV	

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
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 low level
Terminal Hardware:	Screws and lockwashers provided when applicable K1/K2 series recommended Quick Connect terminals: AMP 60253-2 for 12-16 AWG 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

Part Number Code Continued Below

K1 X X X X

Terminal Style/ Switch Rating

A. Q.C./Std.
B. Screw/Std.
C. Solder/Std.
D. Q.C./Low Level
E. Screw/Low Level
F. Solder/Low Level
G. PC Pin/Std.
H. PC Pin/Low Level

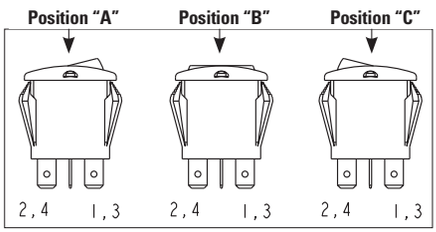
Actuator Color/Style

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

K1 PART NUMBER CODE CONTINUED FROM ABOVE

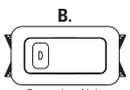
K1 Continued X X X X

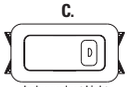
Lens Color

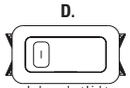
Position "A"	Position "C"
A. No Lens	**A.** No Lens
B. Red	**B.** Red
C. Green	**C.** Green
D. Amber	**D.** Amber
E. Clear	**E.** Clear

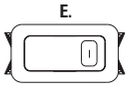
Light/Circuit Location

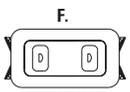
A. No Light

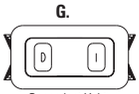
B.

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

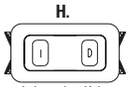
C.

Independent 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**

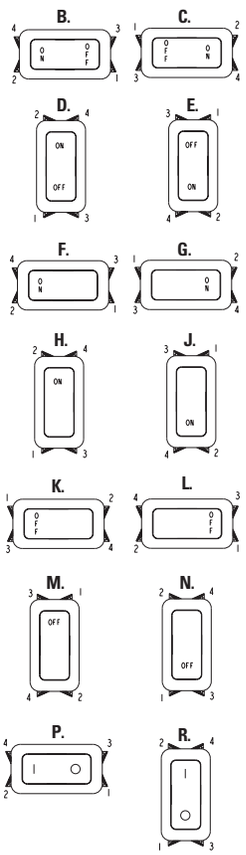
H.

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

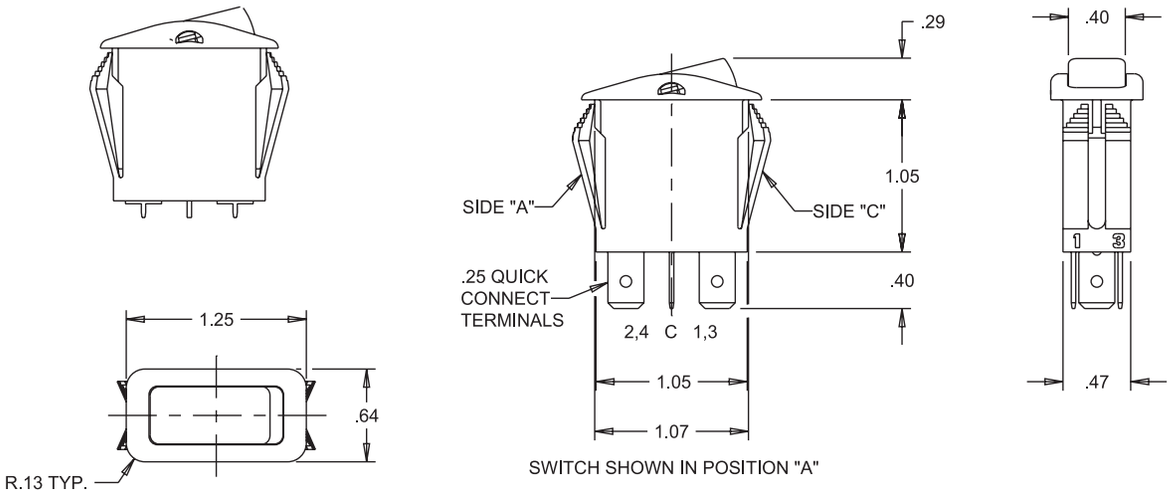
A. None



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 on page 167.

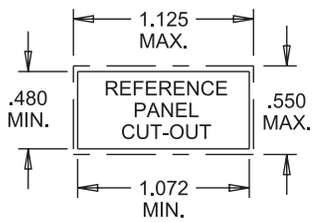
LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS



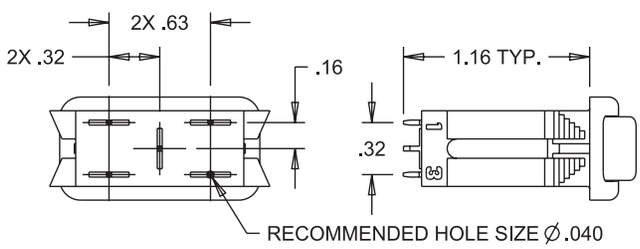
MOUNTING HOLE:
PANEL THICKNESS RANGE OF .025 - .105 A GASKET IS RECOMMENDED,
0.031" THICKNESS = GASKET P/N 807039-2
0.062" THICKNESS = GASKET P/N 807039-1

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

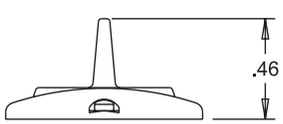
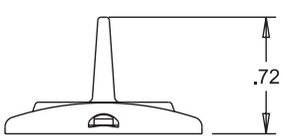
PANEL OPENING:	MIN.	TYP.	MAX.
WIDTH	.480	.515	.550
LENGTH	1.072	1.099	1.125



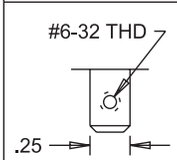
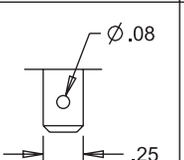
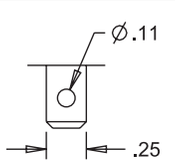
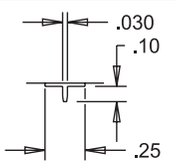
P.C. PIN LAYOUT



PADDLE STYLES

SHORT PADDLE ROCKER	STANDARD PADDLE ROCKER
	

TERMINAL STYLES (.032 THICK)

SCREW	QUICK CONNECT	SOLDER	P.C. PIN
			

SEALED, ILLUMINATED ROCKER SWITCHES

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/ Low Level
- **E.** Screw/Low Level
- **F.** Solder/Low Level

Actuator Color/Style

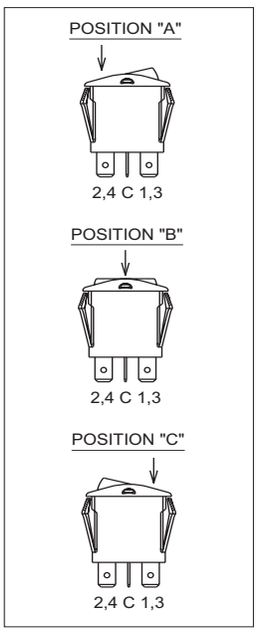
- **A.** Red Standard
- **B.** Black Standard
- **C.** White Standard
- **D.** Red Standard Paddle
- **E.** Black Standard Paddle
- **F.** White Standard Paddle
- **G.** Red Short Paddle Pinned
- **H.** Black Short Paddle Pinned
- **J.** White Short Paddle Pinned
- **K.** Red Standard Paddle Pinned
-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

NOTE: ( ) denotes momentary action.



K2 PART NUMBER CODE - CONTINUED FROM ABOVE

X X X X X

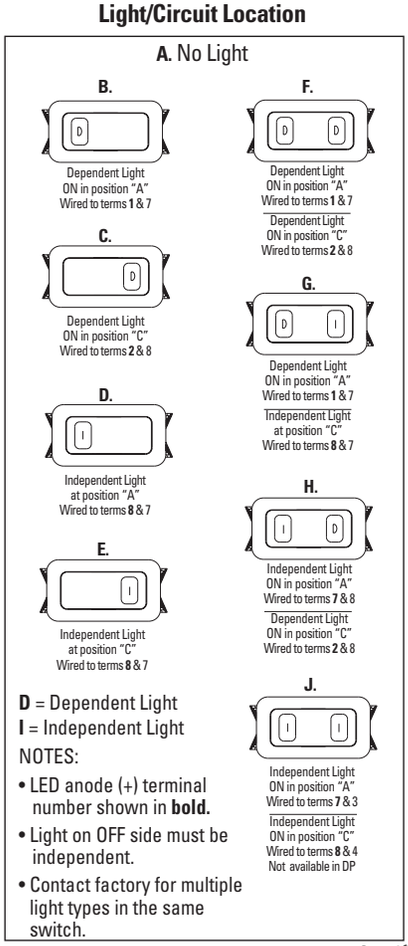
Light Type

- **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

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

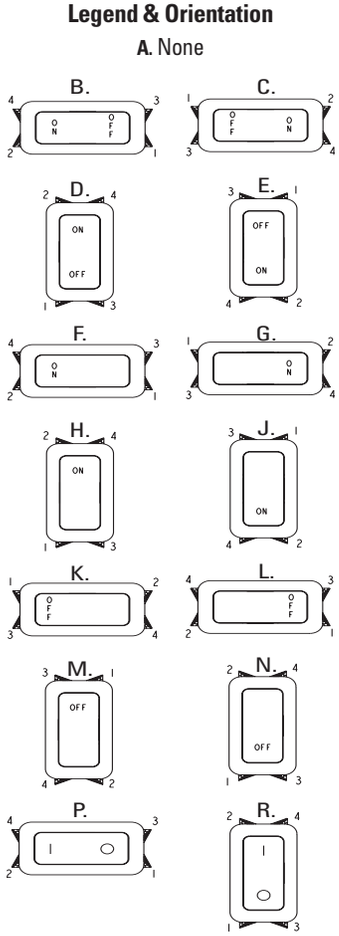


D = Dependent Light
I = Independent Light

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

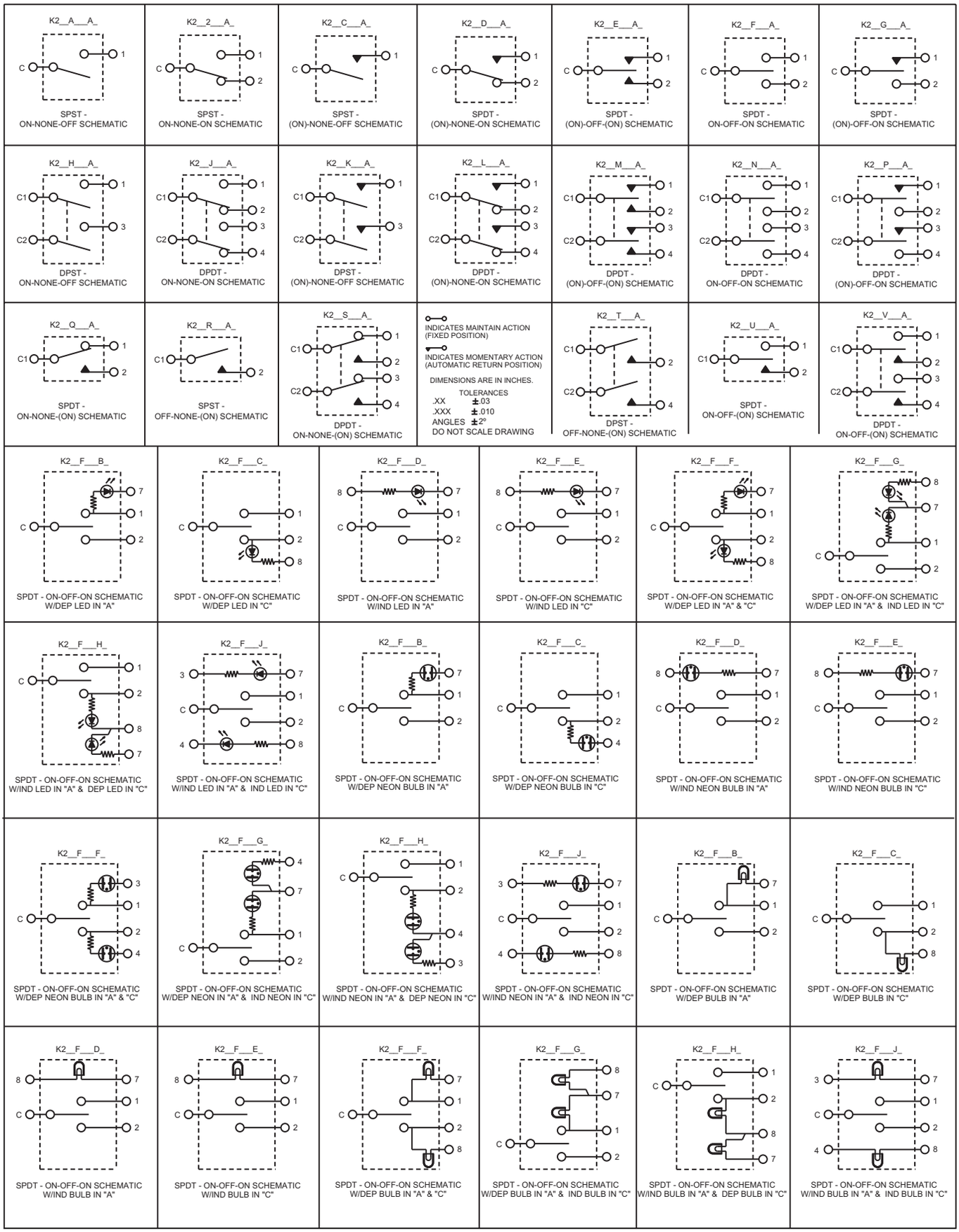


NOTES:

- 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.
- 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 on page 167.**

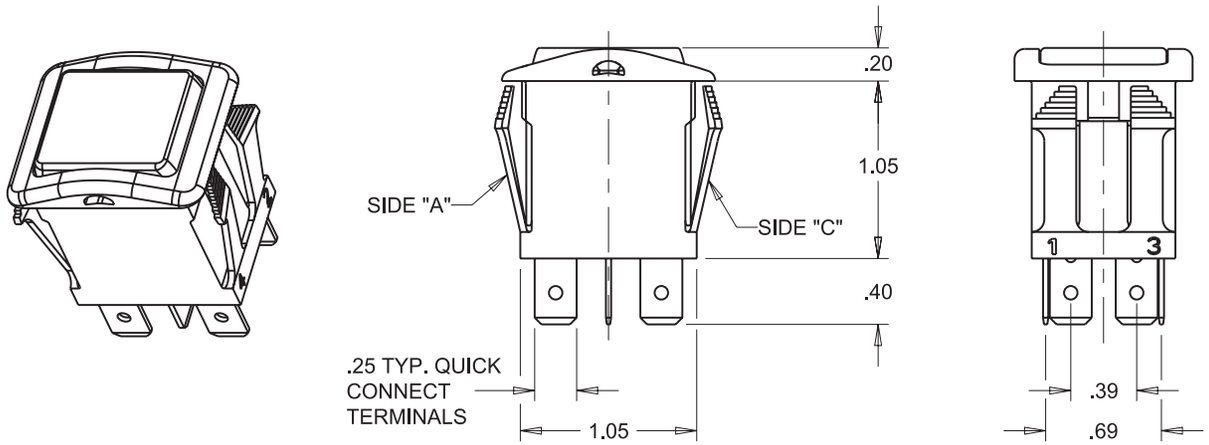
Specifications Subject To Change Without Notice

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

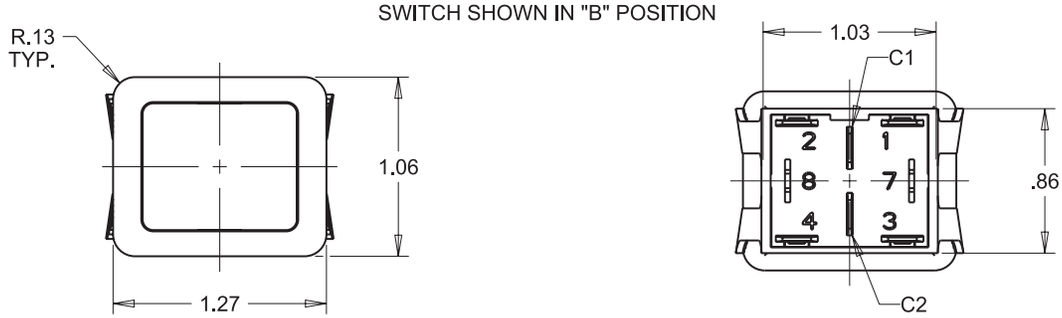


SEALED, ILLUMINATED ROCKER SWITCHES

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



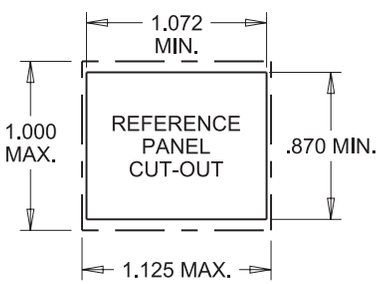
SWITCH SHOWN IN "B" POSITION

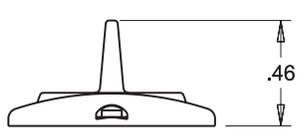
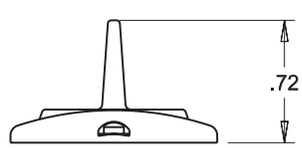


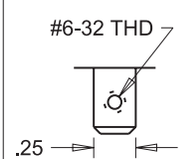
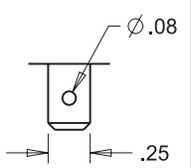
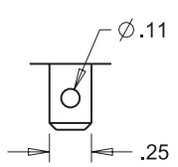
MOUNTING HOLE:
PANEL THICKNESS RANGE OF .025 - .105 A GASKET IS RECOMMENDED
0.031" THICKNESS = GASKET P/N 807038-2
0.062" THICKNESS = GASKET P/N 807038-1

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

PANEL OPENING:	MIN.	TYP.	MAX.
WIDTH	.870	.937	1.000
LENGTH	1.072	1.099	1.125



PADDLE STYLES	
SHORT PADDLE ROCKER	STANDARD PADDLE ROCKER
	

TERMINAL STYLES (.032 THICK)		
SCREW	QUICK CONNECT	SOLDER
		

SEALED, ILLUMINATED ROCKER SWITCHES

ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

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 low 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 low 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**
- **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**
- **Low level up to 20 amp switch**
- **Configurable Single Pole Triple Throw (SPTT) with external jumpers**
- **RoHS/WEEE/Reach 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	
Low Level	10mA @ 30mV	
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
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 low level
Terminal Hardware:	K3 series recommended Quick Connect terminals: AMP 60253-2 for 12-16 AWG 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
Low Level Rating
Gold Plate
E. Without Barriers or Pin
Low Level Rating
Gold Plate
F. With Terminal Barriers Only
Low 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 ON/ON/OFF
2S.	(3-4)/8-9	OFF/8-9	OFF/OFF	(ON)/OFF/OFF ON/ON/OFF

NOTE: ( ) denotes momentary action.

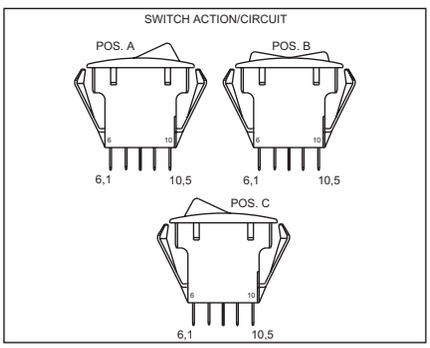
Light Source Type

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.



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 on page 162, find the two digit code and enter the code in the appropriate position(s).

STOP HERE for lighted switches without legends.

Example: K3AAIFNH-44

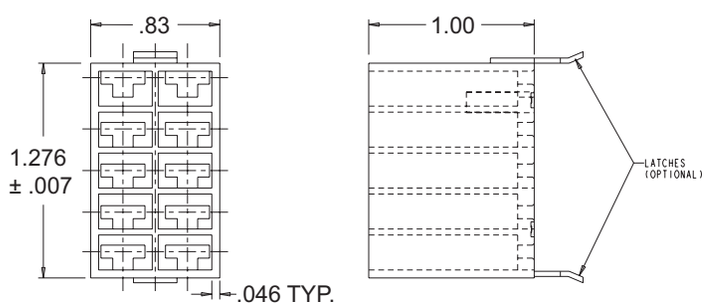
Legend Color

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 on page 160.

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

K3 Connector

P/N 801775-2A Without Latches
P/N 801775-2B With Latches

Panel Seal Gasket

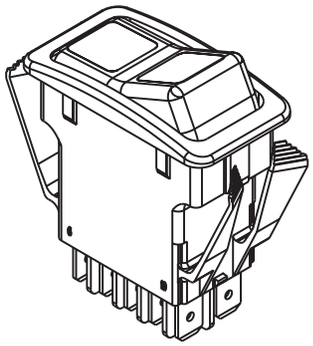
P/N 807037

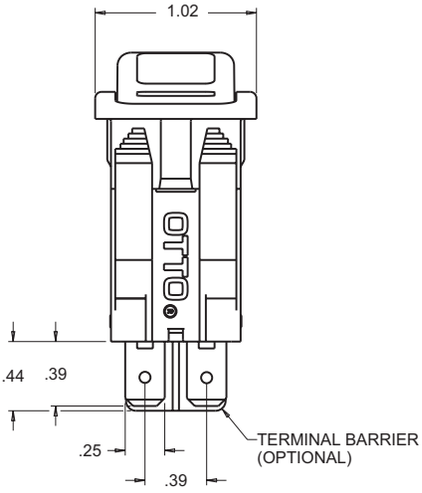
Order separately for use with switches without drain holes.

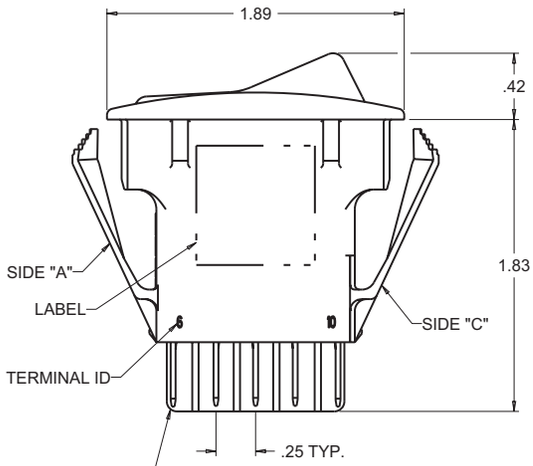
Panel Plug

See Panel Plug (PP) page 167.

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

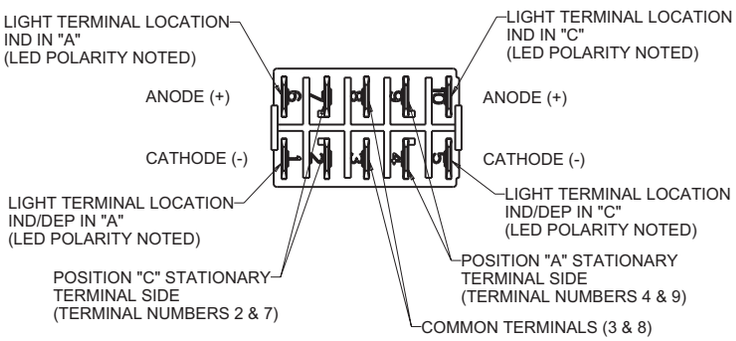




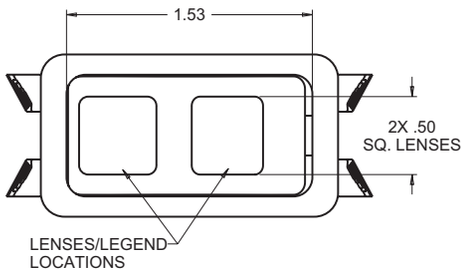


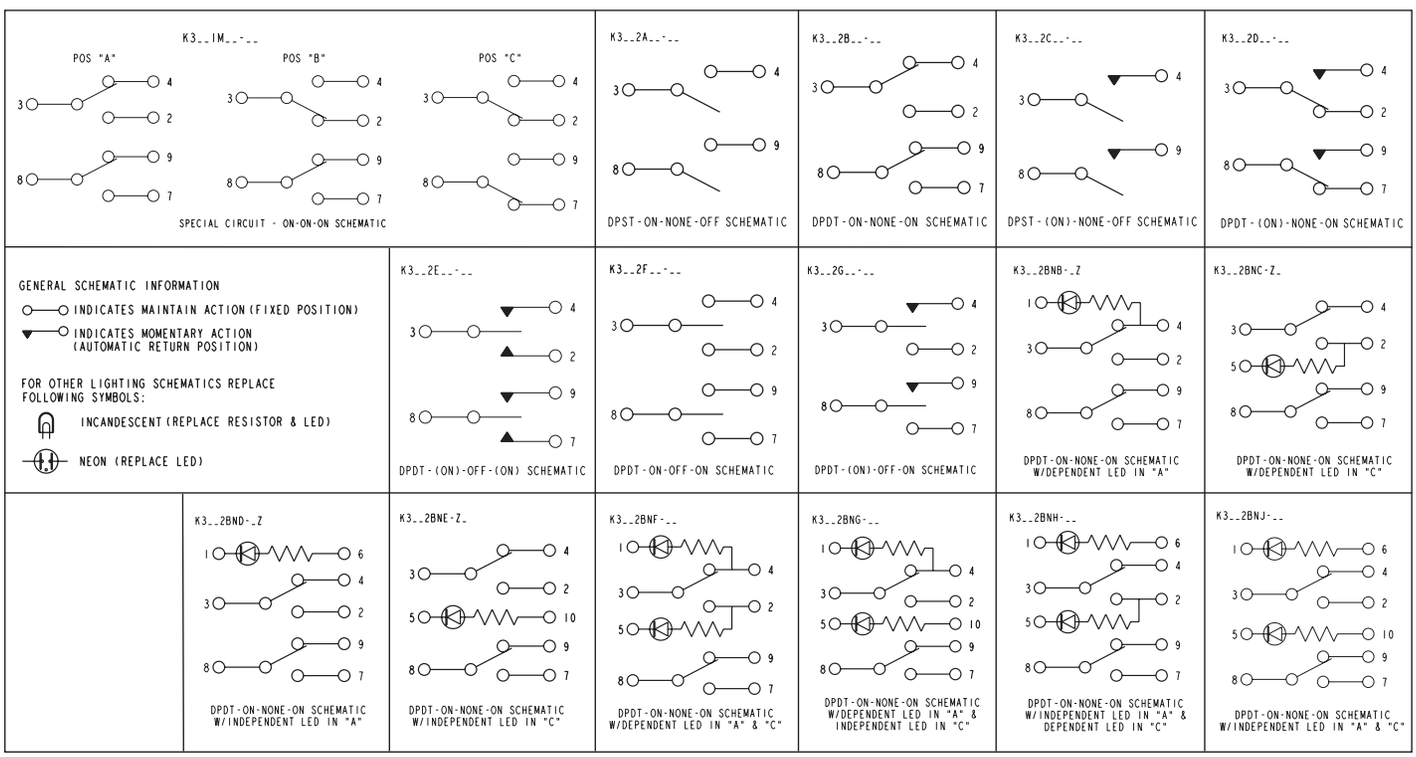
SWITCH SHOWN WITH TERMINAL BARRIERS
CONNECTOR KEY FEATURE OPTIONAL

SWITCH SHOWN IN POSITION "A"



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





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 so the switch can withstand direct water spray and submersion, even during operation. Sealed to IP68S with an optional panel seal available.

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 low level electronic switching levels.

Single & Double Pole

LED, Neon or
Incandescent Illumination

Features:

- **Withstands direct water spray**
- **Sealed to IP68S**
- **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/WEEE/Reach compliant**

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC or 125/250VAC, 60Hz	Cycles
Resistive	16A	25,000
Resistive	10A	50,000
Inductive	10A	25,000
Lamp	5A	25,000
Motor	0.5HP	25,000
DWV	1050Vrms except across light terminals	
Low Level	10mA @ 30mV	100,000
Electrical Life:	See Rating Chart	

LIGHTING:

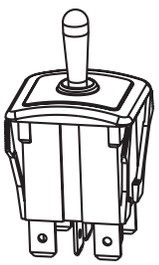
Light Source	Rating
Incandescent	(VDC) 6V, 12V, 24V
Neon	(VAC) 125V, 250V
LED	(VDC) 2V, 6V, 12V, 24V
Mechanical Life:	100,000 cycles
Seal:	IP68S
Operating Temp Range:	-30°C to +85°C

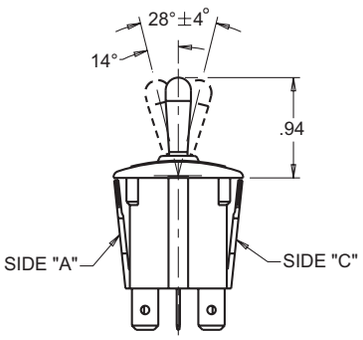
MATERIALS:

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

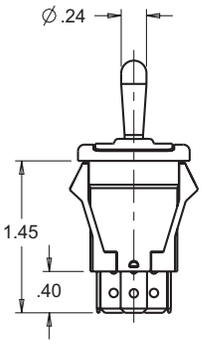
SEALED, ILLUMINATED SNAP-IN TOGGLE

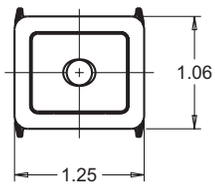
LOW COST, SNAP-IN TOGGLE FOR WET & DUSTY ENVIRONMENTS, 1 & 2 POLES

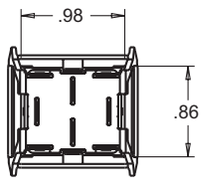


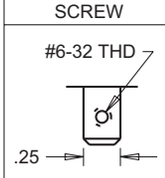
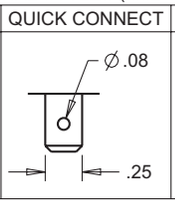
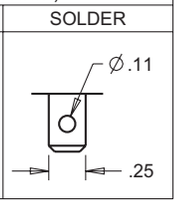


SWITCH SHOWN IN "B" POSITION





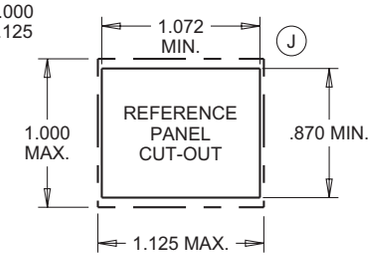


TERMINAL STYLES (.032 THICK)		
SCREW	QUICK CONNECT	SOLDER
		

MOUNTING OPENING: (J)

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	1.000
LENGTH	1.072	1.099	1.125



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/ Low Level
- **E.** Screw/Low Level
- **F.** Solder/Low Level

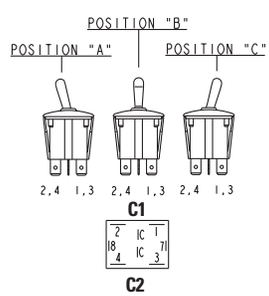
NOTE: Contact factory for panel recommendations on switches with potting cups.

Actuator 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 807038-1 0.062" thickness
P/N 807038-2 0.031" thickness

K4 Connector P/N C801765

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

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.

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

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

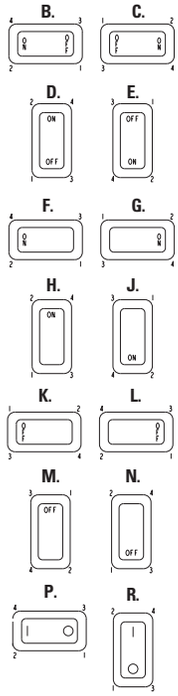
J. Independent Light at position "A" Wired to terms 3 & **7**
Independent Light at position "C" Wired to terms 4 & **8**
Not available in DP

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

D = Dependent Light
I = Independent Light

Legend & Orientation ①

A. No Legend



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

ORDERING INFORMATION

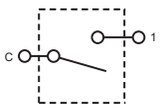
Example: K4AAKEEABA specifies Q.C. terminals, standard rating; bat handle; DPST two position momentary ON, maintained OFF; 125VAC neon light; clear lens in positions "A", no lens in position "C"; dependent light ON in position "A", wired to terminals 1 & 7; no legend.

• **K4 panel plugs available as shown on page 167.**

SEALED, ILLUMINATED SNAP-IN TOGGLE

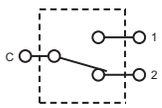
K4 SCHEMATICS

K4__A___A_



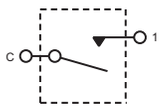
SPST - ON-NONE-OFF SCHEMATIC

K4__B___A_



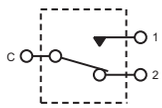
SPST - ON-NONE-ON SCHEMATIC

K4__C___A_



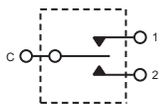
SPST - (ON)-NONE-OFF SCHEMATIC

K4__D___A_



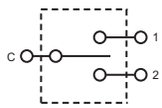
SPDT - (ON)-NONE-ON SCHEMATIC

K4__E___A_



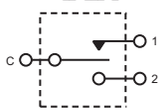
SPDT - (ON)-OFF-(ON) SCHEMATIC

K4__F___A_



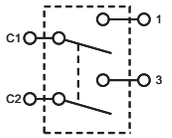
SPDT - ON-OFF-ON SCHEMATIC

K4__G___A_



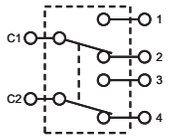
SPDT - (ON)-OFF-ON SCHEMATIC

K4__H___A_



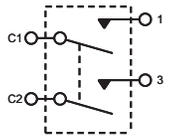
DPST - ON-NONE-OFF SCHEMATIC

K4__J___A_



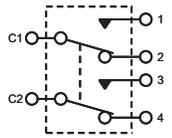
DPDT - ON-NONE-ON SCHEMATIC

K4__K___A_



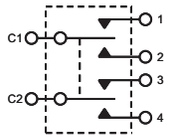
DPST - (ON)-NONE-OFF SCHEMATIC

K4__L___A_



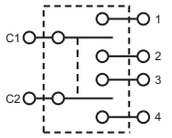
DPDT - (ON)-NONE-ON SCHEMATIC

K4__M___A_



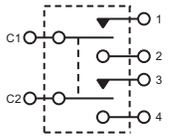
DPDT - (ON)-OFF-(ON) SCHEMATIC

K4__N___A_



DPDT - ON-OFF-ON SCHEMATIC

K4__P___A_



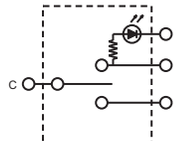
DPDT - (ON)-OFF-ON SCHEMATIC

GENERAL SCHEMATIC INFORMATION

INDICATES MAINTAIN ACTION
(FIXED POSITION)

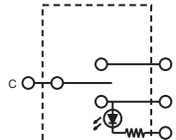
INDICATES MOMENTARY ACTION
(AUTOMATIC RETURN POSITION)

K4__F___B_



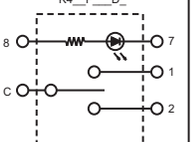
SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A"

K4__F___C_



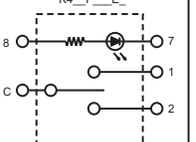
SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "C"

K4__F___D_



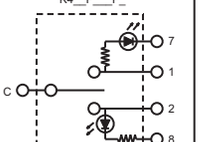
SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A"

K4__F___E_



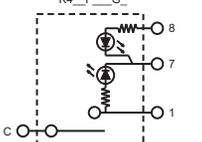
SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "C"

K4__F___F_



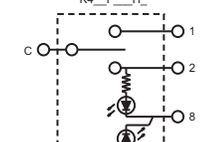
SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A" & "C"

K4__F___G_



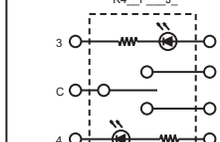
SPDT - ON-OFF-ON SCHEMATIC
W/DEP LED IN "A" & IND LED IN "C"

K4__F___H_



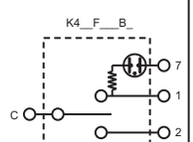
SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A" & DEP LED IN "C"

K4__F___J_



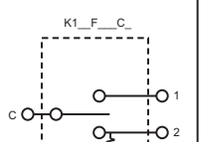
SPDT - ON-OFF-ON SCHEMATIC
W/IND LED IN "A" & IND LED IN "C"

K4__F___B_



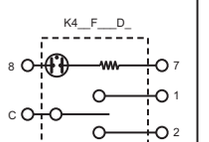
SPDT - ON-OFF-ON SCHEMATIC
W/DEP NEON BULB IN "A"

K1__F___C_



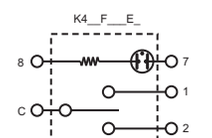
SPDT - ON-OFF-ON SCHEMATIC
W/DEP NEON BULB IN "C"

K4__F___D_



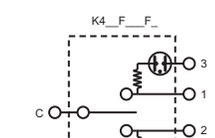
SPDT - ON-OFF-ON SCHEMATIC
W/IND NEON BULB IN "A"

K4__F___E_



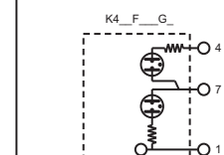
SPDT - ON-OFF-ON SCHEMATIC
W/IND NEON BULB IN "C"

K4__F___F_



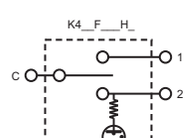
SPDT - ON-OFF-ON SCHEMATIC
W/DEP NEON BULB IN "A" & "C"

K4__F___G_



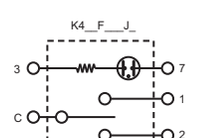
SPDT - ON-OFF-ON SCHEMATIC
W/DEP NEON IN "A" & IND NEON IN "C"

K4__F___H_



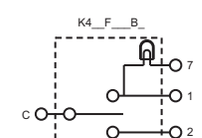
SPDT - ON-OFF-ON SCHEMATIC
W/IND NEON IN "A" & DEP NEON IN "C"

K4__F___J_



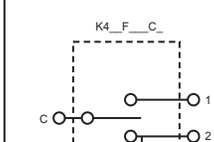
SPDT - ON-OFF-ON SCHEMATIC
W/IND NEON IN "A" & IND NEON IN "C"

K4__F___B_



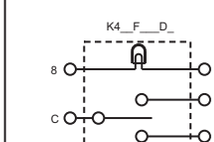
SPDT - ON-OFF-ON SCHEMATIC
W/DEP BULB IN "A"

K4__F___C_



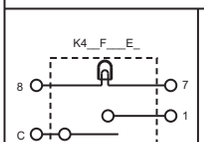
SPDT - ON-OFF-ON SCHEMATIC
W/DEP BULB IN "C"

K4__F___D_



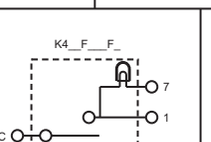
SPDT - ON-OFF-ON SCHEMATIC
W/IND BULB IN "A"

K4__F___E_



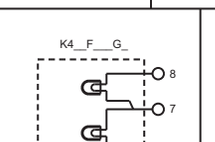
SPDT - ON-OFF-ON SCHEMATIC
W/IND BULB IN "C"

K4__F___F_



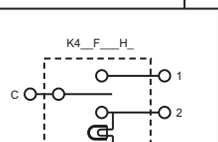
SPDT - ON-OFF-ON SCHEMATIC
W/DEP BULB IN "A" & "C"

K4__F___G_



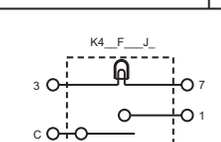
SPDT - ON-OFF-ON SCHEMATIC
W/DEP BULB IN "A" & IND BULB IN "C"

K4__F___H_



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

K4__F___J_



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

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE AS LISTED.
MUST BE FREE FROM BURRS
AND SHARP EDGES

TOLERANCES
.XX ±.03
.XXX ±.010
ANGLES ±2°
DO NOT SCALE DRAWING

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 low 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 low 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**
- **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**
- **Low level up to 20 amp switch**
- **Configurable Single Pole Triple Throw (SPTT) with external jumpers**
- **Soft Touch button available**
- **RoHS/WEEE/Reach compliant**

Raised Bars Shown

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC	Sea Level @ 115VAC, 60/400Hz
Resistive	20A	16A
Inductive	15A	15A
Lamp	5A	5A
Motor	0.5HP @ 110VAC	
DWV	1050Vrms except across light terminals	
Low Level	10mA @ 30mV	
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
Operating Temp Range:	-40°C to +85°C

MATERIALS:

Case:	Thermoplastic
Button:	Thermoplastic
Terminals/Contact:	Brass, silver alloy with silver plate, gold flash for low level
Terminal Hardware:	K5 series recommended Quick Connect terminals: AMP 60253-2 for 12-16 AWG 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
Low Level Rating
Gold Plate
E. Without Barriers or Pin
Low Level Rating
Gold Plate
F. With Terminal
Barriers Only
Low 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

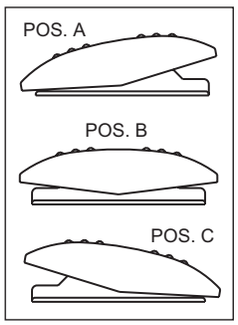
A. Black Plastic Rocker
B. Black "Soft Touch" Rocker
C. Red Plastic Rocker
D. Red "Soft Touch" Rocker
E. White Plastic Rocker
F. White "Soft Touch" Rocker
H. Green Plastic Rocker
J. Orange Plastic Rocker
K. Blue Plastic Rocker
L. Gray "Soft Touch" Rocker
M. Gray Plastic Rocker

*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: 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.

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 on page 162, 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

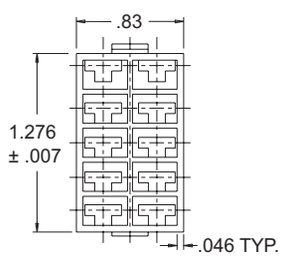
③ Only available on Rocker Style "A" & Rocker Features "1" and lens color "Z" for each position.

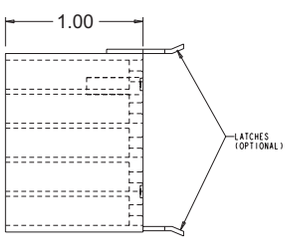
Legend Orientation

	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 801775-2A Without Latches
P/N 801775-2B With Latches

Recommended Quick Connect Terminals

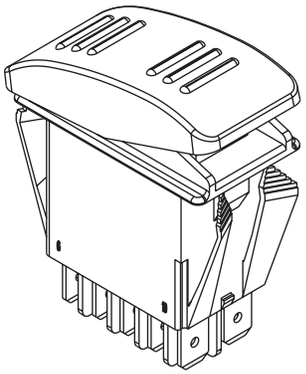
AMP 60253-2 for 12-16 AWG
AMP 42100-2 for 14-18 AWG

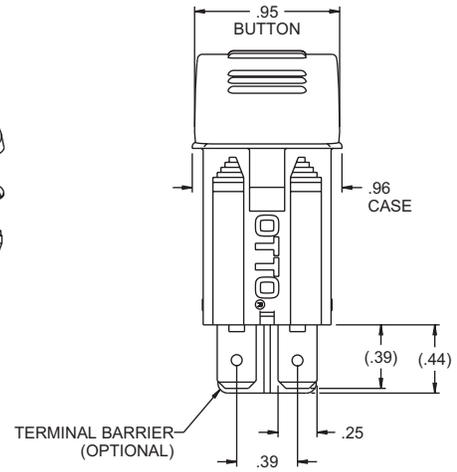
Panel Seal Gasket

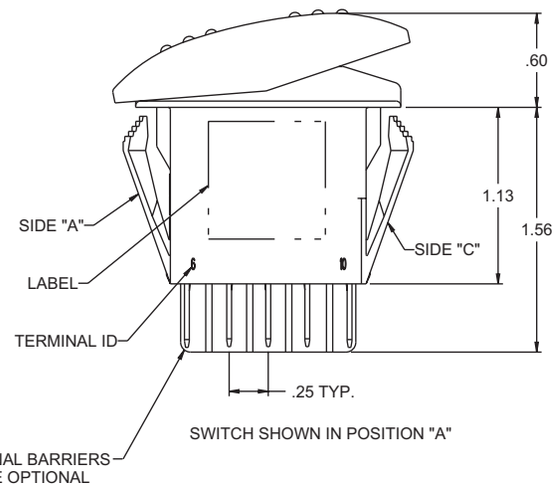
P/N 807109

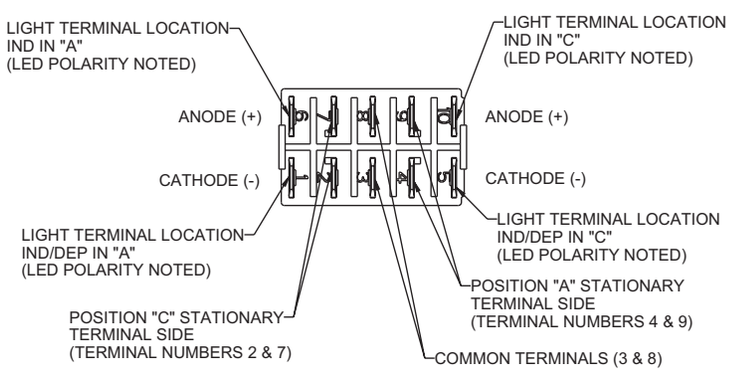
- **K5 panel plugs available as shown on page 167.**

ATTRACTIVE & RUGGED FOR WET & DUSTY ENVIRONMENTS

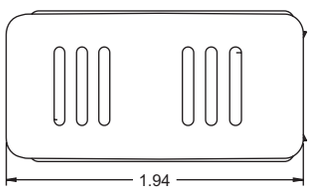






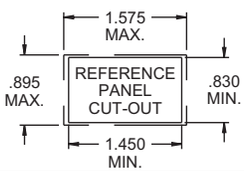


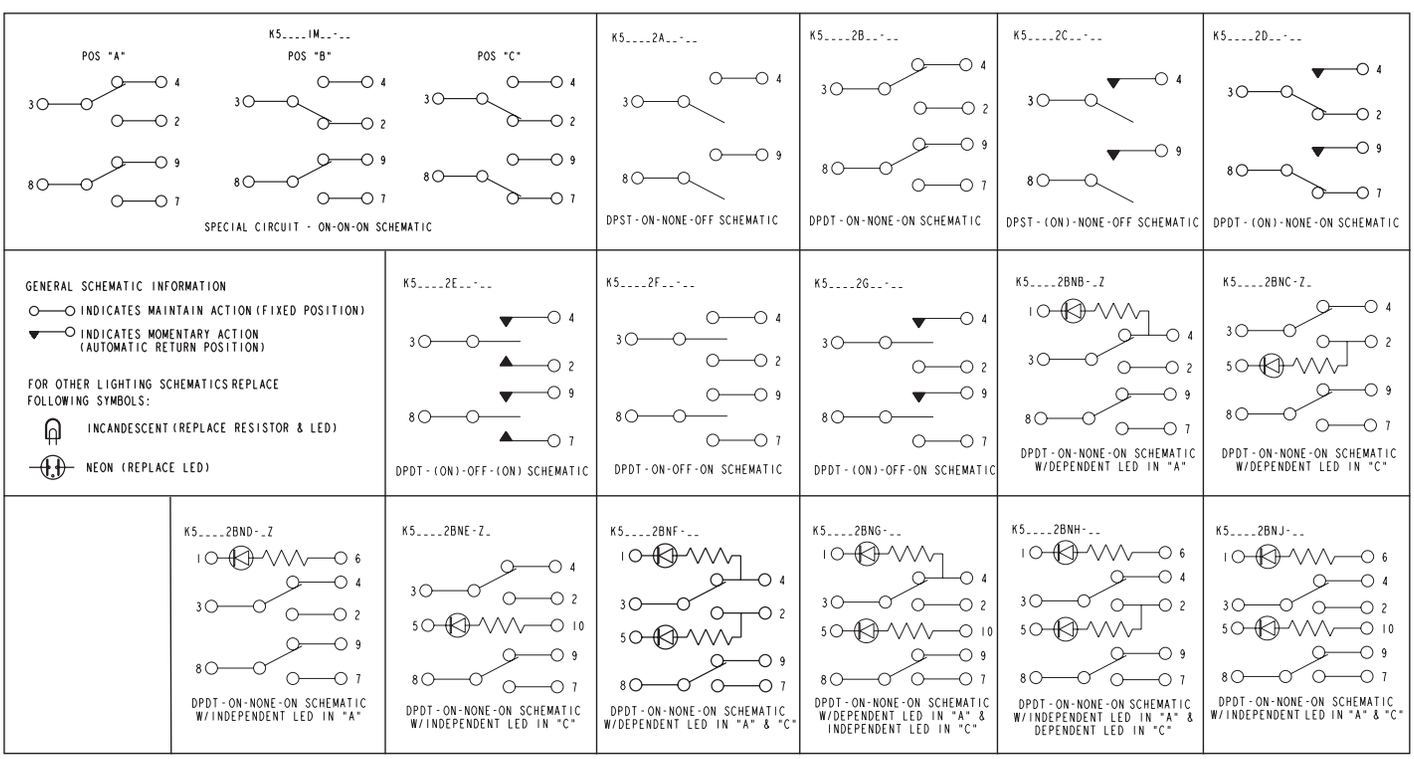
TERMINAL LOCATIONS AS VIEWED FROM BOTTOM OF SWITCH
(CASE REMOVED FOR CLARITY)
CONTACT MADE IN OPPOSITE DIRECTION OF ROCKER TRAVEL



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





STANDARD LEGENDS PER SAE

SNAP-IN PANEL MOUNTING

Standard Legends Per SAE Specifications

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

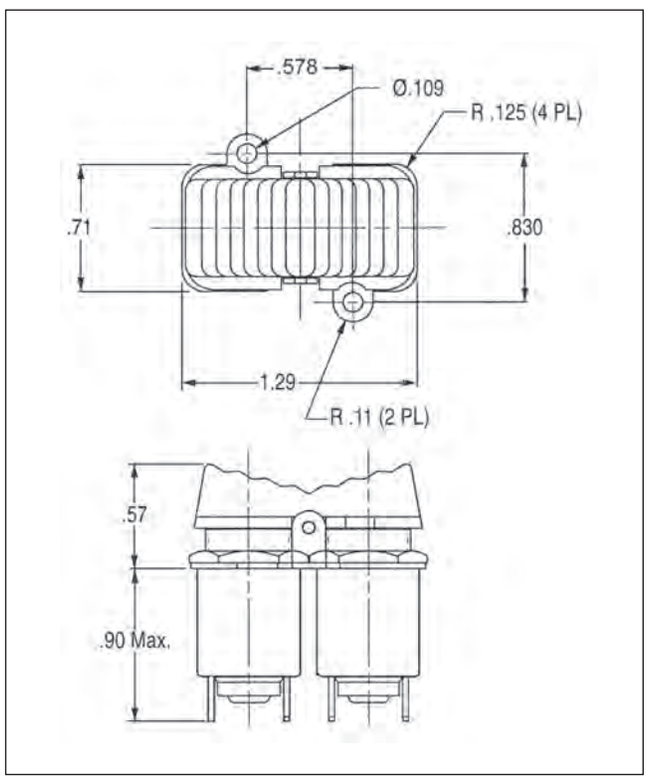
For legends not shown, please consult an OTTO representative.

ONE MILLION CYCLE SEALED ROCKER SWITCH

The U2-277 (low 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**
- **Low level up to 10 amps switching capability**
- **RoHS/WEEE/Reach compliant**



Standard Characteristics/Ratings:	
ELECTRICAL RATINGS:	
Load	**Sea Level @ 28VDC or 115VAC**
Resistive	10A
Inductive	5A
Lamp	3A
Low Level	10mA @ 30mV
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:	0.080 inches max
Overtravel:	0.012 inches min
MATERIALS:	
Button:	Nylon black
Bracket:	Stainless steel
Contacts:	Silver, standard Silver, gold for low level
Terminal Hardware:	None provided
Mounting Hardware:	None provided