

CV-Series

FULLY SEALED ROCKER SWITCHES

Designed and manufactured at Carling Technologies' Zhongshan facility, the CV-Series rocker switch draws upon Carling's 90+ years of design experience to provide a reliably rugged IP67 sealed switch, that is fully functional in temperatures of -40°C to $+85^{\circ}\text{C}$. Incorporating the cutting edge aesthetics that are the hallmark of Carling Technologies, the CV-Series fits an industry standard size mounting hole, features an optional lock and a 10 terminal base, accommodating lighted or unlighted, single and double pole, maintained or momentary circuits. This product has been tested to a variety of electrical and environmental specifications, assuring suitability for most any indoor or outdoor applications. Additional features, such as removable rockers, choice of 9 electrical ratings, connector housings, mounting panels, hole plugs and thousands of available pad print or laser etched legends combine to offer the flexibility demanded by the design engineers of leading OEMs. The CV-Series is the obvious choice for the exacting needs of the Transportation industry.



Product Highlights:

- IP67 Sealing Protection
- Optional Lock
- 10 Terminal Base
- A multitude of Illumination and Legend Options

Typical Applications:

- On/Off Highway Equipment
- Construction Machinery and Equipment
- Agricultural Equipment
- Any application requiring environmental protection



Carling Technologies®
Innovative Designs. Powerful Solutions.

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Carling Technologies Asia-Pacific Ltd.



Established in 2001, Carling Technologies is one of China's leading manufacturers of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. Our state of the art facility in Zhongshan, China combines engineering excellence with the latest manufacturing technologies to assure the highest quality product is available to OEMs across the region. Additionally, Carling Technologies network of customer support offices are strategically located, guaranteeing timely and local support to customers.

Electrical Table

Circuit	Voltage	Max Current	Lamp Amp
2 Position Maintain	12	20	8
2 Position Momentary	12	20	6
3 Position All	12	15	6
3 Position Maintain	24	15	5
3 Position Momentary	24	15	3
3 Position All	24	15	3
Hazard	12	10	3
Hazard	24	10	1.5

Electrical

Dielectric Strength	1500V RMS
Insulation Resistance	50 Megohms
Initial Contact Resistance	10 Milli Ohm max @ 4VDC
Contact Life	50,000 Cycles
Terminals	0.250" (6.3mm) Quick Connect

Environmental

Sealing	IEC 60529, IP67 above panel, IP64 below panel
Dust	Mil STD 810, Method 510.2 Air Velocity 300 Ft/Min. duration, 16 hr,
Corrosion	IEC 68-2-60 Mixed Flowing Gas (MFG) 14 Days
Chemical Splash	Gasoline, Diesel, Motor Oil, Brake Fluid, Ammonia, Armorall
Salt Spray	Mil STD 202G, Method 101, Test Condition A 96 hrs.
Vibration Random	Mil STD 202G, Method 214, Test Condition C 10 G's RMS
Vibration Sinusoidal	Mil STD 202G, Method 204D, Test Condition A 0.06DA or 10 G's 10-500Hz
Shock	Mil STD 202G, Method 213B, Test Condition K 30 G's
Handling Shock	1 Meter Drop on to Hard Surface
Thermal Shock	Mil STD 202G, Method 107G, Test Condition A -55°C to +85°C
Moisture Resistance	MIL-STD 2020G, Method 106F 10 Cycles 25°C to 65°C Cycles 95% RH 25 Cycles -40°C to 85°C
Thermal Cycling	ISO 8846 with EC Directive 94/25/EC for Marine Products
Ignition Protection	ASTM G155-05a, cycle 11, 300 hr Xenon Arc, 1.4W/(m ² ·nm), wavelength 420 nm.
UV Protection	Human Static Discharge, +/- 15KV applied during normal operation
ESD	Shipping/Handling, frequency range 200-2000Mhz applied voltage is +8KV to +15KV and -8KV to -15KV 3 discharge cycles

Physical

Circuitry	Single and Double Pole Single, Double and Triple Throw ON-OFF, ON-ON, (ON)-OFF, ON-(OFF), ON-(ON), ON-OFF-ON, ON-OFF-(ON), (ON)-OFF-(ON), OFF-ON, (ON)-ON, (ON)-OFF-ON, ON-ON-ON
Operation	Two and Three Position Maintained and Momentary
Angular Movement	Two Position 18 Degrees Three Position 9 Degrees From Center
Lock Function	Lock Down, Lock Center, Lock Up, Lock Up and Down
Illumination	LED (Red, Green, Amber, Yellow, White, Blue)
Seals	Mechanism, and LED; Silicone
Flammability	Exceeds FVMSS 302 Requirements
Base	Polyester PBT
Bracket	Nylon 66, PA
Rocker	Polycarbonate, PC Painted Version Nylon 66 13% GF Standard and Lens Version
Rocker Paint	Polyurethane Heat Cured
Lens	Polycarbonate, PC
Lock	Acetal, POM
Connector	Nylon 66, PA
Mounting	Snap in From Front, 1.450" (36.83mm) X 0.830" (21.08mm) Panel Thickness, 0.030" – 0.187" (0.76 – 4.75mm)

Mechanical

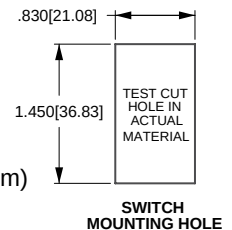
Mechanical Life	100,000 Cycles
Rocker Image Abrasion	RCA Wear Tester 175 G Weight 40 Cycles
Panel Insertion Retention	Insertion 25-40N, Retention 50-75N (Est)
Rocker Impact	50 G weight drop height of 18 inches on Top and Sides
Lock Impact	200 G weight drop height of 18 inches on Top of Lock And Rocker

Mounting Specifications

Panel Thickness Range

Gaskets Acceptable Panel Thickness

0	.030 to .250 (.76 to 6.35mm)
1	.030 to .109 & .147 to .157 (.76 to 2.77mm & 3.73 to 3.98mm)



CV	1	D	2	B	C	0	B	-	A	9	Z	00	-	0	00
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lamp 1	7 Lamp 2	8 Bracket/ Seal	9 Actuator	10 Lens 1	11 Lens 2	12 Legend 1	13 Legend Orientation	14 Legend 2		

1 SERIES 5

CV CV-Series Contura IX

2 CIRCUIT 12

Terminal Connections as viewed from bottom of switch:

() - momentary

10 terminal

8 - -7

1 - -4

2 - -5

3 - -6

10 - -9

Position:

SP DP

1 A

2 B

3 C

4 D

5 F

6 J

7 K

8 L

9 N

V P

Y T

SPECIAL CIRCUITS

H

G

S

M

R

E 2



SP - single pole uses 1, 2 & 3.

DP - double pole uses 1, 2, 3 and 4, 5, 6.

2 & 3, 5 & 6

Connected Terminals

1 & 2, 4 & 5

ON

NONE

OFF

(ON)

NONE

OFF

ON

NONE

(OFF)

ON

NONE

ON

ON

NONE

(ON)

ON

OFF

ON

ON

OFF

(ON)

ON

OFF

(ON)

ON

NONE

ON

ON

NONE

ON

ON

OFF

ON

2 & 3

2 & 3, 5 & 4

5 & 4

2 & 3, 5 & 6

2 & 3

OFF

2 & 3, 5 & 6

2 & 3

1 & 2

(2 & 3, 5 & 6)

2 & 3

OFF

(2 & 3, 5 & 6)

2 & 3

1 & 2

5 & 6

5 & 3

5 & 1

*Jumper between terminals 2 & 5 for circuits H, G, & M are specified in selection 4.

3 RATING

1 40ma 28VDC

2 40ma 14VDC

B 15A 24VDC

D 20A 12VDC

E 8A 14VT

F 6A 14VT

K 5A 28VT

P 3A 28VT

R 15A 12VDC

Circuits

All

All

All

1, 2, 4 & A, B, D

1, 4, 6 & A, D, J, E

2, 8 & B, L

4, A, B, D

1, 2, 6, 8, E, J, L

All

4 TERMINATION 3

2 .250 TABS (QC) No Barriers

K .250 TABS (QC) No Barriers

Jumper

No

T2 to 5

5 ILLUMINATION 4

Lamps Illumination Type Lamp wired to Terminals

S NONE -

A 1 INDEPENDENT

B 1 DOWN

C 2 UP

D 1 DOWN

E 2 DOWN

F 1 UP

G 2 UP

H 1 INDEPENDENT

U 2 INDEPENDENT

R 2 UP

T 2 INDEPENDENT

SINGLE POLE SWITCHES ONLY

J 1 DOWN

K 2 INDEPENDENT

N 1 INDEPENDENT

P 2 INDEPENDENT

DOUBLE POLE SWITCHES ONLY

L 1 DOWN

M 1 UP

N 1 DOWN

P 2 DOWN

P 1 UP

P 2 UP

8 (+) 7 (-)

3 (+) 7 (-)

3 (+) 7 (-)

3 (+) 7 (-)

1 (+) 7 (-)

1 (+) 7 (-)

3 (+) 7 (-)

8 (+) 7 (-)

3 (+) 6 (-)

8 (+) 7 (-)

3 (+) 7 (-)

8 (+) 7 (-)

10 (+) 9 (-)

3 (+) 9 (-)

10 (+) 9 (-)

3 (+) 8 (-)

6 (+) 7 (-)

8 (+) 7 (-)

6 (+) 7 (-)

3 (+) 6 (-)

3 (+) 6 (-)

3 (+) 6 (-)

1 (+) 4 (-)

1 (+) 4 (-)

3 (+) 6 (-)

6 & 7 LED LAMP #1 AND/OR #2

Lamp #1: above terminals 1 & 4 end of switch.; Lamp #2 above terminals 3 & 6 end of switch.

No lamp

STANDARD BRIGHT

12VDC

24VDC

SUPERBRIGHT

12VDC

24VDC

0

Red

N

P

T

V

Amber

N

P

7

E

Yellow

1

4

8

K

Green

2

5

H

J

Blue

3

6

-

-

White

9

U

-

-

8 BRACKET COLOR & PANEL SEAL

No Gasket

B

G

W

1 Gasket

C

H

Y

2 Gasket

D

J

Z

Color

Black

Gray

White

9 ACTUATOR STYLE & ORIENTATION 11

0 No Actuator - Furnished separately

A Black

B White

C Gray

D Red

E Blue

F Yellow

G Red Laser Etch

L Black Laser Etch

T 1-4



T 3-6

10 & 11 LENS #1 AND LENS #2 COLOR 6,9,10,11

0 - No Actuator

Clear White Amber Green Red Blue Yellow

- 8 6 F M S U

3 - D J P V B

- 9 7 G N T Y

4 - E K R W C

- A - - 2 - -

5 - - - - -

Bar Lens Translucent
Bar Lens Transparent
Square Lens Translucent
Square Lens Transparent
Laser Etch Translucent
Laser Etch Transparent

12 LEGEND POSITION 1 7,8

00 - No Legend this location / No actuator

11 ON

OFF

13 I

O

15 O O

F N

F

16 O O

N F

F

17 O I

18 I O

**13 LEGEND ORIENTATION 7**

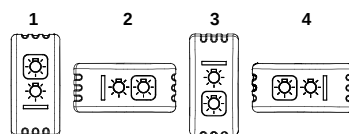
0 No legend

1 Orientation 1

2 Orientation 2

3 Orientation 3

4 Orientation 4

**14 LEGEND POSITION 2 8**

00 No legend

Notes:

1 SP-single pole uses terminals 1,2 & 3. DP-double pole uses terminals 1,2,3,4,5 & 6.

Terminals 7,8,9 & 10 are for lamp circuit only.

2 External jumper between terminals 2 & 4 for Circuit E are to be provided by customer.

Circuit E may be used for SP, OFF-ON-ON circuit.

3 Customer may provide externally wired jumper to connect terminals 2 and 5.

4 Lamp #1 located above terminals 1 & 4 end of switch. Lamp #2 located above terminals 3 & 6 end of switch. Positive (+) and negative (-) symbols apply to LEDs.

5 Mounting hole size is 1.450" (36.83mm) by 0.830" (21.08mm).

6 Lens color for LEDs must be clear, white, or match color of LED.

7 Field 13 must be 0 if Legend Code in Selection 12 is 11-18

8 Field 14 must be 00 if Legend Code in Selection 12 is 11-18

9 Lens 1 is over Lamp 1, Lens 2 is over Lamp 2

10 Selection 14 Required when two lens legends are required. Body marking and lens marking combination available as special configuration, consult factory for details.

11 Laser etched background only available with white, red or clear lens background. Choose lens code "5" for clear, (dead front) and "A" for white and "2" for red in position 10 or 11 for laser etch option. If a laser etched bar lens is required, choose legend "EK" for orientation 1 or 3 and "EL" for orientation 2 or 4 in position 12 and/or 14.

12 Additional hazard warning circuits available in CJ-Series. (See page 8)

CV	1	D	2	C	Y	C	B	-	A	9	B	00	-	0
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lock	7 Lamp 2	8 Bracket/ Seal	9 Actuator	10 Lens	11 Lock	12 Legend	13 Legend Orientation		

1 SERIES⁵

CV CV-Series Contura IX Lock

2 CIRCUIT¹

Terminal Connections as viewed from bottom of switch:

10 terminal

8 - 7
1 - 4
2 - 5
3 - 6
10 - 9



SP - single pole uses 1, 2 & 3.

DP - double pole uses 1, 2, 3 and 4, 5, 6.

Position:

	1	2	3
SP	DP	2 & 3, 5 & 6	Connected Terminals
1	A	ON	NONE
2	B	(ON)	NONE
3	C	ON	NONE
4	D	ON	NONE
5	F	ON	NONE
6	J	ON	OFF
7	K	ON	OFF
8	L	(ON)	OFF
9	N	OFF	NONE
V	P	(ON)	NONE
Y	T	(ON)	OFF

SPECIAL CIRCUITS

	2 & 3	2 & 3, 5 & 4	5 & 4
H	2 & 3	2 & 3	OFF
G	2 & 3, 5 & 6	2 & 3	1 & 2
S	2 & 3, 5 & 6	2 & 3	OFF
M	(2 & 3, 5 & 6)	2 & 3	1 & 2
R	(2 & 3, 5 & 6)	2 & 3	5 & 1
E 2	5 & 6	5 & 3	5 & 1

*Jumper between terminals 2 & 5 for circuits H, G, & M are specified in selection 4.

3 RATING

	Circuits
1	40ma 28VDC
2	40ma 14VDC
B	15A 24VDC
D	20A 12VDC
E	8A 14VT
F	6A 14VT
K	5A 28VT
P	3A 28VT
R	15A 12VDC

4 TERMINATION³

	Jumper
2	.250 TABS (QC) No Barriers
K	.250 TABS (QC) No Barriers

5 ILLUMINATION⁴

	Lamp #	Illumination Type	Lamp wired to Terminals
S	NONE	-	-
C	2	UP	3 (+) 7 (-)
H	2	INDEPENDENT	8 (+) 7 (-)
R	2	UP	3 (+) 9 (-)
T	2	INDEPENDENT	10 (+) 9 (-)
DOUBLE POLE SWITCHES ONLY			
M	2	UP	3 (+) 6 (-)

6 LOCK⁴

W	Cross Serrated Lock
Y	Flat Surface with Raised Tab Lock

7 LED LAMP⁴

No lamp	0					
	Red	Amber	Yellow	Green	Blue	White
12VDC	C	N	1	2	3	9
24VDC	D	P	4	5	6	U
SUPERBRIGHT						
12VDC	T	7	8	H	-	-
24VDC	V	E	K	J	-	-

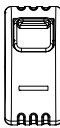
8 BRACKET COLOR & PANEL SEAL

No Gasket	1 Gasket	2 Gasket	Color
B	C	D	Black
G	H	J	Gray
W	Y	Z	White

9 ACTUATOR STYLE & ORIENTATION

0	No Actuator - Furnished separately
A	Black
B	White
C	Gray
D	Red
E	Blue
F	Yellow
G	Red Laser Etch
L	Black Laser Etch

T 1-4



T 3-6

10 LENS COLOR⁶

0 - No Actuator Z - No Lens

	Clear	White	Amber	Green	Red	Blue	Yellow	
-	8	6	F	M	S	U		Bar Lens Translucent
3	-	D	J	P	V	T		Bar Lens Transparent
-	9	7	G	N	Y	B		Square Lens Translucent
4	-	E	K	R	W	C		Square Lens Transparent
-	A	-	-	2	-	-		Laser Etch Translucent
5	-	-	-	-	-	-		Laser Etch Transparent

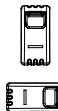
11 ACTUATOR LOCK FUNCTION & COLOR

Up	Down	Up & Down	Center	Lock Color
A	H	R	1	Match Actuator
B	J	S	2	Black
C	K	T	3	White
D	L	V	4	Red
E	M	W	5	Safety Orange
F	G	N	6	Gray

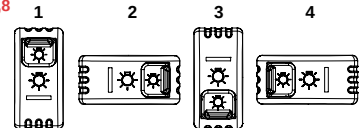
12 LEGEND POSITION^{1,7,8}

00 - No Legend this location / No actuator

11 ON	12 OFF	13 I	14 O
OFF	ON	O	I
15 O O	16 O O	17 O I	18 I O
F N	N F	F	

**13 LEGEND ORIENTATION^{7,8}**

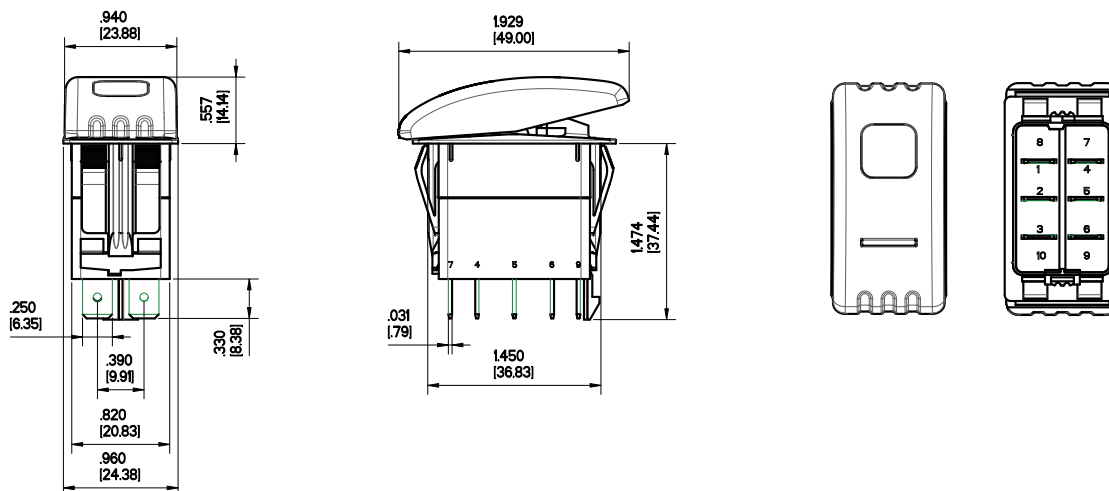
0	No legend
1	Orientation 1
2	Orientation 2
3	Orientation 3
4	Orientation 4

**Notes:**

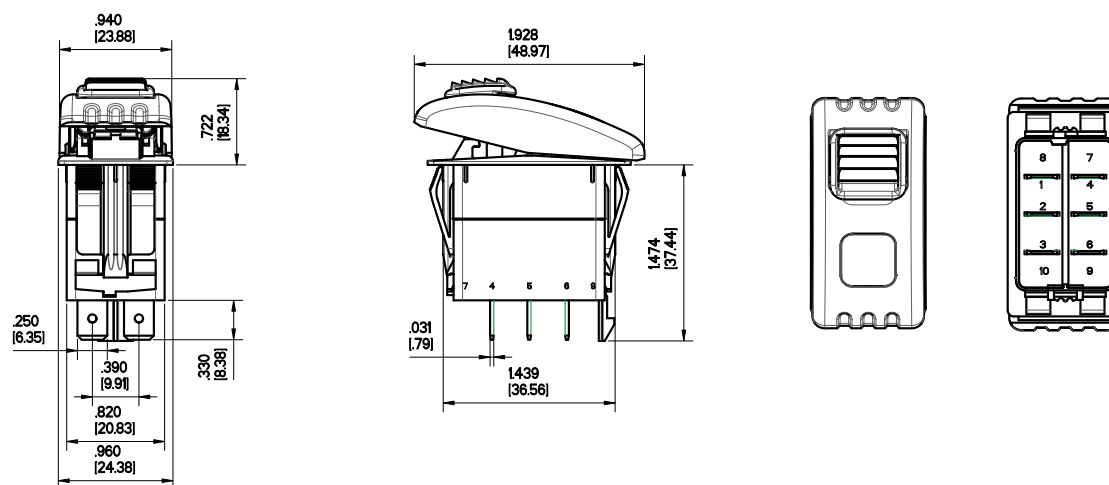
- SP-single pole uses terminals 1,2 & 3. DP-double pole uses terminals 1,2,3,4,5 & 6. Terminals 7,8,9 & 10 are for lamp circuit only.
- External jumper between terminals 2 & 4 for Circuit E are to be provided by customer. Circuit E may be used for SP, OFF-ON-ON circuit.
- Customer may provide externally wired jumper to connect terminals 2 and 5.
- Lock located above terminals 1 & 4 end of switch. Lamp located above terminals 3 & 6 end of switch. Positive (+) and negative (-) symbols apply to LEDs.
- Mounting hole size is 1.450" (36.83mm) by 0.830" (21.08mm).
- Lens color for LEDs must be clear, white, or match color of LED.
- Field 13 must be 0 if Legend Code in Selection 12 is 11-18.
- Laser etched background only available with white, red or clear lens background. Choose lens code "5" for clear, (dead front) and "A" for white and "2" for red in position 10 for laser etch option. If a laser etched bar lens is required, choose legend "EK" for orientation 1 or 3 and "EL" for orientation 2 or 4 in position 12 and/or 13.

Dimensional Specifications: in. [mm]

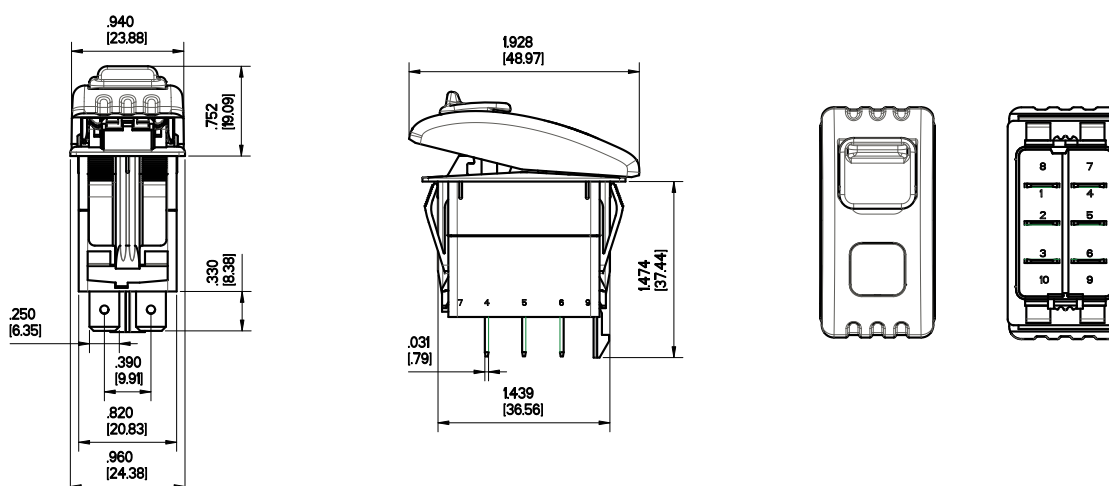
NO-LOCK WITH .250 TERMINAL



LOCK W WITH .250 TERMINAL



LOCK Y WITH .250 TERMINAL



CV	1	D	2	B	C	0	B	-	1	A	A	00	-	0	00
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lamp 1	7 Lamp 2	8 Bracket/ Seal	9 Actuator	10 Lens 1	11 Lens 2	12 Legend 1	13 Legend Orientation	14 Legend 2		

1 SERIES

CV CV-Series Contura V Plus

2 CIRCUIT 1, 2

Terminal Connections as viewed from bottom of switch:

() - momentary

10 terminal

8 - - 7

1 - - 4

2 - - 5

3 - - 6

10 - - 9

Position:

SP DP

1 A

2 B

3 C

4 D

5 F

6 J

7 K

8 L

9 N

V P

Y T

SPECIAL CIRCUITS

H

G

S

M

R

E 2



SP - single pole uses 1, 2 & 3.

DP - double pole uses 1, 2, 3 and 4, 5, 6.

Position:	1	2	3	Connected Terminals	1 & 2, 4 & 5
SP	DP	2 & 3, 5 & 6			
1	A	ON	NONE	OFF	
2	B	(ON)	NONE	OFF	
3	C	ON	NONE	(OFF)	
4	D	ON	NONE	ON	
5	F	ON	NONE	(ON)	
6	J	ON	OFF	ON	
7	K	ON	OFF	(ON)	
8	L	(ON)	OFF	(ON)	
9	N	OFF	NONE	ON	
V	P	(ON)	NONE	ON	
Y	T	(ON)	OFF	ON	

SPECIAL CIRCUITS

	2 & 3	2 & 3, 5 & 4	5 & 4
H	2 & 3	2 & 3	OFF
G	2 & 3, 5 & 6	2 & 3	OFF
S	2 & 3, 5 & 6	2 & 3	1 & 2
M	(2 & 3, 5 & 6)	2 & 3	OFF
R	(2 & 3, 5 & 6)	2 & 3	1 & 2
E 2	5 & 6	5 & 3	5 & 1

*Jumper between terminals 2 & 5 for circuits H, G, & M are specified in selection 4.

3 RATING

1 40ma 28VDC

2 40ma 14VDC

B 15A 24VDC

D 20A 12VDC

E 8A 14VT

F 6A 14VT

K 5A 28VT

P 3A 28VT

R 15A 12VDC

Circuits

All

All

All

1, 2, 4 & A, B, D

1, 4, 6 & A, D, J, E

2, 8 & B, L

4, A, B, D

1, 2, 6, 8, E, J, L

All

4 TERMINATION 2, 3

2 .250 TABS (QC) No Barriers

K .250 TABS (QC) No Barriers

Jumper

No

T2 to 5

5 ILLUMINATION 4

	Lamps	Illumination Type	Lamp wired to Terminals
S	NONE	—	—
A	1	INDEPENDENT	8 (+) 7 (—)
B	1	DOWN	3 (+) 7 (—)
C	2	UP	3 (+) 7 (—)
D	1	DOWN	3 (+) 7 (—)
	2	DOWN	1 (+) 7 (—)
E	1	UP	1 (+) 7 (—)
	2	UP	3 (+) 7 (—)
F	1	INDEPENDENT	8 (+) 7 (—)
	2	UP	3 (+) 6 (—)
G	1	INDEPENDENT	8 (+) 7 (—)
	2	UP	3 (+) 7 (—)
H	2	INDEPENDENT	8 (+) 7 (—)
U	1	INDEPENDENT	8 (+) 7 (—)
	2	INDEPENDENT	10 (+) 9 (—)
R	2	UP	3 (+) 9 (—)
T	2	INDEPENDENT	10 (+) 9 (—)
SINGLE POLE SWITCHES ONLY			
J	1	DOWN	3 (+) 8 (—)
	2	INDEPENDENT	6 (+) 7 (—)
K	1	INDEPENDENT	8 (+) 7 (—)
	2	INDEPENDENT	6 (+) 7 (—)
DOUBLE POLE SWITCHES ONLY			
L	1	DOWN	3 (+) 6 (—)
M	1	UP	3 (+) 6 (—)
N	1	DOWN	3 (+) 6 (—)
	2	DOWN	1 (+) 4 (—)
P	1	UP	1 (+) 4 (—)
	2	UP	3 (+) 6 (—)

CV	1	D	2	B	Y	0	B	-	0	A	A	00	-	0
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lock	7 Lamp	8 Bracket/ Seal	9 Actuator	10 Laser Etch Color	11 Lock Color	12 Legend	13 Legend Orientation		

1 SERIES

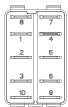
CV CV-Series Contura V Plus Lock

2 CIRCUIT 1, 2

Terminal Connections as viewed from bottom of switch:

10 terminal

8 - - 7
1 - - 4
2 - - 5
3 - - 6
10 - - 9



SP - single pole uses 1, 2 & 3.
DP - double pole uses 1, 2, 3 and 4, 5, 6.

Position:

	1	2	3
SP	DP	2 & 3, 5 & 6	Connected Terminals
1	A	ON	NONE
2	B	(ON)	NONE
3	C	ON	NONE
4	D	ON	NONE
5	F	ON	NONE
6	J	ON	OFF
7	K	ON	OFF
8	L	(ON)	OFF
9	N	OFF	NONE
V	P	(ON)	NONE
Y	T	(ON)	OFF

SPECIAL CIRCUITS

	2 & 3	2 & 3, 5 & 4	5 & 4
H	2 & 3	2 & 3	OFF
G	2 & 3, 5 & 6	2 & 3	OFF
S	2 & 3, 5 & 6	2 & 3	1 & 2
M	(2 & 3, 5 & 6)	2 & 3	OFF
R	(2 & 3, 5 & 6)	2 & 3	1 & 2
E	5 & 6	5 & 3	5 & 1

*Jumper between terminals 2 & 5 for circuits H, G, & M are specified in selection 4.

3 RATING

1	40ma 28VDC
2	40ma 14VDC
B	15A 24VDC
D	20A 12VDC
E	8A 14VT
F	6A 14VT
K	5A 28VT
P	3A 28VT
R	15A 12VDC

Circuits

All
All
All
1, 2, 4 & A, B, D
1, 4, 6 & A, D, J, E
2, 8 & B, L
4, A, B, D
1, 2, 6, 8, E, J, L
All

4 TERMINATION 2

2	.250 TABS (QC) No Barriers
K	.250 TABS (QC) No Barriers

Jumper

No
T2 to 5

5 ILLUMINATION 4

	Lamps	Illumination Type	Lamp wired to Terminals
S	NONE	-	-
C	2	UP	3 (+) 7 (-)
H	2	INDEPENDENT	8 (+) 7 (-)
R	2	UP	3 (+) 9 (-)
T	2	INDEPENDENT	10 (+) 9 (-)
DOUBLE POLE SWITCHES ONLY			
M	2	UP	3 (+) 6 (-)

6 LOCK

Y Flat Surface with Raised Tab Lock

7 LAMP 4

No lamp	0	Red	Amber	Yellow	Green	Blue	White
STANDARD BRIGHT	C	N	1	2	3	9	
12VDC	D	P	4	5	6	U	
24VDC							
SUPERBRIGHT	T	7	8	H	A	F	
12VDC	V	E	K	J	B	G	
24VDC							

8 BRACKET COLOR & PANEL SEAL

No Gasket	1 Gasket	2 Gasket	Color	Light Shield
B	C	D	Black	No
G	H	J	Gray	No
W	Y	Z	White	No
No Gasket	1 Gasket	2 Gasket	Color	Light Shield
A	E	F	Black	Yes
K	L	M	Gray	Yes
P	R	S	White	Yes

9 ACTUATOR STYLE

1	Black, Laser Etch
2	Red, Laser Etch
3	Green, Laser Etch
4	Orange, Laser Etch



10 LASER ETCH COLOR

Z	No Legends
A	White Translucent
2	Red Translucent

11 LOCK COLOR AND FUNCTION

Lock Color	UP	Down	Up/Down	Center
Match Actuator	A	H	R	1
Black	B	J	S	2
White	C	K	T	3
Red	D	L	V	4
Safety Orange	E	M	W	5
Gray	F	G	N	6

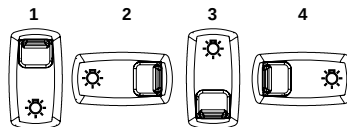
12 LEGEND POSITION

00 No legend

For legend options, see Standard Legend Imprinting pages.

13 LEGEND ORIENTATION

0	No legend
1	Orientation 1
2	Orientation 2
3	Orientation 3
4	Orientation 4

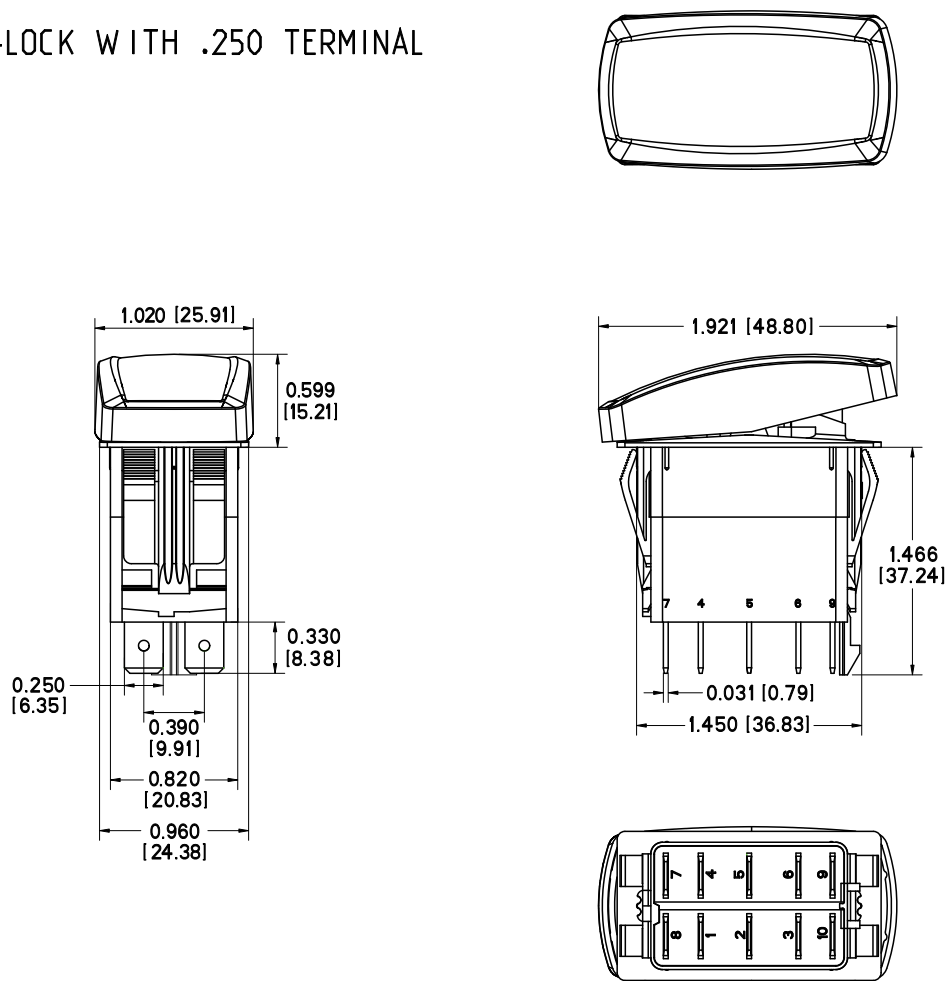


Notes:

- SP-single pole uses terminals 1, 2 & 3. DP-double pole uses terminals 1, 2, 3, 4, 5 & 6. Terminals 7, 8, 9 & 10 are for lamp circuit only. Position 1, 2 and 3 refer to figure 1, 2, 3.
- External jumper between terminals 2 & 4 for Circuit E are to be provided by customer. Circuit E may be used for SP, OFF-ON-ON circuit.
- Customer may provide externally wired jumper to connect terminals 2 and 5.
- Lamp located above terminals 1 & 4 end of switch. Lamp located above terminals 3 & 6 end of switch. Positive (+) and negative (-) symbols apply to LED lamps only.
- Mounting hole size is 1.450" (36.83mm) by 0.830" (21.08mm). To mount multiple switches in single panel cut-out order optional interlocking mounting panels.

Dimensional Specifications: in. [mm]

NO-LOCK WITH .250 TERMINAL



WITH LOCK

FIGURE 1: Position 1

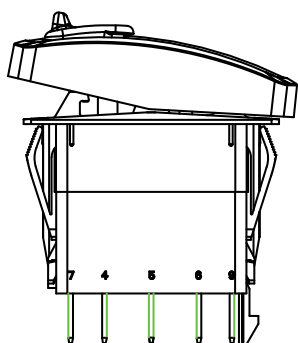


FIGURE 2: Position 2

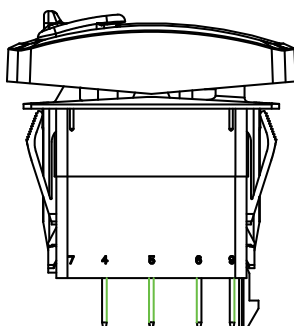
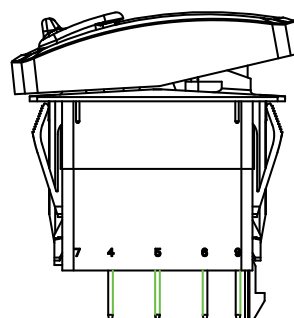


FIGURE 3: Position 3



Circuit Diagrams:

CIRCUIT	CIRCUIT DIAGRAM
1	
2	
3	
4	
5	
6	
7	
8	

CIRCUIT	CIRCUIT DIAGRAM
9	
V	
Y	
A	
B	
C	
D	
E	

CIRCUIT	CIRCUIT DIAGRAM
F	
G	
H	
J	
K	
L	

CIRCUIT	CIRCUIT DIAGRAM
M	
N	
P	
R	
S	
T	

CJ	1	A	2	U	C	0	B	-	A	9	Z	00	-	0	00
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lamp 1	7 Lamp 2	8 Bracket/ Seal		9 Actuator	10 Lens 1	11 Lens 2	12 Legend 1		13 Legend Orientation	14 Legend 2

1 SERIES**CJ** CJ-Series Multi-Circuit Rocker**2 CIRCUIT 1,4**

See circuit diagrams

3 RATING

A	10A 12VDC
B	10A 24VDC
M	.4V/10A 12VDC
N	.4V/10A 24VDC

4 TERMINATION

2	.250 TABS (QC) No Barriers
K	.250 TABS (QC) No Barriers

Jumper

No
T2 to 5

5 ILLUMINATION 1,4

	Lamps	Illumination Type	Lamp wired to Terminals
U	1	DEDICATED	See circuit diagrams
S	2	DEDICATED	See circuit diagrams
Z	NONE	NONE	See circuit diagrams
A	2	INDEPENDENT	10 (+) 9 (-)
B	1	INDEPENDENT	10 (+) 9 (-)

6 & 7 LAMP #1 AND/OR #2 2

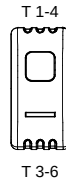
No lamp	0					
12VDC	C	N	1	2	3	9
24VDC	D	P	4	5	6	U
SUPERBRIGHT						
12VDC	T	7	8	H	A	F
24VDC	V	E	K	J	B	G

8 BRACKET COLOR & PANEL SEAL

No Gasket	1 Gasket	2 Gasket	Color
B	C	D	Black
G	H	J	Gray
W	Y	Z	White

9 ACTUATOR STYLE & ORIENTATION

0	No Actuator - Furnished separately
A	Black
B	White
C	Gray
D	Red
E	Blue
F	Yellow
G	Red Laser Etch
L	Black Laser Etch

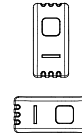
**10 & 11 LENS #1 AND LENS #2 COLOR 2**

0 - No Actuator	Z - No Lens					
Clear	White	Amber	Green	Red	Blue	Yellow
-	8	6	F	M	S	U
3	-	D	J	P	V	B
-	9	7	G	N	T	Y
4	-	E	K	R	W	C
-	A	-	2	-	-	-
5	-	-	-	-	-	-

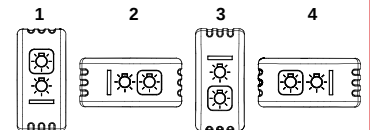
Bar Lens Translucent
Bar Lens Transparent
Square Lens Translucent
Square Lens Transparent
Laser Etch Translucent
Laser Etch Transparent

12 LEGEND POSITION 1 3**00** - No Legend this location / No actuator

11 ON	12 OFF	13 I	14 O
OFF	ON	O	I
15 O O	16 O O	17 O I	18 I O
F N	N F		
F	F		

**13 LEGEND ORIENTATION 3**

0	No legend
1	Orientation 1
2	Orientation 2
3	Orientation 3
4	Orientation 4

**14 LEGEND POSITION 2****00** No legend

For legend options, see Standard Legend Imprinting pages.

Notes:

- Circuits 1-5 provided with dedicated lamp circuit.
- Lens color must be clear, white or match color of LED.
- Box 13 must be 0 if legend code in box 12 is 11 through 18.
- Illumination code A, B and Z to be used with circuits A through Y.

CJ	1	A	2	U	C	0	B	-	1	A	Z	00	-	0	00
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lamp 1	7 Lamp 2	8 Bracket/ Seal		9 Actuator	10 Laser Etch	11 Laser Etch	12 Legend 1		13 Legend Orientation	14 Legend 2

1 SERIES**CJ** CJ-Series Multi-Circuit Rocker**2 CIRCUIT 1,4**

See circuit diagrams

3 RATING

A	10A 12VDC
B	10A 24VDC
M	.4V/10A 12VDC
N	.4V/10A 24VDC

4 TERMINATION

2	.250 TABS (QC) No Barriers
K	.250 TABS (QC) No Barriers

Jumper

No
T2 to 5

5 ILLUMINATION 1,4

	Lamps	Illumination Type	Lamp wired to Terminals
U	1	DEDICATED	See circuit diagrams
S	2	DEDICATED	See circuit diagrams
Z	NONE	NONE	See circuit diagrams
A	2	INDEPENDENT	10 (+) 9 (-)
B	1	INDEPENDENT	10 (+) 9 (-)

6 & 7 LAMP #1 AND/OR #2 2

No lamp	0					
	Red	Amber	Yellow	Green	Blue	White
12VDC	C	N	1	2	3	9
24VDC	D	P	4	5	6	U
SUPERBRIGHT						
12VDC	T	7	8	H	A	F
24VDC	V	E	K	J	B	G

8 BRACKET COLOR & PANEL SEAL

No Gasket	1 Gasket	2 Gasket	Color
B	C	D	Black
G	H	J	Gray
W	Y	Z	White

9 ACTUATOR STYLE & ORIENTATION

0	No Actuator - Furnished separately
1	Black, Laser Etch
2	Red, Laser Etch
3	Green, Laser Etch
4	Orange, Laser Etch

10 & 11 LASER ETCH COLOR

0	No Actuator
Z	No Legend
A	White Translucent
2	Red Translucent

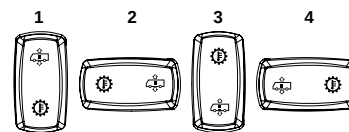
12 LEGEND POSITION 1

00	No Legend
-----------	-----------

For legend options, see Standard Legend Imprinting pages.

13 LEGEND ORIENTATION 3

0	No Legend
1	Orientation 1
2	Orientation 2
3	Orientation 3
4	Orientation 4

**14 LEGEND POSITION 2**

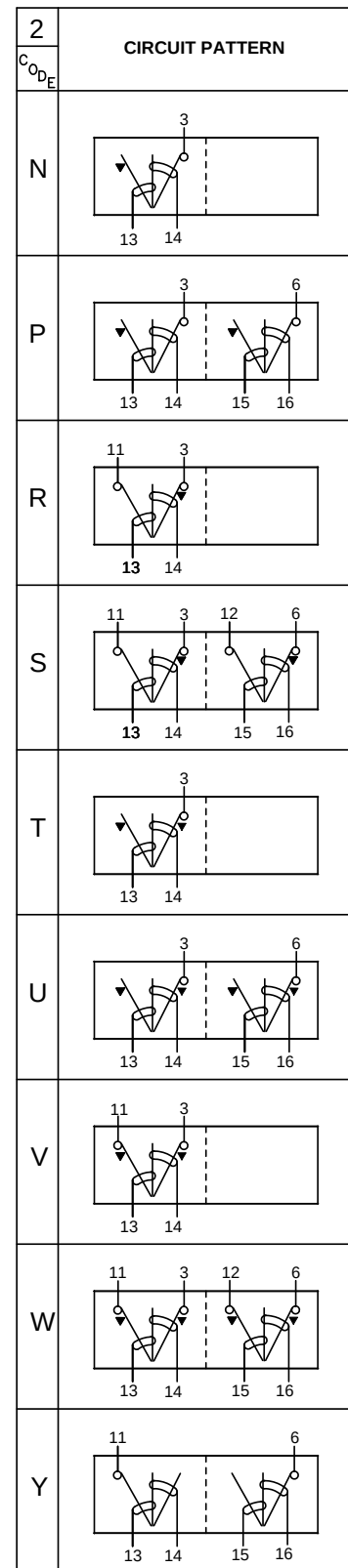
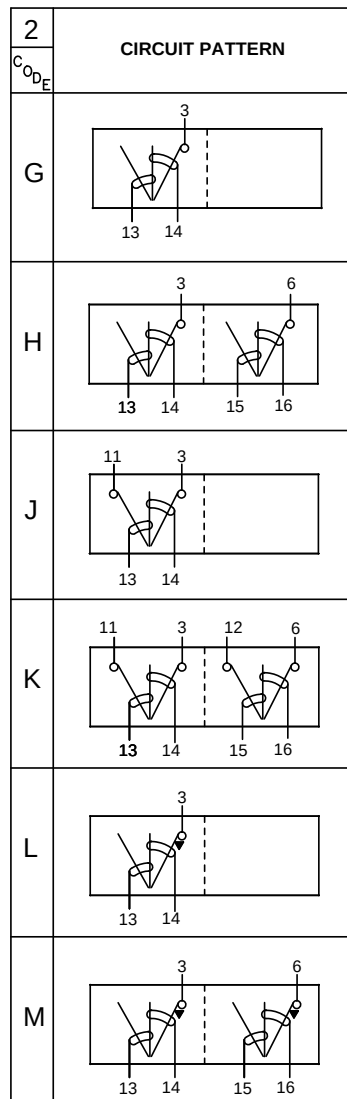
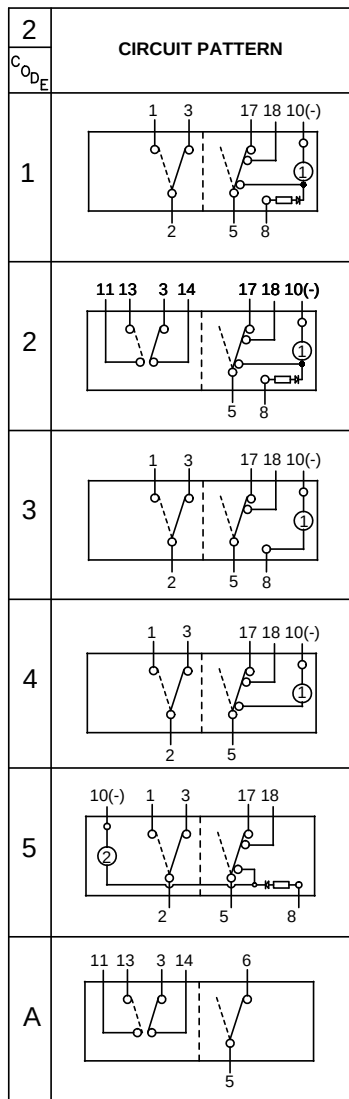
00	No Legend
-----------	-----------

For legend options, see Standard Legend Imprinting pages.

Notes:

- Circuits 1-5 provided with dedicated lamp circuit.
- Illumination code A, B and Z to be used with circuits A through Y.
- Tolerance for the image size (transfer or laser etch) is .020" applicable on box 12 and 14, unless otherwise specified.
- Bright LED is used for black light, super bright is used for function light.

Circuit/Lamp Diagrams:



SYMBOL LEGEND	
SYM.	DEFINITION
	DESIGNATES POSITION
	DESIGNATES TERMINALS AND CONTACTS
	DESIGNATES LAMP
	DESIGNATES MAINTAINED CIRCUITS
	DESIGNATES OTHER POSITION
	DESIGNATES MOMENTARY CIRCUITS
	DESIGNATES TWO POSITION CONNECTION
	DESIGNATES LOW INTENSITY LAMP PATH

CVP	1	N	N	-	B	1	1	6	6	-	00	0	00
1 Series	2 Termination	3 Lamp	4 Lamp	5 Housing Color	6 Lens Design	7 Lens Design	8 Lens Color	9 Lens Color	10 Legend	11 Legend Orientation	12 Actuator Legend		

1 SERIES

CVP Illuminated plug
CH2¹ Housing only
CH3² Lamp module only

2 TERMINATION

1 .250 TAB

3,4 LAMP (same coding for both selections) 4,5

No lamp	0						
STANDARD BRIGHT	T	N	H	C	A	9	
12VDC	V	P	J	D	B	U	
24VDC							
SUPER BRIGHT							
12VDC	Q	3	Y	-	-	-	
24VDC	W	E	K	-	-	-	

5 HOUSING COLOR

Black **B**
 Gray **W**
 White **R**
 Red **G**

Notes:

- To order housing only, specify "CH2" followed by fields 5-11.
- To order lamp module only, specify "CH3" followed by fields 2-3.
- To order connector housing, specify "HP1-01"
- If only 1 lamp, specify 0 in selection 4 and Z in selections 7 & 9.
- Field 3 specifies lamp 1 located over terminals 1A & 1B.
- Field 4 specifies lamp 2 located over terminals 2A & 2B.
- Field 6 specifies lamp 1 located over terminals 1A & 1B.
- Field 7 specifies lamp 2 located over terminals 2A & 2B.
- Field 8 specifies lamp 1 located over terminals 1A & 1B.
- Field 9 specifies lamp 2 located over terminals 2A & 2B.
- Field 10 specifies legend over lens 1.
- Field 12 specifies legend over lens 2.
- If only 1 lens is chosen, it will be located over terminals 1A & 1B.
- Translucent lens available with two piece lens option only.

6,7 SQUARE LENS DESIGN (same coding for both selections) 6, 10

Z No lens
1 Transparent diamond square 7
2 Translucent square 8

8, 9 LENS (same coding for both selections) 7, 9

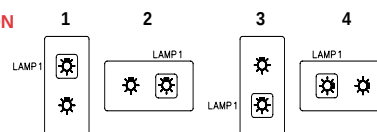
Z	No Lens						
Clear	White	Amber	Green	Red	Blue	Yellow	Lens Style
4	9	E	K	R	W	D	One piece
5	A	F	L	S	Y	J	Two piece (with clear top protective lens)
2	7	C	H	N	U	P	Two piece (with smoke top protective lens)
1	6	B	G	M	T	V	Two piece (with white top protective lens)

10 LAMP #1 LENS OR BODY LEGEND 8

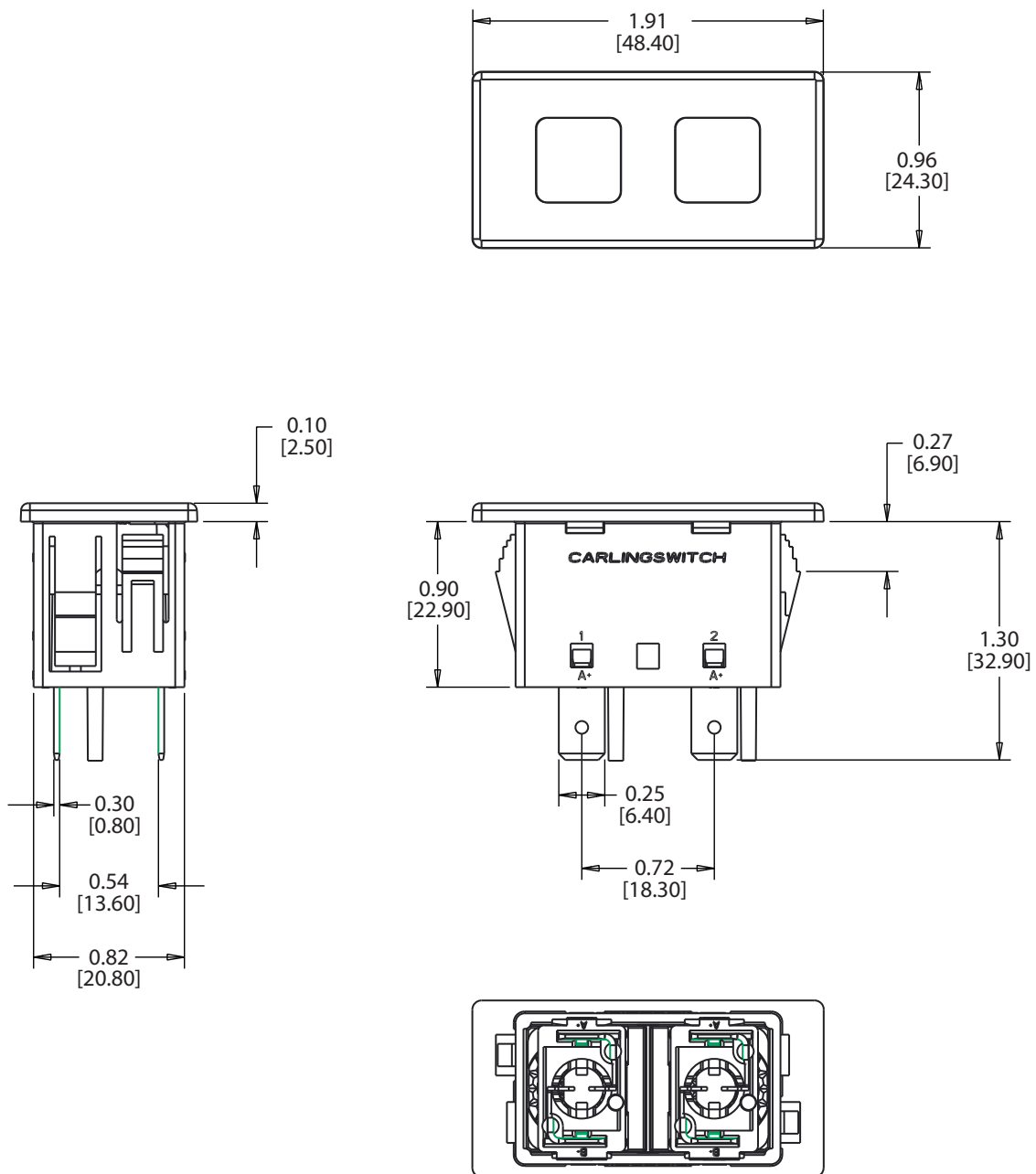
00 No legend
 For legend options, see Standard Legend Imprinting pages.

11 LEGEND ORIENTATION

0 No legend
1 Orientation 1
2 Orientation 2
3 Orientation 3
4 Orientation 4

**12 LAMP #2 LENS OR BODY LEGEND 8**

00 No legend
 For legend options, see Standard Legend Imprinting pages.

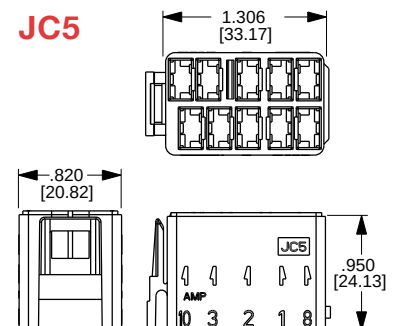
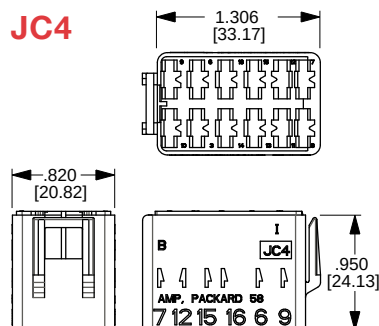
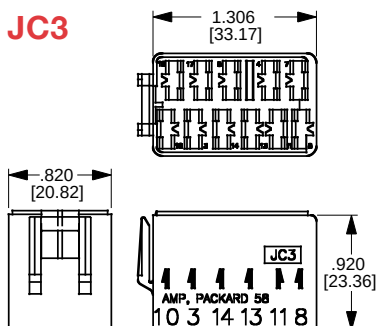
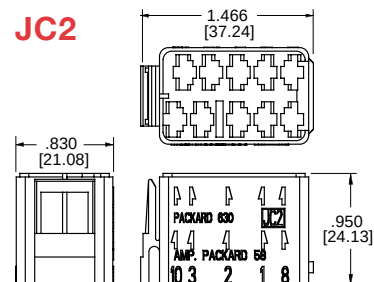
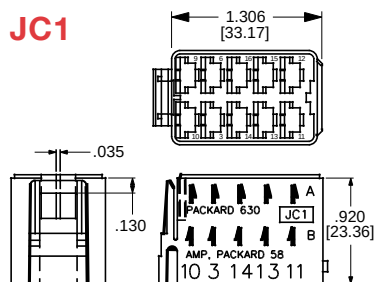
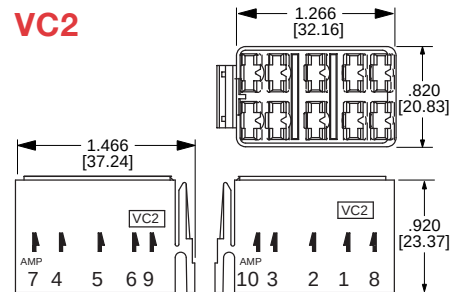
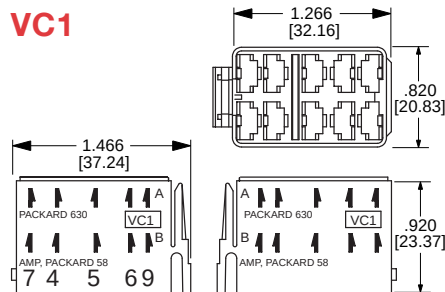
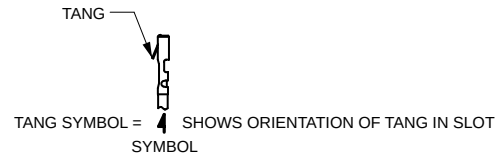
Dimensional Specifications: in. [mm]

Easily integrate products into your system, with Accessories

Connectors

Q.C. SELECTION GUIDE					
COMPANY SERIES	PART NO		WIRE RANGE		ORIEN- TATION
	PLAIN BRASS	TIN PLATED BRASS	AWG	MM ² (REF)	
PACKARD 58 SERIES	02965580		12	3.0	B
	02965471	12010601	(2)16-14	(2)1.0-2.0	
	02965470		16-14	1.0-2.0	
	02965469	06288318	20-18	.5-.8	
PACKARD METRI-PACK 630 SERIES		12084590	10	5.0	A
		12052224	12	3.0	
		12015870	16-14	1.0-2.0	
		12020035	(2)22-18	(2).5-.8	
	12015832	12015869	20-18	.5-.8	
		12052222	20-22	.35-.5	
AMP 250 SERIES FASTIN-FASTON	60253-1	60253-2	16-12	1.3-3	B
			(2) 16	(2) 1.3	
	42100-1	42100-2	18-14	.8-2	
	60295-1	60295-2	22-18	.3-.9	

NOTE: Consult Delphi Packard and/or Amp on actual part numbers and availability.
AMP is a registered trademark of AMP Inc. Harrisburg, PA
Delphi Packard is a registered trademark of Delphi-Packard Electrical Systems Warren, Ohio

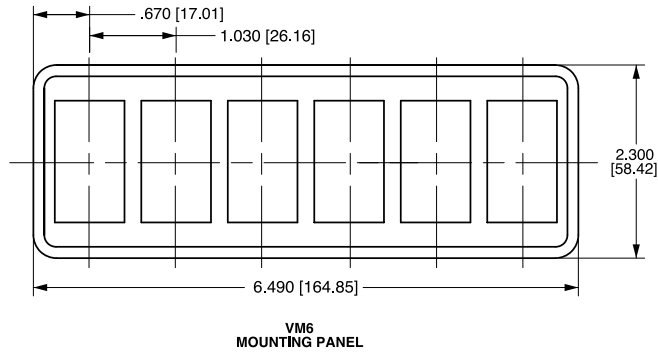
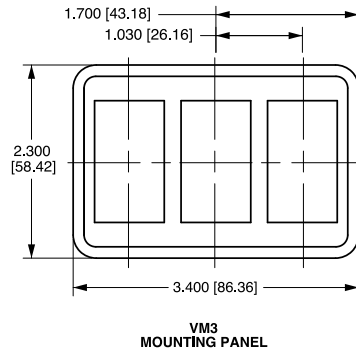
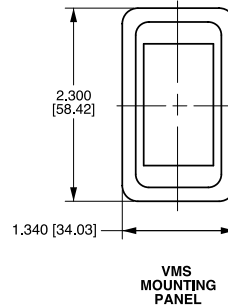
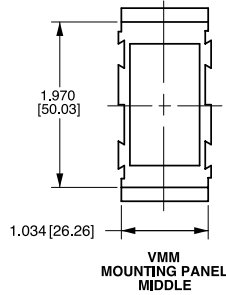
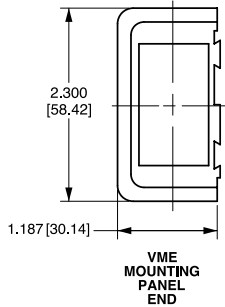
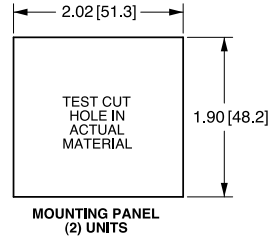
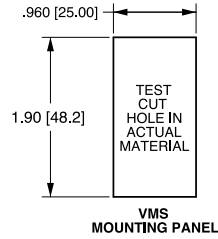


Notes:
JC1 is used with circuit JJ-JK only.
JC2 is used with circuit J1, J3, J4, J5 only.
JC3 is used with circuit J2 only.
JC4 is used with circuit JJ-JK with lamps only.
JC5 connector is used with circuit J1, J3, J4, J5, for AMP terminals only.

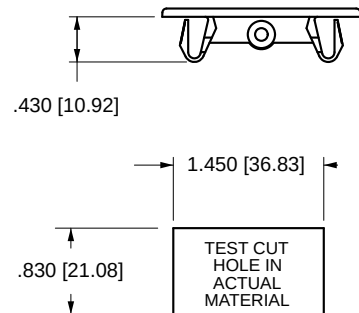
Mounting Panels: in. [mm]

MOUNTING PANEL
For additional units, add 1.03[26.2] per unit.
For more than 2 CV-Series Switches, add middle section. Available in Panel Thicknesses listed below. Consult factory.

MOUNTING PANEL THICKNESS	
.062[1.57]	.187[4.75]
.093[2.36]	.250[6.35]
.125[3.17]	.375[9.52]

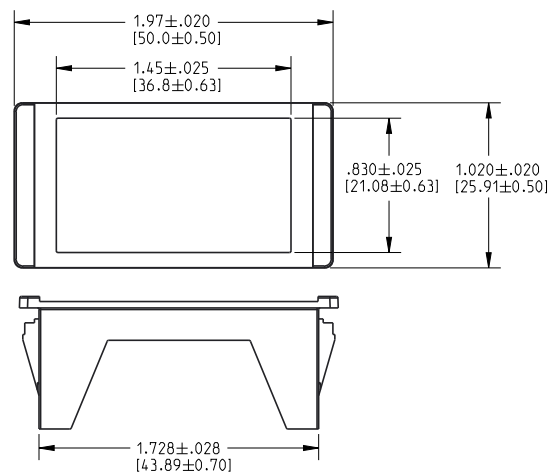
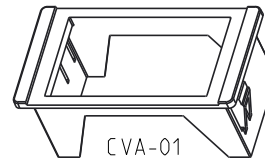


Hole Plug



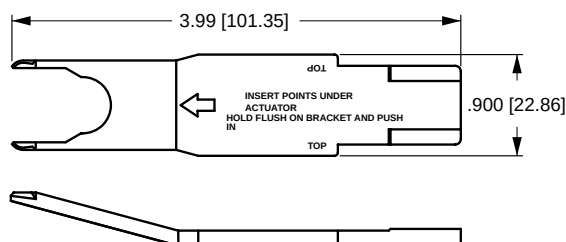
Mounting Hole Adaptor

allows CV-Series to fit 44 x 22mm mounting hole



SUGGESTED MOUNTING PANEL THICKNESS: 2.2-2.3MM

Actuator Removal Tool (P/N VRT)



Standard Legend Imprinting Codes:

YK	UA	UB	US	UV	UW	UX	UY	MP	MR	PX	MS	MT	
VU	MW	NZ	NX	NY	YM	VW	PS	PW	PZ	WG	WM	RN	
			NAV LIGHTS	COURT LIGHTS	PANEL LIGHTS	ANCH LIGHTS	HEAD LIGHTS	FOG LIGHTS	DASH LIGHTS	DOCK LIGHTS	BEACON	LIGHT	
RP	YG	TX	VD	VE	VF	VG	SH	SM	SN	SP	SR	SY	
DIM	BRIGHT						BILGE PUMP	BILGE					
WY	WZ	UH	UJ	PD	PE	PF	VC	VJ	UF	UG	MU	TN	
		WIPER											
NS	PB	SE	VZ	YE	NN	RW	PU	WA	YN	UE	NM	RJ	
				ENG FAN	BLWR					HORN			
NR	YD	TL	VR	SL	VA	UC	VN	PK	VY	UZ	RH	NU	
							UP	DOWN					
NV	RB	RC	RK	RL	MZ	RG	WS	WT	UD	UR	WD	TY	
		WATER PUMP			ANCHOR								
PA	UK	WR	UU	UT	YR	PM	VV	WB	TB	TC	TD	TE	
											ENG HATCH	ENG BRAKE	
MY	PV	TA	TZ	WC	PT	PN	PH	RA	TU	TT	YL	SK	
						TCS							
VS	UL	UM	WK	TS	VT	WL	VP	YJ	PJ	RY	UP	NW	
NP	RE	RF	PP	PR	TV	PC	YT	YU	PL	WJ	MV	RR	
		SEAT					CRUISE						
TK	RT	SZ	VX	WF	WH	PG	SJ	YA	YB	RM	TM	RD	
RS	UN	TP	TR	NT	MX	YC	TW	TJ	YF	TH	TF	TG	
		AUX	ON OFF	OFF ON	I O	O I	O F F O N	ON	OFF	I	O	II	
YS	YH	SX	RZ	YP	WN	WP	WW	WX	SA	SB	SC	SD	
RAISE	LOWER	HIGH	LOW	FWD	REV	DEPTH	TRIM TAB	ACC	NAV ANCH	WIND LASS UP/DN	LIVE WELL	REAR	
ST	SU	WU	WV	SV	SW	VB	VH	VK	VL	VM	WE	SF	
PARK	AUTO												
SG	SS	RU	RV	RX									

Notes:

- 1 ISO compliant symbols. Consult factory for custom icons.
2 New legend codes recommended for new part set ups. Previous codes still valid for existing customers.

Below is a list of useful product catalogs.

Please scan the QR codes below or visit **carlingtech.com/onthego** for complete details.

WEBSITE

Product Selector, Resources, Configurit,
Find Rep, Product Materials and Videos.



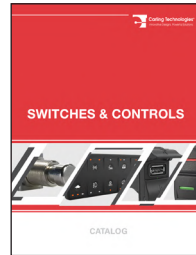
carlingtech.com



/onthego

SWITCHES AND CONTROLS

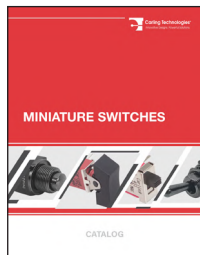
Rocker, toggle, pushbutton, rotary, battery
disconnects and controls.



catalog

MINI & SUB-MINI SWITCHES

Sealed and non-sealed rocker, toggle,
pushbutton and slide options.



catalog

HYDRAULIC-MAGNETIC CIRCUIT PROTECTION

1-6 poles from .02 to 700A with CSA, VDE, TUV,
UL489, UL489A, UL1500 approvals.



catalog

THERMAL CIRCUIT PROTECTION

1 pole from 3 to 60A with UL, cUL, CE,
UL1500/ISO 8846 approvals.



catalog

GFCI/ELCI CIRCUIT PROTECTION

1-3 poles from 0.10 to 50A with CSA, UL489,
UL1077, UL1053, UL1500 approvals.



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