

V-Series

Contura Rotary Switch

The V-Series Contura Rotary Switch was designed for maximum performance and reliability leveraging the features of the widely popular V-series Contura Rocker Switches.

Available in maintained and momentary circuit options, the V-Series Rotary features a sturdy knob construction, up to three separate LEDs, and fits in an industry standard panel opening.

Internally, the V-Series Contura Rotary uses a patented mechanism that translates rotary to linear motion. This allows for common switch functionality and terminal connections with the V-Series rocker version and requires no harness change. A secondary CAM, which helps drive the mechanism, provides definitive detent positions and prevents the switch from stopping between positions, while improving tactile feel.

The V-Series Rotary also features an innovative PC board that supports the LED and surface mount resistors; and IP67 sealing protection above panel by utilizing LED and actuator stem seals. Together, these features make the V-Series Contura Rotary switch the best choice available in the market today.

Typical Applications:

- ◆ On/Off Highway Equipment
- ◆ Marine
- ◆ Test & Measurement
- ◆ Instrumentation
- ◆ Speed Control



Product Highlights:

- ◆ Accommodates up to three separate LEDs
- ◆ Patented mechanism translates rotary into linear motion
- ◆ Secondary CAM for definitive detent positions
- ◆ PC Board supports LED and surface mount resistors
- ◆ IP67 sealing protection above panel
- ◆ Common terminal & circuit functionality with V-Series Rocker switches, with no harness change required



Carling Technologies™
Innovative Designs. Powerful Solutions.

Carling Technologies, Inc.
60 Johnson Avenue • Plainville, CT 06062
Phone: (860) 793-9281 • Fax: (860) 793-9231
Email: sales@carlingtech.com • www.carlingtech.com

V-Series Rotary Switch

DESIGN FEATURES

OPTIONAL PANEL SEAL

Prevents water/dust ingress behind panel

SEALS

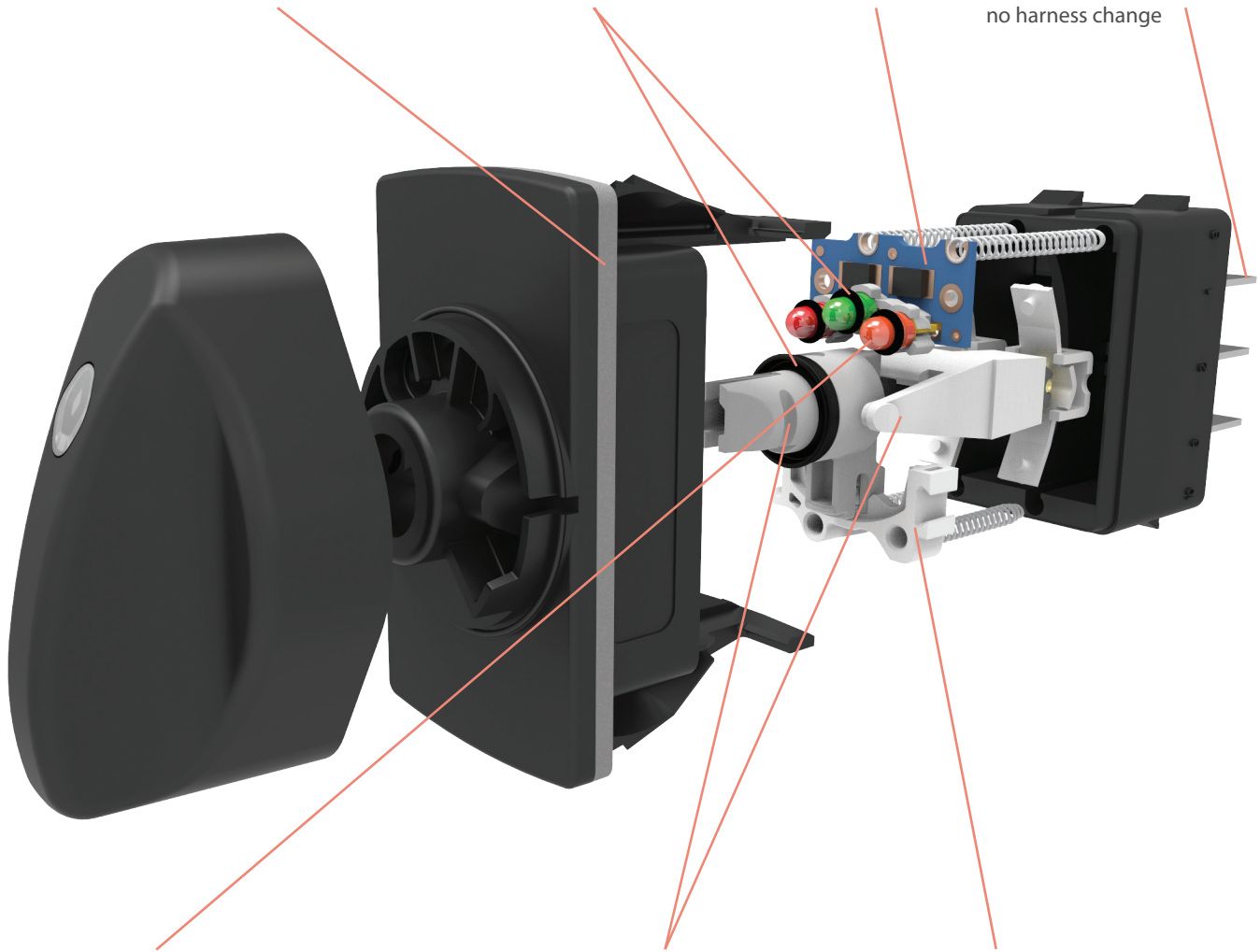
LED and stem seals provide IP67 protection above panel

PC BOARD

Supports LEDs and surface mount resistors

TERMINALS

Same pinout as V-Series Rocker Switches, requiring no harness change



LEDS

Up to three separate LEDs

ROTARY & LINEAR ACTUATOR

Patented mechanism that translates rotary to linear motion

SECONDARY CAM

Provides definitive detent positions with ball & spring located in rotary actuator

Electrical

Rating

Circuit	Voltage	Max Current Resistive
2 Position Maintain	12	20
2 Position Momentary	12	20
3 Position All	12	20
2 Position Maintain	24	15
2 Position Momentary	24	15
3 Position All	24	15

Dielectric Strength 1500 Volts RMS
 Insulation Resistance 50 Megohms
 Initial Contact Resistance 10 Milli Ohm max @ 4VDC
 Life 50,000 Cycles Two Position
 25,000 Cycles Two Position
 Momentary and All Three position
 Terminals 0.250" (6.3mm) Quick Connect

Physical

Function Circuits Single and Double Pole Single Throw, SPST, DPST
 Single and Double Pole Double Throw, SPDT, DPDT
 Operation Two and Three Position Maintained and Momentary
 Knob Rotation Two Position 60 Degrees
 Three Position 30 Degrees from Center
 Illumination LED; Red, Green, Amber, Yellow, White, Blue
 Seals LED O-ring(s) – Silicone, Bezel gasket – Neoprene, Knob seal - NBR
 Flammability Exceeds FVMSS 302 Requirements, Exterior Components, UL 94 V-2 or Better Interior Components, UL 94 HB or Better
 Base Polyester, PBT
 Bracket Nylon 66, PA
 Knob Polybutylene Terephthalate, PBT 6.5%GF
 Lens Polycarbonate, PC
 Connector Nylon 66, PA
 Mounting Front Panel Snap In, 1.450" (36.83mm) X 0.830" (21.08mm) Panel Thickness, 0.030" – 0.187" (0.76 – 4.75mm)

Mechanical

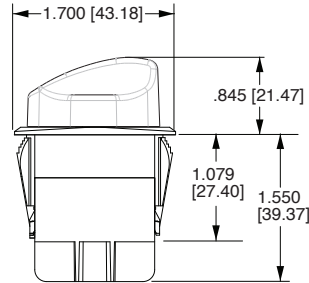
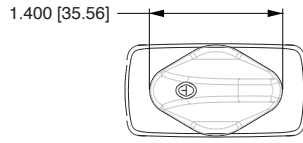
Mechanical Life 100,000 Cycles Maintained Circuits
 50,000 Cycles Momentary Circuits
 Knob Impact 50 Gram weight dropped from a height of 18 inches on Top & Sides

Environmental

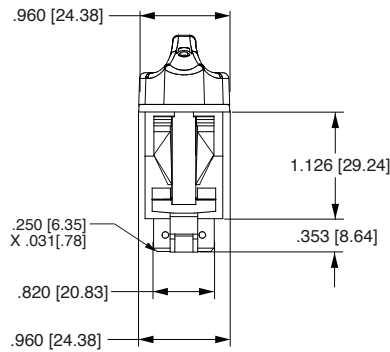
Sealing IP67, in accordance with IEC 60529, BS 5490, DIN 40050 & NFC 20 010. This rating applies to front panel components of the actual switch only, and signifies protection against dust and the prolonged effects of immersion under pressure.
 Dust Mil STD 810, Method 510.2 Air Velocity 300 Ft/Min Duration 16Hr
 Corrosion IEC 68-2-60 Mixed Flowing Gas (MFG) 14 Days
 Chemical Splash Gasoline, Diesel, Motor Oil, Brake Fluid, Ammonia, Armour All
 Salt Spray Mil STD 202G, Method 101, Test Condition A 96 Hr
 Vibration Random Mil STD 202G, Method 214 test Condition C 10G's RMS
 Vibration Sinusoidal Mil STD 202G, Method 204D, Test Condition A 0.06DA or 10G's 10-500Hz
 Shock MIL-STD 202G, Method 213B Test Condition K, 30G's
 Handling Shock 1 Meter Drop onto Hard Surface
 Thermal Shock MIL-STD 202G, Method 107G Test Condition A -55 C to 85 C
 Moisture Resistance MIL-STD 202G, Method 106F 10, 25 C to 65 C Cycles 95% RH
 Thermal Cycling 25 Cycles -40 C to 85 C
 Ignition Protection ISO 8846 with EC Directive 94/25/EC for Marine Products
 UV Protection 300 hr Xenon Arc, 1.4W/m2 wavelength 420 nm
 ESD Human Static Discharge, +/- 15KV applied during normal operation Shipping/Handling, frequency range 200-2000 MHz applied voltage is +8KV to +15KV and -8KV to -15KV 3 discharge cycles

*Manufacturer reserves the right to change product specification without prior notice.

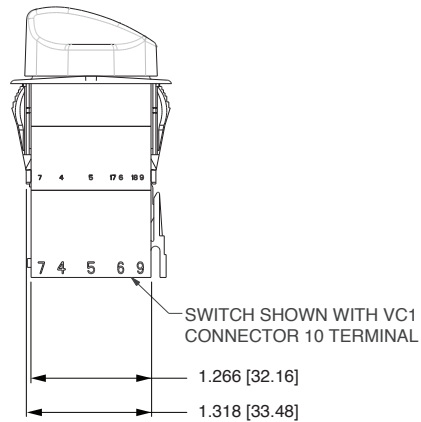
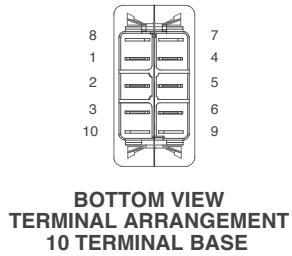
Dimensional Specifications: in. [mm]



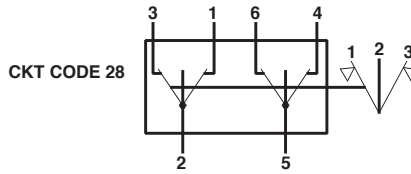
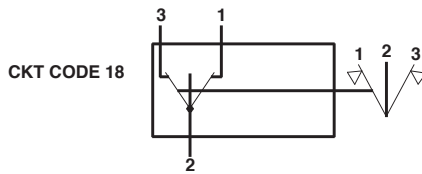
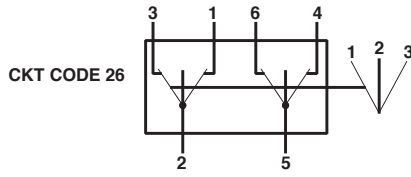
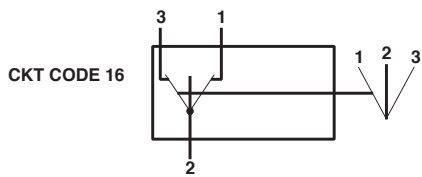
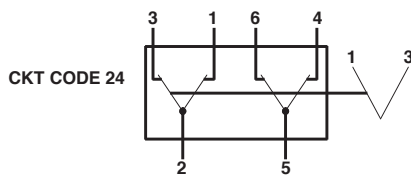
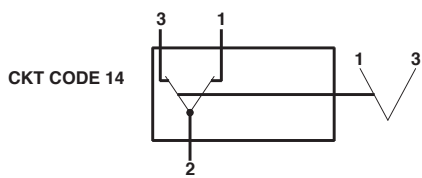
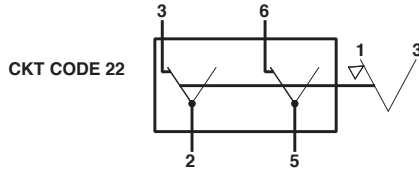
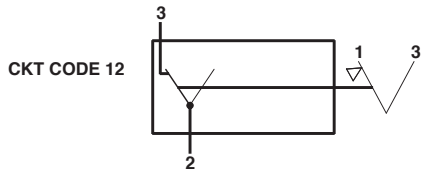
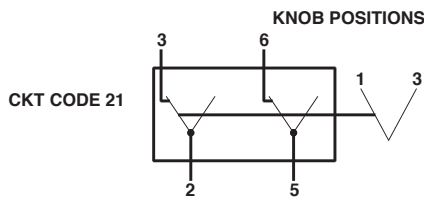
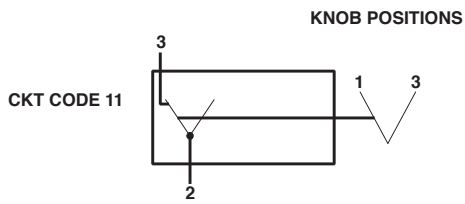
**10 TERMINAL BASE
 W/ BARRIERS**



**10 TERMINAL BASE
 W/O BARRIERS**



Circuits Codes



LEGEND	
SYMBOL	DEFINITION
	TERMINAL LOCATION
	MAINTAINED CIRCUIT
	MOMENTARY CIRCUIT
	INTERNAL CONNECTION (JUMPER TERMINAL)
	2 POSITION CONNECTION
	2 POSITION CONNECTION
	2 POSITION
	3 POSITION

Standard Lamp Circuit Diagrams

LAMP CIRCUIT	CIRCUIT DIAGRAM	LAMP CIRCUIT	CIRCUIT DIAGRAM
A		L	
B		M	
C		N	
D		P	
E		R	
F		T	
G		U	
H		V	
J			
K			

RV 11 D 2 B C 0 0 B - K R C

1 Series 2 Circuit 3 Rating 4 Termination 5 Illumination 6 Lamp 1 7 Lamp 2 8 Lamp 3 9 Bracket 10 Actuator 11 Lens 12 Knob Color

1 SERIES
RV Rotary Contura

2 CIRCUIT¹

Terminal Connections as viewed () - momentary from bottom of switch:
 8 - -7 SP - single pole uses 1, 2 & 3.
 1 - -4 DP - double pole uses 1, 2, 3 and 4, 5, 6.
 2 - -5
 3 - -6
 10 - -9

Position:	1	2	3
SP DP	2 & 3, 5 & 6	Connected Terminals	1 & 2, 4 & 5
11 21	ON	NONE	OFF
12* 22	(ON)	NONE	OFF
(*Available Q2 - 2014)			
14 24	ON	NONE	ON
16 26	ON	OFF	ON
18 28	(ON)	OFF	(ON)

3 RATING

	External
1	.4VA 28VDC Resistive
B	15A 24V
D	20A 12V

4 TERMINATION/BASE STYLE

8 Term	10 Term	Termination	Jumper
1	2	.250 TAB (QC) - no barriers	No
A	B	.250 TAB (QC) - with barriers	No
3	4	Solder Lug - no barriers	No
C	D	Solder Lug	No
5	6	Wire Leads - no barriers	No
E	F	Wire Leads	No

5 ILLUMINATION²

Sealed	Lamps	when illuminated	Terminals
S	NONE		
A	# 1	Independent	8+ 7-
B	# 1	Dependent	3+ 7-
C	# 1	Independent	8+ 7-
D	& # 3	Independent	10+ 7-
E	# 1	Dependent	3+ 7-
F	& # 3	Dependent	1+ 7-
G	# 1	Independent	8+ 7-
H	# 2	Independent	9+ 7-
J	# 3	Independent	10+ 7-
K	# 1	Independent	3+ 7-
L	# 2	Dependent	1+ 7-
M	# 1	Dependent	3+ 7-
N	# 2	Independent	8+ 7-
P	# 2	Independent	8+ 7-
R	# 3	Independent	10+ 7-
T	# 3	Dependent	1+ 7-
Single Pole Switches Only			
U	# 1	Dependent	3+ 6-
V	# 1	Dependent	3+ 6-
	# 3	Dependent	1+ 4-

6, 7, 8 LAMP#1, 2 AND OR LAMP #3⁴
 Selection 6: above terminal 7; Selection 8: above terminal 8

No lamp	Red	Amber	Green	Blue	White
0					
LED	C	N	H	E	6
12VDC	D	P	J	K	8
24VDC					

9 BRACKET COLOR & PANEL SEAL³

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

10 ACTUATOR STYLE

K Rotary Knob Standard

ACTUATOR ORIENTATION ABOVE TERMINALS



11 LENS COLOR⁴

No Actuation	No Lens	Clear	White	Amber	Green	Red	Blue
0	Z	4	9	E	K	R	W

12 KNOB COLOR

Black	Gray	Red
C	H	S

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.
- Lamp #1 located at top end of switch, above terminal 4. Lamp #2 located at top end of switch between terminals 1 & 4. Lamp #3 located at top end of switch, above terminal 1. 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.
- Lens color for LEDs must be clear, white, or match color of LED.