

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



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V-Series Rotary Switch

DESIGN FEATURES

OPTIONAL PANEL SEAL

Prevents water/dust ingress behind panel

SEALS

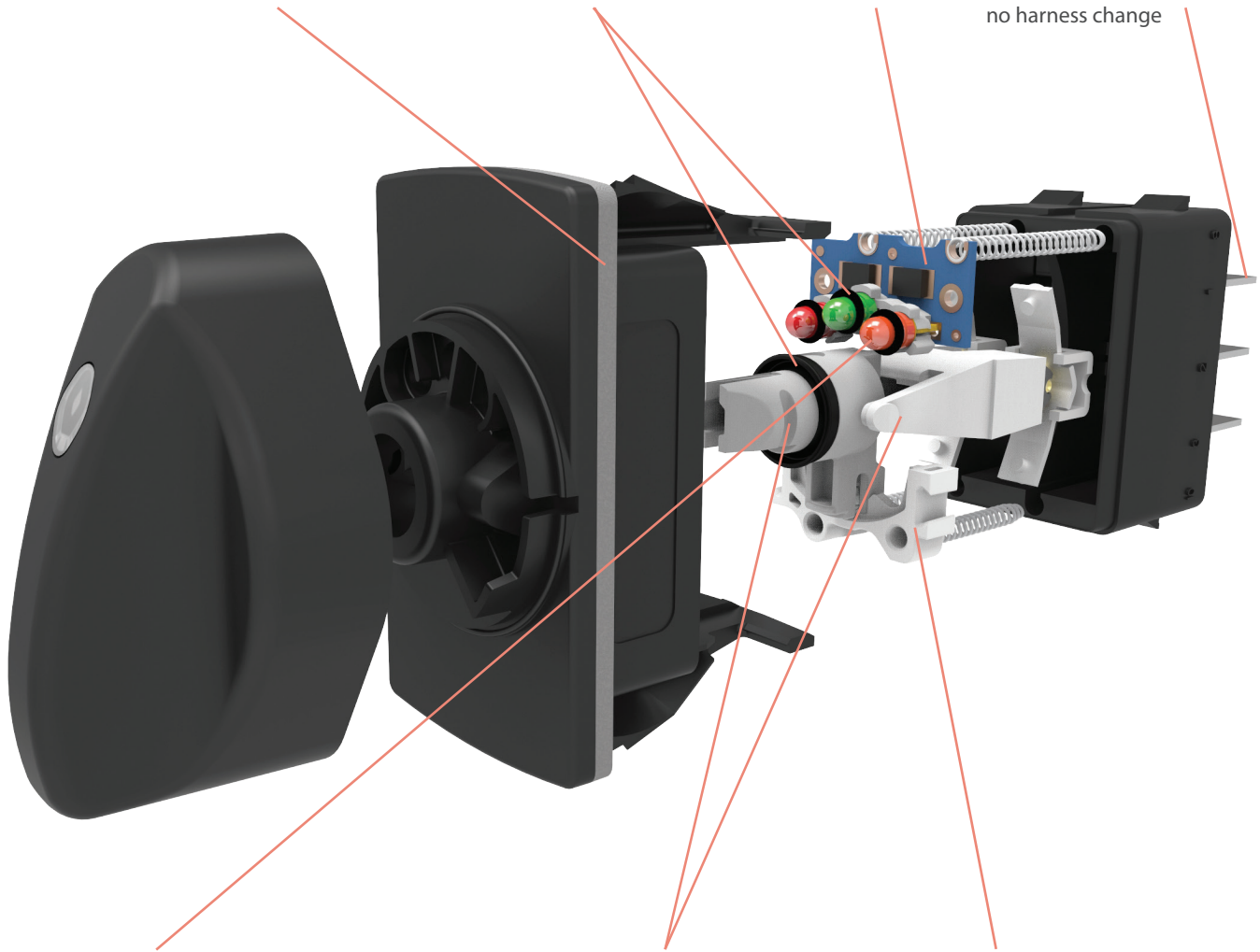
LED and stem seals provide IP67 protection above panel

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

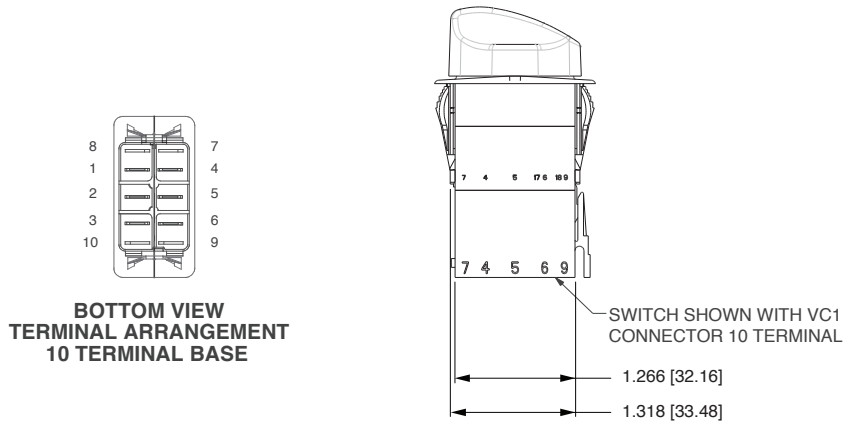
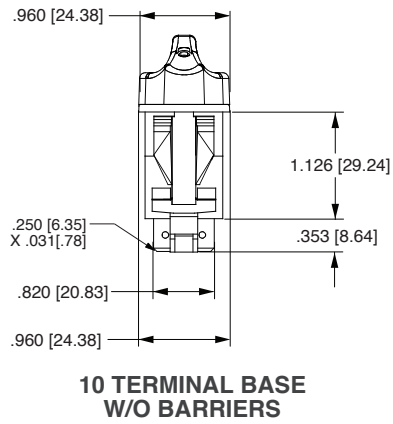
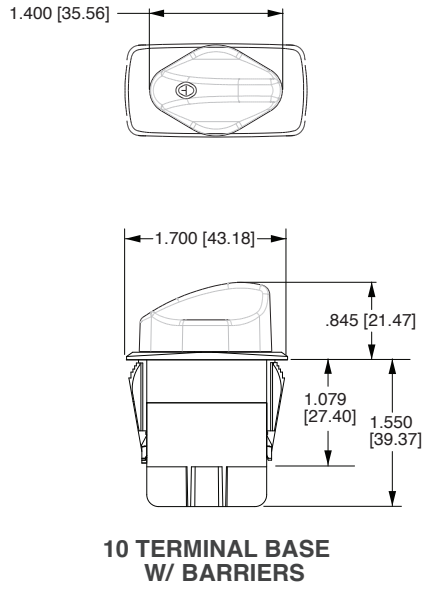
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| Mechanical Life | 100,000 Cycles Maintained Circuits 50,000 Cycles Momentary Circuits |
| Knob Impact | 50 Gram weight dropped from a height of 18 inches on Top & Sides |

Environmental

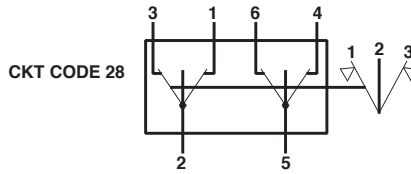
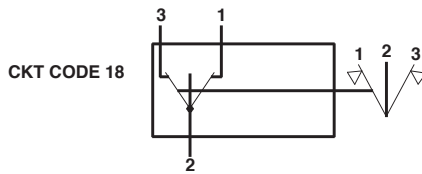
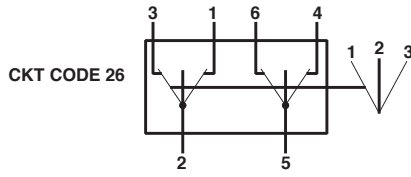
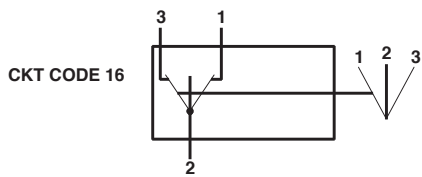
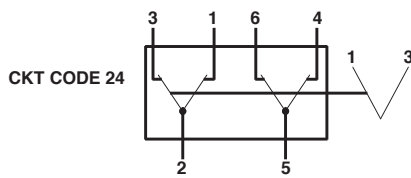
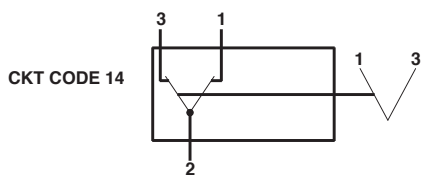
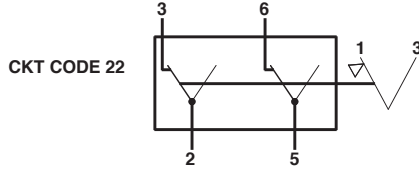
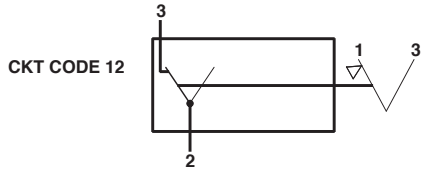
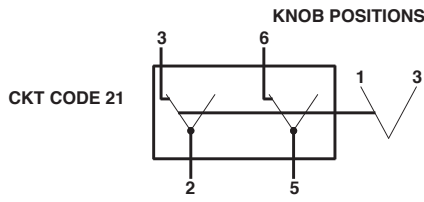
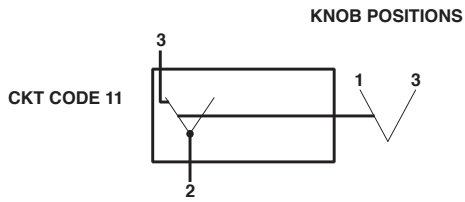
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| Sealing | IP67, in accordance with IEC 60529, BS 5490, DIN 40050 & NFC 20 010. This rating applies to front panel components of the actual switch only, and signifies protection against dust and the prolonged effects of immersion under pressure. |
| 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 1 Meter Drop onto Hard Surface |
| Handling Shock | MIL-STD 202G, Method 107G Test Condition A -55 C to 85 C |
| Thermal Shock | MIL-STD 202G, Method 106F 10, 25 C to 65 C Cycles 95% RH |
| Moisture Resistance | 25 Cycles -40 C to 85 C |
| Thermal Cycling | ISO 8846 with EC Directive 94/25/EC for Marine Products |
| Ignition Protection | 300 hr Xenon Arc, 1.4W/m2 wavelength 420 nm |
| UV Protection | Human Static Discharge, +/- 15KV applied during normal operation |
| ESD | 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]



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 |
|---------|-----|-------|-------|------|-------|
| 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.

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JONHON

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