V-Series
Contura X, XI, XII Switches

The V-Series Contura X, XI & XII snap-in rocker/paddle switches offer countless unique options including choices for ratings, circuits, colors, illuminations and symbols. These single or double pole switches feature removable actuators in a choice of actuator styles and colors, and can be illuminated with either square or bar shaped lenses. Actuators and square lenses may also be purchased and stocked separately from the base assembly. They also feature a raised bracket/bezel which helps prevent inadvertent actuation of the switch.

The Contura switches with sealed option, are certified to IP66 and IP68, signifying complete protection against dust and prolonged spray and submersion under pressure, and are recognized to UL1500 - Ignition Protection for Marine Products. These switches are vibration, shock, thermoshock, moisture and salt spray resistant. Temperature ratings range from -40°C to +85°C.

Resources:
Download 3D CAD Files
IGS ➤ STP ➤

Watch Product Video

Product Highlights:
• Countless options for ratings, circuits, colors, illuminations and legends
• Certified to IP66 and IP68 for front panel components
• Vibration, shock, thermoshock, moisture and salt spray resistant
• Temperature range from -40°C to +85°C.

Typical Applications:
• On/Off Highway Equipment
• Marine
• Military Armored Vehicles
• Mining Machinery and Equipment
• Any application requiring environmental protection
V-Series Switch
DESIGN FEATURES

INTERCHANGEABLE ACTUATORS
Panel redesign is a snap with our wide range of rocker/paddle styles. Achieve maximum design variety with minimum inventory. Simply swap rockers to create an entirely new look for your panel.

DUAL SEAL PROTECTION
Seals out water, dust, debris, and enables switch certification to IP66/IP68 for front panel components.

CLEAN CONNECTIONS
Options for both eight and ten terminal base styles with AMP & Packard compatible connectors affords myriad circuit options while providing ease of assembly.

OPTIONAL PANEL SEAL
Prevents water/dust ingress behind panel.

MULTIPLE LIGHTING OPTIONS
In addition to incandescent lamps, our LED illumination is offered in a wide array of light intensities, colors, as well as dual level, tri-color, and flashing options.

BRASS ROLLER PIN
Robust mechanism eliminates the need for lubricants. Enables switch to withstand -40°C to +85°C temperatures.

SILVER PLATED BUTT CONTACT MECHANISM
Providing 50K to 100K electrical cycles and a variety of different electrical ratings.
### Electrical

**Contact Rating**
- .4VA @ 24VDC (MAX) resistive
- 15 amps, 125VAC
- 10 amps, 250VAC
- 1/2 HP 125-250VAC
- 20 amps, 4-14VDC
- 15 amps, 15-28VDC
- 10A, 14V
- 6A, 125VAC L

**Dielectric Strength**
- 1500 Volts RMS

**Insulation Resistance**
- 50 Megohms

**Initial Contact Resistance**
- 10 milliohms max. @ 4VDC

**Life**
- 50,000-100,000 cycles circuit dependent

**Contacts**
- Silver alloy, silver tin-oxide, fine silver

**Terminals**
- Brass or copper/silver plate 1/4" (6.3mm) Quick Connect terminations standard. Solder lug, Wire Lead

### Mechanical

**Endurance**
- 150,000 cycles minimum circuit dependent

### Physical

**Lighted**
- Incandescent - rated 10,000 hours Neon - rated 25,000 hours LED - rated 100,000 hours 1/2 life (LED is internally ballasted for voltages to 24VDC)

**Seals**
- Internal
- Optional external gasket panel seal

**Base**
- Polyester blend rated to 125°C with a UL flammability rating of 94V0.

**Contura II,III,IV,V, VI, VII Actuator**
- **Hard Surface**: Basic actuator structure molded of thermoplastic polycarbonate with a hard Nylon 66 thermoplastic surface overlay.
- **Soft Surface**: Basic actuator structure molded of thermoplastic polycarbonate with an elastomer overlay.

**Contura X,XI,XII Actuator,VP**
- Nylon 66 Reinforced rated to 105°C
- Polycarbonate rated at 100°C
- Polycarbonate lens/subrocker with ABS shell

**Contura XIV**
- Polycarbonate lens/subrocker with ABS shell

### Actuator Travel (Angular Displacement)

- 2 position: 18°
- 3 positions: 9° from center

### Mounting Specifications

**Panel Thickness Range**
- **Gaskets**: Acceptable Panel Thickness
  - 0: .030 to .250 (.76mm to 6.35mm)
  - 1: .030 to .109 & .147 to .157 (.76 to 2.77mm & 3.73 to 3.98mm)
- Recommended: No gasket with panel thickness of .032, .062, .093, .125, .187 or .250

**Agency Certifications**

**Environmental**
- **Sealing**: Sealed version: IP68, 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. The standard test for immersion under pressure requires submersion under one meter of water for 30 min. The V-Series switch has exceeded these parameters, having been actuated and illuminated during submersion.

- **Corrosion**: Mixed Flowing Gas (MFG) Class III 3 year accelerated exposure per ASTM B-827, B-845 Silver and gold contacts
- **Operating Temp.**
  - Vibration 1
- **Vibration 2**: Resonance search 24-50 Hz 0.40 DA 50-2000 Hz ±10 G’s peak Horizontal Axis 3-5 G’s max. Random 24 Hz 0.06 PSD-Gsq/Hz 60 Hz 0.50 100 Hz 0.50 200 Hz 0.25 2000 Hz 0.25 No loss of circuit during test; <10μ seconds chatter.
- **Shock**: Per Mil-Std 202F, Method 213B, Test Condition K @ 30G’s. Tested with VCH connector. Test criteria - No loss of circuit during test, pre and post test contact resistance.
- **Salt Spray**: Per Mil-Std 202F, Method 101D, Test Condition A, 96 Hrs. Sealed version only.
- **Dust**: Per Mil-Std 810C, Method 510.2 Air Velocity 300 ±200 Feet/Min, Test Duration 16 Hrs.
- **Moisture Resistance**: Per Mil-Std 202F, Method 106F, Test Criteria - pre and post test contact resistance
- **Ignition Protection**: All Contura switches with sealed construction meet the requirements of UL1500/ISO8846 for ignition protection, in addition to conformance with EC directive 94/25/EC for marine products.
Dimensional Specifications: in. [mm]

**CONTURA X**  
SHOWN WITH RAISED BRACKET

- Width: 0.350 [8.89] in.
- Height: 1.370 [34.79] in.

**CONTURA XI**  
SHOWN WITH RAISED BRACKET AND TWO SQUARE LENSES

- Width: 0.350 [8.89] in.
- Height: 1.370 [34.79] in.

**CONTURA XII**  
SHOWN WITH PADDLE ACTUATOR

- Width: 0.960 [24.38] in.
- Height: 0.820 [20.82] in.

Bottom View Terminal Arrangement:

**CONTURA X**
- Terminal 1
- Terminal 2
- Terminal 3
- Terminal 4
- Terminal 5
- Terminal 6
- Terminal 7
- Terminal 8
- Terminal 9
- Terminal 10

**CONTURA XI**
- Terminal 1
- Terminal 2
- Terminal 3
- Terminal 4
- Terminal 5
- Terminal 6
- Terminal 7
- Terminal 8
- Terminal 9
- Terminal 10

**CONTURA XII**
- Terminal 1
- Terminal 2
- Terminal 3
- Terminal 4
- Terminal 5
- Terminal 6
- Terminal 7
- Terminal 8
- Terminal 9
- Terminal 10
### SYMBOL LEGEND

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<th>SYM.</th>
<th>DEFINITION</th>
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<td>DESIGNATES TERMINALS AND CONTACTS</td>
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<td>○</td>
<td>DESIGNATES LAMP LOCATION</td>
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<td>□</td>
<td>DESIGNATES MAINTAINED CIRCUITS</td>
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<td>—</td>
<td>DESIGNATES OTHER POSITION</td>
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<td>—</td>
<td>DESIGNATES MOMENTARY CIRCUITS</td>
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<tr>
<td>—</td>
<td>DESIGNATES TWO POSITION CONNECTION</td>
</tr>
<tr>
<td>—</td>
<td>DESIGNATES EXTERNAL JUMPER PROVIDED BY CUSTOMER</td>
</tr>
</tbody>
</table>
NOTE:

J circuits are available for all non-locking V-Series styles. Consult factory for p/n details.
### 1 SERIES

#### 2 CIRCUIT

**Terminal Connections as viewed from bottom of switch:**

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

**Position:**

- SP DP 2 & 3, 5 & 6
- SP OFF 2 & 3
- DP OFF 2 & 3

**Rating:**

- 4VA/15A 24V
- 20A 14V, 10A 14VT (circuit 1, 4, A & D only)

**Actuator**

- Neon 1 125VAC 2 250VAC

**Lamp**

- Incandescent 4 3V 5 6V 6 12V superbright 7 18V 8 24V

**Legend**

- Red Amber Green Red

**Bracket**

- Black C D 1 4
- White Y Z 2 5
- Gray G H J 3 6

**Actuator orientation above terminals:**

- Contura X 1 2 3 4
- Contura XI 6 7 8 9
- Contura XII J K N M

**Notes:**

- Codes J & K for circuits H, G & M.
- All lamp lenses are molded of opaque material. Consult factory for other lens colors.
- Lens colors for LEDs must be clear, white, or match color of LED.
- Green or blue lenses are not recommended with Neon lamps.

### 4 TERMINATION/BASE STYLE

<table>
<thead>
<tr>
<th>Term</th>
<th>10 Term</th>
<th>Termination</th>
<th>Jumper</th>
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<tbody>
<tr>
<td>1 A</td>
<td>1 A</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>2 B</td>
<td>2 B</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>3 C</td>
<td>3 C</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>4 D</td>
<td>4 D</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>5 F</td>
<td>5 F</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>6 J</td>
<td>6 J</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>7 K</td>
<td>7 K</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>8 L</td>
<td>8 L</td>
<td>ON</td>
<td>OFF</td>
</tr>
</tbody>
</table>

### 5 ILLUMINATION & SWITCH SELECTION

- Lamp #1 above terminals 1 & 4 end of switch; Lamp #2 above terminals 3 & 6 end of switch.
- Positive (+) and negative (-) symbols apply to LED lamps only.
- Lamp #1 and #2 are wired to Terminals 2 & 4.

#### 6.7 LAMP (same coding for both selections)

**Selection 6:** above terminals 1 & 4; **Selection 7:** above terminals 3 & 6

- No lamp 0
- Neon 1 125VAC 2 250VAC
- Incandescent 4 3V 5 6V 6 12V superbright 7 18V 8 24V

**Legend**

- Red Amber Green Red

**Bracket**

- Black C D 1 4
- White Y Z 2 5
- Gray G H J 3 6

**Notes:**

- For legend options & codes, visit us at www.carlingtech.com.
### 1 SERIES

**V**

### 2 CIRCUIT

**Terminal Connections as viewed from bottom of switch:**

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

**Position:**

- 1 & 2 3 & 4 5 & 6
- 2 & 3 1 & 2
- 3 & 6 3 & 4
- 4 & 5 4 & 6
- 5 & 6 5 & 4

**Notes:**

- Jumper between terminals 2 & 5 for circuits H, G, M, R & S are specified in selection 4.
- External jumper between terminals 2 & 4 for circuit E are provided by customer. Circuit E may be used for SP OFF-ON-ON circuit.
- * Consult factory for “daylight bright” LED options. Typical current draw for LED is 20mA.

### 3 RATING

- 0.4VA @ 28VDC Resistive
- 20A 12V
- 20A 18V
- 15A 24V
- .4VA @ 28VDC Resistive
- 20A 14V, 10A 14VT (circuit 1, 4, A & D only)
- 20A 14V, 10A 14VT (circuit G only)
- M 4.4VA/15A 24V
- N 4.4VA/28V 12V

### 4 TERMINATION/BASE STYLE

**Termination & Jumper**

- 0: 290 TAB (QC) no barriers
- 1: 290 TAB (QC) with barriers
- 2: Solder Lug no barriers
- 3: Solder Lug no barriers
- 4: Wire Leads no barriers
- 5: Wire Leads no barriers
- 6: Wire Leads no barriers

**Notes:**

- Codes J & K for circuits H, G & M.

### 5 ILLUMINATION & SWITCH SEALING

**Lamp #2 above terminals 3 & 6 end of switch.**

**Sealed**

- NONE
- Up
- Down & Up
- Down

**Unsealed**

- NONE
- Up
- Down & Up
- Down

**Lamp wired to Terminals**

- Lamp #1 above terminals 1 & 4 end of switch.

### 6 LOCK

**Lock above terminals 1 & 4 end of switch.**

**W lock**

### 6.7 LAMP (same coding for both selections)

**Selection 6:** above terminals 1 & 4; **Selection 7:** above terminals 3 & 6

- No lamp
- Neon 1 125VAC 2 250VAC
- Incandescent 4 33V 5 6V 6 12V 7 12V 8 24V
- LED* 2 Red Amber Green Red
- 2VDC A L F M R 3 6 6
- 6VDC B M G S 3 6 6
- 12VDC C N H T 3 6 6
- 24VDC D P J 3 6 6

**Notes:**

- * Consult factory for “daylight bright” LED options. Typical current draw for LED is 20mA.

### 8 FLUSH BRACKET COLOR, PANEL SEAL

- Contura X Black Grey Red White

### 9 HARD SURFACE ACTUATOR

- Actuator orientation above terminals: 3.6 1.4

### 10 LENS - ABOVE LAMP #2 TERMINALS

**Z - No Lens**

- Clear White Amber Green Red Blue

**Lens Style**

- 1 - One piece Square
- 2 - Two piece Square

**Notes:**

- Len color for LEDs must be clear, white, or match color of LED.
- Green or blue lenses are not recommended with Neon lamps.

### 11 ACTUATOR LOCK FUNCTION AND COLOR

**Lock Color**

- Up
- Down
- Up & Down

**Match Actuator**

- A H R
- B J S
- C K T
- D L V
- F N W

**Safety Orange**

- F N W

### 12 ACTUATOR LENS OR BODY LEGEND

- 00 - No Legend
- 21 22 23 24
- OFF ON O I
- 25 26 27 O 28 I
- F N F

**Notes:**


### 13 LEGEND ORIENTATION

**Notes:**

- Consult factory to verify horsepower rating for your particular circuit choice.
- Custom colors are available. Consult factory.
- White imprinting is standard on black actuators; Black imprinting is standard on white, red and gray actuators; Custom colors are available, consult factory.
- Located over T1-4 end of switch.
- Additional ratings available. See V-Series Switch Accessories page.
- Located over T5-6 end of switch.

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Email: sales@carlingtech.com • Application Support: team2@carlingtech.com
Phone: (860) 793–9281 • Fax: (860) 793–9231 • www.carlingtech.com
Easily integrate Contura products into your system, with Contura Accessories

Contura Connectors

Q.C. SELECTION GUIDE

<table>
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<th>ORIENTATION</th>
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<td>12 3.0</td>
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<td>AMP 250 SERIES FASTIN-FASTON</td>
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<td>3.9</td>
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NOTE: Consult Delphi Packard and/or Amp on actual part numbers and availability.

Delphi Packard is a registered trademark of Delphi-Packard Electrical Systems Warren, Ohio

AMP is a registered trademark of AMP Inc. Harrisburg, PA

Contura X Boot (P/N VB1-01)

Contura II, III, IV & V Actuator Removal Tool (P/N VRT)

Additional V-Series Ratings

1. .4VA @ 28VDC Resistive
2. 10A 250VAC 1/2 HP, 15A 125V 1/2 HP, No Agency Listings
3. 10A 250VAC 1/2 HP, 15A 125V 1/2 HP, UL Recognized, CSA Certified
4. 15A 125VAC 1/2 HP, 12(2)A 125 VAC μT85
5. 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
6. 15A 250VAC, 15A 125VAC, 1/2 HP 125-250VAC, 12(2)A 250 VAC μT85
7. 15A 250VAC, 15A 125VAC, 1/2 HP 125-250VAC, 12(6)A 250 VAC T85
8. 15A 250VAC, 15A 125VAC, 1/2 HP 125-250VAC, 12(6)A 250 VAC T85
9. 15A 250VAC, 15A 125VAC, 1/2 HP 125-250VAC, 12(6)A 250 VAC T85
10. 15A 24V
11. 20A 18V
12. 20A 12V
13. 20A 14V, 10A 14VT (circuits 1, 4, A, & D only)
14. 10A 14V, 6A, 14VT (circuit G only)
15. 20A 6V
16. 20A 3V
17. 15A 125 VAC, 10A 250VAC, 1/2 HP 125-250 VAC; 6A 125 VAC L
18. .4VA/20A 12V (combi-contact) (combination gold/silver contacts for borderline dry circuit applications)
19. .4VA/15A 24V (combi-contact) (combination gold/silver contacts for borderline dry circuit applications)

NOTES

Consult factory to determine availability for individual circuits and their HP rating.
1. Not available with Contura 7 or 14 rocker styles.
2. Ratings 6 - 9 are UL, CSA & VDE certified, require terminations A or B for double pole circuits, & are not available with illumination circuits 4, 8, D, J, N, & T or with wire lead or solder lug terminations.

Circuits 1, 4, A, D, H, M & E are not available with rating 6 & 8. Rating 7 & 9 only available with circuits 1, 4, A & D. Circuits 2, 3, 5, 7, 8, K, L are 1/2 HP 250VAC only with rating 8. Ratings 6 & 7 must specify lamp code 1 (125VAC neon). Ratings 8 & 9 must specify lamp code 2 (250VAC neon). Rating L available with circuits 1, 4, A & D only.
Contura Mounting Panels
Dimensional Specifications: in. [mm]

Contura Hole Plug
Dimensional Specifications: in. [mm]
Authorized North America Sales Representatives

Carling extensive sales representative network group is strategically located and ready to answer any questions. Find your local representative by clicking on a group name on the map below or by visiting www.carlingtech.com/findarep.

About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.