



V-Series Contura[®] II & III

Sealed Rocker Switches





Contura® IP66/68 Snap-In Mounted Switches

The V-Series switches are well known for their cutting edge design, high quality, maximum performance and unmatched reliability. These snap-in rocker switches offer countless options for ratings, circuits, colors, illuminations and symbols. These single or double pole switches feature removable actuators in a choice of actuator styles and colors, which may be purchased and stocked separately. An optional plug-in terminal connector enables pre-wiring of wire harness.





Typical Applications

- On/Off-Highway
- Marine
- Armored Vehicles Industrial Automation
- Commercial Food Medical Equipment
 - · Any Application Requiring **Sealing Protection**

0

12-24

VDC

Design Features

INTERCHANGEABLE ACTUATORS

Panel redesign is a snap with our wide range of rocker 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 sealed to IP66/68 for above-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

Helps prevent 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, circuit and load dependent

Actuator Options & Accessories



Contura II & III

The Contura II & III actuators are constructed of thermoplastic polycarbonate and are offered with a hard nylon overlay or a "soft-touch" elastomer overlay. These models incorporate aesthetic designs on the top and bottom of the rocker featuring two rows of raised "bumps" on the Contura II and three "indented" lines on the Contura III.



Contura X

The raised bracket/bezel on the Contura X helps prevent inadvertent actuation of the rocker, as well as preventing debris from being trapped under the actuator. This curved rocker style is available with a variety of lenses and legends.



Contura IV

The Contura IV's "Shape to create a Shape" actuator works with the curves, contours & advanced styling of the latest panel designs, flowing with these advanced curves & radii. This actuator style fits on the Contura flush bracket/bezel.



Contura XI

The raised bracket/bezel on the Contura XI helps prevent inadvertent actuation of the rocker, as well as preventing debris from being trapped under the actuator. This convex style rocker is available with a wide variety of lenses and legends.



Contura V

The symmetrically curved Contura V actuator provides the perfect complement to the Contura IV's "Shape to create a Shape" design concept. With its flush style mounting bracket, Contura V can be mounted in between two Contura IV's, by itself, or in groups.

Contura VI (WAVE)

The Contura VI WAVE sealed rocker switches, when used in a row, create an uniquely appealing "wave" design on your panel. A variety of colors and finishes are available for both rocker and wave insert. Contura VI features bar and oval lenses.



Contura XII

The Contura XII version features a paddle style actuator with the raised bracket/bezel of Contura X and XI. The contoured handle design provides intuitive recognition and ease of operation and is available with all Contura X and XI lens and legend offerings.



The Contura XIV represents a sleek new crossover rocker design which should appeal to Trucks, Buses and Heavy Vehicles as well as the Marine Industry. Intuitive feel is provided by recessed ridges along with a Center Groove which effectively defines the boundary between top and bottom switch functions.



Contura VII

Contura VII featuring gently curved corners and edges assuring compatibility with most any panel design. Intuitive feel is maximized by the use of 2 embossed circular pads located at opposite ends of the rocker. Any combination of Bar or Oval style lenses can be located in the pads providing a truly unique look, exclusive to Contura VII.



Illuminated Indicators & Accessories

Alert operator of systems functions or malfunctions, are offered with removable/ replaceable lamps in Contura II, II, V or X styles. Accessories include connectors, mounting panels, hole plugs, panel seals, and actuator removal tools. Refer to accessories page for full details

Tech Specs

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, 14VT 6A, 125VAC L
Dielectric Strength	1500 Volts RMS
Insulation Resistance	50 Megohms
Initial Contact Resistance	10 milliohms max. @ 4VDC
Life	Up to 100,000 cycles, circuit and load 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

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
Lens	Polycarbonate rated at 100°C
Contura XIV	Polycarbonate lens/sub-rocker with ABS shell

Environmental

Sealing	IP66/68, for above-panel components of actual switch only.
Corrosion	Mixed Flowing Gas (MFG) Class III 3 year accelerated exposure per ASTM B-827, B-845 Silver and gold contacts
Operating Temp	-40°C to +85°C
Vibration 1	Per Mil-Std 202F, Method 204D Test Condition A 0.06 DA or 10G's 10-500 Hz. Tested with VCH connector. Test criteria - No loss of circuit during test, pre and post test contact esistance.
Vibration 2	Resonance search24-50 Hz 0.40 DA50-2000 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 0.025 2000 Hz 0.025 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	Mil STD 810, Method 510.2 Air Velocity 300 Ft/Min Duration 16Hr
Thermal Shock	Per Mil-Std 202F, Method 107F, Test Cond. A, -55°C to +85°C. Test criteria -pre and post test contact resistance
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.

Mounting Specifications

Actuator Travel (Angular Displacement)

2 position	18°
3 positions	9° from center

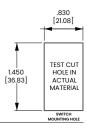
 Panel Thickness Range

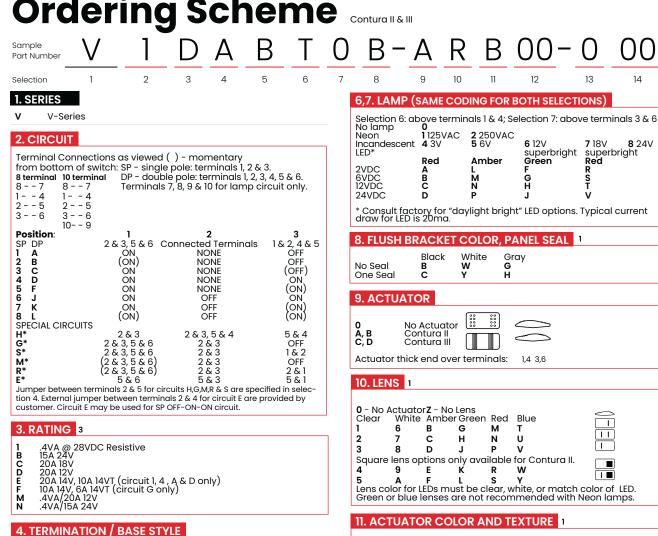
 Gaskets
 Acceptable Panel Thickness

 0
 .030 to .250 (.76 to 6.35mm)

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

 Recommended: No gasket with panel thickness of .032, .062, .093, .125,.187 or .250





8 term 1 A J 3 C 5 E Note: Cool lubricant	10 Term 2 B K 4 D 6 F des J & K fo s to reduce	Termination .250 TAB (QC) no barriers .250 TAB (QC) with barriers .250 TAB (QC) no barriers Solder Lug no barriers Solder Lug Wire Leads no barriers Wire Leads r circuits H, G & M. Do not use terminal insertion forces du	Jumper No No Yes T2 to 5 No No No e silicone based ring connector as-	
lubricants to reduce terminal insertion forces during connector as- sembly, as it is detrimental to function and performance.				

5. ILLUMINATION

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 Sealed Unsealed Lamps Illumination Type Lamp wired to Terminals				
Sealed	Unsealed	Lamps	Illumination Type	Lamp wired to Terminals
S A B C D	0 1 2 3 4	NONE 1 2 1 2	- INDEPENDENT DOWN UP DOWN DOWN	- 8 (+) 7 (-) 3 (+) 7 (-) 3 (+) 7 (-) 3 (+) 7 (-) 1 (+) 7 (-)
E	5	2 1	UP UP	1(+)7(-)
F	6	2 1 2 1 2 2	INDEPENDENT UP	3 (+) 7 (-) 3 (+) 6 (-)
G	7	1	INDEPENDENT UP	8 (+) 7 (-) 3 (+) 7 (-)
H U	Z Y	1 2	INDEPENDENT INDEPENDENT INDEPENDENT	3 (+) 7 (-) 3 (+) 7 (-) 3 (+) 6 (-) 8 (+) 7 (-) 10 (+) 9 (-)
SINGLE PO	DLE SWITO 8	CHES ONL	Y DOWN	3 (+) 8 (-)
к	w	2 1 2	INDEPENDENT INDEPENDENT INDEPENDENT	3 (+) 8 (-) 6 (+) 7 (-) 8 (+) 7 (-) 6 (+) 7 (-)
DOUBLE F	POLE SWIT 9	CHES ON	LY DOWN	3 (+) 6 (-)
M N	Ř T	i 1 2	UP DOWN DOWN	3 (+) 6 (-) 3 (+) 6 (-) 3 (+) 6 (-) 1 (+) 4 (-)
Р	v	1 2	UP UP	1 (+) 4 (-) 3 (+) 6 (-)

Black Soft Surface B C Ġ R S й Hard Surface

12. ACTUATOR LENS OR BODY LEGENDS 2

11	ON OFF	12 OFF ON	13 O	14 O 	\prod	
15	F N F	16 O O N F F) D	
	For addit	ional leger	nd option	s & code	s, visit us at wwv	w.carlingtech.com

Gray

Red

White

W Y

13. LEGENDS ORIENTATION

0 - No Actuator

0 1 2 3 4	No legend (used v Orientation 1 Orientation 2 Orientation 3 Orientation 4	with codes II-	18 in selection	on 12) ≣D	
		Ĩ	2	3	4

14. ACTUATOR LENS LEGENDS

00 No legend this location / no actuator (used with codes 11-18 in selection 12) Selection 14 required when switch requires two legends. If the two legends consist of one lens and one body legend, lens legend must be specified in selection 12; body legend specified in selection 14. For legend options & codes, visit us at www.carlingtech.com.

Notes:

- Notes:

 Consult factory to verify horsepower rating for your particular circuit choice.

 1
 Custom colors are available. Consult factory.

 2
 Body legends not available on Soft surface actuators; White imprinting is standard on black actuators; Black imprinting is standard on white, red and gray actuators. Custom colors are available, consult factory.

 3
 Additional ratings available. See V-Series Switch Accessories page.

 4
 Contura II available with two square lenses. Consult factory for details.



1. SERIES

V V-Series

2. CIRCUIT

	inal DP - doubl Terminals	() - momentary pole: terminals 1, 2 & e pole: terminals 1, 2, 7, 8, 9 & 10 for lamp c	3, 4, 5 & 6.
Position:	1	2	3
SP DP	2 & 3 5 & 6 C	onnected Terminals	1& 2.4&5
1 A	ÓN	NONE	ÓFF
4 D	ON	NONE	ON
6 J	ÖN	OFF	ÖN
6 J 7 K 8 L 9 N	ON	OFF	(ON)
8 L	(ON)	OFF	(ON)
9 N	OFF	NONE	ON
SPECIAL CIRCUITS	5		
H*	2&3	2 & 3, 5 & 4	5&4
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	2&1
E*	5&6	5&3	5&1
		rcuits H,G,M,R & S are sp rminals 2 & 4 for circuit	

provided by customer. Circuit E may be used for SP OFF-ON-ON circuit.

3. RATING 4

- .4VA @ 28VDC Resistive 15A 24V 20A 18V 1
- в
- C D
- Ε
- 20A 12V 20A 12V 20A 14V, 10A 14VT (circuit 1, 4, A & D only) 10A 14V, 6A 14VT (circuit G only) 4VA/20A 12V F
- М Ν .4VA/15A 24V

4. TERMINATION / BASE STYLE

lubricants to redu		iring connector		
lubricants to reduce terminal insertion forces during connector assembly, as it is detrimental to function and performance.				

5. ILLUMINATION & SWITCH SEALING

3 & 6 end of switch. Positive (+) and negative (-) symbols apply to LED lamps only				
Sealed	Unsealed	Lamps	Illumination Type	Lamp wired to Terminals
S	0	NONE	_ //	
С	3	2	UP	3 (+) 7 (–)
н	Z	2	INDEPENDENT	8 (+) 7 (–)
DOUBLE F	POLE SWITC	HES ONLY		
м	R	1	UP	3 (+) 6 (-)
		2	DOWN	1(+)'4(-)'
Р	v	1	UP	1(+)4(-)
		2	UP	3`(+) 6`(-)

6. LOCK

Lock above terminals 1 & 4 end	of switch
W lock	

7. LAMP

Lamp above t No lamp	erminals 3	& 6 end of	switch		
Neon Incandescent		2 250VAC	6 12V	7 18V	8 24V
LED*	430	•••	superbright		
	Red	Amber	Green	Red	
2VDC	Α	1	F	P	
	A				
6VDC	B	м	Ġ	Ŝ	
		M N	G H	S T	
6VDC	BCD	N	Ĥ	S T V	

8. FLUSH BRACKET COLOR, PANEL SEAL 1

No Seal One Seal	Black B C	White W Y	Gray G H	

9. HARD SURFACE ACTUATOR 1

Contura II	Black A	Gray B	Red G	White H	
Contura III	С	D	E	F	
Actuator orier	ntation c	above te	erminal	S:	3,6 1,4

10. LENS

Z - No Clear 3	Lens White 8	Amber D	Green J	Red P	Blue V	
Lens co						match color of

FLED. Green or blue lenses are not recommended with Neon lamps.

11. ACTUATOR LOCK FUNCTION AND COLOR 1

Lock Color	Up	Down	Up & Down	Center ³	
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	

12. ACTUATOR LENS OR BODY LEGENDS 2

00 21	- No	Lego 22	end	23		24	
	OFF		ON		0		
25	O F F	26	O N	27	0	28	
For	addi	tion	al leg	genc	l opt	ions &	odes, visit us at www.carlingtech.com

13. LEGEND ORIENTATION

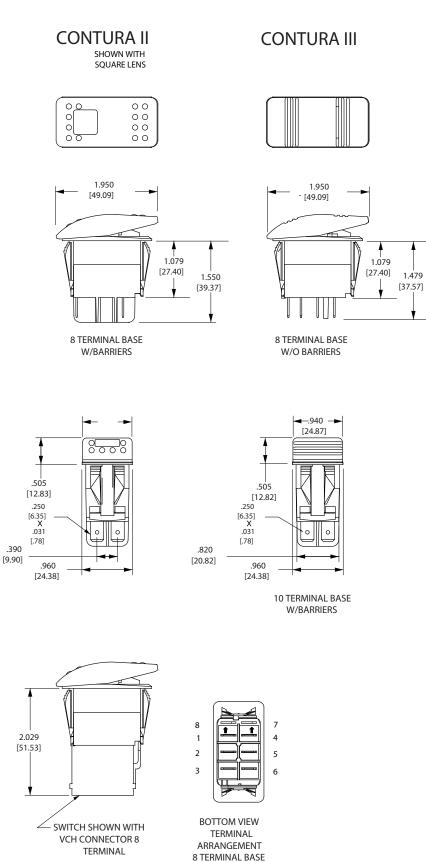
0 1 2 3 4	No legend (used wir Orientation 1 Orientation 2 Orientation 3 Orientation 4	th codes	21-28 in s	select IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	tion 12) 	
		1	2	3	4	

Notes: Consult factory to verify norsepower runny for your participation of the part Notes: Consult factory to verify horsepower rating for your particular

🗟 Configure Complete Part Number > 🛛 🐵 Browse Standard Parts >

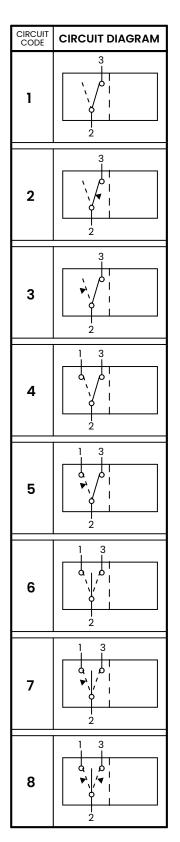
Dimensional Specs

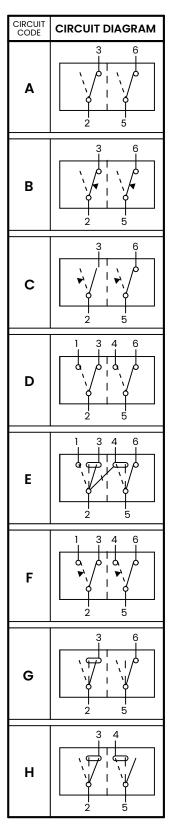
inches [millimeters]

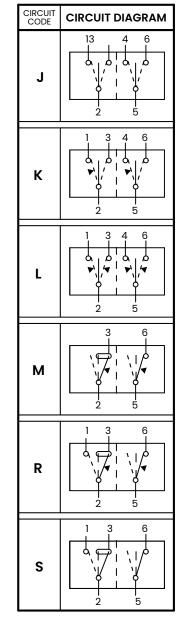




Circuit Diagrams:

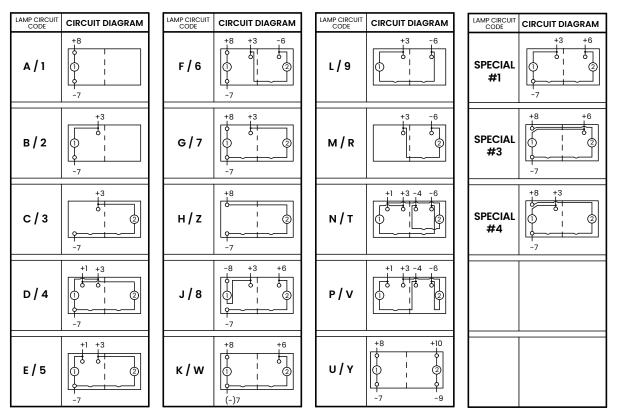




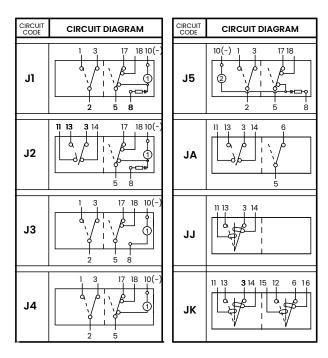


	SYMBOL LEGEND							
SYM. DEFINITION								
0	DESIGNATES TERMINALS AND CONTACTS							
۰ —۰	DESIGNATES MAINTAINED CIRCUITS							
	DESIGNATES OTHER POSITION							
₀_▼_₀	DESIGNATES MOMENTARY CIRCUITS							
0	DESIGNATES TWO POSITION CONNECTION							
	DESIGNATES EXTERNAL JUMPER PROVIDED BY CUSTOMER							

Lamp Circuit Diagrams:



J-Series Hazard Warning Circuit Diagrams:



NOTE: J circuits are available for all non-locking V-Series styles. Consult factory for partnumber details.

	SYMBOL LEGEND					
SYM.	DEFINITION					
0	DESIGNATES TERMINALS AND CONTACTS					
O DESIGNATES LAMP LOCATION						

Stand-Alone Components

Reduce inventory levels and cost by stocking actuators and base switches separately.

Contura II, III, IV, V Actuator only: VV with code A or C for selection 9, & with selections 10-14 in the ordering schemes.

Contura VI Actuator with lenses and inserts only: VT with code selections 9-16

Contura II, III, IV, V, VII Actuator only: VV with code A, C, E, G, P or Z for selection 9 & with selections 10-14 in the ordering schemes. Contura X, XI, XII, XIV actuators with lenses separately: VV with code selections 9-14 in the ordering schemes. Panel Seal: VPS

Contura X & XI actuators without lenses separately	Contura XII actuators without lenses separately
VVR 6 1 00 1	VVP J 1 Z 21 1 00
1 2 3 4 5	1 2 3 4 5 6 7
1. CONTURA X & XI ACTUATOR SEPARATELY	1 CONTURA XII ACTUATOR SEPARATELY
VVR	VVP
2. ACTUATOR STYLE & COLOR	2. ACTUATOR STYLE & COLOR
Black Gray White Red Contura X 1 2 3 4 Contura XI 6 7 8 9	J Black K Gray N White M Red
	3,4 LENS OPENING FOR 1
3. LENS OPENING FOR 1 1 One bar lens	Z No lens 1 Bar lens 2 Square lens
2 Two bar lenses 5 square lens on top/ 3 One square lens bar lens on bottom	5, 7 LENS OR BODY LEGEND 2
4 Two square lens (Contura X only)	00 - No Legend 21 22 23 24 OFF ON O I
4. ACTUATOR LENS OR BODY LEGEND	
00 - No Legend this location 11 ON 12 OFF 13 14 O	F N F
OFF ON O I	For additional legend options & codes, visit us at www.carlingtech.com
15 00 16 00 17 01 18 10 FN NF	6 LEGEND ORIENTATION 3
F F F F F F F F F F F F F F F F F F F	0 No legend
	2 Orientation 2
5. LEGEND ORIENTATION 1 0 No legend	
0 No legend 1 Orientation 1 2 Orientation 2	Contura X, XI & XII actuator lens assembly separately
3 Orientation 3 4 Orientation 4 1 2 3 4	VVI 2 1 00 0
Contura X, XI & XII top piece of 2-piece lens separately	1 2 3 4 5
VVT 1	VVL
	2 LENS STYLE 3
1 2 1 TOP OF LENS SEPARATELY	1 Barlens
VVT	 2 One Piece Square lens 3 Bottom of Two-Piece Square lens ⁵
2 COLOR	3 TRANSLUCENT LENS COLOR
1 Clear 2 Smoke 3 White	1 Clear 2 White 3 Amber 4 Green ⁴ 5 Red 6 Blue ⁴
	4 LENS OR BODY LEGEND 2
Contura X, XI & XII actuator lens assembly:	00 - No Legend 21 22 23 24
	OFF ON O I 25 0 26 0 27 0 28 I
octuator stem top lens	F N F
actuator stem top lens two piece lens assembly	For additional legend options & codes, visit us at www.carlingtech.com.
1 piece lens/bar lens are positioned the same as bottom lens for	5 LEGEND ORIENTATION 3
assembly, minus the top lens. Lenses snap in from bottom. Notes:	0 No legend 1 Orientation 1 1 Orientation 1 Orientatio 1 Orientation 1 O
I If actuator lens opening for 2 bar or 2 square lenses, legend orientation 0,1, or 2 must be chosen.	2 Orientation 2 - D D D D D D
 Center of actuator marking not available for Contura XII. Legend is not available for bar style lens. 	4 Orientation 4 1 2 3 4
 Not recommended with neon lamps. Must also order top piece of 2 piece square lens separately. 	

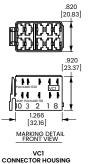
Accessories

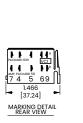
Easily integrate Contura products into your system, with Contura Accessories

Contura Connectors

Q.C. SELECTION GUIDE							
	PART	PART NO WIRE RANGE					
COMPANY SERIES	PLAIN BRASS	TIN PLATED BRASS	AWG	MM ² (REF)	ORIEN- TATION		
	02965580		12	3.0			
	02965471	12010601	(2)16-14	(2)1.0-2.0			
PACKARD 58 SERIES	02965470		16-14	1.0-2.0	В		
SO SERIES	02965469	06288318	20-18	.58			
		12084590	105.0				
		12052224	123.0				
PACKARD		12015870	16-14	1.0-2.0			
METRI-PACK		12020035	(2)22-18	(2).58	А		
630 SERIES	12015832	12015869	20-18	.58			
		12052222	20-22	.355			
	60253-1	60253-2	16-12	1.3-3			
AMP 250 SERIES	00203-1	00203-2	(2) 16	(2) 1.3			
FASTIN-FASTON	42100-1	42100-2	18-14	.8-2	В		
	60295-1	60295-2	22-18	.39			

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 Warr







6 6 A 5 6 9 1466 [37.24] MARKING DETAIL REAR VIEW

11

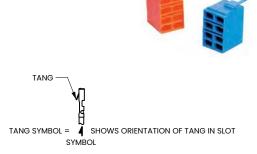
.820 [20.83]

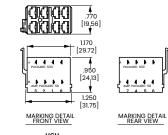
.920 [23.37]

VC2 CONNECTOR HOUSING (For AMP terminals only)

VC2

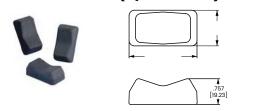
4 4 4 4



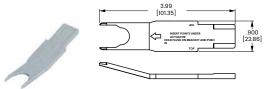


VCH CONNECTOR HOUSING

Contura X Boot (P/N VB1-01)



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



Additional V-Series Ratings

- .4VA @ 28VDC Resistive 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP, No Agency Listings 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP, UL Recognized, CSA Certified
- 51
- В 15A 24V С 20A 18V

4

- D 20A 12V
- 20A 14V, 10A 14VT (circuits 1, 4, A, & D only) Е
- F 10A 14V, 6A, 14VT (circuit G only) G
 - 20A 6V
- H L² 20A 3V
- 15A 125 VAC, 10A 250VAC, 1/2 HP 125-250 VAC; 6A 125 VAC L М .4VA/20A 12V (combi-contact)
 - (combination gold/silver contacts for borderline dry circuit applications)
- Ν .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.
- Not available with Contura 7 or 14 rocker styles. 1.
- 2. Rating L available with circuits 1, 4, A & D only.

Accessories

Contura Mounting Panels Dimensional Specifications: in. [mm] +.008[+.20] -.000[-.00] 2.02 [51.3] MOUNTING PANEL For additional units, add 103[26:2] per unit. For more than 2 V-Series Switches, add middle section. Available in panel Thicknesses listed below. Consult factory. +.008[+.20] .984 [25.00] TEST CUT HOLE IN ACTUAL MATERIAL +.008[+.20] +.008[+.20] TEST CUT HOLE IN ACTUAL MATERIAL 1.90 [48.2] MOUNTING PANEL THICKNESS .62 [1.57] .093 [2.36] .125 [3.17] .187 [4.75] .250 [6.35] .375 [9.52] VMS MOUNTING PANEL HOLE MOUNTING PANEL OPENING (2) UNITS 1.970 2.300 . 1.187 [30.14] 1.034 [26.26] 1.340 [34.03] VME MOUNTING PANEL END VMM MOUNTING PANEL MIDDLE VMS MOUNTING PANEL .670 [17.01] 1.700 [43.18] 1.030 [26.16] 1.030 [26.16] 2.300 [58.42] 2.300 6.490 [164.85] 3.400 [86.36] VM6 MOUNTING PANEL VM3 MOUNTING PANEL

