

PUTTING POWER IN
YOUR CONTROL



Circuit Protection • Switches • Control Solutions

CARLINGSWITCH[®]
QUALITY BY DESIGN[™]





Transforming Customer Needs into Customized Solutions

At Carlingswitch, we do much more than manufacture electrical components. We engineer powerful solutions.

Working closely with your product team, we can tailor switching and circuit protection solutions that meet your application needs — and exceed your customer's expectations.

Since our founding in 1920, there are few products we haven't turned on, fewer industries that haven't turned to us. With four ISO certified manufacturing locations and technical sales offices worldwide, Carlingswitch now ranks among the world's largest privately owned manufacturers of electromechanical switches, switch assemblies, hydraulic magnetic circuit breakers and power distribution centers.

Our 2600 employees, working through offices and manufacturing sites across the globe, provide engineered solutions to leading electronic and industrial OEMs in a variety of industries, including:

- Electronics (telecommunications, medical, computers, office automation)
- Transportation (construction and agricultural vehicles, trucks, buses, commercial boats)
- Industrial
- Appliances

We look forward to helping you create safe, reliable products that exceed the tough demands of today's applications. You'll find our commitment to excellence consistently delivers "Quality by Design."

Diverse Product Solutions

Thanks to the breadth of our product line, you can count on Carlingswitch to meet your needs now — and as they evolve. Besides a variety of sizes and actuator styles, we offer an array of illumination, lens, legend, and termination options.

We also offer design engineers an unparalleled opportunity to integrate electromechanical and electronic switch functions. That makes it easier to create solutions that are as innovative as they are cost effective.



In addition to being *willing* to tailor solutions for your industry, Carlingswitch is *able* to do so faster and more creatively — thanks in large measure to our diverse range of product options.

While we are always eager to respond to requests for true custom applications, you'll find that many of your needs can be addressed



Operator control integrating rocker switches and custom controls

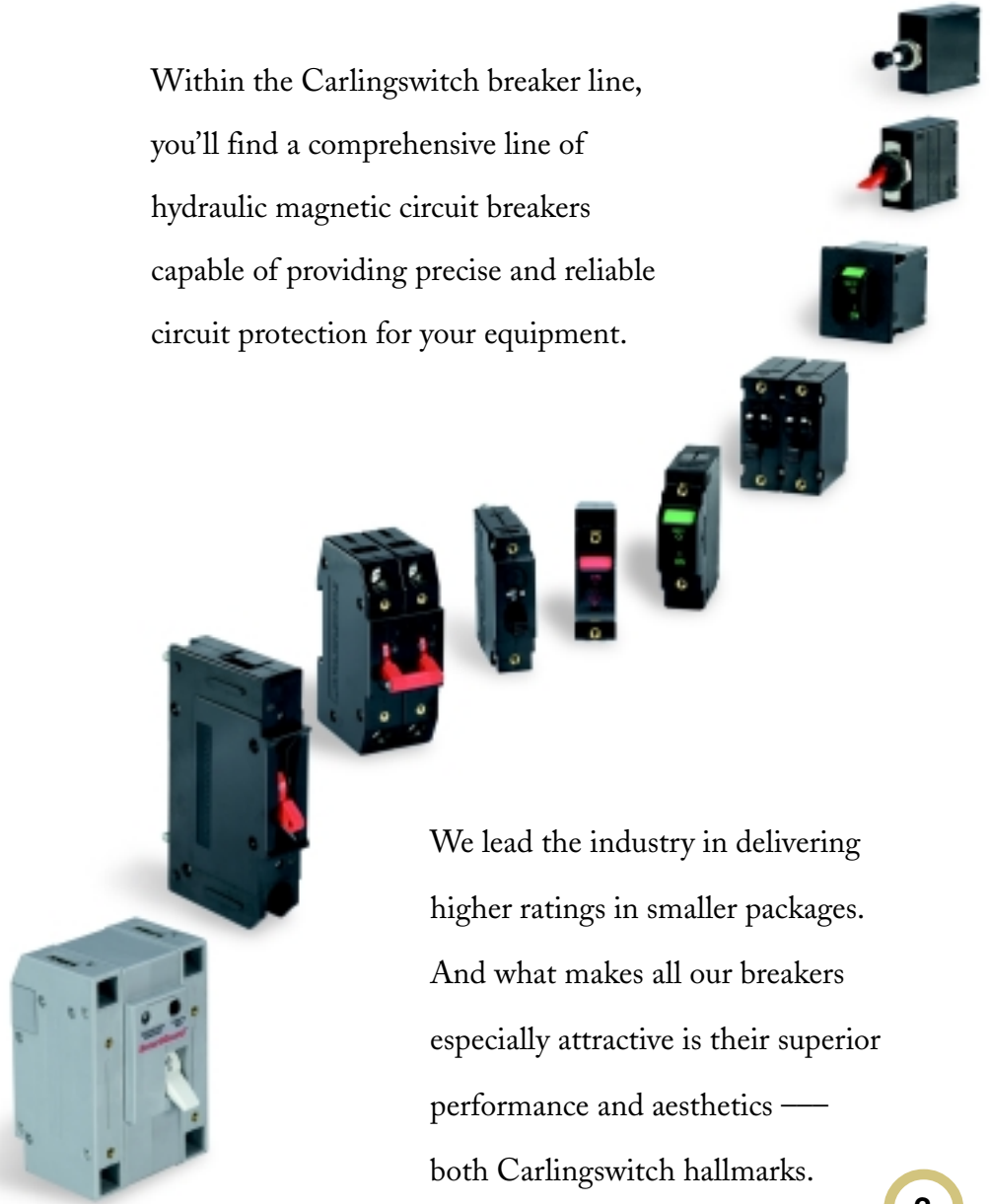
simply by taking advantage of the depth of choices within the breadth of our product lines.

Blending our expertise in both switches and circuit protection, we also specialize in panel assemblies. So why do business with multiple vendors, when you can rely on Carlingswitch for a total solution for your circuit protection, switch and control needs.

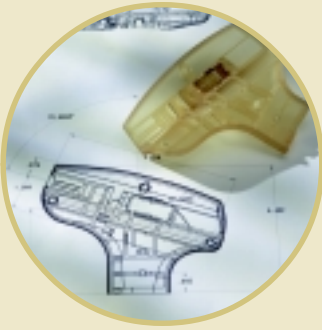


Power distribution center with ground fault circuit protectors and various breakers

Within the Carlingswitch breaker line, you'll find a comprehensive line of hydraulic magnetic circuit breakers capable of providing precise and reliable circuit protection for your equipment.



We lead the industry in delivering higher ratings in smaller packages. And what makes all our breakers especially attractive is their superior performance and aesthetics — both Carlingswitch hallmarks.



Quality Engineering

Our commitment to quality products begins with our investment in research and development. Not only does Carlingswitch have a team of highly-qualified engineers on staff, we equip them with the industry's most advanced computer-aided design tools.

Our engineering team will work closely with yours to advance your project from initial product concepts to final design and manufacturing. Using industry-leading CAD/CAM software, Carlingswitch engineers can



evaluate multiple design alternatives as well as develop products, tooling and manufacturing processes concurrently. The result? Functionally superior, aesthetically pleasing products — produced faster and at a lower cost.

We can even share electronic files that can be easily incorporated into the rest of your design.

Just one more reason you'll think of Carlingswitch as much more than an approved vendor, but rather as a proven partner.



Our engineers utilize industry-leading CAD/CAM software...



...then share electronic files with our in-house tool designers.



Many of our clients incorporate our electronic files for component parts into the rest of their design.

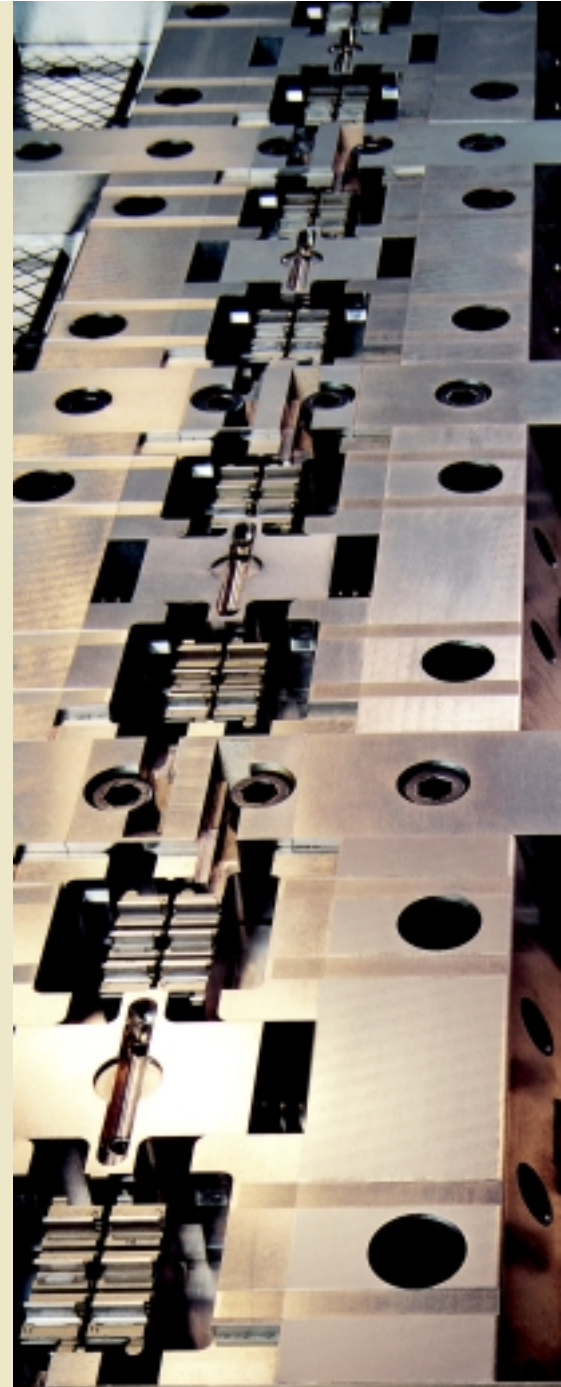


Expert In-House Tooling

Once the product design is complete, many manufacturers outsource the tool design. But at Carlingswitch, we know that good tooling is critical to maximizing

product quality while minimizing production costs. So we maintain our own in-house tool design and tool and die-making division — one of the most extensive facilities of its kind in the country.

Our product and tool designers function as a team to ensure that the product that's been designed will be cost-efficiently manufactured. Depending on the volume, we can design runnerless molds of up to 32 cavities to reduce waste and speed production.



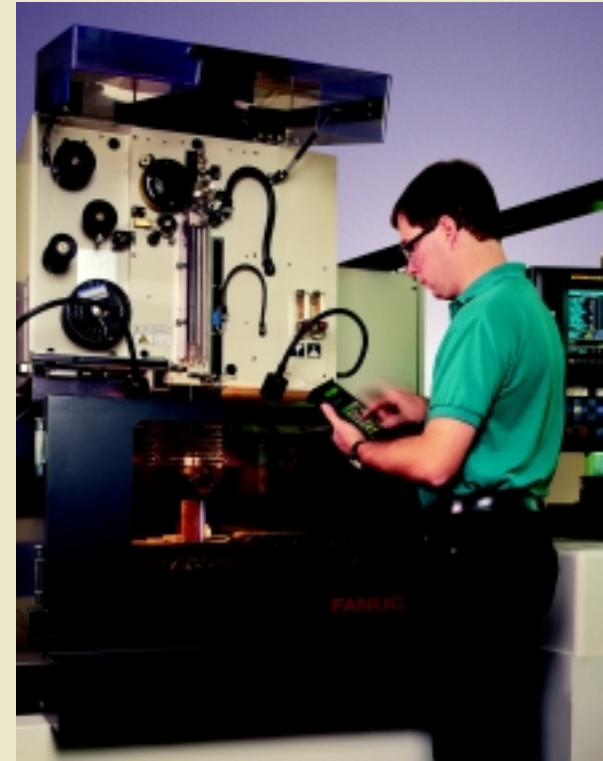


Carlingswitch tool designers also work closely with our tool makers to craft precision injection and compression molds. Walk through our mold room and you will be impressed to see leading-edge machinery, run by today's most sophisticated statistical process controls.

Even more impressive than our advanced technology, however, is our expert staff. They know how to harness the power of this technology to bring you quality by design.



Wire EDM (Electric Discharge of Material) for mold and die making

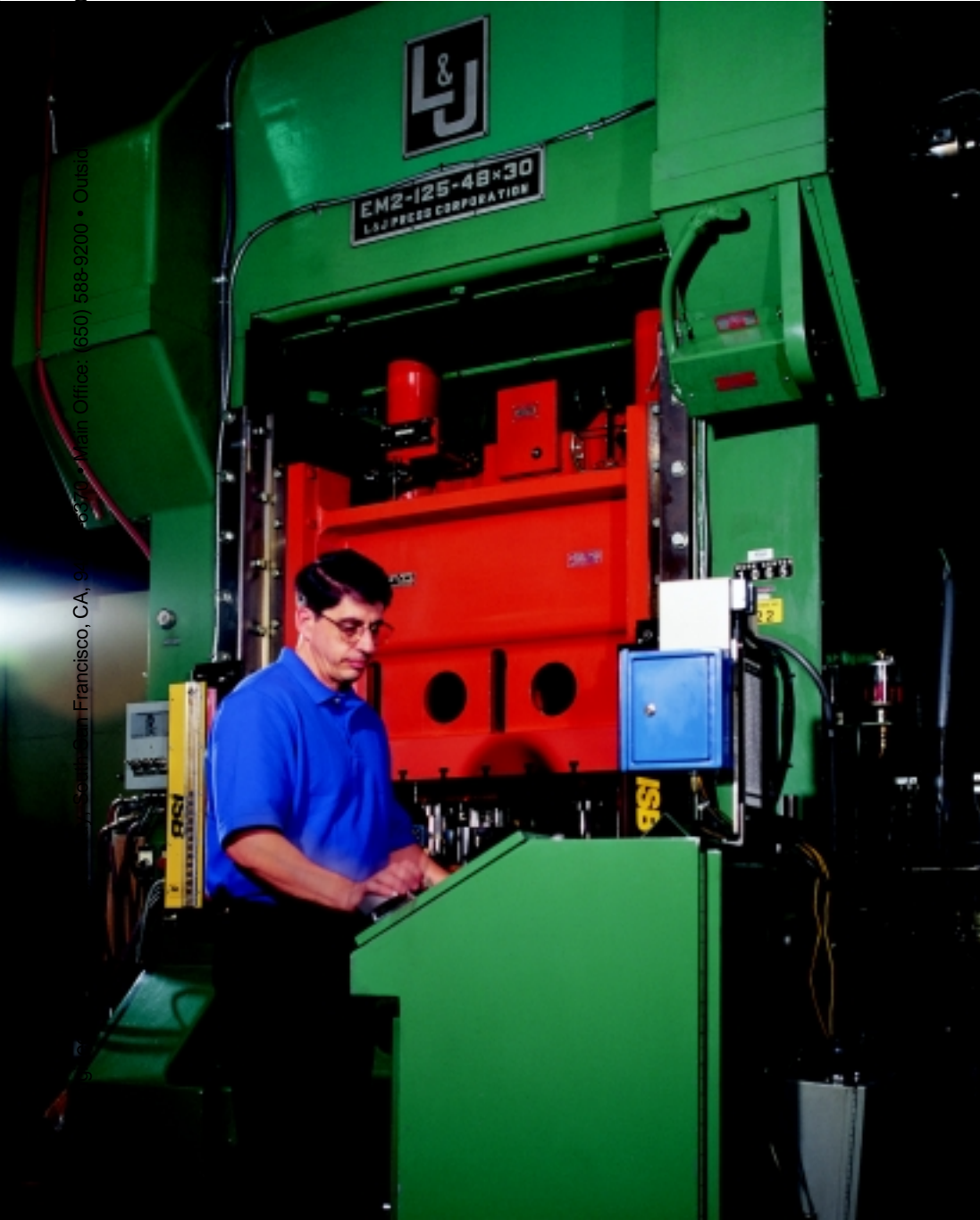


Worldwide Manufacturing



A At Carlingswitch, we have the worldwide capacity to meet your delivery requirements. And the highly trained staff to assure you of quality products.

Our extensive manufacturing capabilities — ranging from plastic injection molding through automated assembly — all utilize state-of-the-art CAM equipment. And since we develop and manufacture 90% of the product component ourselves, we can ensure optimum performance. Better still, we are committed to maximizing yield and minimizing costs, we continually invest in the latest technology.

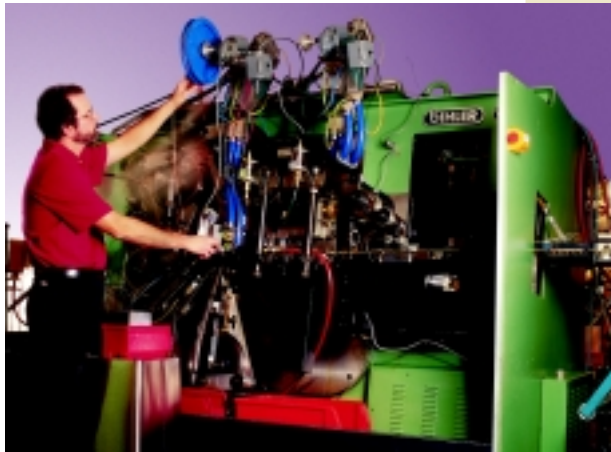




Two-shot injection molding of thermoplastic material



Injection molding of thermoplastic and thermoset materials



Automated fabrication and assembly of component parts



High volume automated assembly

Quality Assurance





At Carlingswitch, quality assurance isn't a department. It's a way of doing business, as evidenced by our ISO 9000 certification.

Nowhere is this commitment to quality more evident than at our assembly facilities located both in the United States and in Mexico.

From all of our locations, we support our customers' needs for just-in-time delivery and dock to stock programs.

Built into all Carlingswitch processes are rigorous quality control procedures. Frequent in-process assembly inspection is complemented by 100% end-of-process product testing.



High quality cell assembly



In-process product inspection and electrical verification



Our ISO 9000 Certificate, further evidence of our corporate-wide commitment to quality

Global Support



Not only have Carlingswitch products earned worldwide agency approvals, our staff provides global technical sales and service support. Whether you're in the U.S., Europe, or Asia, you'll find knowledgeable

Carlingswitch technical sales and support teams close at hand. Plus, our international organization of sales representatives is backed by an experienced applications staff and a worldwide distribution network.



Because we bring our people and our products closer to you, you can carry less inventory, reduce freight and duty costs, allowing you to maximize cash flow. In short, Carlingswitch can reduce your total “cost of ownership” — a much truer measure of value than just acquisition cost.

Add up all the advantages that Carlingswitch offers — and you’ll see that we truly put the power you need in your control.

CARLINGSWITCH
QUALITY BY DESIGN™

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CARLINGSWITCH[®]
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How To Use This Catalog

Within this catalog, you'll find a comprehensive line of electrical switches for most any power switching need. These switches are extremely versatile, compact, attractive and cost-effective.

Please refer to the Contents, located on page three, for the type of switch required. Each switch series is located under an alphanumeric code. Each code refers you to the specific page(s) covering an individual series. Product and dimensional specifications are provided to assist you with product selection.















Follow our easy step-by-step catalog numbering sequence to construct the switch which meets your needs. An ordering format and an example for constructing a catalog number are provided for each series. Standard part numbers are shaded.

For application assistance, we urge you to consult with our experienced technical staff, with its extensive test, research and development capabilities. Historically, we have assisted many customers in solving unique design and application problems with standard or customized products.

The ability to construct a catalog number does not necessarily imply the ability to manufacture the specified product. Please consult factory for specific catalog number availability.

Agency Approvals

These marks are granted by national certification bodies for use on products which comply with their specifications.

Agency	Country	Mark	File Number
UL	USA	 Recognized	E7560*
BEAB	United Kingdom		*
CSA	Canada		LR9280*
VDE	Germany		10537
TUV	Germany		*
SEMKO	Sweden		*
NEMKO	Norway		*
KEMA	Netherlands		*
DEMKO	Denmark		*
UTE(USE)	France		*
SEV	Switzerland		*
OVE	Austria		*
IMQ	Italy		*
FIMKO	Finland		*

* Due to ongoing technological advances, consult factory for certification specifics.

Disclaimer

The product information published in this catalog is subject to change without notice. Modification of material, finishes, technical specifications and agency approvals may occur as part of our continual pursuit of product enhancement. All statements, technical information and recommendations are based on facts and tests we believe to be reliable. The products described may be used in a variety of applications. Since the user's product information, specific use application, and conditions of use are all outside of Carlingswitch's control, IT IS THE RESPONSIBILITY OF THE PURCHASER TO DETERMINE THE SUITABILITY OF THESE PRODUCTS FOR THE PURCHASER'S SPECIFIC USE AND THE PURCHASER ASSUMES ALL ASSOCIATED RISKS. The purchaser should review applicable codes and standards such as UL, NEMA, CSA, VDE, OSHA and others for recommended practices and safety standards along with electrical ratings as marked on product to ensure compatibility of product performance to applicable requirements.

Whatever your application, our Contura switches deliver the performance you demand

— and the flexibility you need. There's no challenge these sealed switches can't help you address. Especially since they're IP66/IP68 certified, UL1500 recognized, and able to withstand temperatures from -40°C to +85°C. Never have such rugged switches been available in such attractive packages. A dazzling array of light, lens and legend options on several actuator styles, plus countless circuit combinations, and valuable accessories, make our Contura switches the ideal choice.

Maximum Design Options with minimum inventories

Panel redesign is a snap, requiring no tooling change, with our removable interchangeable actuators. A unique balance between aesthetics and functionality

Optional Panel Seal

Myriad Lighting Options

Incandescent lamps & LED illumination. Our LED illumination is offered in a wide array of light intensities, colors, as well as dual level illumination and flashing options.

Seals out water, dust and debris

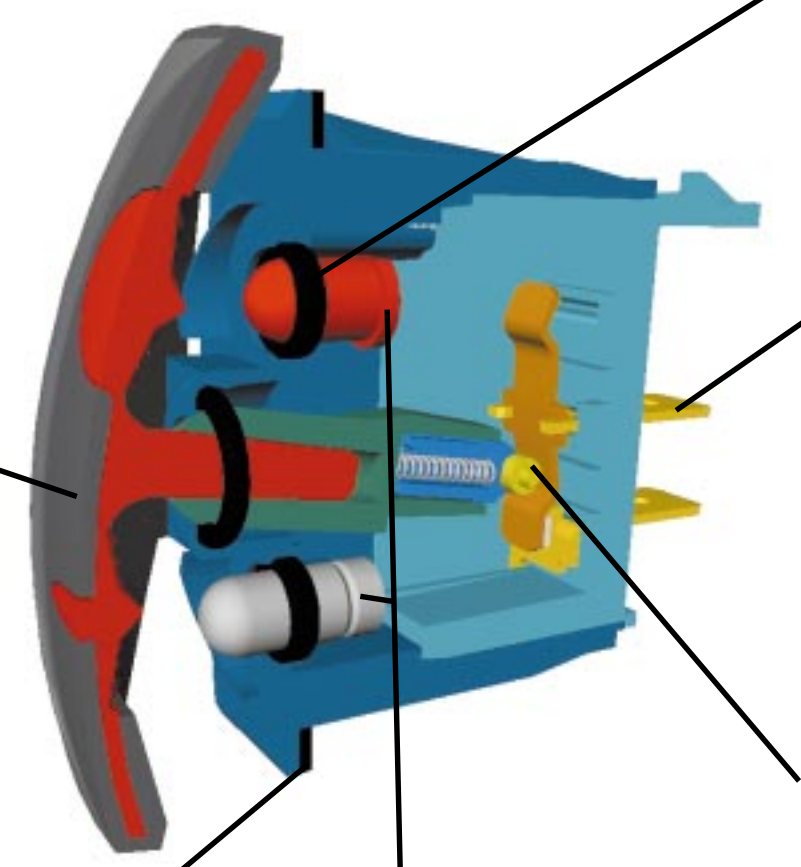
Dual seal protection locks out elements. Certified to IP66/IP68.

Clean Connections

Offered in both eight and ten terminal base options. AMP & Packard compatible connectors available.

Withstands Extreme Temperatures

Roller pin mechanism eliminates need for lubricants, so it can withstand from -40°C to +85°C.



Maximize Design Options with the V-Series Contura Switches

V-Series switches offer countless unique options including choices for ratings, colors, illuminations and symbols. These switches feature removable actuators in a choice of actuator styles and colors, are available in single or double pole configurations, and can be illuminated with either square or bar shaped lenses.



Contura II and Contura III

The Contura II and III actuators are constructed of thermoplastic polycarbonate, and are offered with either a hard nylon overlay, or a "soft-touch" elastomer overlay. The Contura II incorporates an aesthetic design of two rows of raised "bumps" on the top and bottom of the rocker, while the Contura III incorporates three rows of bars.



Contura IV

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



Contura X and Contura XI

The raised bracket/bezel on the Contura X and XI helps prevent inadvertent actuation of the rocker, as well as preventing debris from being trapped under the actuator. The conventionally designed actuators are available with one-piece bar lenses, or square lenses in either one or two part construction with backlit legends, for increased durability of lens symbols. Actuators and square lenses may be purchased/stocked separately from the base.



Contura XII

The Contura XII version incorporates a paddle style handle on the raised bracket/bezel, also used in the Contura X and XI switch. The contoured handle design provides intuitive recognition and ease of operation for a variety of transportation related applications, and is available with all Contura X and XI lens and legend offerings.



Illuminated Plug

The Illuminated Plug is an additional design option, for our modular and flexible V-Series Contura® system. It is offered with removable/replaceable lamps, Contura styling, and LED illumination. As a critical safety feature, it's illumination alerts the operator of essential system functions or malfunctions like: oil pressure, high temperature, transmission or other fluid levels, parking brake, or general system malfunction.

V-Series Accessories/Options

Carlingswitch also offers many V-Series accessories to meet the needs of the Transportation Market: including connectors, mounting panels, hole plugs, panel seals, and actuator removal tools. Please refer to pages 22 & 23 of this catalog for more information. In addition, Multi-Circuit Options for hazard warnings, additional lamp configurations, and progressive circuits are available. Please refer to the Ordering Information on pages 10-21 of this catalog for more information.



Connector



Mounting Panel



Modular Mounting Panel



Hole Plug



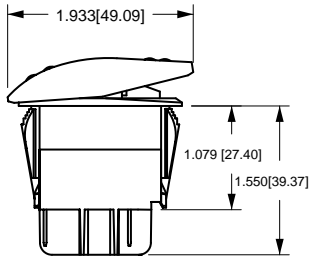
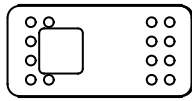
Contura X Boot



Removal Tool

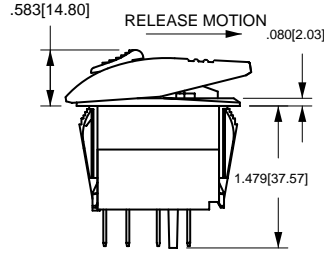
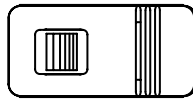
Dimensional Specifications: in. [mm]

CONTURA II STYLE SHOWN WITH SQUARE LENS



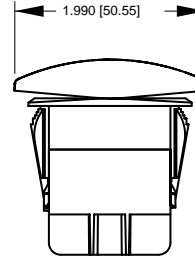
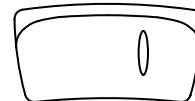
8 TERMINAL
BASE
W/BARRIERS

CONTURA III STYLE SHOWN WITH LOCKING ROCKER

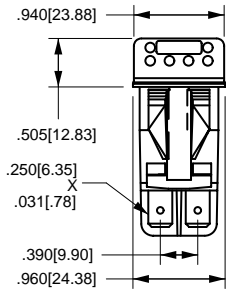


8 TERMINAL
BASE
W/O BARRIERS

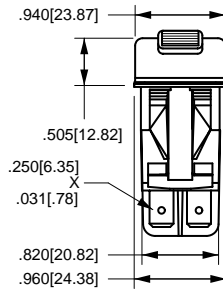
CONTURA IV STYLE SHOWN WITH BAR LENS



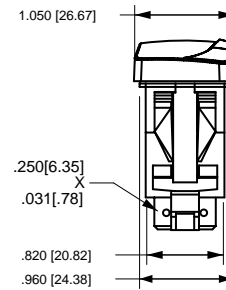
10 TERMINAL BASE
W/BARRIERS



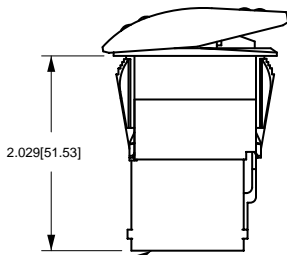
8 TERMINAL BASE
W/BARRIERS



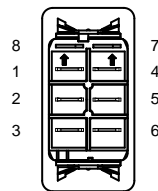
10 TERMINAL BASE
W/BARRIERS



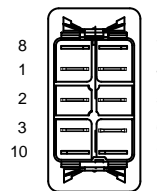
10 TERMINAL BASE
W/O BARRIERS



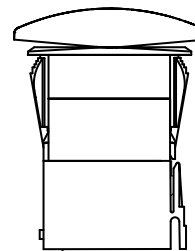
SWITCH SHOWN WITH
VCH CONNECTOR 8
TERMINAL



BOTTOM VIEW
TERMINAL
ARRANGEMENT
8 TERMINAL BASE



BOTTOM VIEW
TERMINAL
ARRANGEMENT
10 TERMINAL BASE



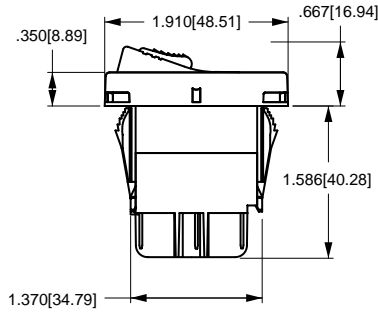
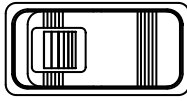
SWITCH SHOWN WITH
VC1 CONNECTOR 10
TERMINAL

V-SERIES
 Contura II & III
 Contura IV
 Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Area: (800) 256-9200
 www.stevenengineering.com

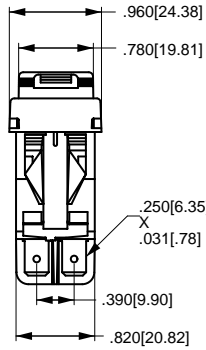
Dimensional Specifications: in. [mm]

CONTURA X STYLE

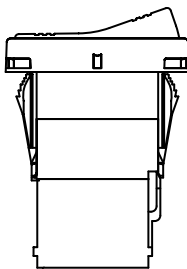
SHOWN WITH RAISED BRACKET AND LOCKING ROCKER



8 TERMINAL BASE W/BARRIERS



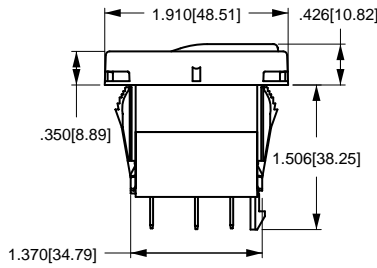
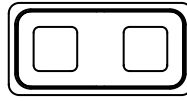
8 TERMINAL BASE W/BARRIERS



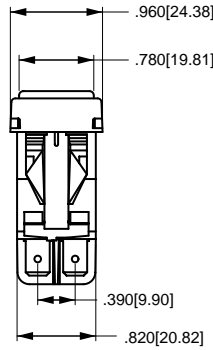
SWITCH SHOWN WITH VCH CONNECTOR 8 TERMINAL

CONTURA XI STYLE

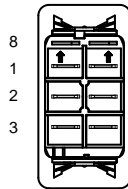
SHOWN WITH RAISED BRACKET AND TWO SQUARE LENSES



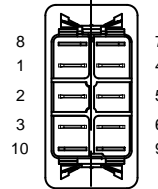
10 TERMINAL BASE W/O BARRIERS



10 TERMINAL BASE W/BARRIERS



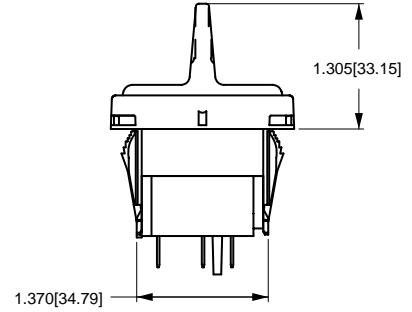
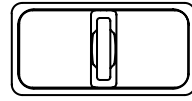
BOTTOM VIEW TERMINAL ARRANGEMENT 8 TERMINAL BASE



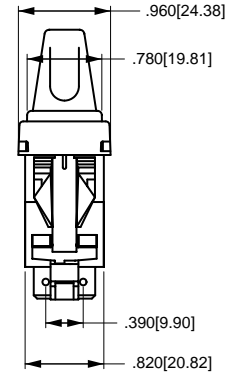
BOTTOM VIEW TERMINAL ARRANGEMENT 10 TERMINAL BASE

CONTURA XII STYLE

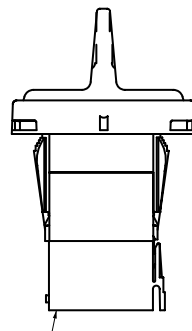
SHOWN WITH PADDLE ACTUATOR



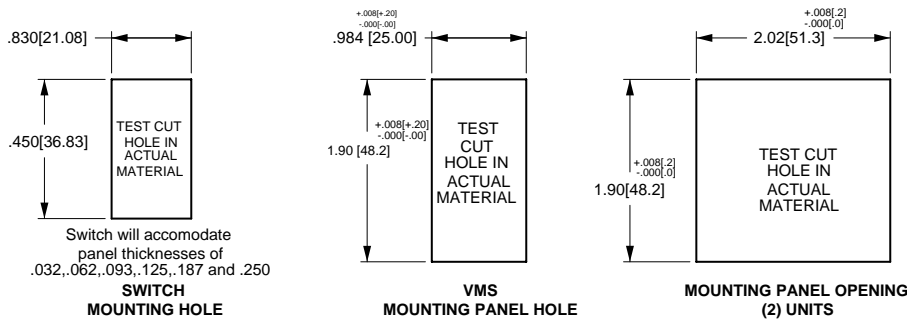
8 TERMINAL BASE W/O BARRIERS



10 TERMINAL BASE W/O BARRIERS



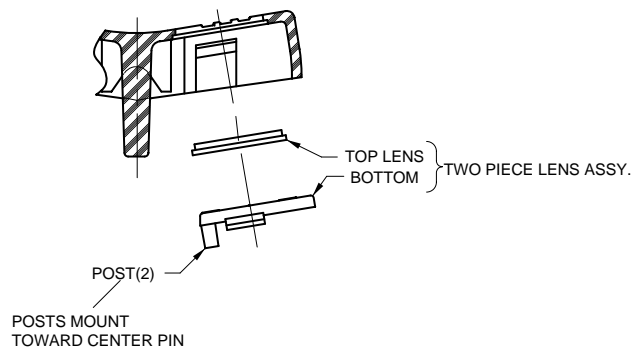
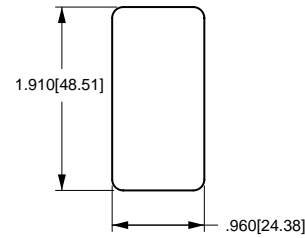
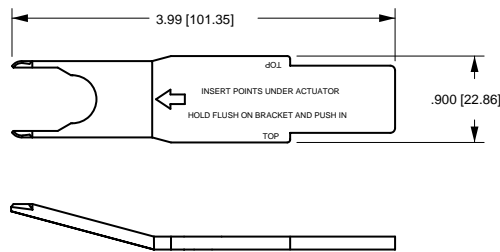
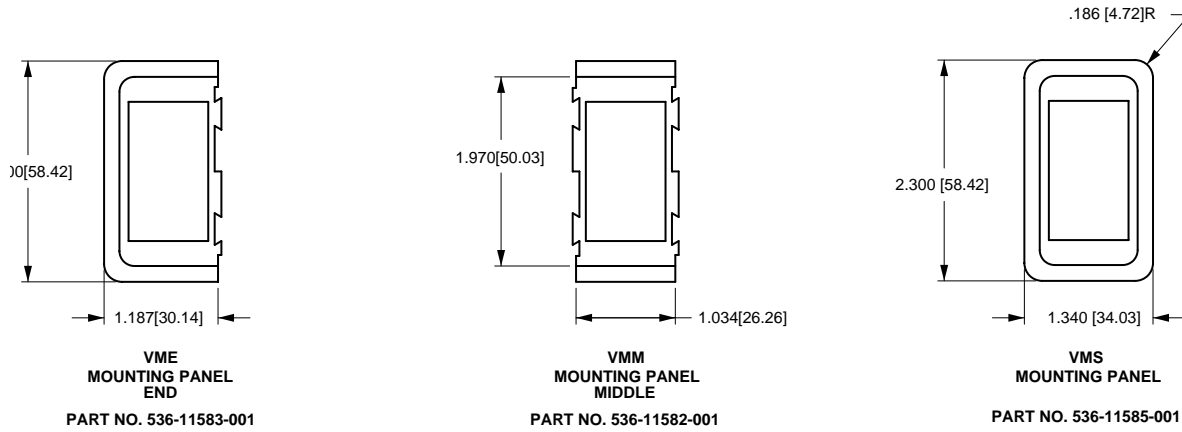
SWITCH SHOWN WITH VC1 CONNECTOR 10 TERMINAL



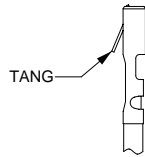
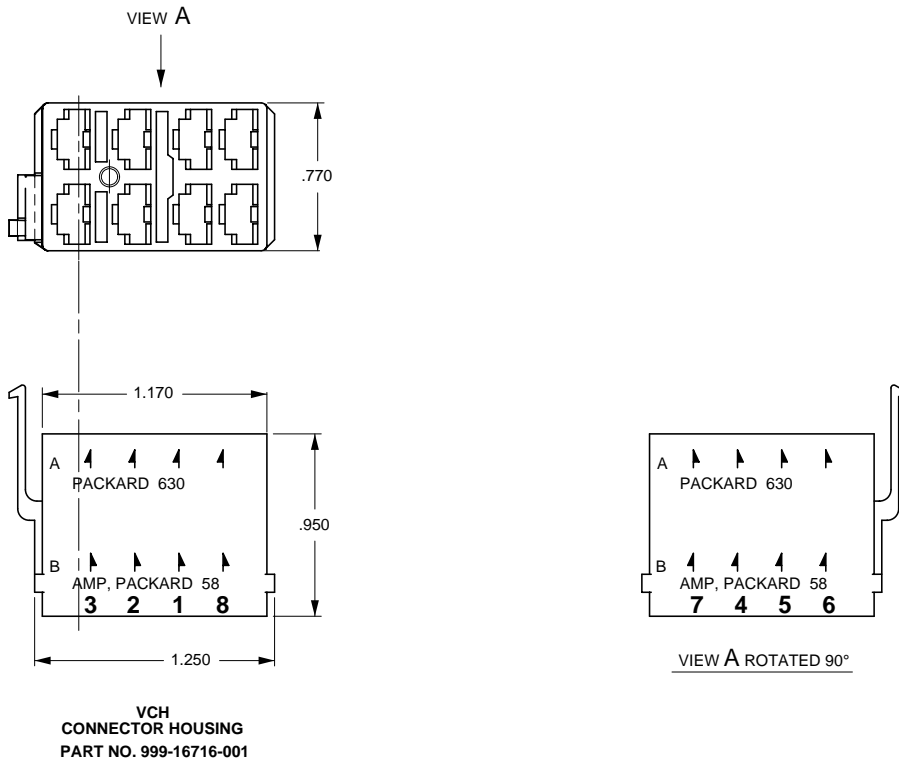
MOUNTING PANEL
For additional units, add 1.03[26.2] per unit. For more than 2 V-Series Switches, add middle section. Will accommodate panel thicknesses listed below.


PANEL THICKNESS

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



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TANG SYMBOL =  SHOWS ORIENTATION OF TANG IN SLOT SYMBOL

VCH Q.C. SELECTION GUIDE							
COMPANY SERIES	PART NO		WIRE RANGE		INSULATION SIZE		ORIENTATION
	PLAIN BRASS	TIN PLATED BRASS	AWG	MM ²	INCH	MM	
PACKARD 58 SERIES	02965580		12	3.0	.137-.143	3.49-3.65	B
	02965471	12010601	(2)16-14	(2)1.0-2.0	.097-.122	2.48-3.10	
	02965470		16-14	1.0-2.0	.097-.122	2.48-3.10	
	02965482		(2)20-18	(2).5-.8	.079-.098	2.03-2.51	
	02965469	06288318	20-18	.5-.8	.079-.098	2.03-2.51	
PACKARD METRI-PACK 630 SERIES		12084590	12	3.0	.190 MAX	4.83 MAX	A
	12066276	12052224	12	3.0	.115-.125	2.94-3.10	
	12015833	12015870	16-14	1.0-2.0	.097-.156	2.48-3.97	
		12020035	(2)22-18	(2).5-.8	.079-.122	2.03-3.12	
	12015832	12015869	20-18	.5-.8	.079-.122	2.03-3.12	
	12066268	12052222	20-22	.35-.5	.072-.098	1.84-2.51	
	12020143	12020144	(2) 22	(2) .35	.053-.078	1.35-2.00	
AMP 250 SERIES FASTIN-FASTON	60253-1	60253-2	16-12 (2) 16	1.3-3 (2) 1.3	.160-.190 (2).130 MAX	4.06-4.83 (2) 3.3 MAX	B
	42100-1	42100-2	18-14	.8-2	.120-.160	3.06-4.06	
	60295-1	60295-2	22-18	.3-.9	.085-.125	2.16-3.18	





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



LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	RUNNING LIGHTS (UNDER POWER)	AA	NA	MA
	LIGHT	AB	NB	MB
	MASTER LIGHT SWITCH	AC	NC	MC
	HORN	AD	ND	MD
	PROPULSION SYSTEM TRIM TRIMMING OPERATION	AE	NE	ME
	VENTILATION FAN OR BLOWER	AF	NF	MF
	WINDSHIELD WASHER	AG	NG	MG
	WINDSHIELD WIPER	AH	NH	MH
	BILGE PUMP	AJ	NJ	MJ
	BILGE BLOWER	AK	NK	MK
	POTABLE WATER PRESSURE	AL	NL	ML
	ENGINE START	AM		MM
	ENGINE STOP	AN		MN
	DRIVE TILT TILT OPERATION	30		31
	EMERGENCY START	32		33
	UP/DOWN LIFT	34		
	TRIM TAB TRIMMING OPERATION	35		36

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	ANCHOR LIGHT	37		38
	ANCHOR	39		40
	WATER FLUSHING TAP FOR OUTBOARDS	41		42
	HIGH BEAM	43	44	45
	LOW / DIPPED BEAM	46	47	48
	SIDE MARKER LIGHT		49	
	INTERIOR LIGHT	50	51	52
	WORK LIGHT	53	54	55
	WORK LAMP	56	57	58
	LOADING FLOOR LAMP		59	
	ON -WIPER-INT DELAY	60		
	ROTARY BEACON	61	62	63
	LAMP TEST		64	
	WINDSHIELD WIPER/WASHER	65	66	67
	HAZARD WARNING	68	69	70
	WARM AIR BLOWER	71	72	73
	HORN REAR		74	

NOTES

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LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	REAR FOG LAMP	75	76	77
	DIFFERENTIAL LOCK	78	79	80
	ALL WHEEL DRIVE	81	82	83
	DIRECTION INDICATOR	84	85	86
ENG HATCH		87		88
HORN		89		90
BLOWER		91		92
DEPTH		93		94
BILGE PUMP		95		96
NAV LTS		97		98
COURT LTS		99		1A
PANEL LTS		1B		1C
ANCH LTS		1D		1E
TRIM TAB		1F		1G
WATER PUMP		1H		1J
WIPER		1K		1L
BILGE		1M		

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
ENG COMP		1N		1P
ACC		1R	1S	1T
NAV ANC		1U		1V
WNDLS UP/DN		1W		1Y
NAV ANCH LTS		1Z		2A
WNDLS ON/OFF		2B		2C
DOCKING LTS		2D		2E
	MUSIC	2F		2G
	BATTERY	2H		2J
	LEVER UP/DOWN	2K		
	ENG PREHEAT	2M		2N
UP		2P		2R
ANTENNA		2S		
DOWN		2T		
PRESS		2U		
AUX START		2V		2W
	GAS	2Y		2Z

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















LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	RIDE CONTROL	3A		3B
	KICK OUT	3C		3D
	BEACON	3E		3F
	SLOW	3G		3H
	CHECK	3J		3K
	A/C	3L		3M
	REAR DEFOGGER	3N	3P	3R
	FORK LIFT	3S		3T
	ENG PREHEAT	3U		3V
AUX START	(EUROSTYLE FONT)	3W		
	REAR WINDOW WIPER		3Y	
WASH	(EUROSTYLE FONT)	3Z		
REAR	(EUROSTYLE FONT)	4A		
	EXCAVATOR BACKHOE BOOM SHIFT	4B		4C
	UNLOCK	4D		4E
	TRANSMISSION LOCK	4F		4G
	FORK LIFT DOWN / UP	4H		

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	DRIVER SEAT LIGHTING	4J		4K
	SIDE MARKER LAMPS	4L	4M	4N
	FOG LAMP	4P	4R	4S
	TRUNK LIGHT	4T		4U
RED		4V		4W
AMBER		4Y		
	LINE INDICATOR	5B		5C
	HANDICAP	5D		5E
	STOP REQUEST	5F		5G
	WINDSCREEN HEATING & VENTILATION	5H		5J
	EXTERIOR MIRROR DEFROSTER	5K		5L
	MOMENTARY LEVER	5M		5N
	SLOW	5P		5R
SHOWER DRAIN	(EUROSTYLE FONT)	5S		
HIGH		5T		5U
LOW		5V		5W
PARK		5Y		5Z

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LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	WASHER	6C		
	SUPPLEMENTAL STEERING	6D		6E
	BATT PARL	6F		6G
	DEPTH SOUNDER	6H		6J
	MUTE	6K		6L
	T I M E R	6M		
	M A N	6N		
	LIVEWELL	6R		
	WATER TANK		6S	
	REAR WASHER/WIPER	6T		6U
	FRONT DIFFERENTIAL LOCK	6V		6W
	LEVER UP/DOWN	6Y		
	BILGE PUMP#1	6Z		7A
	BILGE PUMP#2	7B		7C
	BILGE PUMP#3	7D		7E
	RIGHT STABILIZER	7F		7G
	LEFT STABILIZER	7H		7J

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	HEAD LIGHTS	7K		
	CL / ID LIGHTS	7L		
	CRUISE CONTROL	7M		
	SET/DECEL RES/ACCEL	7N		
	ENGINE BRAKE	7P		
	HIGH MED LOW	7R		
	POWER WINDOW	7S		
	ENGINE FAN	7T		
	DRIVING LIGHTS	7U		
	FOG LIGHTS	7V		
	TRAILER CL / ID LIGHTS	7W		
	ENGINE DIAGN	7Y		
	LH/RH TANK	7Z		
	MIRROR DEFOG	8A		
	BACKUP LIGHTS	8B		
	DASH LIGHTS	8C		
	CAB SLEEPER	8D		

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







LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	SLEEPER START	8E		
	HIGH LOW	8F		
	CRUISE CONTROL	8G	8H	8J
	CRUISE CONTROL ADJUST	8K	8L	8M
	ENGINE BRAKE	8N	8P	8R
	HIGH/MED/LOW	8S	8T	8U
	POWER WINDOW	8V	8W	8Y
	ENGINE FAN	8Z	9A	9B
	DIAGNOSTICS	9C	9D	9E
	LH/RH TANK	9F	9G	9H
	LENS BLACKOUT		9J	
	VARIABLE	9L	9M	9N
	MIRROR ADJUST	9P	9R	9S
	SPEAKER	9T		9U
	SLEEPER START	9V	9W	9Y
	HIGH / LOW	9Z	A1	A2
	BEACON	A3		












LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	MIRROR	A4		
	MASTER SWITCH	A5		A6
	RABBIT (FAST)	A7		A8
	RETARDER	A9		B1
	EXHAUST BRAKE	B2		B3
	TANDEM AXLE	B4		B5
	AIR TANK	B6		B7
	DRAIN	B8		
	AUTOMATIC TRANSMISSION	B9		C1
	LOADER BUCKET DOWN	C2		C3
	LOADER BUCKET	C4		C5
	AUTO	C6		
	NEUTRAL LOCK	C7		C8
	TRANSMISSION NEUTRALIZER	C9		D1
	RUNNING / ANCHOR LIGHTS	D2		
	TRIM TAB TRIMMING OPERATION	D3		D5
	TRACTOR FORWARD	D6		D7

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LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	STEERING	D8		D9
BATTERY PARALLEL		E1		
	MIRROR DEFROST		E2	
	SLEEPER LIGHTS		E3	
	IDLE SPEED		E4	
SLEEPER LIGHTS		E5		
IDLE SPEED		E6		
	MOWER DECK UP/DN	E7		E8
	4 / 2 WD LOCK	E9		F1
	STEERING CONTROL	F2		F3
	DRIVE TILT UP	F4		F5
	MILL MAIN	F6		F7
	MILL REVERSAL	F8		F9
	HEAD LIGHTS	G1		G2
	WORK LIGHT	G3		G4
RAISE		G5		G6
LOWER		G7		G8

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
FWD		G9		H1
REV		H2		H3
	BROOM	H4		H5
	SANDER	H6		H7
KNEEL		H8		
	CHIME MUTE		H9	
R. DOOR		J1		J2
F. DOOR		J3		J4
AUX BATT		J5		J6
	SWING MAIN	J7		J8
	ACTIVE SWING	J9		K1
	CENTERING	K2		K3
	REAR OPERATION AUTO-LIFT RELEASE	K4		K5
		K6		K7
	ARROW		K8	
	FRONT WINDOW DEFROST	K9		L1
	REAR WINDOW DEFROST	L2		L3

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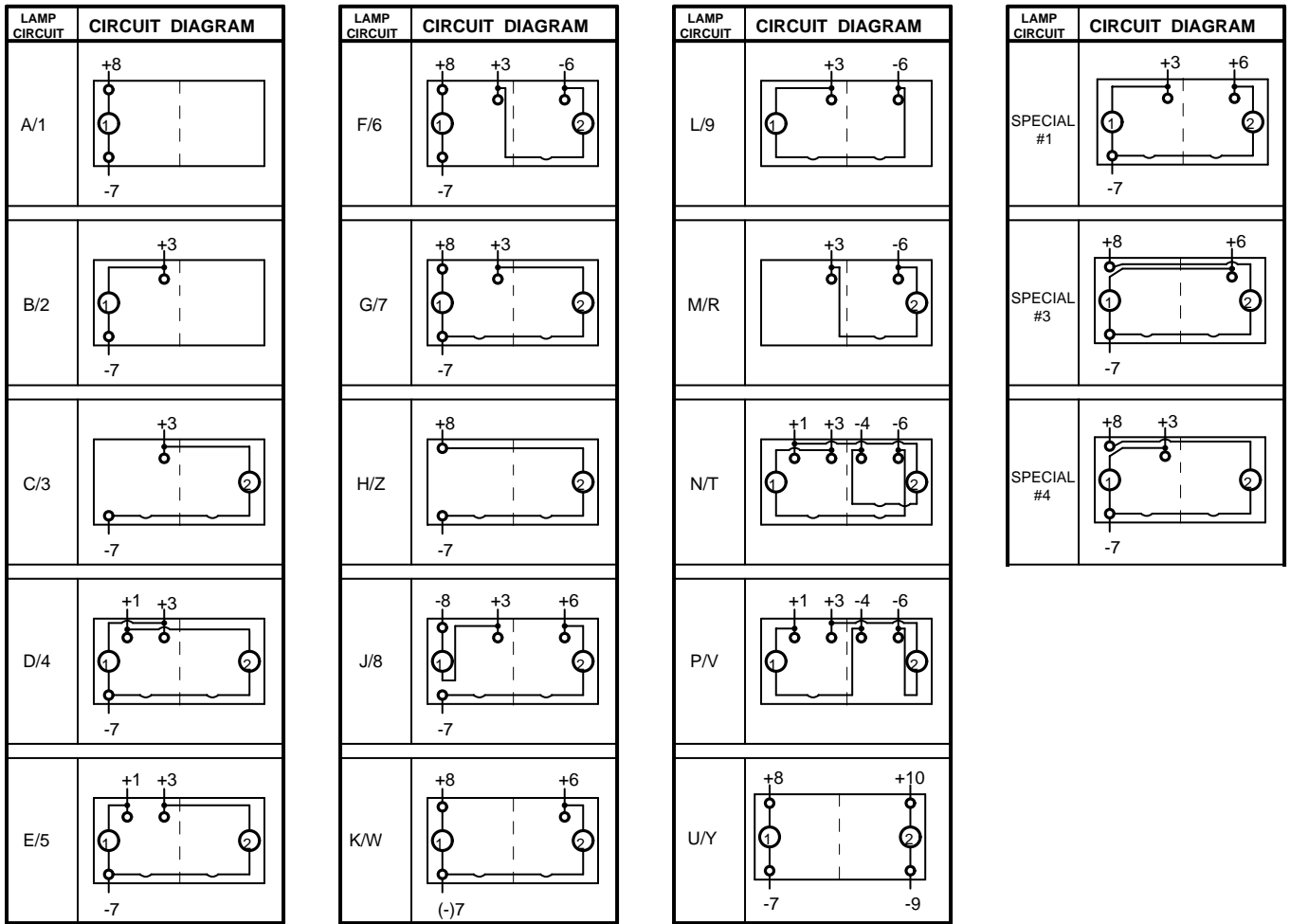
LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	SIDE WINDOW DEFROST	L4		L5
		L6		L7
	CRAWLER STRETCHING	L8		L9
	CRAWLER LOOSENING	M1		M2
	SEARCH LIGHT	M3		M4
	SIDE MIRROR DEFROST	M5		M6
		M7		M8
	UNLOADER AUGER	M9		N1
	REVERSING	N2		N3
	DRIVING LIGHT	N4		N5
	HAZARD	N6		N7
	EXTRA PLUG	N8		N9
	GRAIN TANK LIGHT	P1		P2
	ROTOR LIGHT	P3		P4
	CHAFF SPREADER	P5		P6
	HANDLE	P7		P8
	LEFT / RIGHT TABLE	P9		R1

LEGEND		LEGEND CODE		
SYMBOL	NAME <small>(SYMBOL MEANING)</small>	BODY	LENS	
			NEGATIVE	POSITIVE
	LEFT SIDE KNIFE	R2		R3
	ALL MECHANISMS	R4		R5
	MONITOR MENU	R6		R7
	VERTICAL BAR	S1		S2
	THRESHING SYSTEM	S3		S4
	TABLE MOVEMENT	S5		S6
	CYLINDER SPEED	S7		S8
	COVER PLATE	S9		T1
	ENGINE STARTING AID ETHER	T2		T3
	TRACTION CONTROL SYSTEM	T4		T5
	HYDRAULIC DIVERTER VALVE	T6		T7

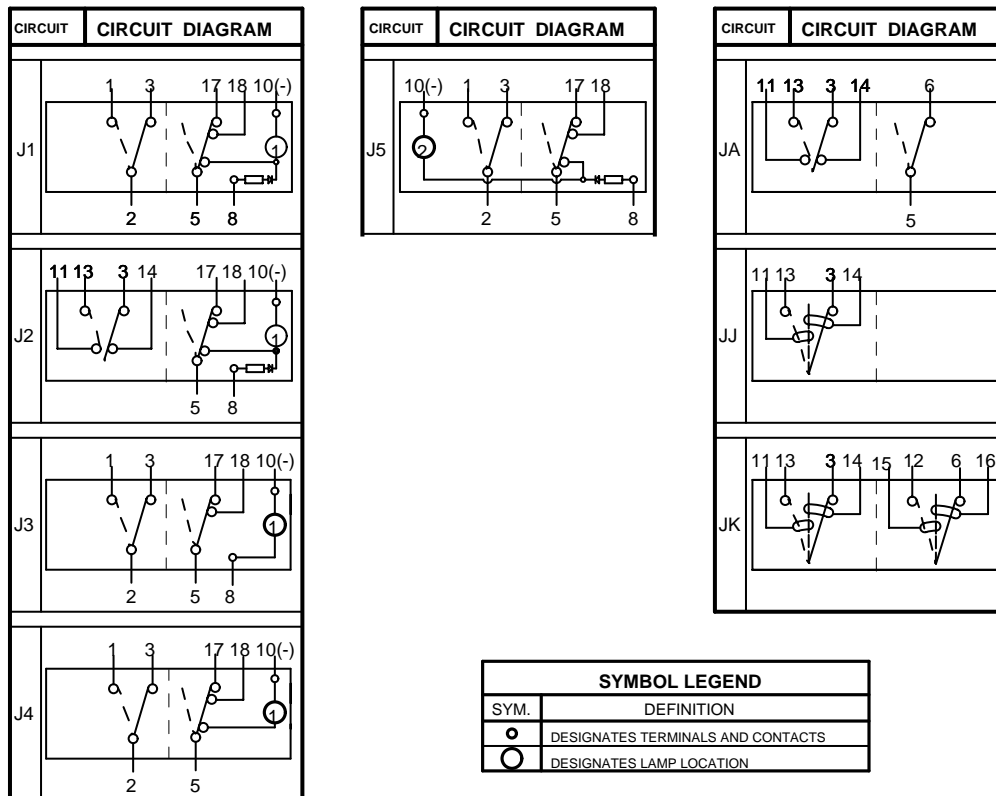
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Standard Lamp Circuit Diagrams¹



Specialty (Hazard/Progressive) Lamp Circuit Diagrams^{1,2}



NOTE
 1 Other circuits available, consult factory.
 2 Consult factory for ordering information.



1 SERIES

V

2 CIRCUIT

Terminal Connections as viewed from bottom of switch:

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

() - momentary
 SP - single pole - uses terminals 1, 2 & 3.
 DP - double pole uses terminals 1, 2, 3, 4, 5 & 6.
 Terminals 7, 8, 9 & 10 for lamp circuit only.

Position:	1	2	3
	2 & 3	CONNECTED	1 & 2
SP DP	5 & 6	TERMINALS	4 & 5
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)

SPECIAL CIRCUITS

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	1 & 2
E*	5 & 6	5 & 3	5 & 1

* Jumper between terminals 2 & 5 for circuits H, G, & M to be specified in selection 4. 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. Special circuits H, M & E not available with ratings 5 through 9.

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- 5** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
UL Recognized, CSA Certified
- 6*** 15A 125VAC 1/2 HP, 12(2)A 125 VAC μ T85
- 7*** 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
- 8*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(2)A 250 VAC μ T85
- 9*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(6)A 250 VAC T85
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 20A 14V, 10A 14VT (circuits 1, 4, A, & D only)
- F** 10A 14V, 6A, 14VT (circuit G only)
- G** 20A 6V
- H** 20A 3V
- L** 15A 125 VAC, 10A 250VAC,
1/2 HP 125-250 VAC; 6A 125 VAC L

* Ratings 6, 7, 8 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified, require terminations A or B for double pole circuits, and 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 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.

4 TERMINATION/BASE STYLE

8 Base	10 Termination	Jumper
1	2 .250 TAB (QC) no barriers	No
A	B .250 TAB (QC) with barriers	No
J	K .250 TAB (QC) no barriers	Yes T2 to 5
3	4 Solder Lug no barriers	No
C	D Solder Lug	No
5	6 Wire Leads no barriers	No
E	F Wire Leads	No

Note: Codes J & K for circuits H, G & M. Ratings 6, 7, 8 & 9 require terminations A or B only.

5 ILLUMINATION & SWITCH SEALING

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 LED lamps only.

SEALED	UNSEALED	LAMPS	ACTUATOR LENS POSITION WHEN ILLUMINATED	LAMP WIRED TO TERMINALS
S	0	None		
A	1	# 1	Independent	8+ 7-
B	2	# 1	Down	3+ 7-
C	3	# 2	Up	3+ 7-
D	4	# 1 & # 2	Down Down	3+ 7- 1+ 7-
E	5	# 1 & # 2	Up Up	1+ 7- 3+ 7-
F	6	# 1 & # 2	Independent Up	8+ 7- 3+ 6-
G	7	# 1 & # 2	Independent Up	8+ 7- 3+ 7-
H	Z	# 2	Independent	8+ 7-

Selections for Single Pole Switches Only:

J	8	# 1	Down	3+ 8-
		& # 2	Independent	6+ 7-
K	W	# 1	Independent	8+ 7-
		& # 2	Independent	6+ 7-

Selections for Double Pole Switches Only:

L	9	# 1	Down	3+ 6-
M	R	# 2	Up	3+ 6-
N	T	# 1	Down	3+ 6-
		& # 2	Down	1+ 4-
P	V	# 1	Up	1+ 4-
		& # 2	Up	3+ 6-
U	Y	# 1	Independent	8+ 7-
		& # 2	Independent	10+ 9-

6, 7 LAMP

Selection 6: above terminals 1 & 4; Selection 7: above terminals 3 & 6
 USE SAME CODING FOR BOTH SELECTIONS

	1 - 125VAC	2 - 250VAC
0	NO LAMP THIS LOCATION	
Neon	1	2
Incandescent	4 - 3V	5 - 6V 6 - 12V 7 - 18V 8 - 24V
LED	superbright superbright	
	Red	Amber Green Red
2VDC	A	L F R
6VDC	B	M G S
12VDC	C	N H T
24VDC	D	P J V

B

8
Bracket

-

A

9
Actuator

R

10
Lens

B

11
Color

00

12
Legend

-

0

13
Orientation

00

14
Legend




8 BRACKET COLOR¹, PANEL SEAL

FLUSH BRACKET

# OF SEALS:	0	1
BRACKET COLOR:		
Black	B	C
White	W	Y
Gray	G	H

9 ACTUATOR

0 - No Actuator (Furnished Separately)






Contura II	A		Lens style & location 
	B		
Contura III	C		
	D		

Actuator orientation above terminals:

3,6 1,4

10 LENS

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

0 - No Actuator			Z - No Lens			
Clear	White	Amber	Green	Red	Blue	
1	6	B	G	M	T	
2	7	C	H	N	U	
3	8	D	J	P	V	
Square lens options available only for Contura II:						
4	9	E	K	R	W	
5	A	F	L	S	Y	

11 ACTUATOR COLOR¹ AND TEXTURE

0 - No Actuator

	SOFT SURFACE		HARD SURFACE	
Black	B		C	
Gray	G		H	
Red	R		S	
White	W		Y	

To order V-Series components separately:

Switch without actuator, specify: V with code selections **2 - 8**. (ex.) V1DABC0B-00000-000

Actuator, specify: VV with code **A** or **C** only for selection 9, with code selections 10 - 14. (ex.) VVARBMA-100.

Panel Seal, specify VPS.

NOTES:



Shading indicates standard configurations.

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 For CONTURA II with square lens: Orientation 1 & 2 only available with actuators A & C from selection 9; Orientation 3 & 4 only available with actuators B & D from selection 9.

12 ACTUATOR LENS OR BODY LEGENDS²

00 - NO LEGEND THIS LOCATION/NO ACTUATOR

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

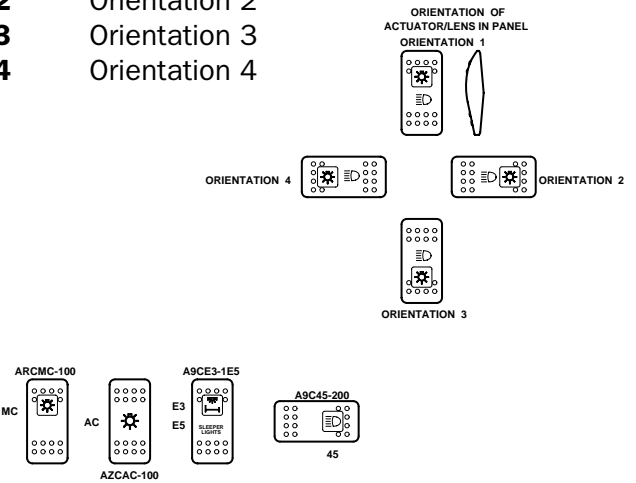
For additional legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION⁴

Field 13 must be 0 if legend code in selection 12 is 11 - 18.

0 - NO LEGEND

- 1 Orientation 1
- 2 Orientation 2
- 3 Orientation 3
- 4 Orientation 4



14 ACTUATOR LENS LEGENDS

Field 14 must be 00 if legend code in selection 12 is 11 - 18.

00 - NO LEGEND this location/NO ACTUATOR

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, see pages 34 - 42 of this catalog



Contura II



Contura III

V	1	D	A	S	W	0
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lock	7 Lamp

1 SERIES

V

2 CIRCUIT⁵

Terminal Connections as viewed from bottom of switch:

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

() - momentary
 SP - single pole - uses terminals 1, 2 & 3.
 DP - double pole uses terminals 1, 2, 3, 4, 5 & 6.
 Terminals 7, 8, 9 & 10 for lamp circuit only.

Position:	<u>1</u>	<u>2</u>	<u>3</u> (lock)
	2 & 3	CONNECTED	1 & 2
SP DP	5 & 6	TERMINALS	4 & 5
1	A ON	NONE	OFF
4	D ON	NONE	ON
6	J ON	OFF	ON
7	K ON	OFF	(ON)
8	L (ON)	OFF	(ON)
9	N OFF	NONE	ON

SPECIAL CIRCUITS

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	1 & 2
E*	5 & 6	5 & 3	5 & 1

* Jumper between terminals 2 & 5 for circuits H, G, & M to be specified in selection 4. 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. Special circuits H, M & E not available with ratings 5 through 9.

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- 5** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
UL Recognized, CSA Certified
- 6*** 15A 125VAC 1/2 HP, 12(2)A 125 VAC μ T85
- 7*** 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
- 8*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(2)A 250 VAC μ T85
- 9*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(6)A 250 VAC T85
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 20A 14V, 10A 14VT (circuits 1, 4, A, & D only)
- F** 10A 14V, 6A, 14VT (circuit G only)
- G** 20A 6V
- H** 20A 3V
- L** 15A 125 VAC, 10A 250VAC,
1/2 HP 125-250 VAC; 6A 125 VAC L

* Ratings 6, 7, 8 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified, require terminations A or B for double pole circuits, and are not available with wire lead or solder lug terminations. Circuits 1, 4, A & D 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.

4 TERMINATION/BASE STYLE

8 Base	10 Termination	Jumper
1	2 .250 TAB (QC) no barriers	No
A	B .250 TAB (QC) with barriers	No
J	K .250 TAB (QC) no barriers	Yes T2 to 5
3	4 Solder Lug no barriers	No
C	D Solder Lug	No
5	6 Wire Leads no barriers	No
E	F Wire Leads	No

Note: Codes J & K for circuits H, G & M. Ratings 6, 7, 8 & 9 require terminations A or B only.

5 ILLUMINATION & SWITCH SEALING

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 LED lamps only.

SEALED	UNSEALED	LAMPS ILLUMINATED	ACTUATOR LENS POSITION WHEN WIRED TO	LAMP WIRE TO TERMINALS
S	0	None		
C	3	# 2 Up		3+ 7-
H	Z	# 2 Independent		8+ 7-

Selections for Single Pole Switches Only:
 Selections for Double Pole Switches Only:

M	R	# 2 Up	3+ 6-
----------	----------	--------	-------

6 LOCK

Lock located above terminals 1 & 4 end of switch.

W Lock Option

7 LAMP

Lamp located above terminals 3 & 6 end of switch

0 - NO LAMP THIS LOCATION

Neon **1** - 125VAC **2** - 250VAC

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

LED			superbright	superbright
	Red	Amber	Green	Red
2VDC	A	L	F	R
6VDC	B	M	G	S
12VDC	C	N	H	T
24VDC	D	P	J	V

B

8
Bracket

-

A

9
Actuator

Z

10
Lens

E

11
Function

00

12
Legend

-

0

13
Orientation

8 BRACKET COLOR¹, PANEL SEAL

FLUSH BRACKET

# OF SEALS:	0	1
BRACKET COLOR:		
Black	B	C
White	W	Y
Gray	G	H

9 ACTUATOR COLOR & STYLE

Hard Surface Actuators

	Black	Gray	Red	White	
Contura II	A	B	G	H	
Contura III	C	D	E	F	

Actuator orientation above terminals: 3,6 1,4

10 LENS

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

0	No Actuator	Z	No Lens			Lens style & location
3	8	D	J	P	V	
	Clear	White	Amber	Green	Red	Blue

11 ACTUATOR LOCK FUNCTION¹ & COLOR

Locked position:

Up	Down	Up & Down	Center ⁴	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

12 ACTUATOR LEGENDS²

00 - NO LEGEND

21	OFF		25	O	
22	ON		26	O	
23	O		27	O	
24	I		28	I	

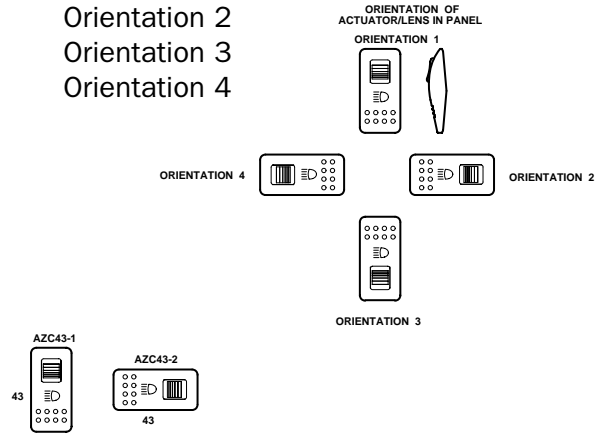
For additional legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION

Field 13 must be 0 if legend code in selection 12 is 21-28.

0 - NO LEGEND

- 1** Orientation 1
- 2** Orientation 2
- 3** Orientation 3
- 4** Orientation 4



NOTES:

Shading indicates standard configurations.

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

- 1 Custom colors are available. Consult factory.
 - 2 White imprinting is standard on black actuators; Black imprinting is standard on white, red & gray actuators; Custom colors are available, consult factory.
 - 4 Only available with 3 position circuits.
- Center off and special circuits only available with center position lock function.



Contura II with lock

V SERIES
 Contura IV
 Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Area: (800) 258-9200 • www.stevenengineering.com



1 SERIES

V

2 CIRCUIT

Terminal Connections as viewed from bottom of switch:

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

() - momentary
 SP - single pole - uses terminals 1, 2 & 3.
 DP - double pole uses terminals 1, 2, 3, 4, 5 & 6.
 Terminals 7, 8, 9 & 10 for lamp circuit only.

Position:	1	2	3
	2 & 3	CONNECTED	1 & 2
SP DP	5 & 6	TERMINALS	4 & 5
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)

SPECIAL CIRCUITS

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	1 & 2
E*	5 & 6	5 & 3	5 & 1

* Jumper between terminals 2 & 5 for circuits H, G, & M to be specified in selection 4. 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. Special circuits H, M & E not available with ratings 5 through 9.

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- 5** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
UL Recognized, CSA Certified
- 6*** 15A 125VAC 1/2 HP, 12(2)A 125 VAC μ T85
- 7*** 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
- 8*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250 VAC, 12(2)A 250 VAC μ T85
- 9*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250 VAC, 12(6)A 250 VAC T85
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 20A 14V, 10A 14VT (circuits 1, 4, A, & D only)
- F** 10A 14V, 6A, 14VT (circuit G only)
- G** 20A 6V
- H** 20A 3V
- L** 15A 125 VAC, 10A 250VAC,
1/2 HP 125-250 VAC; 6A 125 VAC L

* Ratings 6, 7, 8 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified, require terminations A or B for double pole circuits, and 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 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.

4 TERMINATION/BASE STYLE

8 Base	10 Termination	Jumper
1	2 .250 TAB (QC) no barriers	No
A	B .250 TAB (QC) with barriers	No
J	K .250 TAB (QC) no barriers	Yes T2 to 5
3	4 Solder Lug no barriers	No
C	D Solder Lug	No
5	6 Wire Leads no barriers	No
E	F Wire Leads	No

Note: Codes J & K for circuits H, G & M. Ratings 6, 7, 8 & 9 require terminations A or B only.

5 ILLUMINATION & SWITCH SEALING

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 LED lamps only.

SEALED	UNSEALED	LAMPS ILLUMINATED	ACTUATOR LENS POSITION WHEN WIRED TO	LAMP TERMINALS
S	0	None		
A	1	# 1 Independent	8+ 7-	
B	2	# 1 Down	3+ 7-	
C	3	# 2 Up	3+ 7-	
D	4	# 1 Down & # 2 Down	3+ 7- 1+ 7-	
E	5	# 1 Up & # 2 Up	1+ 7- 3+ 7-	
F	6	# 1 Independent & # 2 Up	8+ 7- 3+ 6-	
G	7	# 1 Independent & # 2 Up	8+ 7- 3+ 7-	
H	Z	# 2 Independent	8+ 7-	
Selections for Single Pole Switches Only:				
J	8	# 1 Down & # 2 Independent	3+ 8- 6+ 7-	
K	W	# 1 Independent & # 2 Independent	8+ 7- 6+ 7-	
Selections for Double Pole Switches Only:				
L	9	# 1 Down	3+ 6-	
M	R	# 2 Up	3+ 6-	
N	T	# 1 Down & # 2 Down	3+ 6- 1+ 4-	
P	V	# 1 Up & # 2 Up	1+ 4- 3+ 6-	
U	Y	# 1 Independent & # 2 Independent	8+ 7- 10+ 9-	

6, 7 LAMP

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

USE SAME CODING FOR BOTH SELECTIONS

0 - NO LAMP THIS LOCATION

Neon **1** - 125VAC **2** - 250VAC

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

LED superbright superbright

	Red	Amber	Green	Red
2VDC	A	L	F	R
6VDC	B	M	G	S
12VDC	C	N	H	T

B

8
Bracket

-

E

9
Actuator

R

10
Lens

C

11
Color

00

12
Legend

-

0

13
Orientation

00

14
Legend

8 BRACKET COLOR¹, PANEL SEAL FLUSH BRACKET

# OF SEALS:	0	1
BRACKET COLOR:		
Black	B	C
White	W	Y
Gray	G	H

9 ACTUATOR⁴

0 - No Actuator (Furnished Separately)

Contura IV

E

F



Actuator orientation above terminals:

3,6 1,4

10 LENS

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

0 - No Actuator

Z - No Lens

	Clear	White	Amber	Green	Red	Blue	Lens style & location
1		6	B	G	M	T	
2		7	C	H	N	U	
3		8	D	J	P	V	
4		9	E	K	R	W	
5		A	F	L	S	Y	

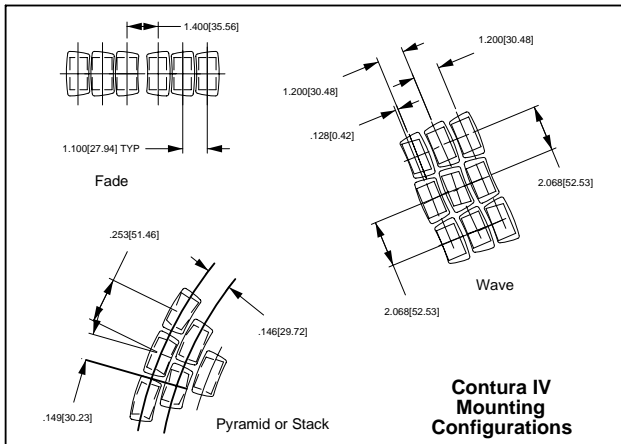
Lens style & location



11 ACTUATOR COLOR¹

0 - No Actuator

Black	C
Gray	Y
Red	S
White	H



Contura IV
Mounting
Configurations

NOTES:

Shading indicates standard configurations.

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

- 1 Custom colors are available. Consult factory.
- 2 White imprinting is standard on black actuators; Black imprinting is standard on white, red and gray actuators; Custom colors are available, consult factory.
- 4 Gloss brow is on left side of E actuator and right side of F actuator.

12 ACTUATOR LENS OR BODY LEGENDS²

00 - NO LEGEND THIS LOCATION/NO ACTUATOR



11 ON
OFF

15 O O
F N
F

12 OFF
ON

16 O O
N F
F

13 |
O

17 O |

14 O
|

18 | O

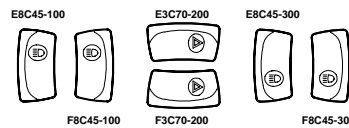
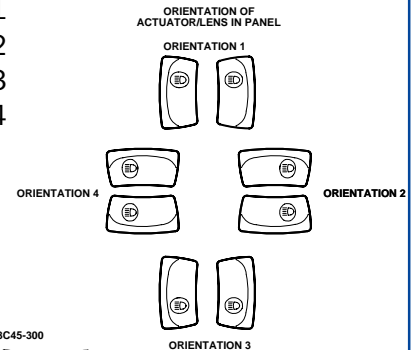
For additional legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION

Field 13 must be 0 if legend code in selection 12 is 11 - 18.

0 - NO LEGEND

- 1 Orientation 1
- 2 Orientation 2
- 3 Orientation 3
- 4 Orientation 4



14 ACTUATOR LENS LEGENDS

Field 14 must be 00 if legend code in selection 12 is 11 - 18.

00 - NO LEGEND this location/NO ACTUATOR

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, see pages 34 - 42 of this catalog

V-Series Components:

To order **switch without actuator** specify: **V** with code selections **2** through **8**. (ex.) V1DABTOB-00000-000

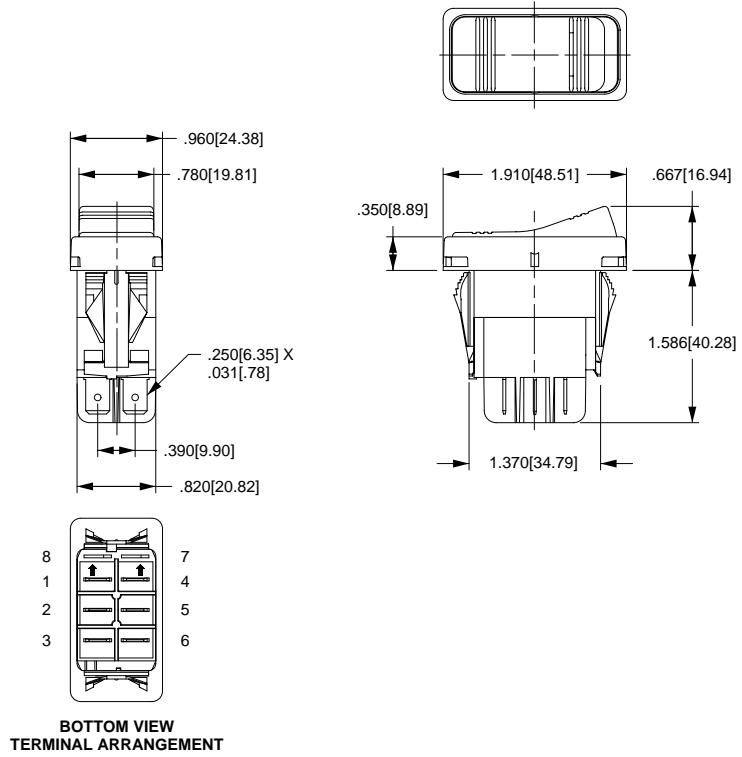
To order **actuator separately** specify: **VV** with code **E** or **F** only for selection 9, and codes from above scheme for selections 10 through 14. (ex.) VVERCMA-100



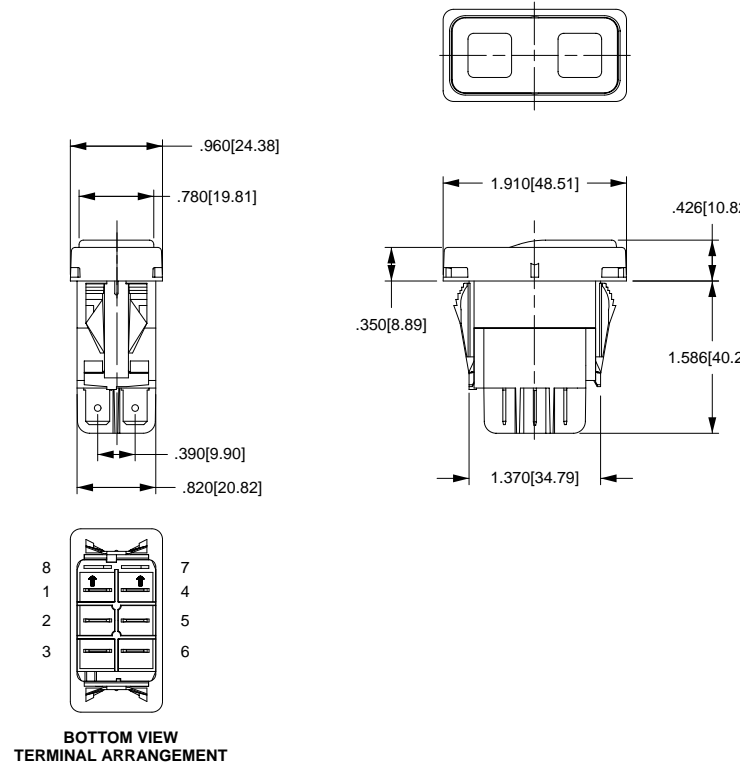
Contura IV

Dimensional Specifications: in. [mm]

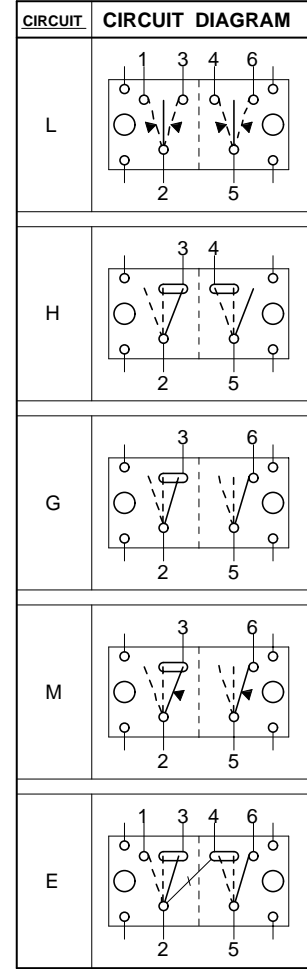
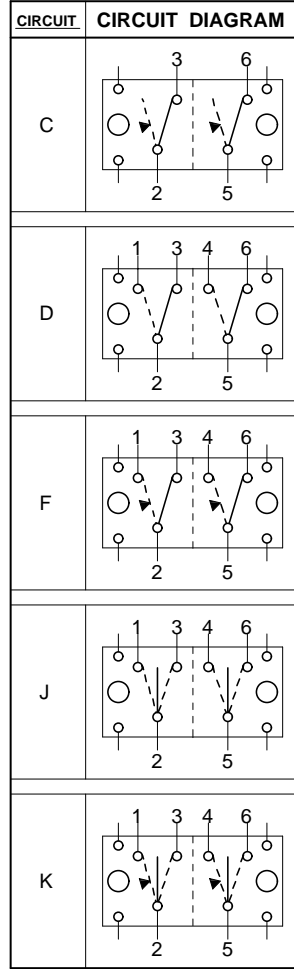
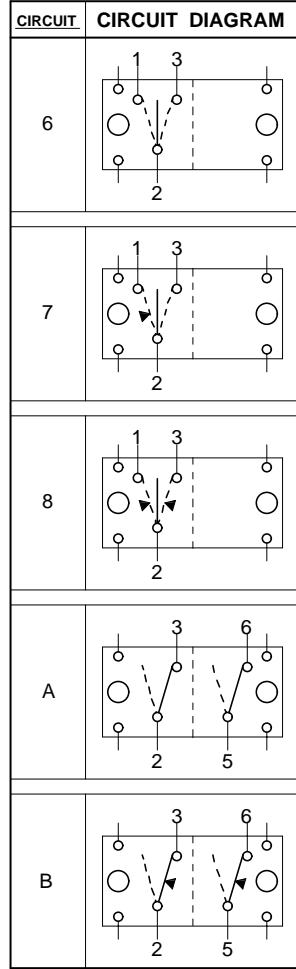
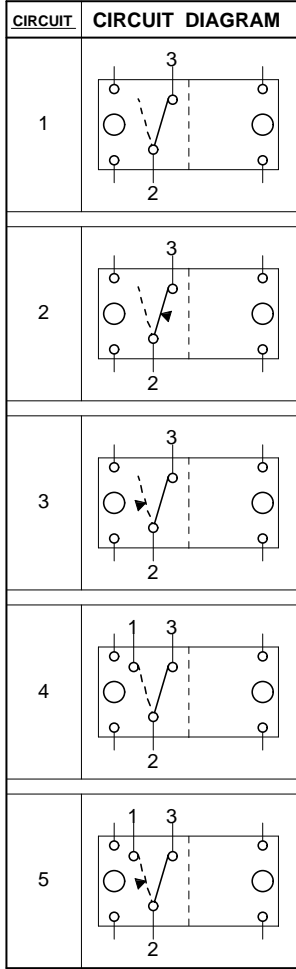
CONTURA X STYLE
SHOWN WITH RAISED
BRACKET AND BAR LENS



CONTURA XI STYLE
SHOWN WITH RAISED
BRACKET AND TWO
SQUARE LENSES

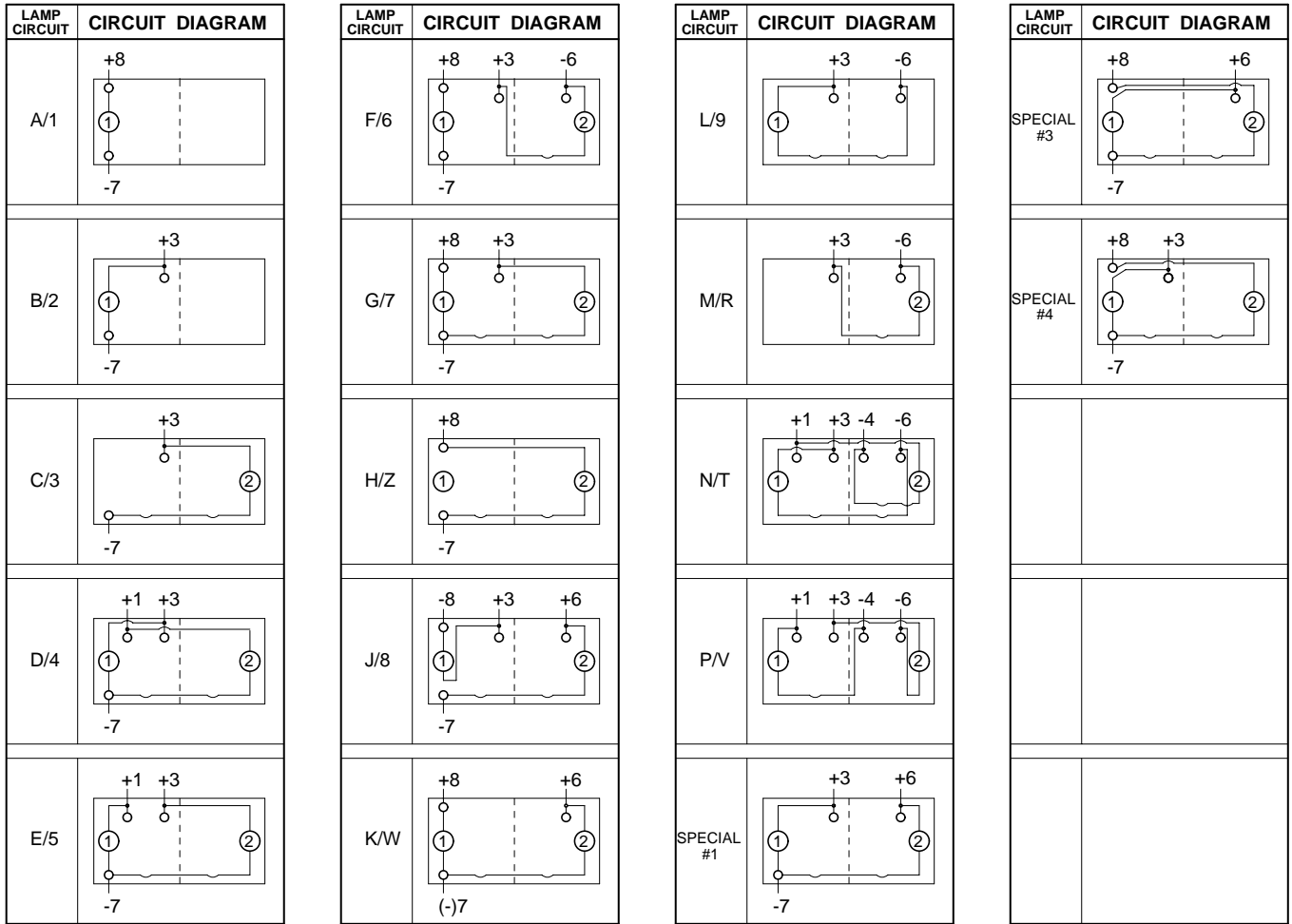


Circuit Diagrams



SYMBOL LEGEND	
SYM.	DEFINITION
○	DESIGNATES TERMINALS AND CONTACTS
○	DESIGNATES LAMP LOCATION
○—○	DESIGNATES MAINTAINED CIRCUITS
---○	DESIGNATES OTHER POSITION
○▼○	DESIGNATES MOMENTARY CIRCUITS
○—○	DESIGNATES TWO POSITION CONNECTION
—	DESIGNATES EXTERNAL JUMPER PROVIDED BY CUSTOMER

Lamp Circuits



SYMBOL LEGEND	
SYM.	DEFINITION
o	DESIGNATES TERMINALS AND CONTACTS
○	DESIGNATES LAMP LOCATION

OTHER CIRCUITS AVAILABLE.
CONSULT FACTORY.

V 1 D A B 6 0 B -

1 SERIES

V

2 CIRCUIT

Terminal Connections as viewed from bottom of switch:

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

SP - single pole - uses terminals 1, 2 & 3.

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

Terminals 7 & 8 for lamp circuit only.

Position:	1	2	3
	2 & 3	CONNECTED	1 & 2
	5 & 6	TERMINALS	4 & 5
SP DP	5 & 6	TERMINALS	1 & 2
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)

SPECIAL CIRCUITS

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

* Jumper between terminals 2 & 5 for circuits H, G, & M to be specified in selection 4. 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. Special circuits H, M and E not available with ratings 5 through 9.

3 RATING

4	10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP No Agency Listings
5	10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP UL Recognized, CSA Certified
6*	15A 125VAC 1/2 HP, 12(2)A 125 VAC μ T85
7*	15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
8*	10A 250VAC, 15A 125VAC, 1/2 HP 125-250 VAC, 12(2)A 250 VAC μ T85
9*	10A 250VAC, 15A 125VAC, 1/2 HP 125-250 VAC, 12(6)A 250 VAC T85
B	15A 24V
C	20A 18V
D	20A 12V
G	20A 6V
H	20A 3V

* Ratings 6, 7, 8 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified. Rating 6 & 8 available with circuits 2, 3, 5, 6, 7, 8, B, C, F, J, K, L only. Rating 8 is 1/2 HP, 250VAC only for circuits 2, 3, 5, 7, 8, K, L. Ratings 7 & 9 available with circuits 1, 4, A, D only. Ratings 6 & 7 only available with lamp code 1 (125VAC neon). Ratings 8 & 9 only available with lamp code 2 (250VAC neon).

4 TERMINATION & JUMPER

TERMINATION	JUMPER
1 .250TAB (QC) NO BARRIERS	NO
A .250TAB (QC) WITH BARRIERS	NO
J .250TAB (QC) NO BARRIERS	YES T2 TO 5

NOTE: Base will not have terminal insulating barriers when connector and/or jumpers are used. Code J is optional for circuits H, G and M. Customer may provide externally wired jumper to connect terminals 2 and 5.

5 ILLUMINATION & SWITCH SEALING

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 LED lamps only.

SEALED	UNSEALED	LAMPS	ACTUATOR LENS POSITION WHEN ILLUMINATED	LAMP WIRED TO TERMINALS
S	0	None		
A	1	# 1	Independent	8+ 7-
B	2	# 1	Down	3+ 7-
C	3	# 2	Up	3+ 7-
D	4	# 1 and # 2	Down	3+ 7- 1+ 7-
E	5	# 1 and # 2	Up	1+ 7- 3+ 7-
F	6	# 1 and # 2	Independent	8+ 7- 3+ 6-
G	7	# 1 and # 2	Independent	8+ 7- 3+ 7-
H	Z	# 2	Independent	8+ 7-
Selections for Single Pole Switches Only:				
J	8	# 1 and # 2	Down	3+ 8- 6+ 7-
K	W	# 1 and # 2	Independent	8+ 7- 6+ 7-
Selections for Double Pole Switches Only:				
L	9	# 1	Down	3+ 6-
M	R	# 2	Up	3+ 6-
N	T	# 1 and # 2	Down	3+ 6- 1+ 4-
P	V	# 1 and # 2	Up	1+ 4- 3+ 6-

6, 7 LAMP

Selection 6: above terminals 1 & 4

Selection 7: above terminals 3 & 6

USE SAME CODING FOR BOTH SELECTIONS

0 - NO LAMP THIS LOCATION

NEON	INCANDESCENT ³
1 - 125VAC	4 - 3V
2 - 250VAC	5 - 6V
	6 - 12V
	7 - 18V
	8 - 24V

LED	RED	AMBER	SUPERBRIGHT GREEN	SUPERBRIGHT RED
2VDC	A	L	F	R
6VDC	B	M	G	S
12VDC	C	N	H	T
24VDC	D	P	J	V

8 BRACKET COLOR¹, PANEL SEAL

# OF SEALS: BRACKET COLOR:	RAISED BRACKET		FLUSH BRACKET	
	0	1	0	1
BLACK	1	4	B	C
WHITE	2	5	W	Y
GRAY	3	6	G	H

Mounting Hole Size: 1.450" x 0.830"
36.83mm 21.08mm

To mount multiple switches in single panel cut-out order optional interlocking mounting panels.

# OF GASKETS	ACCEPTABLE PANEL THICKNESS RANGE
0	.030" to .250" .76mm 4.76mm
1	.030" to .109" & .147" to .157" .76mm 2.77mm 3.73mm 3.98mm

6

9 ACTUATOR

0 - NO ACTUATOR (FURNISHED SEPARATELY)

	BLACK	GRAY	WHITE	RED	
CONTURA X	1	2	3	4	
CONTURA XI	6	7	8	9	

10 LENS - ABOVE LAMP #1 TERMINALS 1,4
11 LENS - ABOVE LAMP #2 TERMINALS 3,6

0 - NO ACTUATOR Z - NO LENS

CLEAR	WHITE	AMBER	GREEN	RED	BLUE	LENS STYLE
3	8	D	J	P	V	BAR LENS
4	9	E	K	R	W	ONE PIECE ■ SQUARE LENS
5	A	F	L	S	Y	TWO PIECE ■ SQUARE LENS w/clear top protective lens*
2	7	C	H	N	U	TWO PIECE ■ SQUARE LENS w/smoke top protective lens*
1	6	B	G	M	T	TWO PIECE ■ SQUARE LENS w/white top protective lens*

* ALL bottom lenses will be molded of OPAQUE material.
 Consult factory for other lens colors.

12 ACTUATOR LENS OR BODY LEGENDS⁴

00 - NO LEGEND THIS LOCATION/NO ACTUATOR

11 ON	15 OFF	OFF	ON
OFF			
12 OFF	16 ON	ON	OFF
ON			
13	17 O	O	
O			
14 O	18		O

FOR ADDITIONAL LEGEND OPTIONS & CODES, SEE PAGES 19 TO 25.

NOTES:

Shading indicates standard configurations.
 Consult factory to verify horsepower rating for your particular circuit choice.

- 1 Custom colors are available. Consult factory.
- 2 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 18V bulbs recommended for 13.8 V applications for more pleasing illumination.
- 4 With two square lenses, use selection 12 for lens above lamp 1, and use selection 14 for lens above lamp 2.

P

Z

00

-

0

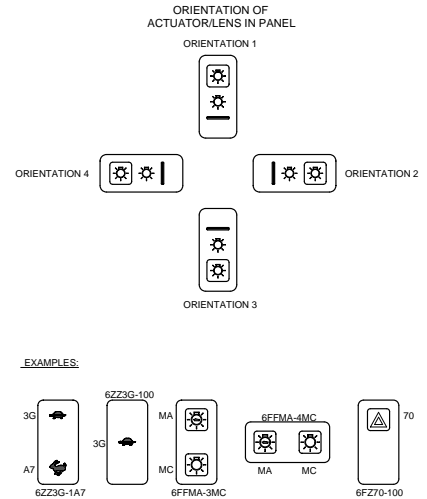
00

13 LEGEND ORIENTATION⁴

Field 13 must be 0 if legend code in selection 12 is 11 - 18.

0 - NO LEGEND

- 1 Position 1
- 2 Position 2
- 3 Position 3
- 4 Position 4



* Additional orientations and locations for legends available, consult factory.

14 ACTUATOR LENS LEGENDS⁴

Field 14 must be 00 if legend code in selection 12 is 11 - 18.

00 - NO LEGEND THIS LOCATION/NO ACTUATOR

FOR LEGEND OPTIONS & CODES, SEE PAGES 19 TO 25.

V-Series Components:

To order **switch without actuator** specify: **V** with code selections **2** through **8**.
 (ex.) V1DABC01-00000-000

To order **actuator separately**, specify **VV** with code **1-4** or **6-9** for selection 9, and codes from above scheme for selections 10 through 14. (ex.) VV6RZMA-100. To order actuator with openings for lenses and lenses separately, see page 16.

VVR

CONTURA X OR XI ACTUATOR SEPARATELY
VVR

ACTUATOR STYLE AND COLOR

Contura	Black	Gray	White	Red
X	1	2	3	4
XI	6	7	8	9

6

OPENING FOR

- 1 One bar lens
- 2 Two bar lenses
- 3 One Square lens
- 4 Two Square lenses
- 5 One Square on top/ One bar lens on bottom (Contura X only)
- 0 No lens (non-lighted)

1

00

ACTUATOR LEGENDS

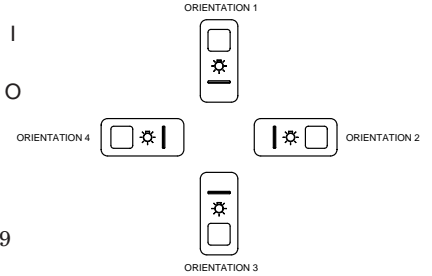
00 - No Legend

11 ON	15 OFF	ON
OFF	16 ON	OFF
12 OFF	17 ON	ON
ON	18 OFF	OFF
13	19 O	
O	20	O
14 O	21	O
	22 O	

0

LEGEND ORIENTATION¹

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



FOR ADDITIONAL LEGEND OPTIONS & CODES, SEE PAGES 19 TO 25.

NOTES

See page 17 for assembly instructions of lens into the actuator.

¹ If actuator has opening for two bar lenses or two square lenses, then legend orientation must be option 0, 1 or 2 only.

CONTURA X AND XI - Lens Separately

VVL

CONTURA X AND XI LENS SEPARATELY
VVL

LENS STYLE

- ¹ Bar Lens
- ² One Piece Square Lens
- ³ Bottom of 2-Piece Square Lens

¹ Legend not available on bar lens.

² Must also order top piece of 2-piece square lens separately. (See ordering scheme below)

2

TRANSLUCENT LENS COLOR

- 1 Clear
- 2 White
- 3 Amber
- 4 Green
- 5 Red
- 6 Blue

1

00

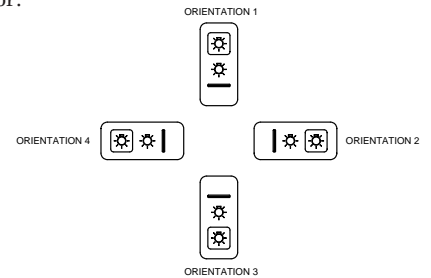
LENS LEGENDS

00 - No Legend

for vertical actuator:	for horizontal actuator:
21 OFF	25 O F F
22 ON	26 O N
23 O	27 O
24	28

LEGEND ORIENTATION ON LENS WHEN IN ROCKER

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



FOR ADDITIONAL LEGENDS OPTIONS & CODES, SEE PAGES 19 TO 25.

NOTES

To ensure proper assembly of lens, place actuator face down and firmly snap lens into position using a small blunt object.

See page 17 for assembly diagram.

CONTURA X AND XI - Top Piece of Two-Piece Square Lens - Separately

VVT

CONTURA X AND XI - TOP OF TWO-PIECE SQUARE LENS SEPARATELY
VVT

LENS COLOR

- 1 Clear
- 2 Smoke
- 3 White

1

NOTES

To ensure proper assembly of lens, place actuator face down and firmly snap lens into position using a small blunt object.

See page 17 for assembly diagram.

For Contura X or XI panel seal, order VP1. (506-11315-001)

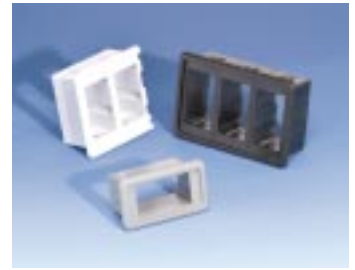
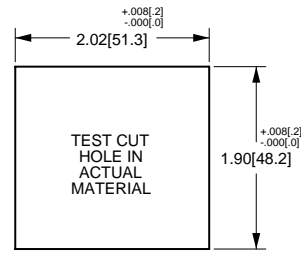
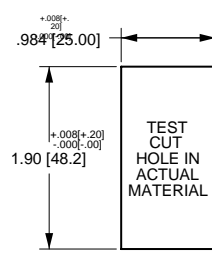
Contura Mounting Panels

MOUNTING PANEL

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

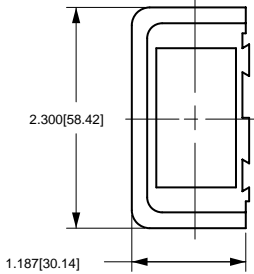
MOUNTING PANEL THICKNESS

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

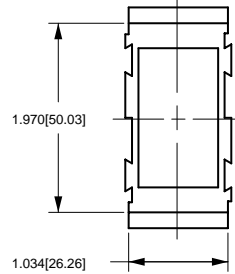


VMS MOUNTING PANEL HOLE

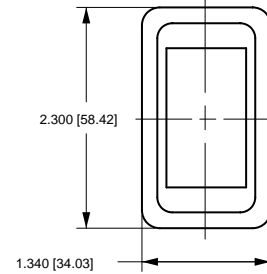
MOUNTING PANEL OPENING (2) UNITS



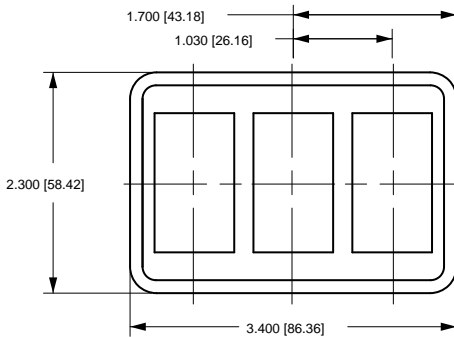
VME MOUNTING PANEL END



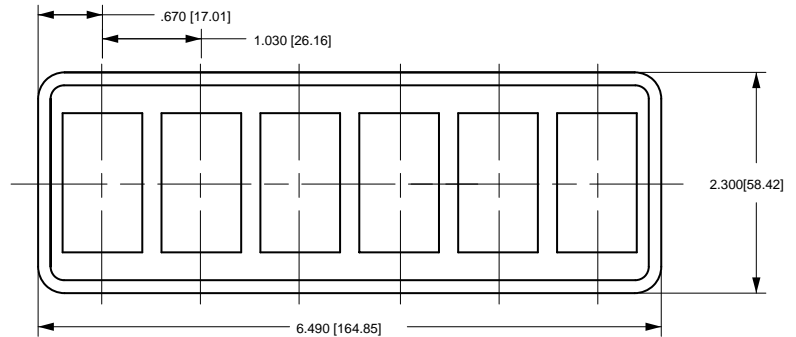
VMM MOUNTING PANEL MIDDLE



VMS MOUNTING PANEL

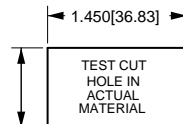


VM3 MOUNTING PANEL

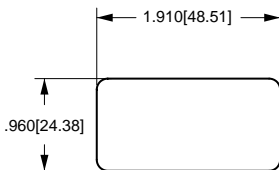
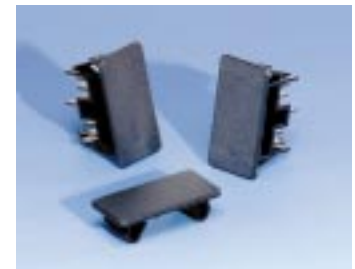


VM6 MOUNTING PANEL

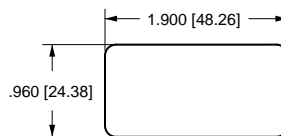
Contura Hole Plug



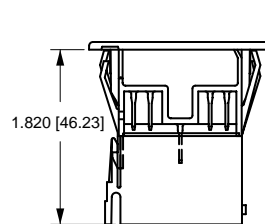
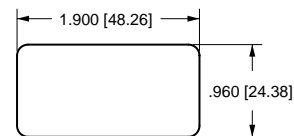
PLUG MOUNTING HOLE



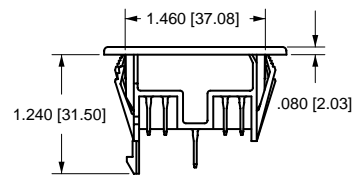
VHP MOUNTING PANEL PLUG



DETAIL VIEW VH1 HOLE PLUG (No wing serrations for ease of removal)



VH1 HOLE PLUG (No wing serrations) (With VC1 connector attached)












VH2 HOLE PLUG (With wing serrations)



DETAIL VIEW VH2 HOLE PLUG (With wing serrations)

Legends

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	REAR FOG LAMP	75	76	77
	DIFFERENTIAL LOCK	78	79	80
	ALL WHEEL DRIVE	81	82	83
	DIRECTION INDICATOR	84	85	86
ENG HATCH		87		88
HORN		89		90
BLOWER		91		92
DEPTH		93		94
BILGE PUMP		95		96
NAV LTS		97		98
COURT LTS		99		1A
PANEL LTS		1B		1C
ANCH LTS		1D		1E
TRIM TAB		1F		1G
WATER PUMP		1H		1J
WIPER		1K		1L
BILGE		1M		

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
ENG COMP		1N		1P
ACC		1R	1S	1T
NAV ANC		1U		1V
WNDLS UP/DN		1W		1Y
NAV ANCH LTS		1Z		2A
WNDLS ON/OFF		2B		2C
DOCKING LTS		2D		2E
	MUSIC	2F		2G
	BATTERY	2H		2J
	LEVER UP/DOWN	2K		
	ENG PREHEAT	2M		2N
UP		2P		2R
ANTENNA		2S		
DOWN		2T		
PRESS		2U		
AUX START		2V		2W
	GAS	2Y		2Z

NOTES

Legends shown represent positive lens legend, where image is stamped on lens. On negative lens legends, the background is stamped black so that only the image will be illuminated when the switch is actuated.

Legend size may vary on V and L-Series switches.

1 Negative legends not available on L-Series.

Legends


















LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	RIDE CONTROL	3A		3B
	KICK OUT	3C		3D
	BEACON	3E		3F
	SLOW	3G		3H
	CHECK	3J	DJ	3K
	A/C	3L		3M
	REAR DEFOGGER	3N	3P	3R
	FORK LIFT	3S		3T
	ENG PREHEAT	3U		3V
	REAR WINDOW WIPER	AY	3Y	Y5
	EXCAVATOR BACKHOE BOOM SHIFT	4B		4C
	UNLOCK	4D		4E
	TRANSMISSION LOCK	4F		4G
	FORK LIFT DOWN / UP	4H		


















LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	DRIVER SEAT LIGHTING	4J		4K
	SIDE MARKER LAMPS	4L	4M	4N
	FOG LAMP	4P	4R	4S
	TRUNK LIGHT	4T		4U
RED		4V		4W
AMBER		4Y		
	LINE INDICATOR	5B		5C
	HANDICAP	5D	BX	5E
	STOP REQUEST	5F		5G
	WINDSCREEN HEATING & VENTILATION	5H		5J
	EXTERIOR MIRROR DEFROSTER	5K		5L
	MOMENTARY LEVER	5M		5N
	SLOW	5P		5R
HIGH		5T	Y6	5U
LOW		5V	Y7	5W
PARK		5Y		5Z

NOTES
 Legends shown represent positive lens legend, where image is stamped on lens. On negative lens legends, the background is stamped black so that only the image will be illuminated when the switch is actuated.
 Legend size may vary on V and L-Series switches.

¹ Negative legends not available on L-Series.

Legends

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	WASHER	6C		
	SUPPLEMENTAL STEERING	6D		6E
	BATT PARL	6F		6G
	DEPTH SOUNDER	6H		6J
	MUTE	6K		6L
	TIMER	6M		
	MAN	6N		
	LIVWELL	6R		
	WATER TANK		6S	
	REAR WASHER/WIPER	6T	BY	6U
	FRONT DIFFERENTIAL LOCK	6V		6W
	LEVER UP/DOWN	6Y		
	BILGE PUMP#1	6Z		7A
	BILGE PUMP#2	7B		7C
	BILGE PUMP#3	7D		7E
	RIGHT STABILIZER	7F		7G
	LEFT STABILIZER	7H		7J

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	HEAD LIGHTS	7K		
	CL / ID LIGHTS	7L		
	CRUISE CONTROL	7M		
	SET/DECEL RES/ACCEL	7N		
	ENGINE BRAKE	7P		
	HIGH MED LOW	7R		
	POWER WINDOW	7S		
	ENGINE FAN	7T		
	DRIVING LIGHTS	7U		
	FOG LIGHTS	7V		
	TRAILER CL / ID LIGHTS	7W		
	ENGINE DIAGN	7Y		
	LH/RH TANK	7Z		
	MIRROR DEFOG	8A		
	BACKUP LIGHTS	8B		
	DASH LIGHTS	8C		
	CAB SLEEPER	8D		













NOTES












Legends shown represent positive lens legend, where image is stamped on lens. On negative lens legends, the background is stamped black so that only the image will be illuminated when the switch is actuated.

Legend size may vary on V and L-Series switches.

¹ Negative legends not available on L-Series.

Legends

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	STEERING	D8		D9
BATTERY PARALLEL		E1		
	MIRROR DEFROST	DD	E2	DE
	SLEEPER LIGHTS		E3	
	IDLE SPEED		E4	
SLEEPER LIGHTS		E5		
IDLE SPEED		E6		
	MOWER DECK UP/DN	E7		E8
	4 / 2 WD LOCK	E9		F1
	STEERING CONTROL	F2		F3
	DRIVE TILT UP	F4		F5
	MILL MAIN	F6		F7
	MILL REVERSAL	F8		F9
	HEAD LIGHTS	G1		G2
	WORK LIGHT	G3		G4
RAISE		G5		G6
LOWER		G7		G8

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
FWD		G9		H1
REV		H2		H3
	BROOM	H4		H5
	SANDER	H6		H7
KNEEL		H8		
	CHIME MUTE	DY	H9	DZ
R. DOOR		J1		J2
F. DOOR		J3		J4
AUX BATT		J5		J6
	SWING MAIN	J7		J8
	ACTIVE SWING	J9		K1
	CENTERING	K2		K3
	REAR OPERATION AUTO-LIFT RELEASE	K4		K5
		K6		K7
	ARROW		K8	
	FRONT WINDOW DEFROST	K9		L1
	REAR WINDOW DEFROST	L2		L3

NOTES

Legends shown represent positive lens legend, where image is stamped on lens. On negative lens legends, the background is stamped black so that only the image will be illuminated when the switch is actuated.

Legend size may vary on V and L-Series switches.

¹ Negative legends not available on L-Series.

Legends

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	TRIM	V1		
	AIR TEMP SEA	V2		
	ENGINE LIGHTS	V3		
	TRANS LIGHTS	V4		
	DEFOG	V5		
	SEAT	V6		
	UP TRAILER	V7		
	DEPTH FINDER	V8		
	EXHAUST	V9		
	SINK PUMP	W1		W2
	STORAGE LIGHTS	W3		
	UP HATCH DOWN	W4		
	TRAILER 3rd AXLE LIFT	W5	W6	W7
	TRAILER 3rd AXLE LIFT	W8		
	HANDLE BAR HEATER	W9		Y1
	PARKING BRAKE	Y2	DH	Y3
	ARROW (UP)	Y8		Y9

LEGEND		LEGEND CODE		
SYMBOL	NAME (SYMBOL MEANING)	BODY	LENS	
			NEGATIVE ¹	POSITIVE
	ARROW (DOWN)	Z1		Z2
	RIGHT SIDE KNIFE	Z3		Z4
	HYDRAULIC HAMMER	Z5		Z6
	HYDRA-CLAMP	Z7		Z8
	SHOVEL FLOAT	Z9		AP
	SHOVEL HORIZONTALLY	AR		AS
	HYDRAULIC HITCH	AT		AU
	LOCK	AV	BW	AW
	LIGHT	AZ		BA
	BLOWER FAST	BB		BC
	ARROW (LEFT)	BD		BE
	ARROW (RIGHT)	BF		BG
	HYDRAULIC FLUID	BH		BJ
	WORK LIGHTS	BK		BL
	TRACTOR WITH REAR PTO	BM		BN
	READING LIGHTS	BP		BR
	5 TH GEAR LOCKOUT	BS		BT

NOTES

Legends shown represent positive lens legend, where image is stamped on lens. On negative lens legends, the background is stamped black so that only the image will be illuminated when the switch is actuated.

Legend size may vary on V and L-Series switches.

¹ Negative legends not available on L-Series.



1 SERIES

V

2 CIRCUIT

Terminal Connections as viewed from bottom of switch:

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

() - momentary
 SP - single pole - uses terminals 1, 2 & 3.
 DP - double pole uses terminals 1, 2, 3, 4, 5 & 6.
 Terminals 7, 8, 9 & 10 for lamp circuit only.

Position:	1	2	3
	2 & 3	CONNECTED	1 & 2
	5 & 6	TERMINALS	4 & 5
SP	A ON	NONE	OFF
DP	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)

SPECIAL CIRCUITS

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	1 & 2
E*	5 & 6	5 & 3	5 & 1

* Jumper between terminals 2 & 5 for circuits H, G, & M to be specified in selection 4. 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. Special circuits H, M & E not available with ratings 5 through 9.

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- 5** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
UL Recognized, CSA Certified
- 6*** 15A 125VAC 1/2 HP, 12(2)A 125 VAC μ T85
- 7*** 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
- 8*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(2)A 250 VAC μ T85
- 9*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(6)A 250 VAC T85
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 20A 14V, 10A 14VT (circuits 1, 4, A, & D only)
- F** 10A 14V, 6A, 14VT (circuit G only)
- G** 20A 6V
- H** 20A 3V
- L** 15A 125 VAC, 10A 250VAC,
1/2 HP 125-250 VAC; 6A 125 VAC L

* Ratings 6, 7, 8 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified, require terminations A or B for double pole circuits, and 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 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.

4 TERMINATION/BASE STYLE

		Jumper
8 Base	10 Termination	
1	2 .250 TAB (QC) no barriers	No
A	B .250 TAB (QC) with barriers	No
J	K .250 TAB (QC) no barriers	Yes T2 to 5
3	4 Solder Lug no barriers	No
C	D Solder Lug	No
5	6 Wire Leads no barriers	No
E	F Wire Leads	No

Note: Codes J & K for circuits H, G & M. Ratings 6, 7, 8 & 9 require terminations A or B only.

5 ILLUMINATION & SWITCH SEALING

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 LED lamps only.

SEALED	UNSEALED	ACTUATOR LENS POSITION WHEN ILLUMINATED	LAMP WIRED TO TERMINALS
S	0	None	
A	1	# 1 Independent	8+ 7-
B	2	# 1 Down	3+ 7-
C	3	# 2 Up	3+ 7-
D	4	# 1 Down & # 2 Down	3+ 7- 1+ 7-
E	5	# 1 Up & # 2 Up	1+ 7- 3+ 7-
F	6	# 1 Independent & # 2 Up	8+ 7- 3+ 6-
G	7	# 1 Independent & # 2 Up	8+ 7- 3+ 7-
H	Z	# 2 Independent	8+ 7-

Selections for Single Pole Switches Only:

J	8	# 1 Down & # 2 Independent	3+ 8- 6+ 7-
K	W	# 1 Independent & # 2 Independent	8+ 7- 6+ 7-

Selections for Double Pole Switches Only:

L	9	# 1 Down	3+ 6-
M	R	# 2 Up	3+ 6-
N	T	# 1 Down & # 2 Down	3+ 6- 1+ 4-
P	V	# 1 Up & # 2 Up	1+ 4- 3+ 6-
U	Y	# 1 Independent & # 2 Independent	8+ 7- 10+ 9-

6, 7 LAMP

Selection 6: above terminals 1 & 4; Selection 7: above terminals 3 & 6
 USE SAME CODING FOR BOTH SELECTIONS

0 - NO LAMP THIS LOCATION

Neon **1** - 125VAC **2** - 250VAC

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

LED

	Red	Amber	Green	Red
2VDC	A	L	F	R
6VDC	B	M	G	S
12VDC	C	N	H	T
24VDC	D	P	J	V

1

8
Bracket

-

6

9
Actuator

P

10
Lens

Z

11
Lens

00

12
Legend

-

0

13
Orientation

00

14
Legend

8 BRACKET COLOR¹, PANEL SEAL (External Foam Gasket)

Contura X & XI with flush bracket

of gaskets: 0 1 2

Bracket Color:

Black **B C D**

White **W Y Z**

Gray **G H J**

Contura X, XI, & XII with raised bracket

of gaskets: 0 1

Bracket Color:

Black **1 4**

White **2 5**

Gray **3 6**

9 ACTUATOR

0 - No Actuator (Furnished Separately)

Black Gray White Red

Contura X **1 2 3 4**

Contura XI **6 7 8 9**

Contura XII **J K N M**

Lens style & location



10 LENS - ABOVE LAMP #1 TERMINALS 1,4 11 LENS - ABOVE LAMP #2 TERMINALS 3,6

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

0 - No Actuator Z - No Lens

Clear White Amber Green Red Blue Lens Style

3 8 D J P V Bar lens

4 9 E K R W One piece square lens

5 A F L S Y Two piece square lens

2 7 C H N U Two piece square lens

1 6 B G M T Two piece square lens

w/clear top protective lens*

w/smoke top protective lens*

w/white top protective lens*

*All bottom lenses will be molded of opaque material. Consult factory for other lens colors.

To order V-Series components separately:

Switch without actuator, specify: V with code selections **2 - 8**. (ex.) V1DABC01-00000-000
Actuator with lenses, specify: **VV** with code selections 9-14.
Actuator & lenses separately see pages 20 - 21.

NOTES:

Shading indicates standard configurations.

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

1 Custom colors are available. Consult factory.

2 White imprinting is standard on black actuators; Black imprinting is standard on white, red and gray actuators; Custom colors are available, consult factory.

4 With two square lenses, use selection 12 for lens above lamp 1, and use selection 14 for lens above lamp 2.

12 ACTUATOR LENS OR BODY LEGENDS²

00 - NO LEGEND THIS LOCATION/NO ACTUATOR

Contura X & XI

Contura XII

11 ON OFF	15 O O F N F	21 OFF	25 O F F
12 OFF ON	16 O O N F F	22 ON	26 O N
13 O	17 O	23 O	27 O
14 O 	18 O	24 	28

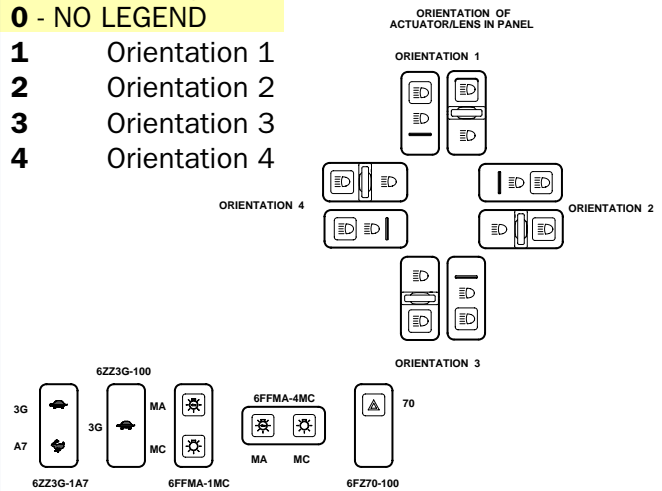
For additional legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION⁴

Field 13 must be 0 if legend code in selection 12 is 11 - 18. Center of actuator marking is not available for Contura XII.

0 - NO LEGEND

- Orientation 1
- Orientation 2
- Orientation 3
- Orientation 4



14 ACTUATOR LENS LEGENDS

Field 14 must be 00 if legend code in selection 12 is 11 - 18.

00 - NO LEGEND this location/NO ACTUATOR

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, see pages 34 - 42 of this catalog



Contura X



Contura XI



Contura XII

V

1
Series

1

2
Circuit

D

3
Rating

A

4
Termination

S

5
Illumination

W

6
Lock

0

7
Lamp

1 SERIES

V

2 CIRCUIT

Terminal Connections as viewed from bottom of switch:		8 terminal	10 terminal
		8 - 7	8 - 7
		1 - 4	1 - 4
		2 - 5	2 - 5
		3 - 6	3 - 6
			10 - 9

SP - single pole - uses terminals 1, 2 & 3.
DP - double pole uses terminals 1, 2, 3, 4, 5 & 6.
Terminals 7, 8, 9 & 10 for lamp circuit only.

Position:		<u>1</u>	<u>2</u>	<u>3</u> (lock)
		2 & 3	CONNECTED	1 & 2
SP	DP	5 & 6	TERMINALS	4 & 5
1	A	ON	NONE	OFF
4	D	ON	NONE	ON
9	N	OFF	NONE	ON

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- 5** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
UL Recognized, CSA Certified
- 7*** 15A 125VAC 1/2 HP, 12(6)A 125 VAC T85
- 9*** 10A 250VAC, 15A 125VAC, 1/2 HP 125-250
VAC, 12(6)A 250 VAC T85
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 20A 14V, 10A 14VT
- G** 20A 6V
- H** 20A 3V
- L** 15A 125 VAC, 10A 250VAC,
1/2 HP 125-250 VAC; 6A 125 VAC L

* Ratings 7 & 9 are UL, CSA, VDE, DEMKO, SEMKO, NEMKO, FIMKO and BEAB certified, require terminations A or B for double pole circuits, and are not available with wire lead or solder lug terminations. Rating 7 & 9 only available with circuits 1, 4, A & D. Rating 7 must specify lamp code 1 (125VAC neon). Rating 9 must specify lamp code 2 (250VAC neon).

4 TERMINATION/BASE STYLE

8 Base	10 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

Note: Ratings 7 & 9 require terminations A or B only.

5 ILLUMINATION & SWITCH SEALING

Lamp #2 located above terminals 3 & 6 end of switch.
Positive (+) and negative (-) symbols apply to LED lamps only.

SEALED	UNSEALED	LAMPS	ILLUMINATED	ACTUATOR LENS POSITION WHEN WIRED TO	LAMP TERMINALS
S	0	None			
C	3	# 2	Up		3+ 7-
H	Z	# 2	Independent		8+ 7-
Selections for Double Pole Switches Only:					
M	R	# 2	Up		3+ 6-

6 LOCK

Lock located above terminals 1 & 4 end of switch.

W Lock Option

7 LAMP

Lamp located above terminals 3 & 6 end of switch

0 - NO LAMP THIS LOCATION

Neon **1** - 125VAC **2** - 250VAC

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

LED	Red	Amber	Green	Red
2VDC	A	L	F	R
6VDC	B	M	G	S
12VDC	C	N	H	T
24VDC	D	P	J	V

1

8
Bracket

-

1

9
Actuator

P

10
Lens

B

11
Function

00

12
Legend

-

0

13
Orientation

8 BRACKET COLOR¹, PANEL SEAL (external foam gasket)

Raised Bracket

of gaskets: 0 1

BRACKET COLOR:

Black	1	4
White	2	5
Gray	3	6

9 ACTUATOR COLOR & STYLE

Hard Surface Actuators

	Black	Gray	Red	White
Contura X	1	2	3	4

Actuator orientation above terminals:



10 LENS

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



Lens above terminals 3, 6

Z No Lens

Clear White Amber Green Red Blue

3	8	D	J	P	V	Bar lens
4	9	E	K	R	W	One piece square lens
5	A	F	L	S	Y	Two piece square lens w/clear top protective lens*
2	7	C	H	N	U	Two piece square lens w/smoke top protective lens*
1	6	B	G	M	T	Two piece square lens w/white top protective lens*

*All bottom lenses will be molded of opaque material. Consult factory for other lens colors.

11 ACTUATOR LOCK FUNCTION¹ & COLOR

Locks in Up Position	Locks in Down Position	Locks in Up & Down Position	Lock Color
A	H	R	Match Actuator
B	J	S	Black
C	K	T	White
D	L	V	Red
K	M	W	Safety Orange

12 ACTUATOR LEGENDS²

00 - NO LEGEND

21	OFF		25	O F F	
22	ON		26	O N	
23	O		27	O	
24	I		28	I	

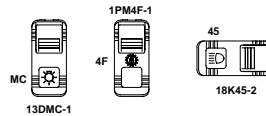
For additional legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION

Field 13 must be 0 if legend code in selection 12 is 21 - 28.

0 - NO LEGEND

1	Orientation 1	<p>ORIENTATION OF ACTUATOR/LENS IN PANEL</p> <p>ORIENTATION 1</p> <p>ORIENTATION 2</p> <p>ORIENTATION 3</p> <p>ORIENTATION 4</p>
2	Orientation 2	
3	Orientation 3	
4	Orientation 4	



Contura X with lock

NOTES:

Shading indicates standard configurations.

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

1 Custom colors are available. Consult factory.

2 White imprinting is standard on black actuators; Black imprinting is standard on white, red and gray actuators; Custom colors are available, consult factory.

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

To order base switch separately, and Contura II, III & IV actuators separately, see pages 10-17.

To order Contura X, XI & XII actuators and lenses separately, refer to the following ordering information:

Contura X, XI & XII Actuator with Assembled Lenses

VVR	6	1	1	00	0
1 Actuator	2 Style & Color	3 Lens	4 Lens	5 Actuator Legend	6 Legend Orientation

1 CONTURA X, XI, XII ACTUATOR VVR

2 ACTUATOR STYLE AND COLOR

Contura	Black	Gray	White	Red
X	1	2	3	4
XI	6	7	8	9
XII	J	K	N	M

3,4 LENS STYLE & COLOR¹

0	NO LENS						
3	8	D	J	P	V	Bar	
4	9	E	K	R	W	1-pc square	
5	A	F	L	S	Y	2-pc square	
2	7	C	H	N	U	2-pc square	
1	6	B	G	M	T	2-pc square	
							<small>w/clear top protective lens*</small>
							<small>w/smoke top protective lens*</small>
							<small>w/white top protective lens*</small>

*All bottom lenses will be molded of opaque material. Consult factory for other lens colors.

4 ACTUATOR LENS OR BODY LEGENDS²

00 NO LEGEND THIS LOCATION/NO ACTUATOR

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

For additional legend options & codes, see pages 34 - 42 of this catalog

5 LEGEND ORIENTATION¹

0 NO LEGEND

1 Orientation 1

2 Orientation 2

3 Orientation 3

4 Orientation 4

NOTES

1 If actuator has two bar lenses or two square lenses, then legend orientation must be option 0, 1 or 2 only.

2 If only one lens, specify 0 in selection 4.

3 Center of actuator marking is not available for Contura XII.

Contura X, XI & XII Actuator Separately

VVR	6	1	00	0
1 Actuator Separately	2 Style & Color	3 Lens Opening	4 Actuator Legend	5 Legend Orientation

1 CONTURA X, XI, XII ACTUATOR SEPARATELY VVR

2 ACTUATOR STYLE AND COLOR

Contura	Black	Gray	White	Red
X	1	2	3	4
XI	6	7	8	9
XII	J	K	N	M

3 LENS OPENING FOR¹

1 One bar lens

2 Two bar lenses

3 One Square lens

4 Two Square lenses

5 Square lens on top/Bar lens on bottom (Contura X only)

4 ACTUATOR LENS OR BODY LEGENDS

00 NO LEGEND THIS LOCATION/NO ACTUATOR

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

For additional legend options & codes, see pages 34 - 42 of this catalog

5 LEGEND ORIENTATION¹

0 NO LEGEND

1 Orientation 1

2 Orientation 2

3 Orientation 3

4 Orientation 4

NOTES

Center of actuator marking is not available for Contura XII.

1 If actuator has opening for two bar lenses or two square lenses, then legend orientation must be option 0, 1 or 2 only.

VSERIES
 Contura II & III
 Contura IV
 Contura X & XI
 Contura XII
 Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA 94080 • (415) 550-0300 • Mail: Contura X & XI • (800) 256-9200 • Outside USA: (800) 256-9200 • www.stevenengineering.com



1 piece lens/bar lens are positioned the same as bottom lens for assembly, minus the top lens. Lenses snap in from bottom.

Contura X, XI & XII Lens Separately



1
Lens
Separately



2
Lens
Style



3
Lens
Color



4
Lens
Legend



5
Legend
Orientation

**1 CONTURA X, XI & XII LENS SEPARATELY
VVL**

2 LENS STYLE

- 1** Bar Lens¹
- 2** One Piece Square Lens
- 3** Bottom of 2-Piece Square Lens²

3 TRANSLUCENT LENS COLOR

- 1** Clear
- 2** White
- 3** Amber
- 4** Green³
- 5** Red
- 6** Blue³

NOTES

- 1 Legend not available on bar lens.
- 2 Must also order top piece of 2-piece square lens separately. (See below.)
- 3 Not recommended in conjunction with neon lamps.

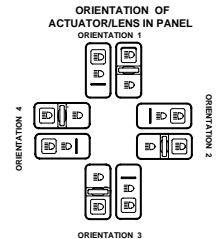
4 LENS LEGENDS
00 NO LEGEND THIS LOCATION/NO ACTUATOR

horizontal actuator	vertical actuator
21 OFF	25 O F F
22 ON	26 O N
23 O	27 O
24	28

For additional legend options & codes, see pages 34 - 42 of this catalog

5 LEGEND ORIENTATION ON LENS WHEN IN ROCKER

- 0** NO LEGEND
- 1** Orientation 1
- 2** Orientation 2
- 3** Orientation 3
- 4** Orientation 4



Contura X, XI & XII Top Piece of Two-Piece Square Lens Separately



1
Lens
Separately



2
Lens
Color

**1 CONTURA X, XI & XII - TOP OF TWO-PIECE SQUARE LENS SEPARATELY
VVT**

2 LENS COLOR

- 1** Clear
- 2** Smoke
- 3** White

Contura X, XI & XII Panel Seal

Mounting between switch bezel and your panel, our **VP1** panel seal protects critical components behind the panel.



VP	1	6	6	-	B	1	1
1 Series	2 Termination	3 Illumination	4 Illumination		5 Housing Color	6 Lens Design	7 Lens Design

1 SERIES

VP	Illuminated plug
H2¹	housing only
H3²	lamp module only
HP1-01³	VP connector

5 HOUSING COLOR

B	Black
W	White
R	Red
G	Gray

2 TERMINATION

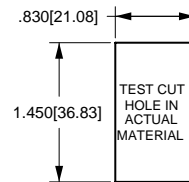
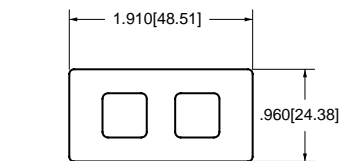
1	.250tabs
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6,7 LENS DESIGN lamp #1 or #2^{4,5,6}

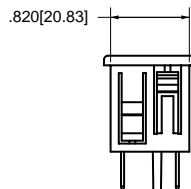
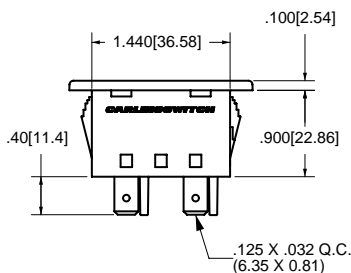
Z	no lens
1	Transparent diamond square ¹⁰
2	Translucent square ⁷

3,4 ILLUMINATION lamp #1 or #2^{4,5,6}

0	no lamp	
NEON ⁸		
1	125VAC	2 250VAC
INCANDESCENT		
4	3V	5 6V 6 12V
7	18V	8 24V
LED		
Amber Green Red		
L	F	R 2VDC
M	G	S 6VDC
N	H	T 12VDC
P	J	V 24VDC



ILLUMINATED PLUG MOUNTING HOLE



MOUNTING PANEL THICKNESSES:

.062 [1.57]	.250 [6.35]
.093 [2.36]	.375 [9.52]
.125 [3.17]	.500 [12.70]
.187 [4.75]	

K
8
Lens Color

K
9
Lens Color

-

00
10
Legend

0
11
Orientation

00
12
Legend

8,9 LENS COLOR/TYPE lamp #1 or #2^{4,5,6}

Z no lens

Clear	White	Amber	Green ⁹	Red	Blue ⁹	Lens style
4	9	E	K	R	W	1 piece
5	A	F	L	S	Y	2 piece w/ clear top
2	7	C	H	N	U	2 piece w/ smoke top
1	6	B	G	M	T	2 piece w/ white top

10 LAMP #1 LENS OR BODY LEGENDS⁵

00 No marking

See pages 34 - 42 for complete listings of available legends.

NOTES

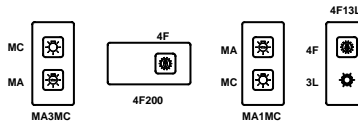
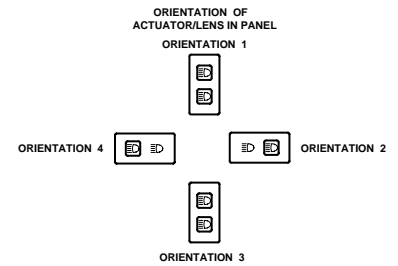
Shading indicates standard configurations.

- To order housing with lenses only, specify H2 followed by fields 5-12.
- To order lamp module only, specify H3 followed by fields 2-3.
- To order VP connector, specify HP1-01.
- If only 1 lamp, specify 0 in selection 4 and Z in selections 7 & 9.
- Lamp and lens #1 located over terminals 1A and 1B.
- Lamp and lens #2 located over terminals 2A and 2B.
- Available with 2 piece lens option only.
- Not recommended with blue or green lenses.
- Not recommended with neon lamps.
- Available with one piece lens option only.

11 MARKING ORIENTATION

0 No marking

- Position 1
- Position 2
- Position 3
- Position 4



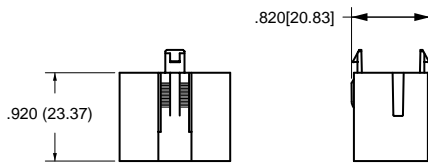
12 LAMP #2 LENS OR BODY LEGENDS⁶

00 No marking

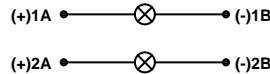
See pages 34 - 42 for complete listings of available legends.



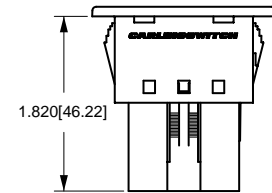
Illuminated Plug



ILLUMINATED PLUG CONNECTOR



CIRCUIT DIAGRAM



ILLUMINATED PLUG WITH CONNECTOR

To move ahead in your industry, rely on our inside connections



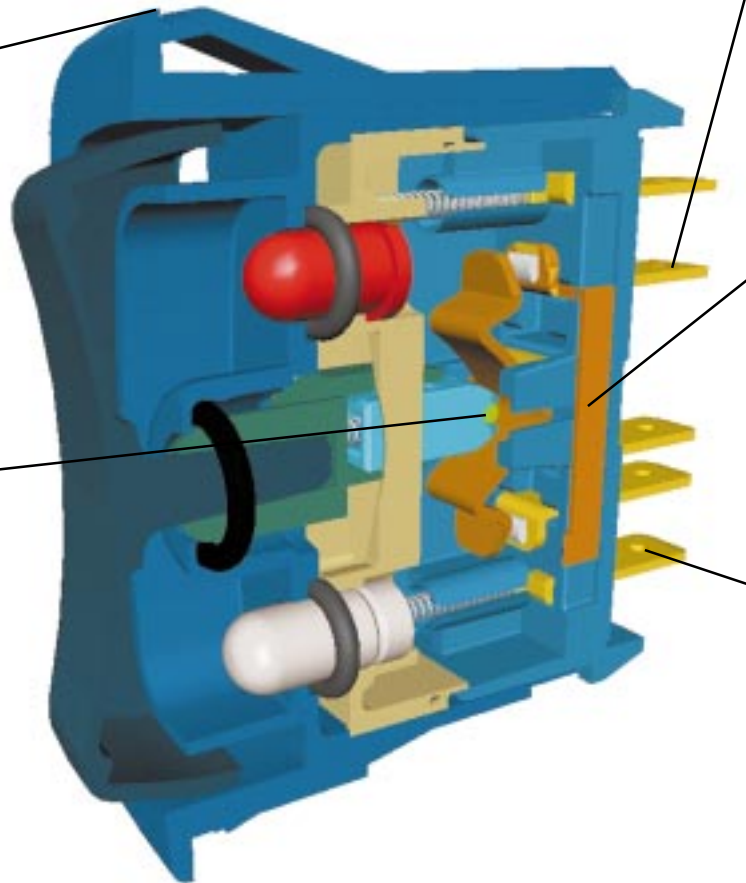
Making the right connections has never been easier — now that Carlingswitch has introduced the L-Series Rocker Switch. Not only does this innovative switch offer total design flexibility, it sets new standards for both performance and reliability. It's IP67 certified, and able to withstand temperatures from -40°C to +85°C. Features include countless switch and lamp circuit combinations, LED illuminated lenses or laser etched rockers, as well as hundreds of legend choices and several accessories.

Eliminates need for retooling

Neatly proportioned, our L-Series fits into industry standard mounting holes of 1.734" x .867" and 44.0mm x 22.0mm

Withstands extreme temperatures

Roller pin mechanism eliminates need for lubricants, so it can withstand from -40°C to +85°C.



Integrates easily into your system

You can choose from a variety of termination options, including .250 TAB QC & .187 TAB QC.

Ensures greater shock protection

Welded lamp connection and one-piece internal, jumperless terminal withstand extreme shock and vibration.

Maximizes your design flexibility

Twelve terminals offer you an extensive range of switch and lamp circuit options, including LED or incandescent illumination.

L-Series Accessories

Carlingswitch also offers L-Series accessories to meet the needs of the Transportation Market: including hole plugs and connectors. Please consult factory for more information.



Hole Plug



Connector

General Specifications

Electrical

Contact Rating4VA @ 24VDC (MAX) resistive
 15 amps, 125 VAC
 10 amps, 250 VAC
 20 amps, 4-14 VDC
 15 amps, 15-28 VDC

Dielectric Strength1250 Volts RMS between pole to pole
 3750 Volts RMS between live parts and accessible surfaces

Insulation Resistance . . . 50 Megohms

Initial Contact Resistance. 10 milliohms max. @ 4 VDC

Life 100,000 cycles maintained, 50,000 cycles momentary at rated voltage and current

Contacts90/10 silver-nickel, silver tin-oxide, gold

TerminalsBrass or copper/silver plate
 3/16" (4.76mm) & 1/4" (6.3mm)
 Quick Connect terminations standard.

Mechanical

Endurance 250,000 cycles minimum

Physical Characteristics

LightedIncandescent - rated 10,000 hours
 LED - rated 100,000 hours 1/2 life (LED is internally ballasted for voltages to 24 VDC)

SealsRocker, base & bracket are sealed.

BasePolyester blend rated to 85°C with a

ActuatorNylon 66 Reinforced, rated to 105°C (modular lens). Locking rocker, standard rocker & paddle. Laser etching with a polycarbonate actuator.

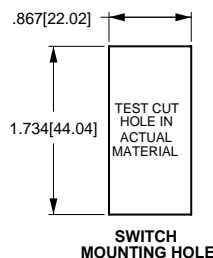
LensPolycarbonate rated at 100°C. Front snap-in.

ConnectorNylon 66 rated at 85°C. Polarized.

Actuator Travel (Angular Displacement)

2 position26°
 3 positions13° from center

Mounting Specifications



Environmental

EnvironmentalIP67, representing an index of protection as applied to electrical equipment in accordance with IEC 529, BS 5490, DIN 400 50 & NFC 20 010.

Corrosion Resistance . . . MFG Class III per ASTM B-827 & B-845, Method H, with 3 years exposure

Operating Temperature . . .-40° C to + 85° C

Vibration 1Per 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 and pre and post test contact resistance.

Vibration 2Resonance search
 24-50 Hz 0.40 DA
 50-2000 ±10 G's peak
 Results 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 chatter.

ShockPer 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.

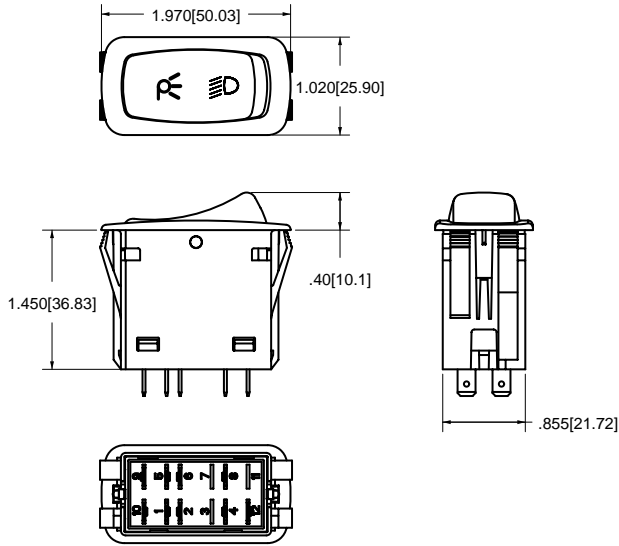
Salt SprayPer Mil-Std 202F, Method 101D, Test Condition A, 48 Hrs.

Thermal ShockPer Mil-Std 202F, Method 107F, Test Condition A, -55°C to 85°C. Test criteria - pre and post test contact resistance

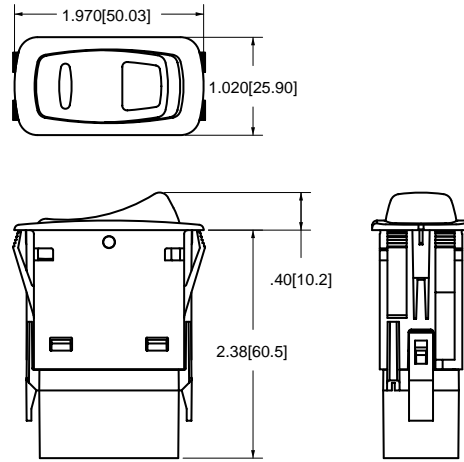
Moisture ResistancePer Mil-Std 202F, Method 106E, Test Criteria - pre and post test contact resistance

L-Series Dimensional Specifications & Accessories

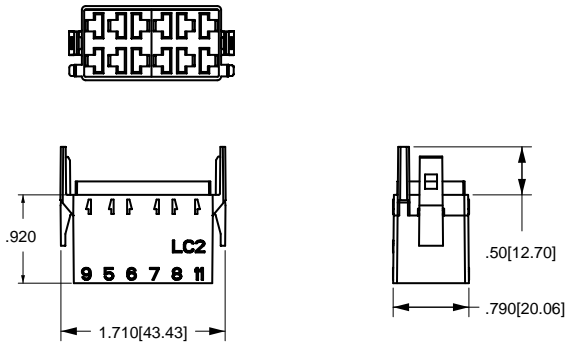
L SERIES
SHOWN WITH LASER ETCHED
ACTUATOR



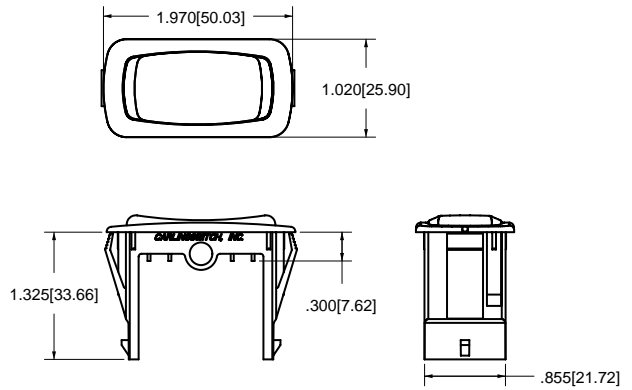
L SERIES
SHOWN WITH SNAP-IN LENS
AND CONNECTOR



L SERIES
CONNECTOR



L SERIES
HOLE PLUG



Switch Circuit Diagrams¹

CIRCUIT CODE	SCHEMATIC	CIRCUIT CODE	SCHEMATIC	CIRCUIT CODE	SCHEMATIC
11		23		53	
12		24		54	
13		25		55	
14		26		56	
15		27		57	
16		28		58	
17		30		61	
18		31		62	
21		51		63	
22		52		64	

NOTE
See page 31 for schematic legend.
1 Other circuits available, consult factory.

Switch Circuit Diagrams¹

CIRCUIT CODE	SCHEMATIC
65	
66	
67	
68	
69	
70	
71	
72	

NOTE
See page 31 for schematic legend.
1 Other circuits available, consult factory.

Lamp Circuit Diagrams¹

ILLUMIN. CODE	CIRCUIT DIAGRAM
A	
B	
C	
D	
E	
F	
G	
H	

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

NOTE
1 Other circuits available, consult factory.

L	11	D	3	C	H	N
1 Series	2 Circuit	3 Rating	4 Termination	5 Illumination	6 Lamp	7 Lamp

1 SERIES

- L** Standard Switch
- L** w/o rocker
- LL** Actuator Only

2 CIRCUIT

() - momentary

Position:	<u>1</u>	<u>2</u>	<u>3</u>
	2&4	CONNECTED	1&2
SP DP	6&8	TERMINALS	5&6
11	21 ON	NONE	OFF
12	22 (ON)	NONE	OFF
13	23 ON	NONE	(OFF)
14	24 ON	NONE	ON
15	25 ON	NONE	(ON)
16	26 ON	OFF	ON
17	27 ON	OFF	(ON)
18	28 (ON)	OFF	(ON)

CIRCUITS WITH JUMPER TERMINALS

30	(2,4&5),(1,6&8)	OFF, OFF	(1,2&8),(4,5&6)
31	1,2&5	2,3&7	2,4&8

PROGRESSIVE CIRCUITS

51	3&4	2&3	1&2
52	3&4	2&3	OFF
53	(3&4)	2&3	1&2
54	(3&4)	2&3	OFF
55	(3&4)	2&3	(1&2)
56	(3&4)	2&3	(OFF)
57	3&4	2&3	(OFF)
58	2&4	2&3	1&2
61	3&4,7&8	2&3,6&7	1&2,5&6
62	3&4,7&8	2&3,6&7	OFF
63	(3&4),(7&8)	2&3,6&7	1&2,5&6
64	(3&4),(7&8)	2&3,6&7	OFF,OFF
65	(3&4),(7&8)	2&3,6&7	(1&2),(5&6)
66	(3&4),(7&8)	2&3,6&7	(OFF)
67	3&4,7&8	2&3,6&7	(OFF)
68	2&4,7&8	2&4,OFF	OFF
69	2&4,1,7&8	2&4,OFF	OFF
70	(2&4),(7&8)	2&4,5&7	(1&2),(5&7)
71	(2&4),(7&8)	2&4,5&7	1&2,5&7
72	2&4,7&8	2&4,5&7	1&2,5&7

3 RATING

- 1** .4VA @ 28VDC Resistive
- 4** 10A 250VAC 1/2 HP, 15A 125 VAC 1/2 HP
No Agency Listings
- B** 15A 24V
- C** 20A 18V
- D** 20A 12V
- E** 15A 12V
- G** 20A 6V
- H** 20A 3V

4 TERMINATION

- 1** .250 (6.4mm) TAB (QC)
- 2** Solder Lug
- 3** .187 (4.7mm) TAB (QC)
- 4** PC
- 5** Wire Leads

5 ILLUMINATION

Lamp #1 located above terminals 9 & 10 end of switch.

Lamp #2 located above terminals 11 & 12 end of switch.

Positive (+) and negative (-) symbols apply to LED lamps only.

	LAMPS	ILLUMINATION TYPE	LAMP WIRED TO TERMINALS	
S	None			
A	# 1	Independent	10+	9-
B	# 2	Independent	12+	11-
C	# 1	Independent	10+	9-
	&# 2	Independent	12+	9-
D	# 1	Dependent	4+	9-
E	# 1	Independent	10+	9-
	&# 2	Dependent	4+	9-
F	# 1	Independent	10+	9-
	&# 2	Dependent	8+	9-
G	# 1	Dependent	4+	9-
	&# 2	Independent	10+	9-
H	# 1	Both Independent	10+	9-
	&# 2	(in series)		

6, 7 LAMP #1 and/or LAMP #2²

Selection 6: above terminals 10 and 9

Selection 7: above terminals 12 and 11

Use same coding for both selections.

0 - NO LAMP THIS LOCATION

Incandescent

4 3V

5 6V

6 12V

7 18V

8 24V

LED	Red	Amber	Green
2VDC	A	L	F
6VDC	B	M	G
12VDC	C	N	H
24VDC	D	P	J

* Blue/Green and White LEDs also available.
Consult factory.

1

8
Bracket

-

3

9
Actuator

A

10
Lens

A

11
Lens

45

12
Legend

-

1

13
Orientation

48

14
Legend

8 BRACKET COLOR¹

BRACKET

- 1** Black
- 2** White
- 3** Gray
- 4** Red

9 ACTUATOR STYLE & COLOR¹

ROCKER

- A** Black
- B** White
- C** Gray
- D** Red

3 Laser Etched

PADDLE

- J** Black
- N** White
- K** Gray
- M** Red
- 4** Laser Etched

10 & 11 LENS STYLE & COLOR

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

0 - No Actuator **Z** - No Lens

	Clear	White	Amber	Green	Red	Blue	Lens Style
1	6	B	G	M	T		Large
2	7	C	H	N	U		Large
3	8	D	J	P	V		Bar
4	9	E	K	R	W		Bar
5	A	F	L	S	Y		Translucent
							Laser Etch
							Background
							Color

L-Series Components:

To order **switch without actuator** specify: **L** with code selections **2** through **8**.

(ex.) L1113S001-00000-000

To order **actuator separately** specify: **LL** with codes from above scheme for selections **9** through **14**.

(ex.) LLANZAMA-100

NOTES:

Shading indicates available options. Contact factory for availability of other listed options. Consult factory to verify horsepower rating for your particular circuit choice.

1 Custom colors are available. Consult factory.

2 18V bulbs recommended for 13.8 V applications for sharper illumination.

12 LASER ETCH, LENS OR BODY LEGENDS

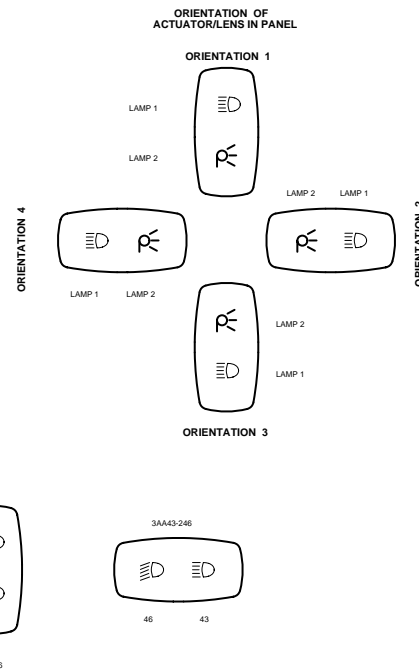
00 - NO LEGEND

For legend options & codes, see pages 34 - 42 of this catalog

13 LEGEND ORIENTATION

0 - NO LEGEND

- 1** Vertical (lamp 1 on top)
- 2** Horizontal (lamp 1 on right)
- 3** Vertical (lamp 1 on bottom)
- 4** Horizontal (lamp 1 on left)



14 ACTUATOR LENS LEGENDS

00 NO LEGEND

For legend options & codes, see pages 34 - 42 of this catalog



L-Series

LR-Series



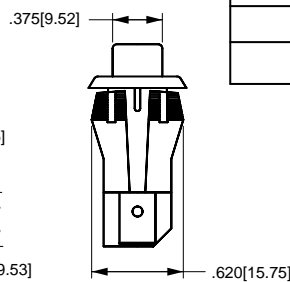
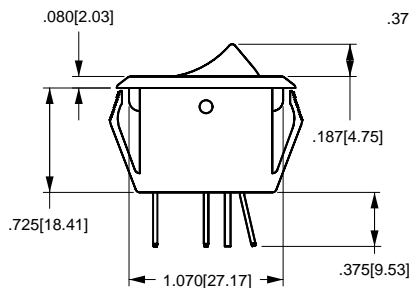
The LR-Series Curvette single pole illuminated miniature snap-in rocker switches are available with a rocker or paddle actuator. These lighted switches are available in a number of lamp voltages with internationally approved current ratings up to 16 amps. Due to the patented mounting ear design, these switches are compatible with a wide range of standard panel cutouts.

Specifications

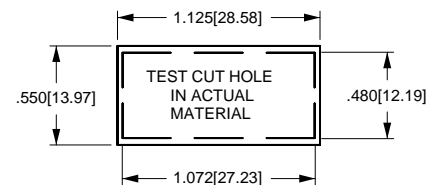
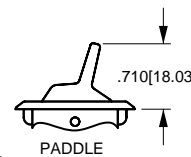
- Certifications*: UL, CSA, VDE, SEMKO, DEMKO, NEMKO, FIMKO, SEV and BEAB
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Translucent Nylon or Polycarbonate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



.250 TAB (Q.C.)	SOLDER LUG	WIRE LEAD
TERMINAL TYPE		



MOUNTING HOLE
Panel Thickness: .025 min. - .187 max.
Specific cutout dimension range dependent on panel thickness and material.
Consult factory.

LR	A	21	1	- R	S	- B	/	125N
SERIES	RATING¹	RATING¹	ACTUATOR STYLE²	ACTUATOR STYLE²	ACTUATOR COLOR	BASE COLOR⁴	LAMP VOLTAGE	LAMP VOLTAGE
LR SINGLE POLE	21 10A 250 VAC 16 A 125VAC 10(4)A 125VAC _μ	51 LOW VOLTAGE FOR 6, 12, 18 & 24 VOLT LAMPS	C CLEAR ROCKER ³ P PADDLE R ROCKER	A APRICOT (amber) C COCONUT (white) P PINEAPPLE (pale yellow) S STRAWBERRY (red) W WATERMELON (pale red)	B BLACK W WHITE	006V 6 VOLTS/ INCANDESCENT 012V 12 VOLTS/ INCANDESCENT 018V 18 VOLTS/ INCANDESCENT 024V 24 VOLTS/ INCANDESCENT 125N 125 VOLTS/ NEON ⁵ 250N 250 VOLTS/ NEON ⁵		
CIRCUIT	A OFF-NONE-ON	81 10A 250VAC 16A 125VAC 6(4)A 250VAC _μ 50E3 T85	ACTUATOR COLOR					
		91 10A 250VAC 16A 125VAC 10(4)A 250VAC _μ T85	TERMINATION					
		0 SOLDER LUG 1 .250TAB (QC) 5 WIRE LEAD						
			CLEAR ROCKER A AMBER C CLEAR G GREEN B BLUE R RED					

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

1 Rating Code 21 available with 125 Volt neon lamp only. Additional ratings are available. Consult factory.

2 Imprinting is available. Consult factory.

3 Clear rocker = T55 and is available with rating 21 and 91.

4 Custom colors available. Consult factory.

5 Neon lamps (125 volt or 250 volt) not recommended with green or blue colored actuators.

RGSC-Series

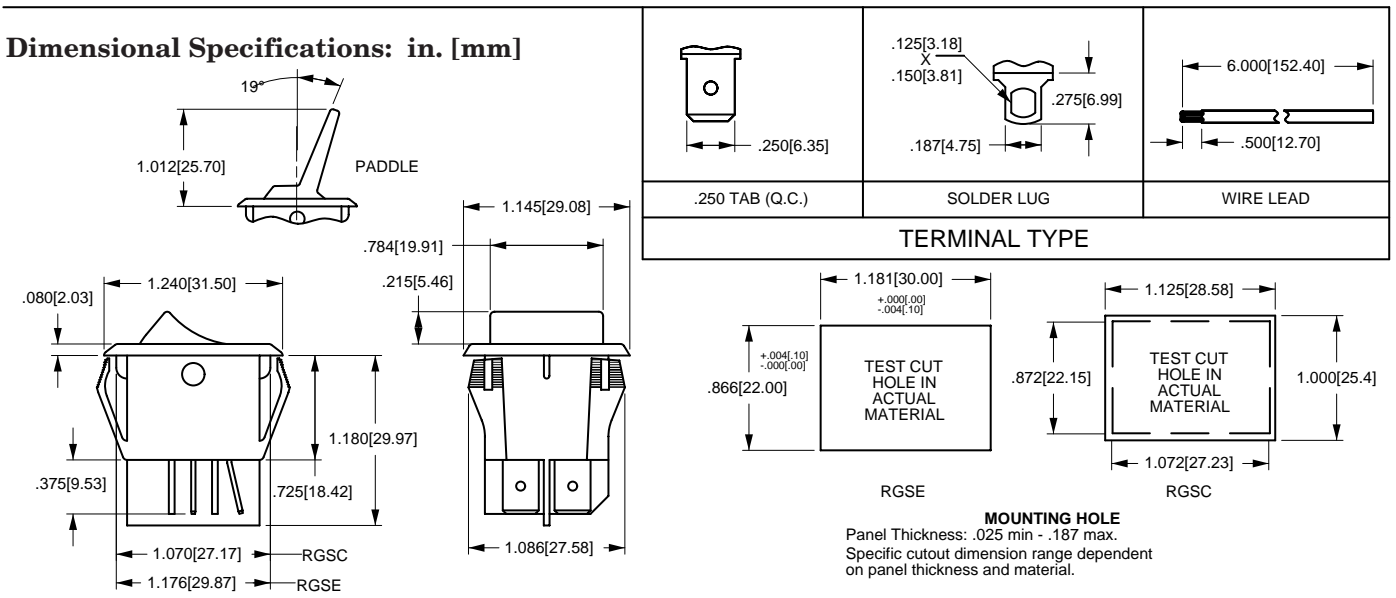


The RGSC-Series Super Corvette rocker switches offer the Corvette styling in a double pole construction with higher electrical ratings and high inrush capabilities. These switches can handle up to 125 amp peak inrush current and can accommodate a wide range of panel cutouts due to the patented mounting ear construction. International ratings are available up to 20 amps.

Specifications

- Certifications*: UL, CSA, VDE
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.



SERIES	CIRCUIT ¹	RATING ²	ACTUATOR STYLE	BASE COLOR ³
RGSC STANDARD BASE	A OFF-NONE-ON SINGLE POLE	20 15A 250VAC 20A 125VAC	P PADDLE	B BLACK
RGSB METAL BRACKET	B ON-NONE-ON SINGLE POLE	21 15A 250 VAC	R ROCKER	W WHITE
RGSE EUROPEAN BASE	C OFF-NONE-ON DOUBLE POLE	57 10A 250VAC 3/4HP 15A 125VAC 3/4HP 6A 277VAC 3/4HP	ACTUATOR COLOR³	ROCKER FACE IMPRINTED LEGEND⁴
	D ON-NONE-ON DOUBLE POLE	70 15A 250VAC 20A 125VAC 3/4HP 125-250VAC 16(6)A 250VAC T85	B BLACK	0 NO LEGEND
	E POLE 1 ON-NONE-ON POLE 2 OFF-NONE-ON	71 15A 250VAC 20A 125VAC 16(6)A 250VAC T85	W WHITE	A OFF-ON (VERTICAL)
	F POLE 1 ON-NONE-OFF POLE 2 OFF-NONE-ON			B OFF-ON (HORIZONTAL)
				D O-I (HORIZONTAL)
				E O-I (VERTICAL)
				F ON-OFF (VERTICAL)
				G ON-OFF (HORIZONTAL)

TERMINATION

0 SOLDER LUG
1 .250TAB (QC)
5 WIRE LEAD

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

1 Circuits E and F available with Rating Codes 20, 21 and 57 only.

2 Additional ratings are available. Consult factory.

3 Custom colors are available. Consult factory.

4 White is standard with dark actuators; black is standard with light actuators.

LRGSC-Series



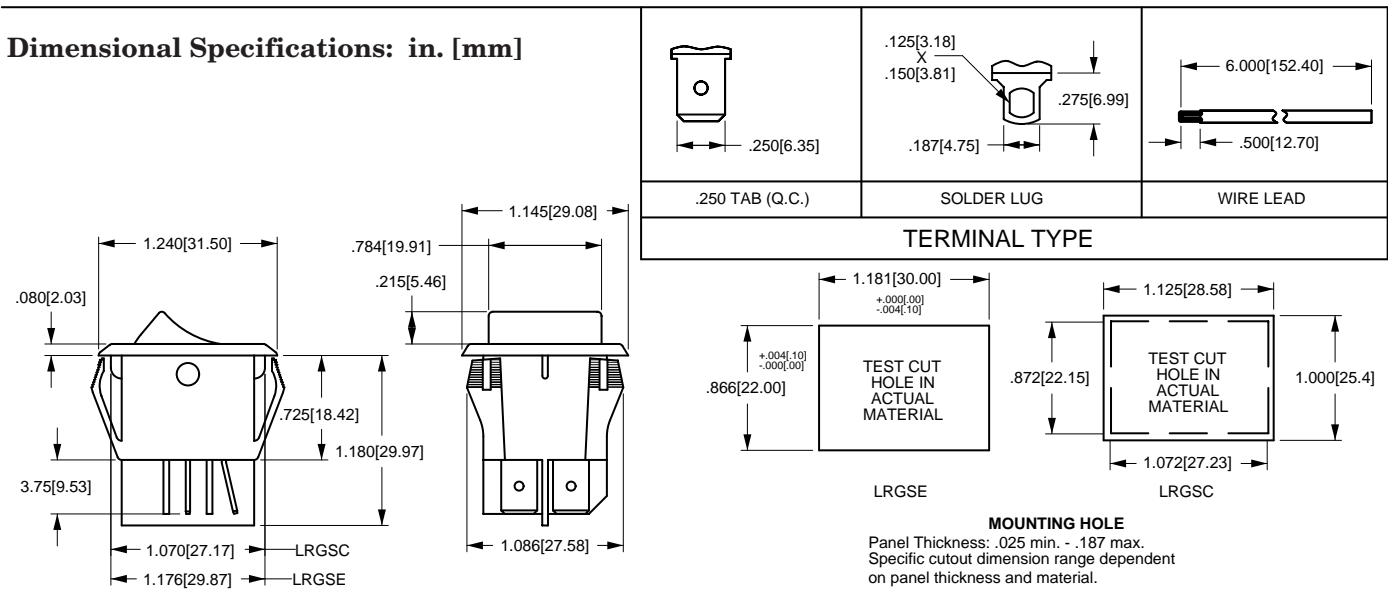
The LRGSC-Series Super Curvette rocker switches offer double pole circuitry in an illuminated package. These switches can handle up to 125 amp peak inrush current and can accommodate a wide range of panel cutouts due to the patented mounting ear construction. International ratings are available up to 20 amps.

Specifications

- Certifications*: UL, CSA, VDE
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon/Polycarbonate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



LRGSC K 71 1 - R - S - B - 0 / 250N

SERIES	RATING ¹	ACTUATOR STYLE	BASE COLOR ²	LAMP VOLTAGE
LRGSC STANDARD BASE	22 15A 250VAC 20A 125VAC	R TRANSLUCENT ROCKER C CLEAR ROCKER	B BLACK W WHITE	006V 6 VOLTS/ INCANDESCENT ⁵
LRGSE EUROPEAN BASE	51 LOW VOLTAGE FOR 6, 12, 18 & 24 VOLT LAMPS		ROCKER FACE IMPRINTED LEGEND ⁴	012V 12 VOLTS/ INCANDESCENT ⁵
CIRCUIT	61 15A 250VAC 20A 125VAC	COLOR		018V 18 VOLTS/ INCANDESCENT ⁵
K OFF-NONE-ON DOUBLE POLE	71 15A 250VAC 20A 125VAC 16(6)A 250VAC T85	TRANSLUCENT A APRICOT (amber) C COCONUT (white) L LIME (green) S STRAWBERRY (red) W WATERMELON (pale red)	0 NO LEGEND A OFF-ON (VERTICAL) B OFF-ON (HORIZONTAL) D O-I (HORIZONTAL) E O-I (VERTICAL) F ON-OFF (VERTICAL) G ON-OFF (HORIZONTAL)	024V 24 VOLTS/ INCANDESCENT ⁵
	TERMINATION	CLEAR A AMBER B BLUE ³ C CLEAR G GREEN R RED		125N 125 VOLTS/ NEON 250N 250 VOLTS/ NEON
	0 SOLDER LUG 1 .250TAB (QC) 5 WIRE LEAD			

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- 1 Rating Code 22 must use 125V neon lamp. Rating code 71 must use 250V neon lamp.
- 2 Custom colors are available. Consult factory.
- 3 Not available with 125VAC, 250VAC neon lamp.
- 4 White is standard with dark actuators; black is standard with light actuators.
- 5 Incandescent lamps must specify rating code 51.

611/621-Series

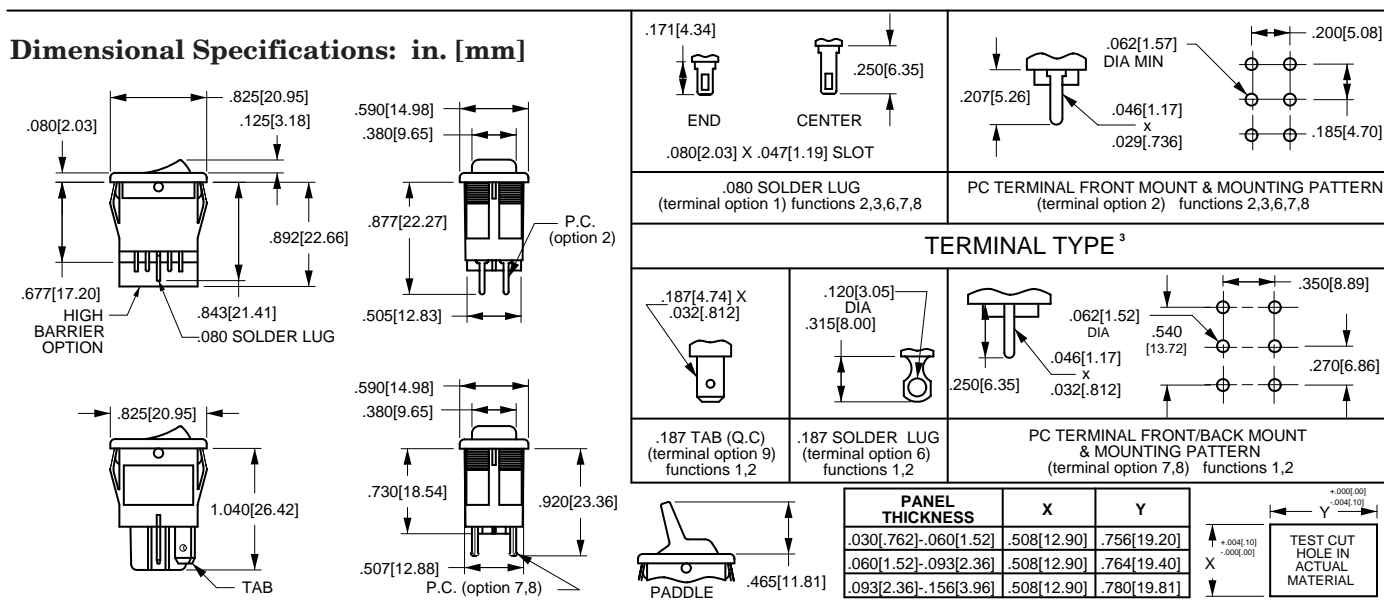


The miniature 611/621-Series switches are double insulated and available in single or double pole. These snap-in mounting style switches are available with paddle, rocker or Visi-Rocker type actuators. A variety of terminations are offered with ratings through 11 amps. International approvals are also available.

Specifications

- Certifications*: UL, CSA, VDE, TUV, SEMKO, DEMKO, SEV, NEMKO, SETI
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.



6 21 1 5 9 1 9 - 0 - 9 - V

<p>SERIES</p> <p>6</p> <p>ACTUATOR STYLE</p> <p>11 PADDLE 21 CURVED ROCKER</p>	<p>BASE/ACTUATOR COLOR¹</p> <table border="1"> <tr> <th>BASE</th> <th>ACTUATOR</th> </tr> <tr> <td>1 BLACK</td> <td>BLACK</td> </tr> <tr> <td>2 BLACK</td> <td>WHITE</td> </tr> <tr> <td>4 WHITE</td> <td>BLACK</td> </tr> <tr> <td>5 WHITE</td> <td>WHITE</td> </tr> </table> <p>POLES</p> <p>1 SINGLE POLE 2 DOUBLE POLE 5 DOUBLE POLE W/ HIGH BARRIERS 6 SINGLE POLE W/ HIGH BARRIERS</p>	BASE	ACTUATOR	1 BLACK	BLACK	2 BLACK	WHITE	4 WHITE	BLACK	5 WHITE	WHITE	<p>RATING²</p> <p>1 .4VA MAX @20V MAX (AC/DC) 2 2A 250VAC 3 5A 125VAC RESISTIVE 4 4A 250 VAC 5 8A 125VAC 6 4A 250VAC 7 8A 125VAC 8 4A 250VAC 9 6(4)A 250VAC T85⁸</p> <p>FUNCTION</p> <p>1 ON-NONE-OFF 2 ON-NONE-ON 3 ON-NONE-(ON) 6 ON-OFF-ON 7 ON-OFF-(ON) 8 (ON)-OFF-(ON)</p>	<p>TERMINATION⁴</p> <p>1 .080 SOLDER LUG 2 PC TERM 3 WIRE LEAD⁷ 4 WIRE LEAD 6 .187 SOLDER LUG 7 PC BACK MOUNT 8 PC FRONT MOUNT 9 .187TAB (QC)</p> <p>EPOXY SEALED TERMINALS</p> <p>E EPOXY 0 NONE REQUIRED</p>	<p>ROCKER FACE LEGEND</p> <table border="1"> <tr> <th>MOLDED-IN⁵</th> <th>INK TRANSFER STAMP⁶</th> </tr> <tr> <td>0 NO LEGEND</td> <td>0</td> </tr> <tr> <td>ON-OFF (VERTICAL)</td> <td>A</td> </tr> <tr> <td>ON-OFF (HORIZONTAL)</td> <td>B</td> </tr> <tr> <td>I-O (HORIZONTAL)</td> <td>D</td> </tr> <tr> <td>I-O (VERTICAL)</td> <td>E</td> </tr> <tr> <td>● (indicates ON) (ON ROCKER RADIUS)</td> <td>F</td> </tr> </table> <p>COLOR OF MOLDED-IN LEGEND AND/OR VISI-ROCKER END¹</p> <p>N NOT APPLICABLE B BLACK V VISI-RED W WHITE</p>	MOLDED-IN ⁵	INK TRANSFER STAMP ⁶	0 NO LEGEND	0	ON-OFF (VERTICAL)	A	ON-OFF (HORIZONTAL)	B	I-O (HORIZONTAL)	D	I-O (VERTICAL)	E	● (indicates ON) (ON ROCKER RADIUS)	F
BASE	ACTUATOR																											
1 BLACK	BLACK																											
2 BLACK	WHITE																											
4 WHITE	BLACK																											
5 WHITE	WHITE																											
MOLDED-IN ⁵	INK TRANSFER STAMP ⁶																											
0 NO LEGEND	0																											
ON-OFF (VERTICAL)	A																											
ON-OFF (HORIZONTAL)	B																											
I-O (HORIZONTAL)	D																											
I-O (VERTICAL)	E																											
● (indicates ON) (ON ROCKER RADIUS)	F																											

NOTES:

- Shading indicates standard configurations.
- Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.
- Matte finish is standard. Custom colors are available. Consult factory.
- Rating 1 contact surfaces: gold plate over nickel plate. Rating Code 9 available with function 1 or 2 only.
- Available in single pole with high barriers, ON-NONE-OFF circuit with .187TAB terminals only.
- Terminations 1, 2 and 3 are not available with function 1. Terminations 4, 6, 7, 8 and 9 are available with function 1 or 2 only.
- Molded-in Legend available only with Visi-Rocker Option.
- White is standard with dark actuators; black is standard with light actuators.
- Termination 3 available with rating 2 only - 18 gauge wire used.
- Rating 9 using Termination 1 or 2 is rated T55 only.

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610/620-Series



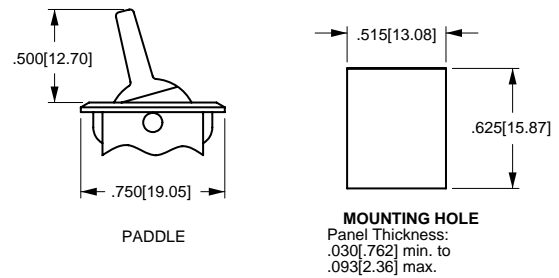
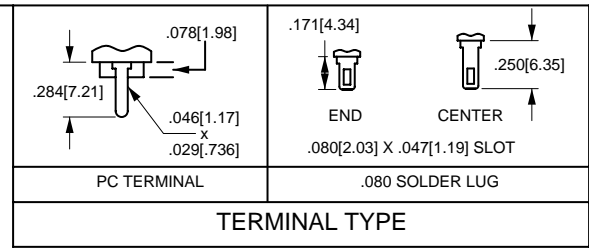
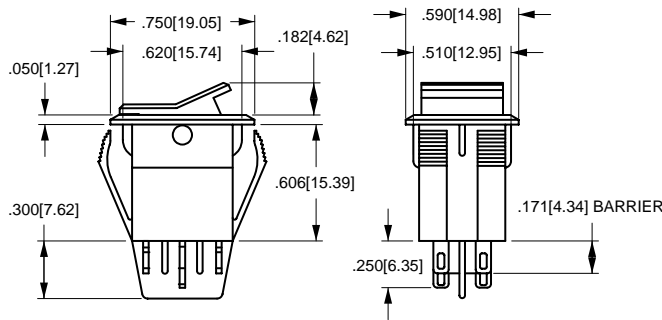
The miniature 610/620-Series switches are double insulated and available in single or double pole configurations. These snap-in mounted switches are offered with either a paddle or rocker actuator and with ratings up to 8 amps.

Specifications

- Certifications*: UL, CSA, VDE, and SEMKO
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



6 20 1 6 4 2 1 - 0 - 0

<p>SERIES</p> <p>6</p> <p>ACTUATOR STYLE</p> <p>10 PADDLE</p> <p>20 ANGLED ROCKER</p>	<p>BASE/ACTUATOR COLOR¹</p> <table border="0"> <tr> <td>BASE</td> <td>ACTUATOR</td> </tr> <tr> <td>1 BLACK</td> <td>BLACK</td> </tr> <tr> <td>2 BLACK</td> <td>WHITE</td> </tr> <tr> <td>4 WHITE</td> <td>BLACK</td> </tr> <tr> <td>5 WHITE</td> <td>WHITE</td> </tr> </table> <p>POLES</p> <p>1 SINGLE POLE</p> <p>2 DOUBLE POLE</p> <p>5 DOUBLE POLE W/ HIGH BARRIERS</p> <p>6 SINGLE POLE W/ HIGH BARRIERS</p>	BASE	ACTUATOR	1 BLACK	BLACK	2 BLACK	WHITE	4 WHITE	BLACK	5 WHITE	WHITE	<p>RATING²</p> <p>1 .4VA MAX @20V MAX (AC/DC)</p> <p>2 2A 250VAC</p> <p>5 5A 125VAC RESISTIVE</p> <p>4 4A 250 VAC</p> <p>8 8A 125VAC</p> <p>9 4A 250VAC</p> <p>8 8A 125VAC</p> <p>INDUCTIVE</p> <p>6(4)A 250VAC</p> <p>FUNCTION</p> <p>2 ON-NONE-ON</p> <p>3 ON-NONE-(ON)</p> <p>6 ON-OFF-ON</p> <p>7 ON-OFF-(ON)</p> <p>8 (ON)-OFF-(ON)</p>	<p>TERMINATION</p> <p>1 SOLDER LUG</p> <p>2 PC TERM</p> <p>EPOXY SEALED TERMINALS</p> <p>E EPOXY</p> <p>0 NONE REQUIRED</p>	<p>ROCKER FACE IMPRINTED LEGEND³</p> <p>0 NO LEGEND</p> <p>A ON-OFF (VERTICAL)</p> <p>B ON-OFF (HORIZONTAL)</p> <p>D I-O (HORIZONTAL)</p> <p>E I-O (VERTICAL)</p>
BASE	ACTUATOR													
1 BLACK	BLACK													
2 BLACK	WHITE													
4 WHITE	BLACK													
5 WHITE	WHITE													

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

1 Matte finish is standard. Custom colors are available. Consult factory.

2 Rating 1 contact surfaces: gold plate over nickel plate. Rating Code 9=T55, available with function 2 only.

3 White is standard with dark rocker actuators; black is standard with light rocker actuators. Choose 0 if paddle actuator is specified.

622/632-Series



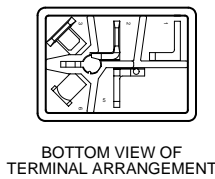
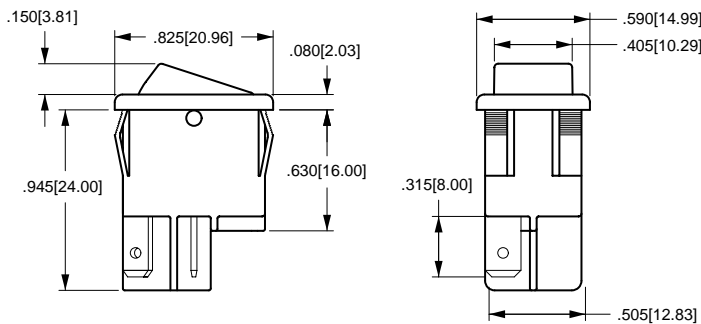
The miniature 622/632-Series rocker switches are non-illuminated and illuminated and available in both single and double pole configurations. This switch provides 100 amp inrush capability and fits into industry standard cut-out dimensions. Other features include a small, shallow base, a contemporary actuator design and availability of a single pole circuit with an independent lamp.

Specifications

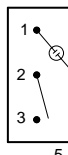
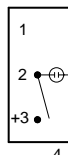
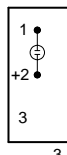
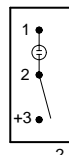
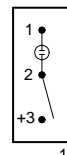
- Certifications*: UL, CSA, TUV, VDE
- Dielectric Strength: 1,500V (minimum)
- Insulation Resistance: 50 Megohms (minimum)
- Base Material: Polysulfone
- Flammability rating - UL 94 V-0
- Actuator Material: Polycarbonate

* Due to ongoing technological advances, consult factory for certification specifics.

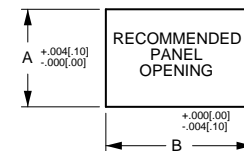
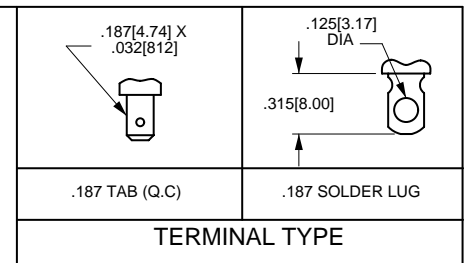
Dimensional Specifications: in. [mm]



632 SCHEMATIC



UNBALLASTED



PANEL THICKNESS	A	B
.030[.76]-.050[1.27]	.508[12.90]	.756[19.20]
.050[1.27]-.078[1.98]	.508[12.90]	.764[19.40]
.078[1.98]-.125[3.17]	.508[12.90]	.780[19.81]

SERIES	CIRCUIT	RATING ^{1,2}	ACTUATOR COLOR	LAMP VOLTAGE
622	2	3	2	-
632	3	2	B	B
				-
				N
				N

SERIES	CIRCUIT	RATING ^{1,2}	ACTUATOR COLOR	LAMP VOLTAGE
622	1 ON-NONE-OFF SINGLE POLE	1 10A 250VAC	SOLID^{3,5}	N NONE
632	2 ON-NONE-OFF DOUBLE POLE	2 8A 250VAC 1/2HP 12A 125VAC 1/2HP	B BLACK W WHITE	1 UNBALLASTED LED
	3 ON-NONE-OFF SINGLE POLE Independent Lamp	3 8A 250 VAC 1/2HP 12A 125VAC 1/2HP 10(4)/250 T85	CLEAR	2 6V LED
	4 ON-NONE-OFF DOUBLE POLE	4 12A 125VAC 1/2HP 10(4)/125 T85	1 AMBER 2 RED	3 12V LED
	5 ON-NONE-OFF SINGLE POLE Independent Lamp Unballasted Lamp	5 12A 28V	3 BLUE ⁴ 4 GREEN 5 CLEAR	4 24V LED
		TERMINATION	BASE COLOR^{3,5}	A 6V INCANDESCENT
		1 SOLDER LUG 2 .187 TAB (QC)	B BLACK W WHITE	C 12V INCANDESCENT
				E 18V INCANDESCENT
				H 24V INCANDESCENT
				J 125V NEON (use w/rating 1, 4)
				K 250V NEON (use w/rating 3, 4)

ROCKER FACE IMPRINTED LEGEND

- N** NO LEGEND
- A** ON-OFF (VERTICAL)
- B** ON-OFF (HORIZONTAL)
- D** I-O (HORIZONTAL)
- E** I-O (VERTICAL)
- F** O (ON ROCKER END)

NOTES:

- Shading indicates standard configurations.
- Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.)
- Test cut hole in actual material.
- 1 Rating 1 only available with circuits 1 or 3.
- 2 Rating 5 is a low voltage rating. Switch Voltage will match lamp voltage.
- 3 Custom colors available. please consult factory.
- 4 Blue actuator available with incandescent lamp only.
- 5 Surface finish on solid colors is matte. Solid color available on 622 series only.

T-Series



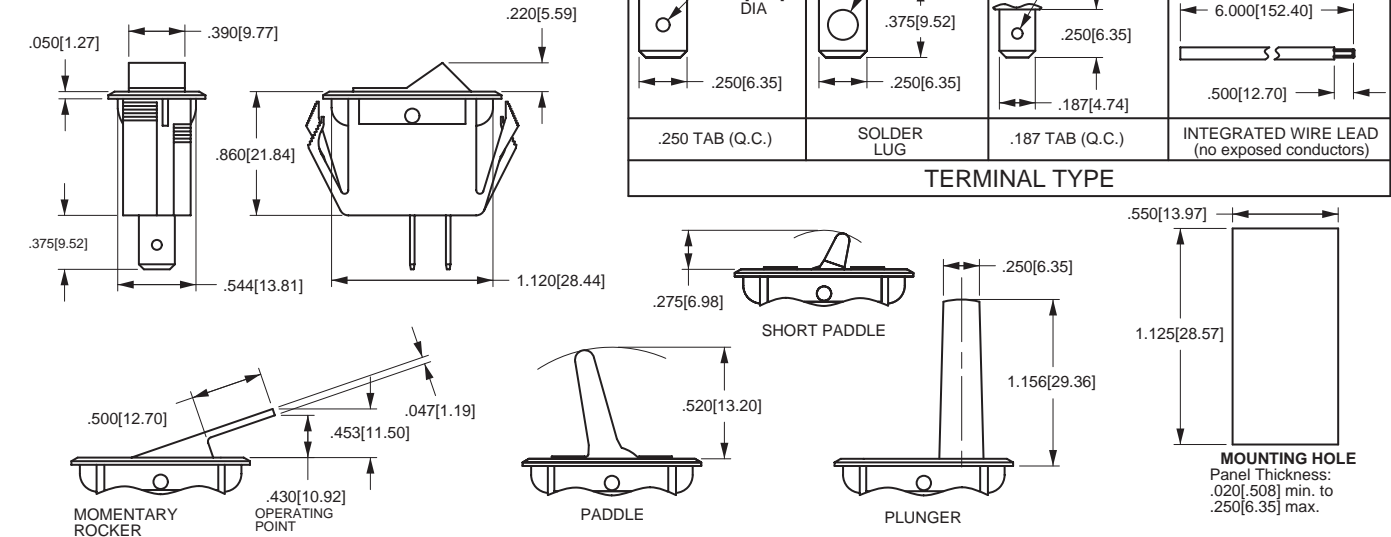
The T-Series Mini Tippette snap-in rocker switches are single pole with ratings up to 20 amps. A variety of circuits, actuators and terminations are available.

Specifications

- Certifications*: UL, CSA, VDE
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon
- Bezel Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]

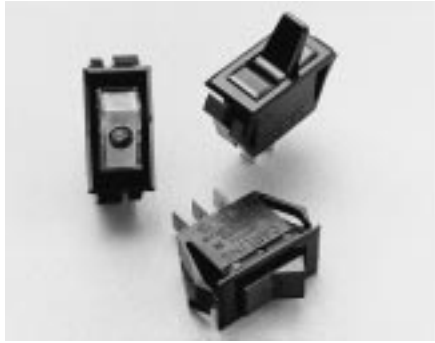


SERIES	RATING ¹	TERMINATION/FUNCTION	ACTUATOR COLOR ³
T SINGLE POLE	10 5A 250VAC 10A 125VAC 1/2HP 125-250VAC	FUNCTION ON-NONE-OFF (ON)-NONE-OFF ON-NONE-(OFF) ON-NONE-ON ON-NONE-(ON) ON-OFF-ON	B BLACK W WHITE
CIRCUIT	11 5A 250VAC 10A 125VAC 5A (TUNGSTEN) 125VAC L	SOLDER LUG	BASE COLOR³
A ON-NONE-OFF B ON-NONE-ON C ON-OFF-ON	20 10A 250VAC 15A 125VAC 3/4HP 125-250VAC 22 10A 250VAC 15A 125VAC 20A 125-250VAC H 3/4HP 125-250VAC 25 10A 250VAC 16A 125VAC 1/2HP 125-250VAC	0 1 A B D L M R T 0 1 3 5 A B D F 0 1 3 5	ACTUATOR STYLE²
		0 1 3 5 A B D F 0 1 3 5	P PADDLE PL PLUNGER PS PADDLE - SHORT T ROCKER TL MOMENTARY ROCKER

NOTES:
 Shading indicates standard configurations. Stainless steel bezels are available. Add suffix "Bezel" to the end of the catalog number. (ex. TA201-TB-B/BEZEL)
 Imprinting is available. Please specify when ordering. (ex. TA201-TB-B/ON-OFF)
 Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.
 1 Rating Code 22 is 20A 125VAC inductive when momentary function is specified. Rating Code 22 only available with circuits A & B. Rating Code 25 only available with PL-Plunger actuator.
 2 PL-Plunger actuator available only in T Series with circuit A, termination/function B or F, and terminals at T1 and 2.
 3 Custom colors are available. Consult factory.

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LTA-Series



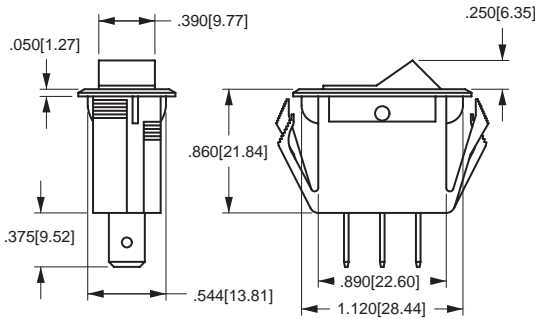
The LTA-Series Mini Tippette Snap-in rocker switches are illuminated, single pole and double-insulated. These AC rated switches are also suitable for low voltage DC applications. A variety of actuators, colors and terminations can be specified with ratings up to 20 amps.

Specifications

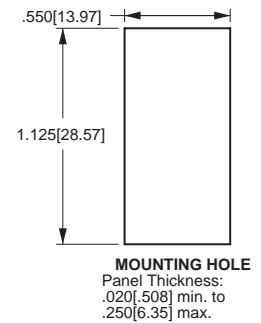
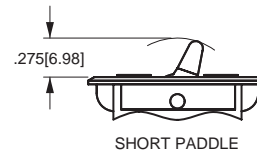
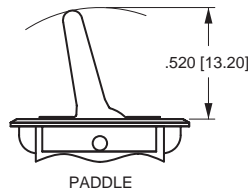
- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon or Polycarbonate
- Bezel Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



.250 TAB (Q.C.)	SOLDER LUG	.187 TAB (Q.C.)	INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE			



LTA	20	1	-	T	R	-	B	-	/	125N
SERIES	RATING			TERMINATION			ACTUATOR COLOR			LENS COLOR^{2,3}
LTA OFF-NONE-ON SINGLE POLE	10 5A 250VAC 10A 125VAC 1/2HP 125-250VAC 11 5A 250VAC 10A 125VAC 5A (TUNGSTEN) 125VAC L 20 10A 250VAC 15A 125VAC 3/4HP 125-250VAC 21 10A 250VAC 15A 125VAC 22 10A 250VAC 15A 125VAC 20A 125-250VAC H 3/4HP 125-250VAC			0 SOLDER LUG 1 .250 TAB (QC) 3 .187 TAB (QC) 5 WIRE LEAD			ROCKER A AMBER C CLEAR G GREEN ³ R RED			A AMBER C CLEAR G GREEN LU BLUE R RED
				ACTUATOR STYLE			BASE COLOR¹			LAMP VOLTAGE
				P PADDLE PS PADDLE - SHORT T LIGHTED ROCKER			PADDLE ¹ B BLACK W WHITE			6V 6 VOLT/ INCANDESCENT 12V 12 VOLT/ INCANDESCENT 18V 18 VOLT/ INCANDESCENT 24V 24 VOLT/ INCANDESCENT 28V 28 VOLT/ INCANDESCENT 125N 125 VOLT/ NEON 250N 250 VOLT/ NEON

NOTES:

Shading indicates standard configurations. Stainless steel bezels are available. Add suffix "BEZEL" to the end of the catalog number. (ex.) LTA201-TR-B/12V/BEZEL
 Imprinting is available. Please specify when ordering.

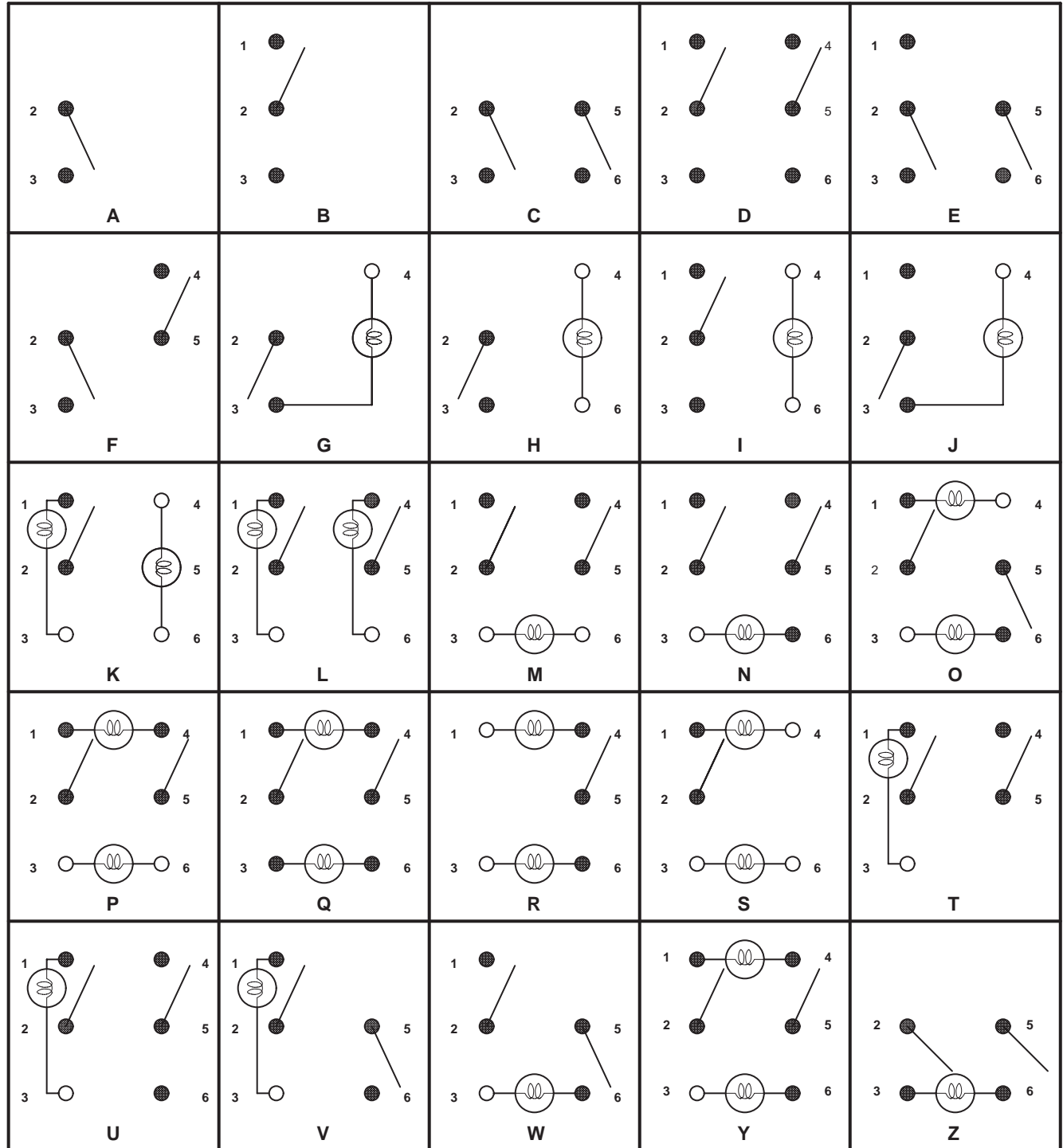
Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

¹ Custom colors are available. Consult factory.

² Neon lamps (125 volt or 250 volt) not recommended with green or blue colored indicators.

³ Specify lens color only if actuator style is P or PS.

Circuit Designation Chart - refers to TG/LTG, TTG and TLG-Series Switches pages 36-38



● CONTACT TERMINAL
Will make contact with switching lever

● CONTACT TERMINAL AND SWITCH LEVER

○ ISOLATED TERMINAL
Does not make contact with switching lever

○ BULB

NOTES:
For variations to above circuits, consult factory.

TTG-Series



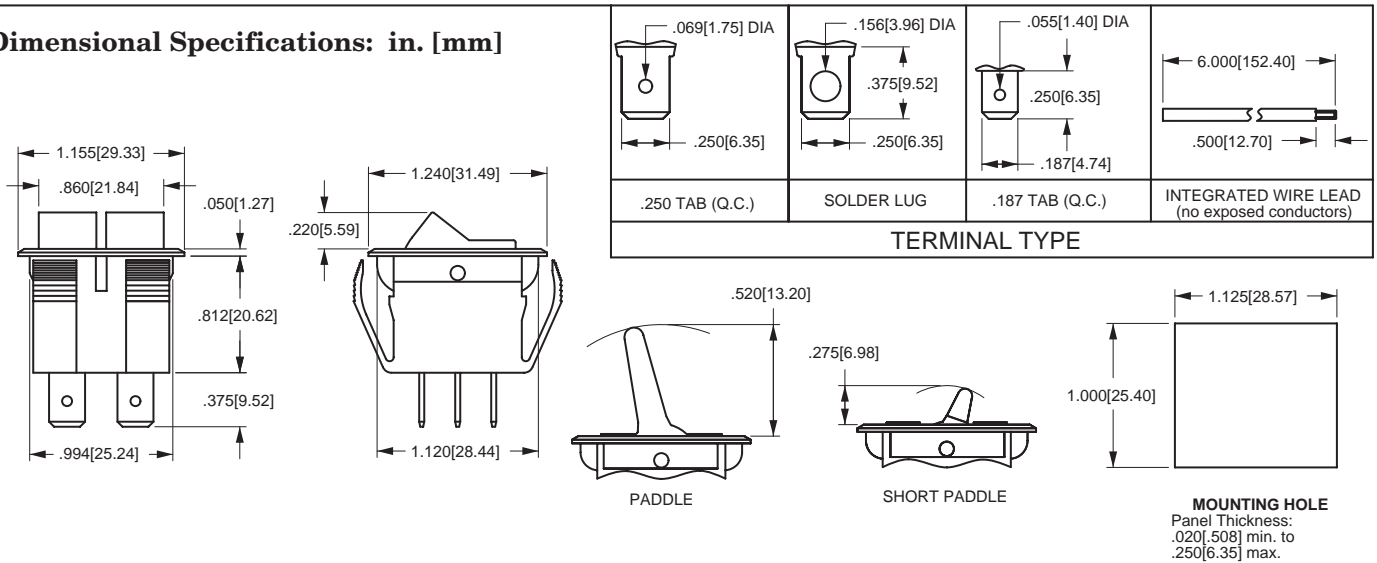
The TTG-Series Mini Tippette snap-in rocker switches consist of two single pole illuminated or non-illuminated switches in a common base. Each pole can have the same or different switch function. These switches are AC rated up to 20 amps and are also suitable for low-voltage DC applications.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon
- Bezel Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



TTG T - TA 20 1 - T B - B
LTA 20 1 - T R - B - / 125N

SERIES

TTG TWO SINGLE POLE SWITCHES IN ONE BASE

CIRCUIT¹

See Circuit Designation Chart Page 39

BASIC SWITCH NO.

TA ON-NONE-OFF
TB ON-NONE-ON
TC ON-OFF-ON
LTA OFF-NONE-ON LIGHTED

20 10A 250VAC
15A 125VAC
3/4HP 125-250VAC

21 10A 250VAC
15A 125VAC

22 10A 250VAC
15A 125VAC
20A 125-250VAC H
3/4HP 125-250VAC

NOTES:

Shading indicates standard configurations.
Imprinting is available. Please specify when ordering.
Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- 1 TTG available with circuits A, B, C, D, E, F, L, T, U.
- 2 Custom colors available. Consult factory.
- 3 Specify lens color only if actuator is lighted paddle. Neon lamps (125 volt or 250 volt) not recommended with green or blue colored actuators and lenses.

RATING

ACTUATOR STYLE

P PADDLE
PS PADDLE - SHORT
T ROCKER

TERMINATION/FUNCTION

FUNCTION	.250 SOLDER LUG (QC)	.187 TAB (QC)	WIRE LEAD
ON-NONE-OFF	0	1	3
(ON)-NONE-OFF	A	B	D
ON-NONE-(OFF)	L	M	R
ON-NONE-ON	0	1	3
ON-NONE-(ON)	A	B	D
ON-OFF-ON	0	1	3

ACTUATOR COLOR

UNLIGHTED²
B BLACK
W WHITE

LIGHTED³
A AMBER
C CLEAR
G GREEN
LU BLUE
R RED

BASE COLOR²

B BLACK
W WHITE

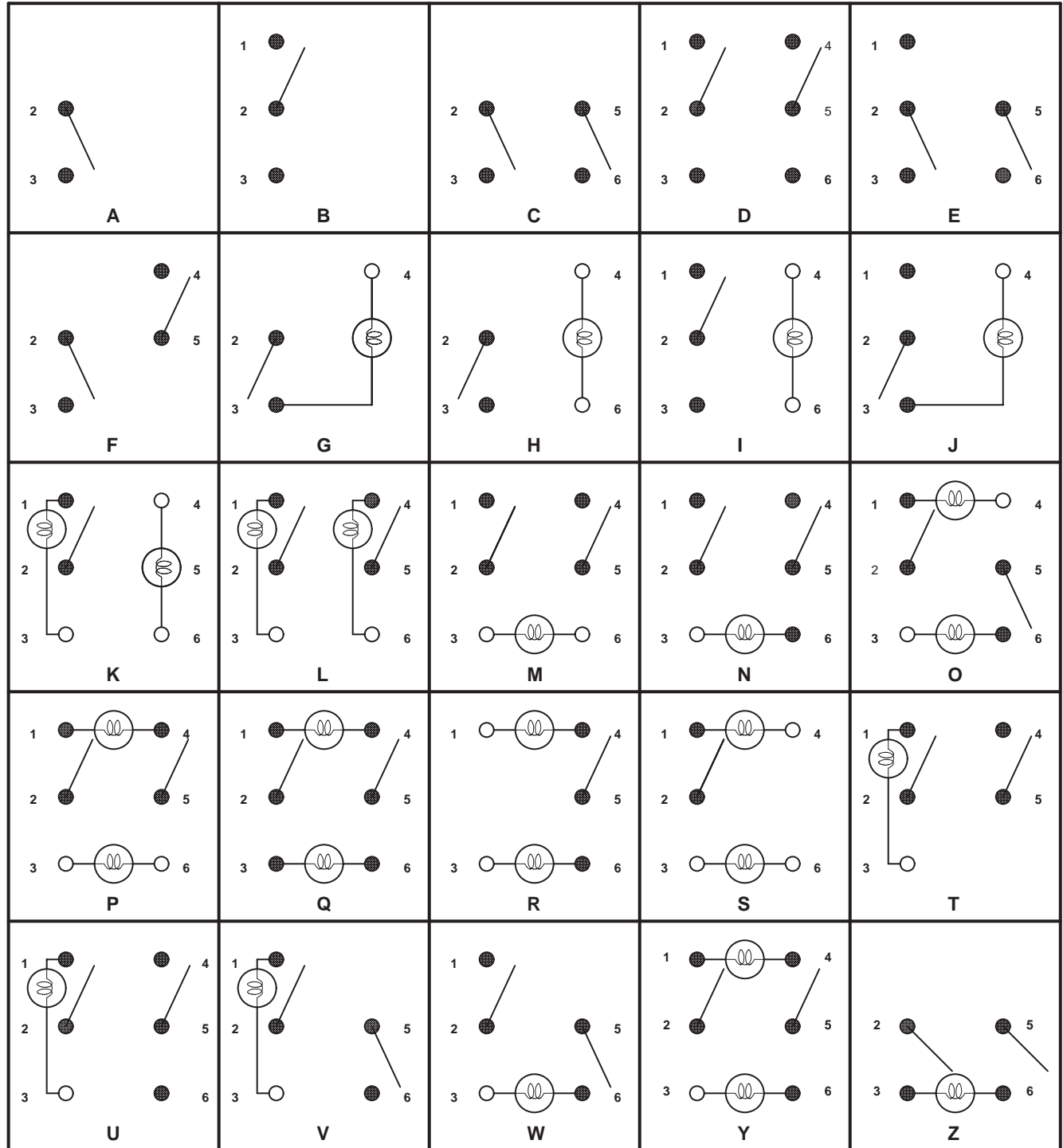
LENS COLOR³

A AMBER
C CLEAR
G GREEN
LU BLUE
R RED

LAMP VOLTAGE

6V 6 VOLT/ INCANDESCENT
12V 12 VOLT/ INCANDESCENT
18V 18 VOLT/ INCANDESCENT
24V 24 VOLT/ INCANDESCENT
28V 28 VOLT/ INCANDESCENT
125N 125 VOLT/ NEON
250N 250 VOLT/ NEON

Circuit Designation Chart - refers to TG/LTG, TTG and TLG-Series Switches pages 36-38



● CONTACT TERMINAL
Will make contact with switching lever

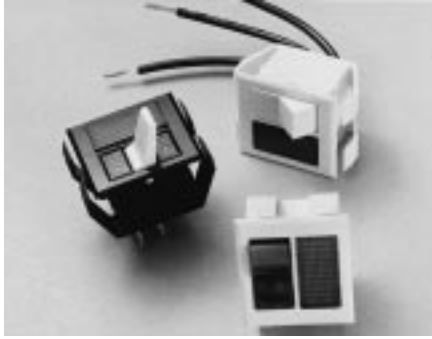
● CONTACT TERMINAL AND SWITCH LEVER

○ ISOLATED TERMINAL
Does not make contact with switching lever

⊗ BULB

NOTES:
For variations to above circuits, consult factory.

TLG-Series



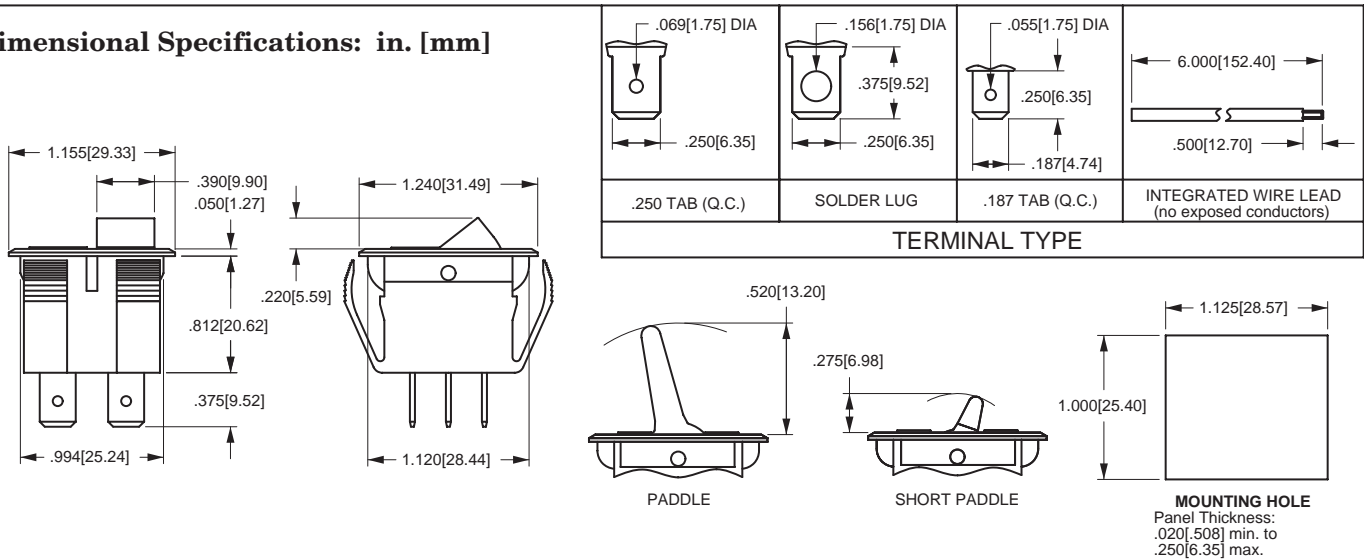
The TLG-Series Mini Tippette snap-in rocker switches are single pole, rocker or paddle actuated with an adjacent indicator light. These single-actuator-switches are AC rated to 20 amps and are also suitable for low voltage DC applications.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon
- Bezel Material: Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



TLG G - DR - TA 20 1 - T B - B - / 125N

SERIES

TLG SINGLE POLE WITH ADJACENT INDICATOR LIGHT

CIRCUIT¹

See Circuit Designation Chart Page 39

LENS DESIGN

D DIAMOND
L LONG LINE

LENS COLOR²

A AMBER
C CLEAR
G GREEN
R RED
W WHITE

BASIC SWITCH NO.

TA ON-NONE-OFF
TB ON-NONE-ON
TC ON-OFF-ON
LTA ON-NONE-OFF LIGHTED

RATING

10 5A 250VAC
10A 125VAC
1/2HP 125-250VAC
11 5A 250VAC
10A 125VAC
5A 125VAC L
20 10A 250VAC
15A 125VAC
3/4HP 125-250VAC
21 10A 250VAC
15A 125VAC
22 10A 250VAC
15A 125VAC
20A 125-250VAC H
3/4HP 125-250VAC

ACTUATOR STYLE

P PADDLE
PS PADDLE - SHORT
T ROCKER

ACTUATOR COLOR

UNLIGHTED³
B BLACK
W WHITE
LIGHTED²
A AMBER
C CLEAR
G GREEN
LU BLUE
R RED

BASE COLOR³

B BLACK
W WHITE

LENS COLOR^{2,4}

A AMBER
C CLEAR
G GREEN
LU BLUE
R RED
W WHITE

LAMP VOLTAGE

6V 6 VOLT/ INCANDESCENT
12V 12 VOLT/ INCANDESCENT
18V 18 VOLT/ INCANDESCENT
24V 24 VOLT/ INCANDESCENT
28V 28 VOLT/ INCANDESCENT
125N 125 VOLT/ NEON
250N 250 VOLT/ NEON

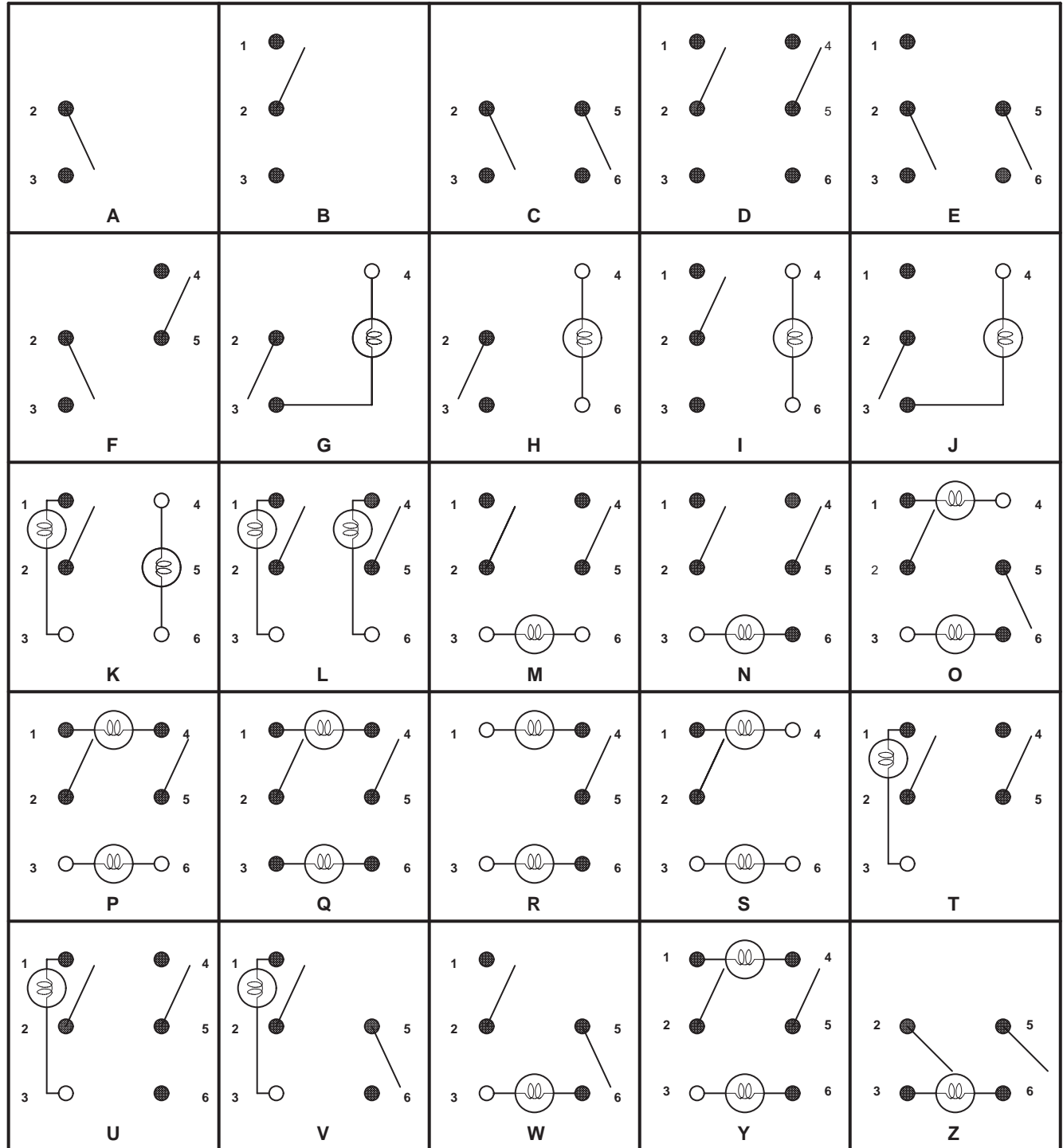
TERMINATION/FUNCTION

FUNCTION	SOLDER LUG	.250TAB (QC)	.187TAB (QC)	WIRE LEAD
ON-NONE-OFF	0	1	3	5
(ON)-NONE-OFF	A	B	D	F
ON-NONE-(OFF)	L	M	R	T
ON-NONE-ON	0	1	3	5
ON-NONE-(ON)	A	B	D	F
ON-OFF-ON	0	1	3	5

NOTES:

- Shading indicates standard configurations. Imprinting is available. Please specify when ordering. Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.
- Available with circuits G, H, I, J, K.
- Neon lamps (125 volt or 250 volt) not recommended with green or blue colored actuators and lenses.
- Custom colors are available. Consult factory.
- Specify lens color only if actuator is lighted paddle.

Circuit Designation Chart - refers to TG/LTG, TTG and TLG-Series Switches pages 36-38



● CONTACT TERMINAL
Will make contact with switching lever

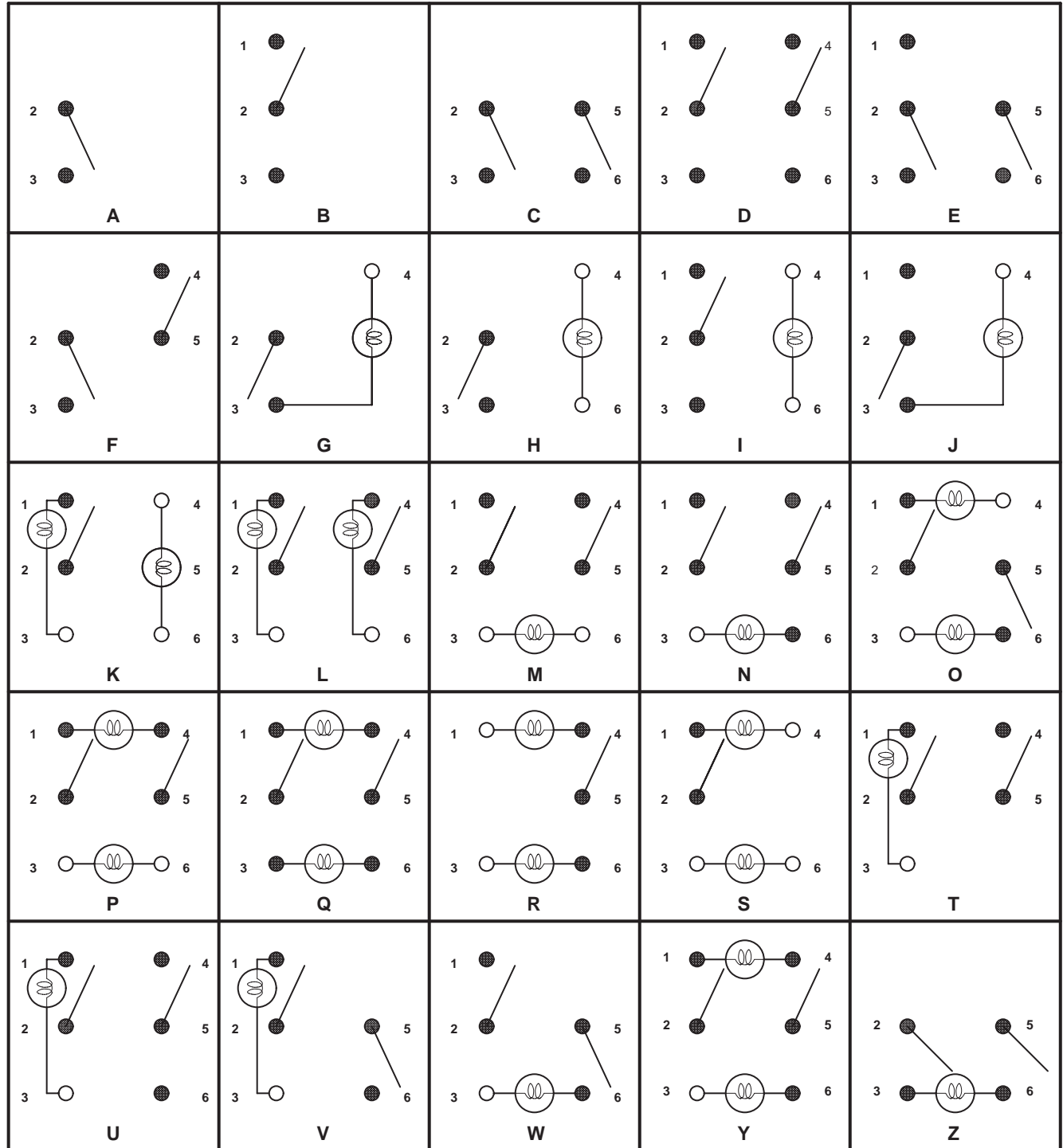
● CONTACT TERMINAL AND SWITCH LEVER

○ ISOLATED TERMINAL
Does not make contact with switching lever

⊗ BULB

NOTES:
For variations to above circuits, consult factory.

Circuit Designation Chart - refers to TG/LTG, TTG and TLG-Series Switches pages 36-38



● CONTACT TERMINAL
Will make contact with switching lever

● CONTACT TERMINAL AND SWITCH LEVER

○ ISOLATED TERMINAL
Does not make contact with switching lever

⊗ BULB

NOTES:
For variations to above circuits, consult factory.

TIL, TIG, TIH, TII-Series



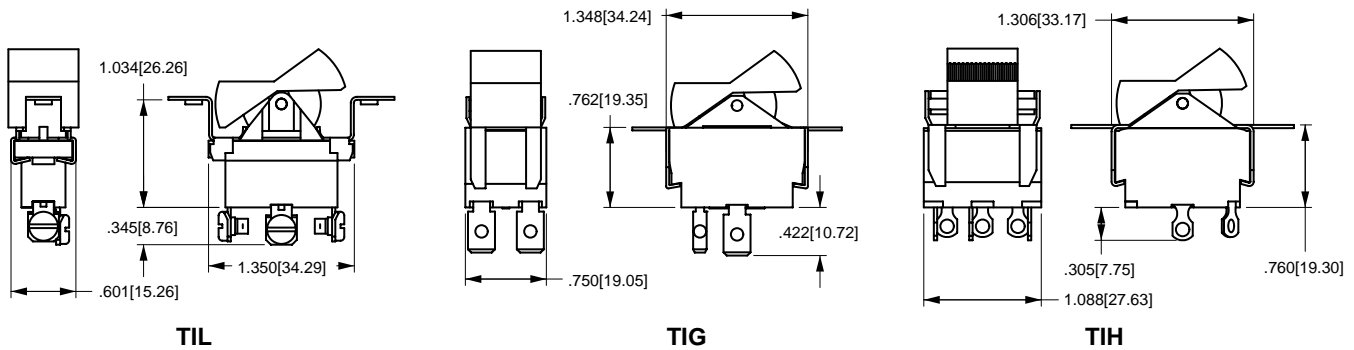
The TI-Series Tippette rocker switches are available in single pole (TIL), double pole (TIG), three pole (TIH) and four pole (TII) versions. These switches are available with nylon snap-in or screw-type mounting brackets, are AC rated to 20 amps and suitable for low voltage DC applications. Multiple actuator options and colors are available, and many circuits have international approvals.

Specifications

- Certifications*: UL, CSA, and VDE
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon
- Bracket/Bezel Material: Nylon or Steel

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



SERIES	CIRCUIT	RATING ¹	ACTUATOR STYLE ²	ACTUATOR COLOR ³
TIL SINGLE POLE	SINGLE POLE	5 10A 250VAC	1C CROSS SERRATED	BL BLACK
TIG DOUBLE POLE	A ON-NONE-OFF	15A 125VAC	1F SMOOTH W/ FLATTED CENTER	WH WHITE
TIH THREE POLE	B ON-NONE-ON	3/4HP 125-250VAC	1L LONG LINED	BRACKET STYLE⁴
TII FOUR POLE	C ON-OFF-ON	6 3A 250VAC	1S SMOOTH ANGLED	
	DOUBLE, THREE OR FOUR POLE	6A 125VAC	2L LONG NARROW	A
	K ON-NONE-OFF	1/4HP 125-250VAC	SMOOTH	B
	L ON-NONE-ON	9 10A 250VAC	6M⁵ MATTE CURVED (M, N OR W BRACKETS ONLY)	C
	M ON-OFF-ON	15A 125VAC	6S SMOOTH CURVED (M, N OR W BRACKETS ONLY)	H
		12(6)A 250VAC T85	7N WITCHES HAT (NARROW)	FN NARROW
		72 20A 125-277VAC	7P WITCHES HAT	FW WIDE
		1 1/2HP 125VAC	7S TOGGLE	MBL MARINE
		2HP 250VAC		NBL
				WBL WATERSHEDDING

TERMINATION/FUNCTION		SOLDER LUG	.250 TAB (QC)	.187 TAB (QC)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF	0	1	3	4	5	6	
(ON)-NONE-OFF	A	B	D	E	F	G	
ON-NONE-(OFF)	L	M	R	S	T	U	
ON-NONE-ON	0	1	3	4	5	6	
ON-NONE-(ON)	A	B	D	E	F	G	
ON-OFF-ON	0	1	3	4	5	6	
ON-OFF-(ON)	A	B	D	E	F	G	
(ON)-OFF-(ON)	L	M	R	S	T	U	

NOTES:
 Shading indicates standard configurations.
 Dust covers for single and double pole are available, consult factory.
 Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

1 Horsepower rating for code 5 is applicable to certain circuits only. Consult factory for specifics.
 Rating Code 9 for TIG-Series only with maintained A, B, K, L and M Circuits, and N Bracket Style, terminals 0 or 1 only.
 Rating Code 72 for TIG-Series only, in maintained circuits, with N or W Bracket Style only.

2 For double actuator with or without interlock or other actuator styles, consult factory.
 Imprinting available on smooth face rockers.

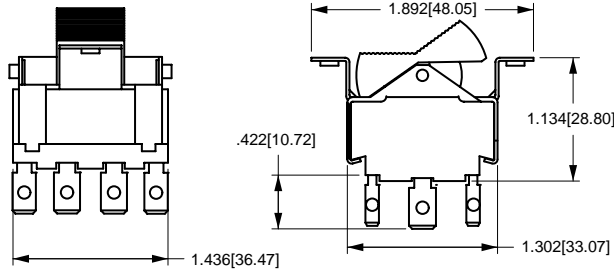
3 Glossy finish is standard. Custom colors are available. Consult factory.

4 Barbs are available on FN style bracket to accommodate panel thicknesses of .062, .100, .125, .156 and .250. Specify after bracket selection. (ex.) FN/.125
 MBL, NBL & WBL brackets are molded in black. If white is desired, specify as MWH, NWH & WWH.
 Bracket Styles D, E and G available. Consult factory.
 Bracket Style M consists of LNP rocker, neoprene seal, syntech grease, dummy rivets. M, N and W brackets supplied in two pole bases.
 MBL does not have UL, CSA approvals.
 Bracket style H available with actuator styles 7N and 7P only.

5 Actuator & Bracket Finish is a matched set.

Special Circuits for Tippette Rocker Switches

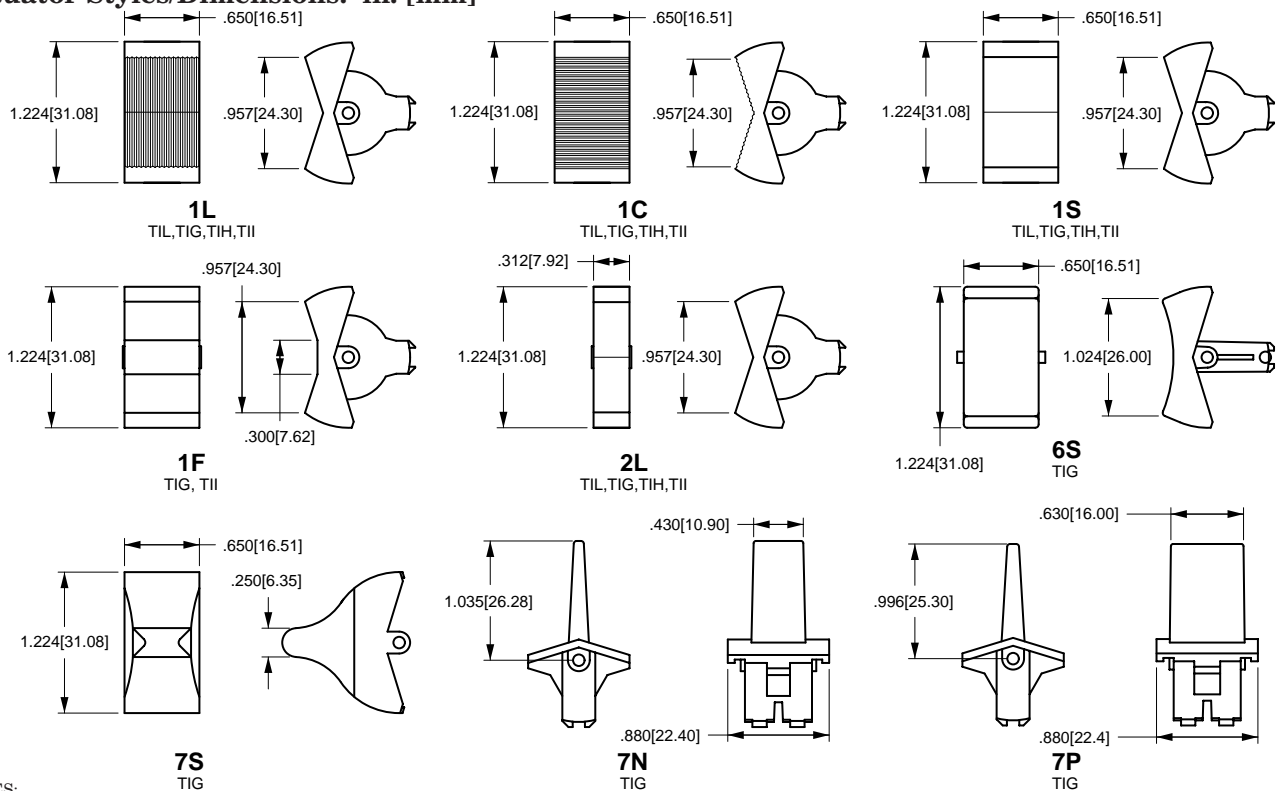
CIRCUIT	POSITION 1	POSITION 2	POSITION 3
PROGRESSIVE TWO CIRCUIT			
GG	BOTH CIRCUITS ON	ONE CIRCUIT ON	OFF
GG	BOTH CIRCUITS (ON)	ONE CIRCUIT ON	OFF
SINGLE POLE TRIPLE THROW			
GE	ON	ON	ON
TWO CIRCUIT			
GH	CIRCUIT 1 ON	BOTH CIRCUITS ON	CIRCUIT 2 ON
GP	CIRCUIT 2 ON	CIRCUIT 1 ON	OFF
REVERSING DOUBLE POLE DOUBLE THROW			
GO	ON	OFF	ON
GX	ON	NONE	ON



TII

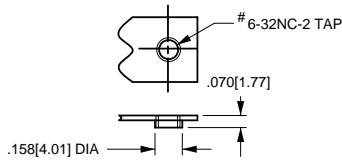
Terminal Type	Terminal Type	Terminal Type
<p>SOLDER LUG</p>	<p>.250 TAB (Q.C.)</p>	<p>.187 TAB (Q.C.)</p>
TERMINAL TYPE		
<p>SCREW (ASSEMBLED)</p>	<p>WIRE LEAD</p>	<p>PRINTED CIRCUIT</p>

Actuator Styles/Dimensions: in. [mm]



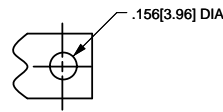
NOTES:
Additional momentary circuits are available. Consult factory for details.

Bracket Dimensions: in. [mm]



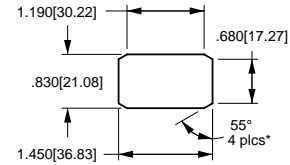
TAPPED HOLE

Standard with
A & B Brackets



CLEARANCE HOLE

Standard with
C Bracket



MOUNTING HOLE

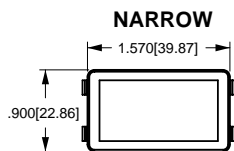
(Nylon Snap-in Brackets)

Panel Thickness:

.030 min. - .250 max.

* Angled corners are suggested for optimum fit. Standard rectangular cutout is acceptable.

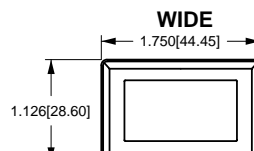
TIL	TIG	TII	TIH
<p>A TIL</p>	<p>A TIG</p>	<p>A TII</p>	<p>A TIH</p>
<p>B TIL</p>	<p>B TIG</p>		
<p>C* TIL</p>	<p>C TIG</p>	<p>C TIH, TII</p>	
	<p>H TIG</p>		<p>GCP / GMP GLOSS FINISH / MATTE FINISH HOLE PLUG FOR TIL, TIG, TIH & TII</p>



NARROW

FN

TIL, TIG, TIH, TII
METAL, SNAP-IN

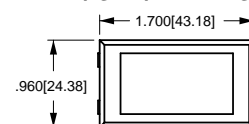


WIDE

FW

TIL, TIG, TIH, TII
METAL, SNAP-IN

MARINE / STD / WATERSHEDDING



MBL, NBL, WBL

TIG
BLACK NYLON, SNAP-IN

NOTES

Double brackets supplied on TII-Series when B style bracket is specified. Consult factory for dimensional information.

* Available in both clearance and tapped hole options. Please specify when ordering.

Traditionally styled rocker switches with the durability you've come to depend on and trust



The Carlingswitch Tippette Series is a traditionally styled rocker switch, available in sealed or unsealed versions. These switches are appropriate for use in those applications not requiring the more stringent sealing protection of the V-Series and L-Series switches. The Tippette Series is available in both illuminated and non-illuminated versions and features a wide variety of circuits, actuator styles and bracket options. This versatile offering includes international agency certifications and ratings to 26 amps for select circuits.

General Specifications

Electrical

Contact Rating	15 amps, 125 VAC 10 amps, 250 VAC 3/4 HP 125-250 VAC
Life	15 amps, 15-28 VDC 25,000 cycles circuit dependent 50,000 cycles circuit dependent consult factory for applicable circuits.
Contacts	Fine silver, silver cad-oxide
Terminals	Brass or copper/silver plate 1/4" (6.3mm) Quick Connect terminations standard. Solder lug - Brass Tin Plated Wire Lead 16 gauge standard 105°C 600VAC Screw Terminals - Brass

Mechanical

Endurance	100,000 cycles minimum
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Physical Characteristics

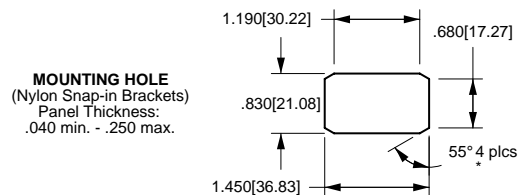
Lighted	Incandescent - rated 10,000 hours Neon - rated 25,000 hours
Seals	Bracket - Actuator WBL/NBL optional external gasket panel seal (MBL bracket)
Base	Phenolic (150°C)
Rocker/Bracket	Nylon 66 (105°C)

Agency Certifications



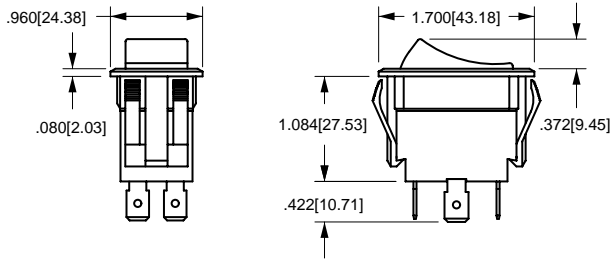
Select circuits and constructions with IEC approvals are available. Consult factory.

Mounting Specifications

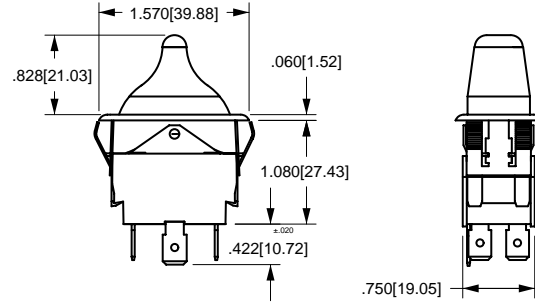


*Angled corners are suggested for optimum fit. Standard rectangular cutout is acceptable.

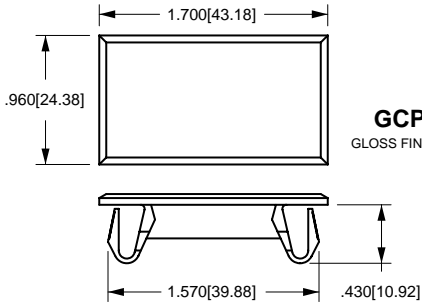
Tippette Dimensional Specifications



**6S ACTUATOR
WITH MBL BRACKET**



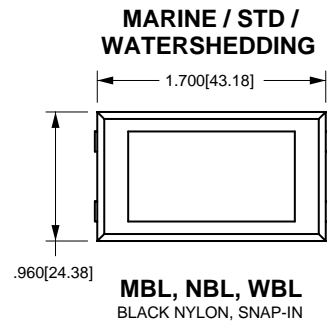
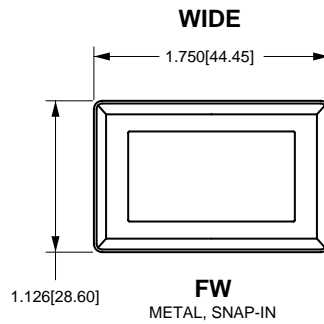
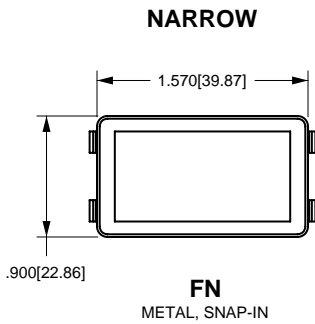
**7S ACTUATOR
WITH FN BRACKET**



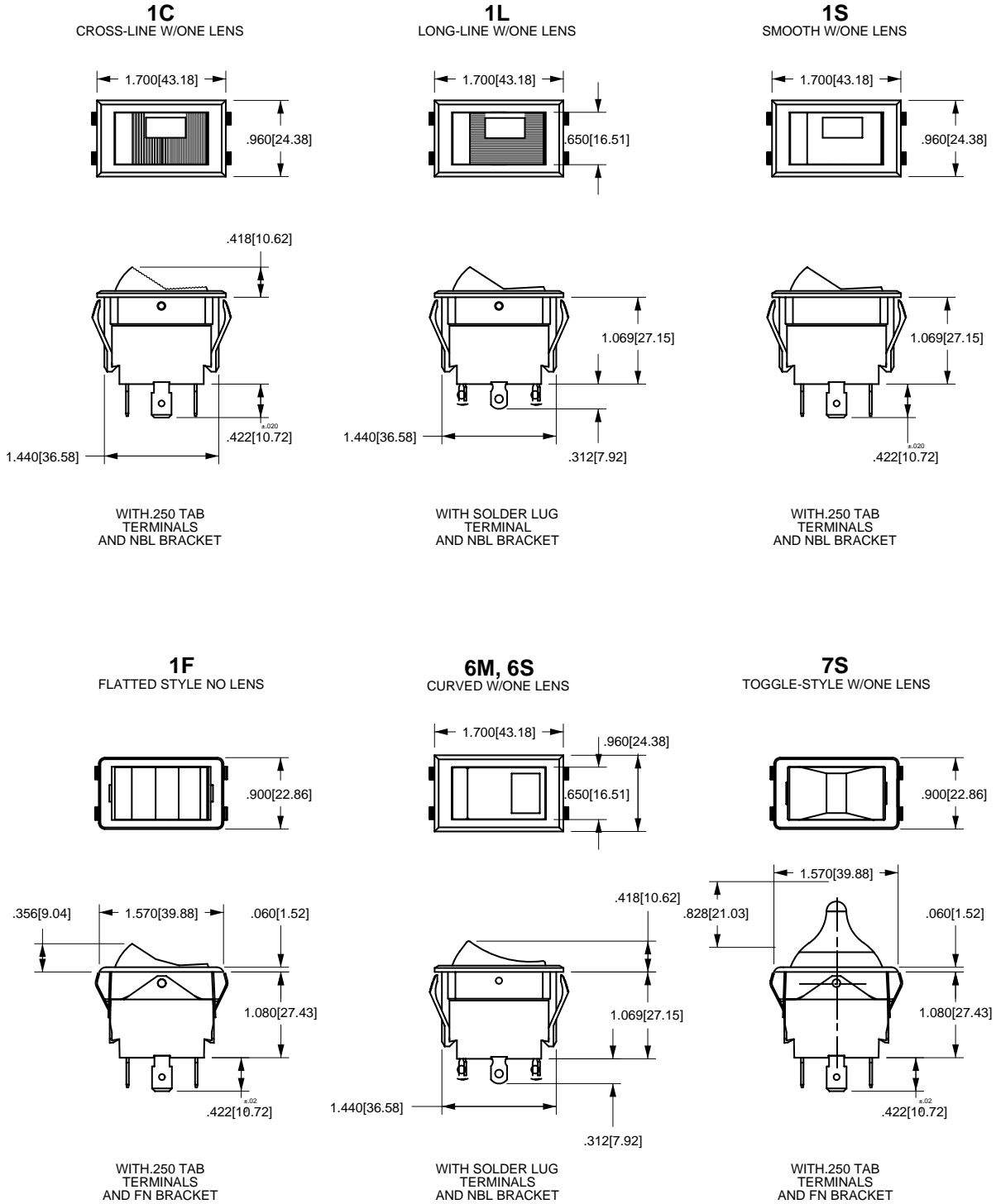
**HOLE PLUG
FOR TIG, LTIL & LTIG**

GCP / **GMP**
GLOSS FINISH / MATTE FINISH

SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)
TERMINAL TYPE		
SCREW (ASSEMBLED)	WIRE LEAD	



Tippette Dimensional Specifications



TIGA51

1
Base Part Number

6M

2
Actuator

BL

3
Color

MBL

4
Bracket

1 BASE PART NUMBER: SERIES/ POLES/ ILLUMINATION/ RATING/ CIRCUITRY/ TERMINATION¹¹

10A 250VAC, 15A 125VAC, 3/4 HP 125-250VAC, 15A 15-28VDC⁸

single pole in double pole base²

single pole in double pole base ²					double pole					
solder	.250	.187	screw	wire	solder	.250	.187	screw	wire	
lug	tab	tab	term.	leads	lug	tab	tab	term.	leads	
TIGA50	TIGA51	TIGA53	TIGA54	TIGA55	ON-NONE-OFF	TIGK50	TIGK51	TIGK53	TIGK54	TIGK55
TIGA5A	TIGA5B	TIGA5D	TIGA5E	TIGA5F	(ON)-NONE-OFF	TIGK5A	TIGK5B	TIGK5D	TIGK5E	TIGK5F
TIGA5L	TIGA5M	TIGA5R	TIGA5S	TIGA5T	ON-NONE-(OFF)	TIGK5L	TIGK5M	TIGK5R	TIGK5S	TIGK5T
TIGB50	TIGB51	TIGB53	TIGB54	TIGB55	ON-NONE-ON	TIGL50	TIGL51	TIGL53	TIGL54	TIGL55
TIGB5A	TIGB5B	TIGB5D	TIGB5E	TIGB5F	ON-NONE-(ON)	TIGL5A	TIGL5B	TIGL5D	TIGL5E	TIGL5F
TIGC50	TIGC51	TIGC53	TIGC54	TIGC55	ON-OFF-ON	TIGM50	TIGM51	TIGM53	TIGM54	TIGM55
TIGC5A	TIGC5B	TIGC5D	TIGC5E	TIGC5F	ON-OFF-(ON)	TIGM5A	TIGM5B	TIGM5D	TIGM5E	TIGM5F
TIGC5L	TIGC5M	TIGC5R	TIGC5S	TIGC5T	(ON)-OFF-(ON)	TIGM5L	TIGM5M	TIGM5R	TIGM5S	TIGM5T

special circuits⁹

solder	.250	.187	screw	wire	
lug	tab	tab	term.	leads	
TIGG50	TIGG51	TIGG53	TIGG54	TIGG55	ON - CIRCUIT 1 ON - CIRCUIT 1&2 ON
TIGG5A	TIGG5B	TIGG5D	TIGG5E	TIGG5F	OFF - CIRCUIT 1 ON - CIRCUIT 1&2 (ON)
TIGE50	TIGE51	TIGE53	TIGE54	TIGE55	ON - ON - ON
TIGP50	TIG551	TIGP53	TIGP54	TIGP55	OFF - CIRCUIT 1 ON - CIRCUIT 2 ON
TIGH50	TIGH51	TIGH53	TIGH54	TIGH55	CIRCUIT 1 ON - CIRCUIT 1&2 ON - CIRCUIT 2 ON
TIGO50	TIGO51	TIGO53	TIGO54	TIGO55	REVERSING ON - OFF - ON
TIGO5L	TIGO5M	TIGO5R	TIGO5S	TIGO5T	REVERSING (ON) - OFF - (ON)
TIGX50	TIGX51	TIGX53	TIGX54	TIGX55	REVERSING ON - NONE - ON

2 ACTUATOR STYLE

1S	Angular/Smooth Face Gloss ¹
1C	Angular/Cross Serrations Gloss ¹
1F	Flatted/Smooth Face Gloss ¹
1L	Angular/Longline Serrations Gloss ¹
6M	Curved/Smooth Face Matte ³
6S	Curved/Smooth Face Gloss ³
7S	Rounded Paddle/Smooth Face Gloss ¹

3 ACTUATOR COLOR¹⁰

BL	Black
WH	White
RD	Red

4 BRACKET STYLE¹⁰

NBL	Nylon Black ⁴
WBL	Watershedding Black ⁵
MBL	Marine Style Black ^{5,7}
FN	Metal Snap-In ⁶
FN BLK	Black Metal Snap-In ⁶
FN SS	Stainless Steel Snap-In ⁶
FW	Wide Stainless Steel Snap-In ⁶

NOTES

Shading indicates standard configurations.

- NBL, FN, & FW brackets only.
- For single pole switch in a single pole base, specify TIL with single pole rating/circuitry/termination.
- NBL, WBL, & MBL brackets only. With 6M actuator, brackets also will be matte finish.
- 1S, 1C, 1F, 1L, 6M, 6S, 7S actuators only.
- 6M & 6S actuators only.
- Not available with 6M & 6S actuators.
- Consists of WBL bracket, neoprene seal, and dummy rivets at open holes. Consult factory for agency approval status.
- All ratings are appropriate for usage in low voltage applications. For additional rating requirements, consult factory.
- For agency certification of special circuits, consult factory.
- Custom colors are available, consult factory.
- () - momentary



TIG-Series

LS-Series

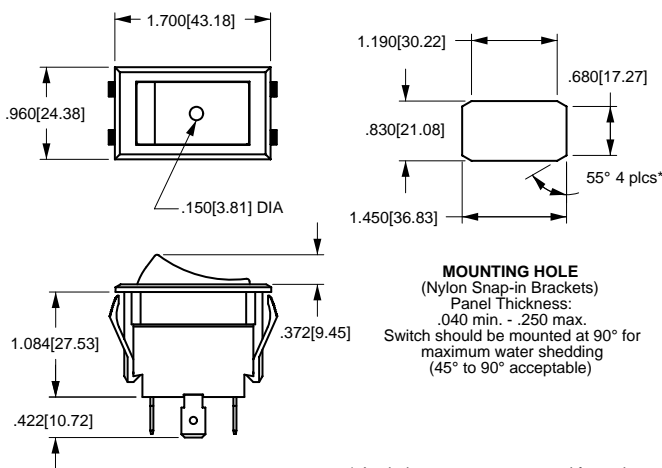


The LS-Series Softspot illuminated rocker switches feature a three-color high brightness light sequence, from a single lamp. These switches are designed with a standard nylon snap-in bracket and "Drip-Dry" construction that protects the front panel from dust and moisture.

Specifications

- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Polycarbonate

Dimensional Specifications: in. [mm]



* Angled corners are suggested for optimum fit. Standard rectangular cutout is acceptable.

 .125[3.18] DIA .330[8.38] .187[4.74]	 .075[1.91] DIA .437[11.09] .250[6.35]	 .055[1.40] DIA .394[10.00] .187[4.74]
SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)
TERMINAL TYPE		
 #6-32NC-2 THREAD .370[9.39] .286[7.26] .141[3.58]	 6.000[152.40] .500[12.70]	 .187[4.75] .187[4.75] .350[8.89]
SCREW (ASSEMBLED)	WIRE LEAD	PRINTED CIRCUIT

LS 1 5 6 1 - 13 - BL - BL - 012

SERIES

LS LIGHTED ROCKER

POLES

1 SINGLE

RATING

5 10A 250VAC
15A 125VAC
3/4HP 125-250VAC

CIRCUIT

- 1 ON-NONE-OFF
- 2 ON-NONE-(OFF)
- 3 (ON)-NONE-OFF
- 4 ON-NONE-ON
- 5 ON-NONE-(ON)
- 6 ON-OFF-ON
- 7 ON-OFF-(ON)
- 8 (ON)-OFF-(ON)

TERMINATION

- 0 SOLDER LUG
- 1 .250TAB (QC)
- 3 .187TAB (QC)
- 4 SCREW TERM.
- 5 WIRE LEAD
- 6 PC TERM.

LIGHTING SEQUENCE^{1,3}

	POS 1	POS 2	POS 3	POS 1	POS 2	POS 3
01	RED	RED	RED	32	GREEN	CLEAR
02	AMBER	AMBER	AMBER	33	GREEN	CLEAR
03	GREEN	GREEN	GREEN	34	GREEN	CLEAR
10	RED	----	NONE	35	GREEN	CLEAR
11	RED	CLEAR	RED	40	BLUE	----
12	RED	CLEAR	AMBER	41	BLUE	CLEAR
13	RED	CLEAR	GREEN	42	BLUE	CLEAR
14	RED	CLEAR	BLUE	43	BLUE	CLEAR
15	RED	CLEAR	CLEAR	44	BLUE	CLEAR
20	AMBER	----	NONE	45	BLUE	CLEAR
21	AMBER	CLEAR	RED	50	CLEAR	----
22	AMBER	CLEAR	AMBER	51	CLEAR	CLEAR
23	AMBER	CLEAR	GREEN	52	CLEAR	CLEAR
24	AMBER	CLEAR	BLUE	53	CLEAR	CLEAR
25	AMBER	CLEAR	CLEAR	54	CLEAR	CLEAR
30	GREEN	----	NONE	55	CLEAR	CLEAR
31	GREEN	CLEAR	RED			

ROCKER COLOR²

BL BLACK
WH WHITE

BRACKET COLOR²

BL BLACK
WH WHITE

LAMP VOLTAGE³

006 6V/ INCANDESCENT
012 12V/ INCANDESCENT
018 18V/ INCANDESCENT
024 24V/ INCANDESCENT
125 125V/ NEON
250 250V/ NEON

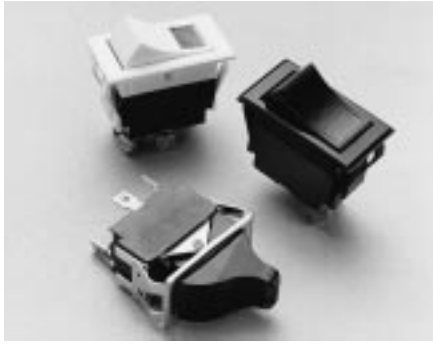
NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- Independent lamp is standard. Dependent lamp with ON-OFF function (including momentary) is available with Lighting Sequences 10, 20, 30, 40 and 50. No light in OFF position.
- Matte finish is standard. Custom colors are available. Consult factory.
- Green and blue not recommended with 125 volt or 250 volt neon lamps.

LTIL-Series



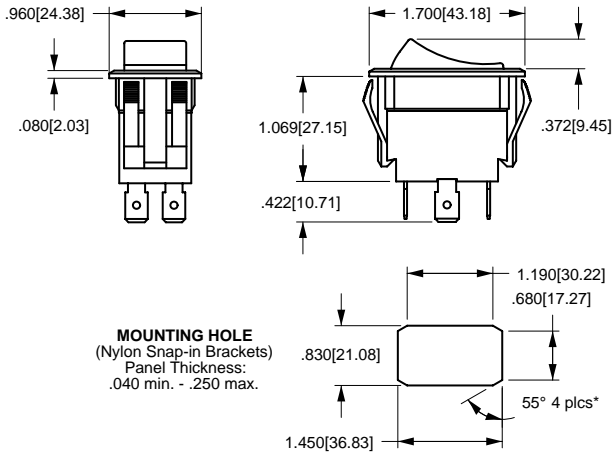
The LTIL-Series Tippette rocker switches are lighted, single pole and available with AC ratings to 17 amps. These switches are also suitable for low voltage DC applications. A variety of circuits, colors, terminations and lamp voltages are available.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon
- Bezel Material: Nylon or Steel

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



 .125[3.18] DIA .330[8.38] .187[4.74]	 .075[1.91] DIA .437[11.09] .250[6.35]	 .055[1.40] DIA .394[10.00] .187[4.74]
SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)
TERMINAL TYPE		
 #6-32NC-2 THREAD .370[9.39] .286[7.26] .141[3.58]	 6.000[152.40] .500[12.70]	 .187[4.75] .187[4.75] .350[8.89]
SCREW (ASSEMBLED)	WIRE LEAD	PRINTED CIRCUIT

LTIL A 5 1 - 6S - BL - RC - NBL/ 125N

SERIES

LTIL SINGLE POLE
LIGHTED IN
DOUBLE POLE
BASE

CIRCUIT

- A ON-NONE-OFF
- B ON-NONE-ON
- C ON-OFF-ON

NOTES:

Shading indicates standard configurations.
Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- 1 Imprinting available on smooth face rockers. Other actuator styles available. Consult factory.
- 2 Glossy finish is standard. Custom colors are available. Consult factory.
- 3 Green and blue lenses are not recommended with 125 volt or 250 volt neon lamps. For two different color lenses, please specify when ordering lens color. (ex.) RC/GN
- 4 Barbs are available on FN style bracket to accommodate panel thickness of .062, .100, .125, .156 and .250. Specify after bracket selection. (ex.) FN/125
MBL, NBL & WBL brackets are molded in black. If white is desired, specify as MWH, NWH & WWH. FN and FW brackets have a nickel-plated finish. Additional finishes are available; specify as follows: stainless steel: FN/SS; chrome: FN/CHR; black oxide: FW/BLK. FW bracket not available in stainless steel.
Bracket style MBL consists of LNP rocker, neoprene seal, syntech grease, dummy rivets.
MBL does not have UL & CSA approvals.
- 5 Actuator & Bracket Finish is a matched set.

RATING

- 5 10A 250VAC
15A 125VAC
1/2HP 125-250VAC
- 6 3A 250VAC
6A 125VAC
1/4HP 125-250VAC
- 7 12A 250VAC
17A 125VAC
3/4HP 125VAC
1HP 250VAC

ACTUATOR STYLE¹

- 1C CROSS SERRATED
- 1L LONG LINED
- 1S SMOOTH ANGLED
- 6M⁵ MATTE CURVED (M, N OR W BRACKETS ONLY)
- 6S SMOOTH CURVED (M, N & W BRACKETS ONLY)
- 7S TOGGLE

TERMINATION/FUNCTION

FUNCTION	.250 SOLDER LUG	.187 TAB (QC)	.187 TAB (QC)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF	0	1	3	4	5	6
(ON)-NONE-OFF	A	B	D	E	F	G
ON-NONE-(OFF)	L	M	R	S	T	U
ON-NONE-ON	0	1	3	4	5	6
ON-NONE-(ON)	A	B	D	E	F	G
ON-OFF-ON	0	1	3	4	5	6
ON-OFF-(ON)	A	B	D	E	F	G
(ON)-OFF-(ON)	L	M	R	S	T	U

ACTUATOR COLOR²

- BL BLACK
- WH WHITE

LENS COLOR³

- AM AMBER
- CL CLEAR
- GN GREEN
- LU BLUE
- RC RED
- WH WHITE

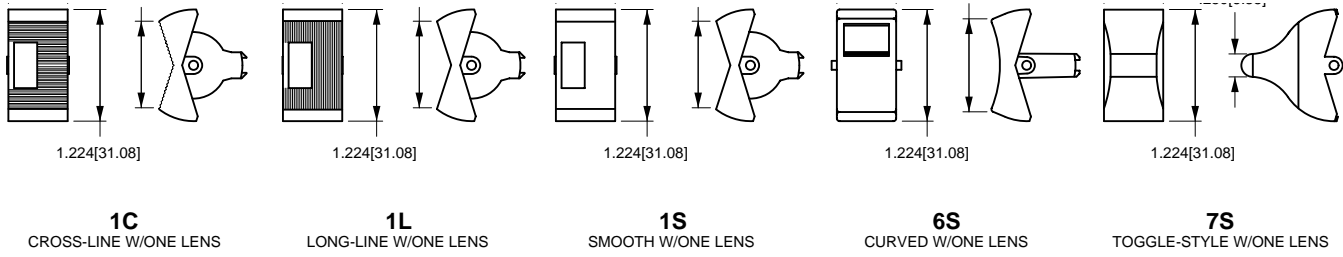
BRACKET STYLE⁴

- A
- B
- C
- FN NARROW
- FW WIDE
- MBL MARINE
- NBL
- WBL WATERSHEDDING

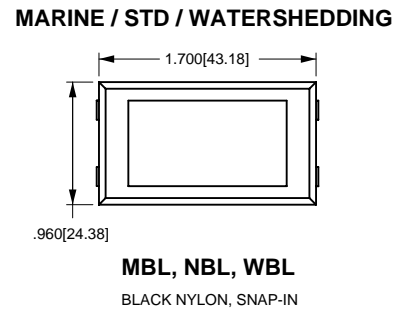
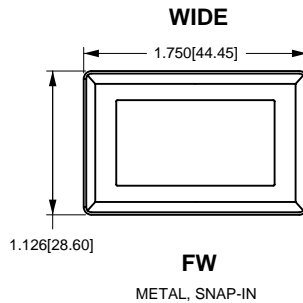
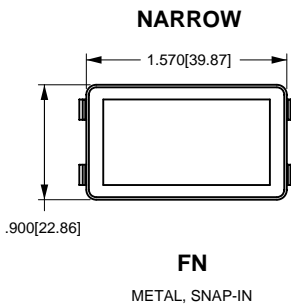
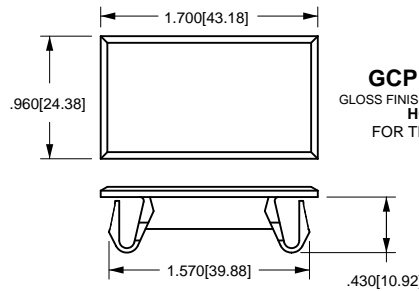
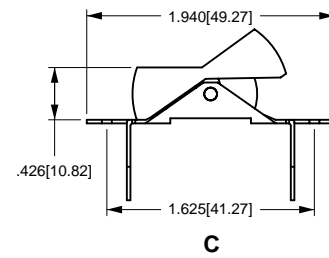
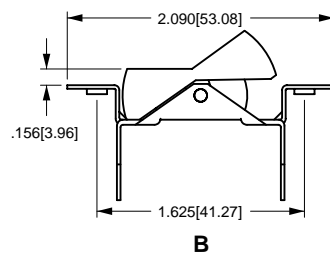
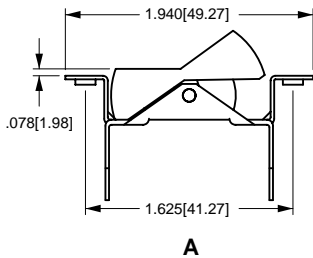
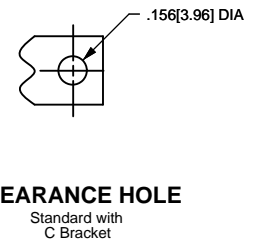
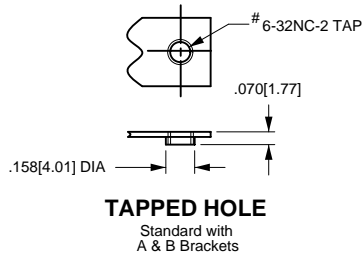
LAMP VOLTAGE

- 6V 6 VOLT/ INCANDESCENT
- 12V 12 VOLT/ INCANDESCENT
- 18V 18 VOLT/ INCANDESCENT
- 24V 24 VOLT/ INCANDESCENT
- 28V 28 VOLT/ INCANDESCENT
- 125N 125 VOLT/ NEON
- 250N 250 VOLT/ NEON

Actuator Style/Dimensions: in. [mm]



Bracket Dimensions: in. [mm]



NOTES

Double brackets supplied on LTIH-Series when B style bracket is specified. Consult factory for dimensional information.

LTILA51

1
Base Part Number

- **6M**

2
Actuator

- **BL**

3
Actuator Color

- **RC**

4
Lens Color

- **MBL**

5
Bracket

- **12V**

6
Lamp Voltage

1 BASE PART NUMBER: SERIES/ POLES/ ILLUMINATION/ RATING/ CIRCUITRY/ TERMINATION¹³

10A 250VAC, 15A 125VAC, 3/4 HP 125-250VAC, 15A 15-28VDC¹⁰

illuminated single pole in double pole base

illuminated double pole

solder	.250	.187	screw	wire		solder	.250	.187	screw	wire
lug	tab	tab	term.	leads		lug	tab	tab	term.	leads
LTILA50	LTILA51	LTILA53	LTILA54	LTILA55	ON-NONE-OFF	LTIGK50	LTIGK51	TIGK53	TIGK54	TIGK55
LTILA5A	LTILA5B	LTILA5D	LTILA5E	LTILA5F	(ON)-NONE-OFF	LTIGK5A	LTIGK5B	TIGK5D	TIGK5E	TIGK5F
LTILA5L	LTILA5M	LTILA5R	LTILA5S	LTILA5T	ON-NONE-(OFF)	LTIGK5L	LTIGK5M	TIGK5R	TIGK5S	TIGK5T
LTILB50	LTILB51	LTILB53	LTILB54	LTILB55	ON-NONE-ON	LTIGL50	LTIGL51	TIGL53	TIGL54	TIGL55
LTILB5A	LTILB5B	LTILB5D	LTILB5E	LTILB5F	ON-NONE-(ON)	LTIGL5A	LTIGL5B	TIGL5D	TIGL5E	TIGL5F
LTILC50	LTILC51	LTILC53	LTILC54	LTILC55	ON-OFF-ON	LTIGM50	LTIGM51	TIGM53	TIGM54	TIGM55
LTILC5A	LTILC5B	LTILC5D	LTILC5E	LTILC5F	ON-OFF-(ON)	LTIGM5A	LTIGM5B	TIGM5D	TIGM5E	TIGM5F
LTILC5L	LTILC5M	LTILC5R	LTILC5S	LTILC5T	(ON)-OFF-(ON)	LTIGM5L	LTIGM5M	TIGM5R	TIGM5S	TIGM5T

2 ACTUATOR STYLE

- 1S** Angular/Smooth Face Gloss¹
- 1C** Angular/Cross Serrations Gloss¹
- 1L** Angular/Longline Serrations Gloss¹
- 6M** Curved/Smooth Face Matte³
- 6S** Curved/Smooth Face Gloss¹¹
- 7S** Rounded Paddle/Smooth Face Gloss²

5 BRACKET STYLE¹²

- NBL** Nylon Black⁴
- WBL** Watershedding Black⁵
- MBL** Marine Style Black^{5,8}
- FN** Metal Snap-In⁶
- FN BLK** Black Metal Snap-In⁶
- FN SS** Stainless Steel Snap-In⁶
- FW** Wide Stainless Steel Snap-In⁶

3 ACTUATOR COLOR¹²

- BL** Black
- RD** Red
- WH** White

6 LAMP VOLTAGE

- neon⁹
- 125N** 125 volt
- 250N** 250 volt
- incandescent
- 6V** 6 volt
- 12V** 12 volt
- 18V** 18 volt
- 24V** 24 volt
- 28V** 28 volt

4 LENS COLOR¹⁴

- AM** Amber
- RD** Red
- GN** Green⁷
- LU** Blue⁷
- CL** Clear
- WH** White

NOTES

Shading indicates standard configurations.

- 1 NBL, FN, & FW brackets only. Double pole circuits provided with 3 pole base.
- 2 LTIL-Series with NBL, FN, & FW brackets only.
- 3 WBL & MBL brackets only. With 6M actuator, bracket will also be matte finish.
- 4 1S, 1C, 1L, 6S, 7S actuators only. 1S, 1C, 1L & 7S with NBL bracket only available with LTIL-Series.
- 5 6M, 6S actuators only.
- 6 Not available with 6M and 6S actuators.
- 7 Not recommended with neon lamps.
- 8 Consists of WBL bracket, neoprene seal, dummy rivets at open holes. Consult factory for agency approval status.
- 9 Not recommended with blue or green lenses.
- 10 For additional rating requirements, consult factory.
- 11 NBL, WBL & MBL only.
- 12 Custom colors are available, consult factory.
- 13 () - momentary
- 14 All double throw circuits supplied with two different color lenses. To specify two different lens colors, specify second color, after first color. (ex. LTIGM51-6S-BL-RC/GN-WBL-12V)



LTIG-Series

LTIG-Series



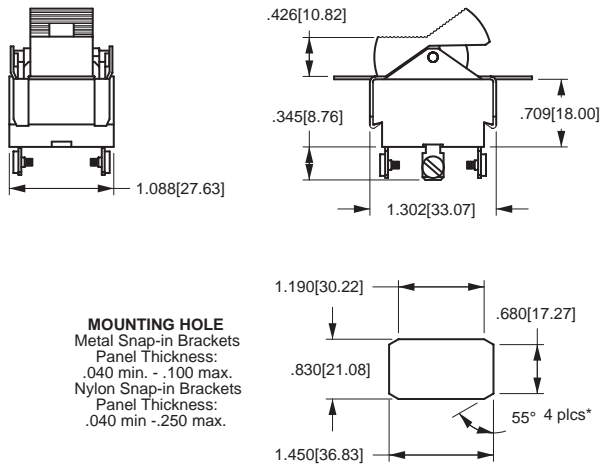
The LTIG-Series Tippette rocker switches are lighted, double pole and AC rated up to 26 amps. A variety of circuits, colors, terminations and lamp voltages are available.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon
- Bezel Material: Nylon or Steel

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



 .125[3.18] DIA .330[8.38] .187[4.74]	 .075[1.91] DIA .437[11.09] .250[6.35]	 .055[1.40] DIA .394[10.00] .187[4.74]
SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)
TERMINAL TYPE		
 #6-32NC-2 THREAD .370[9.39] .286[7.26] .141[3.58]	 6.000[152.40] .500[12.70]	 .187[4.75] .187[4.75] .350[8.89]
SCREW (ASSEMBLED)	WIRE LEAD	PRINTED CIRCUIT

* Angled corners are suggested for optimum fit. Standard rectangular cutout is acceptable.

LTIG K 5 1 - 6S - BL - RC - NBL / 125N

SERIES

LTIG DOUBLE POLE LIGHTED

CIRCUIT¹

- K** ON-NONE-OFF
- L** ON-NONE-ON
- M** ON-OFF-ON

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- Lighted circuits L and M have two lamps.
- Additional non-inductive ratings to 26 amps available. Consult factory.
- Imprinting available on smooth face rockers. Other actuator styles available. Consult factory.
- Glossy finish is standard. Custom colors are available. Consult factory.
- Green & blue not recommended w/125 volt or 250 volt neon lamp. For two different color lenses, please specify when ordering lens color. (ex.) RC/GN
- Barbs are available on FN style bracket to accommodate panel thickness of .062, .100, .125, .156 and .250. Specify after bracket selection. (ex.) FN/125
MBL, NBL & WBL brackets are molded in black. If white is desired, specify as MWH, NWH & WWH. FN and FW brackets have a nickel-plated finish. Additional finishes are available; specify as follows: stainless steel: FN/SS; chrome: FN/CHP; black oxide: FW/BLK. FW bracket not available in stainless steel. Bracket style MBL consists of LNP rocker, neoprene seal, syntech grease, dummy rivets.
MBL, NBL and WBL brackets supplied in two pole base. All other brackets supplied in three pole base.
MBL does not have UL & CSA approvals.
- Actuator & Bracket Finish is a matched set.

RATING²

- 5** 10A 250VAC
15A 125VAC
3/4HP 250VAC
- 6** 3A 250VAC
6A 125VAC
1/4HP 125-250VAC

ACTUATOR STYLE³

- 1C** CROSS SERRATED
- 1L** LONG LINED
- 1S** SMOOTH ANGLED
- 6M⁷** MATTE CURVED (M, N OR W BRACKETS ONLY)
- 6S** SMOOTH CURVED (M, N & W BRACKETS ONLY)

ACTUATOR COLOR⁴

- BL** BLACK
 - WH** WHITE
- LENS COLOR⁵**
- AM** AMBER
 - CL** CLEAR
 - GN** GREEN
 - LU** BLUE
 - RC** RED
 - WH** WHITE

BRACKET STYLE⁶

- A**
- C**
- FN** NARROW
- FW** WIDE
- MBL** MARINE
- NBL**
- WBL** WATERSHEDDING

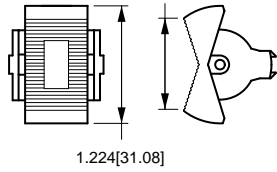
LAMP VOLTAGE

- 6V** 6 VOLT/ INCANDESCENT
- 12V** 12 VOLT/ INCANDESCENT
- 18V** 18 VOLT/ INCANDESCENT
- 24V** 24 VOLT/ INCANDESCENT
- 28V** 28 VOLT/ INCANDESCENT
- 125N** 125 VOLT/ NEON
- 250N** 250 VOLT/ NEON

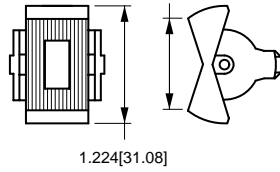
TERMINATION/FUNCTION

FUNCTION	SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF	0	1	3	4	5	6
(ON)-NONE-OFF	A	B	D	E	F	G
ON-NONE-(OFF)	L	M	R	S	T	U
ON-NONE-ON	0	1	3	4	5	6
ON-NONE-(ON)	A	B	D	E	F	G
ON-OFF-ON	0	1	3	4	5	6
ON-OFF-(ON)	A	B	D	E	F	G
(ON)-OFF-(ON)	L	M	R	S	T	U

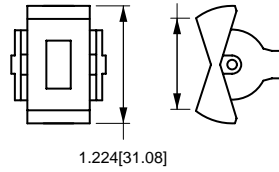
Actuator Style/Dimensions: in. [mm]



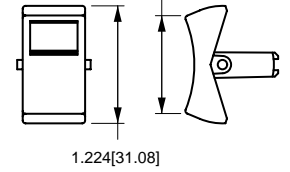
1C
CROSS-LINE W/ONE LENS



1L
LONG-LINE W/ONE LENS

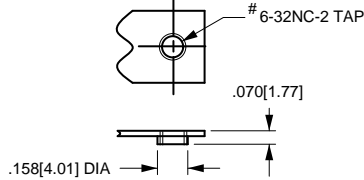


1S
SMOOTH W/ONE LENS

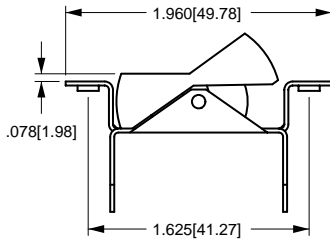


6S
CURVED W/ONE LENS

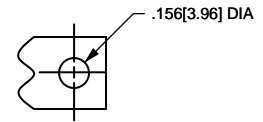
Bracket Dimensions: in. [mm]



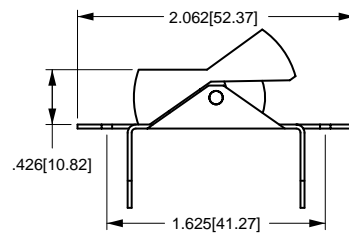
TAPPED HOLE
Standard with
A Bracket



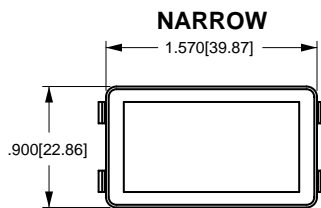
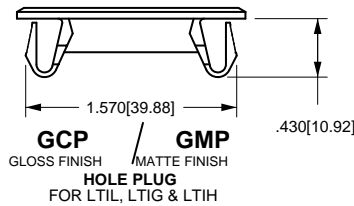
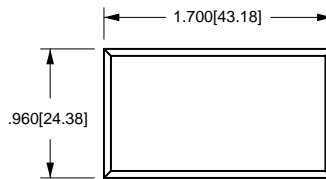
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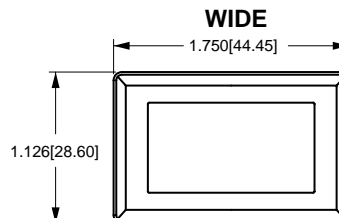
CLEARANCE HOLE
Standard with
C Bracket



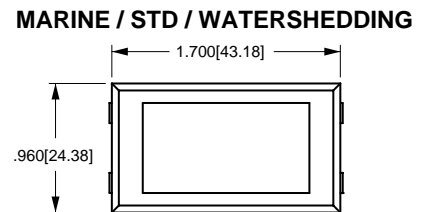
C



FN
METAL, SNAP-IN



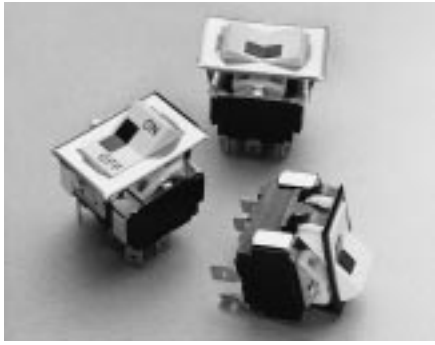
FW
METAL, SNAP-IN



MBL, NBL, WBL
BLACK NYLON, SNAP-IN

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

LTIH-Series



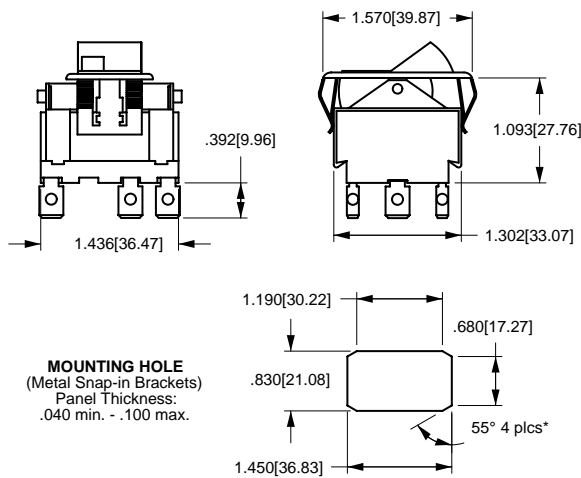
The LTIH-Series Tippetto rocker switches are lighted, three-pole and AC rated up to 15 amps. A variety of circuits, colors, terminations and lamp voltages are available.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon
- Bezel Material: Steel

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



 .125[3.18] DIA .330[8.38] .187[4.74]	 .075[1.91] DIA .437[11.09] .250[6.35]	 .055[1.40] DIA .394[10.00] .187[4.74]
SOLDER LUG	.250 TAB (Q.C.)	.187 TAB (Q.C.)
TERMINAL TYPE		
 #6-32NC-2 THREAD .370[9.39] .286[7.26] .141[3.58]	 6.000[152.40] .500[12.70]	 .187[4.75] .187[4.75] .350[8.89]
SCREW (ASSEMBLED)	WIRE LEAD	PRINTED CIRCUIT

* Angled corners are suggested for optimum fit. Standard rectangular cutout is acceptable.

LTIH K 5 1 - 1S - BL - RC - FN / 125N

SERIES	RATING	ACTUATOR STYLE¹	ACTUATOR COLOR²	BRACKET STYLE⁴
LTIH THREE POLE IN A FOUR POLE BASE LIGHTED	5 10A 250VAC 15A 125VAC 1/2HP 125-250VAC 1, 2 OR 3 PHASE	1C CROSS SERRATED 1L LONG LINED 1S SMOOTH ANGLED	BL BLACK WH WHITE	A C FN NARROW FW WIDE
CIRCUIT	6 3A 250VAC 6A 125VAC 1/4HP 125-250VAC		LENS COLOR³	LAMP VOLTAGE
K ON-NONE-OFF L ON-NONE-ON M ON-OFF-ON			AM AMBER CL CLEAR GN GREEN LU BLUE RC RED WH WHITE	NEON 125N 125 VOLT 250N 250 VOLT

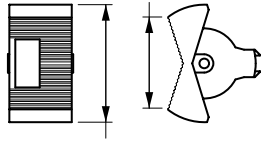
NOTES:
Shading indicates standard configurations.
Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

- Imprinting available on smooth face rockers. Other actuator styles available. Consult factory.
- Custom colors are available. Consult factory.
- Green and blue not recommended with 125 volt or / 250 volt neon lamps.
For two different color lenses, please specify when ordering lens color. (ex.) RC/GN
Split lenses available. Please specify when choosing lens. (ex.) RC/GN
- Bracket Styles D, E, and G available. Supplied with double brackets.
Barbs are available on FN style bracket to accommodate panel thickness of .062, .100, .125, .156 & .250. Specify after bracket selection. (ex.) FN/125
Standard FN and FW brackets are nickel. FN brackets are available in stainless steel, chrome and black oxide. FW brackets are available in chrome and black oxide. Please specify when ordering.

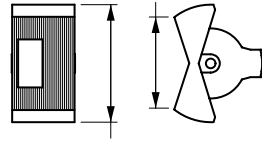
TERMINATION/FUNCTION

FUNCTION	SOLDER LUG	.250 TAB (QC)	.187 TAB (QC)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF	0	1	3	4	5	6
(ON)-NONE-OFF	A	B	D	E	F	G
ON-NONE-(OFF)	L	M	R	S	T	U
ON-NONE-ON	0	1	3	4	5	6
ON-NONE-(ON)	A	B	D	E	F	G
ON-OFF-ON	0	1	3	4	5	6
ON-OFF-(ON)	A	B	D	E	F	G
(ON)-OFF-(ON)	L	M	R	S	T	U

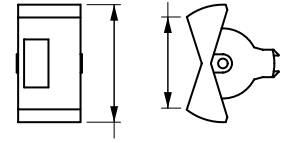
Actuator Style/Dimensions: in. [mm]



1C
CROSS-LINE W/ONE LENS

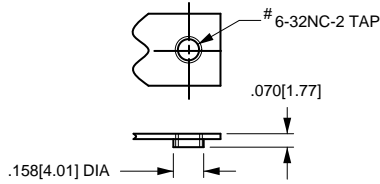


1L
LONG-LINE W/ONE LENS

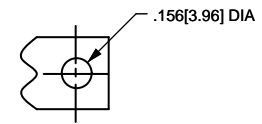


1S
SMOOTH W/ONE LENS

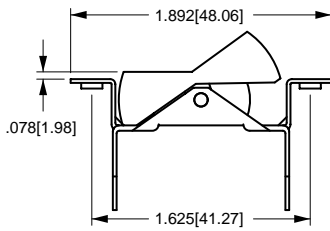
Bracket Dimensions: in. [mm]



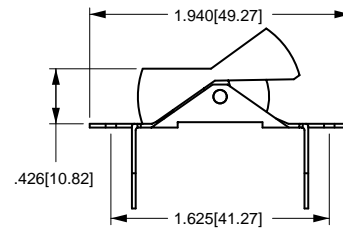
TAPPED HOLE
Standard with
A Bracket



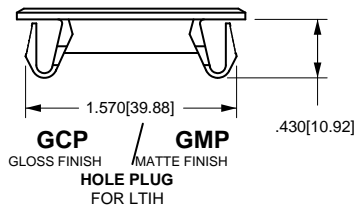
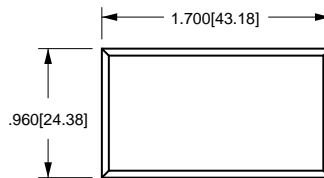
CLEARANCE HOLE
Standard with
C Bracket



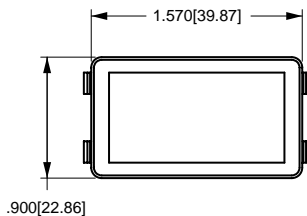
A



C

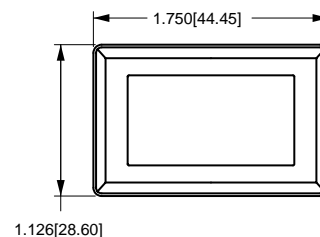


NARROW



FN
METAL, SNAP-IN

WIDE



FW
METAL, SNAP-IN

F-Series



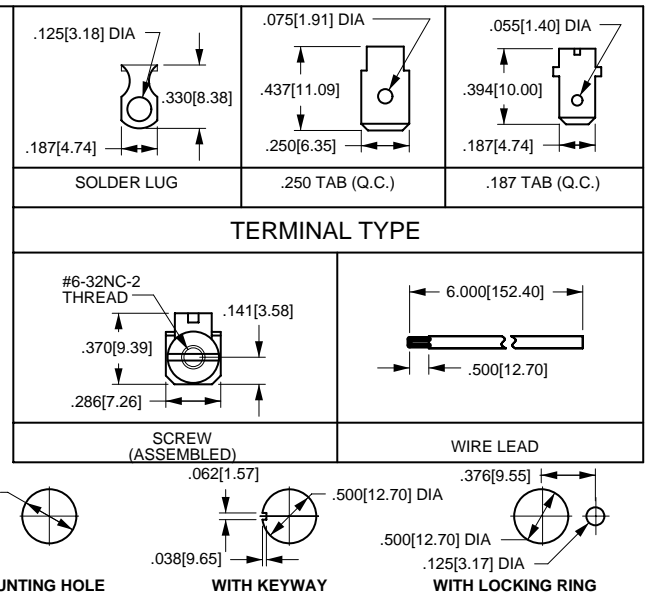
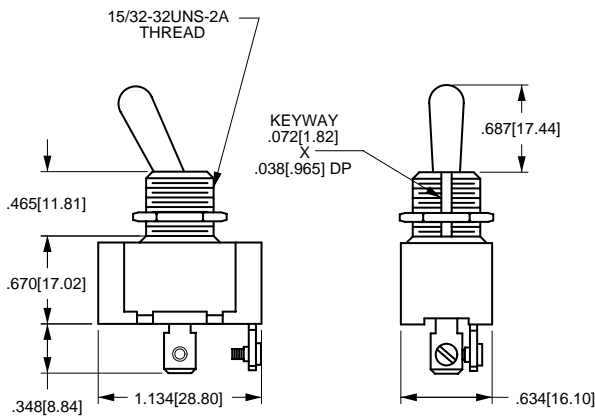
The F-Series toggle switches are AC rated up to 20 amps, single pole, with a slow-make, slow-break contact mechanism. These switches are available in a wide range of ratings, circuits, terminations and bushing/toggle configurations.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



2F A 5 3 - 73 /TABS

SERIES	RATING ¹	TERMINATION/FUNCTION ²	SOLDER LUG	.250TAB (QC)	SCREW TERM.	WIRE LEAD
2F SINGLE POLE	5 10A 250VAC 15A 125VAC 3/4HP 120-240VAC	FUNCTION	3	3/TABS	4	1
6F SINGLE POLE MOMENTARY		(ON)-NONE-OFF	3	3/TABS	4	1
		(ON)-NONE-(OFF)	7	7/TABS	8	6
	6 3A 250VAC 6A 125VAC 1/4HP 120-240VAC	ON-NONE-ON	3	3/TABS	4	1
		ON-NONE-(ON)	3	3/TABS	4	1
		ON-OFF-ON	3	3/TABS	4	1
		(ON)-OFF-(ON)	3	3/TABS	4	1
		ON-OFF-(ON)	7	7/TABS	8	6

- CIRCUIT**
- A** ON-NONE-OFF
 - B** ON-NONE-ON
 - C** ON-OFF-ON

TOGGLE STYLE

	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.	NEOPRENE SEAL
BAT	.406	.343	52	57
	.562	.465	63	68
	.687	.465	73	78
	1.00	.343	A2	A7
	2.00	.465	E3	E8
BALL	.500	.343	22	---

NOTES:

Shading indicates standard configurations.

For bushing accessories, see pages 69 and 70.

¹ Additional ratings to 20A available. Consult factory.

² For .187TAB (QC) type terminal use solder lug function selection codes. Add the suffix /.187TABS. (ex.) 2FA53-73/.187TABS

G-Series



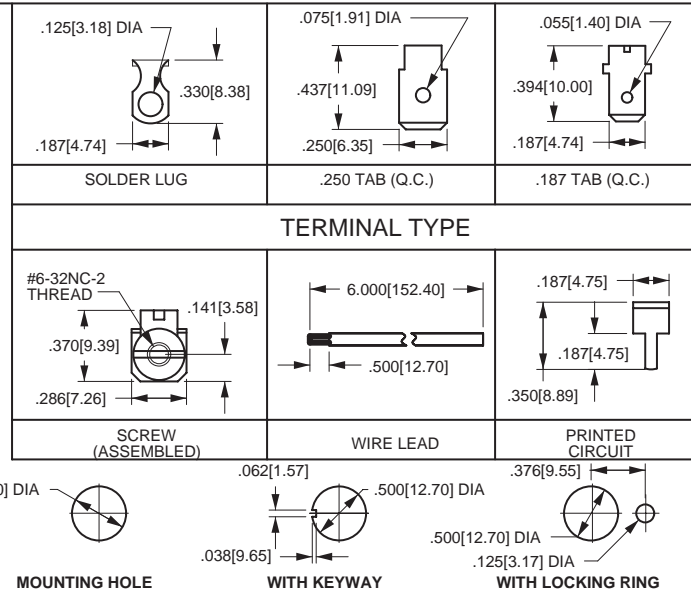
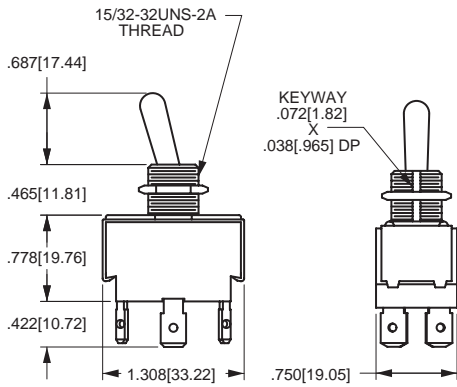
The G-Series toggle switches are single or double pole, AC rated up to 20 amps and contain a slow-make, slow-break contact mechanism. These switches are available in a wide range of ratings, terminations, circuits and bushing/toggle configurations.

Specifications

- Certifications*: UL, CSA, VDE
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate or Polycarbonate
- Bushing Material: Brass/Nickel Plate or Polycarbonate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



2G **A** **5** **1** - **73**

SERIES

2G MAINTAINED
6G MOMENTARY

CIRCUIT¹

SINGLE POLE IN
DOUBLE POLE BASE

A ON-NONE-OFF
B ON-NONE-ON
C ON-OFF-ON

DOUBLE POLE

K ON-NONE-OFF
L ON-NONE-ON
M ON-OFF-ON

RATING²

0 20A 250VAC
5 10A 250VAC
15A 125VAC
3/4HP 125-250VAC
6 3A 250VAC
6A 125VAC
1/4HP 125-250VAC
7 12A 250VAC
17A 125VAC
1HP 250VAC
9 10A 250VAC
15A 125VAC
12(6)A 250VAC T85
3/4HP 125-250VAC
72 20A 125-277VAC
1 1/2HP 125VAC
2HP 250VAC

TERMINATION/FUNCTION

FUNCTION	SOLDER LUG	.250 TAB (QC)	.187 TAB (QC)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF (ON)-NONE-OFF	0	1	3	4	5	6
ON-NONE-(OFF)	A	B	D	E	F	G
ON-NONE-(ON)	L	M	R	S	T	U
ON-NONE-(ON)	0	1	3	4	5	6
ON-NONE-(ON)	A	B	D	E	F	G
ON-OFF-ON	0	1	3	4	5	6
ON-OFF-(ON)	A	B	D	E	F	G
(ON)-OFF-(ON)	L	M	R	S	T	U

TOGGLE STYLE³

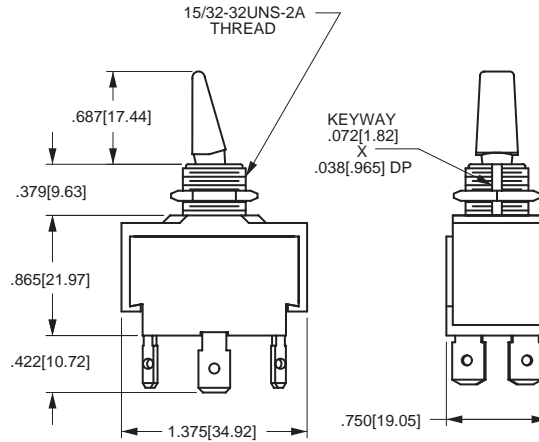
BAT	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.	NEOPRENE SEAL
	.406	.343	52	57
	.562	.465	63	68
	.687	.465	73	78
	1.00	.465	A3	A8
	1.25	.465	B3	B8
	.687	.465	NBL3	NBL8
	.687	.465	NWH3	NWH8
	1.50	.465	C3	C8

NOTES:

Shading indicates standard configurations.
For bushing accessories, see pages 69 and 70.

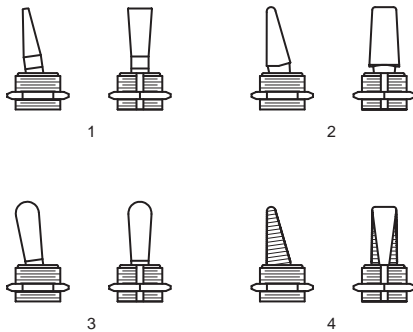
- Additional circuits are available on page 53.
- Additional ratings available. Consult factory.
Rating Code 5 is applicable to certain circuits only. Consult factory for specifics.
Rating 9 is only available with nylon bushing and actuator. See page 53 for callout.
Rating 9 is only available with terminations 0 and 1, circuits A, B, K and L only.
Rating 72 is only available in maintained circuits and nylon construction. See page 53 for callout.
- NBL toggle uses black oxide plated metal bushing for standard construction. NWH toggles use nickel plated metal bushing for standard construction.

Nylon Toggle



S.P. OR D.P. NYLON

FOR NYLON TOGGLES
AFTER TERMINATION SELECTION, ADD SUFFIXES:
(ex.) 2GK51-D-4B-B



D	-	4	-	B	-	B
NYLON TOGGLE		TOGGLE STYLE (SEE DRAWING AT LEFT)		ACTUATOR COLOR		BUSHING COLOR
D				B BLACK W WHITE		B BLACK W WHITE
		1 2 3 4 (WITH NEOPRENE SEAL)				

Additional Circuits¹

CIRCUIT	POSITION 1	POSITION 2	POSITION 3
PROGRESSIVE TWO CIRCUIT			
2GH	CIRCUIT 1 ON	2 CIRCUITS ON	CIRCUIT 2 ON
2GP	CIRCUIT 2 ON	CIRCUIT 1 ON	OFF
2GG	2 CIRCUITS ON	CIRCUIT 1 ON	OFF
6GG MOMENTARY	2 CIRCUITS (ON)	CIRCUIT 1 ON	OFF
SINGLE POLE TRIPLE THROW			
2GE	ON	ON	ON
REVERSING DOUBLE POLE DOUBLE THROW*			
2GX	ON	NONE	ON
2GO	ON	OFF	ON
6GO MOMENTARY	(ON)	OFF	(ON)

*WITH REVERSING DOUBLE POLE DOUBLE THROW CIRCUITS, USE TERMINATION/FUNCTION FROM FOLLOWING OPTIONS:

	SOLDER LUG	.250 TAB (Q.C)	SCREW TERM.	WIRE LEAD
3		3/TABS	4	1
3		3/TABS	4	1
3		3/TABS	4	1

NOTES:

Shading indicates standard configurations.

¹ Additional momentary circuits are available. Consult factory for details.

H-Series



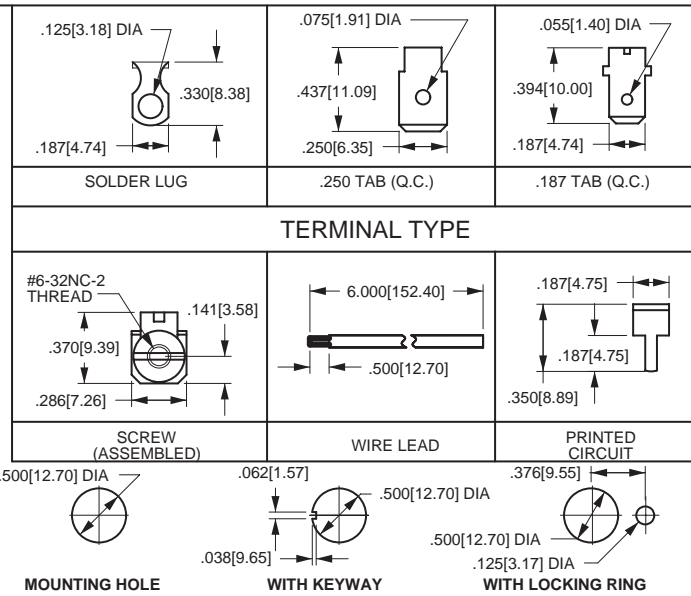
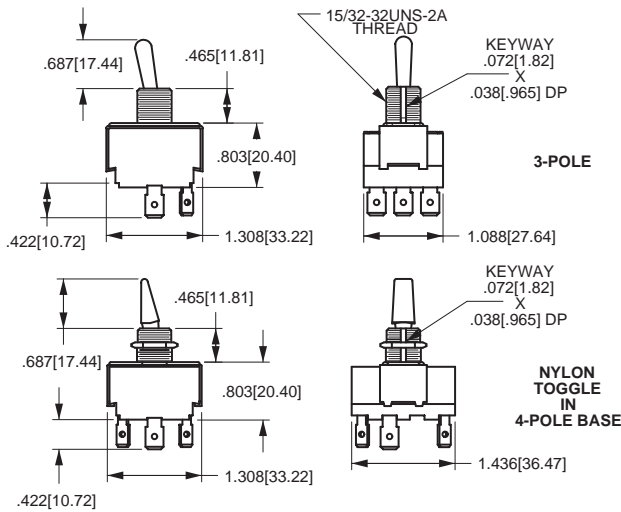
The H-Series toggle switches are heavy-duty, high voltage, high amperage, three-pole switches. These switches have a slow-make, slow-break contact mechanism, are AC rated to 600V, and are available in a wide range of ratings, circuits, terminations and bushing/toggle configurations.

Specifications

- Certifications*: UL, CSA,
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate or Polycarbonate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



H SERIES **K** CIRCUIT¹ **25** TERMINATION/FUNCTION **1** - **73** TOGGLE STYLE²

H THREE POLE TOGGLE

K ON-NONE-OFF
L ON-NONE-ON
M ON-OFF-ON

RATING

A27 6A 600VAC 12A 250VAC 17A 125VAC 1HP 125VAC 1, 2 OR 3 PHASE 1 1/2HP 250VAC 1, 2 OR 3 PHASE 2HP 480-600VAC; 3 PHASE	26 3A 250VAC 6A 125VAC 1/4HP 125-250VAC 1, 2 OR 3 PHASE	27 12A 250VAC 17A 125VAC 1 1/2HP 250VAC 1, 2 OR 3 PHASE	28 5A 250VAC 8A 125VAC 1/2HP 125-250VAC 1, 2 OR 3 PHASE
25 10A 250VAC 15A 125VAC 3/4HP 125-250VAC 1, 2 OR 3 PHASE			

TERMINATION/FUNCTION

FUNCTION	SOLDER LUG	.250 TAB (QC)	.187 TAB (QC)	SCREW TERM.	WIRE LEAD	PC TERM.
ON-NONE-OFF	0	1	3	4	5	6
(ON)-NONE-OFF	A	B	D	E	F	G
ON-NONE-(OFF)	L	M	R	S	T	U
ON-NONE-ON	0	1	3	4	5	6
ON-NONE-(ON)	A	B	D	E	F	G
ON-OFF-ON	0	1	3	4	5	6
ON-OFF-(ON)	A	B	D	E	F	G
(ON)-OFF-(ON)	L	M	R	S	T	U

TOGGLE STYLE²

	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.	NEOPRENE SEAL
BAT	.687	.465	73	78
	1.25	.343	B2	---
NYLON	.687	.465	NBL3	NBL8
	.687	.465	NWH3	NWH8

NOTES:

Shading indicates standard configurations.

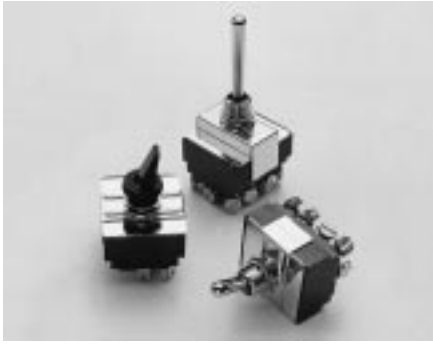
For bushing accessories, see pages 69 and 70.

1 Consult factory for additional circuits.

2 Nylon toggles are available with 4-pole base only.

NBL toggle uses black oxide plated metal bushing for standard construction. NWH toggle uses nickel plated metal bushing for standard construction.

I-Series



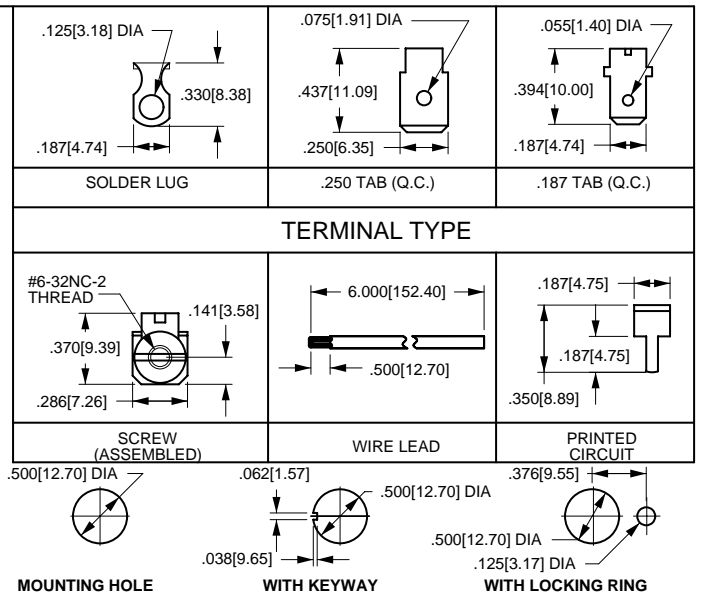
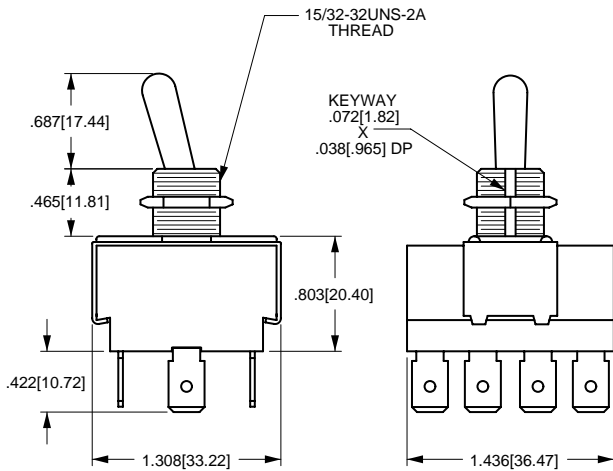
The I-Series toggle switches are heavy-duty, four pole switches with a slow-make, slow-break contact mechanism. These switches are available in a wide range of terminations, circuits and bushing/toggle configurations.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate or Polycarbonate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



I	K	25	1	-	73
SERIES	RATING	TERMINATION/FUNCTION			
I FOUR POLE TOGGLE	25 10A 250VAC 15A 125VAC 3/4HP 125-250VAC 1, 2 OR 3 PHASE	FUNCTION	SOLDER LUG	.250 TAB (QC)	.187 TAB (QC)
CIRCUIT¹		ON-NONE-OFF	0	1	3
		(ON)-NONE-OFF	A	B	D
		ON-NONE-(OFF)	L	M	R
		ON-NONE-ON	0	1	3
		ON-NONE-(ON)	A	B	D
		ON-OFF-ON	0	1	3
		ON-OFF-(ON)	A	B	D
		(ON)-OFF-(ON)	L	M	R
K ON-NONE-OFF				SCREW TERM.	WIRE LEAD
L ON-NONE-ON				4	5
M ON-OFF-ON				5	6
				6	7
				7	8
				8	9
				9	0
				0	1
				1	2
				2	3
				3	4
				4	5
				5	6
				6	7
				7	8
				8	9
				9	0
				0	1
				1	2
				2	3
				3	4
				4	5
				5	6
				6	7
				7	8
				8	9
				9	0
				0	1
				1	2
				2	3
				3	4
				4	5
				5	6
				6	7
				7	8
				8	9
				9	0
				0	1
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				9	0
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				9	0
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				8	9
				9	0
				0	1
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				8	9
				9	0
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				9	0
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				8	9
				9	0
				0	1
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				5	6
				6	7
				7	8
				8	9
				9	0
				0	1
				1	2
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				4	5
				5	6
				6	7
				7	8
				8	9
				9	0
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				7	8
				8	9
				9	0
				0	1
				1	2
				2	3
				3	4
				4	5
				5	6
				6	7
				7	8
				8	9
				9	0

C-Series



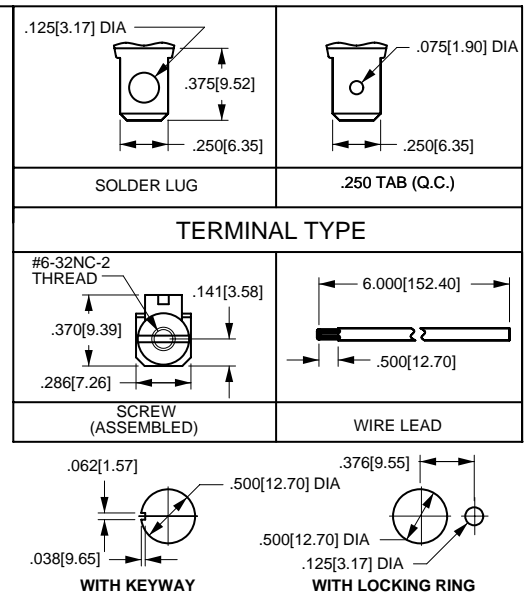
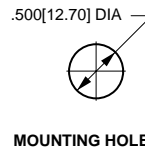
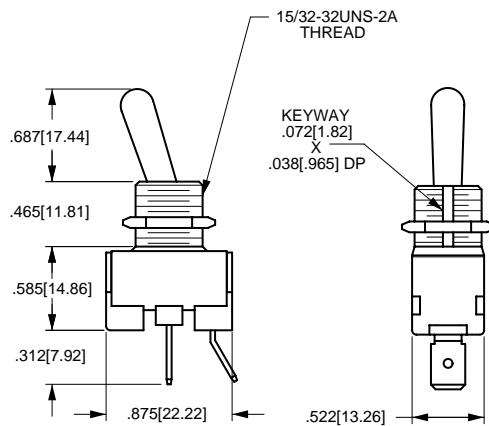
The C-Series toggle switches are single pole switches with ratings up to 20 amps and 1 1/2 horsepower. These switches are available with plated brass toggles and bushings.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Polyarylether
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



C	A	20	1	-	73
SERIES	CIRCUIT	RATING	TERMINATION		TOGGLE STYLE
C SINGLE POLE TOGGLE	A ON-NONE-OFF B ON-NONE-ON	10 5A 250VAC 10A 125VAC 1/2HP 125-250VAC 20 10A 250VAC 20A 125VAC 1 1/2HP 125-250VAC	0 SOLDER LUG 1 .250TAB (QC) 4 SCREW TERMINAL 5 WIRE LEAD		

BAT	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.	NEOPRENE SEAL
	.406	.343	52	57
	.687	.465	73	78



NOTES:
Shading indicates standard configurations.

D-Series



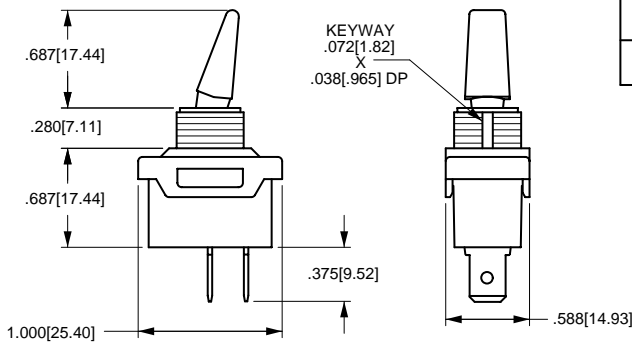
The D-Series toggle switches are single pole and have ratings up to 20 amps and 1-1/2 horsepower. These switches have a nylon toggle and base, and are also available with integrated wire leads.

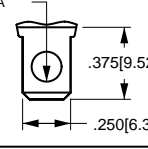
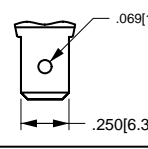
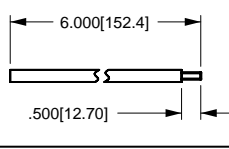
Specifications

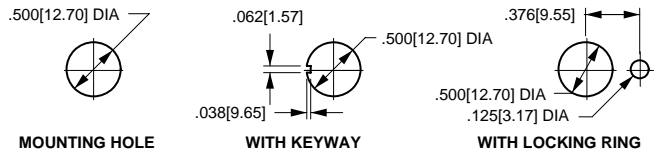
- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon
- Bushing Material: Polycarbonate


* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



 SOLDER LUG	 .250 TAB (Q.C.)	 INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE		



D	A	22	1	-	P	B	-	B
SERIES		RATING	TERMINATION		TOGGLE STYLE			TOGGLE COLOR¹
D SINGLE POLE TOGGLE		10 5A 250VAC 10A 125VAC 1/2HP 125-250VAC	0 SOLDER LUG 1 .250TAB (QC) 5 WIRE LEAD		B BAT P PADDLE			B BLACK W WHITE
CIRCUIT		11 5A 250VAC 10A 125VAC						BUSHING¹
A ON-NONE-OFF B ON-NONE-ON C ON-OFF-ON		22 10A 250VAC 20A 125VAC 1 1/2HP 125-250VAC						B BLACK W WHITE
		23 10A 250VAC 20A 125VAC						
		60 3A 250VAC 6A 125VAC 1/4HP 125-250VAC						

NOTES:
Shading indicates standard configurations.
Available with neoprene seal. Consult factory.
1 Custom colors are available. Consult factory.

110/216-Series



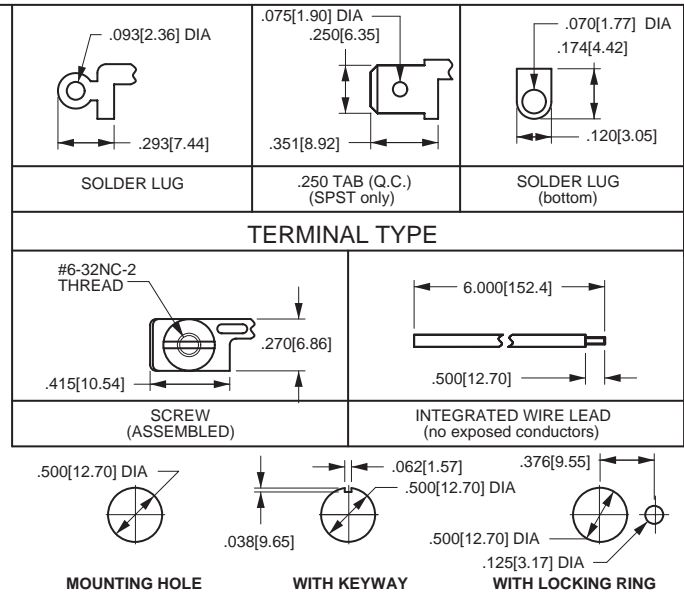
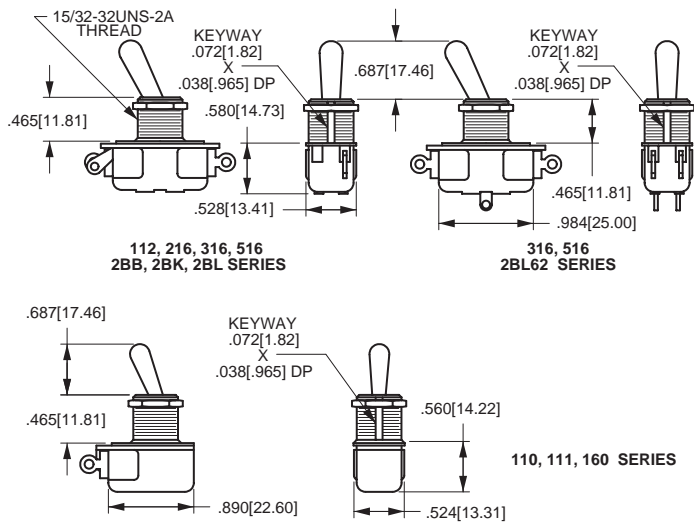
The 110/216-Series toggle switches utilize a quick-make, quick-break contact mechanism and are available in both single and double pole. These switches are 125-250 volts AC/DC rated and suitable for shallow back panel applications. They are available in a range of circuits, terminations and bushing/toggle configurations.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



110

73

SERIES

MAINTAINED	(ON) MOMENTARY NORMALLY OPEN	(OFF) MOMENTARY NORMALLY CLOSED	TERMINAL	CIRCUIT & POLES	RATING ¹
110 110-B 110-S 111-16	110-M-NO 110-BM-NO 110-SM-NO 111-16M-NO	110-M-NC 110-BM-NC 110-SM-NC 111-16M-NC	SOLDER LUG-END SOLDER LUG-BTM SCREW TERM. WIRE LEAD	SP-ST	3A 250V 6A 125V
112 112-A	112-M 112-M-A	NONE	SOLDER LUG-END WIRE LEAD	SP-DT	1A 250V 3A 125V
216 216-A	216-M-NO 216-M-ANO	216-M-NC 216-M-ANC	SOLDER LUG-END WIRE LEAD	DP-ST	6A 125VAC
316 316-B	NONE	316-M 316-BM	SOLDER LUG SOLDER LUG-BTM	DP-DT	
516 516-A 516-B	NONE	516-M 516-AM 516-BM	SOLDER LUG-END WIRE LEAD SOLDER LUG-BTM	2 CIRCUIT	
2BB65 2BB62	NONE	NONE	WIRE LEAD SOLDER LUG-END	SP-DT	
2BK65 2BK62	NONE	NONE	WIRE LEAD SOLDER LUG-END	DP-ST	3A 250V 6A 125V
2BL62 2BL63	NONE	NONE	SOLDER LUG-END SOLDER LUG-BTM	DP-DT	
160H 160H-A 160H-B 160H-S	NONE	NONE	SOLDER LUG-END WIRE LEAD SOLDER LUG-BTM SCREW TERM.	SP-ST	5A 250V 10A 125V 1/4HP 125V

TOGGLE STYLE²

	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.	NEOPRENE SEAL
BAT	.375 .500 .687	.343 .465 .465	52 63 73	57 68 78
BALL	.375 .375	.250 .343	21 22	---

NOTES:
Shading indicates standard configurations.
Tab terminals available on all above SP-ST switches. Add suffix /TABS. (ex.) 110-73/TABS
1 Additional ratings available. Consult factory.
2 Momentary functions are available only with 73 toggles.

DK/EK-Series



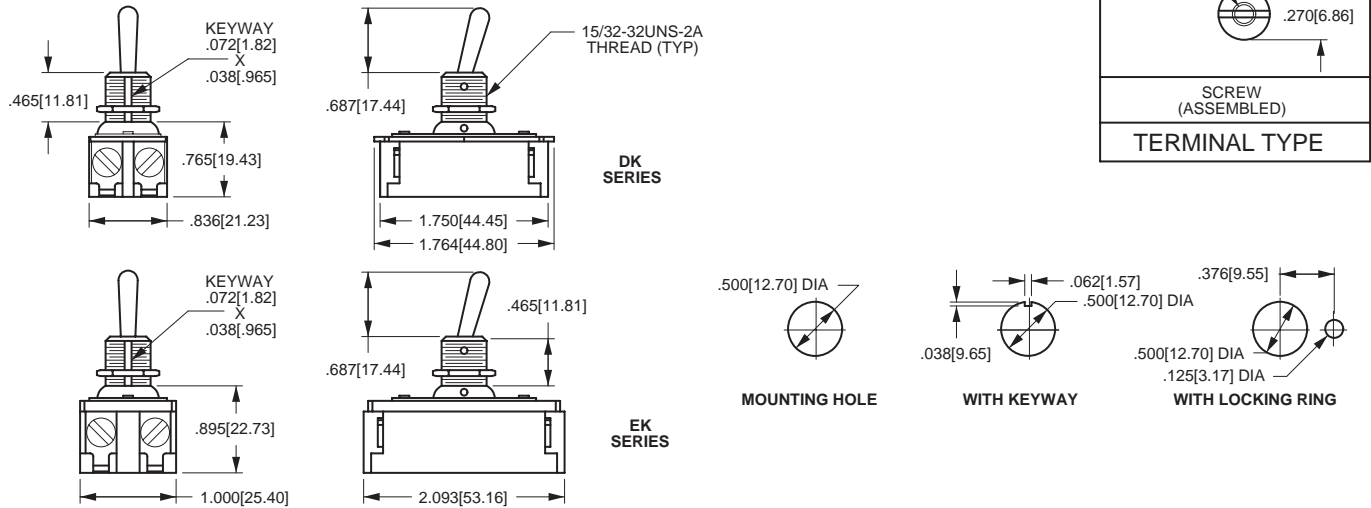
The DK/EK-Series toggle switches are quick-make and quick-break type switches, suitable for high amperage AC/DC motor control. These heavy-duty switches are supplied with plated brass toggles and bushings in a phenolic base.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bezel Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



DK 28 4 - 73

SERIES/CIRCUIT	RATING	TERMINATION	TOGGLE STYLE	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.
DA ON-OFF SINGLE POLE	28 8A 250V	4 SCREW TERMINAL	BALL	.500	.343	32
DK ON-OFF DOUBLE POLE	16A 125V		BAT	.687	.343	72
	1HP 125-250V			.687	.465	73

EK 20 4 - 73

SERIES/CIRCUIT	RATING	TERMINATION	TOGGLE STYLE	TOGGLE LENGTH	BUSHING LENGTH	SUFFIX NO.
EA ON-OFF SINGLE POLE	20 10A 250V	4 SCREW TERMINAL	BALL	.500	.343	32
EK ON-OFF DOUBLE POLE	20A 125V		BAT	.687	.343	72
	1 1/2HP 125-250V			.687	.465	73

NOTES:
Shading indicates standard configurations.

MAAOA/215-Series



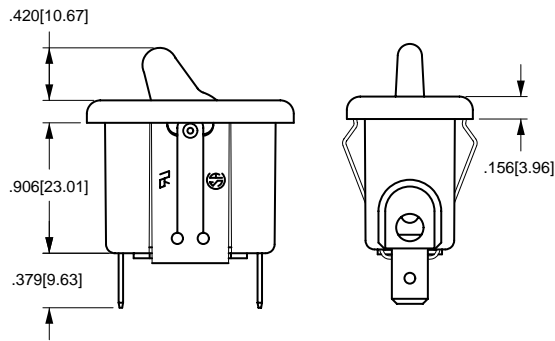
The MAAOA/215-Series toggle switches are single pole, AC rated at 20 amps and 125 VAC. These switches are snap-in mounted, with a phenolic toggle and base, and are suitable for high ambient temperature applications.

Specifications

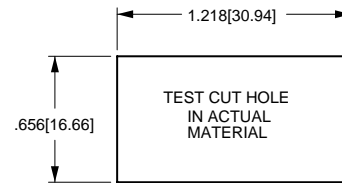
- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Phenolic

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



.250 TAB (Q.C.)	SCREW (ASSEMBLED)	INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE		



MOUNTING HOLE
Panel Thickness: .030[.762] min - .090[2.28] max.
Specific cutout dimension range dependent on panel thickness and material.

MAAOA

-

BL

/

ON-OFF

SERIES

SINGLE POLE

10A 250VAC
20A 125VAC
1/2HP 125-250VAC

MAAOA .250TAB (QC)
ON-OFF

215 SCREW TERM.
ON-OFF

215A WIRE LEAD
ON-OFF

MM-021 .250TAB (QC)
(ON)-OFF

BASE AND ACTUATOR COLOR

BL BLACK
BN BROWN

LEGEND¹

ON-OFF

NOTES:

Shading indicates standard configurations.

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

¹ Imprinting is available. ON-OFF legend is not standard and must be specified after color. If not specified, switch will be manufactured with no legend.

PP-Series



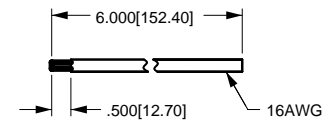
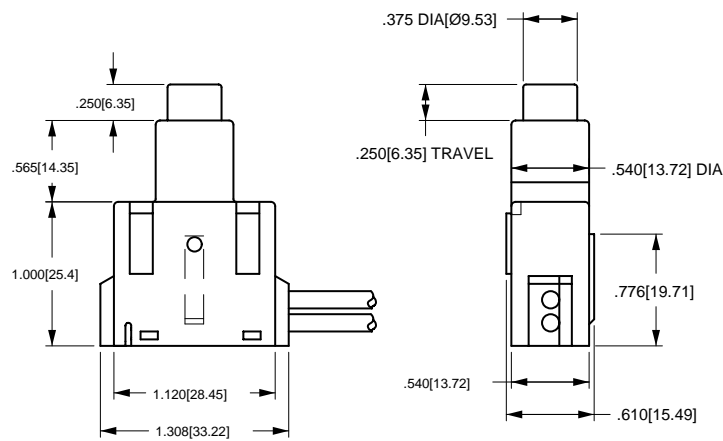
The new PP-Series plastic pushbutton switches are heavy-duty, single pole switches with wire leads. They are alternate action, available in single throw construction, with AC ratings up to 15 amps. Both bushing and bracket are made out of nylon.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Polycarbonate
- Plunger Material: Nylon
- Housing Material: Nylon

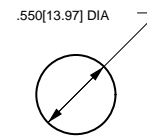
* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]

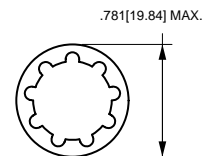


INTEGRATED WIRE LEAD
(NO EXPOSED CONDUCTORS)

TERMINAL TYPE



MOUNTING HOLE



FASTENER
FASTENER THICKNESS .010

OPTIONAL FASTENER

PP	A	51	5	-	A	C
SERIES	CIRCUIT	RATING	TERMINATION		BUSHING	BUTTON STYLE
PP SINGLE POLE PUSHBUTTON	A ON-OFF	51 10A 250VAC 15A 125VAC 52 10A 250VAC 15A 125VAC 3/4HP 125-250VAC	5 WIRE LEAD		A .540 DIA X .565	C

NOTES:
Shading indicates standard configurations.

P-Series



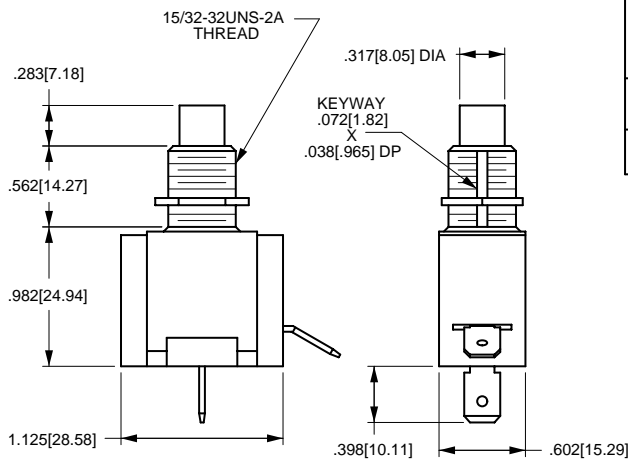
The P-Series pushbutton switches are heavy-duty, single pole switches. They are alternate action, available in single and double throw construction, with ratings up to 20 amps. Both plunger and bushing are made of plated brass. Typical actuation force is 3-5 lbs.

Specifications

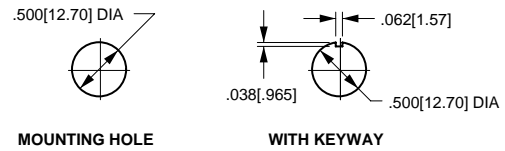
- Certifications*: UL, CSA, TUV
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bracket Material: Plated Steel
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



.250 TAB (Q.C.)	SCREW (ASSEMBLED)	INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE		



P
SERIES
P SINGLE POLE
PUSHBUTTON

A
CIRCUIT
A ON-OFF
B ON-ON

35
RATING¹
30 10A 250VAC
20A 125VAC
1 1/2HP 120-240VAC
34 10A 250VAC
15A 125VAC
3/4HP 120-240VAC
35 10A 250VAC
15A 125VAC
95 10A 250VAC
15A 125VAC
10A(6) 250V μ T85

1
TERMINATION
1 .250TAB (QC)
4 SCREW TERM.
5 WIRE LEAD

NOTES:
Shading indicates standard configurations.
1 For TUV approval, use rating 95.

16-3P-Series



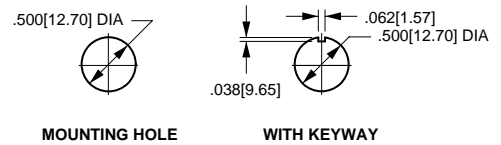
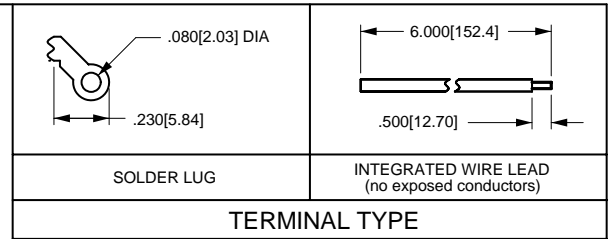
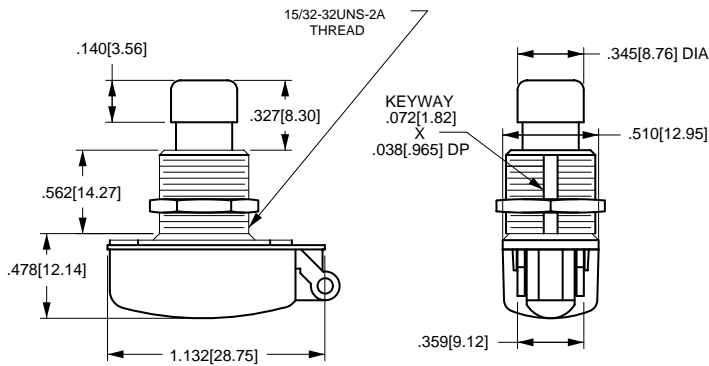
The 16-3P-Series pushbutton switches are single pole and AC rated up to 3 amps. These momentary action switches have a slow-make, slow-break contact mechanism and require only light actuation force (4 oz. - 1 lb.).

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



16-3POFF

SERIES

PLASTIC COLOR CAP

4

BUSHING¹

STANDARD PLUNGER	WITH OVERTRAVEL	TERMINAL	SINGLE POLE CIRCUIT	RATING
16-3POFF 16-3APOFF	16-3POFF-OV 16-3APOFF-OV	SOLDER LUG WIRE LEAD	OFF-NONE-(ON)	3A 125VAC
16-3PON 16-3APON	NONE	SOLDER LUG WIRE LEAD	ON-NONE-(OFF)	
116-P 116-AP	116-P-OV 116-AP-OV	SOLDER LUG WIRE LEAD	ON-NONE-ON	1A 125VAC
516-P 516-AP	516-P-OV 516-AP-OV	SOLDER LUG WIRE LEAD	2 CIRCUIT 1 ON - 1 OFF	

- CBL BLACK
- CRD RED

- 2 .312
- 4 .562

NICKEL PLATED PLUNGER IS STANDARD. NO CODE REQUIRED.

NOTES:

Shading indicates standard configurations.

1 Overtravel only available with #4 bushing.

170/172-Series



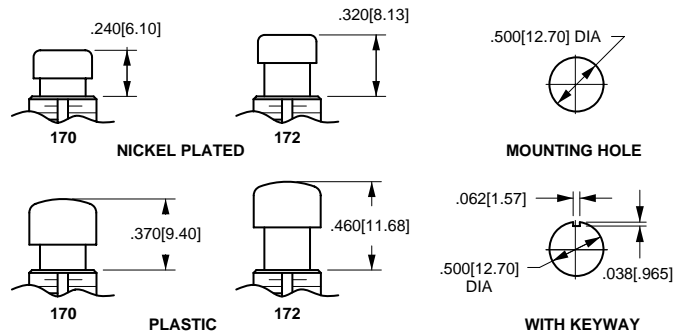
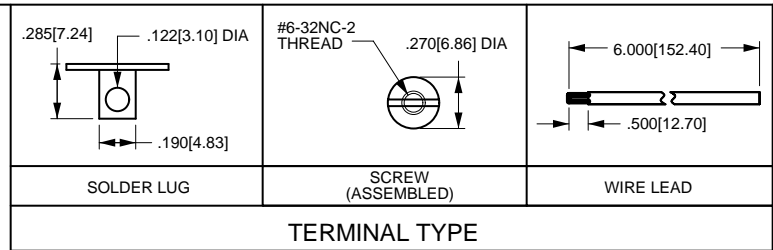
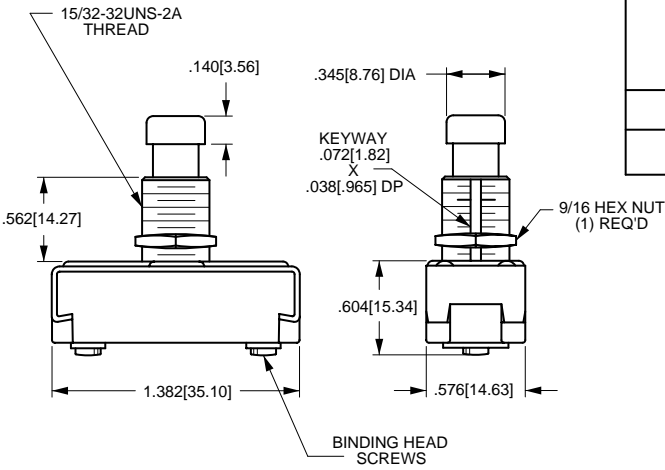
The 170/172-Series pushbutton switches are single pole, high amperage switches suitable for shallow back panel applications. These switches are momentary action and require an actuation force of 2.5 lbs. The 170/172-Series switches are equipped with a slow-make, slow-break contact mechanism and are rated at 15 amps at 125VAC.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



172

SERIES¹

SINGLE POLE
PUSHBUTTON

10A 250VAC
15A 125VAC

170 ON-(OFF)
172 OFF-(ON)

TERMINATION

- **A** WIRE LEAD
- **B** SOLDER LUG

SCREW TERMINAL IS
STANDARD. NO CODE
REQUIRED.

PLASTIC COLOR CAP

- **CBL** BLACK
- **CGN** GREEN
- **CRD** RED
- **CWH** WHITE

NICKEL PLATED PLUNGER
IS STANDARD. NO CODE
REQUIRED.

NOTES:
Shading indicates standard configurations.
1 172 switch has approximately .03 overtravel.

P26-Series



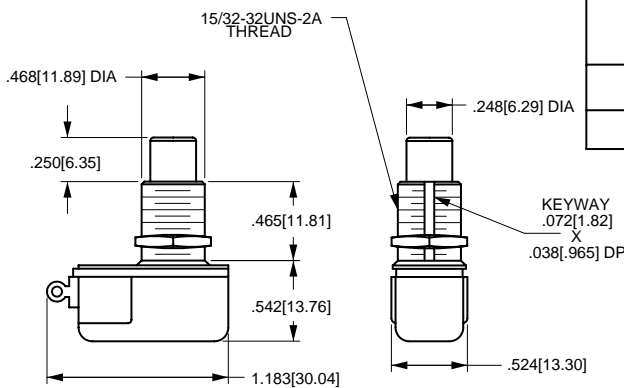
The P26-Series pushbutton switches are single pole, AC rated for 8 amps at 125 VAC and suitable for shallow back panel applications. These switches are momentary action with a medium actuation force (13 oz. typical). The P26-Series switch is equipped with a slow-make, slow-break contact mechanism.

Specifications

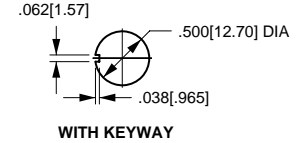
- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon or Brass
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



.093[2.36] DIA	.075[1.90] DIA .250[6.35]	6.000[152.4]
.293[7.44]	.351[8.92]	.500[12.70]
SOLDER LUG	.250 TAB (Q.C.) (Momentary ON only)	INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE		



SERIES	RATING	TERMINATION/ FUNCTION	BUSHING ¹	LENGTH	DIAMETER
P SINGLE POLE PUSHBUTTON	26 3A 250VAC 6A 125VAC 3/4A 125V	A SOLDER LUG OFF-(ON)	1A	.406	.375
	28 4A 250VAC 8A 125VAC 1A 125V	B .250TAB (QC) OFF-(ON)	1B	.406	.468
	265 3A 250VAC 6A 125VAC 3/4A 125V 5A 12V	F WIRE LEAD OFF-(ON)	1C	.465	.375
	267 3A 277VAC 6A 125VAC	L SOLDER LUG ON-(OFF)	1D	.465	.468
		T WIRE LEAD ON-(OFF)	BUTTON COLOR/STYLE²		
			BL	BLACK NYLON	
			RD	RED NYLON	
			RND MTL	ROUND METAL	
			CON MTL	CONCAVE METAL	

NOTES:

Shading indicates standard configurations.

1 For panel mounting to assure equal button heights, use bushing 1A or 1B for Momentary ON and 1C or 1D for Momentary OFF.

2 Round metal and concave metal buttons are only available with 1D bushing, which will be .562 in length.

P27-Series



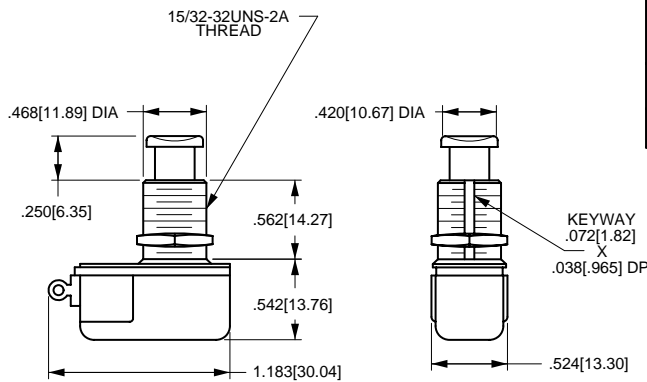
The P27-Series pushbutton switches are single pole, AC/DC rated switches suitable for shallow back panel applications. These switches are momentary action with a medium actuation force (26 oz. typical). The P27-Series switch is equipped with a slow-make, slow-break contact mechanism, rated at 6 amps with a nylon concave pushbutton.

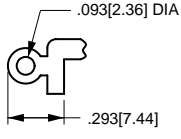
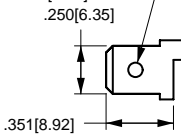
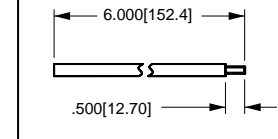
Specifications

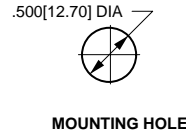
- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Nylon
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



 .093[2.36] DIA .293[7.44]	 .075[1.90] DIA .250[6.35] .351[8.92]	 6.000[152.4] .500[12.70]
SOLDER LUG	.250 TAB (Q.C.) (Momentary ON only)	INTEGRATED WIRE LEAD (no exposed conductors)
TERMINAL TYPE		



P
SERIES

P SINGLE POLE
PUSHBUTTON
MOMENTARY

27
RATING

27 3A 250VAC
6A 125VAC
3/4A 125V

A -
TERMINATION/
FUNCTION¹

A SOLDER LUG
OFF-(ON)

B .250TAB (QC)
OFF-(ON)

F WIRE LEAD
OFF-(ON)

L SOLDER LUG
ON-(OFF)

T WIRE LEAD
ON-(OFF)

BL
CONCAVE BUTTON

BL BLACK NYLON
RD RED NYLON
WH WHITE NYLON

NOTES:

Shading indicates standard configurations.

¹ Momentary OFF functions (L and T) available only with 3/4A 125V.

110/316-P-Series



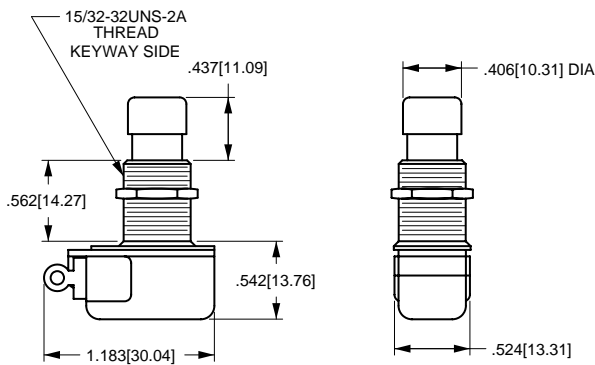
The 110/316-P-Series pushbutton switches are heavy duty, AC/DC rated and suitable as foot-switches. These switches are available with alternate or momentary action. This series is equipped with a quick-make, quick-break contact mechanism which is both non-teasable and self-cleaning. Typical actuation force ranges from 6-8 lbs.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Phenolic
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



SOLDER LUG	.250 TAB (Q.C.) (SPST only)	SOLDER LUG (bottom)
TERMINAL TYPE		
END TERMINAL	SCREW (ASSEMBLED) (SPST ONLY)	INTEGRATED WIRE LEAD (no exposed conductors)
MOUNTING HOLE		WITH KEYWAY

110

-

P

MAINTAINED	(ON) MOMENTARY NORMALLY OPEN	(OFF) MOMENTARY NORMALLY CLOSED	TERMINAL	CIRCUIT & POLES	RATING
110-P 110-BP 110-SP 111-16-P	110-PM-OFF 110-PBM-OFF 110-SPM-OFF 111-PM-OFF	110-PM-ON 110-PBM-ON 110-SPM-ON 111-PM-ON	SOLDER LUG-END SOLDER LUG-BTM SCREW TERM. WIRE LEAD	SP-ST	3A 250V 6A 125V
160H-P 160H-BP 160H-SP 160H-AP	NONE	NONE	SOLDER LUG SOLDER LUG-BTM SCREW TERM. WIRE LEAD	SP-ST	5A 250V 10A 125V 1/4HP 125V
216-PP 216-PPA	216-PM-OFF 216-PAM-OFF	216-PM-ON 216-PAM-ON	SOLDER LUG WIRE LEAD	DP-ST	1A 250V 3A 125V
112-P 112-PA	ON-(ON) 112-PM 112-PAM		SOLDER LUG WIRE LEAD	SP-DT	
316-PP 316-PPA	ON-(ON) 316-PM 316-PAM		SOLDER LUG WIRE LEAD	DP-DT DP-DT	
516-PP 516-PPA	516-PM 516-PAM		SOLDER LUG WIRE LEAD	2 CIRCUIT 1 ON - 1 OFF	

NOTES:

Shading indicates standard configurations.

Tab terminals available on all above SPST switches. Add suffix /TABS to end of part number. (ex.) 110-PM-OFF/TABS

641-Series



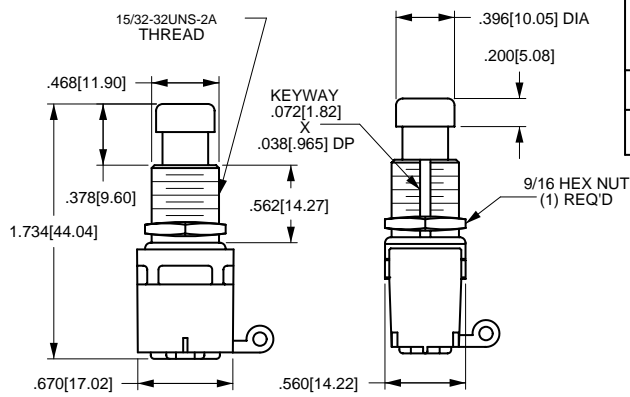
The 641-Series pushbutton switches are single or double pole and AC rated up to 5 amps. These switches offer maintained action with a slider contact mechanism. The typical actuation force required is 3 - 3 1/2 lbs.

Specifications

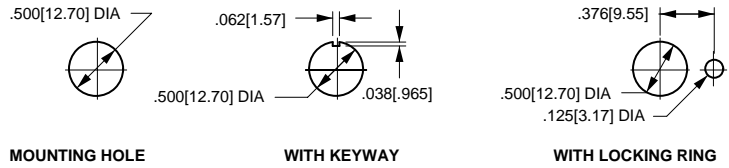
- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Polyester
- Actuator Material: Brass/Nickel Plate
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



SOLDER LUG	PC TERMINAL	WIRE LEAD
TERMINAL TYPE		

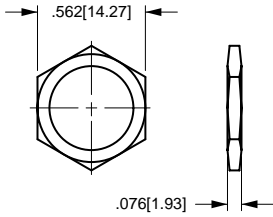


641	1	2	2	1	0
SERIES	BUSHING	POLES	RATING	CIRCUIT	TERMINATION
641 PUSHBUTTON	1 .465 DIAMETER .562 LENGTH	1 SINGLE 2 DOUBLE	2 2A 250VAC 5A 125VAC	1 ON-OFF 2 ON-ON	0 SOLDER LUG 2 PC TERM. 5 WIRE LEAD

NOTES:
Shading indicates standard configurations.

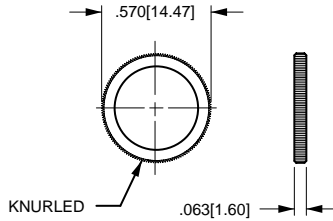
Bushing Accessories

The hardware options and accessories listed below were specifically designed to be used with Carlingswitch toggle and pushbutton switches. To make it easier for you to select the required hardware, we have identified the finish material. The drawings are representative of the actual products. When other hardware options are required, please consult factory.



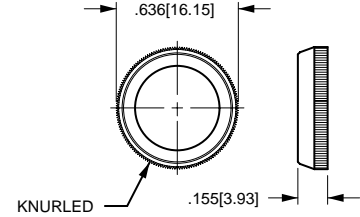
STANDARD HEXAGON BACKUP

.562" X .076"
[14.27] X [1.93]
NICKEL - 380-08602
BLACK - 380-08606



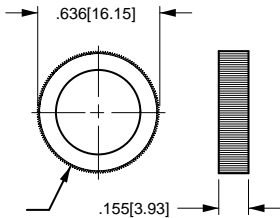
STANDARD FACENUT

.570" X .063"
[14.47] X [1.60]
NICKEL - 380-08693
BLACK - 380-08694



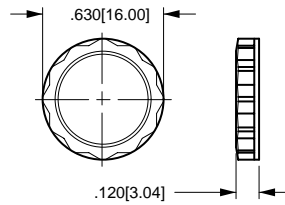
"DRESS" FACENUT

.636" X .155"
[16.15] X [3.93]
NICKEL - 380-08810
BLACK - 380-08811



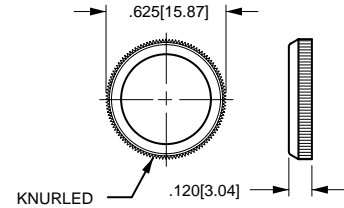
SHOULDER "DRESS" FACENUT

.636" X .155"
[16.15] X [3.93]
BLACK - 380-08819



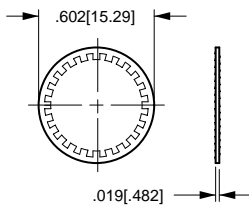
PLASTIC FACENUT

(Fits 9/16" and 14mm wrenches)
.630" X .120"
[16.00] X [3.04]
BLACK - 384-17131



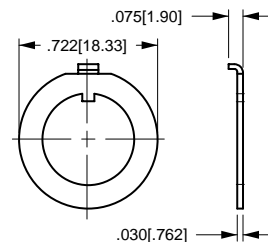
PLASTIC FACENUT

(Wrench supplied N/C)
.625" X .120"
[15.87] X [3.04]
BLACK - 384-17126-001
RED 384-17126-002
WHITE - 384-17126-003



LOCKWASHER

NICKEL-PLATED - 728-15907



LOCKING RING

ZINC - 728-15946
BLACK - 728-15947

Bushing Accessories

BRASS LOCKNUTS

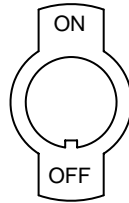
PART NO.	DIMENSIONS, IN.		PLATING
	O.D.	WIDTH	
380-08603	.562	.076	DULL NICKEL
380-08657	.625	.076	NICKEL
380-08666	.562	.094	NICKEL
380-08668	.562	.094	BLACK
380-08675	.500	.060	NICKEL
380-08755	.625	.180	NICKEL

BRASS FACENUTS

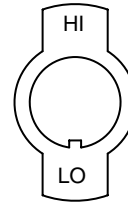
PART NO.	DIMENSIONS, IN.		PLATING
	O.D.	WIDTH	
380-08717	.562	.094	NICKEL
380-08719	.562	.094	BLACK
380-08784	.500	.060	NICKEL
380-08792	.625	.167	NICKEL

All indicator plates are nickel-plated steel. Odd keyway locations, alternate imprints and plating available on special order. Contact factory for minimum quantities and specifications.

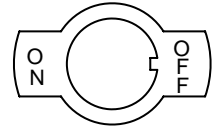
ALL PLATES SHOWN FIT 15/32" (.465[11.81]) BUSHINGS



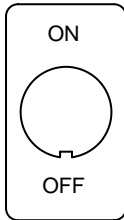
YO1
272-06747



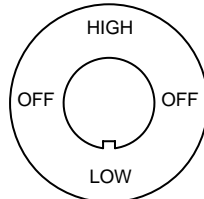
YO2
272-06764



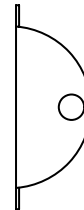
Y51
272-06842



Y101
272-06935



Y311
272-07258



Y500
272-07293



R135-Series



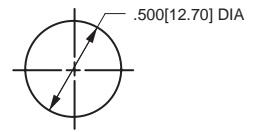
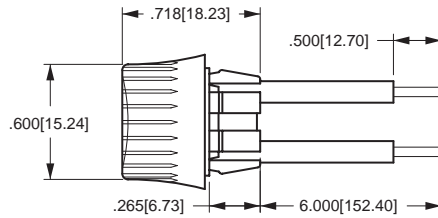
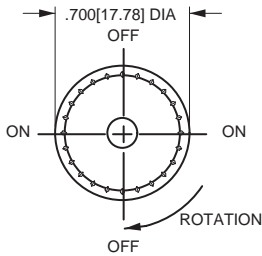
The R135 and R135A-Series rotary switches are single pole, single throw, "L" rated up to 3A, feature an ON-OFF repeating action, and are available with a nylon actuating knob; nylon snap-in bracket or nickel-plated brass bushing.

Specifications

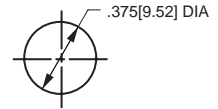
- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Nylon
- Actuator Material: Nylon
- Bushing Material: Brass/Nickel Plate or Nylon

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



NYLON BEZEL MOUNTING HOLE
 Snaps into .500[12.70] Dia. hole
 Panel Thickness: .020[.508] to .078[1.98]



THREADED BUSHING MOUNTING HOLE
 Fits into .375[9.52] Dia. hole
 Bushing Length: .312[7.92]

R
 SERIES

R ROTARY
 SINGLE POLE

 1.5A 250VAC
 3A 125VAC L
 5A 12VDC

135-A
 BUSHING

135 .375 THREADED
135-A NYLON BEZEL

BL
 ACTUATOR COLOR¹

BL BLACK
WH WHITE

NOTES:

Shading indicates standard configurations.

Standard wire leads are 6" long, stripped 1/2" black. If different length required, please specify at end of part number (ex.) R135-A-BL/20"

Panel Cut-Out Recommendations: For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.

1 Custom colors available. Consult factory.

700-Series



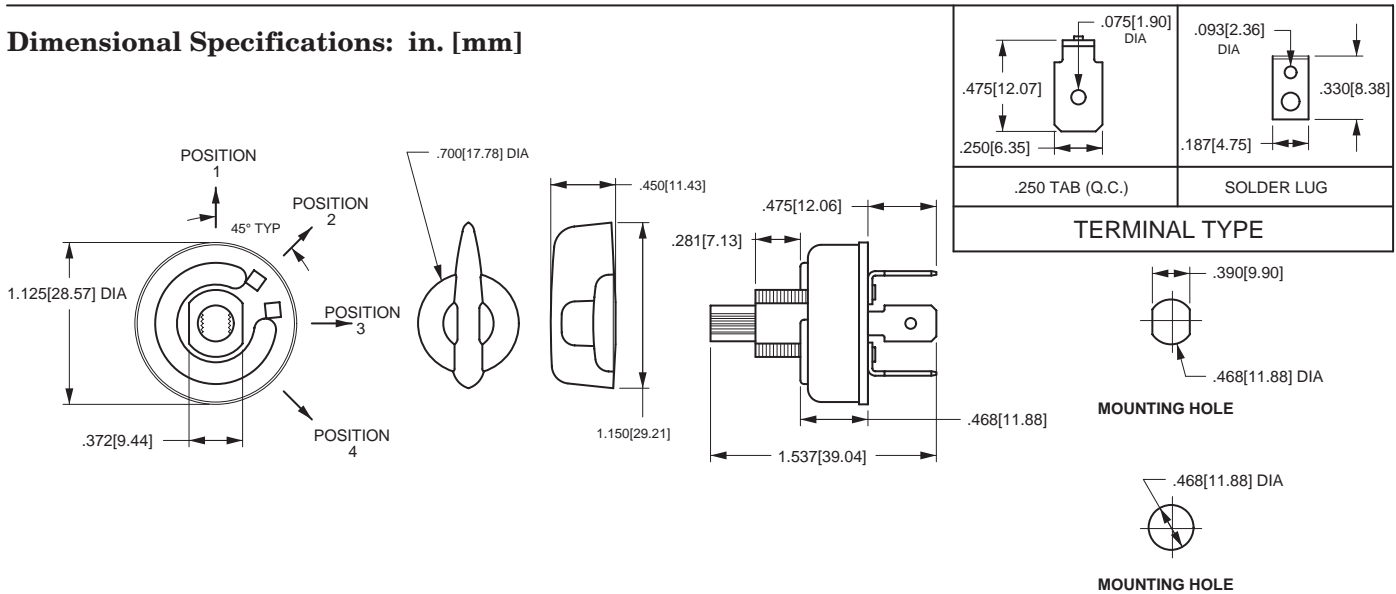
The 700-Series rotary switches are AC/DC rated, multi-position, single pole switches. These switches feature a nylon actuator and shaft in a metal clad construction. The 700-Series also feature a self-cleaning wiping action and a silver-plated contact system.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000 V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Steel/Zinc Plate
- Actuator Material: Nylon
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



SERIES	700	-	1A	-	BL	ACTUATOR COLOR
700 ROTARY 4 POSITION						BL BLACK
2A 250VAC						REPEAT
4A 125VAC						
1A 125V						
	LUG	.250TAB (QC)	1	2	3	4
	1	1A	OFF	ON	ON	ON
	2	2A	OFF	ON	ON	ON
	3	3A	OFF	ON	ON	OFF
	4	4A	OFF	ON	ON	
	5	5A	OFF	ON	OFF	
	6	6A		ON	OFF	ON
	7	7A		ON	ON	
	8	8A		ON	ON	ON
	9	9A	OFF	ON	OFF	ON

NOTES:

Shading indicates standard configurations.

1 2 and 2A supplied with eight detent positions.

800-Series



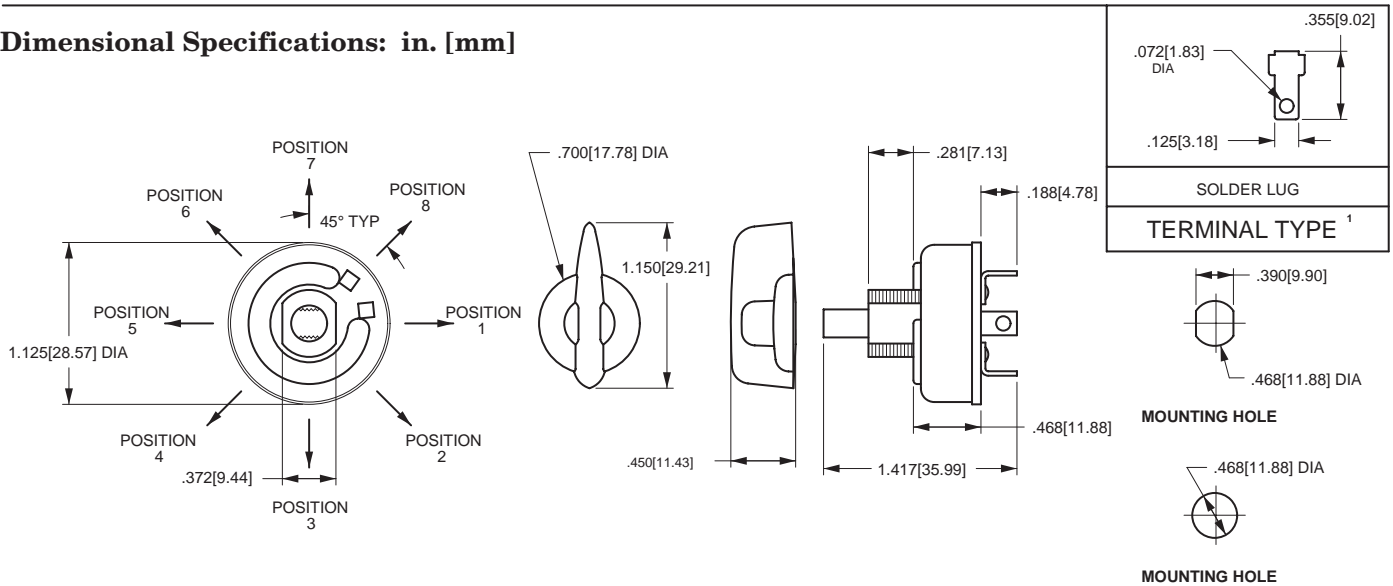
The 800-Series rotary switches are single pole and AC rated to 6 amps. These switches feature a self-cleaning wiping action and a silver-plated contact system. A nylon actuator and shaft in a metal clad package highlight the construction of this multi-position switch.

Specifications

- Certifications*: UL, CSA
- Dielectric Strength: 1,000V (minimum)
- Insulation Resistance: 100 Megohms (minimum)
- Base Material: Steel/Zinc Plate
- Actuator Material: Nylon
- Bushing Material: Brass/Nickel Plate

* Due to ongoing technological advances, consult factory for certification specifics.

Dimensional Specifications: in. [mm]



800	-	4	-	BL
SERIES		SWITCH POSITIONS		ACTUATOR COLOR
800 ROTARY 8 POSITION 3A 250VAC 6A 125VAC		2 2 POSITIONS 3 3 POSITIONS 4 4 POSITIONS 5 5 POSITIONS 6 6 POSITIONS 7 7 POSITIONS 8 8 POSITIONS		BL BLACK
		OFF POSITION²		
		A FIRST POSITION A2 SECOND POSITION A3 THIRD POSITION A4 FOURTH POSITION A5 FIFTH POSITION A6 SIXTH POSITION A7 SEVENTH POSITION A8 EIGHTH POSITION		

NOTES:

Shading indicates standard configurations.

1 Terminal style is a combination solder lug and quick connect.

2 Not necessary when all "ON" positions specified.

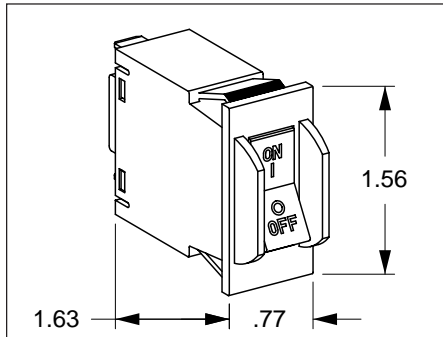
Power Switches – High-Amperage

Carlingswitch also offers high-amperage power switches, up to 100 amps. These switches provide low cost, heavy duty capability, with or without an auxiliary switch.

For more detailed information on these switches, including ordering information, please refer to the Carlingswitch Magnetic Circuit Breaker catalog.

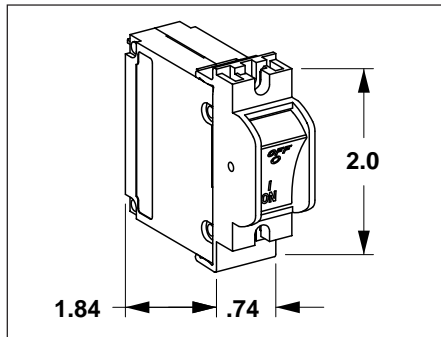
To get a Carlingswitch Magnetic Circuit Breaker Catalog, please call us or send back the reply card located in the back of this catalog.

M-Series



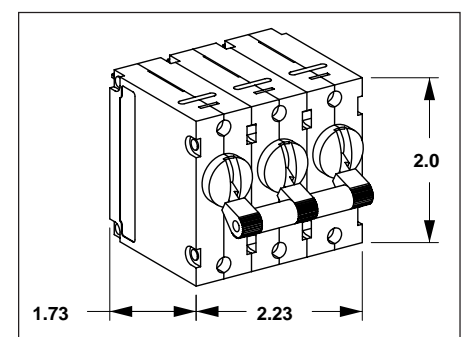
1-2 poles
0.02 to 25 amps
up to 250 VAC or 65 VDC
choice of actuator styles and colors
lighted or unlighted
UL Recognized
CSA Certified

A-Series



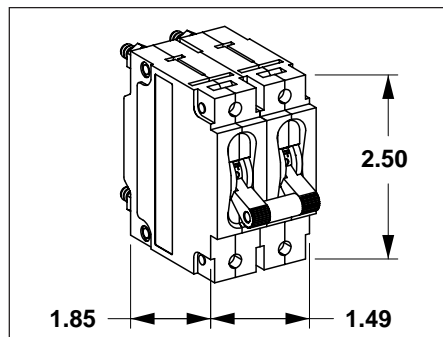
1-6 poles
0.02 to 50 amps
up to 277 VAC or 65 VDC
choice of actuator styles and colors
UL Recognized
CSA Certified

B-Series



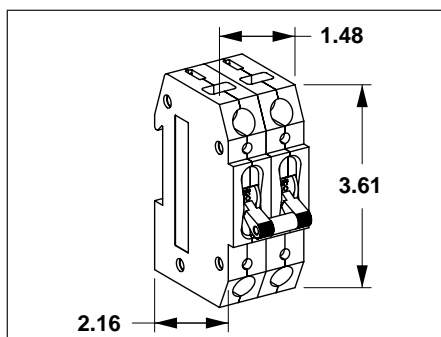
1-6 poles
0.02 to 50 amps
up to 277 VAC or 65 VDC
choice of actuator colors
UL Recognized
CSA Certified

C-Series



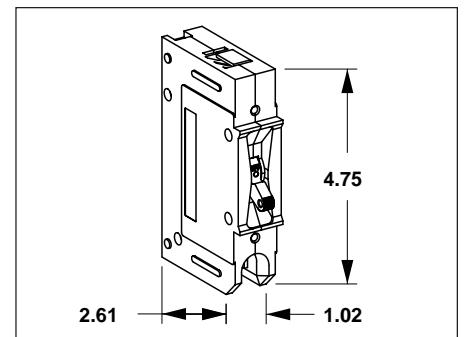
1-6 poles
0.02 to 100 amps
up to 480 VAC or 80 VDC
choice of actuator colors
UL Recognized
CSA Certified

D-Series



1-4 poles
0.02 to 50 amps
up to 480 VAC or 80 VDC
choice of actuator styles and colors
UL Recognized
CSA Certified

E-Series



1-6 poles
0.02 to 100 amps
up to 600 VAC or 125 VDC
choice of actuator colors
UL Recognized
CSA Certified

Custom Switch Modifications To Meet Your Needs

Our in-house tooling and design capabilities allow us to make modifications to meet your specifications. Some of the many "added-value products" we offer are listed below. For additional requirements, consult factory.

ACTUATORS

ROCKERS

- matte finish
- double rockers
- interlocking rockers
- clear lighted rockers
- paddle rockers

TOGGLES

- various length toggles and bushings
- lighted toggles
- all nylon construction
- ball toggles
- trimline toggle covers (multi-colored)
- neoprene seal
- special plating: chrome, ebonal, brass, nickel
- reverse keyway

PUSHBUTTONS

- concave metal cap
- round metal cap
- color cap
- slotted plunger
- non metal cap

WIRE LEADS

- any length over 2.5" (standard is 6")
- any stripping over .187" (standard is .5")
- added value wire lead constructions
 - male/female spade terminals
 - flag terminals
 - poke in connectors
 - wiring harness
- wire lead enclosures
- redundant/multiple leads
- shrink tubing
- hot tin dipping

SPECIAL CIRCUITS

- reversing circuits
- progressive circuits
- triple throw circuits
- custom circuits

BRACKET STYLES

- marine
- watershedding
- nylon
- narrow chrome
- wide chrome
- tapped clearance holes

CONSTRUCTION OPTIONS

RIVETS

- silver capped
- orbital (solid)
- soldered
- dummy

SEALS

- neoprene
- fire retardant
- external panel
- silicone boots

CONTACTS

- wiping
- butt
- gold/silver plated
- make before break
- 3mm gap
- sintered

OTHER

- momentary spring construction
- heavy or light pin spring construction
- high ambient materials

TERMINAL OPTIONS

- .187, .250 or .500 TAB (QC)
- PC or screw terminals
- solder lugs or wire leads
- silver, gold, or tin plated terminals
- reversed terminals
- double tabs
- jumper terminals
- offset tabs
- flatted or angled terminals
- insulated terminals
- end terminals
- RTV/EPOXY sealed terminals

OTHER ADDED-VALUE OPTIONS

- custom colors to match any panel
- custom imprinting
 - company logo
 - special symbols
- special packaging and markings
- hole plugs
- mounting panels
- rubber stamping
- IP (Index of Protection) Construction

Specifications/Definitions

SP (single pole)	A switch device that opens, closes or changes connection of a single conductor in an electrical circuit.						
DP (double pole)	A switch device that opens, closes or changes connection of two conductors in an electrical circuit.						
ST (single throw)	A switch that opens, closes or completes a circuit at only one of the extreme positions of its actuator.						
DT (double-throw)	A switch that opens, closes or completes a circuit at both extreme positions of its actuator.						
μ	European marking required for contact separation of less than 3mm. Switches with microgap (μ) approval are not acceptable as the safety disconnect of equipment from the main power source. The equipment requires an additional means for safe disconnection from the main power source such as a cord and plug.						
L Rating	Denotes the ability of a switch to handle the initial high inrush of Tungsten Filament Lamp on AC voltage only.						
H Rating	Denotes a non-inductive resistive rating. The ratings in this catalog may appear with the symbol "H" or with the words non-inductive or resistive.						
50E3	Frequency operation 50,000 cycles of operation						
Temperatures	All European certified switches have a maximum operating temperature of 85 degrees Centigrade, except where noted in the catalog. Switches rated T85, if directly operated, should not be used in applications where the temperature of the actuating member inclusive of any temperature rise exceeds 85°C. All North American rated switches have the following maximum material temperature ratings except where noted in the catalog. Thermoplastic: 105°C Phenolic: 150° C						
Lamp Characteristics	Neon (120-240V)	.002	AMPS				
	Incandescent 6V	.20	AMPS				
	12-14V	.08	AMPS				
	18V	.04	AMPS				
	24-28V	.04	AMPS				
Dielectric Strength	Strength between live parts and operator at accessible surfaces.						
Mechanical Life	50,000 cycles minimum						
Electrical Life	10,000 cycles minimum						
Bulb Life	Neon	-	25,000	hours			
	Incandescent	-	25,000+	hours			
	LED	-	100,000	hours			
Typical European Rating	16	(4)	A	250V	~	T85	μ
	Resistive Load Amperage	Motor Load Amperage	Amperage	Voltage	AC	Max. Operating Temp. in Centigrade	Micro-gap (<3mm) Approved
Panel Cut-Out Recommendations	For sheet metal panels, switch must enter panel in same direction as the punch. (Burr on bottom.) Test cut hole in actual material.						

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

Designer's Choice...

This catalog represents a wide selection of popular electrical switches, available through our network of Authorized Distributors and Sales Representatives.

Carlingswitch, Inc. also manufactures a complete line of magnetic circuit breakers, from the miniature M-Series to the 100 amp E-Series. These circuit breakers are summarized below.

To get a **Carlingswitch Magnetic Circuit Breaker Catalog**, please call us or send back the reply card located in the back of this catalog.

M-Series - Rocker Actuator (WORLD MARKET DESIGN)



The new M-series "miniature" magnetic circuit breakers are designed for those demanding applications where space, aesthetics and ease of mounting are important. LEDs or neon bulbs indicate circuit mode. "Rockerguard" prevents inadvertent actuation of rocker. These "international-look" snap-in front panel breakers have wiping contacts which reduce carbon build-up to lengthen contact life.

1-2 poles, 0.02 to 25 amps, up to 250 VAC or 65 VDC. Available with a choice of circuits, time delays, actuator styles and colors.

CERTIFICATIONS



A-Series - Handle Actuator



Compact, temperature stable, magnetic design for precision operation in domestic market applications.

1 - 6 poles, 0.02 - 50 amps, up to 277 VAC or 65 VDC with a choice of circuits, time delays, terminals and actuator colors.

CERTIFICATIONS



A-Series - Rocker Actuator (WORLD MARKET DESIGN)



When front panel operation and aesthetics demand a clean contemporary design, the unique Visi-Rocker two-color actuator can be specified to indicate either the ON mode or the TRIPPED/OFF mode. Available in three Visi-color combinations and seven Solid colors. Similar in size to the A-Series-Handle Actuator.

1 - 3 poles, 0.02 - 50 amps, up to 277 VAC or 65 VDC with a choice of circuits, time delays, terminals and actuator colors.

CERTIFICATIONS



B-Series - Handle Actuator (WORLD MARKET DESIGN)

Designed specifically for world market applications requiring extra insulation and tongue and groove half shell construction.

1 - 6 poles, 0.02 - 50 amps, up to 277 VAC or 65 VDC with a choice of circuits, time delays, terminals and actuator colors.

CERTIFICATIONS**C-Series - Rocker/Handle Actuator (WORLD MARKET DESIGN)**

Designed for those applications requiring higher amperage and higher voltage handling capability. Available with English or Metric Stud terminals, or Saddle Clamp screw terminals. Available with the exclusive Visi-Rocker two-color actuator, which can be specified to indicate either the ON mode or the TRIPPED/OFF mode.

1 - 6 poles, 0.02 - 100 amps, up to 480 VAC or 80 VDC, with choice of circuits, time delays, terminals and actuator colors.

CERTIFICATIONS**D-Series - DIN Rail Rocker/Handle Actuator (WORLD MARKET DESIGN)**

Similar to the C-Series magnetic circuit breaker but designed for snap-on-back panel rail mounting on either a 35mm x 7.5mm, or a 35mm x 15mm Symmetrical Din Rail. Allows rapid and simple mounting and removal of the breaker. Available with the exclusive Visi-Rocker two-color actuator, which can be specified to indicate either the ON mode or the TRIPPED/OFF mode. The D-Series is also available with a standard handle type actuator. Both actuator types fit in the same industry standard panel cutouts.

1 - 4 poles (handle); 1 - 3 poles (rocker), 0.02 - 50 amps up to 480VAC or 65 VDC, with a choice of circuits, time delays and actuator colors.

CERTIFICATIONS**E-Series - Handle Actuator (WORLD MARKET DESIGN)**

The E-Series is ideally suited for high current applications. Available with front or back mounting, screw terminals, stud terminals and heavy duty box wire connectors for solid wire or a pressure plate connector for stranded wire. The E-Series has designs for both UL Listed Branch Circuit Protection and Supplementary Protection.

1 - 6 poles, 0.02 to 100 amps, up to 600 VAC or 125 VDC. Available with a choice of circuits, time delays, terminals and actuator colors.

CERTIFICATIONS

Inch/Millimeter Equivalents

To convert to millimeters, multiply inches x 25.4

To convert to inches, multiply millimeters x .03937

Inches		Milli-	Inches		Milli-	Inches		Milli-	Inches		Milli-
Fract.	Decimal	meters	Fract.	Decimal	meters	Fract.	Decimal	meters	Fract.	Decimal	meters
	.0004	.001		.1378	3.5	19/32	.59375	15.0812		1.5748	40
	.000039	.01	9/64	.14063	3.5719		.6	15.24		1.65354	42
	.00079	.02		.15	3.81	39/64	.60938	15.4781	1 3/4	1.75	44.45
	.001	.025	5/32	.15625	3.9688		.61024	15.5		1.7717	45
	.00118	.03		.15748	4	5/8	.6250	15.875		1.88976	48
	.00157	.04	11/64	.17188	4.3656		.62992	16		1.9685	50
	.00197	.05		.175	4.445	41/64	.64063	16.2719	2	2	50.8
	.002	.051		.17717	4.5		.64961	16.5		2.04724	55
	.00236	.06	3/16	.1875	4.7625		.65	16.51		2.16540	53
	.00276	.07		.19685	5	21/32	.65625	16.6688		2.20472	56
	.003	.0762		.2	5.08		.66929	17	2 1/4	2.250	57.15
	.00315	.08	13/64	.20313	5.1594	43/64	.67188	17.0656		2.36220	60
	.00354	.09		.21654	5.5	11/16	.68750	17.4625	2 1/2	2.500	63.5
	.00394	.1	7/32	.21875	5.5562		.68898	17.5		2.51968	64
	.004	.1016		.225	5.715		.7	17.78	2 3/4	2.750	69.85
	.005	.1270	15/64	.23438	5.9531	45/64	.70313	17.8594		2.83464	72
	.006	.1524		.23622	6		.70866	18		2.9528	75
	.007	.1778	1/4	.25	6.35	23/32	.71875	18.2562	3	3	76.2
	.00787	.2		.25591	6.5		.72835	18.5		3.1496	80
	.008	.2032	17/64	.26563	6.7469	47/64	.73438	18.6531	3 1/2	3.5	88.9
	.009	.2286		.275	6.985		.74803	19		3.5433	90
	.00984	.25		.27559	7	3/4	.75	19.05		3.937	100
	.01	.254	9/32	.28125	7.1438	49/64	.76563	19.4469	4	4	101.6
	.01181	.3		.29528	7.5		.76772	19.5		4.3307	110
1/64	.01563	.3969	19/64	.29688	7.5406	25/32	.78125	19.8438	4 1/2	4.5	114.3
	.01575	.4		.3	7.62		.7874	20		4.7244	120
	.01969	.5	5/16	.3125	7.9375	51/64	.79688	20.2406	5	5	127
	.02	.508		.31496	8		.8	20.32		5.5118	140
	.02362	.6	21/64	.32813	8.3344		.80709	20.5		5.9055	150
	.025	.635		.33465	8.5	13/16	.8125	20.6375	6	6	152.4
	.02756	.7	11/32	.34375	8.7312		.82677	21		6.2992	160
	.0295	.75		.35	8.89	53/64	.82813	21.0344		7.0866	180
	.03	.762		.35433	9	27/32	.84375	21.4312		7.874	200
1/32	.03125	.7938	23/64	.35938	9.1281		.84646	21.5	8	8	203.2
	.0315	.8		.37402	9.5		.85	21.59		8.6614	220
	.03543	.9	3/8	.375	9.526	55/64	.85938	21.8281		9.4488	240
	.03937	1	25/64	.39063	9.9219		.86614	22		9.8425	250
	.04	1.016		.3937	10	7/8	.875	22.225	10	10	254
3/64	.04687	1.191		.4	10.16		.88583	22.5		10.2362	260
	.04724	1.2	13/32	.40625	10.3188	57/64	.89063	22.6219		11.0236	280
	.05	1.27		.41339	10.5		.9	22.86		11.811	300
	.05512	1.4	27/64	.42188	10.7156		.90551	23	12 (1ft)	12	304.8
	.05906	1.5		.43307	11	29/32	.90625	23.0188		12.5984	320
	.06	1.524	7/16	.43750	11.1125	59/64	.92188	23.4156		13.3858	340
1/16	.0625	1.5875		.45	11.43		.9252	23.5		13.7795	350
	.06299	1.6		.45276	11.5	15/16	.9375	23.8125		14.1732	360
	.06693	1.7	29/64	.45313	11.5094		.94488	24		14.9609	380
	.07	1.778	15/32	.46875	11.9062		.95	24.13		15.748	400
	.07087	1.8		.47244	12	61/64	.95313	24.2094	16	16	406.4
	.075	1.905	31/64	.48438	12.3031		.96457	24.5		17.7165	450
5/64	.07813	1.9844		.49213	12.5	31/32	.96875	24.6062		19.685	500
	.07874	2	1/2	.5	12.7		.98425	25	20	20	508
	.08	2.032		.51181	13	63/64	.98438	25.0031		23.622	600
	.08661	2.2	33/64	.51563	13.0969	1	1	25.4	2 ft	24	609.6
	.09	2.286	17/32	.53125	13.4938		1.06299	27	3 ft	36	914.4
	.09055	2.3		.5315	13.5		1.10204	28		39.37	1 Meter
3/32	.09375	2.3812	35/64	.54688	13.8906		1.1811	30	4 ft	48	1,219.2
	.09843	2.5		.55	13.97	1 1/4	1.25	31.75	5 ft	60	1,524
	.1	2.54		.55118	14		1.29921	33	6 ft	72	1,828.8
	.10236	2.6	9/16	.5625	14.2875		1.378	35		78.74	2 Meters
7/64	.10937	2.7781		.57087	14.5		1.41732	36	8 ft	96	2,438.4
	.11811	3	37/64	.57813	14.6844	1 1/2	1.5	38.1		118.11	3 Meters
1/8	.125	3.175		.59055	15		1.53543	39		196.85	5 Meters

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