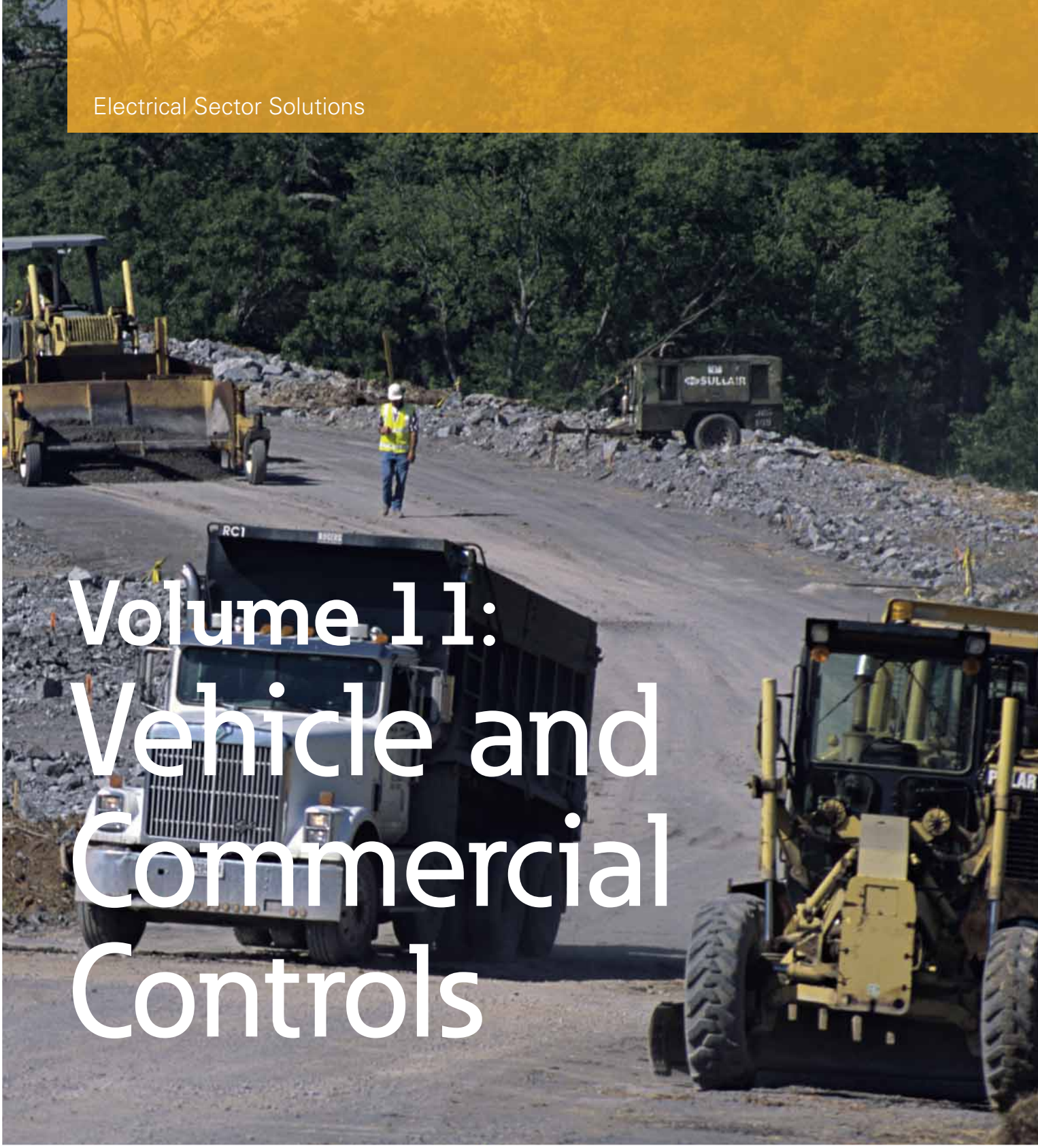
Electrical Sector Solutions



Volume 11: Vehicle and Commercial Controls

Powering Business Worldwide

Volume 11—Vehicle and Commercial Control

11

Tab 1—Electronic Products V11-T1-1

Tab 2—Rockers V11-T2-1

Tab 3—Special Devices V11-T3-1

Tab 4—Toggle Switches V11-T4-1

Tab 5—Dimmers and Wipers V11-T5-1

Tab 6—Pushbuttons V11-T6-1

Tab 7—Definitions and Index V11-T7-1

Copyright

Dimensions, Weights and Ratings

Dimensions, weights and ratings given in this catalog **are approximate and should not be used for construction purposes**. Drawings containing exact dimensions are available upon request. All listed product specifications and ratings are subject to change without notice. Photographs are representative of production units.

Terms and Conditions

All prices and discounts are subject to change without notice. When price changes occur, they are published in Eaton's *Price and Availability Digest* (PAD). All orders accepted by Eaton's Electrical Sector are subject to the general terms and conditions as set forth in Appendix 1—Eaton Terms & Conditions.

Technical and Descriptive Publications

This catalog contains brief technical data for proper selection of products. Further information is available in the form of technical information publications and illustrated brochures. If additional product information is required, contact your local Eaton Products Distributor, call **1-800-525-2000** or visit our website at **www.eaton.com**.

Compliance with Nuclear Regulation 10 CFR 21

Eaton products are sold as commercial grade products not intended for application in facilities or activities licensed by the United States Nuclear Regulatory Commission for atomic purposes, under 10 CFR 21. Further certification will be required for use of these products in a safety-related application in any nuclear facility licensed by the U.S. Nuclear Regulatory Commission.

WARNING

The installation and use of Eaton products should be in accordance with the provisions of the U.S. National Electrical Code® and/or other local codes or industry standards that are pertinent to the particular end use. Installation or use not in accordance with these codes and standards could be hazardous to personnel and/or equipment.

These catalog pages do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the local Eaton Products Distributor or Sales Office. The contents of this catalog shall not become part of or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Eaton's Electrical Sector. The warranty contained in the contract between the parties is the sole warranty of Eaton. Any statements contained herein do not create new warranties or modify the existing warranty.

Copyright ©2015 Eaton, All Rights Reserved.

Powering Business Worldwide

Eaton is a global leader in power distribution, power quality, control and automation, and monitoring products.

At Eaton, we believe a reliable, efficient and safe power system is the foundation of every successful enterprise. Through innovative technologies, cutting-edge products and our highly skilled services team, we empower businesses around the world to achieve a powerful advantage.

In addition, Eaton is committed to creating and maintaining powerful customer relationships built on a foundation of excellence. From the products we manufacture to our dedicated customer service and support, we know what's important to you.

Solutions

Eaton takes the complexity out of power systems management with a holistic and strategic approach, leveraging our industry-leading technology, solutions and services. We focus on the following three areas in all we do:

- Reliability—maintain the appropriate level of power continuity without disruption or unexpected downtime
- Efficiency—minimize energy usage, operating costs, equipment footprint and environmental impact
- Safety—identify and mitigate electrical hazards to protect what you value most

Using the Eaton Catalog Library

As we grow, it becomes increasingly difficult to include all products in one or two comprehensive catalogs. Knowing that each user has their specific needs, we have created a library of catalogs for our products that when complete, will contain 15 volumes. Since the volumes will continuously be a work in progress and updated, each volume will stand alone. Refer to our volume directory, MZ08100001E, for a quick glance of where to look for the products you need. The 15 volumes include:

- Volume 1—Residential and Light Commercial (CA08100002E)
- Volume 2—Commercial Distribution (CA08100003E)
- Volume 3—Power Distribution and Control Assemblies (CA08100004E)
- Volume 4—Circuit Protection (CA08100005E)
- Volume 5—Motor Control and Protection (CA08100006E)
- Volume 6—Solid-State Motor Control (CA08100007E)
- Volume 7—Logic Control, Operator Interface and Connectivity Solutions (CA08100008E)
- Volume 8—Sensing Solutions (CA08100010E)
- Volume 9—Original Equipment Manufacturer (CA08100011E)
- Volume 10—Enclosed Control (CA08100012E)
- Volume 11—Vehicle and Commercial Controls (CA08100013E)
- Volume 12—Aftermarket, Renewal Parts and Life Extension Solutions (CA08100014E)
- Volume 13—Counters, Timers and Tachometers (CA08100015E)—Available in electronic format only
- Volume 14—Fuses (CA08100016E)—Available in electronic format only
- Volume 15—Solar Inverters and Electrical Balance of System (CA08100018E)

These volumes are not all-inclusive of every product, but they are meant to be an overview of our product lines. For our full range of product solutions and additional product information, consult Eaton.com/electrical and other catalogs and product guides in our literature library. These references include:

- The Consulting Application Guide (CA08104001E)
- The Eaton Power Quality Product Guide (COR01FYA)

If you don't have the volume that contains the product or information that you are looking for, not to worry. You can access every volume of the catalog library at Eaton.com/electrical in the Literature Library.

By installing our Automatic Tab Updater (ATU), you can be sure you always have the most recent version of each volume and tab.

Contact Us

If you need additional help, you can find contact information under the Customer Care heading of Eaton.com/electrical.

Product Selection Guide

TAB 1—Electronic Products

Description	Page
E31 eSM	**V11-T1-2**
E30 eSM	**V11-T1-7**
E32 eSM	**V11-T1-10**
E33 eSM	**V11-T1-14**
eVu	**V11-T1-17**

TAB 2—Rockers

Description	Page
Introduction	**V11-T2-2**
NGR	**V11-T2-8**
SVR	**V11-T2-32**
Dual Motion Safety Switch	**V11-T2-43**
1500/2500	**V11-T2-45**
1600/2600	**V11-T2-49**
Rockette	**V11-T2-56**
8006/8007—EURO SR	**V11-T2-64**
8004/8005 Euro Full-Size	**V11-T2-67**
X Series	**V11-T2-70**
8064/8065 ESPORT	**V11-T2-74**
Accessories	**V11-T2-78**
Technical Data	**V11-T2-80**
Symbol Library	**V11-T2-82**

TAB 3—Special Devices

Description	Page
High Capacity Switches	**V11-T3-2**
Panelboard Switches	**V11-T3-3**
Keylock Switches, General Purpose/Heavy Duty—AC/DC Rated	**V11-T3-5**
Locking Rocker	**V11-T3-9**

TAB 4—Toggle Switches

Description	Page
Introduction	**V11-T4-2**
Military Purpose Toggles	**V11-T4-3**
Illuminated AC Rated Toggles	**V11-T4-9**
General Purpose Toggles—AC Rated	**V11-T4-11**
General Purpose Toggles—AC/DC Rated	**V11-T4-20**
X Series Toggles	**V11-T4-24**
Heavy Duty Hesitation Switches	**V11-T4-27**
Accessories	**V11-T4-31**
Technical Data	**V11-T4-35**

TAB 5—Dimmers and Wipers

Description	Page
Paddle and Slide Controls	**V11-T5-2**
Rotary Wipers	**V11-T5-4**

TAB 6—Pushbuttons

Description	Page
AC Rated	**V11-T6-2**
Illuminated AC/DC Rated	**V11-T6-8**
XP Series Sealed Pushbutton	**V11-T6-21**

TAB 7—Definitions and Index

Description	Page
Definitions	**V11-T7-1**
Index	**V11-T7-2**

E31 eSM—Multiplexed Keypad

E30 eSM—Multiplexed Rockers

E32 eSM—Multiplexed Rockers

E33 eSM—Sealed Multiplex Rocker Switch Units

eVu—Electronic Vehicle Display

1.1 E31 eSM—Keypad Multiplexed Switch Module

Product Description V11-T1-2
Application Description V11-T1-2
Features and Benefits V11-T1-2
Catalog Number Selection V11-T1-3
Product Selection V11-T1-4
Technical Data and Specifications V11-T1-5
Dimensions V11-T1-5

1.2 E30 eSM—Multiplexed Rocker Switch Units

Product Description V11-T1-7
Application Description V11-T1-7
Product Selection V11-T1-7
Technical Data and Specifications V11-T1-8
Wiring V11-T1-9
Dimensions V11-T1-9

1.3 E32 eSM—Multiplexed Rocker Switch Units

Product Description V11-T1-10
Application Description V11-T1-10
Features and Benefits V11-T1-10
Product Selection V11-T1-11
Accessories V11-T1-11
Wiring V11-T1-12
Dimensions V11-T1-13

1.4 E33 eSM—Sealed Multiplexed Rocker Switch Units

Product Description V11-T1-14
Application Description V11-T1-14
Features and Benefits V11-T1-14
Product Selection V11-T1-15
Wiring V11-T1-15
Technical Data and Specifications V11-T1-15
Dimensions V11-T1-16

1.5 eVu—Electronic Vehicle Display

Product Description V11-T1-17
Application Description V11-T1-17
Features V11-T1-17
Product Selection V11-T1-17
Dimensions V11-T1-17

1

E31 eSM—Keypad Multiplexed Switch Module

Contents

Description	*Page*
E31 eSM—Keypad Multiplexed Switch Module	
Catalog Number Selection	**V11-T1-3**
Product Selection	**V11-T1-4**
Technical Data and Specifications	**V11-T1-5**
Dimensions	**V11-T1-5**

Product Description

Because your vehicle is continuously exposed to nature's elements, we offer the latest in Eaton's multiplexed line of switch product, the E31 Keypad eSM. Eaton's E31 Keypad eSM multiplex switch module offers a flexible and sealed solution for high-density switch requirements in severe environments. The keypad can be configured with any graphic/switch, as well as with customer-defined illumination. For customers requiring additional switches, expansion modules can be used with no requirement for additional CAN nodes. For additional product flexibility and differentiated operator control, the E31 Keypad eSM is designed to communicate with Eaton's E32 and E33 sealed rocker expansion modules.

Application Description

Great for specialty vehicle, construction, and agricultural equipment markets. The eSM product is especially suitable for severe environmental applications and where there is a desire to move to a multiplexed solution to simplify wiring and control requirements. Typical applications are:

Target Market Segments:

- Tractors
- Wheel loaders
- Refuse vehicles
- Concrete mixers
- Street sweepers
- Mining equipment
- Emergency vehicles
- Transit buses

Features and Benefits

Key Features

- Fully compliant with J1939/CAN 2.0b messaging
- IP68 degree of protection from front and rear of module
- Rocker and keypad expansion module capability
- Exceptional illumination characteristics
  - LED backlighting of icons
  - Four color daylight-visible indicators per switch
  - Message-controlled dimming and flash rates
- Large switch surface area and alignment ridges for ease of gloved hand use
- Exceptional tactile and audible feedback of switch actuation
- Electrical/mechanical life to over 1,000,000 cycles
- 9–32 Vdc operating voltage
- Immunity per SAE J1455/1113
  - Power disturbance
  - Radiated immunity
  - Radiated emissions

Advantages

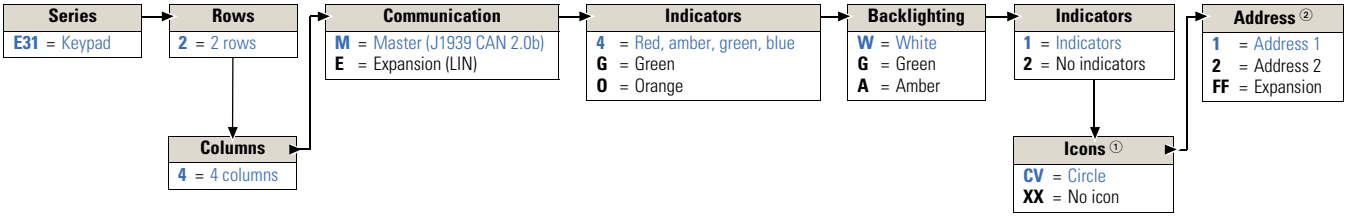
- Reduced assembly labor due to ease of installation, allowing for mounting and connection of eight switches at one time as opposed to individually
- Reduced wire harness complexity; uses one harness to a controller, reducing wiring, connection point, and controller requirements
- Reduced harness size offers an overall reduction in weight, improving operational efficiency of the equipment
- Increase in life-cycle over traditional electromechanical switches
- Front, rear, and panel sealing for harsh environments

Catalog Number Selection

How To Order—E31 eSM—Keypad Multiplexed Switch Module, 2x4

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

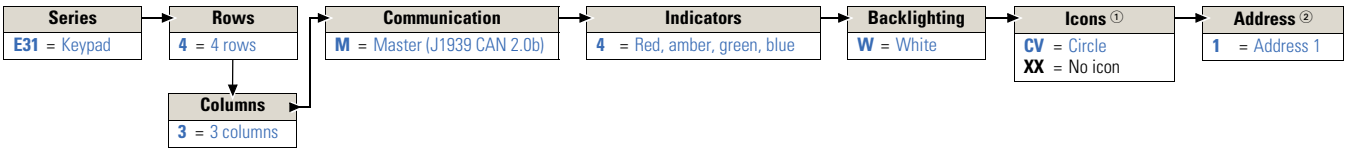
Example: **E31 2 4 M 4 W 1 CV 1**



How To Order—E31 eSM—Keypad Master Module, 4x3

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

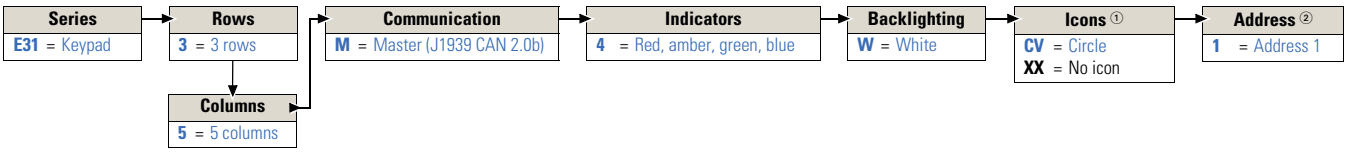
Example: **E31 4 3 M 4 W CV 1**



How To Order—E31 eSM—Keypad Master Module, 3x5

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **E31 3 5 M 4 W CV 1**



Notes

① Contact Eaton sales for custom graphics. See V11-T2-80–V11-T2-84 and V11-T2-95–V11-T2-102, symbols library, for available graphics.

② For use of multiple masters on one system. (Address 3–8 available as special order.)

1

Product Selection

Master

E3124M4W1CV1

E31 Keypad eSM Master Module, 2x4

Basic Part	Indicator Colors	Backlighting	Icon Graphic	Address	Catalog Number
E3124M	Red, amber, green, blue	White	Circle	1	**E3124M4W1CV1**
				2	**E3124M4W1CV2**
			None	1	**E3124M4W1XX1**
				2	**E3124M4W1XX2**
	Green	Green	Circle	1	**E3124MGG1CV1**
				2	**E3124MGG1CV2**
			None	1	**E3124MGG1XX1**
				2	**E3124MGG1XX2**
	Orange	Amber	Circle	1	**E3124MOA1CV1**
				2	**E3124MOA1CV2**
			None	1	**E3124MOA1XX1**
				2	**E3124MOA1XX2**

E3143M—Custom

E31 Keypad eSM Master Module, 4x3

Basic Part	Indicator Colors	Backlighting	Icon Graphic	Address	Catalog Number
E3143M	Red, amber, green, blue	White	Circle	1	**E3143M4W1CV1**
				2	**E3143M4W1CV2**
			None	1	**E3143M4W1XX1**
				2	**E3143M4W1XX2**

E3135M—Custom

E31 Keypad eSM Master Module, 3x5

Basic Part	Indicator Colors	Backlighting	Icon Graphic	Address	Catalog Number
E3135M	Red, amber, green, blue	White	Circle	1	**E3135M4W1CV1**
				2	**E3135M4W1CV2**
			None	1	**E3135M4W1XX1**
				2	**E3135M4W1XX2**

Expansion

E3124EGG1XXFF

E31 Keypad eSM Expansion Module, 2x4 ①

Basic Part	Indicator Colors	Backlighting	Icon Graphic	Address	Catalog Number
E3124E	Red, amber, green, blue	White	Circle	FF	**E3124E4W1CVFF**
			None	FF	**E3124E4W1XXFF**
	Green	Green	Circle	FF	**E3124EGG1CVFF**
			None	FF	**E3124EGG1XXFF**
	Orange	Amber	Circle	FF	**E3124EOA1CVFF**
			None	FF	**E3124EOA1XXFF**

Note

① Expansion keypad module is available in 2x4 configuration only.

Technical Data and Specifications

Master Module Wiring Harness

The interconnection between the master module and the controller uses a minimum four-wire harness with an additional two pins associated to expansion module interconnection. Wire sizes of 16–20 AWG can be accommodated with the Deutsch connector shown in the mating connector information.

Wiring Harness

PIN	Master	Expansion
1	Vbat	Vbat
2	Common	Common
3	CAN (+)	LIN
4	CAN (–)	LIN
5	Common	Common
6	LIN	Vbat

Environmental and Electronic Specifications

- Operational temperature: –40° to +85°C
- Storage temperature: –40° to +95°C
- Operational voltage: 9–32 Vdc
- Degree of protection: IP68
- Mechanical shock: 30g for 11 msec
- Handling drop: 1m
- Electrical/mechanical life: 1M cycles
- Load dump
  - SAE J1455: 100V/12V systems
  - SAE J1113/11: 174V for 24V systems

Mating Connector Information

Deutsch DT Series connector

6-pin connector: DT06-6S

- EP11 (Black–Master)
- E008 (Gray–Expansion)

6-pin wedge lock: W6S

Female terminal: 0462-201-16141 (16-18-20 AWG)

Hole plug: 0413-217-1605

Crimper: HDT-48-00

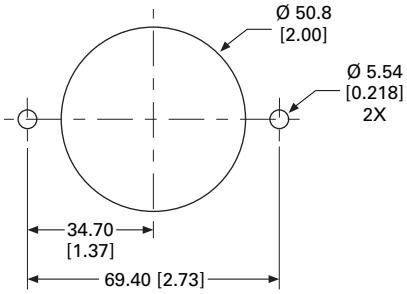
E32 and E33 Rocker Expansion Modules

The Keypad eSM master module is capable of supporting Eaton's E32 and E33 product line of rocker eSMs. The E32 and E33 product line is an above-panel–style rocker switch module that contains any combination of rocker or indicator functionality with no additional CAN node requirement to the system. Similar to the keypad, the rocker module offers icon graphic illumination with up to four center indicator bar LEDs for status or mode. This product is also fully functional to support dimming and flashing capabilities through software command.

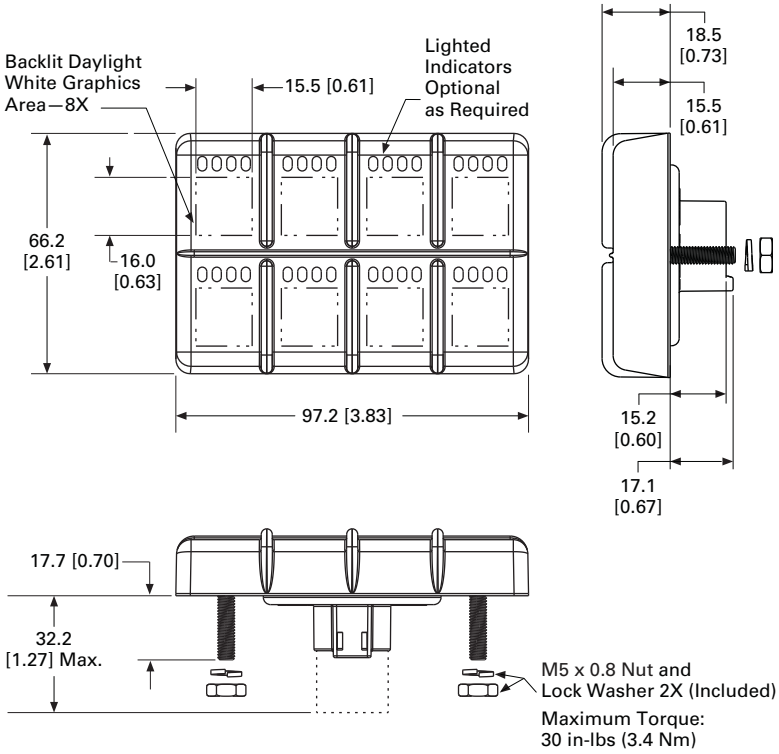
Dimensions

Approximate Dimensions in mm [in]

2x4 Mounting Dimensions



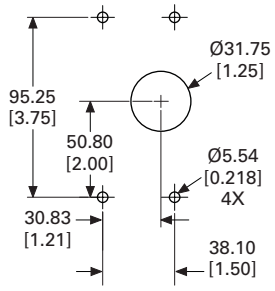
E31 Keypad Master or Expansion Module



1

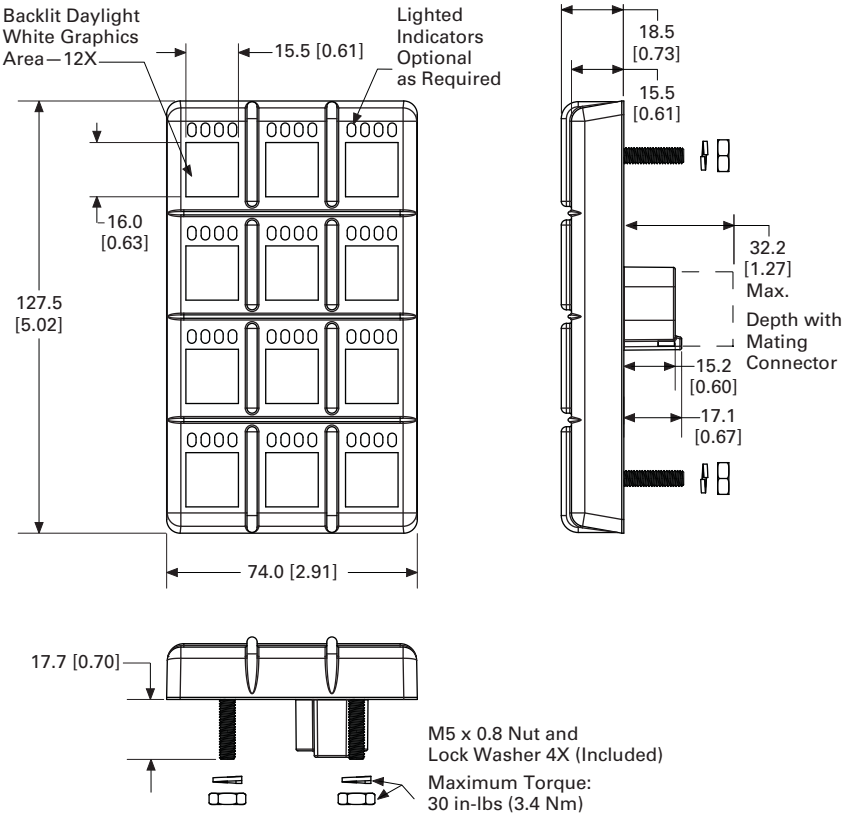
Approximate Dimensions in mm [in]

4x3 Mounting Dimensions

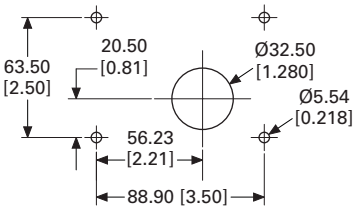


Recommended Panel Opening

E31 Keypad Master Module

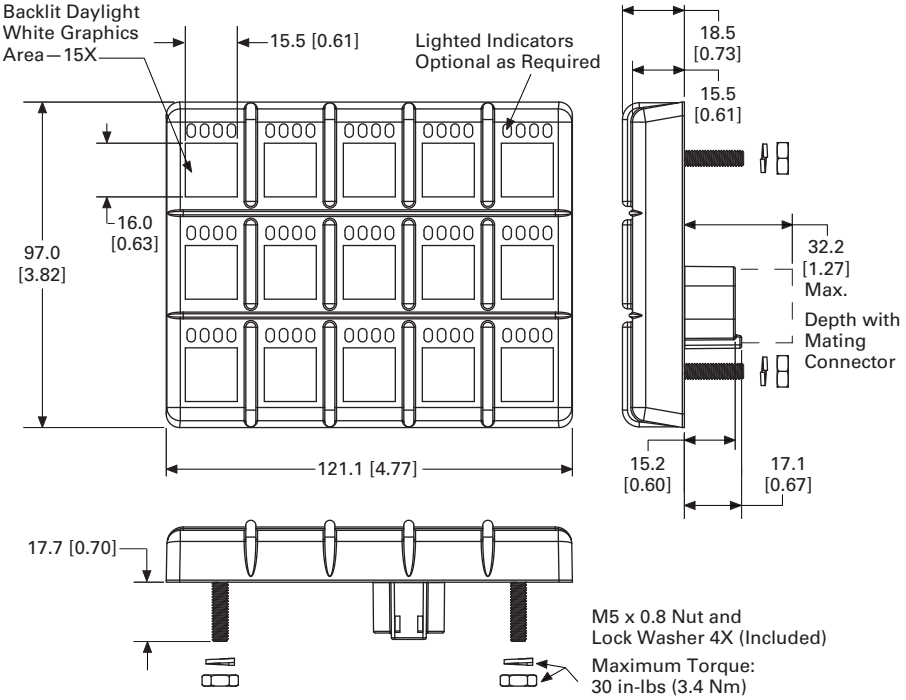


3x5 Mounting Dimensions



Recommended Panel Opening

E31 Keypad Master Module



E30 eSM—Multiplexed Rocker Switch Units

Contents

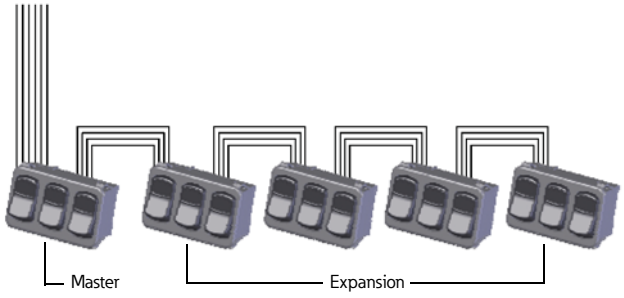
Description	*Page*
E30 eSM—Multiplexed Rocker Switch Units	
Technical Data and Specifications	**V11-T1-8**
Wiring	**V11-T1-9**
Dimensions	**V11-T1-10**

Product Description

Tailored to meet the same look and feel of Eaton's NGR product line, the E30 eSM offers the added benefits of multiplexed control and system simplification. The E30 eSM is a below-panel styled multiplexed rocker module capable of communicating via SAE J1939 CAN 2.0b. The modules are set up in a master-expansion configuration capable of supporting up to seven expansion modules per master thus minimizing the impact on a controller to a single CAN node. Additionally, up to eight master modules per system can be accommodated. Communication with the expansion modules is done via a four-wire sub-bus.

Multiplexing of switches can significantly reduce harness costs and complexity as well as improve installation cycle time.

Master Expansion Modules



Application Description

The E30 eSM is especially suited for applications that require both high current independently wired switches using Eaton NGR switches as well as those applications realizing the benefits of multiplexing. The E30 eSM is styled to match the Eaton NGR switch for a consistent look and feel to your dash panel.

The E30 eSM also has the capability of having a separate input for key switch and dimmer control functions to increase the flexibility of the product to interface seamlessly to your vehicle.

Customization of the E30 eSM is done by creating an application specific rocker with icons representing the function as well as by use of colored LEDs to highlight status. Two and three position as well as momentary or maintained circuits are identified using a sub-actuator to offer complete flexibility.

Target Market Segments:

- Motor coach/bus
- Specialty vehicle
- Truck

Product Selection

Note: All products are custom ordered. Contact your local Eaton Sales Representative.

1

Technical Data and Specifications

E30 eSM Specifications

Description	Specification
Power supply	12 Vdc regulated power, 1.5A
Operating temperature	–40° to 85°C
Storage temperature	–40° to 85°C
Sealing	IP42
Illumination	Dependent or search lighting, customer defined LED color
Switch life cycle	
Electrical life	250,000 cycles
Mechanical life	250,000 cycles
Radiated immunity	SAE J1113/21, 100 v/m
Radiated emissions	SAE J1113/41, Class 2
Dimming	0–10 Vdc Analog Input (0 = 0% and 10V = 100% brightness)
Connectors	Delphi Micro VHT 15499927 Delphi Micro VHT 13513469

SAE J1455

Description	Specification
Dust test (Non-operational)	SAE J726 Course
Mechanical vibration	2gs from 10 to 2 kHz
Mechanical shock	30g
Handling drop	1m, 3-axis
Load dump transient	Table 4A and 4B
Reverse voltage	–28 Vdc for 5 mins
Over-voltage	48 Vdc for 5 mins
Under-voltage	4 Vdc for 5 mins

Power Supply

A regulated 12 Vdc power supply capable of providing 1.5A should be connected to terminals 1, 5 and 6 of the six-pole connector of the master module only. All connected expansion modules receive their supply power from the master module.

Diagnostics

The LED indicators at the back of the modules show the status of the internal diagnostics as follows:

Diagnostics

Label	Color	Meaning
J1939 ACTIVE	Red	CANbus active
MODULE ACTIVE	Amber	Sub bus active
SWITCH CHANGE	Green	Switch change

Communication

The communication to and from the master module is fully compliant to the SAE J1939/CAN 2.0b protocol.

The application-specific J1939 message parameters are as follows:

Transmission Repetition

Description	Specification
Transmission repetition rate	100 ms
Data length	8 bytes
Data page	0
PDU format	255
PDU specific	160
Default priority	5
Parameter group number	65440

Message Contents

Status

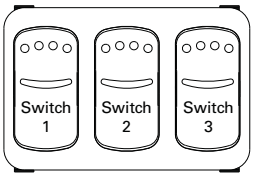
Byte	Status
Byte 1	Master module status
Byte 2	Expansion module 1 status
Byte 3	Expansion module 2 status
Byte 4	Expansion module 3 status
Byte 5	Expansion module 4 status
Byte 6	Expansion module 5 status
Byte 7	Expansion module 6 status
Byte 8	Expansion module 7 status

Within each status byte, the bits are assigned to the individual switches as follows:

Bit	Switch
Bit 8&7	Not defined
Bit 5&6	Switch 1 status
Bit 3&4	Switch 2 status
Bit 1&2	Switch 3 status

where the switches are numbered as shown below.

Switches

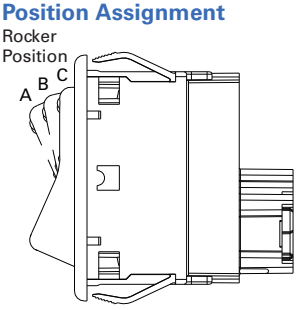


The two status bit pairs represent the switch state in the following manner:

Bit	Switch
00	Switch in DOWN position
01	Switch in MIDDLE position
10	Switch in UP position
11	Not defined

where the position assignment is as shown below.

Position Assignment

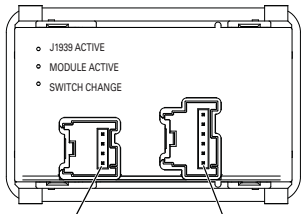


A = DOWN
B = MIDDLE
C = UP

Wiring

The master unit is connected using six unshielded wires. The connection from the master to the first expansion module and between any consecutive expansion modules is made using four unshielded wires.

Master Module



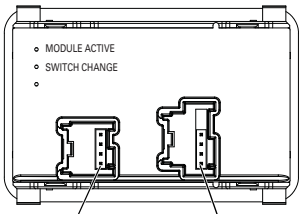
Pin	Function
4	Vcc out
3	Ground
2	Sub bus +
1	Sub bus –

Pin	Function
6	Keyswitch
5	Dimmer
4	Ground
3	J1939 +
2	J1939 –
1	+12 Vdc

Master wiring:

- Six unshielded wires

Expansion Module



Pin	Function
4	Vcc out
3	Ground
2	Sub bus +
1	Sub bus –

Pin	Function
4	Vcc in
3	Ground
2	Sub bus +
1	Sub bus –

Expansion wiring:

- Four unshielded wires

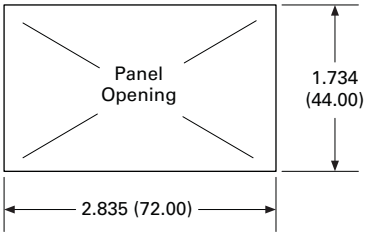
Dimensions

Approximate Dimensions in Inches (mm)

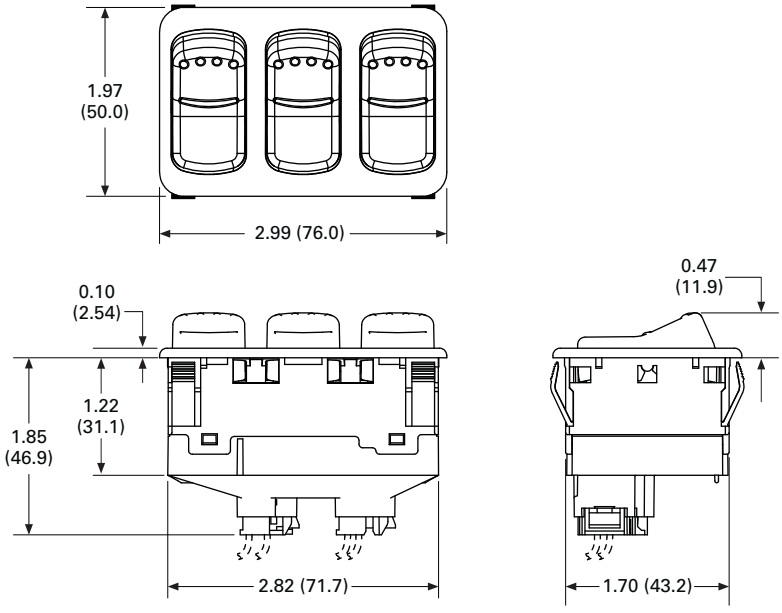
Mounting Dimensions

If you want to mount the modules in a panel, the opening in the panel should be rectangular, 2.835 in wide and 1.732 in high (72.00 mm wide and 44.00 mm high).

The panel thickness should be between 0.039 and 0.157 in (1.00 and 4.00 mm).



E30 eSM Multiplexed Rocker Switch Units



1

E32 eSM—Multiplexed Rocker Switch Units

Contents

Description	*Page*
E32 eSM—Multiplexed Rocker Switch Units	
Product Selection	**V11-T1-13**
Accessories	**V11-T1-13**
Wiring	**V11-T1-15**
Dimensions	**V11-T1-17**

Product Description

Multiplexed Master Module using a LIN sub bus to communicate with up to seven expansion modules.

Offering a high level of flexibility, the above-panel electronic multiplex switch module (E32 eSM) covers your wide range of switch and indicator applications using standard or custom graphics, as well as a full range of circuits and illumination options. The above-panel E32 eSM has top, center and bottom LED lighting with software that offers advanced circuit and lighting flexibility, including dimming and flashing options via J1939 CANbus communication. The indicator bar can be lighted with up to four separate colors to indicate operational status, vehicle mode and faults. All standard combinations of maintained and momentary switch actions, matching indicator caps and dummy plugs, along with the complementary styled SVR electromechanical rocker switch are available to complete the offering.

Compared with electromechanical switches, multiplexed switch modules offer several advantages.

- Reduced assembly labor due to ease of installation, allowing for mounting and connection of three switches at one time versus individually
- Reduced wire harness complexity, using one harness to a controller to accommodate up to 24 switches and a three-wire interconnect between expansion and master modules
- Reduced harness size offers an overall reduction in weight, improving operational efficiency of the equipment
- Increase in switch life-cycle over traditional electromechanical switches (500k cycles)

Application Description

Target Market Segments

This product is targeted at the bus/coach, truck and specialty vehicle markets. The product is especially suitable where a customer has "gangs" of switches mounted in a panel or dashboard, and expansion modules can be connected easily to a master module.

- On-road specialty vehicle
- EMS vehicles
- Street sweepers
- Recreational vehicles
- Motor coach/bus
- Refuse vehicles

Features and Benefits

- Fully compliant with J1939 CAN 2.0b messaging
- LED lighting in top, center and bottom positions
- Late point definition of circuit and rockers to reduce inventory and accommodate multiple application requirements
- 9–16 Vdc operating voltage
- 16–32 Vdc operating voltage
- IP53 degree of protection from the front
- Easy address assignment
- Immune to SAE J1455 and J1113 power disturbances
- Front panel removable for ease of maintenance
- Sleep mode available to reduce current draw on the battery
- Wake on switch change configurable
- Decorative-style rocker with matching indicator option available
- Colored rocker options
- CAN controlled digital logic output—500 mA

Product Selection

Note: All fully-assembled products are custom ordered.
Contact your local Eaton Sales Representative.

Modules

Voltage	Module	Icon Lighting	Status Bar Lighting	Catalog Number
9–16V	Master	Amber	Amber	**E321AAAAAAAAA01**
		Green	Green	**E321GGGGGGGGG01**
		White	Red, Amber, Green, Blue	**E321W4WW4WW4W01**
	Expansion	Amber	Amber	**E322AAAAAAAAA01**
		Green	Green	**E322GGGGGGGGG01**
		White	Red, Amber, Green, Blue	**E322W4WW4WW4W01**
	Indicator expansion	Amber	Amber	**E322AAAAAAAAAI7**
		Green	Green	**E322GGGGGGGGGI7**
		White	Red, Amber, Green, Blue	**E322W4WW4WW4WI7**
16–32V	Master	Amber	Amber	**E323AAAAAAAAA01**
		Green	Green	**E323GGGGGGGGG01**
		White	Red, Amber, Green, Blue	**E323W4WW4WW4W01**
	Expansion	Amber	Amber	**E324AAAAAAAAA01**
		Green	Green	**E324GGGGGGGGG01**
		White	Red, Amber, Green, Blue	**E324W4WW4WW4W01**
	Indicator expansion	Amber	Amber	**E324AAAAAAAAAI7**
		Green	Green	**E324GGGGGGGGGI7**
		White	Red, Amber, Green, Blue	**E324W4WW4WW4WI7**

Accessories

Rockers

Color	Description	Catalog Number
Black	Full-throw actuator	**53-7350**
	Half-throw up actuator	**53-7350-2**
	Half-throw down actuator	**53-7350-3**
Red	Full-throw actuator	**53-7350-4**
	Half-throw up actuator	**53-7350-5**
	Half-throw down actuator	**53-7350-6**
Black	Indicator	**53-7354**
	Dummy plug	**53-7354-2**
	Panel plug	**17-24241**

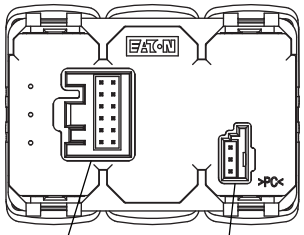
Circuit Sub-Actuators

Color	Circuit (Up-Middle-Down)			Catalog Number
Black	On	On	None	**61-4043**
Red	Momentary	On	None	**61-4043-2**
Light blue	On	On	On	**61-4043-3**
White	Momentary	On	Momentary	**61-4043-4**
Yellow	Momentary	On	On	**61-4043-5**
Gray	On	None	On	**61-4043-6**
Pink	Momentary	None	On	**61-4043-7**
Maroon	None	On	On	**61-4043-8**
Light purple	None	On	Momentary	**61-4043-9**
Orange	On	On	Momentary	**61-4043-10**
Green	On	None	Momentary	**61-4043-11**

1

Wiring

Master Module Wire Harness



Pin	Function
1	VBAT (clamp 30)
2	Ground
3	CAN high
4	CAN low
5	500 mA output
6	Address 1
7	Address 2
8	Address 3
9	Address 4
10	No connect
11	No connect
12	No connect

Pin	Function
1	VBAT (clamp 30)
2	Ground
3	LIN sub bus

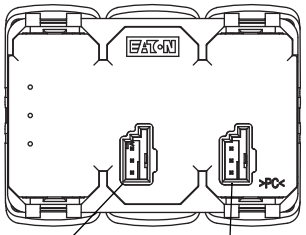
The interconnection between master module and controller uses a simple four-wire harness with addressing specified by jumping between pins 6 to 9. An additional pin-out is provided for a 500 mA output if required.

Mating Connector Information

Housing:

- ETN 28-6982
- Amp/Tyco #1394048-1
- ETN 49-7867
- Amp/Tyco #2-1355524-3

Expansion Module Wire Harness



Pin	Function
1	VBAT (clamp 30)
2	Ground
3	LIN sub bus

Pin	Function
1	VBAT (clamp 30)
2	Ground
3	LIN sub bus

The interconnection between modules uses a cost-effective three-wire harness. This simplified wire harness reduces cost, weight and assembly labor for the end-user.

Mating Connector Information

Terminal:

- ETN 28-6983
- Amp/Tyco #1-1718346-1 Coding A
- ETN 80-20608
- Amp/Tyco #963715-1

Master Address Assignment

The master switch module address is set using jumpers in the wire harness to connect the following pins:

Master Address Assignment

Terminal Pins Connected	Address
6–7	A1
6–8	A2
6–9	A3
7–8	A4
7–9	A5
8–9	A6
6–7, 8–9	A7
6–8, 7–9	A8

Manufacturing Flexibility

E32 eSM offers a tremendous amount of flexibility including options for complete assemblies to be provided as well as late-point definable rocker and circuit. Individual components can be purchased independently and assembled to create any combination of circuits and icons which is especially suited for low volume/high mix applications minimizing inventory requirements. Rockers and indicators can also be laser-etched with custom icons by Eaton or other to accommodate application specific requirements. Contact your Eaton representative to discuss the Eaton solution further.

Dimensions

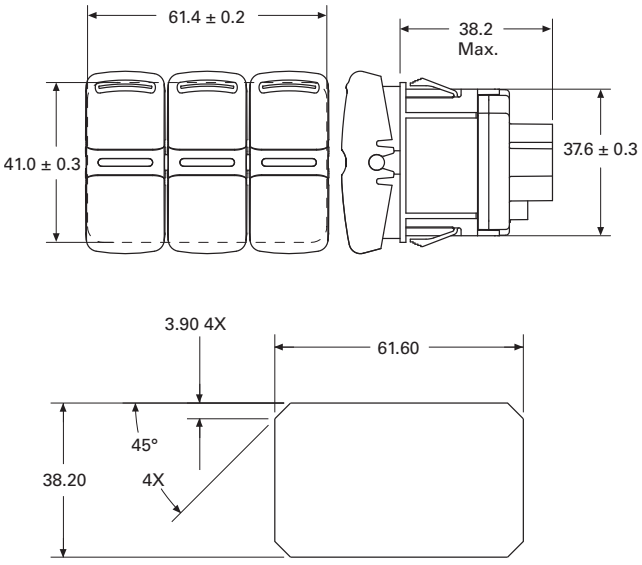
Approximate Dimensions in mm

Mounting Instructions

The modules are easily mounted with plastic retention clips. Modules are mounted in a single, space-saving cutout, reducing assembly time and accommodating up to three switches in a compact design.

The unit will accommodate 1.5 to 3 mm panel thickness.

Mounting Dimensions



1

E33 eSM—Sealed Multiplexed Rocker Switch Units

Contents

Description ***Page***

E33 eSM—Keypad Multiplexed Switch Module
- Product Selection **V11-T1-22**
- Wiring **V11-T1-22**
- Technical Data and Specifications **V11-T1-22**
- Dimensions **V11-T1-23**

Product Description

Sealed Multiplexed Master Module using a LIN sub bus to communicate with up to seven expansion modules.

Eaton is pleased to introduce the newest line of multiplexed electronic Switch Modules (eSM), the E33 product line. The E33 eSM offers an increased level of flexibility over previous modules including:

- Fully sealed to IP68 from the front and rear
- Locking rocker options
- Palm guard option

The E33 eSM offers a complete range of switch circuits as well as indicator options to meet all your control requirements. Similar to the E32 eSM product line, the E33 eSM includes individual icon lighting as well as a multi-color center indicator option allowing for steady state, flashing and dimming controlled via messaging. Additional flexibility is available by using the Eaton IP68 sealed SVR switch line for high-current, hard-wired applications in conjunction with our multiplexed solution.

Compared with electromechanical switches, multiplexed switch modules offer several advantages.

- Reduced assembly labor due to ease of installation, allowing for mounting and connection of three switches at one time versus individually
- Reduced wire harness complexity, using one harness to a controller to accommodate up to 24 switches and a three-wire interconnect between expansion and master modules
- Reduced harness size offers an overall reduction in weight, improving operational efficiency of the equipment
- Increase in switch life-cycle over traditional electromechanical switches (500k cycles)
- Reduced connections resulting in less possible failure points

Application Description

Target Market Segments

This product is targeted at harsh environment applications where a ruggedized product is needed to meet demanding requirements. Additionally, applications where there is concern over inadvertent switch actuation driving the need for guarding or locking features are also well-suited. Typical applications include:

- Construction equipment
- Agricultural equipment
- Specialty vehicle
- Material handling
- Emergency vehicle
- School and transit bus

Features and Benefits

- Fully compliant with J1939 CAN 2.0b messaging
- IP68 degree of protection front and rear
- 9–32 Vdc rated
- Immune to SAE J1455 and J1113 power disturbances
- Top, bottom and full guard option available
- Locking rocker available
- Front panel removable for ease of maintenance
- Sleep mode available to reduce current draw on the battery
- Wake on switch change configurable
- LED lighting in top, center-indicator and bottom position
- Decorative style rocker with matching indicator option
- Late point definition of circuit and rockers to reduce inventory
- Diagnostics

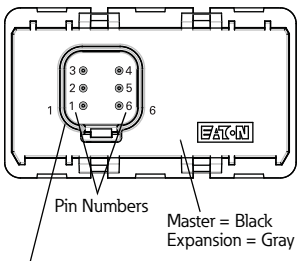
Contact your Eaton sales engineer for availability.

Product Selection

Note: All fully-assembled products are custom ordered. Contact your local Eaton Sales Representative.

Wiring

Master/Expansion Module Wire Harness



Pin	Master	Expansion
1	VBATT	VBATT
2	Common	Common
3	CAN High	LIN
4	CAN Low	LIN
5	Common	Common
6	LIN	VBATT

The interconnection between master module and controller uses a simple four-wire harness. Addressing of the master can be done by software or via address claim process. Interconnect wiring between master-expansion as well as expansion-expansion uses a three-wire harness.

Mating Connector Information

- Mating connector: Deutsch plug DT06-6S
- Wedge lock: W6S
- Socket contact: 0462-201-16141 (1.0–0.5 mm^2 [16–20 AWG]
- Hole plug: 0413-217-1605

Technical Data and Specifications

E33 eSM Specifications

Description	Specification
Operating temperature	–40° to 85°C
Storage temperature	–40° to 95°C
Operating voltage	9–32 Vdc
Environmental sealing	IP68
Mechanical shock	30g for 11 ms
Mechanical vibration	MIL-STD-202F/201A 2.0g random
Immunity to SAE J1455 and J1113 power disturbances	
Communication	
Master	SAE J1939 CAN 2.0b
Expansion	LIN 2.0

Contact your Eaton sales engineer for availability.

1

Dimensions

Approximate Dimensions in Inches (mm)

Standard Cut-Out

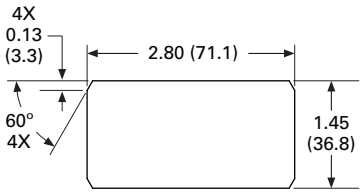
The modules are easily mounted with plastic retention clips. Modules are mounted in a single, space-saving cutout reducing assembly time and accommodating up to three switches in a compact design.

Serviceability

By modifying the standard cut-out to include the optional front panel removable slots shown below, the modules are easily serviceable from the front of the panel without further disassembly.

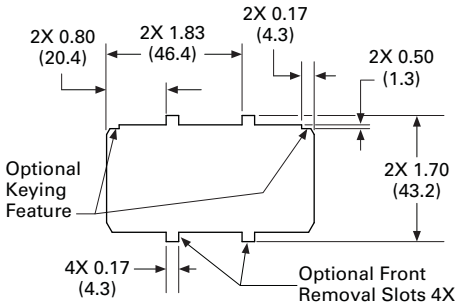
Due to the E33's design allowing for late-point definition on assembly, both the actuator and circuit profile are serviceable as individual components.

Standard Cut-Out

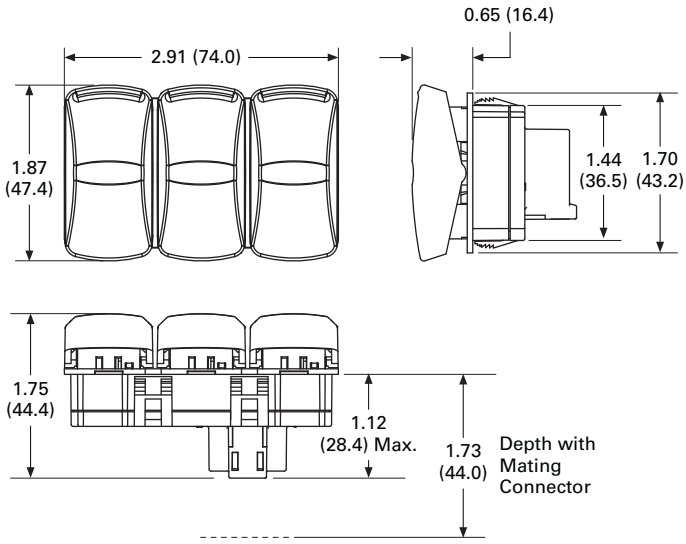


Recommended Panel Opening
Panel Thickness: 0.04–0.16 (1.0–4.0)

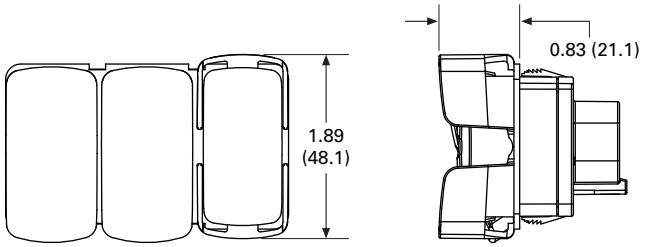
Optional Panel Opening Features



E33 eSM Sealed Multiplexed Rocker Switch Units



E33 eSM Sealed Multiplexed Rocker Switch Units (Palm Guard Version)



Contact your Eaton sales engineer for availability.

eVu—Electronic Vehicle Display

Contents

Description
eVu—Electronic Vehicle Display

Product Description

With a focus on communications, convenience and safety, Eaton is pleased to introduce eVU.

Rugged dashpanel displays simplify the viewing, selecting and inputting of key equipment/trip data.

Working in sync with existing controllers and networks, the displays provide the driver with valuable feedback on vehicle status and performance.

eVU displays offer a great deal of flexibility which can include:

- Internal warning/ alert buzzer
- Backlighted legend displays
- Sunlight readable LCD characters
- Internal power supply
- Analog or discrete switch inputs
- Up to 2.5 digit character display
- 8-segment bar graph
- Individual LED control

So, what's the e for?

Easy, **e**lectronic and **e**volutionary. eVU fills the gap (literally) between on-board systems and displays, ideal for application-specific functions.

Application Description

Typical applications for information display include:

- Temperature
- Pressure
- Speed
- Distance
- Capacity
- Transmission
- Warnings/alarms
- System information

Safety

eVU displays are easier to access than typical touch screens or soft-key applications. Keeping the dashboard displays within the driver's line of vision helps keep the driver and everyone else on the road safe. Additionally, the eVU displays are designed to meet SAE-1455 specification.

What Do You Want to View?

There are many types of eVU displays and they can be customized with various colors, resolutions and character configurations. Choose the functionality you want with the flexibility you need.

Features

Communication and Networking

eVU displays can interface with smart engines, controllers and equipment software via established J1939 and J1708 communication protocols.

In addition, eVU displays can receive input from analog transducers and sub-systems. Analog inputs can be either 0–20 mA or 0–10V. Additional input options exist for up to six logic states.

Designed for Easy Installation

Some advancements in technology create installation obstacles. That isn't the case with eVU. The displays fit into the same cutouts as standard Eaton NGR rocker switches, 0.866 x 1.732 in (22.00 x 44.00 mm), making installation easy.
The simplified architecture not only saves dash space, it also saves costs.

Product Selection

Note: All products are custom ordered. Contact your local Eaton Sales Representative.

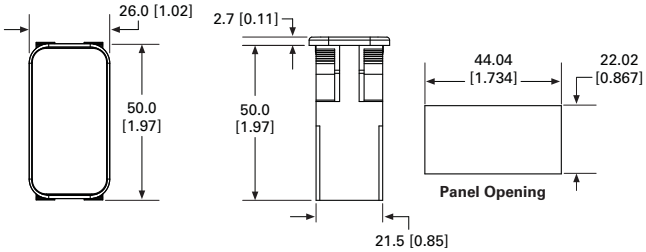
Dimensions

Approximate Dimensions in mm [in]

Mounting Instructions

Product is designed to mount in panels between 1 to 4 mm (0.039 to 0.157 in) thick.

eVu—Electronic Vehicle Display



NGR

SVR

Rockette

EURO SR

ESPORT

2.1 Introduction
Product Selection Guide V11-T2-3

2.2 NGR
Product Description V11-T2-8
Catalog Number Selection V11-T2-10

2.3 SVR
Product Description V11-T2-32
Catalog Number Selection V11-T2-34

2.4 Dual Motion Safety Switch
Product Description V11-T2-43
Catalog Number Selection V11-T2-44

2.5 1500/2500
Product Description V11-T2-45
Catalog Number Selection V11-T2-46

2.6 1600/2600
Product Description V11-T2-49
Catalog Number Selection V11-T2-50

2.7 Rockette
Product Description V11-T2-56
Catalog Number Selection V11-T2-57

2.8 8006/8007—EURO SR
Product Description V11-T2-64
Catalog Number Selection V11-T2-65

2.9 8004/8005—Euro Full Size
Product Description V11-T2-67
Catalog Number Selection V11-T2-68

2.10 X Series
Product Description V11-T2-70
Catalog Number Selection V11-T2-71
X Series Symbols Library V11-T2-72

2.11 8064/8065 ESPORT
Product Description V11-T2-74
Catalog Number Selection V11-T2-75
Icon/Legend Selection V11-T2-76

2.12 Accessories
Dimensions V11-T2-78

2.13 Technical Data
Rocker, Toggle and Pushbuttons V11-T2-80
Rocker Switch Circuit Diagrams V11-T2-81

2.14 Symbol Library
NGR, SVR, E31, E32 and E33 eSM Symbols V11-T2-82
NGR Only Symbols V11-T2-87
SVR, E31, E32 and E33 eSM Symbols V11-T2-97

2.1 Rockers

Introduction

Rocker Switch Products

Contents

Description

Rocker Selection Guide	**V11-T2-3**
NGR Rocker Switches	**V11-T2-8**
SVR—Sealed Vehicle Rockers	**V11-T2-32**
Dual Motion Safety Switches	**V11-T2-43**
1500/2500—Midsize AC Rated	**V11-T2-45**
1600/2600—Midsize AC Only	**V11-T2-49**
Rockette—General Purpose AC Rated	**V11-T2-56**
8006/8007—EURO SR	**V11-T2-64**
8004/8005—Euro Full Size	**V11-T2-67**
X Series Rockers	**V11-T2-70**
8064/8065—ESPORT	**V11-T2-74**
Accessories	**V11-T2-78**
Technical Data	**V11-T2-80**
Symbols Library	**V11-T2-82**

Rocker Selection Guide

See Technical Data and Dimensions for more details.

Rocker Switches—Illuminated and Non-Illuminated

	NGR	SVR
Features		
Ratings	15A at 125 Vac, 10A at 250 Vac; 15A at 28 Vdc (14 Vdc rating)	12A at either 12 or 24 Vdc
Certifications	RoHS, UL® Approvable	RoHS, UL Approvable
Panel Opening	Rectangular	Octagonal
Single- and two-pole length	1.734 in (44.04 ± 0.13 mm)	0.830 in (21.10 mm); 0.680 in (17.30 mm)
Single-pole width	0.867 in (22.02 ± 0.13 mm)	1.450 in (36.80 mm); 1.190 in (30.20 mm)
Two-pole width	0.867 in (22.02 ± 0.13 mm)	1.450 in (36.80 mm); 1.190 in (30.20 mm)
Seal		
Top (internal)	✔	✔
Bottom (internal)	—	✔
Panel	✔	✔
Actuator		
Rocker without bezel	—	✔
Rocker with bezel	✔	✔
Paddle	✔	✔
Snap-in lens	✔	✔
Locking	✔	—
Label	✔	—
Decorative		
Laser-etch	✔	✔
Pad-print	✔	✔
Poles		
Single	✔	✔
Double	✔	✔
Four	—	—
Termination		
Spade	✔	✔
Solder	—	—
Screw	—	—
Weld lugs	—	—
Illumination		
Incandescent 6 Vdc	—	—
Incandescent 12 Vdc	—	—
Incandescent 14 Vdc	✔	—
Incandescent 18 Vdc	✔	—
Incandescent 24 Vdc	—	—
Incandescent 28 Vdc	✔	—
Neon 110V	—	—
Neon 125V	—	—
Neon 250V	—	—
14V LED	✔	✔
28V LED	✔	✔
Catalog Number Selection	**Page V11-T2-10**	**Page V11-T2-34**
Technical Data	**Page V11-T2-16**	**Page V11-T2-36**
Circuit Diagrams	**Page V11-T2-17**	**Page V11-T2-37**
Dimensions	**Page V11-T2-30**	**Page V11-T2-38**
Icon/Legend Symbols Library	**Page V11-T2-82**	**Page V11-T2-82**

See Technical Data and Dimensions for more details.

Rocker Switches—Illuminated and Non-Illuminated, continued

	Dual Motion Safety Switch	1500/2500
Features		
Ratings	10A at 250 Vac, 15A at 125 Vac, 3/4 hp at 250 Vac	Up to 22A at 125 Vac, 16A at 250 Vac
Certifications	UL, CSA®, RoHS	UL, CSA, ENEC, RoHS
Panel Opening	Octagonal	Rectangular
Single- and two-pole length	1.450 in (36.80 mm); 1.190 in (30.20 mm)	1.075 in (27.30 ± 0.10 mm)
Single-pole width	0.830 in (21.10 mm); 0.680 in (17.20 mm)	0.483 in (12.27 ± 0.07 mm)
Two-pole width	N/A	0.876 in (22.25 ± 0.10 mm)
Seal		
Top (internal)	—	—
Bottom (internal)	—	—
Panel	—	—
Actuator		
Rocker without bezel	—	—
Rocker with bezel	✔	✔
Paddle	✔	✔
Snap-in lens	—	—
Locking	—	—
Label	—	—
Decorative		
Laser-etch	—	—
Pad-print	✔	✔
Poles		
Single	✔	✔
Double	—	✔
Four	—	—
Termination		
Spade	✔	✔
Solder	✔	✔
Screw	✔	—
Weld lugs	—	—
Illumination		
Incandescent 6 Vdc	—	✔
Incandescent 12 Vdc	—	✔
Incandescent 14 Vdc	—	—
Incandescent 18 Vdc	—	—
Incandescent 24 Vdc	—	✔
Incandescent 28 Vdc	—	—
Neon 110V	—	—
Neon 125V	—	✔
Neon 250V	—	✔
14V LED	—	—
28V LED	—	—
Catalog Number Selection	**Page V11-T2-44**	**Page V11-T2-46**
Technical Data	**—**	**Page V11-T2-48**
Circuit Diagrams	**—**	**Page V11-T2-80**
Dimensions	**Page V11-T2-44**	**Page V11-T2-48**
Icon/Legend Symbols Library	**—**	**Page V11-T2-55**

See Technical Data and Dimensions for more details.

Rocker Switches—Illuminated and Non-Illuminated, continued

	1600/2600	Rockette
Features		
Ratings	Up to 22A at 125 Vac, 16A at 250 Vac	Up to 15A at 125 Vac, 10A at 250 Vac, 3/4 hp at 250 Vac
Certifications	UL, CSA, ENEC, RoHS	UL, CSA, RoHS
Panel Opening	Rectangular	Octagonal
Single- and two-pole length	1.075 in (27.30 ± 0.10 mm)	1.450 in (36.83 mm); 1.190 in (30.23 mm)
Single-pole width	0.483 in (12.27 ± 0.07 mm)	0.830 in (21.80 mm); 0.680 in (17.27 mm)
Two-pole width	0.876 in (22.25 ± 0.10 mm)	0.830 in (21.80 mm); 0.680 in (17.27 mm)
Seal		
Top (internal)	—	✔
Bottom (internal)	—	—
Panel	—	—
Actuator		
Rocker without bezel	—	—
Rocker with bezel	✔	✔
Paddle	✔	—
Snap-in lens	—	—
Locking	—	—
Label	—	—
Decorative		
Laser-etch	—	—
Pad-print	✔	✔
Poles		
Single	✔	—
Double	✔	✔
Four	—	✔
Termination		
Spade	✔	✔
Solder	✔	✔
Screw	—	✔
Weld lugs	—	—
Illumination		
Incandescent 6 Vdc	✔	—
Incandescent 12 Vdc	✔	—
Incandescent 14 Vdc	—	✔
Incandescent 18 Vdc	—	—
Incandescent 24 Vdc	✔	—
Incandescent 28 Vdc	—	✔
Neon 110V	—	✔
Neon 125V	—	—
Neon 250V	—	—
14V LED	—	—
28V LED	—	—
Catalog Number Selection	**Page V11-T2-50**	**Page V11-T2-57**
Technical Data	**Page V11-T2-54**	**Page V11-T2-60**
Circuit Diagrams	**Page V11-T2-80**	**Page V11-T2-80**
Dimensions	**Page V11-T2-54**	**Page V11-T2-60**
Icon/Legend Symbols Library	**Page V11-T2-55**	—

See Technical Data and Dimensions for more details.

Rocker Switches—Illuminated and Non-Illuminated, continued

2

	8006/8007	8004/8005
Features		
Ratings	10A at 250 Vac, 15A at 125 Vac, 3/4 hp at 250 Vac, recommended up to 15A at 28 Vdc	10A at 250 Vac, 15A at 125 Vac, 3/4 hp at 250 Vac, recommended up to 15A at 28 Vdc
Certifications	UL(CUR), RoHS	UL(CUR), RoHS
Panel Opening	Octagonal	Rectangular
Single- and two-pole length	1.450 in (36.85 mm); 1.190 in (30.23 mm)	1.734 in (44.04 ± 0.13 mm)
Single-pole width	0.830 in (21.08 mm); 0.680 in (17.27 mm)	0.867 in (22.02 ± 0.13 mm)
Two-pole width	0.830 in (21.08 mm); 0.680 in (17.27 mm)	0.867 in (22.02 ± 0.13 mm)
Seal		
Top (internal)	✔	✔
Bottom (internal)	—	—
Panel	—	—
Actuator		
Rocker without bezel	—	—
Rocker with bezel	✔	✔
Paddle	✔	—
Snap-in lens	✔	✔
Locking	—	—
Label	—	✔
Decorative		
Laser-etch	—	—
Pad-print	✔	✔
Poles		
Single	✔	✔
Double	✔	✔
Four	—	—
Termination		
Spade	✔	✔
Solder	✔	✔
Screw	✔	✔
Weld lugs	—	—
Illumination		
Incandescent 6 Vdc	—	—
Incandescent 12 Vdc	—	—
Incandescent 14 Vdc	✔	✔
Incandescent 18 Vdc	✔	✔
Incandescent 24 Vdc	—	—
Incandescent 28 Vdc	✔	✔
Neon 110V	—	—
Neon 125V	✔	✔
Neon 250V	✔	✔
14V LED	—	—
28V LED	—	—
Catalog Number Selection	**Page V11-T2-65**	**Page V11-T2-68**
Technical Data	**Page V11-T2-66**	**Page V11-T2-69**
Circuit Diagrams	**Page V11-T2-80**	**Page V11-T2-80**
Dimensions	**Page V11-T2-66**	**Page V11-T2-69**
Icon/Legend Symbols Library	—	—

See Technical Data and Dimensions for more details.

Rocker Switches—Illuminated and Non-Illuminated, continued

Features	X Series	8064/8065
Ratings	16A 125V, 10A 277V, 3/4 hp 277V Recommended 21A 14 Vdc or 10A 28 Vdc	10A at 250 Vac, 15A at 125 Vac, 3/4 hp at 250 Vac, recommended up to 15A at 28 Vdc
Certifications	UL(CUR); RoHS, T85	UL(CUR); RoHS
Panel Opening	Rectangular	Rectangular
Single- and two-pole length	1.46 in (37.00 ± 0.1 mm)	1.734 in (44.04 ± 0.13 mm)
Single-pole width	0.83 in (21.20 ± 0.1 mm)	0.867 in (22.02 ± 0.13 mm)
Two-pole width	0.83 in (21.20 ± 0.1 mm)	0.867 in (22.02 ± 0.13 mm)
Seal		
Top (internal)	✔	—
Bottom (internal)	—	—
Panel	—	—
Actuator		
Rocker without bezel	—	—
Rocker with bezel	✔	✔
Paddle	—	✔
Snap-in lens	—	—
Locking	—	—
Label	—	✔
Decorative		
Laser-etch	✔	—
Pad-print	—	✔
Poles		
Single	✔	✔
Double	✔	✔
Four	—	—
Termination		
Spade	✔	✔
Solder	✔	—
Screw	✔	—
Weld lugs	—	—
Illumination		
Incandescent 6 Vdc	—	—
Incandescent 12 Vdc	—	—
Incandescent 14 Vdc	—	—
Incandescent 18 Vdc	—	—
Incandescent 24 Vdc	—	—
Incandescent 28 Vdc	—	—
Neon 110V	—	—
Neon 125V	—	—
Neon 250V	—	—
14V LED	✔	✔
28V LED	✔	✔
125V LED	✔	—
277V LED	✔	—
Catalog Number Selection	**Page V11-T2-71**	**Page V11-T2-75**
Technical Data	**Page V11-T2-72**	**Page V11-T2-76**
Circuit Diagrams	**Page V11-T2-72 (Light Diagrams)**	**Page V11-T2-80**
Dimensions	**Page V11-T2-73**	**Page V11-T2-77**
Icon/Legend Symbols Library	**Page V11-T2-72**	**Page V11-T2-76**

NGR Rocker Switches

Contents

Description	*Page*
NGR Rocker Switches	
Switch Base	**V11-T2-10**
Rocker Buttons/Actuators	**V11-T2-11**
Lens Selection	**V11-T2-13**
NGR Complete Indicators and Indicator Caps	**V11-T2-14**
NGR Indicator Base and Indicator Caps	**V11-T2-15**
Technical Data and Specifications	**V11-T2-16**
Standard Circuit Diagrams	**V11-T2-17**
Dimensions	**V11-T2-30**

Product Description

Eaton presents its NGR Rocker Switches. This field-proven line of full-sized rocker switches, initially developed for the heavy truck industry, is now found in a variety of vehicle-related applications.

The NGR offers both European styling and ergonomic design while still providing the solid durability that you have come to expect from Eaton switches.

Illuminated and non-illuminated versions with either incandescent bulbs or LEDs are available in either dependent or independent circuits and in a variety of popular switching circuits.

The NGR also offers a variety of rocker buttons and indicators with laser-etched or pad-printed icons, insertable lenses and adhesive-backed labels.

Features

- Sealing

Standard switch provides splash and dust resistance to IP42. The sealed version is sealed to IP67 when supplied with panel seal.

- Rocker

The standard actuator for the NGR is a clean, European-styled, two-face rocker made of high-quality thermoplastic material. The rocker is replaceable and snaps on and off the switch. Both the rocker and the bezel are supplied with an aesthetically pleasing matte finish. Different colors are also available, but black is standard. Rockers can be ordered separately.

- Lighting

Each switch is capable of accommodating two incandescent light bulbs or LEDs for lighting purposes. A lamp or LED can be located at either end of the switch and oriented to be circuit dependent or independent. The incandescent bulbs are front replaceable. Two lamp or LED voltages, 14 Vdc and 28 Vdc, are standard. For additional voltages or colors, consult your local Eaton Sales Representative.

Standards and Certifications

- Approvable under stringent UL and CSA standards
- For information, contact your local Eaton Sales Representative
- RoHS Compliant ①

RoHS COMPLIANT

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Options

- Circuits
  - 1PST, 1PDT, 2PST and 2PDT
  - Maintained and momentary action
- Common lamp ground jumper for dual lamp units
- Multiple LEDs for daylight readability
- Additional colors of rockers, mounting bezels and lenses are available
- Special circuits
- Special ratings
- Pad-printed legends on lens, rocker and bezel
- Special lamps and lamp voltages
- Dry circuit capabilities
- Custom back-lit legends available
- Reversing jumpers (internal)
- Gang mounting system, see **Page V11-T2-79**
- Locking rocker with locking feature in UP and/or DOWN positions
- Indicators with laser-etched or insertable lenses, or adhesive labels
- IP67 rated sealed switch
- Polarized lock-on connectors, see **Page V11-T2-78**
  - 28-5637-2 for Packard terminals
  - 28-5940 for AMP terminals
- Panel plug 17-21543
- Replacement bulb catalog number
  - 14V: 28-5901
  - 28V: 28-5909

For more information on additional options, contact your local Eaton Sales Representative.

Legends

Two legend areas are provided on the ends of each rocker of sufficient size to accommodate two lines consisting of four Helvetica Narrow 12-point characters. Legends may be non-illuminated or illuminated. The NGR offers three styles of illuminated legends.

Single-piece back-lit—Back-lighting is a high-quality automotive/truck industry technique. The legend can appear daylight white or dead-front when non-illuminated but, depending on the back-lit color chosen, will change color when illuminated. Examples of standard back-lit legends are found on **Pages V11-T2-82** to **V11-T2-96**.

Snap-in lenses—This rocker will have either one or two snap-in lenses in the legend areas. Legends are typically pad-printed on the lens in black or white. Snap-in lenses are available in six standard colors and can be ordered separately.

Label rocker—This rocker has a one-piece adhesive-backed label inserted into a recessed area on the face of the button. Legends can be done in several colors and be illuminated or non-illuminated. Contact your local Eaton Sales Representative for suggested sources.

Flexible Ordering System

You can order assembled switches or the switch base and actuator separately.

Use the final code in the switch base catalog number, **Page V11-T2-10**, to denote assembly instructions.

Switch Base

Rocker and Paddle Frame

Full Palm Guard

Panel Seal and Internal Seal

To order rocker and switch base assembled, contact your local Eaton Sales Representative.
To order rocker buttons, see **Page V11-T2-11**.
To order lenses, see **Page V11-T2-13**.
To order indicator caps, see **Page V11-T2-15**. For a complete indicator, see **Page V11-T2-14**.

Catalog Number Selection

How To Order—Switch Base

To determine complete catalog number, start with the appropriate base prefix and add the appropriate code letters and/or numbers.

Example: **NGR 1501 4 B N A 0 N**

Switch Series (Unsealed)
NGR = Switch base

Circuit ①
1501 = Circuit
See **Pages V11-T2-17** to **V11-T2-29**.

Frame Style
1 = Rocker and paddle frame
2 = Palm guard (top)
3 = Palm guard (bottom)
4 = Full palm guard (top/bottom)
S = Panel seal and internal seal
G = Locking rocker ②
D = Locking rocker ③
F = Locking rocker ④
T = Internal seal

Frame Color
B = Black

Switch Contact Plating ⑤
N = Standard
T = High rated
G = Gold

"A" Lamp Type and Color
0 = No lamp
A = 14 Vdc incand./clear ⑥
B = 24 Vdc incand./clear ⑥
C = 28V LED/red ⑧
D = 28V LED/green ⑧
E = 28V LED/amber ⑧
R = 14V LED/red
G = 14V LED/green
Y = 14V LED/amber
K = 28V LED/red ⑦
L = 28V LED/green ⑦
T = 28V LED/amber ⑦
W = 28V LED/white ⑦
X = 28V LED/blue ⑦
H = 14V LED/high intensity red
J = 14V LED/high intensity green
P = 14V LED/high intensity amber
M = 14V LED/high intensity blue

"B" Lamp Type and Color
0 = No lamp
A = 14 Vdc incand./clear ⑥
B = 24 Vdc incand./clear ⑥
C = 28V LED/red ⑧
D = 28V LED/green ⑧
E = 28V LED/amber ⑧
R = 14V LED/red
G = 14V LED/green
Y = 14V LED/amber
K = 28V LED/red ⑦
L = 28V LED/green ⑦
T = 28V LED/amber ⑦
W = 28V LED/white ⑦
X = 28V LED/blue ⑦
H = 14V LED/high intensity red
J = 14V LED/high intensity green
P = 14V LED/high intensity amber
M = 14V LED/high intensity blue

Rocker Assembled
N = No

Notes
① Circuits show lighting options available. See **Pages V11-T2-17** to **V11-T2-29**.
② Locks in DOWN position.
③ Locks in UP and DOWN positions.
④ Locks in UP position.
⑤ Switch contact construction plating—
N = Standard: Recommended for use on loads up to 12 amps at 14 Vdc.
T = High Rated: Recommended for use on loads greater than 12 amps at 14 Vdc.
G = Gold: Recommended for use on dry circuit/low level switching.
⑥ Replaceable.
⑦ Replaceable/wedge base LED.
⑧ PCB version LED.

Rocker Buttons/Actuators

Two-Face Rocker, No Lens	Two-Face Rocker, Snap-In Lens	Decorative Rocker, Back-Lit	Decorative Paddle, Back-Lit	Locking Rocker	Label Rocker

Catalog Number Selection

How To Order—Rocker Buttons/Actuators

To determine complete catalog number, start with the appropriate button type and add the appropriate code letters and/or numbers.

Example: **3 C AF A 1 B AE C 4 A 3**

Rocker Button Type
- **1** = Two-face, no lens rocker
- **2** = Two-face, snap-in lens rocker
- **3** = Decorative rocker, back-lit
- **4** = Decorative paddle, back-lit
- **5** = Locking rocker
- **6** = Label rocker

Icon/Lens/Hole Location
- **A** = "A" only
- **B** = "B" only
- **C** = "A" and "B"
- **D** = No icon/lens/hole

Icon "A" Code
- **AF** = Unlock

See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Icon "A" Orientation
- **A** = Standard orientation
- **B** = 90° clockwise
- **C** = 180° clockwise
- **D** = 270° clockwise
- **0** = No icon; no orientation

Icon "A" Color
- **0** = No icon; no color
- **1** = Daylight white ①
- **2** = Deadfront ①
- **3** = White ②
- **4** = Black ②
- **5** = Lens hole (no lens)

Icon "A" Lighted Color or Lens Color
- **A** = Red
- **B** = Green
- **C** = Amber
- **E** = Blue
- **F** = White
- **G** = Clear
- **0** = Non-lighted or no lens

Icon "B" Code
- **AE** = Lock

See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Icon "B" Orientation
- **A** = Standard orientation
- **B** = 90° clockwise
- **C** = 180° clockwise
- **D** = 270° clockwise
- **0** = No icon; no orientation

Icon "B" Color
- **0** = No icon; no color
- **1** = Daylight white ①
- **2** = Deadfront ①
- **3** = White ②
- **4** = Black ②
- **5** = Lens hole (no lens)

Icon "B" Lighted Color or Lens Color
- **A** = Red
- **B** = Green
- **C** = Amber
- **E** = Blue
- **F** = White
- **G** = Clear
- **0** = Non-lighted or no lens

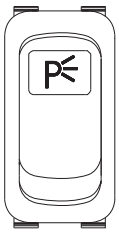
Indicator Stripe Location
- **1** = "A" Position
- **2** = "B" Position
- **3** = "A" and "B" Positions
- **0** = No stripe

Notes

① Decorative rocker only.
② Two-face rocker only.

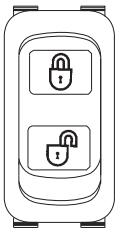
Icon Location Examples

Location A



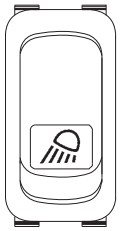
Rocker with Icon in "A" Position (Code A)

Location C



Rocker with Icon in "C" Position (Code C)

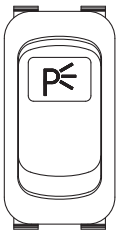
Location B



Rocker with Icon in "B" Position (Code B)

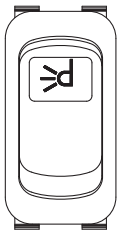
Icon Orientation Examples

Orientation A



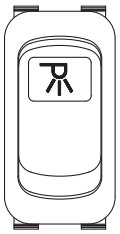
Rocker with Standard Orientation (Code A)

Orientation C



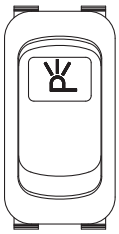
Rocker with Icon at 180° Clockwise (Code C)

Orientation B



Rocker with Icon at 90° Clockwise (Code B)

Orientation D



Rocker with Icon at 270° Clockwise (Code D)

Translucent Lens

Transparent Lens

Lens Selection

For NGR Rocker Type "2" and Indicator Type "2CAP" only.

Catalog Number Selection

How To Order—Translucent Lenses ①②

To determine complete catalog number, start with the appropriate base prefix and add the appropriate code letters and/or numbers.

Example: **28-5863-2 AF A**

Lens Color	Base Catalog Number	Icon Code	Orientation Style Code
Red Green Amber Blue White ④	**28-5863-2** **28-5863** **28-5863-3** **28-5863-9** **28-5863-8**	**AF** = Unlock See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.	**A** = Standard orientation **B** = Rotated 90° clockwise **C** = Inverted 180° **D** = Rotated 270° clockwise

How To Order—Transparent Lenses ①②

To determine complete catalog number, start with the appropriate base prefix and add the appropriate code letters and/or numbers.

Example: **28-5863-5 AF A**

Lens Color	Base Catalog Number	Icon Code	Orientation Style Code
Red Green Amber Blue Clear ④	**28-5863-5** **28-5863-4** **28-5863-6** **28-5863-10** **28-5863-7**	**AF** = Unlock See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.	**A** = Standard orientation **B** = Rotated 90° clockwise **C** = Inverted 180° **D** = Rotated 270° clockwise

Notes

① When ordering a lens with an icon for the code **B** (bottom) position, specify code **C** orientation.
② Standard lens type.
③ Non-standard lens type.
④ Standard pad print for white and clear lens is black.

2

Complete Indicator and Indicator Cap Assembled

NGR Complete Indicators and Indicator Caps

To order rocker buttons, see **Page V11-T2-11**.
To order lenses, see **Page V11-T2-13**.

Catalog Number Selection

How To Order—Complete Indicator

To determine complete catalog number, start with the appropriate indicator type and add the appropriate code letters and/or numbers.

Example: **2N C AA R 1 B AB A 0 A**

Indicator Type
- **2N** = Two-face, snap-in lens
- **3N** = Laser-etched
- **6N** = Label

Icon/Lens/Hole Location
- **A** = "A" icon only
- **B** = "B" icon only
- **C** = "A" and "B" icons
- **D** = No icon/lens/hole

Icon "A" Code
- **AA** = Horn

See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Lamp/LED Type and Color
- **A** = 14 Vdc incand./clear
- **B** = 28 Vdc incand./clear
- **0** = No lamp/LED
- **R** = 14V LED/red
- **G** = 14V LED/green
- **Y** = 14V LED/amber
- **K** = 28V LED/red
- **L** = 28V LED/green
- **T** = 28V LED/amber
- **H** = 14V LED/high intensity red
- **J** = 14V LED/high intensity green
- **P** = 14V LED/high intensity amber
- **M** = 14V LED/high intensity blue

Icon "A" Color
- **0** = No icon; no color
- **1** = Daylight white ①
- **2** = Deadfront ①
- **3** = White ②
- **4** = Black ②
- **5** = Lens hole (no lens)

Icon "A" Lighted Color or Lens Color
- **A** = Red
- **B** = Green
- **C** = Amber
- **E** = Blue
- **F** = White
- **G** = Clear
- **0** = Non-lighted or no lens

Icon "B" Code
- **AB** = Battery

See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Lamp/LED Type and Color
- **A** = 14 Vdc incand./clear
- **B** = 28 Vdc incand./clear
- **0** = No lamp/LED
- **R** = 14V LED/red
- **G** = 14V LED/green
- **Y** = 14V LED/amber
- **K** = 28V LED/red
- **L** = 28V LED/green
- **T** = 28V LED/amber
- **H** = 14V LED/high intensity red
- **J** = 14V LED/high intensity green
- **P** = 14V LED/high intensity amber
- **M** = 14V LED/high intensity blue

Icon "B" Color
- **0** = No icon; no color
- **1** = Daylight white ①
- **2** = Deadfront ①
- **3** = White ②
- **4** = Black ②
- **5** = Lens hole (no lens)

Icon "B" Lighted Color or Lens Color
- **A** = Red
- **B** = Green
- **C** = Amber
- **E** = Blue
- **F** = White
- **G** = Clear
- **0** = Non-lighted or no lens

Notes

① Decorative rocker only.
② Two-face rocker only.

Indicator Base

Indicator Cap

NGR Indicator Base and Indicator Caps

To order rocker buttons, see **Page V11-T2-11**.
To order lenses, see **Page V11-T2-13**.
To order complete indicator, see **Page V11-T2-14**.

Catalog Number Selection

How To Order—Indicator Base

To determine complete catalog number, start with the appropriate base prefix and add the appropriate code letters and/or numbers.

Example: **NGRIND A 0 N**

Switch Series (Unsealed)
NGRIND = Indicator base

"A" Lamp Type and Color
0 = No lamp
A = 14 Vdc incand./clear
B = 24 Vdc incand./clear
R = 14V LED/red
G = 14V LED/green
Y = 14V LED/amber
K = 28V LED/red
L = 28V LED/green
T = 28V LED/amber
X = 28V LED/blue
H = 14V LED/high intensity red
J = 14V LED/high intensity green
P = 14V LED/high intensity amber
M = 14V LED/high intensity blue

"B" Lamp Type and Color
0 = No lamp
A = 14 Vdc incand./clear
B = 24 Vdc incand./clear
R = 14V LED/red
G = 14V LED/green
Y = 14V LED/amber
K = 28V LED/red
L = 28V LED/green
T = 28V LED/amber
X = 28V LED/blue
H = 14V LED/high intensity red
J = 14V LED/high intensity green
P = 14V LED/high intensity amber
M = 14V LED/high intensity blue

Rocker Assembled
N = No

How To Order—Indicator Cap

To determine complete catalog number, start with the appropriate indicator type and add the appropriate code letters and/or numbers.

Example: **2CAP C AB 1 B AH 0 A**

Indicator Type
2CAP = Two-face, snap-in lens
3CAP = Decorative/ laser-etched
6CAP = Label

Icon/Lens/Hole Location
A = "A" icon only
B = "B" icon only
C = "A" and "B" icons
D = No icon/lens/hole

Icon "A" Code
AB = Battery
See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Icon "A" Color
0 = No icon; no color
1 = Daylight white ①
2 = Deadfront ①
3 = White ②
4 = Black ②
5 = Lens hole (no lens)

Icon "A" Lighted Color or Lens Color
A = Red
B = Green
C = Amber
E = Blue
F = White
G = Clear
0 = Non-lighted or no lens

Icon "B" Code
AH = Fuel
See Symbols Library on **Pages V11-T2-82** to **V11-T2-96**.

Icon "B" Color
0 = No icon; no color
1 = Daylight white ①
2 = Deadfront ①
3 = White ②
4 = Black ②
5 = Lens hole (no lens)

Icon "B" Lighted Color or Lens Color
A = Red
B = Green
C = Amber
E = Blue
F = White
G = Clear
0 = Non-lighted or no lens

Notes
① Decorative rocker only.
② Two-face rocker only.

Technical Data and Specifications

NGR Rocker Switches

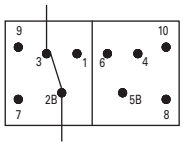
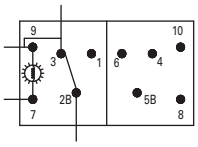
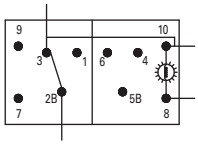
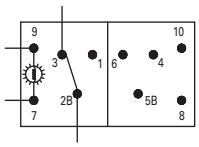
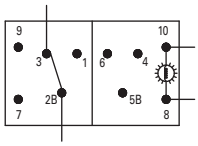
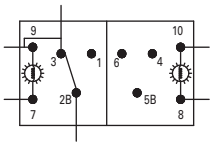
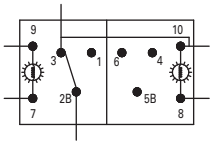
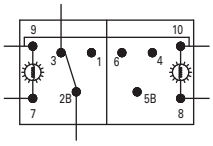
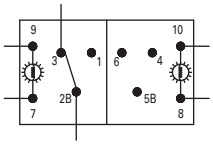
Description	Specification
Ratings ①	15A at 125 Vac, 10A at 250 Vac 15A at 28 Vdc (14 Vdc rating) Approvable under stringent UL and CSA standards
Contact mechanism	Slow-make/slow-break contact mechanism Butt action contact mechanism designed specifically for use on AC and low voltage DC applications
Contact material— Standard construction	Movable—copper alloy with silver alloy contact face button Stationary—silver-plated copper alloy with silver alloy contact face button
Mechanical life	250,000 operations, minimum
Electrical life	200,000 operations, minimum
Terminal type	Standard 0.25 in (6.35 mm) spade, silver-plated copper alloy
Base material	High-grade thermoplastic molding material
Dielectric	1000V rms, minimum
Mounting means	Snap-in mounting with plastic bezel
Mounting hole	Rectangular panel cutout 1.734 x 0.867 in (44 x 22 mm)
Panel thickness	0.040 to 0.156 in (1.0 to 4.0 mm) ② ③
IP rating	Standard IP42; sealed option IP67
Operating temperature range	–40° to 185°F (–40° to 85°C)

Notes

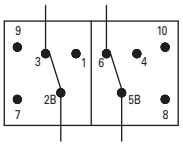
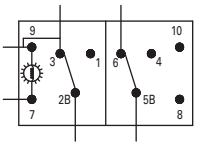
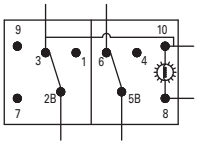
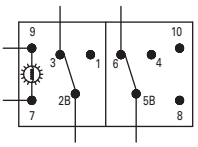
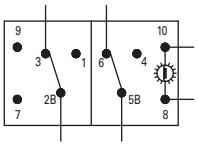
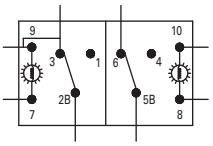
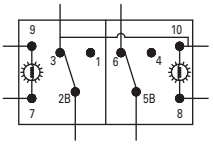
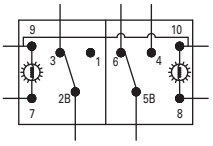
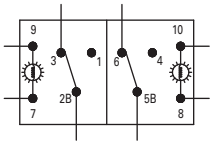
① For information, contact your local Eaton Sales Representative.
② Best results obtained between 0.060 and 0.118 in (1.5 and 3.0 mm).
③ On sealed versions, recommended panel thickness between 0.079 and 0.118 in (2.0 and 3.0 mm).

Standard Circuit Diagrams

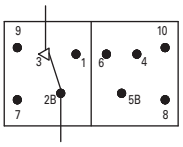
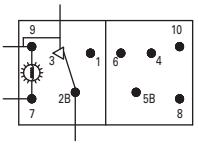
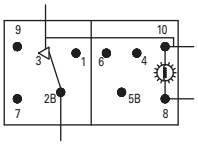
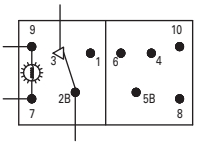
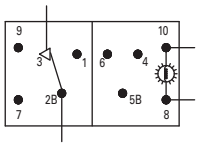
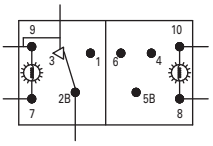
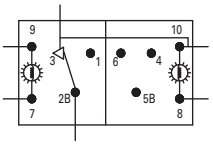
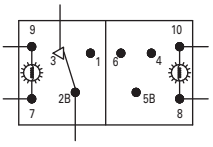
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1001		OFF	NONE	ON
		—	—	2B-3
1501		OFF	NONE	ON
		—	—	2B-3-9
1502		OFF	NONE	ON
		—	—	2B-3-10
1503		OFF	NONE	ON
		—	—	2B-3
1504		OFF	NONE	ON
		—	—	2B-3
1505		OFF	NONE	ON
		—	—	2B-3-9
1506		OFF	NONE	ON
		—	—	2B-3-10
1507		OFF	NONE	ON
		—	—	2B-3-9-10
1508		OFF	NONE	ON
		—	—	2B-3

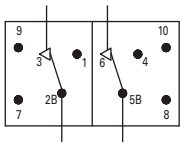
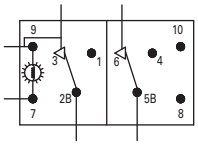
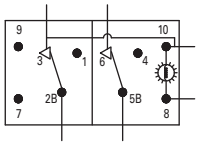
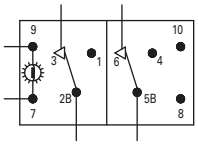
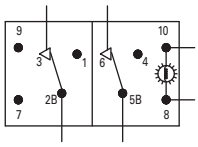
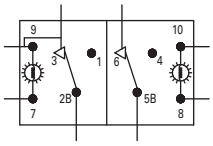
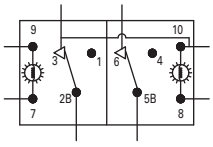
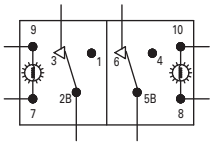
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2001		OFF	NONE	ON
		—	—	2B-3 5B-6
2501		OFF	NONE	ON
		—	—	2B-3-9 5B-6
2502		OFF	NONE	ON
		—	—	2B-3-10 5B-6
2503		OFF	NONE	ON
		—	—	2B-3 5B-6
2504		OFF	NONE	ON
		—	—	2B-3 5B-6
2505		OFF	NONE	ON
		—	—	2B-3-9 5B-6
2506		OFF	NONE	ON
		—	—	2B-3-10 5B-6
2507		OFF	NONE	ON
		—	—	2B-3-9-1 5B-6
2508		OFF	NONE	ON
		—	—	2B-3 5B-6

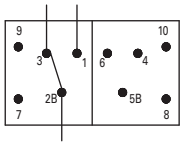
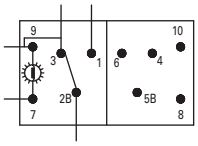
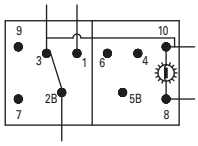
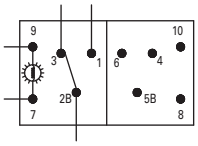
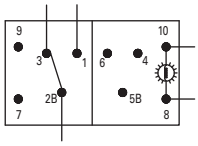
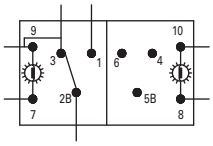
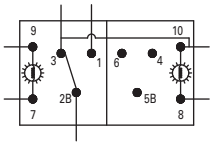
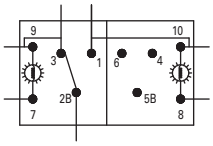
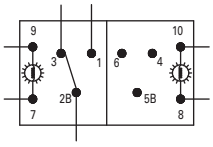
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1002		OFF	NONE	MOM. ON
		—	—	2B-3
1521		OFF	NONE	MOM. ON
		—	—	2B-3-9
1522		OFF	NONE	MOM. ON
		—	—	2B-3-10
1523		OFF	NONE	MOM. ON
		—	—	2B-3
1524		OFF	NONE	MOM. ON
		—	—	2B-3
1525		OFF	NONE	MOM. ON
		—	—	2B-3-9
1526		OFF	NONE	MOM. ON
		—	—	2B-3-10
1528		OFF	NONE	MOM. ON
		—	—	2B-3

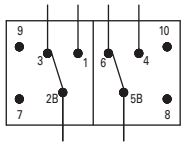
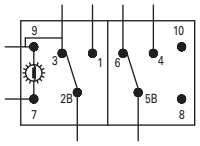
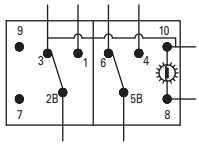
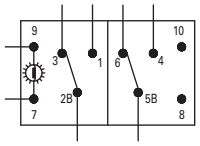
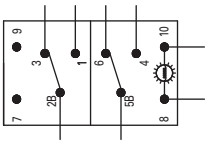
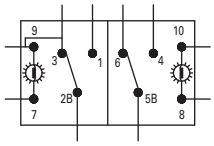
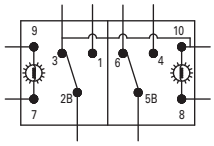
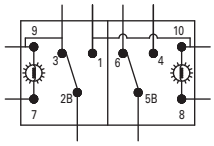
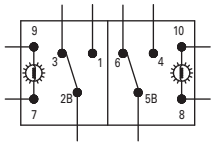
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2002		OFF	NONE	MOM. ON
		—	—	2B-3 5B-6
2521		OFF	NONE	MOM. ON
		—	—	2B-3-9 5B-6
2522		OFF	NONE	MOM. ON
		—	—	2B-3-10 5B-6
2523		OFF	NONE	MOM. ON
		—	—	2B-3 5B-6
2524		OFF	NONE	MOM. ON
		—	—	2B-3 5B-6
2525		OFF	NONE	MOM. ON
		—	—	2B-3-9 5B-6
2526		OFF	NONE	MOM. ON
		—	—	2B-3-10 5B-6
2528		OFF	NONE	MOM. ON
		—	—	2B-3 5B-6

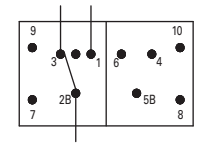
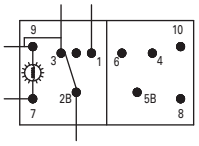
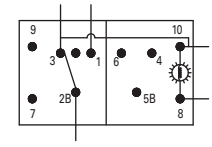
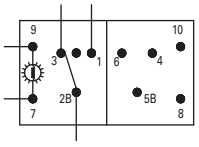
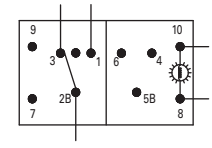
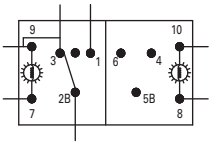
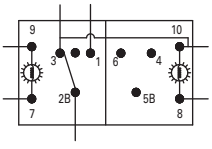
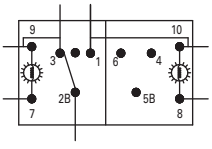
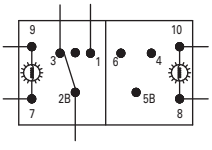
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1003		ON	NONE	ON
		2B-1	—	2B-3
1541		ON	NONE	ON
		2B-1	—	2B-3-9
1542		ON	NONE	ON
		2B-1	—	2B-3-10
1543		ON	NONE	ON
		2B-1	—	2B-3
1544		ON	NONE	ON
		2B-1	—	2B-3
1545		ON	NONE	ON
		2B-1	—	2B-3-9
1546		ON	NONE	ON
		2B-1	—	2B-3-10
1547		ON	NONE	ON
		2B-1-10	—	2B-3-9
1548		ON	NONE	ON
		2B-1	—	2B-3

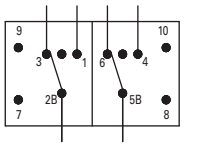
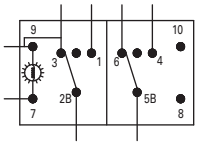
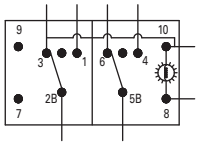
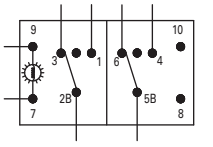
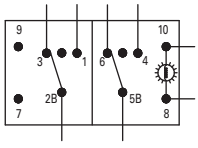
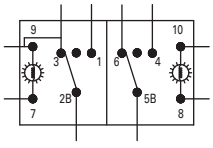
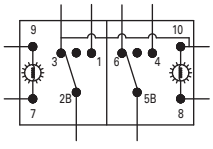
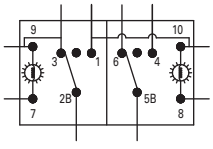
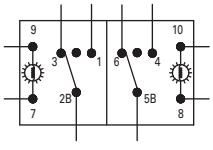
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2003		ON	NONE	ON
		2B-1 5B-4	—	2B-3 5B-6
2541		ON	NONE	ON
		2B-1 5B-4	—	2B-3-9 5B-6
2542		ON	NONE	ON
		2B-1 5B-4	—	2B-3-10 5B-6
2543		ON	NONE	ON
		2B-1 5B-4	—	2B-3 5B-6
2544		ON	NONE	ON
		2B-1 5B-4	—	2B-3 5B-6
2545		ON	NONE	ON
		2B-1 5B-4	—	2B-3-9 5B-6
2546		ON	NONE	ON
		2B-1 5B-4	—	2B-3-10 5B-6
2547		ON	NONE	ON
		2B-1-10 5B-4	—	2B-3-9 5B-6
2548		ON	NONE	ON
		2B-1 5B-4	—	2B-3 5B-6

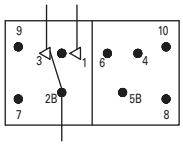
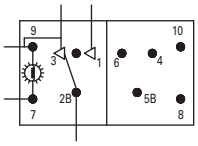
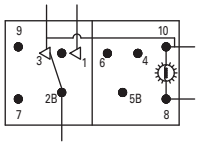
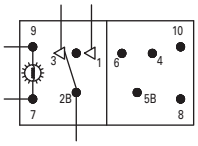
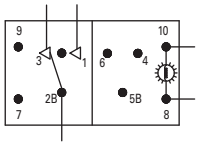
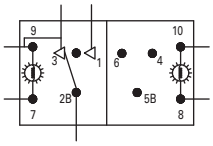
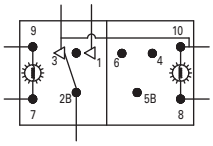
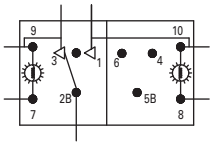
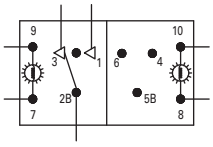
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1004		ON	OFF	ON
		2B-1	—	2B-3
1561		ON	OFF	ON
		2B-1	—	2B-3-9
1562		ON	OFF	ON
		2B-1	—	2B-3-10
1563		ON	OFF	ON
		2B-1	—	2B-3
1564		ON	OFF	ON
		2B-1	—	2B-3
1565		ON	OFF	ON
		2B-1	—	2B-3-9
1566		ON	OFF	ON
		2B-1	—	2B-3-10
1567		ON	OFF	ON
		2B-1-10	—	2B-3-9
1568		ON	OFF	ON
		2B-1	—	2B-3

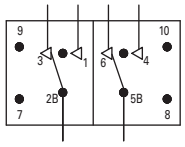
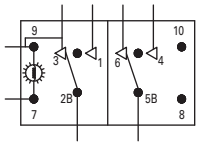
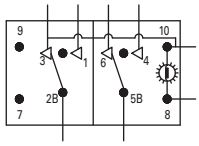
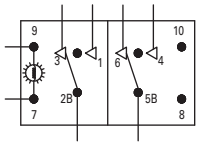
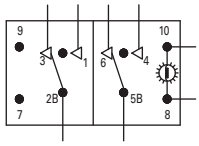
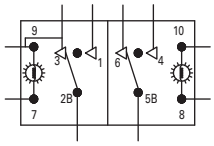
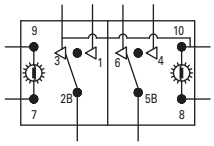
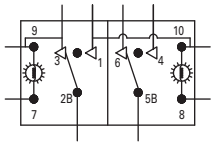
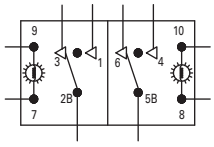
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2004		ON	OFF	ON
		2B-1 5B-4	—	2B-3 5B-6
2561		ON	OFF	ON
		2B-1 5B-4	—	2B-3-9 5B-6
2562		ON	OFF	ON
		2B-1 5B-4	—	2B-3-10 5B-6
2563		ON	OFF	ON
		2B-1 5B-4	—	2B-3 5B-6
2564		ON	OFF	ON
		2B-1 5B-4	—	2B-3 5B-6
2565		ON	OFF	ON
		2B-1 5B-4	—	2B-3-9 5B-6
2566		ON	OFF	ON
		2B-1 5B-4	—	2B-3-10 5B-6
2567		ON	OFF	ON
		2B-1-10 5B-4	—	2B-3-9 5B-6
2568		ON	OFF	ON
		2B-1 5B-4	—	2B-3 5B-6

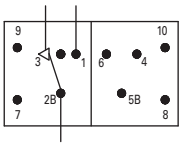
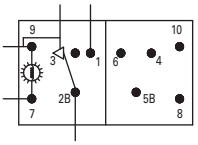
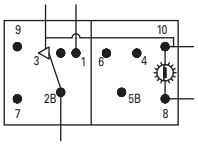
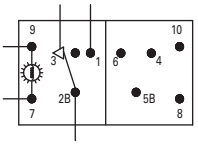
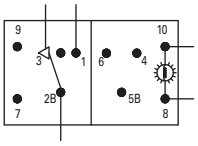
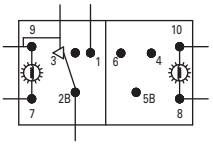
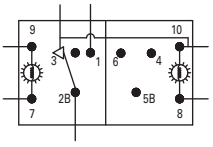
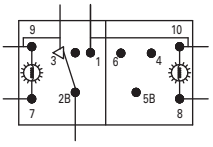
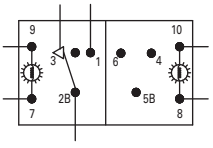
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1005		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3
1581		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3-9
1582		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3-10
1583		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3
1584		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3
1585		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3-9
1586		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3-10
1587		MOM. ON	OFF	MOM. ON
		2B-1-10	—	2B-3-9
1588		MOM. ON	OFF	MOM. ON
		2B-1	—	2B-3

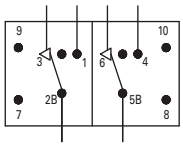
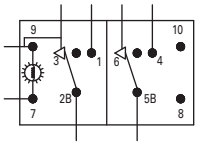
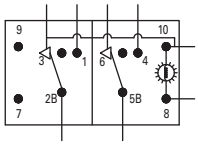
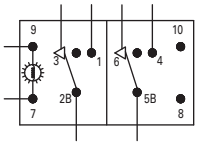
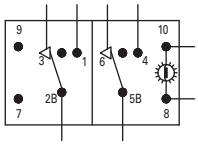
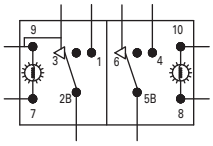
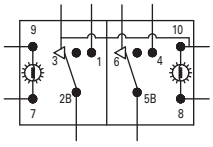
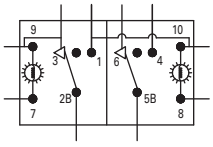
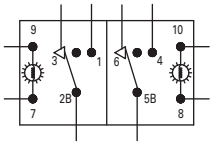
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2005		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2581		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-9 5B-6
2582		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-10 5B-6
2583		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2584		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2585		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-9 5B-6
2586		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-10 5B-6
2587		MOM. ON	OFF	MOM. ON
		2B-1-10 5B-4	—	2B-3-9 5B-6
2588		MOM. ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6

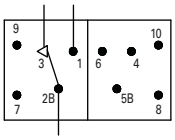
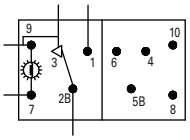
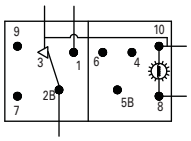
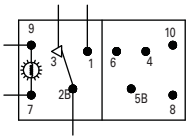
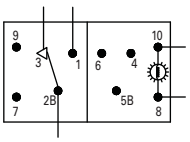
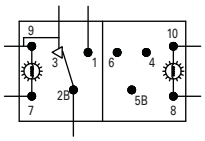
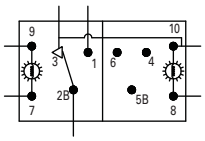
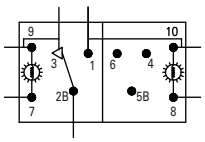
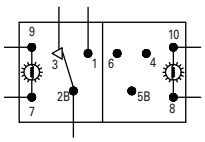
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1006		ON	OFF	MOM. ON
		2B-1	—	2B-3
1601		ON	OFF	MOM. ON
		2B-1	—	2B-3-9
1602		ON	OFF	MOM. ON
		2B-1	—	2B-3-10
1603		ON	OFF	MOM. ON
		2B-1	—	2B-3
1604		ON	OFF	MOM. ON
		2B-1	—	2B-3
1605		ON	OFF	MOM. ON
		2B-1	—	2B-3-9
1606		ON	OFF	MOM. ON
		2B-1	—	2B-3-10
1607		ON	OFF	MOM. ON
		2B-1-10	—	2B-3-9
1608		ON	OFF	MOM. ON
		2B-1	—	2B-3

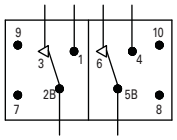
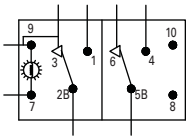
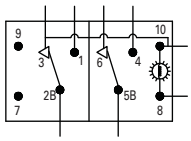
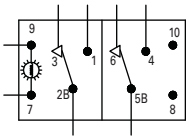
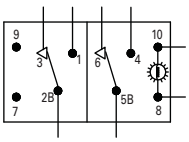
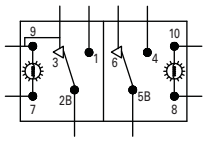
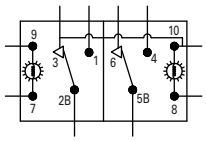
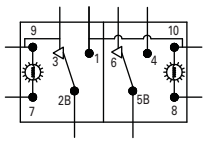
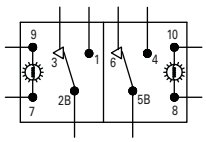
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2006		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2601		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-9 5B-6
2602		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-10 5B-6
2603		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2604		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6
2605		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-9 5B-6
2606		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3-10 5B-6
2607		ON	OFF	MOM. ON
		2B-1-10 5B-4	—	2B-3-9 5B-6
2608		ON	OFF	MOM. ON
		2B-1 5B-4	—	2B-3 5B-6

Single-Pole

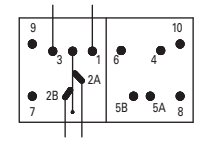
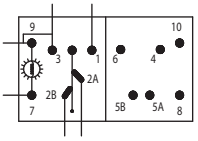
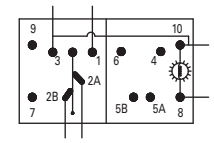
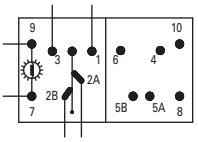
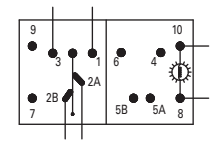
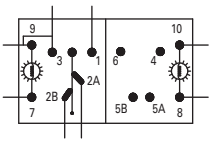
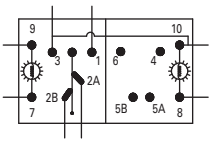
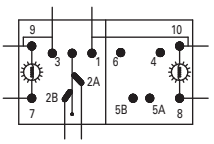
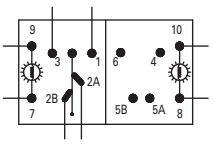
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1007		ON	NONE	MOM ON
		2B-1	—	2B-3
1621		ON	NONE	MOM ON
		2B-1	—	2B-3-9
1622		ON	NONE	MOM ON
		2B-1	—	2B-3-10
1623		ON	NONE	MOM ON
		2B-1	—	2B-3
1624		ON	NONE	MOM ON
		2B-1	—	2B-3
1625		ON	NONE	MOM ON
		2B-1	—	2B-3-9
1626		ON	NONE	MOM ON
		2B-1	—	2B-3-10
1627		ON	NONE	MOM ON
		2B-1-10	—	2B-3-9
1628		ON	NONE	MOM ON
		2B-1	—	2B-3

Two-Pole

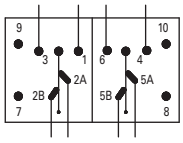
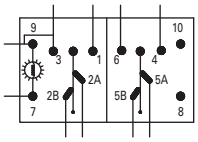
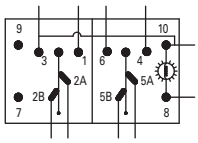
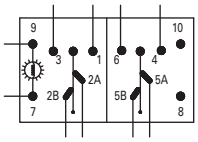
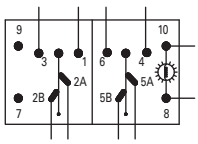
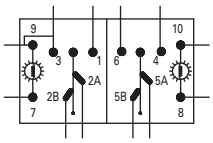
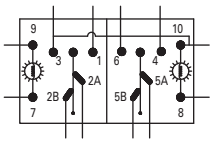
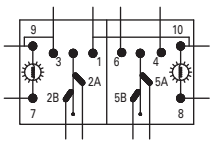
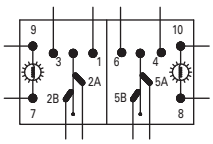
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
2007		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3 5B-6
2621		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3-9 5B-6
2622		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3-10 5B-6
2623		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3 5B-6
2624		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3 5B-6
2625		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3-9 5B-6
2626		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3-10 5B-6
2627		ON	NONE	MOM ON
		2B-1-10 5B-4	—	2B-3-9 5B-6
2628		ON	NONE	MOM ON
		2B-1 5B-4	—	2B-3 5B-6

2

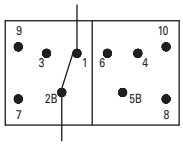
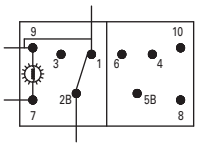
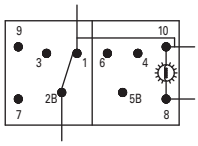
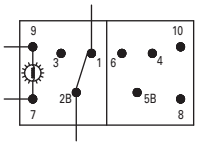
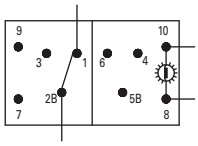
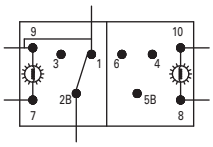
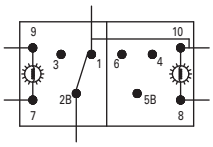
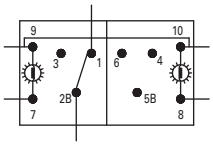
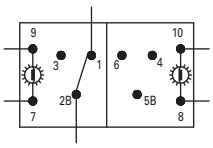
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
3003		OFF	ON	ON
		2A-1	2A-2B	2B-3
3541		OFF	ON	ON
		2A-1	2A-2B	2B-3-9
3542		OFF	ON	ON
		2A-1	2A-2B	2B-3-10
3543		OFF	ON	ON
		2A-1	2A-2B	2B-3
3544		OFF	ON	ON
		2A-1	2A-2B	2B-3
3545		OFF	ON	ON
		2A-1	2A-2B	2B-3-9
3546		OFF	ON	ON
		2A-1	2A-2B	2B-3-10
3547		OFF	ON	ON
		2A-1-10	2A-2B	2B-3-9
3548		OFF	ON	ON
		2A-1	2A-2B	2B-3

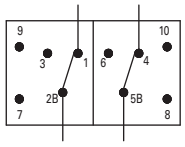
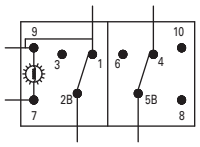
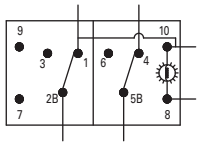
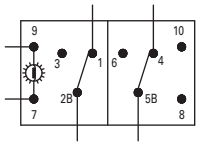
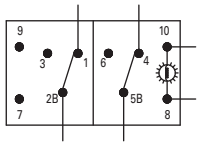
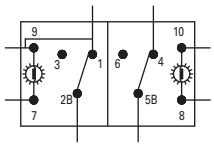
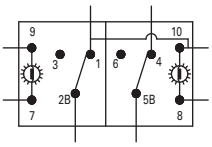
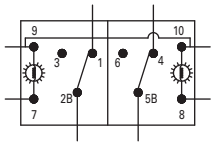
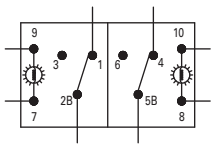
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
3004		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
3561		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
3562		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3-10 5B-6
3563		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
3564		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
3565		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
3566		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3-10 5B-6
3567		OFF	ON	ON
		2A-1-10 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
3568		OFF	ON	ON
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6

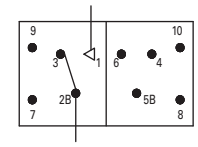
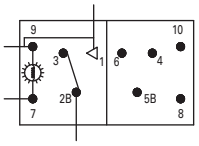
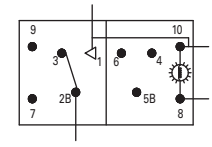
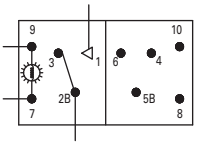
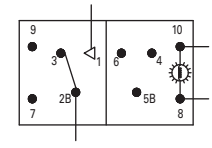
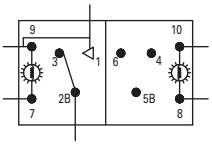
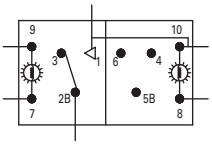
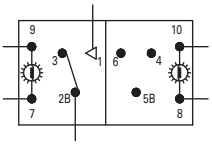
Single-Pole

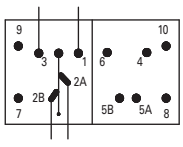
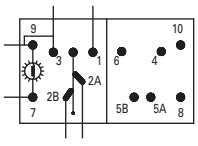
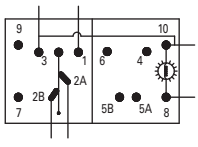
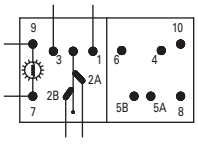
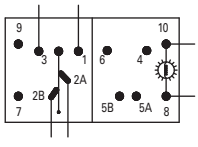
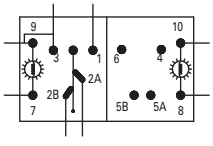
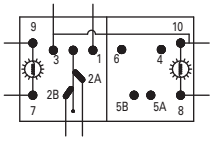
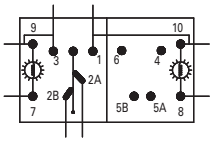
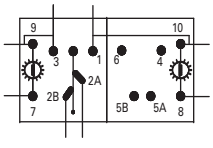
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5001		ON	NONE	OFF
		2B-1	—	—
5501		ON	NONE	OFF
		2B-1-9	—	—
5502		ON	NONE	OFF
		2B-1-10	—	—
5503		ON	NONE	OFF
		2B-1	—	—
5504		ON	NONE	OFF
		2B-1	—	—
5505		ON	NONE	OFF
		2B-1-9	—	—
5506		ON	NONE	OFF
		2B-1-10	—	—
5507		ON	NONE	OFF
		2B-1-9-10	—	—
5508		ON	NONE	OFF
		2B-1	—	—

Two-Pole

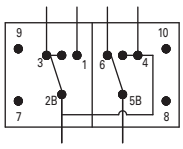
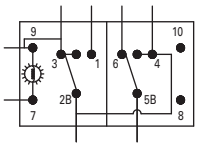
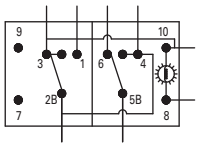
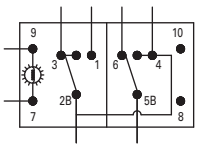
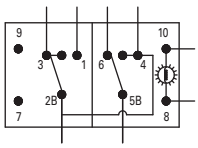
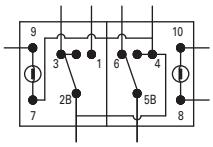
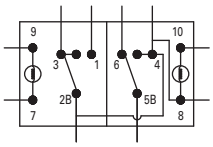
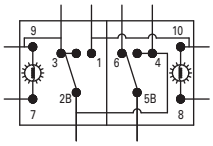
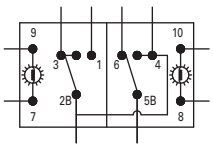
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5510		ON	NONE	OFF
		2B-1 5B-4	—	—
5511		ON	NONE	OFF
		2B-1-9 5B-4	—	—
5512		ON	NONE	OFF
		2B-1-10 5B-4	—	—
5513		ON	NONE	OFF
		2B-1 5B-4	—	—
5514		ON	NONE	OFF
		2B-1 5B-4	—	—
5515		ON	NONE	OFF
		2B-1-9 5B-4	—	—
5516		ON	NONE	OFF
		2B-1-10 5B-4	—	—
5517		ON	NONE	OFF
		2B-1-9-10 5B-4	—	—
5518		ON	NONE	OFF
		2B-1 5B-4	—	—

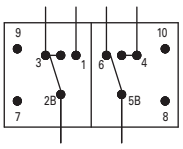
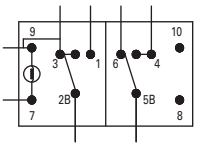
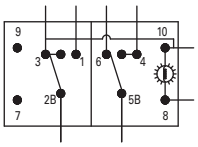
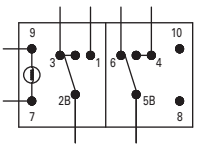
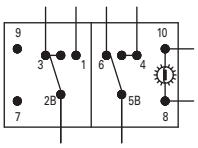
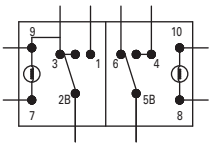
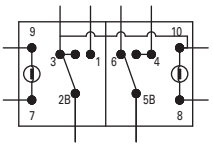
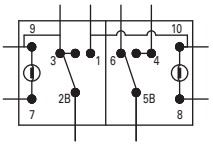
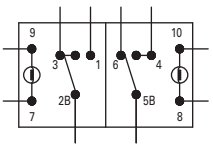
Single-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5002		MOM. ON	NONE	OFF
		2B-1	—	—
5521		MOM. ON	NONE	OFF
		2B-1-9	—	—
5522		MOM. ON	NONE	OFF
		2B-1-10	—	—
5523		MOM. ON	NONE	OFF
		2B-1	—	—
5524		MOM. ON	NONE	OFF
		2B-1	—	—
5525		MOM. ON	NONE	OFF
		2B-1-9	—	—
5526		MOM. ON	NONE	OFF
		2B-1-10	—	—
5528		MOM. ON	NONE	OFF
		2B-1	—	—

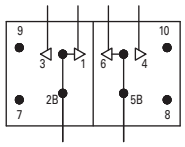
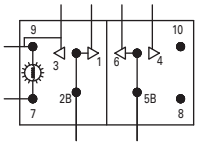
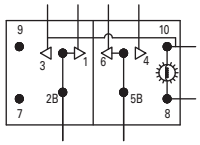
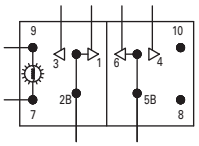
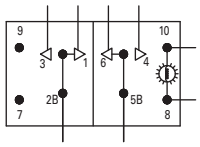
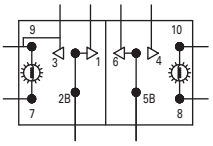
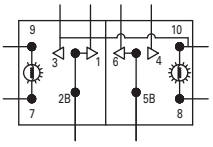
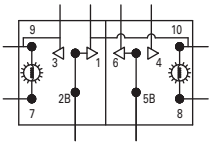
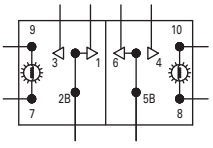
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5003		ON	ON	OFF
		2A-1	2A-2B	2B-3
5541		ON	ON	OFF
		2A-1	2A-2B	2B-3-9
5542		ON	ON	OFF
		2A-1	2A-2B	2B-3-10
5543		ON	ON	OFF
		2A-1	2A-2B	2B-3
5544		ON	ON	OFF
		2A-1	2A-2B	2B-3
5545		ON	ON	OFF
		2A-1	2A-2B	2B-3-9
5546		ON	ON	OFF
		2A-1	2A-2B	2B-3-10
5547		ON	ON	OFF
		2A-1-10	2A-2B	2B-3-9
5548		ON	ON	OFF
		2A-1	2A-2B	2B-3

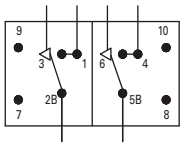
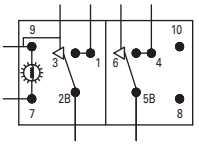
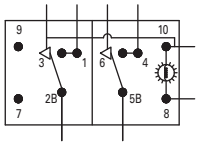
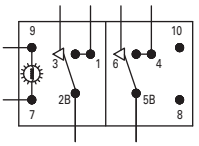
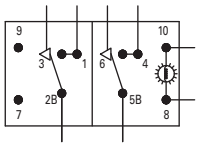
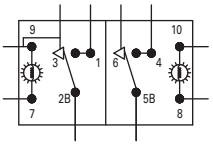
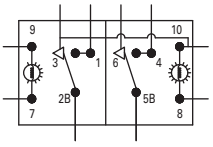
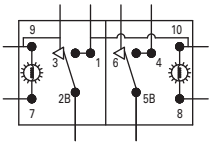
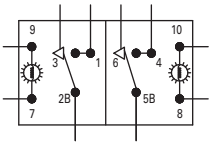
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
3001		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6
3501		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3-9	2B-3-9 5B-6
3502		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3-10	2B-3-10 5B-6
3503		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6
3504		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6
3505		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6
3506		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6
3507		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3-9	2B-3-9 5B-6
3508		ON	ON	ON
		5B-4-2B-1	5B-4-2B-3	2B-3 5B-6

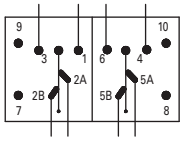
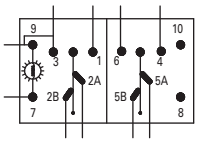
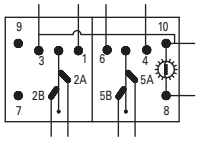
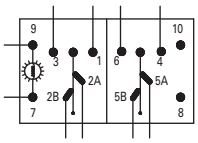
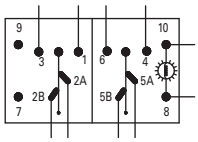
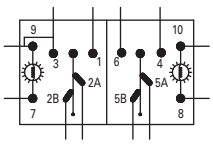
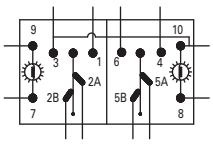
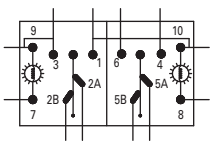
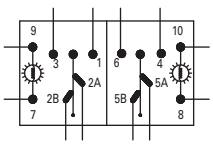
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
3002		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
3521		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
3522		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3-10 5B-4	2B-3-10 5B-6
3523		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
3524		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
3525		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
3526		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3-10 5B-4	2B-3-10 5B-6
3527		OFF	1–ON	2–ON
		2B-1-10 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
3528		OFF	1–ON	2–ON
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6

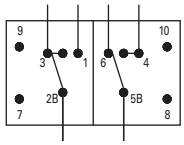
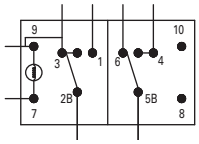
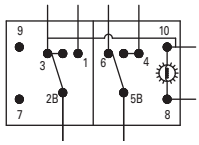
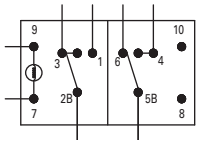
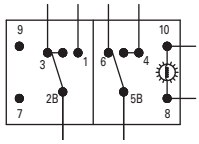
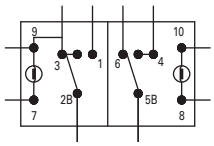
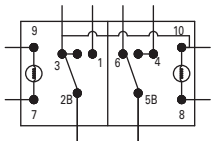
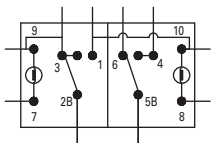
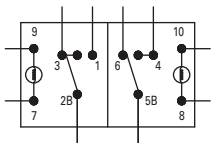
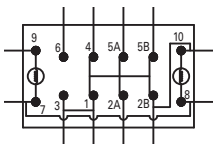
Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
3005		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3 5B-6
3581		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3-9 5B-6
3582		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3-10 5B-6
3583		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3 5B-6
3584		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3 5B-6
3585		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3-9 5B-6
3586		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3-10 5B-6
3587		MOM. ON 2B-1-10 5B-4	ON 2B-1-10 5B-6	MOM. ON 2B-3-9 5B-6
3588		MOM. ON 2B-1 5B-4	ON 2B-1 5B-6	MOM. ON 2B-3 5B-6

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
4001		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3 5B-6
4501		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3-9 5B-6
4502		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3-10 5B-6
4503		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3 5B-6
4504		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3 5B-6
4505		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3-9 5B-6
4506		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3-10 5B-6
4507		NONE 2B-1-10 5B-4	ON 2B-1-10 5B-4	MOM. ON 2B-3-9 5B-6
4508		NONE 2B-1 5B-4	ON 2B-1 5B-4	MOM. ON 2B-3 5B-6

Two-Pole

Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5004		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
5561		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
5562		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3-10 5B-6
5563		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
5564		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6
5565		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
5566		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3-10 5B-6
5567		ON	ON	OFF
		2A-1-10 5A-4	2A-2B 5A-5B	2B-3-9 5B-6
5568		ON	ON	OFF
		2A-1 5A-4	2A-2B 5A-5B	2B-3 5B-6

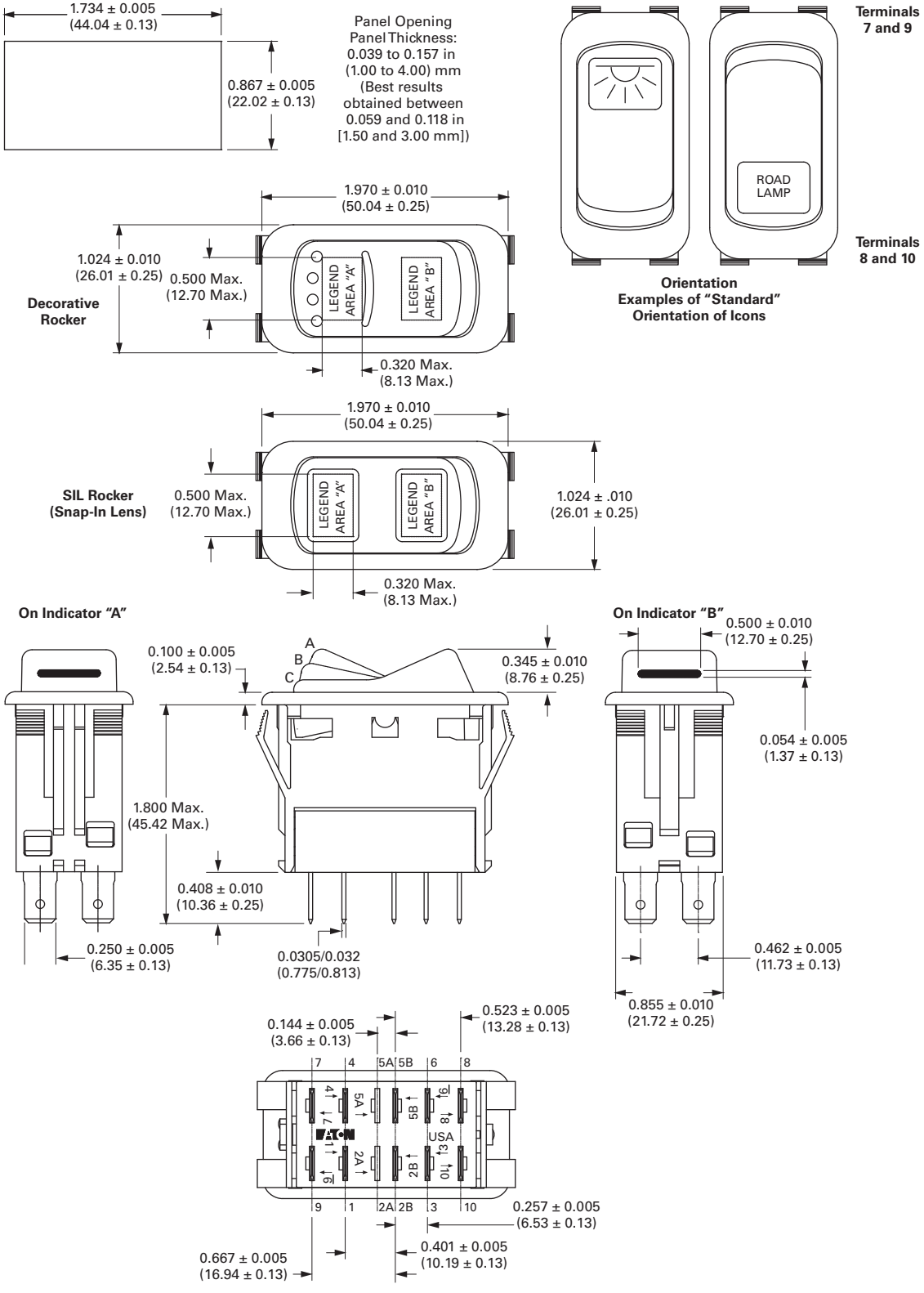
Circuit No.	Schematic (Shown in UP Position)	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
5005		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
5581		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
5582		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3-10 5B-4	2B-3-10 5B-6
5583		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
5584		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3 5B-4	2B-3 5B-6
5585		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
5586		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3-10 5B-4	2B-3-10 5B-6
5587		2–ON	1–ON	OFF
		2B-1-10 5B-4	2B-3-9 5B-4	2B-3-9 5B-6
5588		2–ON	1–ON	OFF
		2B-1 5B-4	2B-3 5B-4	2B-3-9 5B-6
6001		ON	NONE	ON
		2A-2B-5A-5B-10-1-4-3	—	3-6-1

Dimensions

Approximate Dimensions in Inches (mm)

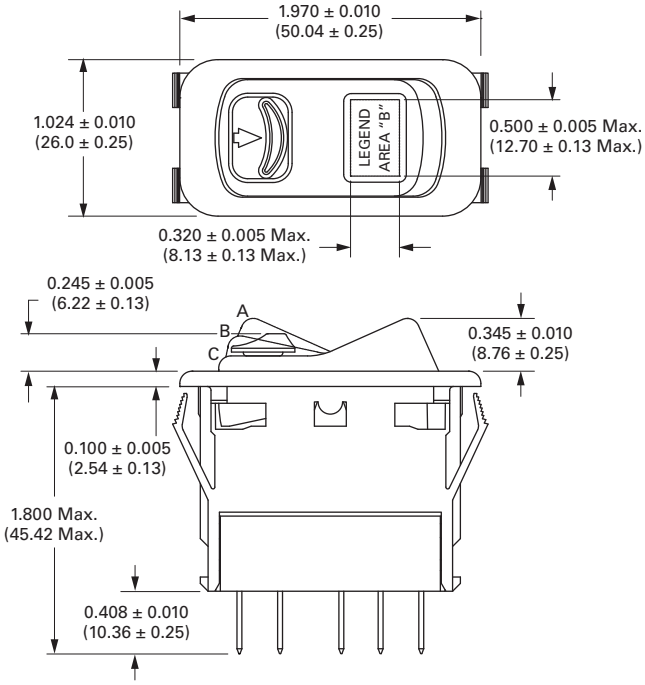
2

Switch Base with Rocker Button

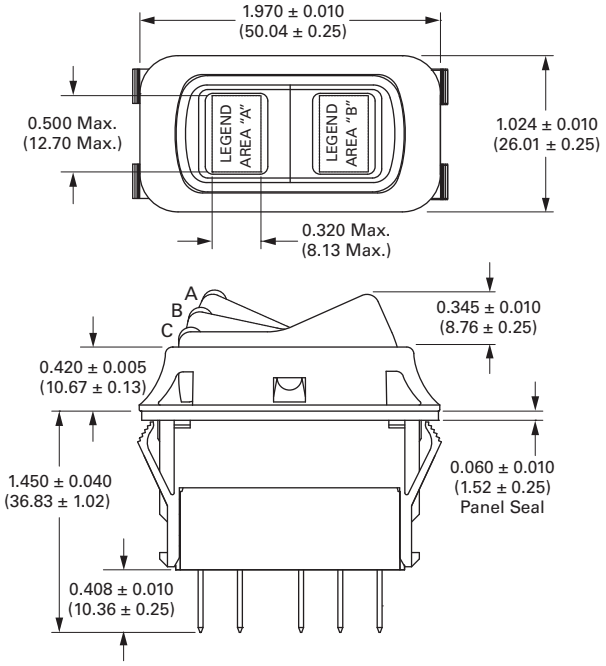


Approximate Dimensions in Inches (mm)

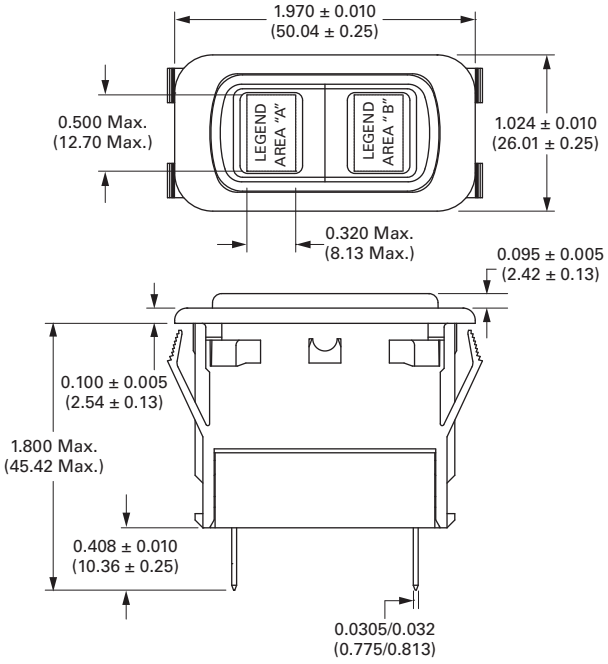
Locking Rocker



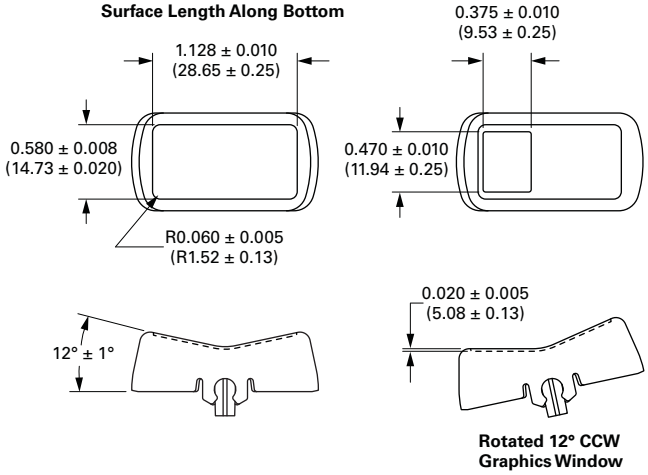
Sealed Rocker



Indicator



Label Rocker



Note: Graphics window may be on both ends or either end of part. Dimensions shown are typical.

SVR—Sealed Vehicle Rocker

2

Contents

Description	*Page*
SVR—Sealed Vehicle Rockers	
Above-Panel Rocker Switch	**V11-T2-34**
Below-Panel Rocker Switch	**V11-T2-35**
Technical Data and Specifications	**V11-T2-36**
Circuit Diagrams	**V11-T2-37**
Dimensions	**V11-T2-38**

Product Description

The Sealed Vehicle Rocker (SVR) switch from Eaton's electrical business now offers an above panel actuator style in addition to the below panel and paddle actuators. Designed to meet the severe environmental requirements of the construction and agricultural vehicle markets, the SVR is sealed at the front and back of the switch and meets the rigorous sealing requirements of IP68.

The small switch footprint minimizes the space taken on switch panels. SVR switches are assembled into panels by pressing the switch through the top of the panel and are held in place by retention tabs molded into the body of the switch; mounting hardware or special tools are not necessary.

The SVR is offered in single- and two-pole switch circuits, with two- and three-position momentary and maintained circuits available. Switch and illumination circuits are terminated with 0.11 in (2.8 mm) tin-plated copper alloy spade terminals. The SVR connector can be loaded with the appropriate terminals and/or wire seals to accomplish sealing at the back end of the switch.

Features

You can order assembled switches or the switch base and actuator separately.

Use the final code in the switch base catalog number, **Pages V11-T2-34** and **V11-T2-35**, to denote assembly instructions.

Actuator

The SVR switch family includes three styles of actuators: above panel, below panel and paddle.

Switch performance and specifications are the same for all actuator styles. Black is standard, but other colors are also available. Matte finish is standard on all actuator styles, matching the finish on the bezels and all other visible SVR switch features and accessories.

Actuator Styles

- Above panel rocker button offers new styling and a larger surface area. Eaton can offer assistance with unique designs of above panel actuators for applications where differentiation is desired
- Below panel rocker button is the same two-faced European styling that has been offered for SVR since its initial release. Indicator style matches the below panel rocker button style
- Paddle actuator allows toggle-type actuation of the SVR switch

Standards and Certifications

- Approvable under stringent UL and CSA standards
- For information, contact your local Eaton Sales Representative
- RoHS Compliant ①

RoHS COMPLIANT

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Illumination

Long life LEDs provide backlighting illumination for the SVR switch. Backlighting can be either independent of or dependent on the switch circuits, or a combination of both. Standard LED color is amber, with red, green and blue also available. LED protection circuitry is available to protect the LED from overvoltage and reverse voltage conditions.

Contact your local Eaton Sales Representative for more specific information about standard and custom circuit options.

Backlighting

- Each switch can accommodate up to two LEDs that can be connected to be either circuit dependent or independent
- Standard LED color is amber, with red, green and blue also available. Long life (100,000 hours) LEDs are standard
- Standard LED voltages are 12 and 24 Vdc
- The below panel rocker button style includes a single-piece back-lit actuator with laser-etched icons in either daylight white or deadfront styles. Without illumination, the icon is either daylight white or deadfront, but will change to the color of the chosen light source when illuminated

Snap-in Lenses

- Above and below panel rocker buttons are available with or without one or two translucent lenses. Five standard lens colors are available: white, red, green, blue and amber

Icons

- Icon areas are provided on each end of the rocker button. Icons may be illuminated or non-illuminated and are pad-printed in a contrasting color either directly on the rocker button or the lens

Mounting Means

Snap-in mounting using four flexible plastic retainers integral with switch frame.

Circuits

The SVR switch is capable of single- or two-pole configurations with two- or three-position maintained, momentary or a combination of actuations.

The addition of jumpers between switch terminals expands the circuit possibilities.

Contact your local Eaton Sales Representative for more specific information about SVR standard and custom circuit options.

Standard Circuit Options

- ON–NONE–ON
- ON–OFF–ON
- ON*–OFF–ON*
- ON*–OFF–ON
- ON–ON–ON
- ON*–NONE–ON
- ON*–ON–ON*
- ON*–ON–ON

Note: * = Momentary. See Electrical Circuit Diagrams on **Page V11-T2-37**.

Sealing

SVR design includes a sealed contact chamber with dust and water resistance to IP68. The harness connection can also be sealed by using AMP wire seals Catalog Number 828905-1 (14–16 gauge) or 828904-1 (18–20 gauge) to seal the wires to the connector. For an application where a connector cavity is not being used, it can be sealed with AMP sealing plug Catalog Number 828922-1.

The above panel version may also be sealed to the panel using panel seal Catalog Number 32-2245.

Options

- Additional colors of actuators, mounting bezels and lenses
- Special circuits
- Special ratings
- Pad printing on the below panel switch bezel
- Low current capabilities
- Custom back-lit icons
- Gang-mount system including end bezel Catalog Number 17-22146 and center bezel 17-22152
- Palm Guard (below panel switch only) at either or both ends of the switch frame
- Indicators with insertable lenses
- Polarized lock-on connector Catalog Number 25-13936
- Panel plug with connector retention feature Catalog Number 17-22145
- Non-illuminated below panel paddle actuator

Note: Contact your local Eaton Sales Representative for additional information on options.

2

Above-Panel Rocker Switch

Catalog Number Selection

How To Order—Above-Panel SVR Switch

To determine complete catalog number, start with the appropriate switch series and add the appropriate code letters and/or numbers.

Example: **S AC M 2X D G AT R AV X X**

Switch Series

S = SVR

Switch Circuits/Illumination Circuits

1st Digit (Circuit)	2nd Digit (Illumination)
	Single-Pole Illumination
A = ON–NONE–ON **C** = ON–NONE–ON ① **D** = ON–OFF–ON **E** = ON–OFF–ON ① **F** = ON*–OFF–ON* **G** = ON*–OFF–ON* ① **H** = ON*–OFF–ON **J** = ON*–OFF–ON ① **K** = ON–ON–ON ② **L** = ON–ON–ON ①② **M** = ON*–NONE–ON **P** = ON*–NONE–ON ① **R** = ON*–ON–ON* ② **S** = ON*–ON–ON* ①② **T** = ON*–ON–ON **U** = ON*–ON–ON ①	**A** = None **C** = Top/left (D) **D** = Bottom/right (D) **E** = Top/left (I) **F** = Bottom/right (I) **G** = Top/left (D)/bottom/right (I) **H** = Top/left (I)/bottom/right (D) **J** = Top/left (D)/bottom/right (D) **K** = Top/left (I)/bottom/right (I)
	Two-Pole Illumination
	R = None **S** = Top/left (D) **T** = Bottom/right (D) **U** = Top/left (I) **V** = Bottom/right (I) **W** = Top/left (D)/bottom/right (I) **Y** = Top/left (I)/bottom/right (D) **3** = Top/left (D)/bottom/right (D) **4** = Top/left (I)/bottom/right (I)

KEY: * = Momentary, **(I)** = Independent, **(D)** = Dependent.

Frame

M = Standard

LED (Top/Left)

1st Digit
X = None
14V Standard
J = Red **K** = Green **L** = Amber (standard for lensed rockers) **M** = Blue **N** = White (standard for decorative rockers)
14V Over/Reverse Voltage Protection
1 = Red **2** = Green **3** = Amber (standard) **7** = Blue
28V Standard
E = Red **F** = Green **G** = Amber (standard for lensed rockers) **H** = Blue **P** = White (standard for decorative rockers)
28V Over/Reverse Voltage Protection
4 = Red **5** = Green **6** = Amber (standard) **8** = Blue

LED (Bottom/Right)

2nd Digit
X = None Same codes available as 1st digit.

LED Wavelengths:
Red = ~630 Nm
Amber = ~592 Nm
Green = ~526 Nm
Blue = ~472 Nm

White LED Coordinates:
White = 0.31 x 0.31

Actuator Style

A = Decorative rocker
C = No lens
D = Top/left lens only
E = Bottom/right lens only
F = Top/left and Bottom/right lenses

Lens Color (Top/Left)

X = None	**B** = Blue
R = Red	**A** = Amber
G = Green	**W** = White

Decorative Icon Color

X = No icon
1 = Daylight white

Icon (Top/Left)

XX = None
AT = Work light
See Symbols Library on **Pages V11-T2-82** to **V11-T2-86** and **V11-T2-97** to **V11-T2-104**.

Lens Color (Bottom/Right)

X = None	**B** = Blue
R = Red	**A** = Amber
G = Green	**W** = White

Decorative Icon Color

X = No icon
1 = Daylight white
2 = Deadfront

Icon (Bottom/Right)

XX = None
AV = Hazard
See Symbols Library on **Pages V11-T2-82** to **V11-T2-86** and **V11-T2-97** to **V11-T2-104**.

Rocker Color

X = Black
R = Red ③

Special Feature

X = None
For Eaton use only.

Notes

① Gold plated.
② Two-pole only. See Electrical Circuit Diagrams on **Page V11-T2-37** and Illumination Circuit Diagrams on **Page V11-T2-38**.
③ For red rocker, only actuator style options A, C and F are available.

Below-Panel Rocker Switch

Catalog Number Selection

How To Order—Below-Panel Rocker Switch

To determine complete catalog number, start with the appropriate switch series and add the appropriate code letters and/or numbers.

Example: **S AC S 2X 3 G AT R AC X X**

Switch Series

S = SVR

Switch Circuits/Illumination Circuits

1st Digit (Circuit)	2nd Digit (Illumination)
	Single-Pole Illumination
A = ON–NONE–ON **C** = ON–NONE–ON ① **D** = ON–OFF–ON **E** = ON–OFF–ON ① **F** = ON*–OFF–ON* **G** = ON*–OFF–ON* ① **H** = ON*–OFF–ON **J** = ON*–OFF–ON ① **K** = ON–ON–ON ② **L** = ON–ON–ON ①② **M** = ON*–NONE–ON **P** = ON*–NONE–ON ① **R** = ON*–ON–ON* ② **S** = ON*–ON–ON* ①② **T** = ON*–ON–ON **U** = ON*–ON–ON ①	**A** = None **C** = Top/left (D) **D** = Bottom/right (D) **E** = Top/left (I) **F** = Bottom/right (I) **G** = Top/left (D)/bottom/right (I) **H** = Top/left (I)/bottom/right (D) **J** = Top/left (D)/bottom/right (D) **K** = Top/left (I)/bottom/right (I)
	Two-Pole Illumination
	R = None **S** = Top/left (D) **T** = Bottom/right (D) **U** = Top/left (I) **V** = Bottom/right (I) **W** = Top/left (D)/bottom/right (I) **Y** = Top/left (I)/bottom/right (D) **3** = Top/left (D)/bottom/right (D) **4** = Top/left (I)/bottom/right (I)

1st and 2nd Digit Indicators

NE = 7–9 Illumination
NF = 8–10 Illumination
NK = Dual Illumination
N9 = Dual Illumination with 8–9 jumper

KEY: * = Momentary, **(I)** = Independent, **(D)** = Dependent.

Frame

S = Standard—Below panel
T = Palm Guard—Top/left
B = Palm Guard—Bottom/right
F = Palm Guard—Full

LED (Top/Left)

1st Digit

X = None

14V Standard

J = Red
K = Green
L = Amber (standard)
M = Blue

14V Over/Reverse Voltage Protection

1 = Red
2 = Green
3 = Amber (standard)
7 = Blue

28V Standard

E = Red
F = Green
G = Amber (standard)
H = Blue

28V Over/Reverse Voltage Protection

4 = Red
5 = Green
6 = Amber (standard)
8 = Blue

LED (Bottom/Right)

2nd Digit

X = None
Same codes available as 1st digit.

LED Wavelengths:
Red = ~630 Nm
Amber = ~592 Nm
Green = ~526 Nm
Blue = ~472 Nm

Actuator Style

1 = No lens
2 = Top/left lens only
3 = Bottom/right lens only
4 = Top/left and bottom/right lenses
5 = Paddle—No lens
6 = Indicator—Top/left lens
7 = Indicator—Bottom/right lens
8 = Indicator—Top/left and Bottom/right lens
9 = Indicator—No lens
A = Decorative rocker

Lens Color (Top/Left)

X = None	**B** = Blue
R = Red	**A** = Amber
G = Green	**W** = White

Decorative Icon Color

1 = Daylight white
2 = Deadfront

Icon (Top/Left)

XX = None
AT = Work light
See Symbols Library on **Pages V11-T2-82** to **V11-T2-86** and **V11-T2-97** to **V11-T2-104**.

Lens Color (Bottom/Right)

X = None	**B** = Blue
R = Red	**A** = Amber
G = Green	**W** = White

Decorative Icon Color

1 = Daylight white
2 = Deadfront

Icon (Bottom/Right)

XX = None
AC = Fast
See Symbols Library on **Pages V11-T2-82** to **V11-T2-86** and **V11-T2-97** to **V11-T2-104**.

Special Feature

X = None
For Eaton use only.

Special Feature

X = None
For Eaton use only.

Notes

① Gold plated.

② Two-pole only. See Electrical Circuit Diagrams on **Page V11-T2-37** and Illumination Circuit Diagrams on **Page V11-T2-38**.

Technical Data and Specifications

SVR—Sealed Vehicle Rocker

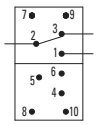
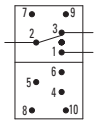
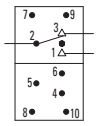
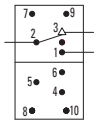
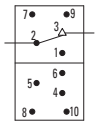
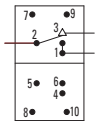
Description	Specification
Ratings	12A at either 12 or 24 Vdc, can be approved under stringent UL and CSA standards
Electrical life	
Standard plating	50,000 operations at 12A at either 12 or 24 Vdc. Life cycle testing conducted using both inductive and resistive loads
Gold plating	250,000 (maintained circuits)/50,000 (momentary circuits) operations at 10 mA at either 12 or 24 Vdc
Mechanical life	
Maintained circuits	250,000 operations minimum
Momentary circuits	50,000 operations minimum
Circuits	Single- or two-pole, two- or three-position, with momentary and maintained capabilities
Dielectric strength	1500 volts rms minimum
Operate force	1–3 lbs (4.4–13.2 Nm) depending on circuit configuration and actuator style
Temperature	
Operating range	–40° to 185°F (–40° to 85°C)
Storage range	–40° to 185°F (–40° to 85°C)
Contact material	
Movable	Copper alloy with silver alloy contact surface
Stationary	Silver-plated copper alloy with silver alloy contact surface
Gold-plated	Contacts are available for low level electrical loads
Terminal type	Standard 0.11 in (2.8 mm) tin-plated copper alloy spade terminal Mates to AMP Junior Power Timer Terminals ① Catalog Number 927766-3 (14–16 gauge) Catalog Number 927770-3 (18–20 gauge)
Plastic component UL ratings	
Base material	UL 94 V-0
Frame material	UL 94 H-B
IP rating	IP68
Sub-actuator material	UL 94 V-0
Actuator material	UL 94 V-0 (above panel rocker button) UL 94 H-B (below panel rocker button and paddle actuator)
Mounting hole	Standard panel cutout of 1.45 x 0.83 in (36.8 x 21.1 mm)
Panel thickness	0.04 to 0.16 in (1.0 to 4.0 mm) Best results obtained between 0.06 and 0.12 in (1.5 and 3.0 mm)

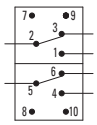
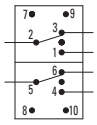
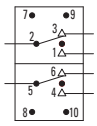
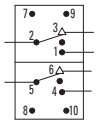
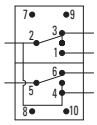
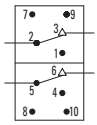
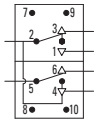
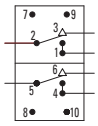
Note

① See also Sealing, **Page V11-T2-33**, for additional AMP components to seal the connector interface.

Circuit Diagrams

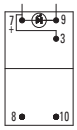
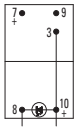
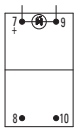
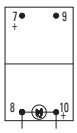
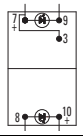
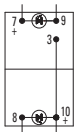
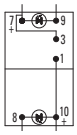
Switch Circuit Schematics

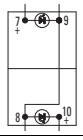
Code	Single-Pole Schematic (Shown in Top/left Actuated Position)	TOP/ LEFT Actuated	CENTER	BOTTOM/ RIGHT Actuated
A C (Gold)		ON	NONE	ON
		2–3	—	2–1
D E (Gold)		ON	OFF	ON
		2–3	—	2–1
F G (Gold)		MOM. ON	OFF	MOM. ON
		2–3	—	2–1
H J (Gold)		MOM. ON	OFF	ON
		2–3	—	2–1
K L (Gold)			Two-pole only	
M P (Gold)		MOM. ON	NONE	ON
		2–3	—	2–1
R S (Gold)			Two-pole only	
T U (Gold)		MOM. ON	ON	ON
		2–3	2–1	2–1

Code	Two-Pole Schematic (Shown in Top/left Actuated Position)	TOP/ LEFT Actuated	CENTER	BOTTOM/ RIGHT Actuated
A C (Gold)		ON	NONE	ON
		2–3 5–6	— —	2–1 5–4
D E (Gold)		ON	OFF	ON
		2–3 5–6	— —	2–1 5–4
F G (Gold)		MOM. ON	OFF	MOM. ON
		2–3 5–6	— —	2–1 5–4
H J (Gold)		MOM. ON	OFF	ON
		2–3 5–6	— —	2–1 5–4
K L (Gold)		ON	ON	ON
		2–3 5–6	5–4–2–3	5–4–2–1
M P (Gold)		MOM. ON	NONE	ON
		2–3 5–6	— —	2–1 5–4
R S (Gold)		MOM. ON	ON	MOM. ON
		2–3 5–6	5–4–2–3	5–4–2–1
T U (Gold)		MOM. ON	ON	ON
		2–3 5–6	2–1 5–4	2–1 5–4

2

Illumination Schematics

Single-Pole Code	Two-Pole Code	Schematic ①
A	R	None
C	S	
D	T	
E	U	
F	V	
G	W	
H	Y	
J	3	
K	4	

Illumination Code	Schematic ①
9	

Note

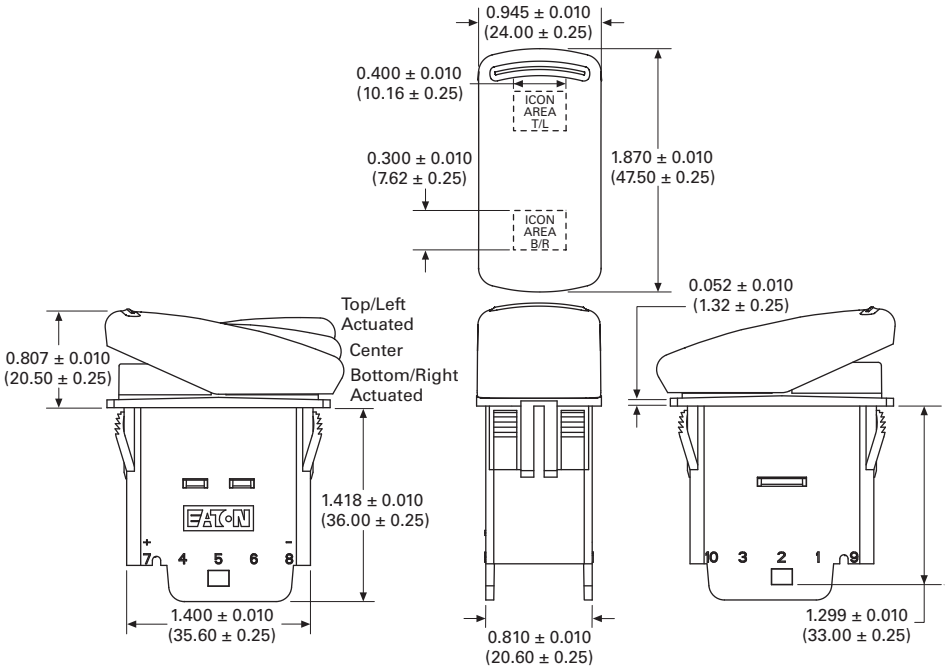
① LED for terminals 7–9 is at top/left side of switch. LED for terminals 8–10 is at bottom/right of switch.

Dimensions

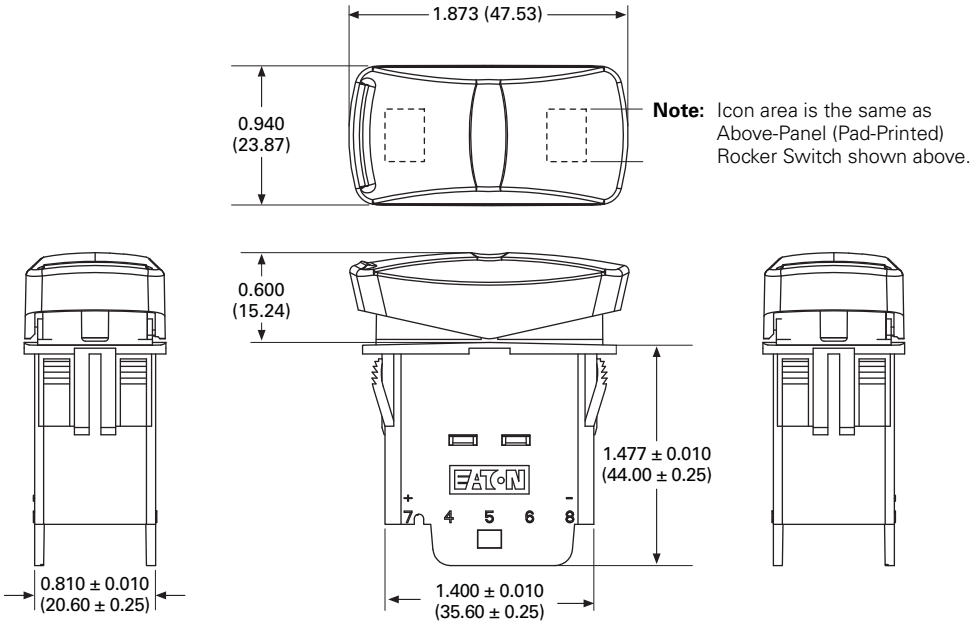
Above-Panel Rocker

Approximate Dimensions in Inches (mm)

Above-Panel (Pad-Printed) Rocker Switch



Above-Panel Decorative (Laser-Etched) Rocker Switch



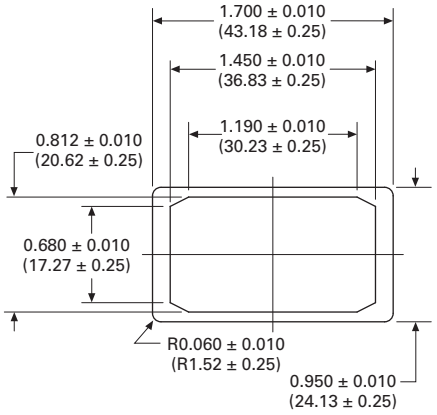
Note: Icon area is the same as Above-Panel (Pad-Printed) Rocker Switch shown above.

Above-Panel Rocker

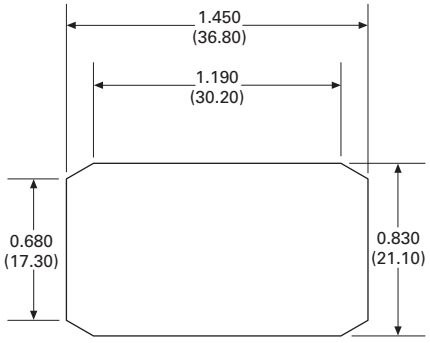
Approximate Dimensions in Inches (mm)

Panel Seal Gasket (Above Only)

Catalog Number 32-2245



Panel Opening (Above and Below)



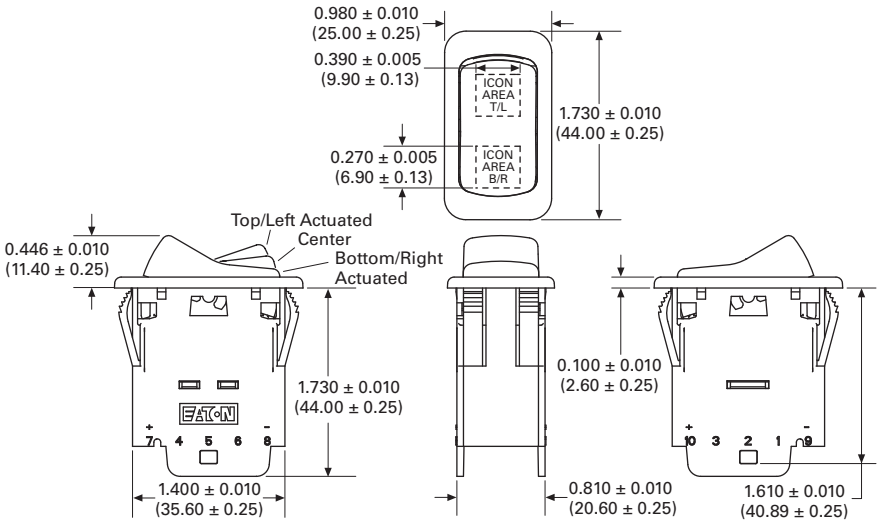
Note: Recommended panel thickness 0.039–0.157 in (1.00–4.00 mm). Best results obtained between 0.059 and 0.118 in (1.50 and 3.00 mm).

Below-Panel Rocker

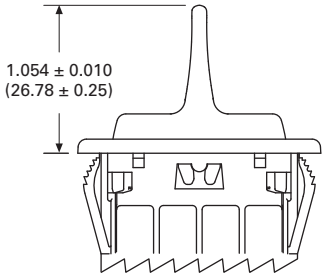
Approximate Dimensions in Inches (mm)

2

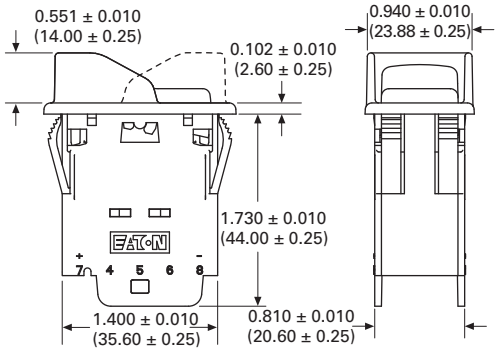
Below-Panel Rocker Switch with Actuator



Panel Actuator (Below-Panel Only)



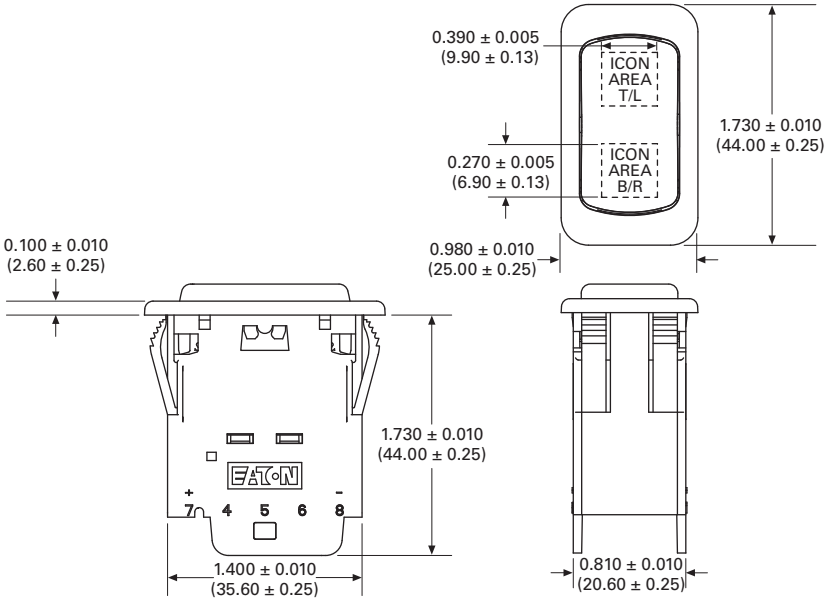
Panel Guard (Below-Panel Only)



Below-Panel Rocker

Approximate Dimensions in Inches (mm)

Indicator (Below-Panel Only)



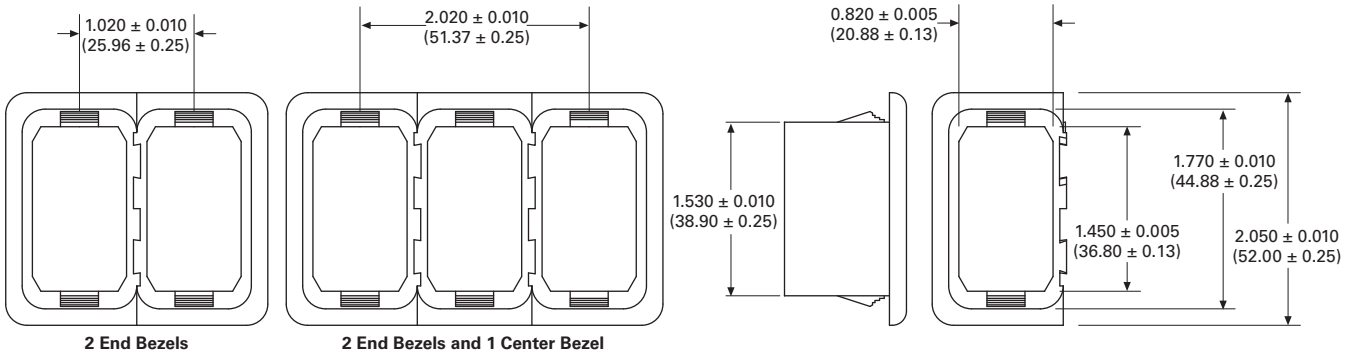
Accessories

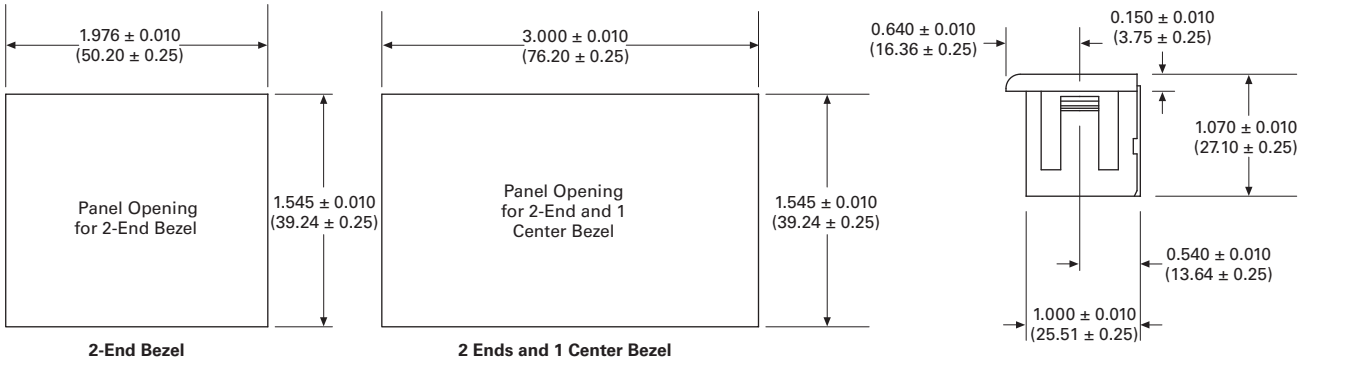
Approximate Dimensions in Inches (mm)

2

Gang Mount System

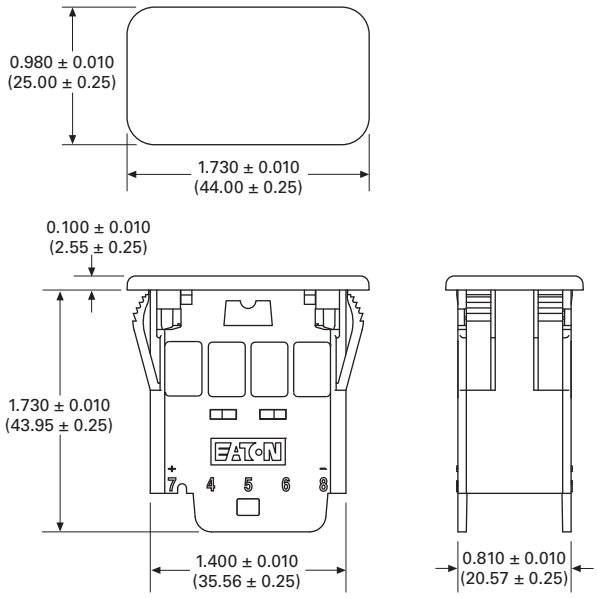
End Bezel Catalog Number 17-22146
Center Bezel Catalog Number 17-22152





Panel Plug

Catalog Number 17-22145



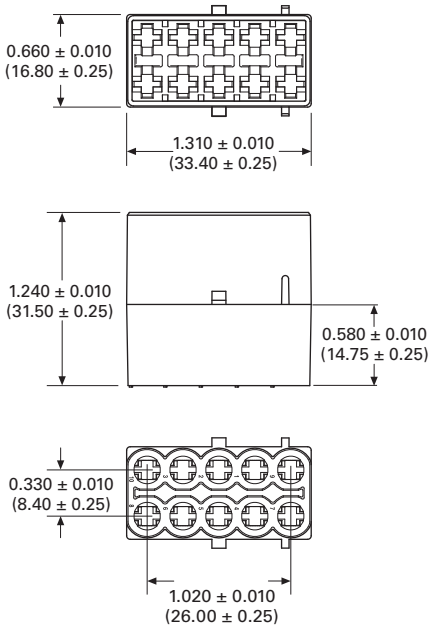
Connector

Catalog Number 25-13936

AMP Terminal Catalog Numbers:
927766-3 (14–16 gauge)
927770-3 (18–20 gauge)

AMP Wire Seal Catalog Numbers:
828905-1 (14–16 gauge)
828904-1 (18–20 gauge)

AMP Sealing Plug Catalog Number:
828922-1



Dual Motion Safety Switch

Contents

Description	*Page*
Dual Motion Safety Switches	
Catalog Number Selection	**V11-T2-44**
Dimensions	**V11-T2-44**

Product Description

Eaton's Vehicle Control business offers these new dual motion safety switches to prevent accidental actuation and protect operator personnel and equipment.

These rockers are available in two standard circuit options: OFF (locked)—None—ON and ON (locked)—None—ON. The locked safety feature requires two motions from the operator to place the actuator in the unlocked position. In the locked position, the operator must apply pressure on the actuator forward and an additional force in an upward motion for the switch to be moved to the unlocked position. Once in the unlocked position, the switch can easily be moved back into the locked position.

Application Description

- Farming equipment
- Fire trucks and safety vehicles
- Lawn and garden equipment
- Large transportation buses
- Industrial and commercial equipment

Features and Benefits

Dual motion safety switches are recommended up to 15A at 28 Vdc. An added benefit is its IP54 seal level. They can be used in tough environments where there may be exposure to small dust particles or water splashing against the enclosure from any direction. For available higher ratings or additional customizable circuits, please contact your local Eaton Sales Representative.

Options

There are many options to choose when building the right switch for your application. Termination types to choose from include screw type, solder lug and 0.250-inch spade terminals. Actuators are available in four standard colors with an appealing matte finish. Choose from black, red, white or yellow. Eaton also offers standard and customizable legend pad printing options on top of the actuator. There is even an option for arrows to be pad printed on the sides of the rocker to indicate the correct forward motion.

For added convenience, the bezel is designed to allow an easy snap-in switch mount into various panel thicknesses. The actuators even have ergonomic grooves to help provide the operator a firm grip when moving the actuator.

Standards and Certifications

- UL/CSA Recognition at 15A, 125 Vac; 10A, 250 Vac; 3/4 hp, 250 Vac
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Catalog Number Selection

8179K21Z T 51 AA A Y

Poles and Throws	Circuit with Rocker In …			Base Part Number
	Position A	Center Position	Position B	
2PST	OFF (lock)	None	ON	**8179K21Z**
2PDT	ON (lock)	None	ON	**8179K22Z**

Rocker Color
Y = Black
T = Red
M = White
E = Yellow

Termination Type
50 = Screw type
51 = Solder lug
52 = Quick connect (0.250 in spade)

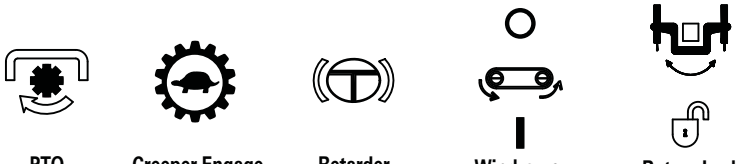
Top Pad Print ①
XX = None
AA = PTO
AB = Creeper engage
AC = Retarder
AD = Windrower ON/OFF
AE = Rotary lock pin cylinder

Icon Orientation
A = Standard
B = 90° clockwise
C = 180° clockwise
D = 270° counterclockwise
X = None

Side Arrow Pad Prints
X = None
Y = Both sides

Available Switch Pad Prints

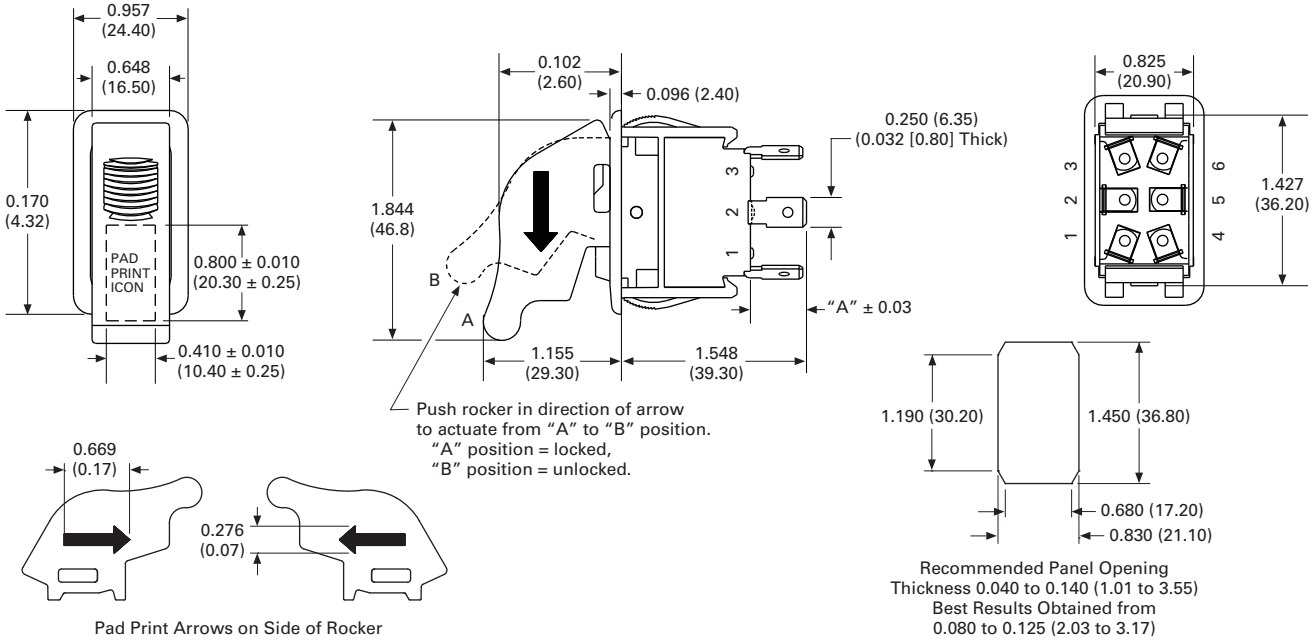
Prints ②



Dimensions

Approximate Dimensions in Inches (mm)

Dual Motion Safety Switch



Notes

① Black pad print color for white and yellow rockers. White pad print color for red and black rockers.
② Contact your local Eaton Sales Representative for more available pad print options.

1500/2500 Series

Contents

Description	*Page*
1500/2500—Midsize AC Rated	
Midsize Non-Illuminated and Illuminated	**V11-T2-46**
Hi-Lite Rocker with High Inrush	**V11-T2-47**
Technical Data and Specifications	**V11-T2-48**
Dimensions	**V11-T2-48**

Product Description

Eaton's 1500/2500 series rocker switch offers a designer touch that will enhance any product line.

Ideal applications include appliances, electronic instrumentation, data processing, communications and medical and office equipment. Custom legends are available on the switch actuator and bezel.

Options

High Inrush Option

The 1500H/2500H is designed to handle high inrush currents up to 100A peak inrush for 10 milliseconds.

Hi-Lite Rocker with High Inrush Option

This two-color rocker version brightly indicates the ON position. This version spares the expense of more costly illuminated switches and is available with the high inrush option.

Standards and Certifications

Note: See Catalog Number Selection for more detail.

International Approvals

- UL Recognized
- CSA Certified
- ENEC
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Midsize Non-Illuminated and Illuminated

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Midsize Non-Illuminated

Example: **1500** → **2 1 E 038**

Code letters and/or numbers. Add to base circuit number.

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ① Position	Base Circuit Number ②	Circuit Number ③
UL/CSA: 15A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(4)A 250V	1PST	ON	NONE	OFF	**1500**	1
		MOM. ON	NONE	OFF	**1501**	3
		ON	NONE	MOM. OFF	**1505**	4
	1PDT	ON	NONE	ON	**1502**	5
		ON	NONE	MOM. ON	**1503**	7
UL/CSA: 15A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	ON	OFF	ON	**1504**	6
UL/CSA: 10A 125 Vac, 10A 250 Vac, 10A 28Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	MOM. ON	OFF	MOM. ON	**1506**	9
		MOM. ON	OFF	ON	**1507**	8
UL/CSA: 15A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(4)A 250V	2PST	ON	NONE	OFF	**2500**	10
		MOM. ON	NONE	OFF	**2501**	11
		ON	NONE	MOM. OFF	**2505**	12
	2PDT	ON	NONE	ON	**2502**	13
		ON	NONE	MOM. ON	**2503**	15
UL/CSA: 15A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	2PDT	ON	OFF	ON	**2504**	14
UL/CSA: 10A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	2PDT	MOM. ON	OFF	MOM. ON	**2506**	17
		MOM. ON	OFF	ON	**2507**	16

Base and Bezel Color
- **1** = Black
- **2** = White
- **3** = Red

Rocker Color
- **1** = Black
- **2** = White
- **3** = Red

Terminal Type
- **E** = 6.3 mm tabs/0.25 in quick connect
- **B** = Solder lugs

Note: B style terminal not offered for 1506 Series.

Legend Type (Optional)
- **038** = ON/OFF

See Most Popular Legends table on **Page V11-T2-55**.

How To Order—Midsize Illuminated

Example: **2500** → **G 2 2 E 725**

Code letters and/or numbers. Add to base circuit number.

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ① Position	Base Circuit Number	Circuit Number ③
UL/CSA: 15A 125 Vac, 10A 250 Vac, 10A 28Vdc, 8A 14VT; **ENEC:** 10(4)A 250V	1PST	ON	NONE	OFF	**1500**	18
		MOM. ON	NONE	OFF	**1501**	21
	2PST	ON	NONE	OFF	**2500**	28
		MOM. ON	NONE	OFF	**2501**	30

Lens/Rocker Color
- **A** = Amber
- **G** = Green
- **R** = Red
- **W** = White (clear)

Lamp Voltage
- **0** = No lamp
- **1** = 125V neon
- **2** = 250V neon
- **4** = 6V filament ④
- **5** = 12V filament ④

Base and Bezel Color
- **1** = Black
- **2** = White
- **3** = Red

Terminal Type
- **E** = 6.3 mm tabs/0.25 in quick connect
- **B** = Solder lugs

Legend Type (Optional)
- **725** = ON/OFF

See Most Popular Legends table on **Page V11-T2-55**.

Notes

① 1500 Type—Lever depressed toward terminal #3. 2500 Type—Lever depressed toward terminals #13 and #26.
② #1500—#1507 switches are supplied in 1500 type base. #2500—#2507 switches are supplied in 2500 type base.
③ See Circuit Diagrams on **Page V11-T2-80**.
④ 6V, 12V filament lamps are not UL, CSA, or ENEC.

Hi-Lite Rocker with High Inrush

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Hi-Lite Rocker with High Inrush Option

Example: **1500H** → **1 2 4 E 038**

Rating	Poles and Throw	Circuit with Rocker in … UP Pos.	CENTER Position	DOWN ① Position	Base Circuit Number	Circuit Number ③
UL/CSA:15A 125 Vac, 10A 250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(4)A 250V	1PST	ON MOM. ON	NONE NONE	OFF OFF	**1500 _** **1501 _**	1 3
UL/CSA: 22A 125 Vac, 16A 250 Vac, 6A 125 VacL, 10A 14VT, 1 hp 125-250Vac; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1500H** ②	1

Code letters and/or numbers. Add to Base Circuit Number.

Base and Bezel Color
1 = Black
2 = White
3 = Red

Rocker Color
1 = Black
2 = White
3 = Red

Hi-Lite Color
1 = Black
2 = White
4 = Green
5 = Gray
6 = Red
7 = Yellow

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect
B = Solder lugs ④

Legend Type (Optional)
038 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

How To Order—High Inrush, Non-Illuminated

Example: **1500H** → **1 2 E 038**

Rating	Poles and Throw	Circuit with Rocker in … UP Pos.	CENTER Position	DOWN ① Position	Base Circuit Number	Circuit Number ③
UL/CSA: 22A 125 Vac, 16A 250 Vac, 6A 125 VacL, 10A 14VT, 1 hp 125-250 Vac; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1500H**	1
	2PST	ON	NONE	OFF	**2500H**	10

Code letters and/or numbers. Add to Base Circuit Number.

Base and Bezel Color
1 = Black
2 = White
3 = Red

Rocker Color
1 = Black
2 = White
3 = Red

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect

Legend Type (Optional)
038 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

How To Order—High Inrush Illuminated

Example: **2500H** → **G 2 2 E 725**

Rating	Poles and Throw	Circuit with Rocker in … UP Pos.	CENTER Position	DOWN ① Position	Base Circuit Number	Circuit Number ③
UL/CSA: 22A 125 Vac, 16A 250 Vac, 6A 125 VacL, 10A 14VT, 1 hp 125–250 Vac; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1500H**	18
	2PST	ON	NONE	OFF	**2500H**	28

Code letters and/or numbers. Add to Base Circuit Number.

Lens/Rocker Color
A = Amber
G = Green
R = Red
W = White (clear)

Lamp Voltage
0 = No lamp
1 = 125V neon
2 = 250V neon
4 = 6V filament ⑤
5 = 12V filament ⑤

Base and Bezel Color
1 = Black
2 = White
3 = Red

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect

Legend Type (Optional)
725 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

Notes

① 1500 Type—Lever depressed toward terminal #2. 1500H Type—Lever depressed toward terminal #3. 2500H Type—Lever depressed toward terminals #13 and #26.
② High inrush capabilities available only on basic catalog numbers beginning with 1500H.
③ See Circuit Diagrams on **Page V11-T2-80**.
④ Standard rating only.
⑤ 6V, 12V filament lamps are not UL, CSA, or ENEC.

Technical Data and Specifications

1500/2500—Midsize AC Rated

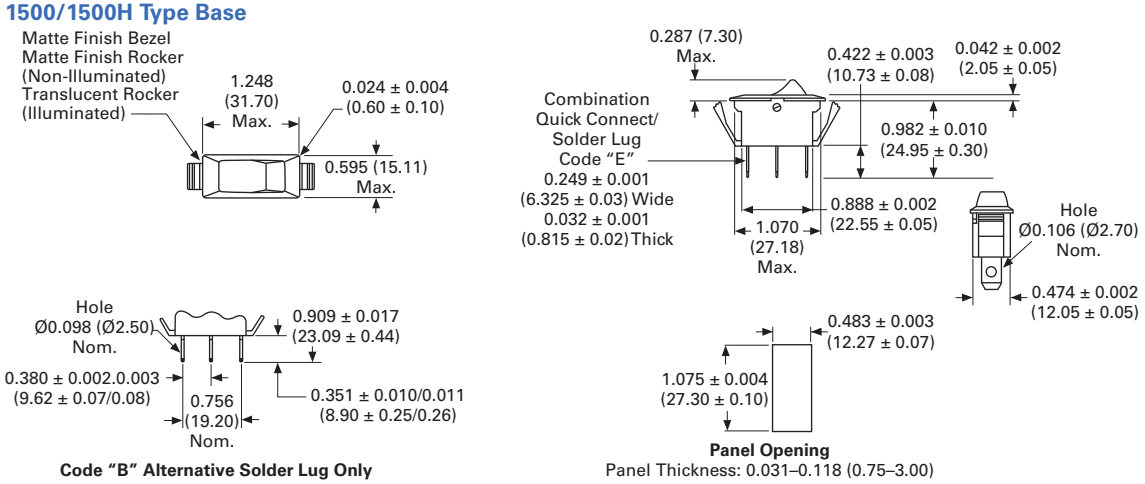
Description	Specification
Ratings	See selection tables on **Pages V11-T2-46** and **V11-T2-47**.
Seal level	IP40
Circuits	
Standard	1PST, 1PDT, 2PST, 2PDT, maintained and momentary
High inrush option	1PST, 2PST, maintained
Hi-lite option	1PST, maintained
Contact mechanism	
Standard	Slow-make/slow-break butt contact
High inrush option	Slow-make/slow-break butt contact with mechanical break
Make—High inrush option	100A peak inrush at 250 Vac for 10 ms for 10,000 cycles minimum
Break—High inrush option	16A, 250 Vac for 10,000 cycles minimum
Contact material	Silver inlay over copper
Contact resistance	10M ohms max. at 1A, 4 Vdc

Description	Specification
Mechanical life	50,000 cycles minimum
Insulation resistance	50M ohms minimum
Dielectric withstand	1000V rms minimum
Terminal types	
Standard	6.3 mm Tabs/0.250 in Quick Connect
Optional	Solder lug
Termination material	
Common (center)	Copper fine silver-plated
End	Copper
Lamp	Brass
Mounting	See dimensions below
Operating temperature range	32° to 185°F (0° to 85°C)

Dimensions

Approximate Dimensions in Inches (mm)

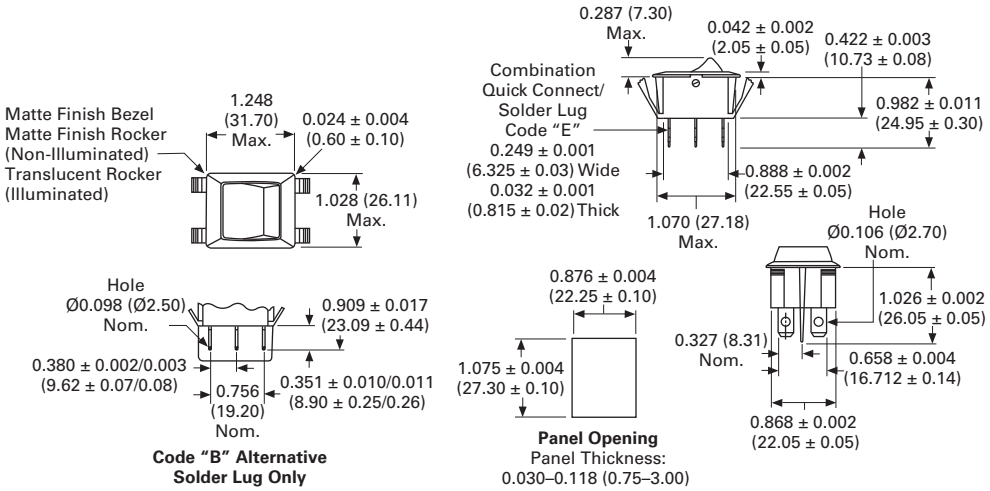
1500/1500H Type Base



Code "B" Alternative Solder Lug Only

Panel Opening
Panel Thickness: 0.031–0.118 (0.75–3.00)

2500/2500H Type Base



Code "B" Alternative Solder Lug Only

Panel Opening
Panel Thickness:
0.030–0.118 (0.75–3.00)

1600/2600 Series

Contents

Description	*Page*
1600/2600—Midsize AC Only	
Non-Illuminated Rocker	**V11-T2-50**
Illuminated Rocker	**V11-T2-51**
Splashguard	**V11-T2-52**
High Inrush Rockers	**V11-T2-53**
Technical Data and Specifications	**V11-T2-54**
Dimensions	**V11-T2-54**
Accessories	**V11-T2-55**
Legends	**V11-T2-55**

Product Description

Eaton's 1600/2600 series of midsize snap-in rocker and paddle switches have worldwide approvals at up to 16A, 250 Vac. One switch can be used for both domestic and foreign markets.

Ideal applications include appliances, electronic instrumentation, data processing, communications, medical equipment, office equipment and many more. A wide circuit variety is offered in a choice of standard and custom colors for illuminated and non-illuminated versions. Custom legends are available on the switch lever and bezel. High inrush and splashguard are also available.

Options

High Inrush Option

The 1600H/2600H is designed to handle high inrush currents up to 100A peak inrush for 10 milliseconds.

Splashguard Option

This version features a uniquely designed seal that resists moisture and water, making it ideally suited for marine, RV and food processing applications. The oversized nylon lever with smooth, matte finish features a convenient thumb depression to ensure effortless touch control. Two-pole switches feature both a thumb depression and a convex curve. See **Page V11-T2-52**.

Standards and Certifications

Note: See Catalog Number Selection for more detail.

International Approvals

- UL Recognized
- CSA Certified ①
- ENEC
- RoHS Compliant ②

Notes

① Splashguard option is cRU marked only.
② Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Non-Illuminated Rocker

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Non-Illuminated Rocker

Example: **1600** → **M 2 1 E 038**

Code letters and/or numbers. Add to base circuit number.

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ② Position	Base Circuit Number Rocker	Paddle ①	Circuit Number ③
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 16(4)A 250V	1PST	ON MOM. ON ON	NONE NONE NONE	OFF OFF MOM. OFF	**1600** **1601** **1605**	**P1600** **P1601** **P1605**	1 3 4
	1PDT	ON ON	NONE NONE	ON MOM. ON	**1602** **1603**	**P1602** **P1603**	5 7
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	ON	OFF	ON	**1604**	**P1604**	6
UL/CSA: 10A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	MOM. ON MOM. ON	OFF OFF	MOM. ON ON	**1606** **1607**	**P1606** **P1607**	9 8
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 16(4)A 250V	2PST	ON MOM. ON ON	NONE NONE NONE	OFF OFF MOM. OFF	**2600** **2601** **2605**	**P2600** **P2601** **P2605**	10 11 12
	2PDT	ON ON	NONE NONE	ON MOM. ON	**2602** **2603**	**P2602** **P2603**	13 15
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	2PDT	ON	OFF	ON	**2604**	**P2604**	14
UL/CSA: 10A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	2PDT	MOM. ON MOM. ON	OFF OFF	MOM. ON ON	**2606** **2607**	**P2606** **P2607**	17 16

Finish ④
Blank = Standard
M = Matte

Base and Bezel Color
1 = Black
2 = White
3 = Red

Rocker/Paddle Color
1 = Black
2 = White
3 = Red

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect
B = Solder lugs

Legend Type (Optional)
038 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

Notes

① Paddles are UL, CSA only.

② 1600 Type—Lever depressed toward terminal #3.
2600 Type—Lever depressed toward terminals #13 and #26.

③ See Circuit Diagrams on **Page V11-T2-80**.

④ To order the standard, add a "dash" to the catalog number. Example: 1600–11E.

Illuminated Rocker

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Illuminated Rocker

Example: **1621 X** → **W 5 3 E 038**

X = Independent lamp

Code letters and/or numbers. Add to base circuit number.

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ① Position	Base Circuit Number ②	Circuit Number ③
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1600**	18
		MOM. ON	NONE	OFF	**1601**	21
		ON	NONE	OFF	**1620X**	20
		MOM. ON	NONE	OFF	**1621X**	④
		ON	NONE	MOM. OFF	**1625X**	④
	1PDT	ON	NONE	ON	**1622X**	④
		ON	NONE	MOM. ON	**1623X**	④
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	ON	OFF	ON	**1624X**	④
UL/CSA: 10A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 10(2)A 250V	1PDT	MOM. ON	OFF	MOM. ON	**1626X**	④
		MOM. ON	OFF	ON	**1627X**	④
UL/CSA: 16A 125–250 Vac, 10A 28 Vdc, 8A 14VT; **ENEC:** 16(4)A 250V	2PST	ON	NONE	OFF	**2600**	28
		MOM. ON	NONE	OFF	**2601**	30
		ON	NONE	MOM. OFF	**2605**	31
—	—	Indicator	—	—	**1609**	32

Lens/Rocker Color
- **A** = Amber
- **G** = Green
- **R** = Red
- **W** = White (clear)

Lamp Voltage
- **0** = No lamp
- **1** = 125V neon
- **2** = 250V neon
- **4** = 6V filament ⑤
- **5** = 12V filament ⑤

Base and Bezel Color
- **1** = Black
- **2** = White
- **3** = Red

Terminal Type
- **E** = 6.3 mm tabs/0.25 in quick connect
- **B** = Solder lugs

Legend Type (Optional)
- **038** = ON/OFF

See Most Popular Legends table on **Page V11-T2-55**.

Notes

① 1600 Type—Lever depressed toward terminal #3.
2600 Type—Lever depressed toward terminals #13 and #26.

② #1600—#1609 switches are supplied in 1600 type base.
#1620—#1627 switches are supplied in 2600 type base. (Must have an "X" code.)
#2600—#2605 switches are supplied in 2600 type base.

③ See Circuit Diagrams on **Page V11-T2-80**.

④ All independent lamps for IP switches to be assembled from terminal positions #24 and #26.

⑤ 6V, 12V filament lamps are not UL, CSA, or ENEC.

Splashguard

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Splashguard ①

Example: **B1600** → **1 2 E**

Code letters and/or numbers.
Add to base circuit number.

Rating ②	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number	Circuit Number ③
16A, 125 Vac 10A, 250 Vac	1PST	NONE NONE	OFF OFF	ON MOM. ON	B1600 B1601	1 2
	1PDT	NONE ON	ON OFF	ON ON	B1602 B1604	5 6
10A, 125 Vac 10A, 250 Vac	1PDT	MOM. ON MOM. ON	OFF OFF	MOM. ON ON	B1606 B1607	9 8
16A, 125 Vac 10A, 250 Vac	2PST	NONE NONE	OFF OFF	ON MOM. ON	B2600 B2601	10 11
16A, 125 Vac 10A, 250 Vac	2PDT	NONE ON	ON OFF	ON ON	B2602 B2604	13 14
10A, 125 Vac 10A, 250 Vac	2PDT	MOM. ON MOM. ON	OFF OFF	MOM. ON ON	B2606 B2607	17 16

Base Color
1 = Black

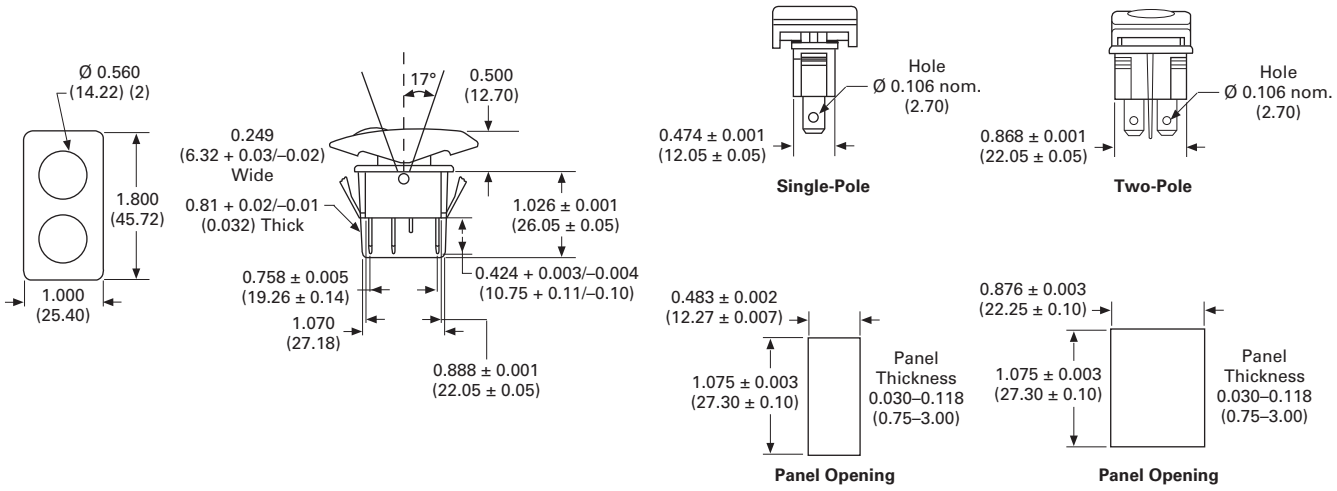
Rocker Color
1 = Black
2 = White
3 = Red
4 = Green
5 = Gray

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect

Dimensions

Approximate Dimensions in Inches (mm)

Splashguard



Notes

① Splashguard is CUR marked, but does not have ENEC approval.
② All circuits also recommended 10A, 28 Vdc.
③ See Circuit Diagrams on **Page V11-T2-80**.

High Inrush Rockers

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Non-Illuminated High Inrush Rockers

Example: **1600H** → **M 2 1 E 038**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ② Position	Base Circuit Number	Circuit Number ⑤
UL/CSA: ① 22A 125 Vac, 16A 250 Vac, 6A 125 VacL, 10A 14VT, 1 hp 125–250 Vac; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1600H**	1
		ON	NONE	OFF	**1620H** ③	2
	2PST	ON	NONE	OFF	**2600H**	10

Code letters and/or numbers. Add to base circuit number.

Finish ④
Blank = Standard
M = Matte

Base and Bezel Color
1 = Black
2 = White
3 = Red

Rocker Color
1 = Black
2 = White
3 = Red

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect

Legend Type (Optional)
038 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

How To Order—Illuminated High Inrush Rockers

Example: **1600H** → **R 2 1 E 038**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN ② Position	Base Circuit Number	Circuit Number ⑤
UL/CSA: ① 22A 125 Vac, 16A 250 Vac, 6A 125 VacL, 10A 14VT, 1 hp 125–250 Vac; **ENEC:** 16(4)A 250V	1PST	ON	NONE	OFF	**1600H**	18
		ON	NONE	OFF	**1620HX** ⑥	19
	2PST	ON	NONE	OFF	**2600H**	28
—	—	Indicator	Indicator	—	**1609**	32

Code letters and/or numbers. Add to base circuit number.

Lens/Rocker Color
A = Amber
G = Green
R = Red
W = White (clear)

Lamp Voltage
0 = No lamp
1 = 125V neon
2 = 250V neon
4 = 6V filament ⑧
5 = 12V filament ⑧
6 = 24V filament ⑧

Base and Bezel Color
1 = Black
2 = White
3 = Red

Terminal Type
E = 6.3 mm tabs/0.25 in quick connect

Legend Type (Optional)
038 = ON/OFF
See Most Popular Legends table on **Page V11-T2-55**.

Notes

① UL, CSA: 1 hp at 125V or 250 Vac; 6A, 125 Vac (L) rating; 10A, 14 Vdc. Marked on request only.
② 1600H Type—Rocker depressed toward terminal #2.
2600H Type—Rocker depressed toward terminals #13 and #26.
③ 1620H switch is supplied in 2600H base.
④ No code required.
⑤ See Circuit Diagrams on **Page V11-T2-80**.
⑥ 1620H switch is supplied in 2600H type base. (Must have "X" code.)
⑦ 1600H Type—Rocker depressed toward terminal #3.
1620H Type—Rocker depressed toward terminals #13 and #26.
2600H Type—Rocker depressed toward terminals #13 and #26.
⑧ 6V, 12V, 24V filament lamps are not UL, CSA, or ENEC.

Technical Data and Specifications

1600/2600—Midsize AC Rated

2

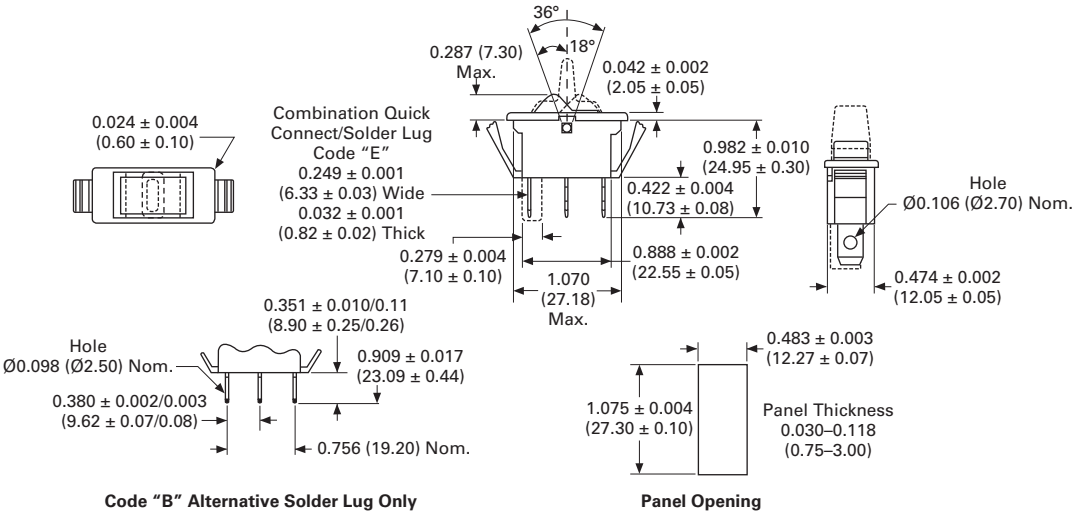
Description	Specification
Ratings	See selection tables on **Pages V11-T2-50** to **V11-T2-53**.
Circuits	
Standard	1PST, 1PDT, 2PST, 2PDT maintained and momentary
High inrush option	1PST, 2PST maintained
Contact mechanism	
Standard	Slow-make/slow-break butt contact
High inrush option	Slow-make/slow-break butt contact with mechanical break
Make—High inrush option	100A, 250 Vac for 10 ms for 10,000 cycles min.
Break—High inrush option	16A, 250 Vac for 10,000 cycles min.
Contact material	Silver inlay over copper
Contact resistance	10M ohms max. at 1A, 4 Vdc
Mechanical life	50,000 cycles minimum

Description	Specification
Insulation resistance	100M ohms minimum
Dielectric withstand	1000V rms minimum
Terminal types	
Standard	6.3 mm tabs/0.250 in quick connect
Optional	Solder lug
Termination material	
Common (center)	Copper fine silver-plated
End	Copper
Lamp	Brass
Mounting	See dimensions below
Operating temperature range	32° to 185°F (0° to 85°C)

Dimensions

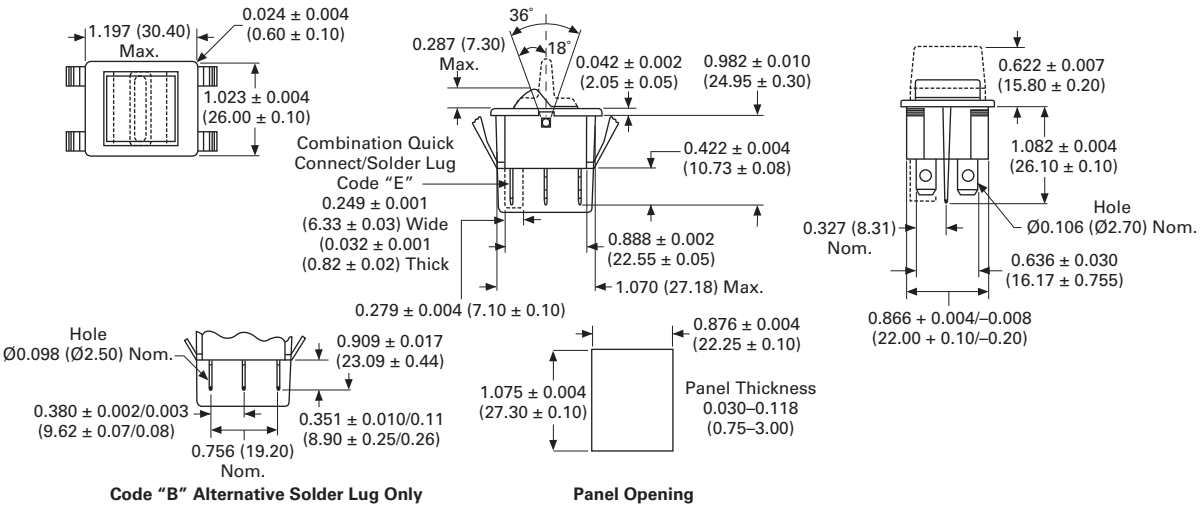
Approximate Dimensions in Inches (mm)

1600/1600H Type Base



Code "B" Alternative Solder Lug Only **Panel Opening**

2600/2600H Type Base



Code "B" Alternative Solder Lug Only **Panel Opening**

Accessories

Panel Cutout Fillers

If panel cutout fillers are required in anticipation of future rocker or paddle switch installation, order Catalog Number 1609DUM.

Specify color of base and filler portion by using the standard two-digit color code (base and lever) for non-illuminated switches.

Example: 1609DUM11

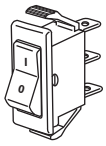
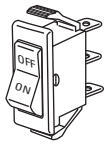
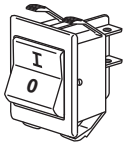
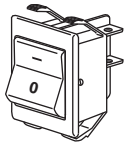
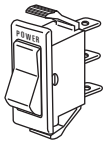
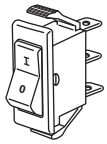
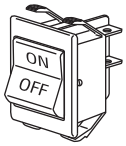
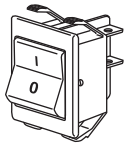
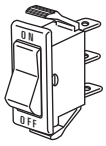
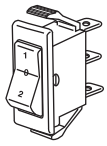
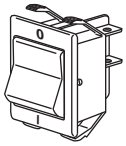
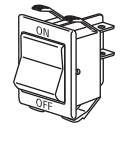
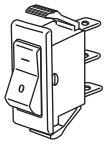
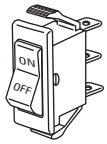
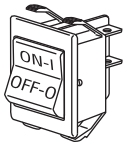
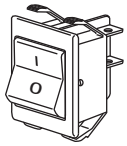
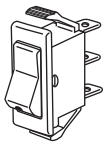
Legends

How To Order—Legends

To order a rocker with a legend marking, add the three-character code to the end of the catalog number. Example: 1500-21E becomes 1500-21E038.

Legends are for 1500/2500 and 1600/2600 only.

Most Popular Legends ①

Legend	Code	Legend	Code	Legend	Code	Legend	Code
	014		653		714		735
	023		656		725		746
	038		657		730		752
	039		671		734		760
	630						

Note

① For additional legend options, contact your local Eaton Sales Representative.

Rockette Series

Contents

Description	*Page*
Rockette—General Purpose AC Rated	
Standard Rockette Switches	**V11-T2-57**
Sealed Rockette Switches	**V11-T2-58**
8058 Series Sealed Rockette Switches	**V11-T2-59**
Technical Data and Specifications	**V11-T2-60**
Dimensions	**V11-T2-60**

Product Description

These rocker switches offer the widest selection of features available, providing the design flexibility needed to fill the requirements of a variety of applications. They are available in two versions: standard and sealed.

The Sealed Rockette features a silicone rubber seal that protects contacts and mechanisms. All switches resist contaminants such as sand, dust and moisture with both a base-to-frame seal and an actuator seal. Non-illuminated and illuminated versions are available. For Sealed Rockette selection, see table on **Page V11-T2-58**.

Features and Benefits

- Voltages
  - 110 Vac neon
  - 14 Vdc and 28 Vdc

On the illuminated version, the lamp is wired to operate in conjunction with the switch on single-throw circuit; on double-throw circuits, the lamp is independent of the switch

- Mounting

Flush (two screws), sub-panel and snap-in mounting

- Snap-in Mounting

Convenient front panel or sub-panel snap-in mounting

Available in single- and two-pole non-illuminated or in single-pole illuminated Rockette switches. Contact your local Eaton Sales Representative for three- and four-pole circuits

Unless otherwise noted, all switches with snap-in mounting are UL Recognized and CSA Certified

Options

Standard and Sealed

- Additional colors of rockers and bezels are available
- Hot stamped or pad printed legends on rocker and bezel
- Paddle actuators
- Single rocker operator on two- and three-pole circuits
- Dry circuits capabilities
- Special ratings
- Reversing jumpers
- Dead back cover (two-pole base) with wire leads
- Special circuits
- Printed circuit terminals and other terminal types
- Metal snap-in bezels
- Foam dust seal

Sealed Only

- Special voltage bulbs
- Industry standard connector available
- Two-pole illuminated circuit

Standards and Certifications

- UL Recognized
- CSA Certified
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Standard Rockette Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

2

Catalog Number Selection

How To Order—Standard Rockette Switches

Example: **8132K21** → **E 6 T 50**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number ②	Circuit Number ④
6A, 125 Vac 3A, 250 Vac	2PST	ON	NONE	OFF	**8132K21** ③	C
	2PDT	ON ON MOM. ON MOM. ON	OFF NONE OFF OFF	ON ON MOM. ON ON	**8132K20** ③ **8132K22** ③ **8138K20** **8138K30**	D
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PST	ON MOM. ON	NONE NONE	OFF OFF	**8142K21** **8147K21**	C
	2PDT	ON ON MOM. ON MOM. ON	OFF NONE OFF OFF	ON ON MOM. ON ON	**8142K20** **8142K22** **8148K20** **8148K30**	D
1000W, 125 Vac 10A, 250 Vac	2PST	ON	NONE	OFF	**8150K21**	C
20A, 250 Vac	2PST	ON	NONE	OFF	**8155K21**	C
	2PDT	ON ON	OFF NONE	ON ON	**8155K20** **8155K22**	D
6A, 125 Vac 3A, 250 Vac	4PDT	ON	OFF	ON	**8130K20** ③	F
15A, 125 Vac 10A, 250 Vac ① 3/4 hp, 250 Vac	4PST	ON	NONE	OFF	**8140K21**	E
	4PDT	ON ON	OFF NONE	ON ON	**8140K20** **8140K22**	F

Code letters and/or numbers.
Add to base circuit number.

Mounting Frame ⑤

All Except 8130K20, 8140K20, 8140K21, 8140K22

- **E** = Mounting, 2-pole
- **F** = Mounting, 2-pole
- **G** = Mounting, 2-pole
- **W** = Snap-in
- **X** = Snap-in
- **Y** = Snap-in
- **Z** = Snap-in

8130K20, 8140K20, 8140K21, 8140K22

- **H** = Mounting, 4-pole

Rocker/Paddle Style ⑥

All Except 8130K20, 8140K20, 8140K21, 8140K22

- **6** = 2-pole
- **7** = 2-pole
- **20** = 2-pole ⑦
- **37** = 2-pole ⑧

8130K20, 8140K20, 8140K21, 8140K22

- **14** = 4-pole

Rocker/Paddle Color

- **M** = White
- **T** = Red
- **V** = Black

Terminal Type

- **50** = Screw
- **51** = Solder lugs
- **52** = 0.250 in spade

Notes

① These switches also have marked rating of 7A at 277 Vac and 3/4 hp at 277 Vac.
② Add code letters and numbers for mounting frame, rocker style and color and terminal construction.
③ Also rated 2A, 277 Vac; 2.5A, L125 Vac.
④ See Circuit Diagrams on **Page V11-T2-80**.
⑤ See Frame Styles on **Page V11-T2-61**.
⑥ See Rocker Styles on **Page V11-T2-63**.
⑦ Cannot be used with snap-in mounting bezel.
⑧ Recommended for use with snap-in mounting.

Sealed Rockette Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Sealed Rockette Switches, Non-Illuminated

Example: **8055K23** → **E 2 V**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number Terminal Type 0.250 in Spade	Solder Lugs	Screw	Circuit Number ①
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	8055K23	8055K24	8055K25	A
	1PDT	ON	OFF	ON	8055K20	8055K21	8055K22	B
		ON	NONE	ON	8055K26	8055K27	8055K28	
		MOM. ON	OFF	ON	8055K29	8055K30	8055K31	
		MOM. ON	OFF	MOM. ON	8055K32	8055K33	8055K34	
	2PST	ON	NONE	OFF	8055K43	8055K44	8055K45	C
	2PDT	ON	OFF	ON	8055K40	8055K41	8055K42	D
		ON	NONE	ON	8055K46	8055K47	8055K48	
		MOM. ON	OFF	ON	8055K49	8055K50	8055K51	
		MOM. ON	OFF	MOM. ON	8055K52	8055K53	8055K54	

Code letters and/or numbers. Add to base circuit number.

Mounting Frame ②
- **E** = Standard
- **F** = Standard
- **L** = Standard
- **X** = Snap-in
- **W** = Snap-in
- **Z** = Snap-in

Rocker Style ③
- **1** = Two-face serrated
- **2** = Three-face smooth
- **7** = Concave

Rocker Color
- **M** = White
- **V** = Black

How To Order—Sealed Rockette Switches, Illuminated

Example: **8057K23** → **E 1 5 V 1**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number Terminal Type 0.250 in Spade	Solder Lugs	Screw	Circuit Number ①
15A, 125 Vac 10A, 250 Vac	1PST	ON	NONE	OFF	8057K23	8057K24	8057K25	G
	1PDT	MOM. ON	OFF	ON	8057K29	8057K30	8057K31	H

Code letters and/or numbers. Add to base circuit number.

Mounting Frame ②
- **E** = Standard
- **F** = Standard
- **L** = Standard
- **X** = Snap-in
- **W** = Snap-in
- **Z** = Snap-in

Bulb Voltage
- **1** = Neon 110V
- **3** = 14 Vdc filament
- **4** = 28 Vdc filament

Rocker Style ③
- **3** = Serrated w/1 lens
- **5** = Smooth w/1 lens
- **8** = Concave w/1 lens

Rocker Color
- **M** = White
- **V** = Black

Lens Color
- **1** = Clear
- **2** = Red
- **4** = Amber
- **5** = Blue

Notes

① See Circuit Diagrams on **Page V11-T2-80**.
② See Frame Styles on **Page V11-T2-61**.
③ See Rocker Styles on **Page V11-T2-63**.

8058 Series Sealed Rockette Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

2

Catalog Number Selection

How To Order—Sealed Rockette Switches, Non-Illuminated

Example: **8058K28** → **Z 7 V**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number Terminal Type 0.250 in Spade	Solder Lugs	Screw ①	Circuit Number ②
30A, 125 Vac 25A, 250 Vac 3/4 hp, 125 Vac 2 hp, 250 Vac	1PST	ON	NONE	OFF	N/A	N/A	**8058K10**	A
	1PDT	ON	OFF	ON	N/A	N/A	**8058K22**	B
	1PDT	ON	NONE	ON	N/A	N/A	**8058K28**	B
	1PDT	MOM ON	OFF	ON	N/A	N/A	**8058K31**	B
	1PDT	MOM ON	OFF	MOM ON	N/A	N/A	**8058K34**	B

Code letters and/or numbers. Add to base circuit number.

Mounting Frame ③
- **E** = Standard ears up with two tapped holes
- **F** = Standard flat with two holes
- **X** = Metal snap-in
- **Z** = Standard plastic snap-in
- **W** = Contour plastic snap-in
- **L** = Standard ears up with two holes

Rocker Style ④
- **1** = Two-face serrated
- **2** = Three-face smooth
- **7** = Concave

Rocker Color
- **M** = White
- **T** = Red
- **V** = Black

8058K22E7V

8058K10X7T

8058K28Z7V

Notes

① Supplied with terminal screws, (Cat. No. 11-8616), unassembled.
② See Circuit Diagrams on **Page V11-T2-80**.
③ See Frame Styles on **Page V11-T2-61**.
④ See Rocker Styles on **Page V11-T2-63**.

Technical Data and Specifications

Rockette—General Purpose AC Rated

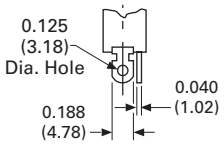
Description	Specification
Ratings and circuits	See selection tables on **Pages V11-T2-57** to **V11-T2-59**. Switch ratings at 125 Vac also apply to 28 Vdc.
Contact mechanism	Slow-make/slow-break contact mechanism. Butt action contact mechanism designed specifically for use on AC and low voltage DC applications
Contact material 3–6A rated	Movable—Silver-plated copper Stationary—Silver-plated copper
10–15A rated	Movable—Silver-plated copper with fine or coin silver contact face button Stationary—Copper with fine or coin silver contact face button
20A rated	Movable—Silver-plated copper with cad-oxide contact face button Stationary—Copper with cad-oxide contact face button
1000W rated	Movable—Checon SK015B contact material welded to contactor Stationary—Copper with cad-oxide contact face button
Terminal types	Screw terminals—Brass designed to accept #6-32 x 3/16 binding head screws (Cat. No. 811-2), furnished unassembled Solder lug—0.250 in (6.35 mm) spade
Termination material	Screw and spade—Brass Solder— Tintillate-plated brass
Lamp voltages	110 Vac neon 14 Vdc and 28 Vdc
Mounting	Flush (two screws), sub-panel and snap-in mounting

Dimensions

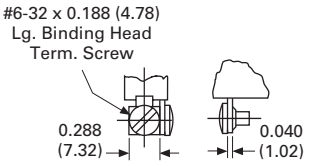
Base Standard Rockette Switch Dimensions

Approximate Dimensions in Inches (mm)

Terminals



Solder Lug Terminal
Hot Tin Dipped



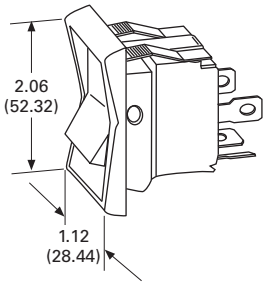
Screw Terminal

Snap-In Mounting Dimensions

Approximate Dimensions in Inches (mm)

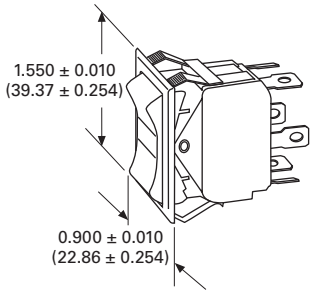
Type W

Contoured Snap-In Bezel, Two-Pole Base



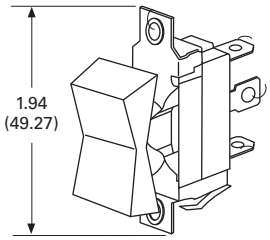
Type X

Snap-In Bezel, Single-, Two- and Four-Pole Bases



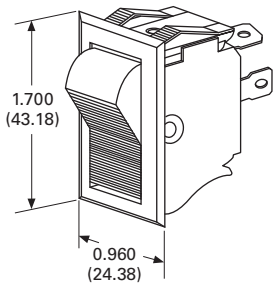
Type Y

Sub-Panel Snap-In Mounting Bezel, Single- and Two-Pole Bases

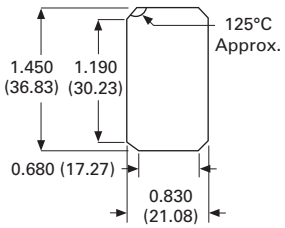


Type Z

Snap-In Mounting Bezel, Two-Pole Base Only



Panel Opening



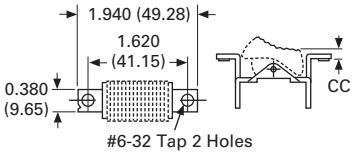
Panel Thickness
0.040–0.140 (1.02–3.56)

Frame Types and Rocker/Paddle Styles for Standing Switches—Non-Illuminated Dimensions

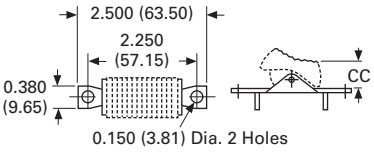
Approximate Dimensions in Inches (mm)

Two-Pole Mounting Frame Types

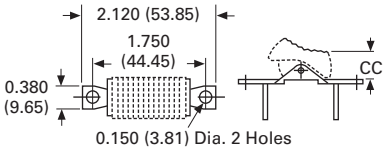
Type E



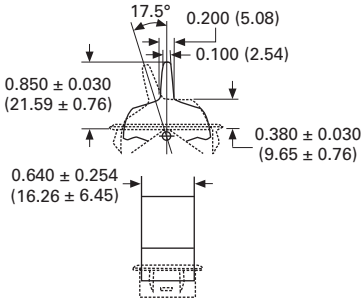
Type F



Type G



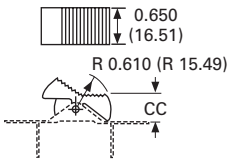
Style 37 with Type X



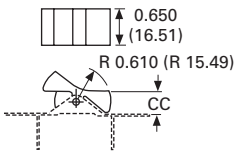
Mounting Type Recommended with This Style

Two-Pole Rocker Styles

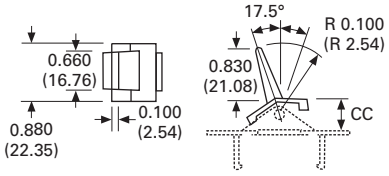
Style 6



Style 7

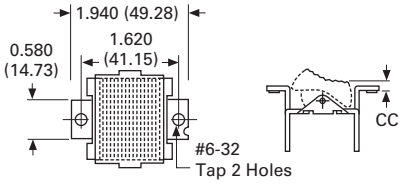


Style 20



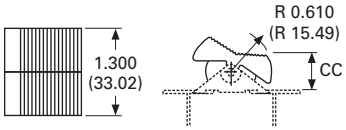
Four-Pole Mounting Frame Type

Type H



Four-Pole Rocker Styles

Style 14



Reference Dimension "CC"—Top of Frame to Bottom of Terminal

Rocker Style	Dimension in Inches (mm) Mounting Frame Type Two-Pole Type E	Type F	Type G	Recommended Panel Opening
6	0.08 (2.03)	0.42 (10.67)	0.42 (10.67)	0.69 x 1.25 (17.53 x 31.75)
7	0.08 (2.03)	0.42 (10.67)	0.42 (10.67)	0.69 x 1.25 (17.53 x 31.75)
20	N/A	0.42 (10.67)	0.42 (10.67)	N/A
37	N/A	N/A	N/A	N/A

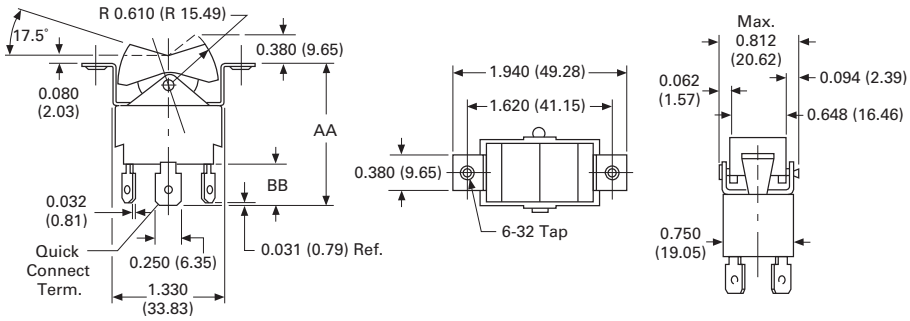
Rocker Style	Dimension in Inches (mm) Mounting Frame Type Four-Pole Type H	Recommended Panel Opening
14	0.08 (2.03)	1.34 x 1.25 (34.04 x 31.75)

Base Sealed Rockette Switch Dimensions

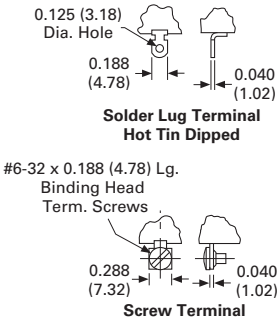
Approximate Dimensions in Inches (mm)

2

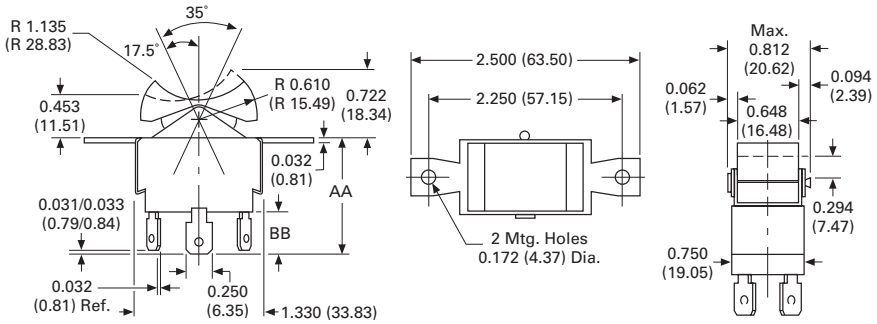
Sealed Two-Pole—Mounting Frame Type E—Rocker Style 1



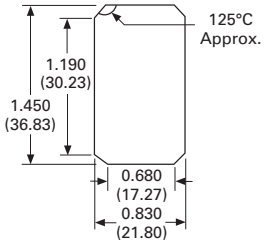
Terminals



Sealed Two-Pole—Mounting Frame Type F—Rocker Style 1



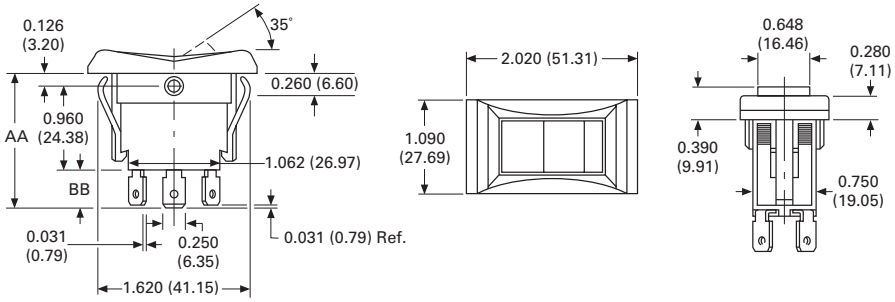
Panel Opening



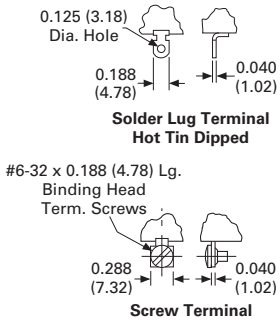
Snap-in Mounting Frame Dimensions

Approximate Dimensions in Inches (mm)

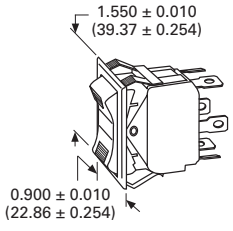
Sealed Two-Pole Switch—Mounting Frame Type W—Rocker Stye 7



Terminals

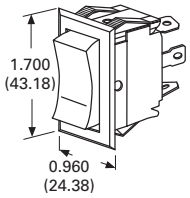


Type X



Snap-In Bezel

Type Z



Snap-In Mounting Bezel

Reference Dimensions "AA" and "BB" in Inches (mm) ①

Terminal Type	Dimension "AA" (Two-Pole) E Frame	F Frame	L Frame	W Frame	X Frame	Z Frame	Dimension "BB" All Frames
Screw	1.39 (35.33)	1.05 (26.62)	1.39 (35.33)	1.37 (34.82)	1.39 (35.34)	1.37 (34.82)	0.30 (7.62)
Solder lug	1.36 (34.57)	1.02 (25.86)	1.36 (34.57)	1.34 (34.06)	1.36 (34.51)	1.34 (34.06)	0.27 (6.86)
0.250 in spade	1.53 (38.89)	1.19 (30.18)	1.53 (38.89)	1.51 (38.38)	1.53 (38.89)	1.51 (38.38)	0.44 (11.18)
8058 Screw ②	1.509 (38.33)	1.145 (29.08)	1.509 (38.33)	1.808 (45.92)	1.627 (41.33)	1.528 (38.81)	0.460 (11.68)

Notes

① Dimension "AA"—Top of frame to bottom of terminal; "BB"—from bottom of base to bottom of terminal.

② #8-32 x 1/4 Phillips screw.

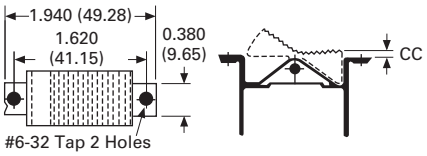
Dimensions for Frame Type and Rocker Styles—Sealed Switches

Approximate Dimensions in Inches (mm)

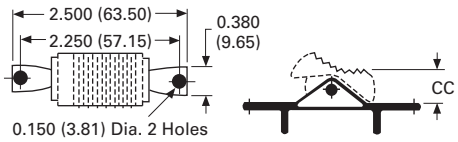
Non-Illuminated

Single- and Two-Pole Mounting Frame Types

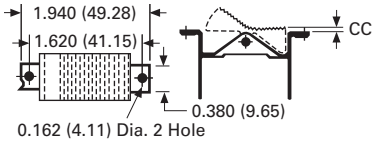
Type E



Type F

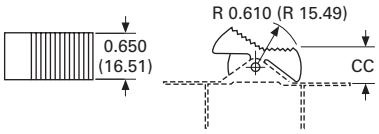


Type L

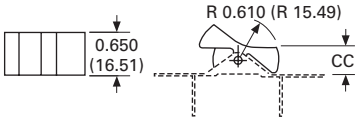


Single- and Two-Pole Rocker Styles

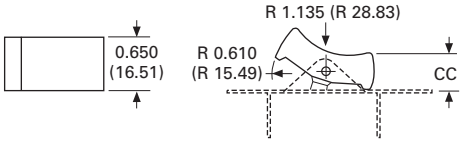
Style 1



Style 2



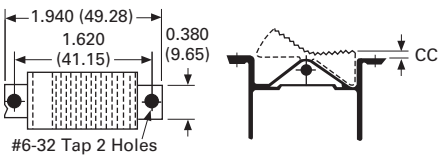
Style 7



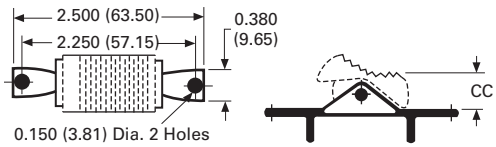
Illuminated

Single-Pole Mounting Frame Types

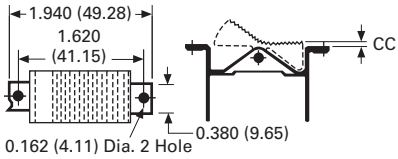
Type E



Type F

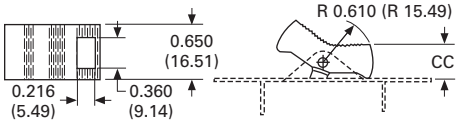


Type L

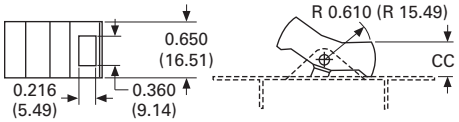


Single-Pole Rocker Styles

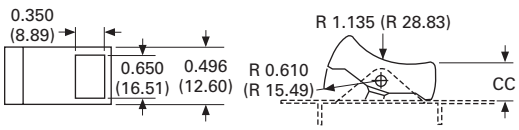
Style 3



Style 5



Style 8



Reference Dimension "CC"—Top of Frame to Rocker Face

Rocker Style	Dimension in Inches (mm) Mounting Frame Type Single- and Two-Pole (Non-Illuminated) E Frame	F Frame	L Frame	Recommended Panel Opening
1	0.08 (2.03)	0.42 (10.67)	0.08 (2.03)	0.69 x 1.25 (17.53 x 31.75)
2	0.08 (2.03)	0.42 (10.67)	0.08 (2.03)	0.69 x 1.25 (17.53 x 31.75)
7	0.11 (2.79)	0.45 (11.43)	0.11 (2.79)	0.69 x 1.25 (17.53 x 31.75)

Rocker Style	Dimension in Inches (mm) Mounting Frame Type Single- and Two-Pole (Illuminated) E Frame	F Frame	L Frame	Recommended Panel Opening
3	0.08 (2.03)	0.42 (10.67)	0.08 (2.03)	0.69 x 1.25 (17.53 x 31.75)
5	0.08 (2.03)	0.42 (10.67)	0.08 (2.03)	0.69 x 1.25 (17.53 x 31.75)
8	0.11 (2.79)	0.45 (11.43)	0.11 (2.79)	0.69 x 1.25 (17.53 x 31.75)

8006/8007 Series

Contents

Description	*Page*
8006/8007—EURO SR	
Catalog Number Selection	**V11-T2-65**
Technical Data and Specifications	**V11-T2-66**
Dimensions	**V11-T2-66**

Product Description

Field-proven in America's roughest off-road applications, the standard size EURO SR is one tough and reliable rocker switch. Available with the complete range of rugged single- and two-pole, illuminated or non-illuminated circuits.

The EURO SR Series offers snap-in mounting and can be provided with a durable silicone seal that resists dust and moisture.

All EURO SR switches are molded in an aesthetically pleasing matte finish and operate with a crisp tactile feel, allowing for easy actuation.

The EURO SR will accept loads up to 15A. Terminal numbers are stamped on base for easy identification.

Features and Benefits

- Contact Mechanism

Slow-make/slow-break contact mechanism. Butt action contact mechanism designed specifically for use on AC and low voltage DC applications.

- Rocker Material

Thermoplastic rocker actuators. Different colors are available. Rocker and bezel are a high-grade nylon supplied with matte finish.

- Lamps

Five lamp voltages—14 Vdc, 18 Vdc, 28 Vdc, 125 Vac neon and 250 Vac neon—are offered as standard. For additional lamp voltages, please contact your local Eaton Sales Representative.

- Mounting Means

Snap-in mounting with plastic bezel.

- Seal

Available in sealed and non-sealed versions. Sealed devices are furnished with silicone rubber seal, providing moisture and dust resistance with an IP67 rating.

Options

- Additional colors of rockers and bezels are available
- Special circuits
- Special ratings
- Pad-printed legends on rocker and bezel
- Special voltage bulbs
- Dry circuit capabilities
- Foam dust seal
- Reversing jumpers
- Printed circuit terminals and other terminal types
- Wire leads
- Dead back cover
- Palm guard
- Industry standard connector: 28-3426
- EURO SR panel plug: 53-3318

For information on optional features, contact your local Eaton Sales Representative.

Lens Options

- Lens Part Numbers (if ordered separately)

Green 28-5415
Amber 28-5415-2
Red. 28-5415-3
Blue 28-5415-4
White 28-5415-5

Standards and Certifications

- UL Recognized and recognized component for Canada File E2702
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

EURO SR Standard Size Euro-Style Rocker Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—EURO SR, Non-Illuminated

Example: **8006K23** → **N 1 T 1**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Terminal Type 0.250 in Spade	Solder Lugs	Screw
10A, 250 Vac 15A, 125 Vac 15A, 28 Vdc	1PST	2-3 2-3 ①	NONE	OFF	**8006K23** **8006K35**	**8006K24** **8006K36**	**8006K25** **8006K37**
	1PDT	2-3 2-3 2-3 ① 2-3 ①	OFF NONE OFF OFF	2-1 2-1 2-1 2-1 ①	**8006K20** **8006K26** **8006K29** **8006K32**	**8006K21** **8006K27** **8006K30** **8006K33**	**8006K22** **8006K28** **8006K31** **8006K34**
	2PST	2-3, 5-6 2-3, 5-6 ①	NONE	OFF	**8006K43** **8006K55**	**8006K44** **8006K56**	**8006K45** **8006K57**
	2PDT	2-3, 5-6 2-3, 5-6 2-3, 5-6 ① 2-3, 5-6 ①	OFF NONE OFF OFF	2-1, 5-4 2-1, 5-4 2-1, 5-4 2-1, 5-4 ①	**8006K40** **8006K46** **8006K49** **8006K52**	**8006K41** **8006K47** **8006K50** **8006K53**	**8006K42** **8006K48** **8006K51** **8006K54**
	2PDT ②	2-3, 5-6	5-6	OFF	**8006K58**	**8006K59**	**8006K60**
	2PDT ③	5-6	5-3	5-1	**8006K61**	**8006K62**	**8006K63**

Code letters and/or numbers. Add to base circuit number.

Mounting Frame Color /Style
- **N** = Black/standard
- **T** = Black/top half palm guard
- **B** = Black/bottom half palm guard

Rocker Style
- **1** = Two-face

Rocker Color
- **M** = White
- **T** = Red
- **V** = Black

Seal Option
- **1** = Non-sealed
- **2** = Sealed

How To Order—EURO SR, Illuminated

Example: **8007K23** → **N 4 1 3 T 2 1**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Terminal Type 0.250 in Spade	Solder Lugs	Screw
10A, 250 Vac 15A, 125 Vac 15A, 28 Vdc	1PST	OFF NONE	NONE OFF	2-1 2-1①	**8007K23** **8007K35**	**8007K24** **8007K36**	**8007K25** **8007K37**
	1PDT ④	2-3 2-3 2-3 ① 2-3 ①	OFF NONE OFF OFF	2-1 2-1 2-1 2-1 ①	**8007K20** **8007K26** **8007K29** **8007K32**	**8007K21** **8007K27** **8007K30** **8007K33**	**8007K22** **8007K28** **8007K31** **8007K34**
	2PST	OFF 2-3, 5-6 ①	NONE OFF	2-1, 5-4 NONE	**8007K43** **8007K55**	**8007K44** **8007K56**	**8007K45** **8007K57**
	2PDT ④⑤	2-3, 5-6 2-1, 5-4 2-3, 5-6 ① 2-3, 5-6 ①	OFF NONE OFF OFF	2-1, 5-4 2-3, 5-6 2-1, 5-4 2-1, 5-4 ①	**8007K40** **8007K46** **8007K49** **8007K52**	**8007K41** **8007K47** **8007K50** **8007K53**	**8007K42** **8007K48** **8007K51** **8007K54**

Code letters and/or numbers. Add to base circuit number.

Mounting Frame Color /Style
- **N** = Black/standard
- **T** = Black/top half palm guard
- **B** = Black/bottom half palm guard

Bulb Voltage
- **1** = 125V neon ⑦
- **2** = 250V neon ⑦
- **3** = 14 Vdc ⑧
- **4** = 28 Vdc ⑧
- **7** = 18 Vdc ⑧

Lamp Wiring
- **1** = Dependent
- **2** = Independent

Rocker Style
- **3** = Two-face w/1 lens ⑥
- **4** = Two-face w/2 lenses ④

Rocker Color
- **M** = White
- **T** = Red
- **V** = Black

Lens Color
- **1** = White
- **2** = Red
- **3** = Green
- **4** = Amber
- **5** = No lens
- **6** = Blue
- **7** = Clear

Seal Option
- **1** = Non-sealed
- **2** = Sealed

Notes

① Momentary contact.
② 3A at 250 Vac, 6A at 125 Vac.
③ 1/4 hp at 125–250 Vac.
④ All double-throw circuits, both 1PDT and 2PDT, provided with two lamps and two lenses (Rocker Style 4). When lamp is wired independent of circuit for 1PDT switches, device is supplied with lamp centered in open-pole of base.
⑤ Not standard with lamp wired independent of circuit. All 2PDT switches must be dependent on circuit and use Rocker Style 4.
⑥ Not provided standard for double-throw circuits, both 1PDT and 2PDT. Must use Rocker Style 4 for all double-throw switches.
⑦ Available on single-pole versions only.
⑧ 14 Vdc, 18 Vdc and 28 Vdc bulbs are not UL, CSA when bulb is wired dependent to switch circuit.

Technical Data and Specifications

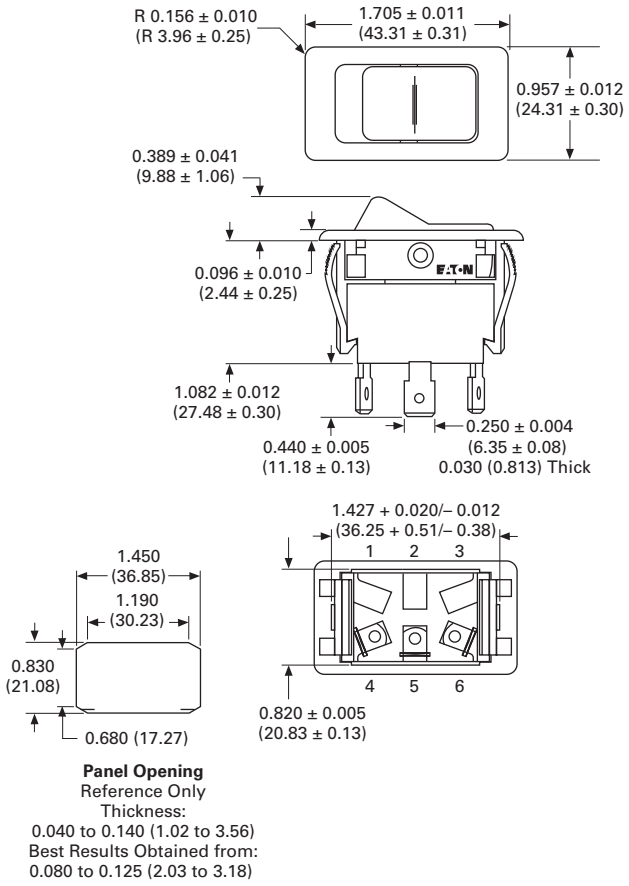
8006/8007—EURO SR

Description	Specification
Ratings	15A at 125 Vac 10A at 250 Vac 3/4 hp at 250 Vac (hp rating does not apply to lighted switches) Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	1PST, 1PDT, 2PST and 2PDT Maintained and momentary action
Mechanical life	Maintained—100,000 operations, minimum Momentary—25,000 operations, minimum
Electrical life	25,000 operations minimum at full load
Terminal types	Standard 0.250 in (6.35 mm) Spade—Brass Screw—Brass (terminal screws provided unassembled) Solder—Tintillate-plated brass
Base material	Thermoset molding material
Rocker material	Thermoplastic rocker actuators
Dielectric	1000V rms, minimum
Seal level	IP67 (with optional seal)
Mounting means	Snap-in mounting with plastic bezel
Operating temperature	–40° to 185°F (–40° to 85°C)

Dimensions

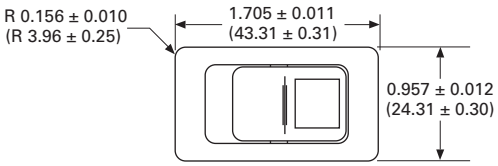
Approximate Dimensions in Inches (mm)

Non-Illuminated

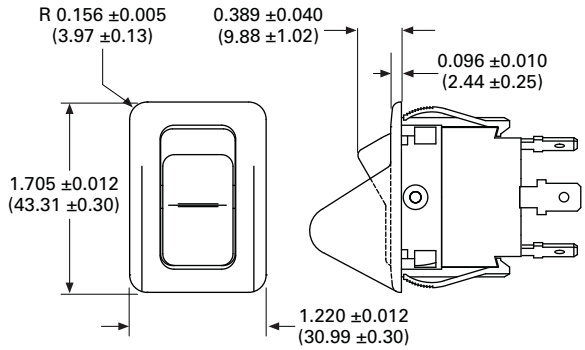


Panel Opening
Reference Only
Thickness:
0.040 to 0.140 (1.02 to 3.56)
Best Results Obtained from:
0.080 to 0.125 (2.03 to 3.18)

Illuminated



Palm Guard



8004/8005–Euro Full Size

Contents

Description	*Page*
8004/8005—Euro Full Size	
Catalog Number Selection	**V11-T2-68**
Technical Data and Specifications	**V11-T2-69**
Dimensions	**V11-T2-69**

Product Description

Eaton's 8004 and 8005 Euro-Look Series features matte finish European styling and snap-in mounting. These durable switches, field-tested in the most demanding truck and marine applications, are available with a variety of standard actuator options. Options include concave, two-face, illuminated, non-illuminated and the recessed feature, which allows placement of your label on the face of our rocker. All switches in this rugged lineup can be fitted with a silicone rubber seal to provide moisture and dust-resistance. Additionally, these switches can be gang-mounted into a single panel opening. Panel blanks are also available.

Features and Benefits

- Contact Mechanism

Slow-make/slow-break contact mechanism. Butt action contact mechanism designed specifically for use on AC and low voltage DC applications.

- Rocker Material

Custom styled, multi-colored thermoplastic rocker actuators. The rocker and bezel are supplied with a matte finish.

- Lamps

Five lamp voltages—14 Vdc, 18 Vdc, 28 Vdc, 125 Vac neon and 250 Vac neon—are offered as standard. For additional lamp voltages, please contact your local Eaton Sales Representative.

- Mounting Means

Snap-in mounting with plastic bezel.

- Seal

Available in sealed and non-sealed versions. Sealed devices are furnished with a silicone rubber seal providing moisture and dust resistance with an IP54 rating.

Options

- Additional colors of rockers and mounting bezels are available
- Special circuits
- Special ratings
- Gold contacts
- Dry circuit capabilities
- Pad-printed legends on rocker and bezel
- Special lamp voltages
- Foam dust seal
- Reversing jumpers
- Printed circuit terminals and other terminal types
- Dead back cover (two-pole base) with wire leads
- Matching indicators
- Industry standard connector: 28-3426
- Full size Euro-Look gang mounting systems
- Full size Euro-Look panel plugs: 17-19544-2

For information on optional features, contact your local Eaton Sales Representative.

Lens Options

- Lens Part Numbers (if ordered separately)

8005 Two-Face

Green	28-3425
Amber	28-3425-2
Red	28-3425-3
Blue	28-3425-4
White	28-3425-5

8005 Concave

Red	28-5148
Green	28-5148-2
Amber	28-5148-3
Blue	28-5148-4
Clear	28-5148-5

Standards and Certifications

- UL Recognized and recognized component for Canada File E2702
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Full Size, Euro-Look Rocker Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—Full Size Euro, Non-Illuminated

Example: **8004K23** → **N 1 T 1**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Terminal Type 0.250 in Spade	Solder Lugs	Screw
10A, 250 Vac 15A, 125 Vac 15A, 28 Vdc	1PST	2-3 2-3 ①	NONE	OFF	8004K23 8004K35	8004K24 8004K36	8004K25 8004K37
	1PDT	2-3 2-3 2-3 ① 2-3 ①	OFF NONE OFF OFF	2-1 2-1 2-1 2-1 ①	8004K20 8004K26 8004K29 8004K32	8004K21 8004K27 8004K30 8004K33	8004K22 8004K28 8004K31 8004K34
	2PST	2-3, 5-6 2-3, 5-6 ①	NONE	OFF	8004K43 8004K55	8004K44 8004K56	8004K45 8004K57
	2PDT	2-3, 5-6 2-3, 5-6 2-3, 5-6 ① 2-3, 5-6 ①	OFF NONE OFF OFF	2-1, 5-4 2-1, 5-4 2-1, 5-4 2-1, 5-4 ①	8004K40 8004K46 8004K49 8004K52	8004K41 8004K47 8004K50 8004K53	8004K42 8004K48 8004K51 8004K54
	2PDT ②	2-3, 5-6	5-6	OFF	8004K58	8004K59	8004K60
	2PDT ③	5-6	5-3	5-1	8004K61	8004K62	8004K63

Code letters and/or numbers. Add to base circuit number.

Mounting Frame Color
- **N** = Black
- **M** = White
- **T** = Red
- **G** = Gray

Rocker Style
- **0** = Recessed
- **1** = Two-face
- **6** = Paddle
- **7** = Concave

Rocker Color
- **M** = White
- **T** = Red
- **V** = Black
- **G** = Gray

Seal Option
- **1** = Non-sealed
- **2** = Sealed

How To Order—Full Size Euro, Illuminated

Example: **8005K23** → **N 4 1 3 T 2 1**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Terminal Type 0.250 in Spade	Solder Lugs	Screw
10A, 250 Vac 15A, 125 Vac 15A, 28 Vdc	1PST	OFF NONE	NONE OFF	2-1 2-1 ①	8005K23 8005K35	8005K24 8005K36	8005K25 8005K37
	1PDT ④	2-3 2-3 2-3 ① 2-3 ①	OFF NONE OFF OFF	2-1 2-1 2-1 2-1 ①	8005K20 8005K26 8005K29 8005K32	8005K21 8005K27 8005K30 8005K33	8005K22 8005K28 8005K31 8005K34
	2PST	OFF 2-3, 5-6 ①	NONE OFF	2-1, 5-4 NONE	8005K43 8005K55	8005K44 8005K56	8005K45 8005K57
	2PDT ④⑤	2-3, 5-6 2-1, 5-4 2-3, 5-6 ① 2-3, 5-6 ①	OFF NONE OFF OFF	2-1, 5-4 2-3, 5-6 2-1, 5-4 2-1, 5-4 ①	8005K40 8005K46 8005K49 8005K52	8005K41 8005K47 8005K50 8005K53	8005K42 8005K48 8005K51 8005K54

Code letters and/or numbers. Add to base circuit number.

Mounting Frame Color
- **N** = Black
- **M** = White
- **T** = Red
- **G** = Gray

Bulb Voltage
- **1** = 125V neon ⑦
- **2** = 250V neon ⑦
- **3** = 14 Vdc ⑧
- **4** = 28 Vdc ⑧
- **7** = 18 Vdc ⑧

Lamp Wiring
- **1** = Dependent
- **2** = Independent

Rocker Style
- **2** = Recessed w/1 lens ⑥
- **3** = Two-face w/1 lens ⑥
- **4** = Two-face w/2 lenses ④
- **5** = Recessed w/2 lenses ④
- **8** = Concave w/1 lens ⑥
- **9** = Concave w/2 lenses ④

Rocker Color
- **M** = White
- **T** = Red
- **V** = Black
- **G** = Gray

Lens Color
- **2** = Red
- **3** = Green
- **4** = Amber
- **5** = No lens
- **6** = Blue

Seal Option
- **1** = Non-sealed
- **2** = Sealed

Notes

① Momentary contact.
② 3A at 250 Vac, 5A at 125 Vac.
③ 1/4 hp at 125–250 Vac.
④ All double-throw circuits, both 1PDT and 2PDT, provided with two lamps and two lenses (Rocker Style 4). When lamp is wired independent of circuit for 1PDT switches, device is supplied with lamp centered in open-pole of base.
⑤ Not standard available with lamp wired independent of circuit. All 2PDT switches must be dependent on circuit and use Rocker Style 4, 5 or 9.
⑥ Not provided standard for double-throw circuits, both 1PDT and 2PDT. Must use Rocker Style 4, 5 or 9 for all double-throw switches.
⑦ Available on single-pole versions only.
⑧ 14 Vdc and 28 Vdc bulbs are not UL, CSA when bulb is wired dependent to switch circuit.

Technical Data and Specifications

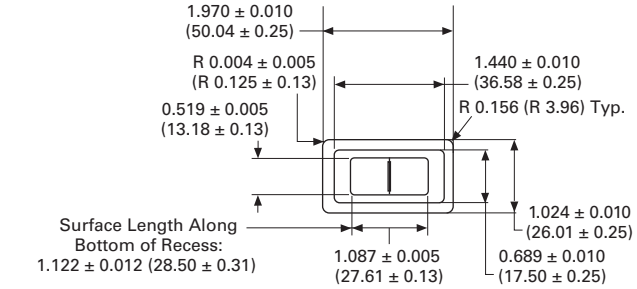
8004/8005—Euro Full Size

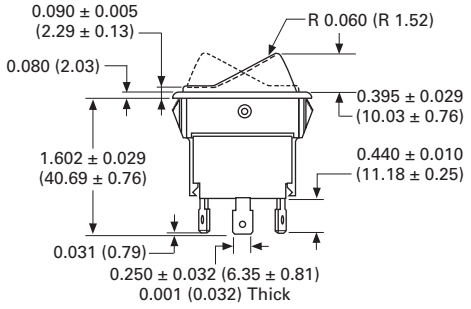
Description	Specification
Ratings	15A at 125 Vac; 10A at 250 Vac; 3/4 hp at 250 Vac (hp rating does not apply to lighted switches) Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	1PST, 1PDT, 2PST and 2PDT; Maintained and momentary action
Contact material	Movable—Silver-plated copper with fine or coin silver contact face button Stationary—Copper with fine or coin silver contact face button
Mechanical life	Maintained—100,000 operations, minimum Momentary—25,000 operations, minimum
Electrical life	25,000 operations minimum at full load
Terminal types	Standard 0.250 in (6.35 mm) spade—Brass Screw—Brass #6-32 x 3/16 (terminal screws provided unassembled) Solder—Tintillate-plated brass; tintillate spade terminals
Base material	Thermoset molding material
Dielectric	1000V rms, minimum
Seal level	IP54 (with optional seal)
Mounting means	Snap-in mounting with plastic bezel

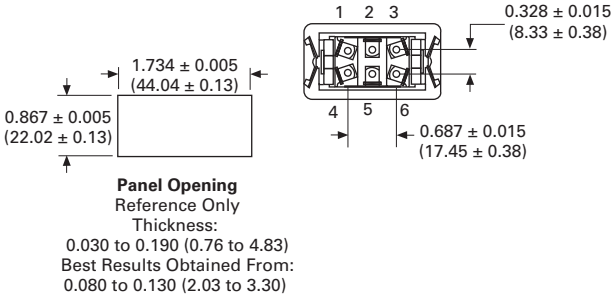
Dimensions

Approximate Dimensions in Inches (mm)

Non-Illuminated

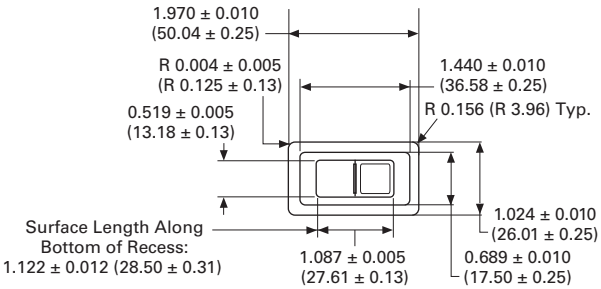


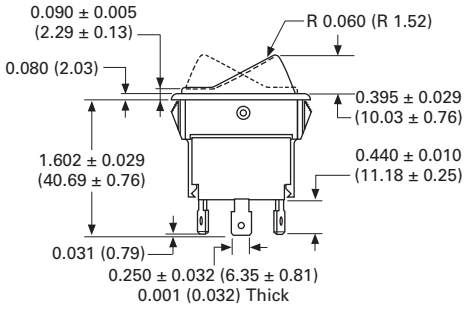


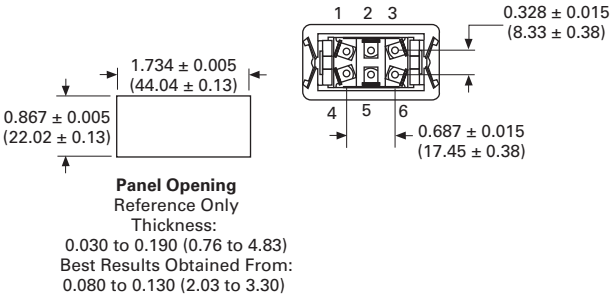


Panel Opening
Reference Only
Thickness:
0.030 to 0.190 (0.76 to 4.83)
Best Results Obtained From:
0.080 to 0.130 (2.03 to 3.30)

Illuminated







Panel Opening
Reference Only
Thickness:
0.030 to 0.190 (0.76 to 4.83)
Best Results Obtained From:
0.080 to 0.130 (2.03 to 3.30)

X Series Rockers—XR

Contents

Description	*Page*
X Series Rockers	
Catalog Number Selection	**V11-T2-71**
X Series Symbols Library	**V11-T2-72**
Technical Data and Specifications	**V11-T2-72**
Light Diagrams	**V11-T2-72**
Dimensions	**V11-T2-73**

Product Description

The Electrical Sector is pleased to offer X Series Rockers for use in outdoor applications to meet almost every market need.

These sleek style rockers are molded in a unique smooth matte finish. The bezel is also unique with a more modern rounded-rectangular design with an oval shaped rocker. X Series Rockers are available in single- and double-pole with various circuit options, LED illumination, and laser etching.

- Frames and actuator colors are black
- Switches provided with 0.025 spade quick connect terminals

Application Description

Market Applications

- Agriculture
- Bus
- Commercial
- Marine
- Specialty Vehicle
- Truck

Features and Benefits

- Seal

Standard IP56 Sealing per IES 60529.

- Illumination

Standard LED voltages offered include 14 Vdc and 125 Vac.

- Material

Frames are nylon and actuators are nylon with glass fiber with both meeting UL flame: 94HB. Terminals are silver plated brass.

- Mounting Means

Easy snap-in mounting with plastic bezel.

- Label

Eaton part number etched on switch for easy inventory management.

Options

- Panel plug: 53-3318
- Industry standard connector: 28-3426
- For information on optional features, contact your local Eaton Sales Representative.

Standards and Certifications

- UL Recognized and recognized component for Canada File E2702
- T85
- RoHS Compliant

c UL us RoHS COMPLIANT

Product Selection Guide

Seal	
Top	✔
Bottom	—
Panel	—

Actuator	
Rocker without bezel	—
Rocker with bezel	✔
Paddle	—
Snap-in lens	—
Locking	—
Label	—

Decorative	
Laser-etch	✔
Pad-print	—

Poles	
Single	✔
Double	✔
Four	—

Termination	
Spade	✔
Solder	—
Screw	—
Weld lugs	—

Illumination			
Incandescent 6 Vdc	—	Neon 110V	—
Incandescent 12 Vdc	—	Neon 125V	—
Incandescent 14 Vdc	—	Neon 250V	—
Incandescent 18 Vdc	—	14 Vdc LED	✔
Incandescent 24 Vdc	—	28 Vdc LED	—
Incandescent 28 Vdc	—	125 Vac LED	✔
		277 Vac LED	—

X Series Rockers

Catalog Number Selection

Standard rating 16A 125V, 10A 277V, 3/4 hp 277V
Also recommended for use in applications up to 21A 14 Vdc
IP56 per IES 60529

Product Selection

XR Series Rocker

X Series Rockers

Lamp Voltage	Switch Function	Light Circuit ③	Lens Color T. 1-4	T. 3-6	Switch Markings	Catalog Number
None	SPST OFF-ON	X = None	None	None	Int'l ON/OFF ④	**XRXAXXXNV1CU**
	SPST OFF-ON	X = None	None	None	ON/OFF ④	**XRXAXXXNV1DB**
14 Vdc LED	SPST OFF-ON	E =	None	Amber	None	**XR1AEX4NV1XX**
	SPST OFF-ON	E =	None	Green	None	**XR1AEX3NV1XX**
	SPST OFF-ON	E =	None	Red	None	**XR1AEX2NV1XX**
	SPDT ON-ON	G =	Amber	Amber	None	**XR1CG44NV1XX**
	SPDT ON-ON	G =	Green	Green	None	**XR1CG33NV1XX**
	SPDT ON-OFF-ON	G =	Amber	Amber	None	**XR1BG44NV1XX**
	SPDT ON-OFF-ON	G =	Green	Green	None	**XR1BG33NV1XX**
	SPDT (ON)-OFF-(ON)	G =	Amber	Amber	None	**XR1EG44NV1XX**
	SPDT (ON)-OFF-(ON)	G =	Green	Green	None	**XR1EG33NV1XX**
None	DPST OFF-ON ②	X = None	None	None	Int'l ON/OFF ④	**XRXMXXXNV1CU**
	DPST OFF-ON ②	X = None	None	None	ON/OFF ④	**XRXMXXXNV1DB**
	DPST OFF-ON	X = None	None	None	None	**XRXMXXXNV1XX**
	DPST ON-ON	X = None	None	None	None	**XRXNXXXNV1XX**
125 Vac LED ①	SPST OFF-ON	E =	None	Amber	None	**XR3AEX4NV1XX**
	SPST OFF-ON	E =	None	Green	None	**XR3AEX3NV1XX**
	SPST OFF-ON	E =	None	Red	None	**XR3AEX2NV1XX**
	SPDT ON-ON	G =	Amber	Amber	None	**XR3CG44NV1XX**
	SPDT ON-ON	G =	Green	Green	None	**XR3CG33NV1XX**
	SPDT ON-OFF-ON	G =	Amber	Amber	None	**XR3BG44NV1XX**
	SPDT ON-OFF-ON	G =	Green	Green	None	**XR3BG33NV1XX**
	SPDT (ON)-OFF-(ON)	G =	Amber	Amber	None	**XR3EG44NV1XX**
	SPDT (ON)-OFF-(ON)	G =	Green	Green	None	**XR3EG33NV1XX**

Notes

① Available in AC applications only.
② Double-pole not available illuminated; it is available laser etched.
③ See Circuit Diagrams on **Page V11-T2-72**.
④ See Symbols Library on **Page V11-T2-72**.

X Series Symbols Library

Inscription	Catalog Number Suffix
— O	CU

Inscription	Catalog Number Suffix
ON OFF	DB

Technical Data and Specifications

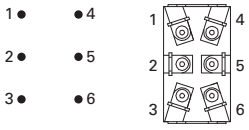
X Series

Description	Specification
Ratings	16A 125V, 10A 277V, 3/4 hp 277V; recommended 21A 14 Vdc or 10A 28 Vdc
Operating temperature	–4° to 176°F (–20° to 80°C)

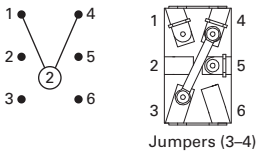
Light Diagrams

X Series

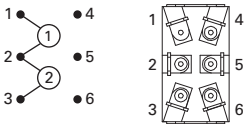
Light Circuit Letter	Functions
X	All



Light Circuit Letter	Functions
E	SPST



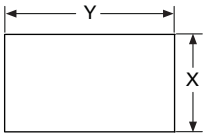
Light Circuit Letter	Functions
G	SPDT



Dimensions

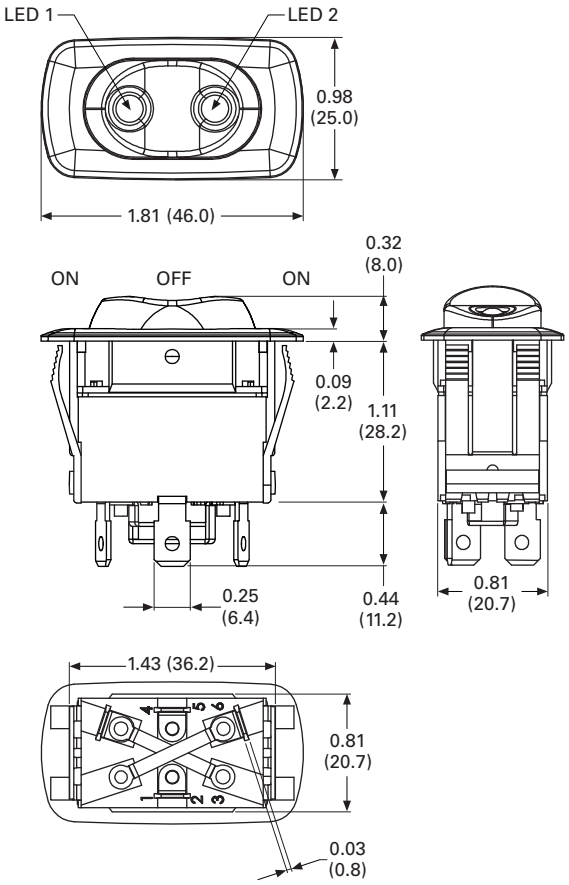
Approximate Dimensions in Inches (mm)

Mounting Hole



	Dimensions
Thickness	0.03–0.12 (0.75–3.0)
X	0.83 +0.01 (21.2 +0.1)
Y	1.46 + 0.01 (37.0 +0.1)

X Series



8064/8065 Series

Contents

Description	*Page*
8064/8065—ESPORT	
Catalog Number Selection	**V11-T2-75**
Technical Data and Specifications	**V11-T2-76**
Icon/Legend Selection	**V11-T2-76**
Dimensions	**V11-T2-77**

Product Description

The ergonomically designed ESPORT Series comes with a large, independent LED-illuminated indicator window that clearly identifies the switch's labeled function—your label or ours. The switch can be ordered with an LED illuminated actuator, as well. All ESPORT switches are molded in a clean matte finish and operate with a definite tactile feel. Actuation of the switch feels crisp. Also, ESPORT switches will accept loads up to15A. Due to the LED's long life, lamp replacement should not be necessary.

Tested in America's toughest truck applications, the ESPORT switch is reliable and durable and is available with a full range of rugged single- and two-pole circuits. It has an optional polarized lock-on connector. Spade switch terminals are tin-plated for long storage life.

Features and Benefits

- Contact Mechanism

Slow-make/slow-break contact mechanism. Butt action contact mechanism designed specifically for use on AC and low voltage DC applications.

- Rocker Material

Thermoplastic rocker actuators. Different colors are available. The rocker and the bezel are a high-grade nylon and are supplied with an aesthetically pleasing matte finish.

- Lamps

Durable, long-life LED illumination; 14 Vdc is standard. Integral indicator is illuminated by two independent green, yellow or red LEDs while the actuator is lighted using one dependent LED. For additional LED voltages and/or colors, contact your local Eaton Sales Representative.

- Mounting Means

Snap-in mounting with plastic bezel.

- Lenses

All switches can be ordered with either a frosted clear lens (Cat. No. 28-5555) or a translucent white lens (Cat. No. 28-5555-2). The clear lens will allow the maximum amount of diffused light to flow through your label or one of ours. The white lens is shipped unassembled to facilitate the addition of your engraved or pad-printed legend.

- Labels

The lens area of the integral indicator will accept a label 0.750 x 0.450 and 0.010 in (19.05 x 11.43 x 0.25 mm) thick. Our selection of standard labels with white legends on black poly-carbonate background can be found on **Page V11-T2-76**.

Options

- Additional colors of rockers and mounting bezels are available
- Special circuits
- Special ratings
- Dry circuit capabilities
- Pad-printed legends on lens, rocker and bezel
- Special indicator legend labels
- Special LEDs and LED voltages
- Special actuators
- Reversing jumpers
- Solder terminals and other terminal types
- Wire leads
- Polarized lock-on connector: 28-5558
- Full-size Euro-Look panel plugs: 17-19544-2

For information on optional features, contact your local Eaton Sales Representative.

Standards and Certifications

- UL Recognized and recognized component for Canada: File 2702
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

ESPORT Full-Size Rocker Switches

To determine complete catalog number, start with the appropriate base circuit number and add the appropriate code letters and/or numbers.

Catalog Number Selection

How To Order—ESPORT, Non-Illuminated

Example: **8064K10** → **L R Z 1 W 2**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number
15A, 125 Vac 15A, 28 Vdc	1PST	5-6	NONE	OFF	**8064K10**
		OFF	NONE	5-4	**8064K11**
	1PDT	2-3	OFF	2-1	**8064K14**
		2-3	NONE	2-1	**8064K12**
		2-3 ①	OFF	2-1	**8064K17**
		2-3 ①	OFF	2-1 ①	**8064K16**
	2PST	2-3, 5-6	NONE	OFF	**8064K20**
		OFF	NONE	2-1, 5-4 ①	**8064K21**
	2PDT	2-3, 5-6	OFF	2-1, 5-4	**8064K24**
		2-3, 5-6	NONE	2-1, 5-4	**8064K22**
		2-3, 5-6 ①	OFF	2-1, 5-4	**8064K27**
		2-3, 5-6 ①	OFF	2-1, 5-4	**8064K26**

Code letters and/or numbers. Add to base circuit number.

Rocker Style
S = 1 in paddle
L = 1.5 in paddle
B = Rocker

Indicator LED Color
R = Red
Y = Yellow
G = Green

Rocker LED Color
Z = None

LED Voltage
1 = 14 Vdc
2 = 28 Vdc

Rocker Color
B = Black
W = White
R = Red
G = Gray

Lens Color
1 = Clear
2 = White ②

How To Order—ESPORT, Illuminated

Example: **8065K10** → **S R Y 1 W 2**

Rating	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit Number
15A, 125 Vac 15A, 28 Vdc	1PST	5-6	NONE	OFF	**8065K10**

Code letters and/or numbers. Add to base circuit number.

Rocker Style
B = Rocker
S = 1 in paddle

Indicator LED Color
R = Red
Y = Yellow
G = Green

Rocker LED Color
R = Red
Y = Yellow
G = Green

LED Voltage
1 = 14 Vdc
2 = 28 Vdc

Rocker Color
B = Black
W = White
R = Red
G = Gray

Lens Color
1 = Clear
2 = White ②

Notes

① Momentary contact.
② White lenses are furnished unassembled.

Technical Data and Specifications

8064/8065—ESPORT

2

Description	Specification
Ratings	15A at 125 Vac; 10A at 250 Vac; 3/4 hp at 250 Vac Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	1PST, 1PDT, 2PST and 2PDT Maintained and momentary action
Contact material	Movable—Silver-plated copper with silver contact face button Stationary—Copper with silver contact face button
Mechanical life	Maintained—100,000 operations, minimum Momentary—25,000 operations, minimum
Terminal types	Switch—Standard 0.250 in (6.35 mm) spade, tintillate-plated brass Integral indicator—0.110 x 0.032 in (2.79 x 0.813 mm) spade, tintillate-plated brass
Base material	Thermoset molding material
Dielectric	1000V rms, minimum
Mounting means	Snap-in mounting with plastic bezel

Icon/Legend Selection

- All labels below come with adhesive backing
- Label legends are distinct and easily readable when illuminated from behind
- Additional labels are available upon request. Contact your local Eaton Sales Representative

Icons and Legends

Legend	Style	Ordering Code ①	Icon	Description	Ordering Code ①
Dome Light	Helvetica Narrow 0.135 in (3.43 mm) high White translucent letters Opaque black background	**0055**		**Windshield Wiper** SAE Specification No. J1362-0086 White graphic on a black background	**0057**
Work Light		**0056**			
TV/VCR		**0065**			
Fridge		**0066**		**Windshield Washer** SAE Specification No. J1362-0087 White graphic on a black background	**0986**
Cruise ON/OFF		**0067**			
Brake Select		**0068**			
Brake ON/OFF		**0069**		**Master Lighting Switch** SAE Specification No. J1362-5012 White graphic on a black background	**0687**
Fan Override		**0071**			
Cruise Set		**0681**			
Engine Brake		**0682**		**Fog Lights** SAE Specification No. J1362-0633 White graphic on a black background	**0684**
Left Window		**0683**			
Power Mirror		**0688**		**Clearance/Position Light** SAE Specification No. J1362-0456 White graphics on a black background	**0686**
Right Window		**0689**			

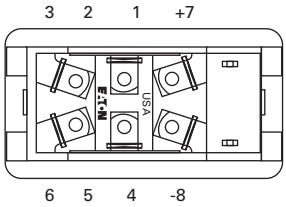
Note

① Ordering Code: If a standard label is required, add the Ordering Code to the end of ESPORT Switch part number preceded by a dash. Example: To order 8065K10BYR1B1 with the 0684 Fog Lights label, the part number will be 8065K10BYR1B1-0684.

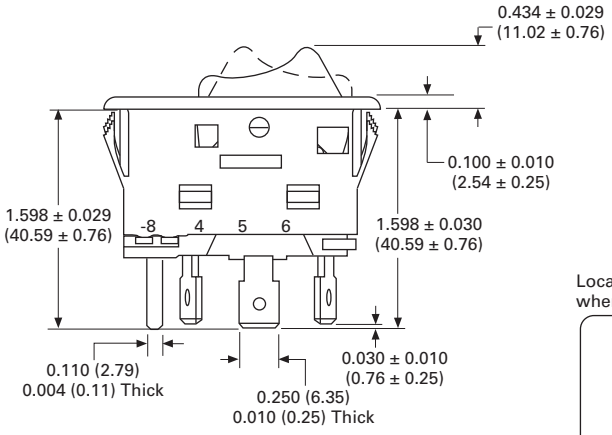
Dimensions

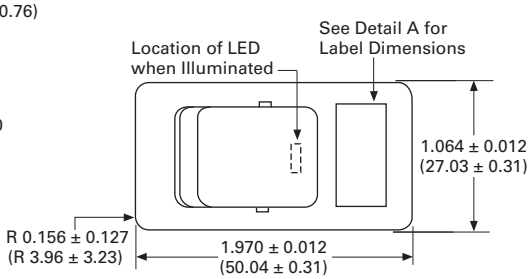
Approximate Dimensions in Inches (mm)

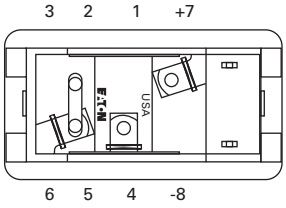
Non-Illuminated and Illuminated



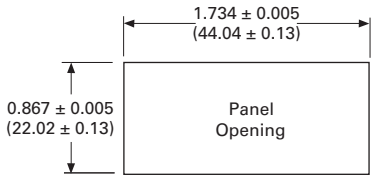
2 PDT—Non-Illuminated
Bottom View



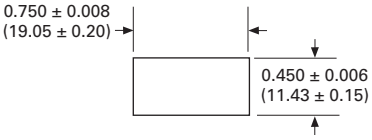




1 PST—Illuminated
Bottom View



Panel Opening
Reference Only
Thickness:
0.060 to 0.150 (1.52 to 3.81)



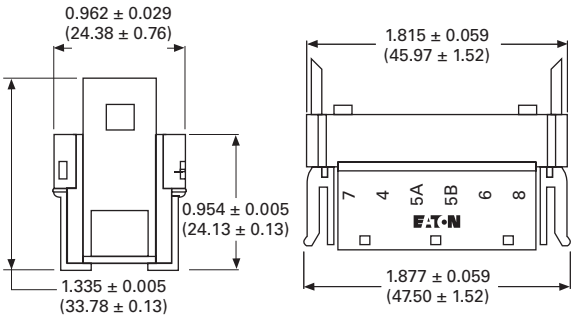
Label Dimensions
Detail A

Dimensions for NGR, EURO SR, Full Size Euro-Look and ESPORT Rocker Accessories

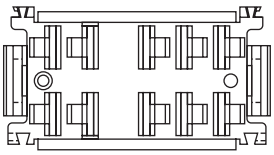
Approximate Dimensions in Inches (mm)

2

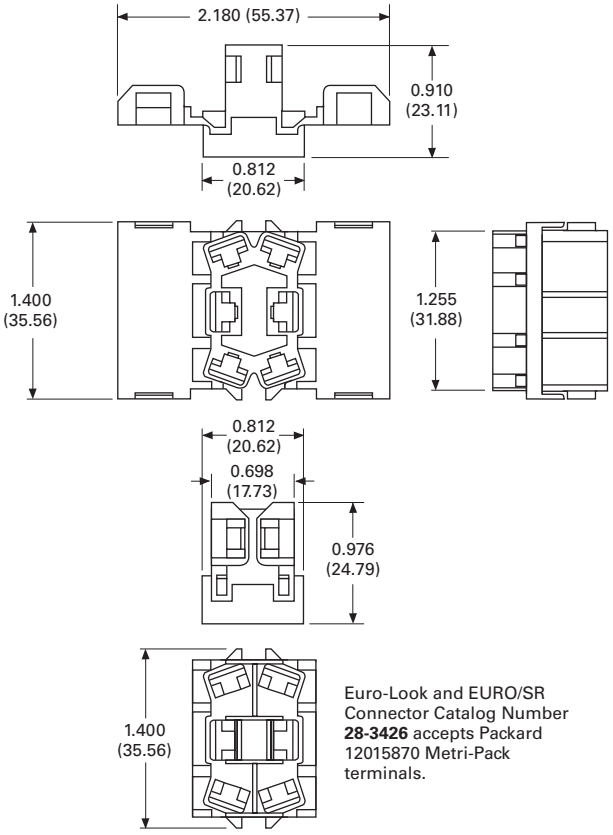
NGR Connector



NGR Connector Catalog Number **28-5637-2** accepts Packard 12015870 Metri-Pack terminals or AMP compatible connector **28-5940** accepts AMP terminals 42100-2.

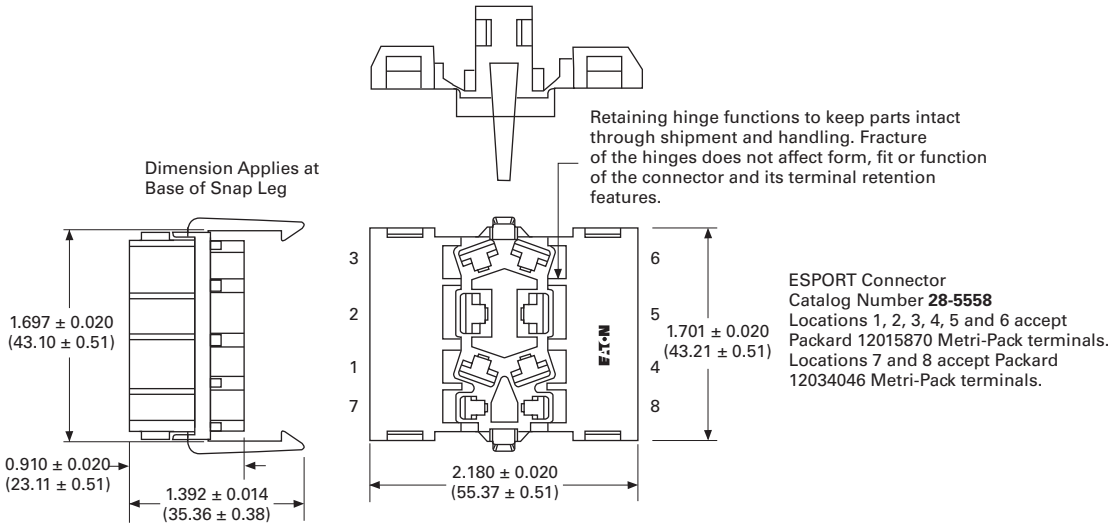


Euro/SR and Full Size Euro-Look Connector



Euro-Look and EURO/SR Connector Catalog Number **28-3426** accepts Packard 12015870 Metri-Pack terminals.

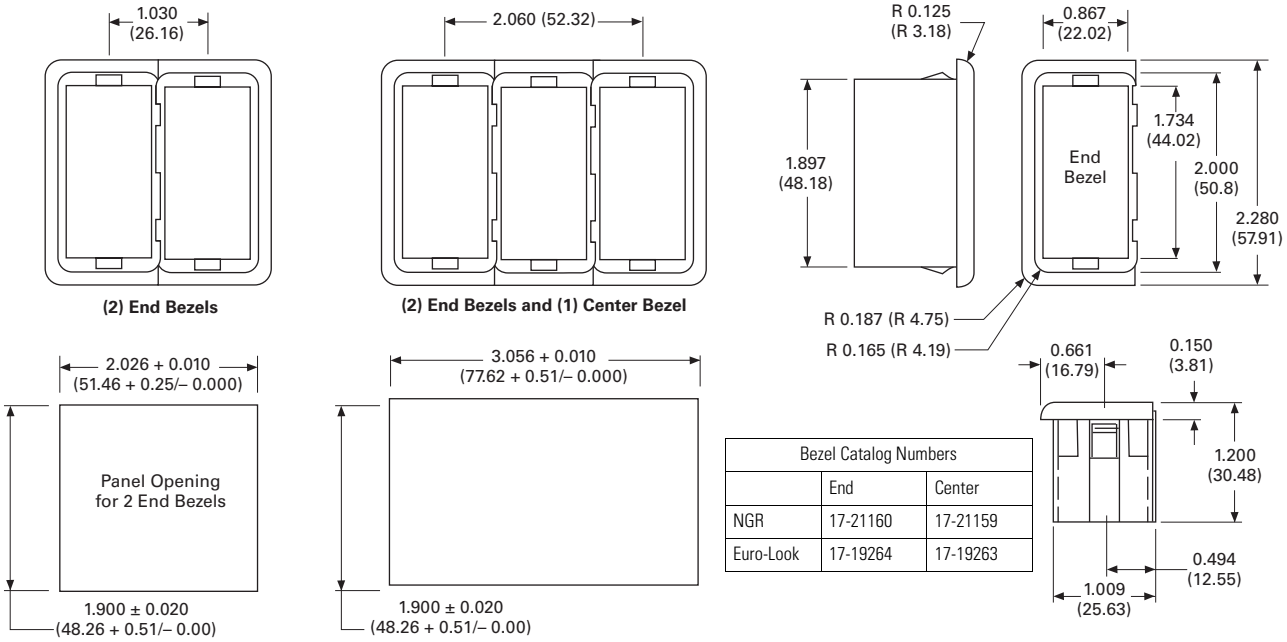
ESPORT Connector



ESPORT Connector Catalog Number **28-5558** Locations 1, 2, 3, 4, 5 and 6 accept Packard 12015870 Metri-Pack terminals. Locations 7 and 8 accept Packard 12034046 Metri-Pack terminals.

Approximate Dimensions in Inches (mm)

Gang Mounting System



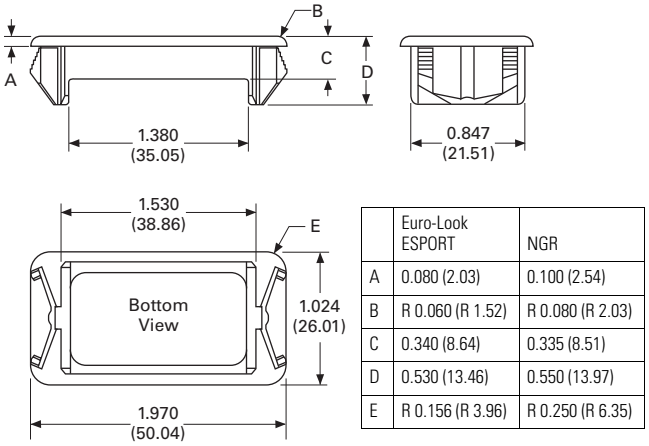
Bezel Catalog Numbers		
	End	Center
NGR	17-21160	17-21159
Euro-Look	17-19264	17-19263

Panel Opening—Reference Only
Thickness: 0.039 to 0.078 to 0.118
(1.00 to 2.00 to 3.00)

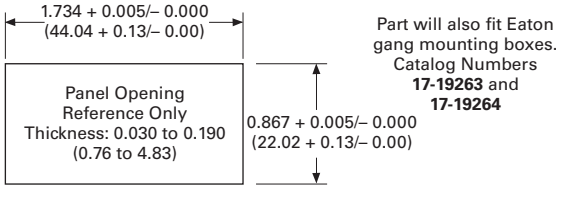
Dimensions: 2.026 + 0.254/–0.00 (51.46 + 0.254/–0.000)
Plus Number of Center Bezels Times 1.03

Tolerance: +0.254/–0.000 (+ 0.254/–0.000) for Each
Center Bezel up to a Maximum of + 0.0002 (+ 0.050)

NGR, Euro-Look and ESPORT Panel Plugs



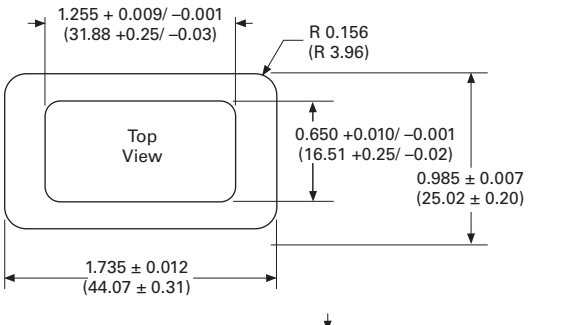
	Euro-Look ESPORT	NGR
A	0.080 (2.03)	0.100 (2.54)
B	R 0.060 (R 1.52)	R 0.080 (R 2.03)
C	0.340 (8.64)	0.335 (8.51)
D	0.530 (13.46)	0.550 (13.97)
E	R 0.156 (R 3.96)	R 0.250 (R 6.35)



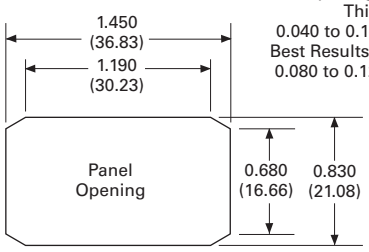
Part will also fit Eaton gang mounting boxes. Catalog Numbers **17-19263** and **17-19264**

Panel plug Catalog Number **17-19544-2** for Use with Euro-Look and ESPORT. NGR panel plug Catalog Number **17-21543**.

EURO SR Panel Plugs

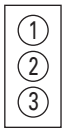


Panel Opening—Reference Only
Thickness:
0.040 to 0.140 (1.01 to 3.55)
Best Results Obtained From:
0.080 to 0.125 (2.03 to 3.17)

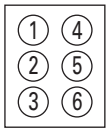


Panel Plug Catalog Number **53-3318**
For Use with EURO/SR

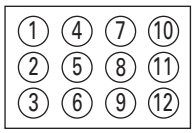
Single-Pole



Two-Pole



Four-Pole



Terminal Identification

When specified on order, switches will have the terminals identified as shown in the illustration at right. Terminal markings will be ink-stamped on the side of the switch case and unused terminal positions will not be identified.

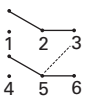
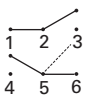
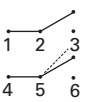
All views are rear of switch with keyway or at down as applicable. Terminal numbers 2, 2 and 5 and 5 and 8 are considered inboard terminals for single-, two- and four-pole switches respectively. All others are considered outboard.

"Three Independent" ON-ON-ON Circuit Diagram

For switch modified with "Three Independent" ON-ON-ON special circuit. External jumpers are required. User to connect wiring per instructions given below.

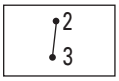
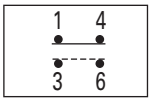
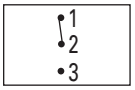
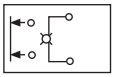
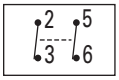
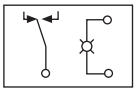
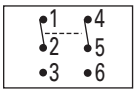
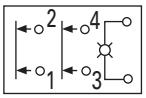
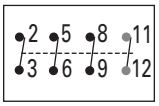
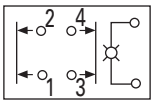
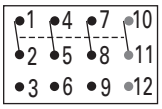
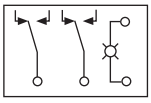
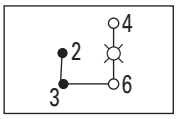
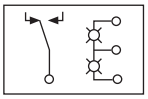
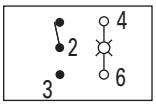
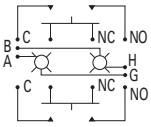
ON-ON-ON Special Circuit

Connection Points	Single-Pole
Connect common to terminals	2
Connect circuit "A" to terminals	6
Connect circuit "B" to terminals	4
Connect circuit "C" to terminals	1

3 ON Independent	No. of Poles	Circuit with Lever in … UP Position	CENTER Position (Maintained)	DOWN Position (Keyway)
		Circuit A	Circuit B	Circuit C
1 PDT	1			

Circuit Diagrams

Rocker Circuit Diagrams

Circuit Letter	Schematic	Circuit Letter	Schematic
A 1PST		**I** 2 Circuit ⑤	
B 1PDT		**J** 1PST	
C 2PST		**K** 1PDT	
D 2PDT		**L** 2PST	
E 4PST ①		**M** 2PST	
F 4PDT ②		**N** ⑥ 2PDT	
G ③ 1PST		**P** 1PDT	
H ④ 1PDT		**Q** ⑦ 2 Circuit	

Legends

Rocker Switch Legend

Legend	Rocker Switch Type
●	Contact terminal—will make contact with switch lever
○	Isolated terminal—does not make contact with lever
	Center terminal and switch lever
	Bulb
	Momentary contact
●	Denotes mechanical contact portion

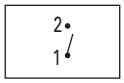
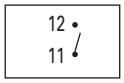
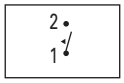
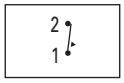
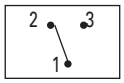
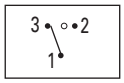
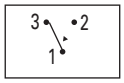
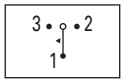
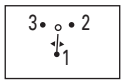
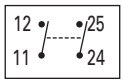
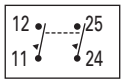
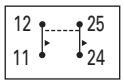
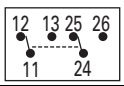
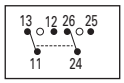
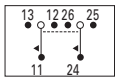
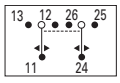
See next page for Midsize Switch Circuit Diagrams. See **Page V11-T2-17** for NGR Circuit Diagrams.

Notes

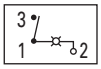
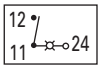
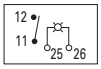
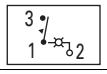
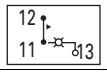
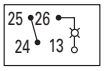
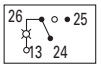
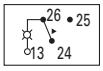
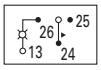
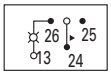
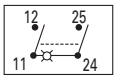
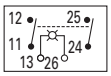
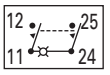
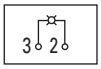
① Poles 11 and 12 may be eliminated for three-pole devices.
② Poles 10, 11 and 12 may be eliminated for three-pole devices.
③ Dependent lamp.
④ Independent lamp.
⑤ Two circuit—indicates a special type of double-throw switch in which the two circuits being controlled may be independent of each other.
⑥ For 206 Series, an additional lamp is available.
⑦ Available in 1PDT or 2PDT.

Midsize Switch Circuit Diagrams ①

Non-Illuminated

Circuit Number (Circuit Designator)	Schematic	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
1 1PST		OFF	NONE	ON
2 1PST		OFF	NONE	ON
3 1PST		OFF	NONE	MOM. ON
4 1PST		OFF	NONE	ON
5 1PDT		ON	NONE	ON
6 1PDT		ON	OFF	ON
7 1PDT		MOM. ON	NONE	ON
8 1PDT		ON	OFF	MOM. ON
9 1PDT		MOM. ON	OFF	MOM. ON
10 2PST		OFF	NONE	ON
11 2PST		OFF	NONE	MOM. ON
12 2PST		MOM. OFF	NONE	ON
13 2PDT		ON	NONE	ON
14 2PDT		ON	OFF	ON
15 2PDT		MOM. ON	NONE	ON
16 2PDT		ON	OFF	MOM. ON
17 2PDT		MOM. ON	OFF	MOM. ON

Illuminated

Circuit Number (Circuit Designator)	Schematic	Circuit with Rocker In … DOWN Position	CENTER Position	UP Position
18 1PST		OFF	NONE	ON
19 1PST		OFF	NONE	ON
20 1PST ②		OFF	NONE	ON
21 1PST		OFF	NONE	MOM. ON
22 1PDT		MOM. OFF	NONE	ON
23 1PDT		ON	NONE	ON
24 1PDT		ON	OFF	ON
25 1PDT		MOM. ON	NONE	ON
26 1PDT		ON	OFF	ON
27 2PST		ON	OFF	ON
28 2PST		ON	NONE	ON
29 2PST ③		ON	NONE	ON
30 2PDT		MOM. ON	NONE	MOM. ON
31 2PDT		ON	NONE	ON
32 Indicator		—	—	—

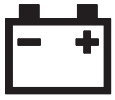
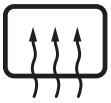
Notes

① Terminal numbers 1, 2 and 3 denote single-pole base.
Terminal numbers 11, 12, 113, 24, 25 and 26 denote two-pole base.

② Single-pole in two-pole base with lamp independently wired.

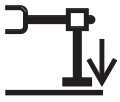
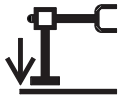
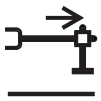
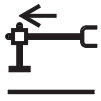
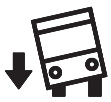
③ Two-pole—independently wired lamp.

NGR, SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	AA
	AB
	AC
	AD
	AE
	AF
	AG
	AH
	AJ
	AK
	AL
	AM
	AN
	AP
	AQ
	AR
	AS
	AT
	AU
	AV
	AW
	AX
	AY
	BA
	BB
	BC
	BD
	BE
	BF
	BG
	BH
	BI
	BJ
	BK
	BL
	BM
	BN
	BP
	BQ
	BR
	BS
	BT
	BU
	BV
	BW
	BX
	BY
	BZ
	CA
	CB
	CC
	CD
	CE
	CF
	CG
	CH

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR, SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
SET/COAST RES/ACCEL	CI
REGLER/ ROUE LIBRE	CJ
AJUSTAR	CK
CRUISE	CL
REPRENDRE/ ACCEL	CM
VOLVERA VELOCIDAD	CN
	CP
	CQ
	CR
	CS
	CT
	CU
	CV
	CW
	CX
	CY
	DA
	DB
	DC
	DD
	DE
	DF
	DG
	DH
	DJ
	DK
	DL
	DM
	DN
	DP
	DQ
	DR
	DS
	DT
	DU
	DV
	DW
START	DX
STOP	DY
	DZ
	EA
	EB
	EC
	ED
	EE
SET	EF
RESUME	EG
ETHER	EH
	EI
	EJ
	EK
	EL
	EM
	EN
B/U CAMERA	EO
	EP

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR, SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	EQ
	ER
WC	ES
	ET
	EU
	EV
	EW
	EX
	EY
	EZ
	FA
	FB
	FC
	FD

Inscription	Catalog Number Suffix
	FE
	FF
	FG
	FH
	FI
	FJ
	FK
	FL
	FM
	FN
	FO
	FP
	FQ
	FR

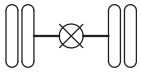
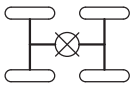
Inscription	Catalog Number Suffix
	FS
OVERRIDE	FT
LOW DOCKING	FU
DOCKING	FV
CORNERING	FW
	FX
	FY
	FZ
	GA
	GB
TEST	GC
	GD
DEST.	GE
110 VOLT	GF

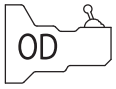
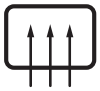
Inscription	Catalog Number Suffix
MICRO WAVE	GG
	GH
	GI
DECEL	GJ
UNLOAD TAG	GK
	GL
	GM
	GN
	GP
	GQ
	GR
	GS
	GT
	GU

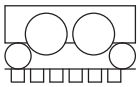
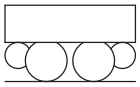
[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR, SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	GV
	GW
	GY
	HA
L	HB
R	HC
CRUISE ON-OFF	HD
	HE
	HF
LUZ PASILLO	HG
	HH
	HJ
DUMP DOOR	HK
	HL

Inscription	Catalog Number Suffix
	HM
	HN
	HP
	HQ
	HR
	HS
ASR AUX	HT
	HU
	HV
MIRROR CLEAN	HW
	HY
SECUENCIA DE DIAGNOSTICO	JA
	JB
	JC

Inscription	Catalog Number Suffix
	JD
	JE
	JF
READ	JG
LAMP TEST	JH
	JJ
	JK
	JL
	JM
	JN
	JP
	JQ
km/h	JR
	JS

Inscription	Catalog Number Suffix
AUDIO VIDEO	JT
	JU
	JV
	JW
	JX
	JY
	JZ
	KA
MAX TRAN	KB
REMOTE CONTROL	KC
TRACTION CONTROL	KD
BLINK CODE	KE
HAND THROT	KF
ENG DIAG	KG

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

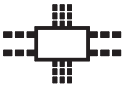
NGR, SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
INTARDER	KH
CMU	KI
	KJ
CRUISE SET	KK
HIGH IDLE	KL
SANDERS	KM
	KN
	KO
OVER LOAD DRIVE AXLE	KP
TRACTION CONTROL	KQ
	KR
	KS
12 V. MASTER	KT
B/U LIGHTS	KU
GEN. START	KV
LOW 12 V.	KW
LOW 110 V.	KX
AIR HORN	KY
STEP SLIDE	KZ
	LA
	LB
CRUISE SELECT	LC
TEST ALARMS	LD
	LE
	LF
AUX HYD OVERHEAT	LG
VIDEO	LH
ENTER	LI
EXIT	LJ
EXH BRK	LK
24V. CHARGER	LL
AQUA HOT	LM
HEAT EXCHGR	LN
AIR COMPSR	LO
	LP
	LQ
	LR
	LS
PA	LT
G-AUX START	LU
CNTR A/C	LV
REAR A/C	LW

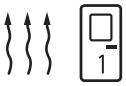
[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
	LX
	LY
POSITION LIGHT	LZ
MASTER WARN	MA
UPPER WARN	MB
LOWER WARN	MC
COMPT LIGHTS	MD
WORK LIGHTS	ME
FAST IDLE	MF
MIRROR HEAT	MG
GEN PTO	MH
WIGWAG	MI
SIREN BRAKE	MJ
LEFT SCENE	MK

Inscription	Catalog Number Suffix
RIGHT SCENE	ML
REAR SCENE	MM
STOP START	MN
BATT IGN	MO
	MP
	MS
	MT
TWO TONE HORNS	MU
SIREN AMP TWO TONES	MV
PUMP PTO	MW
CRUISE	MX
RES/ ACCEL	MY
SET/ COAST	MZ
RETARD ON/OFF	NA

Inscription	Catalog Number Suffix
	NB
	NC
	ND
FRONT A/C	NE
RETARDER	NF
OPTCOM	NG
FUEL PRIME	NH
AERIAL PTO	NI
AIRHRN HORN	NJ
SIREN HORN	NK
Q2B HORN	NL
SIREN Q2B HORN	NM
AIRHRN Q2B HORN	NN
AIRHRN SIREN HORN	NO

Inscription	Catalog Number Suffix
REAR HEAT	NP
	NQ
	NR
	NS
WHT LT DISABLE	NT
	NU
LEFT QTZ LT	NV
RIGHT QTZ LT	NW
DECK LIGHT	NX
ADD'L STROBE	NY
REAR QTZ LT	NZ
MODE	PA
	PB
	PC

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols ①②

Inscription	Catalog Number Suffix
AUX LIGHTS	PD
	PE
FRONT BLIND	PF
SIDE BLIND	PG
ON	PH
OFF	PI
GEN STRT STOP/PRHT	PJ
B.O. SELECT	PK
	PL
B.O. LIGHTS	PM
LEFT DRV	PN
RIGHT DRV	PP
INVERTER	PQ
	PR
VOLUME UP	PS
VOLUME DOWN	PT
MUTE ON	PU
MUTE OFF	PV
	PW
DISPLAY POWER	PX
CRUISE ADJ	PY
HILL HOLDER	PZ
	RA
AISLE LAMPS	RB
	RC
	RD
OVER LOAD DRIVE AXLE	RE
	RF
	RG
CHECK ENGINE	RH
	RI
	RJ
	RK
	RL
	RM
ABS CODE	RN
	RP
	RQ
	RS
	RT
	RU
	RV
	RW
	RX
	RY
	RZ
	SA
	SB
	SC
	SD
	SE
	SF
	SG
	SH
	SJ
	SK

① Additional icons are available. Contact your local Eaton Sales Representative.
② SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
	SL
	SM
Mode	SN
	SP
	SQ
OFF ROAD TRACTION	SR
	SS
	ST
INTER-AXLE	SU
8X8	SV
	SW
	SX
AUX HYD	SY
HYD ENABLE	SZ

Inscription	Catalog Number Suffix
GPFU	TA
CHEM ALARM	TB
	TC
	TD
	TE
	TF
OVER LOAD DRIVE AXLE	TG
	TH
	TJ
	TK
	TL
	TM
SUSP RECOVER	TN
	TP

Inscription	Catalog Number Suffix
	TQ
	TR
	TS
	TT
	TU
	TV
	TW
	TX
	TY
	TZ
	UA
	UB
	UC
	UD

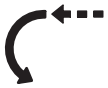
Inscription	Catalog Number Suffix
	UE
	UF
	UG
	UH
	UK
	UL
	UM
	UN
	UP
	UR
	US
	UT
	UU
	UV

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
	UW
	UX
	UY
	UZ
	VA
	VB
	VC
	VD
	VE
	VF
	VG
	VH
	VK
	VL

Inscription	Catalog Number Suffix
	VM
	VN
	VP
DOOR BYPASS	VR
VGT BRK	VS
ASI RESET	VT
CURT. UP	VU
CURT. DOWN	VV
BROOM IN	VW
BROOM OUT	VX
B.O. LIGHTS	VY
ABS BLINK CODE	VZ
	WA
MUD/SNOW TRACTION	WB

Inscription	Catalog Number Suffix
	WC
	WD
	WE
	WF
	WG
	WH
	WJ
	WK
	WL
	WM
	WN
	WP
MIRROR SELECT	WR
T M B	WS

Inscription	Catalog Number Suffix
MIRROR HEAT	WT
OVHD FAN	WU
CEILING LIGHTS	WV
BATTERY BOOST	WW
GENERATOR	WX
DRVR SHADE	WY
PEDALS	WZ
ATC	XA
ENGINE BRAKE	XB
SHOCKS	XC
AIR DUMP	XD
TAG AXLE	XE
FOG LIGHTS	XF
DIMMER	XG

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
HEADLIGHTS	XH
DOCKING LIGHTS	XJ
AQUA HOT ENGINE PREHEAT	XK
ENGINE BLOCK HEAT	XL
PORCH LIGHT	XM
HANDLE STEP LIGHTS	XN
STEP	XP
BAY LIGHTS	XR
BATT CUTOFF	XS
STEP COVER	XT
PASS SHADE	XU
NBC	XV
AUX SUPPLY	XW
	XX

Inscription	Catalog Number Suffix
	XY
	XZ
	YA
	YB
	YC
SILENT WATCH	YD
	YE
	YF
	YG
	YH
IR SELECT	YJ
IR DRIVE	YK
CRUISE	YL
ABS OFF-RD	YM

Inscription	Catalog Number Suffix
CTIS	YN
	YP
	YQ
IGNITION	YR
ENGINE STOP	YS
ENGINE START	YT
CAMERA AIR	YU
WINDOW	YV
	YW
T-CASE LOW	YX
TANK 2	YY
TANK 1	YZ
	ZA
	ZB

Inscription	Catalog Number Suffix
PUMP	ZC
ROAD	ZD
	ZE
UNLOCK	ZF
LOCK	ZG
LM OVRRDE	ZH
E SHUT DWN	ZJ
	ZK
	ZL
	ZM
	ZN
	ZP
	ZR
	ZS

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
	ZT
CAMERA	ZU
VIDEO	ZV
AIR	ZW
ELEC	ZX
FRONT BRAKE	ZY
TIRE CHAINS	ZZ
	A1
400V	B1
230V	C1
MC	D1
	E1
	F1
	G1
	H1
HP	J1
F1	K1
	L1
	M1
	N1
	P1
	R1
	S1
	T1
FRONT	U1
SIDE / REAR	V1
B.O. SELECT	W1
IDLE	X1
	Y1
	Z1
	A2
ATC OFF ROAD	B2
	C2
120V	D2
GAUGE UP/DWN	E2
GAUGE MODE	F2
ENG AFES	G2
CREW AFES	H2
	J2
ABS DIAG	K2
HORN Q2B	L2
MASTER DUMP	M2
PEDALS	N2
GAUGE MODE	P2
REGEN	R2
FRONT QTZ LT	S2
	T2
	U2
	V2
ECO	W2
AUX	X2
	Y2
ABS	Z2
EXTERN	A3
INTERN	B3
GEN ENGAGE	C3

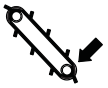
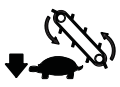
[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
	D3
	E3
	F3
	G3
	H3
	J3
	K3
PEDAL	L3
PEDAL	M3
BAT XOVER	N3
BAT O/RIDE	P3
	Q3
HORN SIREN	R3
DOME LIGHT	S3

Inscription	Catalog Number Suffix
AIRHRN ALT AH	T3
DIFF LOCK	U3
HORN AIRHORN SIREN	V3
MIL	W3
ATC OVRRDE	X3
OUTRGR LASER	Y3
AER QTZ LT	Z3
FOG LIGHTS	A4
SHORT BATTLE	B4
MENU UP	C4
MENU DOWN	D4
ARMOR	E4
NO ARMOR	F4
KNEEL	G4

Inscription	Catalog Number Suffix
ROTO-RAY	H4
REGEN	J4
REGEN INHBT	K4
	L4
	M4
ESC	N4
BODY QTZ LT	P4
REV	R4
FWD	S4
TILT UP	T4
TILT DOWN	U4
REV	V4
FWD	W4
	X4

Inscription	Catalog Number Suffix
	Y4
	Z4
	A5
	B5
	C5
	D5
	E5
	F5
AUX PUMP	G5
TST 1	H5
TST 2	J5
TST 3	K5
SAVE	L5
DOOR LOCK	M5

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
TELMA RTDR	N5
SIREN AIRHORN HORN	P5
PUMP PANEL LTS	Q5
REAR HEATER	R5
T/G OPEN	S5
HYD FILTER	T5
TRANS TEMP	U5
OIL LEVEL	V5
PUMP	W5
STROBE LIGHT	X5
WORK LIGHT	Y5
FLASHING LIGHT	Z5
CAMERA LIGHT	A6
PLATFORM LEVEL	B6
RUMBLER	C6
	D6D6
GRND LT	E6
RED INT LT	F6
WHT INT LT	G6
VAC PUMP	H6
PRESS MODE	J6
VENT VALVE	K6
DRIVER VALVE	L6
OFFICER VALVE	M6
REAR VALVE	N6
MASTER POWER	P6
LEFT CHUTE EXTEND	Q6
RIGHT CHUTE EXTEND	R6
REAR CHUTE EXTEND	S6
LEFT DUMP OPEN	T6
RIGHT DUMP OPEN	U6
REAR DUMP OPEN	V6
LEFT CHUTE RETRACT	W6
RIGHT CHUTE RETRACT	X6
REAR CHUTE RETRACT	Y6
LEFT DUMP CLOSE	Z6
RIGHT DUMP CLOSE	A7
REAR DUMP CLOSE	B7
	C7
PTO	D7
	E7
Q2B SIREN HORN	F7
Q2B AIRHORN HORN	G7
A	H7
B	J7
SCENE LT	K7
	L7
BODY UP	M7
BODY DOWN	N7
S/S TG RAISE	P7
S/S TG LOWER	Q7
S/S TG LOCK	R7
S/S TG UNLOCK	S7
C/S TG RAISE	T7
C/S TG LOWER	U7
C/S TG LOCK	V7

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

NGR Only Symbols ①②

Inscription	Catalog Number Suffix
C/S TG UNLOCK	W7
AUTO PACK	X7
PACKER EXTEND	Y7
PACKER RETRACT	Z7
ONE PACK	A8
TWO PACK	B8
OUTSIDE CONTROLS	C8
STREETSIDE TAILGATE	D8
CURBSIDE TAILGATE	E8
TAILGATE RAISE	F8
TAILGATE LOWER	G8
TAILGATE LOCK	H8
TAILGATE UNLOCK	J8
HOPPER FLOOD	K8
BODY RAISED	L8
TIPPER EXTENDED	M8
PUMP ON	N8
THR ADV	P8
AUTO NEUTRAL	Q8
HIGH IDLE	R8
HEATER	S8
LEFT MIRROR	T8
RIGHT MIRROR	U8
IR LIGHTS	V8
B.O. SPOT LIGHTS	W8
TANK TO PUMP	X8
THROT INC	Y8
FOAM	Z8
FLUSH	A9
TAKEDOWN LIGHTS	B9
DEC	C9
VACUUM POMPE	D9
MODE PRESSION	E9
VALVE VENTIL.	F9
VALVE C/ COND.	G9
VALVE C/ OFF.	H9
VALVE ARR.	J9
MAÎTRE	K9
POMPE	L9
LUMIERE TRAVAIL	M9
MAITRE URGENCE	N9
LIGHT BAR	P9
OFFSIDE AIRHORN OVRRD	Q9
OFFSIDE SIREN OVRRD	R9
OFFSIDE Q2B OVRRD	S9
Q2B SIREN	T9
SIREN BRAKE	U9
	V9
	W9
FLUOR LIGHT	X9
	Y9
	Z9
	1A
LOAD LIMIT	1B
	1C
OFF ROAD LTS	1D

① Additional icons are available. Contact your local Eaton Sales Representative.
② SAE Specification No. J1362.

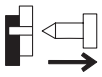
NGR Only Symbols [1][2]

Inscription	Catalog Number Suffix
STEP LT	1E
ON OFF	1F
Drv Spr Nozzle	1G
Off Spr Nozzle	1H
Rem Noz Lt	1J
ALLEY LT RIGHT	1K
ALLEY LT LEFT	1L
PLOW RAISE	1M
PLOW LOWER	1N
PLOW FLOAT	1P
BACK-UP ALRM OVRRD	1Q
HOIST UP	1R
PTO ON	1S
TAIL UP	1T
OVERRIDE	1U
COMMAND LIGHT	1V
PUMP HEATER(S)	1W
LEFT NOZZLE	1X
RIGHT NOZZLE	1Y
	1Z
JAKE BRAKE	2A
OIL TEMP	2B
	2C

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	LX
	LY
HI RPM	MA
LOW RPM	MB
	MC
	MD
TEST	ME
	MF
	MG
	MH
	MI
	MJ
	MK
RSM/ACC	ML

Inscription	Catalog Number Suffix
SET/CST	MM
SHDN OVRD	MN
EXHST BRK	MP
	MQ
	MR
	MS
	MT
	MU
	MV
	MW
	MX
	MY
	MZ
	NA

Inscription	Catalog Number Suffix
	NB
	NC
	ND
	NE
	NF
	NG
	NH
F	NJ
N	NK
AUX WARN	NL
	NM
	NN
OVER LOAD	NP
	NQ

Inscription	Catalog Number Suffix
	NR
	NS
	NT
	NU
	NV
	NW
	NX
	NY
	NZ
	O3
	PA
	PB
	PC
	PD

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols [1][2]

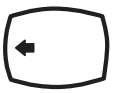
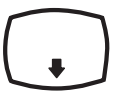
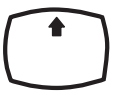
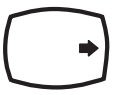
Inscription	Catalog Number Suffix
	PE
	PF
	PG
	PH
	PI
	PJ
	PK
	PL
	PM
	PN
	PP
	PQ
	PR
	PS
	PT
	PU
	PV
	PW
	PX
	PY
	PZ
	QA
	QB
	QC
	QD
	QE
	QF
	QG
	QH
	QJ
	QK
	QL
	QM
	QN
	QP
	QQ
	QR
	QS
	QT
	QU
	QV
	QW
	QX
	QY
SET ACCEL	QZ
RESUME DECEL	RA
	RB
	RC
WINCH	RD
CRANE	RE
AUTO MODE	RF
MAN MODE	RG
	RH
	RJ
	RK
	RL

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	RM
	RN
	RP
	RQ
	RR
	RS
	RT
	RU
	RV
	RW
	RX
	RY
	RZ
	SA

Inscription	Catalog Number Suffix
	SB
	SC
	SD
	SE
	SF
	SG
	SH
	SJ
	SK
	SL
	SM
	SN
	SP
	SQ

Inscription	Catalog Number Suffix
	SR
	SS
	ST
	SU
	SV
	SW
	SX
	SY
	SZ
	TA
	TB
	TC
	TD
	TE

Inscription	Catalog Number Suffix
CLOSE	TF
OPEN	TG
	TH
	TJ
RPM CTRL	TK
ON	TL
AUTO	TM
HIGH	TN
LOW	TP
CHEM ALARM	TQ
GPFU	TR
	TS
LHS	TT
AUTO SPNSN	TU

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	TV
	TW
	TX
	TY
	TZ
	UA
	UB
	UC
	UD
	UE
	UF
	UG
	UH
	UJ

Inscription	Catalog Number Suffix
	UK
	UL
	UM
	UN
	UP
	UQ
	UR
	US
	UT
	UU
	UV
	UW
	UX
	UY

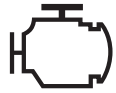
Inscription	Catalog Number Suffix
	UZ
	VA
	VB
	VC
	VD
	VE
	VF
	VG
	VH
	VJ
	VK
	VL
	VM
	VN

Inscription	Catalog Number Suffix
	VP
	VQ
	VR
	VS
	VT
	VU
	VV
	VW
	VX
	VY
	VZ
	WA
	WB
	WC

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	WD
	WE
	WF
	WG
	WH
	WJ
	WK
	WL
AUTO	WM
	WN
	WP
	WQ
	WR
	WS
	WT
	WU
	WV
	WX
	WY
	WZ
	XA
	XB
F	XC
R	XD
SHIFT	XE
	XF
	XG
	XH

Inscription	Catalog Number Suffix
	XJ
	XL
	XM
	XN
CODE	XP
	XQ
	XR
	XS
	XT
	XU
	XV
	XW
	XY
	XZ
	YA
	YB
	YC
SET/RES	YD
	YE
	YF
	YG
	YH
	YJ
	YK
	YL
	YM
	YN
	YP

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols ①②

Inscription	Catalog Number Suffix
	YQ
	YR
	YS
	YT
	YU
	YV
	YW
	YX
	YY
	YZ
	ZA
	ZB
	ZC
	ZD

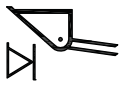
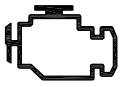
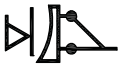
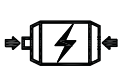
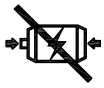
Inscription	Catalog Number Suffix
	ZE
	ZF
	ZG
	ZH
	ZJ
	ZK
	ZL
	ZM
	ZN
	ZP
	ZR
	ZS
	ZT
	ZU

Inscription	Catalog Number Suffix
	ZV
	ZW
	ZX
	ZY
	ZZ
	A1
	B1
	C1
	D1
	E1
	F1
	G1
	H1
	J1

Inscription	Catalog Number Suffix
ENG COMPT	K1
	L1
	M1
ISO	N1
H	P1
	R1
	S1
	T1
	U1
	V1
	W1
DRIVER VALVE	X1
OFFICER VALVE	Y1
REAR VALVE	Z1

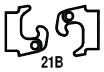
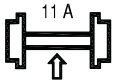
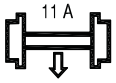
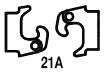
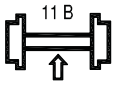
① Additional icons are available. Contact your local Eaton Sales Representative.
② SAE Specification No. J1362.

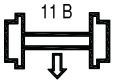
SVR, E31, E32 and E33 eSM Symbols [1][2]

Inscription	Catalog Number Suffix
	A2
	B2
	C2
	D2
	E2
	F2
	G2
	H2
O/D OFF	J2
	K2
	L2
APG	M2
ePTO	N2
	P2
	R2
	S2
	T2
	U2
	V2
	W2
	X2
PUMP COMP LT	Y2
	Z2
	A3
	B3
	C3
	D3
	F3
	G3
	H3
	I3
	J3
	K3
	L3
	M3
	N3
	O3
	P3
	Q3
	R3
	S3
	T3
	U3
	V3
AUTO	W3
	X3
	Y3
	Z3
	A4
	B4
	C4
	D4
	E4
	F4
	G4
	H4

[1] Additional icons are available. Contact your local Eaton Sales Representative.
[2] SAE Specification No. J1362.

SVR, E31, E32 and E33 eSM Symbols ①②

Inscription	Catalog Number Suffix
	I4
	J4
	K4
	L4
	M4
	N4
	O4

Inscription	Catalog Number Suffix
	P4
	Q4
	R4
	S4
	T4
	U4

Inscription	Catalog Number Suffix
	V4
	W4
	X4
	Y4
	Z4
	A5

Inscription	Catalog Number Suffix
	B5
	C5
	D5
	X5
	X6
	X7

① Additional icons are available. Contact your local Eaton Sales Representative.
② SAE Specification No. J1362.

High Capacity Switch

Panel Board Switch

Keylock

Locking Rocker

3.1 High Capacity Switches

Product Description V11-T3-2
Standards and Certifications V11-T3-2
Product Selection V11-T3-2
Technical Data and Specifications V11-T3-2
Dimensions V11-T3-2

3.2 Panelboard Switches

Product Description V11-T3-3
Standards and Certifications V11-T3-3
Product Selection V11-T3-4
Technical Data and Specifications V11-T3-4

3.3 Keylock Switches, General Purpose/Heavy Duty—AC/DC Rated

Product Description V11-T3-5
Features V11-T3-5
Product Selection V11-T3-6
Accessories V11-T3-7
Technical Data and Specifications V11-T3-7
Dimensions V11-T3-8

3.4 Locking Rocker

Product Description V11-T3-9
Standards and Certifications V11-T3-9
Product Selection V11-T3-9
Technical Data and Specifications V11-T3-10
Circuit Diagrams V11-T3-10
Dimensions V11-T3-10

High Capacity Switch

3

Contents

Description
High Capacity Switches

Product Description

The heavy duty high capacity switch, Catalog Number 7818K1 is ideal for exceptionally high-power applications, for heavy-duty motor loads and for use in welding equipment or similar industrial applications.

By combining innovative design and quality materials, this switch is designed to carry the specified maximum inrush current for 10 milliseconds for a minimum of 20,000 ON/OFF cycles.

Standards and Certifications

- UL® to Standard 508, File E147754

Product Selection

High Capacity Switch

Description	Catalog Number
40A, 600 Vac 5 hp, 250 Vac	**7818K1**

Technical Data and Specifications

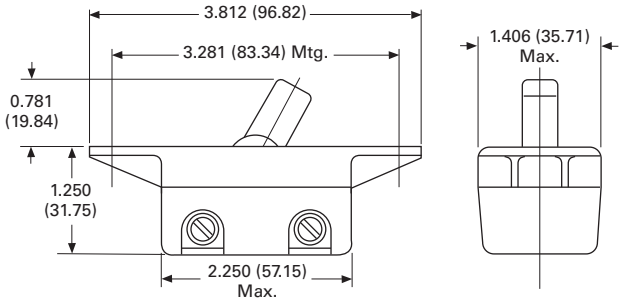
High Capacity Switches

Description	Specification
Circuits	2PST, maintained
Contact mechanism	Quick-make/quick-break snap acting butt contact Make: 200A peak inrush at 125 Vac for 10 ms for 20,000 cycles minimum Break: 20A at 125 Vac for 20,000 cycles minimum
Contact material	10% silver cadmium oxide composite
Terminal types	Screw—brass (Catalog Number 11-6074-4) supplied. Furnish unassembled
Mounting means	Molded flush mounting bracket, high impact polycarbonate, 3.312 in (84.12 mm), center-to-center spacing and 2.375 in (60.33 mm) spacing for self-tapping screws
Lever	Nylon
Base	Molded thermoset material
Dielectric withstand	2200V rms minimum

Dimensions

Approximate Dimensions in Inches (mm)

7818K1



Panel Board Switches

Contents

Description	*Page*
Panelboard Switches	
Product Selection	**V11-T3-4**
Technical Data and Specifications	**V11-T3-4**

Product Description

This group of two-position power toggle switches is used by manufacturers in a wide variety of applications that require dependability and long service, such as welding equipment, commercial floor polishers, battery chargers, food processors and panelboards.

Standards and Certifications

- UL Recognized
- CSA® Certified as noted

Product Selection

8980K1

8980K5

Panelboard Switches

Rating	Poles and Throw	Mounting	Terminals	Catalog Number
60A, 250 Vac/Vdc 2 hp, 125–250 Vac/Vdc ①	2PST	N/A	N/A	**8980K1** ②
30A, 250 Vac/Vdc 30A, 125V "T" 2 hp, 120–240 Vac	1P double break	Frame plate	Center bus	**8980K2**
30A, 250 Vac/Vdc 20A, 600 Vac 2 hp, 120–600 Vac	2PST	Panel type strap	Screw	**8980K5**
30A, 250 Vac/Vdc 20A, 600 Vac 2 hp, 120–600 Vac Three-phase	3PST	Panel type	Screw	**8980K6**
30A, 250 Vac/Vdc 2 hp, 120–240 Vac 1 hp, 480 Vac	2PST	Panel type strap	Screw	**8980K14** ③
30A, 250 Vac/Vdc 2 hp, 120–240 Vac	2PST	Panel type strap	Screw	**8980K16**

Technical Data and Specifications

Panelboard Switches

Description	Specification
Rating	10–60A; 120–600V See Product Selection table
Circuits	1PST, 2PST, 3PST 2 circuit, maintained Except for Catalog Number 8980K13, momentary
Contact mechanism	Quick-make/quick-break wiping action Except for Catalog Number 8980K13, quick-make/quick-break butt contact
Contact material	Movable—bronze; stationary—copper; Catalog Number 8980K13—silver
Terminal types	Screw or bus
Termination material	Copper
Mounting means	Two-hole mounting—panel type flush
Dielectric withstand	1000 volts rms minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Notes

① For appliance use only; 32A, 480 Vac, 25A, 600 Vac.
② CSA Certified.
③ Binding screws assembled. For binding screws provided unassembled, order Catalog Number 8980K30.

General Purpose and Heavy Duty Keylocks

Contents

Description	*Page*
Keylock Switches, General Purpose/Heavy Duty—AC/DC Rated	
Product Selection	**V11-T3-6**
Accessories	**V11-T3-7**
Technical Data and Specifications	**V11-T3-7**
Dimensions	**V11-T3-8**

Product Description

General Purpose

These keylock switches provide reliable performance in a space-saving design. They all use quick-make/quick-break switching mechanisms, with wiping action blades for self-cleaning contacts.

Heavy Duty

These switches have a slow-make/slow-break switching mechanism with large butt type contacts. Their high current switching capability allows them to be used for locking switching circuits in power applications.

Features

Termination Types

General Purpose

Solder lugs—Brass silver-plated

Heavy Duty

- 7842 Series

Screw terminals—Brass designed to accept #7-32 x 3/16 binding head screws

Furnished unassembled

- 7846 Series

Quick connect terminals—Brass

Mounting Means

General Purpose

Threaded bushing—0.468 in (11.89 mm) dia.

Keyway—0.062–0.067 in wide x 0.035–0.370 deep (1.55–1.70 mm wide x 0.89–0.94 mm deep

Hardware supplied—1 hexnut (Cat. No. **15-192**) and 1 chamfered dress nut (Cat. No. **15-994-2**)

Furnished unassembled

Heavy Duty

- 7842 Series

Slotted bushing—0.468 in (11.89 mm) dia.

Hardware supplied—4 terminal screws and 1 hexnut

Furnished unassembled

- 7846 Series

Hardware supplied—2 hexnuts

Product Selection

General Purpose Keylock AC/DC Switches

Rating	Poles and Throw	Circuit with Key in … (Keyway Down) LEFT Position	CENTER Position (Keyway)	RIGHT Position	Key Removal Position	Solder Lug Terminal Catalog Number
6A, 125 Vac/Vdc	1PST	—	OFF	ON	CENTER	**8928K492**
3A, 250 Vac/Vdc		—	OFF	ON	CENTER and RIGHT	**8928K493**
6A, 125 Vac/Vdc 1A, 250 Vac/Vdc	1PDT	—	ON	ON	CENTER and RIGHT	**8928K494**
6A, 125 Vac/Vdc 1-1/2A, 250 Vdc	1PDT	—	ON	ON	CENTER	**8283K150**
6A, 125 Vac/Vdc	2PST	—	OFF	ON	CENTER	**8370K150**
3A, 250 Vdc		—	ON	OFF	CENTER	**8370K151**
6A, 125 Vac/Vdc 3A, 250 Vac/Vdc	2PST	—	OFF	ON	CENTER and RIGHT	**8928K495**
6A, 125 Vac/Vdc	2PDT	—	ON	ON	CENTER	**8373K150**
3A, 250 Vdc		—	ON	ON	CENTER and RIGHT	**8373K151**

Heavy Duty Keylock AC Rated Switches

Rating	Circuit	Action	Key Removal Position	Slotted Bushing Length Inches	mm	Type of Termination	Key Style	Catalog Number
7846 Type Series								
20A, 120 Vac 20A, 240 Vac 1-1/2 hp, 120 Vac 2 hp, 240 Vac	2PST	OFF-ON-OFF-ON	OFF	0.50	12.7	Quick Connect	**E (13-8173)**	**7846K1** ①

Note

① Not CSA Certified.

Accessories

Keys for Locking Switches

Additional keys may be ordered from the Key Selection table.

Key styles shown match those listed for specific switches in the Product Selection tables.

Key Selection

Where Used	Catalog Number
General purpose and heavy duty series	**13-5496**
Security locking bracket	**13-8171**
7846K1	**13-8173**

Rotary Keylock Brackets—Security Tumbler Type

This series of rotary keylock is designed for use in security applications. They provide a simple method of converting single- and two-pole toggle switches. For use with two- or three-position switches.

Key Selection

Where Used	Catalog Number
Key removable in counter-clockwise position	**8980P25**
Key removable in clockwise position	**8980P27**
Key removable in either extreme position	**8980P28**

Technical Data and Specifications

Keylock Switches, General Purpose/Heavy Duty—AC/DC Rated

Description	General Purpose	Heavy Duty
Circuits	1PST, 1PDT, 2PST, 2PDT Maintained action	2PST, 2-circuit maintained
Contact mechanism	Quick-make/quick-break wiping action	Slow-make/slow-break butt contact
Contact material	Movable—Bronze silver-plated Stationary—Brass silver-plated	Movable—Silver cadmium oxide Stationary—Silver cadmium oxide

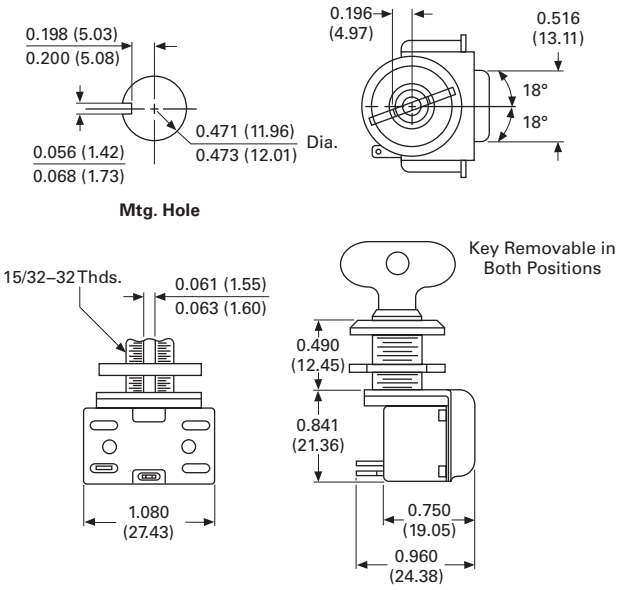
Rotary Keylock Brackets

Description	Specification
Bushing	7/8 in dia., 24 threads/inch
Mounting hardware and keys	
1 hexagon locknut	Cat. No. 15-2528-2
1 bright chrome plated dress nut	Cat. No. 15-2528-2 (furnished unassembled)
2 keys	Cat. No. 13-8171
Finish	
Lock bushing	Diecast zinc
Lock barrel and dress nut	Chrome plated brass
Keys	Brass

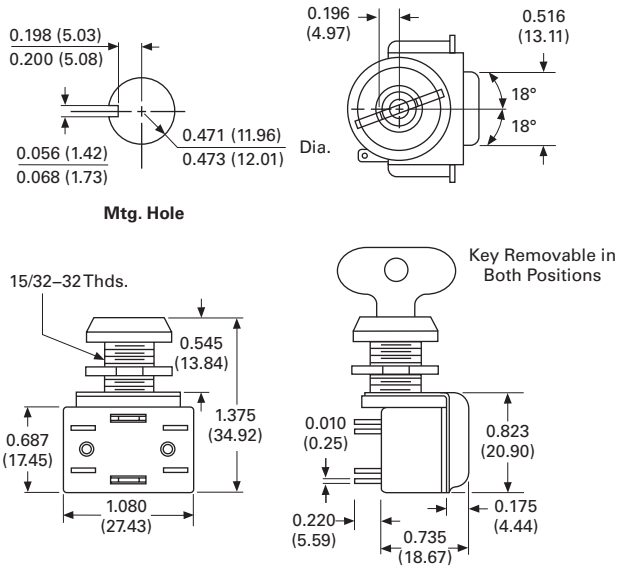
Dimensions

Approximate Dimensions in Inches (mm)

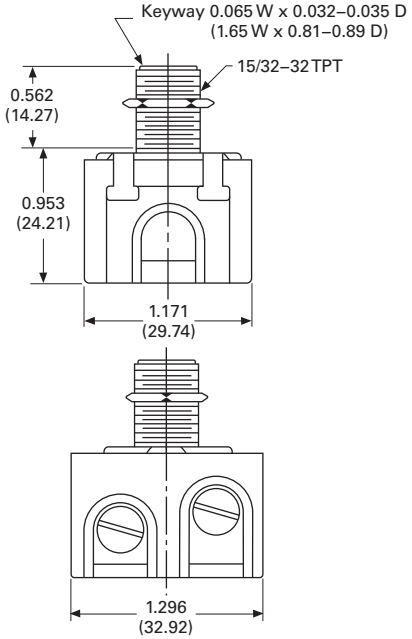
8928K493—1PST/1PDT



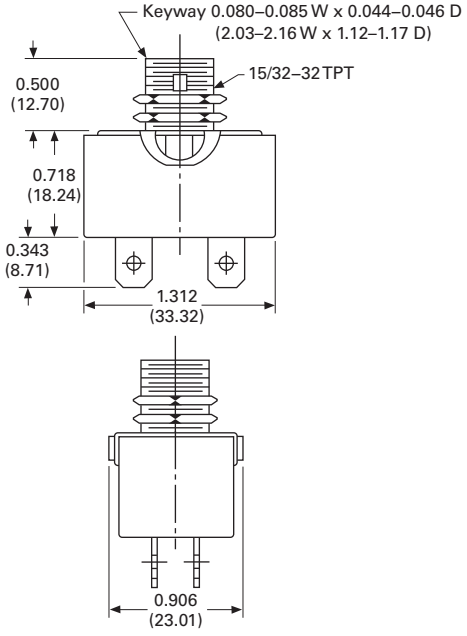
8373K151—2PST/2PDT



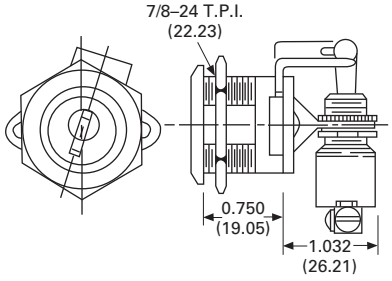
7842K2—2PST



7846K1—2PST



8980P27



Locking Rockers

Contents

Description	*Page*
Locking Rockers	
Accessories	**V11-T3-10**
Technical Data and Specifications	**V11-T3-10**
Circuit Diagrams	**V11-T3-10**
Dimensions	**V11-T3-10**

3

Product Description

This unique switch features a patented internal locking mechanism, which allows the switch to be locked in the OFF position to prevent unauthorized or accidental operation. The key to locking or unlocking the switch is a removable paddle rocker cap, which must be inserted in order to move the switch to the ON position. The switch can still be turned OFF.

The locking rocker is ideally suited for such markets as portable tools, computers, lawn and garden equipment, marine and construction.

Standards and Certifications

- UL Recognized
- CSA Certified
- RoHS Compliant ①

Note: Contact your local Eaton Sales Representative for selection information and optional features.

Product Selection

Locking Rocker Switch

Rating ②	Poles and Throw	Circuit with Rocker in … UP Position	CENTER Position	DOWN Position	Base Circuit (See Page V11-T3-10)	Catalog Number
Without Palm Guard Feature						
20A, 125 Vac 20A, 250 Vac 1 hp, 125 Vac 2 hp, 250 Vac	1PST	ON	NONE	OFF	A	**8166K27**
	1PDT	ON	NONE	ON	B	**8166K28**
	2PST	ON	NONE	OFF	C	**8166K25**
	2PDT	ON	NONE	ON	D	**8166K26**
With Palm Guard Feature						
20A, 125 Vac 20A, 250 Vac 1 hp, 125 Vac 2 hp, 250 Vac	1PST	ON	NONE	OFF	A	**8166K23**
	1PDT	ON	NONE	ON	B	**8166K24**
	2PST	ON	NONE	OFF	C	**8166K21**
	2PDT	ON	NONE	ON	D	**8166K22**

Notes

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

② Ratings listed for 125 Vac also apply at 28 Vdc. Also supplied with a 20A, 277 Vac rating as standard.

Accessories

53-3021-2

Replacement Cap

Description	Catalog Number
Red paddle rocker replacement cap	**53-3021-2**

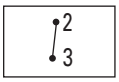
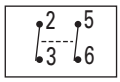
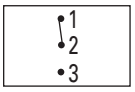
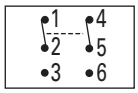
Technical Data and Specifications

Locking Rocker Switch

Description	Specification
Contact mechanism	Butt action contact mechanism designed specifically for use on AC and low voltage DC applications
Contact material	Movable—Silver-plated copper w/cad-oxide contact face button Stationary—Copper w/cad-oxide contact face button
Terminal types	0.25 in spade terminals are standard
Rocker material	Custom styled, red thermoplastic rocker key with "REMOVE TO LOCK" across the top of the key in raised letters
Dielectric	1000V rms minimum

Circuit Diagrams

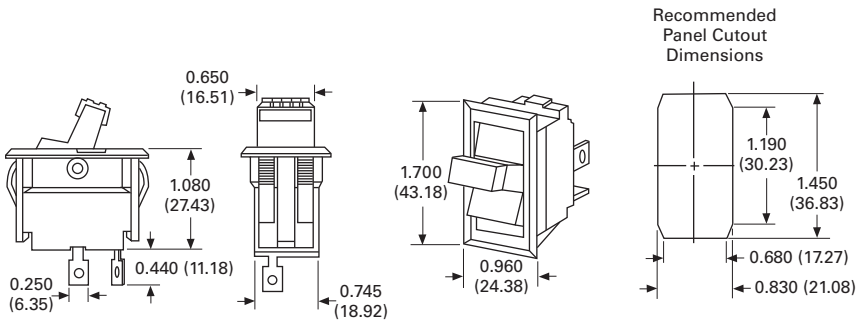
Locking Rocker Circuit Diagrams

Circuit Letter	Schematic	Circuit Letter	Schematic
A 1PST		**C** 2PST	
B 1PDT		**D** 2PDT	

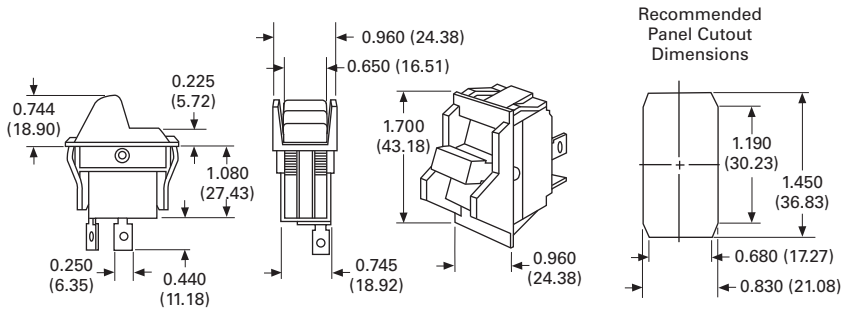
Dimensions

Approximate Dimensions in Inches (mm)

Locking Rocker Switch without Palm Guard



Locking Rocker Switch with Palm Guard



Military

Illuminated AC Rated

General Purpose AC/DC Rated

X Series Toggles

4.1 Introduction
- Product Selection Guide V11-T4-2

4.2 Military Purpose Toggles
- Product Selection V11-T4-3
- Technical Data and Specifications V11-T4-6
- Dimensions V11-T4-7

4.3 Illuminated AC Rated Toggles
- Catalog Number Selection V11-T4-9
- Technical Data and Specifications V11-T4-10
- Dimensions V11-T4-10

4.4 General Purpose Toggles—AC Rated
- Product Selection V11-T4-12
- Technical Data and Specifications V11-T4-16
- Dimensions V11-T4-16

4.5 General Purpose Toggles—AC/DC Rated
- Product Selection V11-T4-20
- Technical Data and Specifications V11-T4-21
- Dimensions V11-T4-21

4.6 X Series Toggles
- Product Description V11-T4-24
- Accessories V11-T4-25
- Technical Data and Specifications V11-T4-25
- Dimensions V11-T4-26

4.7 Heavy Duty Hesitation Switches
- Product Description V11-T4-27
- Technical Data and Specifications V11-T4-29
- Dimensions V11-T4-29

4.8 Accessories
- Mounting Hardware V11-T4-31
- Decorator Facenuts V11-T4-33
- Panel Seal V11-T4-33
- Replacement Terminal Screws V11-T4-33
- Indicating Plates V11-T4-34

4.9 Technical Data
- Circuit Diagrams V11-T4-35

4.1 Toggle Switches

Introduction

Toggle Switches

4

Contents

Description

Military Purpose Toggles **V11-T4-3**
Illuminated AC Rated Toggles **V11-T4-9**
General Purpose Toggles—AC Rated **V11-T4-11**
General Purpose Toggles—AC/DC Rated **V11-T4-20**
X Series Toggles **V11-T4-24**
Heavy Duty Hesitation Switches **V11-T4-27**
Accessories **V11-T4-31**
Technical Data **V11-T4-35**

Product Selection Guide

Toggle Switches

	Military Purpose Toggles	Illuminated AC Rated Switches	General Purpose Toggles—AC Rated
Product Selection	**Page V11-T4-3**	**Page V11-T4-9**	**Page V11-T4-20**
Circuit Diagram	**Page V11-T4-35**	—	**Page V11-T4-35**
Product Description	Eaton's military purpose switches are designed to meet the requirements of MIL-S-83731	These illuminated switches are available only in single-pole circuitry. A two-pole base is utilized with single-pole housing the lamp.	These AC rated toggle switches offer the widest selection of features and the design flexibility to meet a variety of applications.

	General Purpose Toggles—AC/DC Rated	X Series Toggles	Heavy Duty Hesitation Switches
Product Selection	**Page V11-T4-20**	**Page V11-T4-24**	**Page V11-T4-27**
Circuit Diagram	**Page V11-T4-35**	—	**Page V11-T4-35**
Product Description	This line of switches employs a quick-make/quick-break contact mechanism. These switches are especially suited for use in small motor applications.	Eaton's new, competitively priced, AC rated X Series toggles offer a standard high rating for both single- and two-pole applications.	The most common application for this switch is to help prevent motor damage resulting from the high current generation by counter EMF of the armature at the time of reversing.

Military Purpose Toggles

Contents

Description	*Page*
Military Purpose Toggles	
Technical Data and Specifications	**V11-T4-6**
Dimensions	**V11-T4-7**

Product Description

Eaton's military purpose switches are designed to meet the requirements of MIL-S-83731. Sealed Switches have a silicone rubber lever seal assembled between the lever and the bushing to resist the entrance of contaminants such as dust, sand or water into the contact structure.

The switch mechanisms are completely enclosed to resist the entrance of contaminants into the switch. All metal parts are plated to resist corrosion. The heavy duty switches are offered in both standard toggle lever and lever lock versions. Circuit designations are stamped on the side of each switch.

Standards and Certifications

- MIL-S-83731

Product Selection

AC/DC Rated (Medium Duty) MIL-S-83731

Current Ratings	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Dimension "A" Inches (mm)	Dimension "B" Inches (mm)	Military Solder Lug Terminals MIL-S-83731 with Sealed Lever	Catalog Number
Single-Pole									
See **A** below	1PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	A	—	0.906 (23.01)	**MS25098-22** **MS25098-29** **MS25098-30**	**8261K22** **8261K29** **8261K30**
See **A** below	1PDT	ON ON	NONE NONE	ON MOM. ON	B	0.937 (23.80)	—	**MS25098-23** **MS25098-26**	**8261K23** **8261K26**
Two-Pole									
See **B** below	2PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	C	—	0.906 (23.01)	**MS25100-22** **MS25100-29** **MS25100-30**	**8262K22** **8262K29** **8262K30**
See **C** below	2PDT	ON ON	NONE NONE	ON MOM. ON	D	0.937 (23.80)	—	**MS25100-23** **MS25100-26**	**8262K23** **8262K26**

Current Ratings

	Part Number	Current Capacity in Amperes per Pole = 125 Vac, 60 Hz: Resistive Load	Inductive Load
A	All MS25098	3.0	1.5
B	MS25100-22, 29, 30	3.0	1.5
C	MS25100-23, 26	1.0	1.0

AC Rated (Heavy Duty) MIL-S-83731 with Lever Seal

Current Ratings	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Screw Terminals with Sealed Lever MS Part Number	Catalog Number
Single-Pole									
See **A** below	1PST	ON	NONE	OFF	A	0.468 (11.89)	0.687 (17.45)	**MS35058-22**	**8801K22**
		ON	OFF	NONE				**MS35058-24**	**8801K23**
See **B** below		ON	NONE	MOM. OFF				**MS35058-29**	**8813K17**
		ON	MOM. OFF	NONE				**MS35058-25**	**8813K18**
		NONE	OFF	MOM. ON				**MS35058-28**	**8811K18**
		OFF	NONE	MOM. ON				**MS35058-30**	**8811K17**
See **A** below	1PDT	ON	OFF	ON	B	0.468 (11.89)	0.687 (17.45)	**MS35058-21**	**8800K16**
		ON	NONE	ON				**MS35058-23**	**8810K15**
See **B** below		ON	NONE	MOM. ON				**MS35058-26**	**8804K13**
		MOM. ON	OFF	MOM. ON				**MS35058-27**	**8812K14**
		ON	OFF	MOM. ON				**MS35058-31**	**8809K16**
Two-Pole									
See **C** below	2PST	ON	NONE	OFF	C	0.468 (11.89)	0.687 (17.45)	**MS35059-22**	**8822K20**
		ON	OFF	NONE				**MS35059-24**	**8822K21**
See **D** below		ON	NONE	MOM. OFF				**MS35059-29**	**8828K13**
		ON	MOM. OFF	NONE				**MS35059-25**	**8828K12**
		NONE	OFF	MOM. ON				**MS35059-28**	**8826K14**
		OFF	NONE	MOM. ON				**MS35059-30**	**8826K15**
See **C** below	2PDT	ON	OFF	ON	D	0.468 (11.89)	0.687 (17.45)	**MS35059-21**	**8820K16**
		ON	NONE	ON				**MS35059-23**	**8824K14**
See **D** below		ON	NONE	MOM. ON				**MS35059-26**	**8830K13**
		MOM. ON	OFF	MOM. ON				**MS35059-27**	**8834K5**
		ON	OFF	MOM. ON				**MS35059-31**	**8832K6**
See **E** below	1P3T in a 2P base	ON ①	ON ②	ON ④	See **Page V11-T4-35**	0.468 (11.89)	0.687 (17.45)	**MS25201-4**	**8860K4**
		ON ①	ON ②	MOM. ON ④				**MS25201-5**	**8860K5**
		MOM. ON ①	ON ②	MOM. ON ④				**MS25201-6**	**8860K6**
		ON ①	ON ③	ON ④				**MS25201-7**	**8860K7** ⑤
		ON ①	ON ③	MOM. ON ④				**MS25201-8**	**8860K8** ⑤
		MOM. ON ①	ON ③	MOM. ON ④				**MS25201-9**	**8860K9** ⑤
Four-Pole									
See **F** below	4PST	ON	NONE	OFF	E	0.468 (11.89)	0.687 (17.45)	—	**7660K12**
		ON	OFF	NONE				**MS25068-24**	**7660K13**
See **G** below		ON	MOM. OFF	NONE				**MS25068-25**	**7668K7**
		NONE	OFF	MOM. ON				**MS25068-28**	**7666K9**
		OFF	NONE	MOM. ON				—	**7666K6**
See **F** below	4PDT	ON	OFF	ON	F	0.468 (11.89)	0.687 (17.45)	**MS25068-21**	**7662K7**
		ON	NONE	ON				**MS25068-23**	**7664K5**
See **G** below		ON	NONE	MOM. ON				**MS25068-26**	**7674K5**
		MOM. ON	OFF	MOM. ON				**MS25068-27**	**7672K5**
		ON	OFF	MOM. ON				**MS25068-31**	**7670K6**

Current Ratings

	Switch	Type of Operation	Current Capacity in Amperes per Pole 28 Vdc Lamp Load	28 Vdc Resistive Load	28 Vdc Inductive Load	115 Vac, 60 Hz Lamp Load	115 Vac, 60 Hz Resistive Load	115 Vac, 60 Hz Inductive Load	115 Vac, 400 Hz Lamp Load	115 Vac, 400 Hz Resistive Load	115 Vac, 400 Hz Inductive Load
A	MS35058	Maintained	7	25	15	—	10	10	3	10	10
B	MS35058	Momentary	5	20	10	—	10	7	—	—	—
C	MS35059	Maintained	7	20	15	—	20	—	4	20	15
D	MS35059	Momentary	5	18	10	—	11	—	—	—	—
E	MS25201	ON-ON-ON	5	18	10	2	11	8	2	11	8
F	MS25068	Maintained	5	20	12	—	—	—	4	20	15
G	MS25068	Momentary	4	18	10	—	—	—	2	11	5

Notes

① Across terminals 2-3 and 5-6.
② Across terminals 1-2 and 5-6.
③ Across terminals 2-3 and 4-5.
④ Across terminals 1-2 and 4-5.
⑤ For "INDEPENDENT ON-ON-ON" circuit arrangement, see **Page V11-T4-35**.

AC Rated (Heavy Duty) MIL-S-83731 Lever Lock with Lever Seal

Current Ratings	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Lever Lock Bushing Style ①	Bushing Length "A" Inches (mm)	Lever Lock Length "B" Inches (mm)	Screw Terminals with Sealed Lever MS Part Number	Catalog Number
Single-Pole										
See **A** below	1PST	ON	NONE	⟵ OFF	A	3	0.562 (14.27)	1.000 (25.40)	**MS25125-C2**	**8857K47**
		ON ⟶	NONE	⟵ OFF		4			**MS25125-E2**	**8857K48**
		ON ⟶	⟵ OFF	NONE		5			**MS25125-J4**	**8857K49**
See **A** below	1PDT	ON	⟵ OFF ⟶	ON	B	2	0.562 (14.27)	1.000 (25.40)	**MS25125-B1**	**8857K40**
		ON	NONE	⟵ ON		3			**MS25125-C3**	**8857K45**
		ON ⟶	NONE	⟵ ON		4			**MS25125-E3**	**8857K44**
Two-Pole										
See **B** below	2PDT	ON ⟶	⟵ OFF ⟶	⟵ ON	C	1	0.562 (14.27)	1.000 (25.40)	**MS25126-A1**	**8858K39**
		ON	⟵ OFF ⟶	ON		2			**MS25126-B1**	**8858K40**
		ON ⟶	NONE	⟵ ON		4			**MS25126-E3**	**8858K44**
Four-Pole										
See **C** below	4PDT	ON ⟶	NONE	⟵ ON	F	4	0.562 (14.27)	1.000 (25.40)	**MS25127-E3**	**8859K44**

⟵ Indicates direction against which lever is locked.

Current Ratings

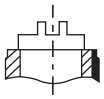
	Switch	Type of Operation	Current Capacity in Amperes per Pole 28 Vdc Lamp Load	28 Vdc Resistive Load	28 Vdc Inductive Load	115 Vac, 60 Hz Lamp Load	115 Vac, 60 Hz Resistive Load	115 Vac, 60 Hz Inductive Load	115 Vac, 400 Hz Lamp Load	115 Vac, 400 Hz Resistive Load	115 Vac, 400 Hz Inductive Load
A	MS25125	Maintained	5	20	15	—	—	—	3	10	10
B	MS25126	Maintained	7	20	15	—	—	—	4	20	15
C	MS25127	Maintained	5	20	15	—	—	—	4	20	15

Note

① See illustrations below for lever lock bushing styles.

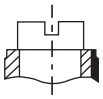
Lever Lock Bushing Styles

Style 1



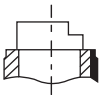
Locked in Three Positions

Style 2



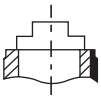
Locked in Center Positions

Style 3



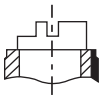
Locked in Keyway Side

Style 4



Locked out of Center Position

Style 5



Locked in Center and Side Opposite Keyway

These illustrations are for pictoral representation only—keyway on right-hand side.

AC Rated (Heavy Duty) Military with Unsealed Lever

Current Ratings	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Solder Lug Terminals Catalog Number	Screw Terminals Catalog Number
Single-Pole									
See **A** below	1PST	ON	NONE	OFF	A	0.468 (11.89)	0.688 (17.45)	**7300K38**	**7300K36**
See **B** below		ON	NONE	MOM. OFF				**7304K38**	**7304K36**
		OFF	NONE	MOM. ON				**7303K38**	**7303K36**
See **A** below	1PDT	ON	OFF	ON	B	0.468 (11.89)	0.688 (17.45)	**7301K38**	**7301K36**
		ON	NONE	ON				**7302K38**	**7302K36**
See **B** below		ON	NONE	MOM. ON				**7307K38**	**7307K36**
		MOM. ON	OFF	MOM. ON				**7306K38**	**7306K36**
		ON	OFF	MOM. ON				**7305K38**	**7305K36**
Two-Pole									
See **C** below	2PST	ON	NONE	OFF	C	0.468 (11.89)	0.688 (17.45)	**7310K38**	**7310K36**
See **D** below		ON	NONE	MOM. OFF				**7314K38**	**7314K36**
		OFF	NONE	MOM. ON				**7313K38**	**7313K36**
See **C** below	2PDT	ON	OFF	ON	D	0.468 (11.89)	0.688 (17.45)	**7311K38**	**7311K36**
		ON	NONE	ON				**7312K38**	**7312K36**
See **D** below		ON	NONE	MOM. ON				**7317K38**	**7317K36**
		MOM. ON	OFF	MOM. ON				**7316K38**	**7316K36**
		ON	OFF	MOM. ON				**7315K38**	**7315K36**

Current Ratings

Type of Operation	Current Capacity in Amperes per Pole 30 Vdc Lamp Load	30 Vdc Resistive Load	30 Vdc Inductive Load	125 Vac, 60 Hz Resistive Load	125 Vac, 60 Hz Inductive Load	125 Vac, 60 Hz Horsepower	250 Vac, 60 Hz Resistive Load	250 Vac, 60 Hz Inductive Load	250 Vac, 60 Hz Horsepower
Single-Pole									
A Maintained	5	20	15	15	—	—	6	—	—
B Momentary	4	15	10	15	—	—	6	—	—
Two-Pole									
C Maintained	7	30	15	25	—	—	9	—	—
D Momentary	5	20	10	15	—	—	6	—	—

Technical Data and Specifications

Military Purpose Switches

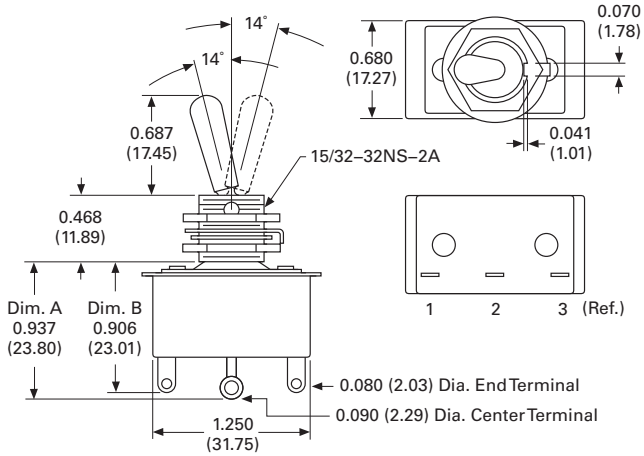
Description	Specification
Ratings	See Product Selection tables
Circuits	1PST, 1PDT, 2PST, 2PDT, 1P3T (ON-ON-ON), 4PST and 4PDT; maintained and momentary action
Contact action	Heavy duty—Slow-make/slow-break butt contact Medium duty—Quick-make/quick-break, wiping action
Contact material	Heavy duty: Movable—silver-plated copper with fine or coin silver contact face button Stationary—copper with fine or coin silver contact face button Medium duty: Movable—copper silver-plated Stationary—bronze silver-plated
Terminal types	Heavy duty MIL-S-83731 types: Screw terminals—brass designed to accept #6-32 x 6.35 mm (0.250 in) pan head (Catalog Number 11-1893) screws and Si bronze #6 helical lockwasher (Catalog Number 16-1096). Furnished unassembled. Terminal screws are tin dipped to facilitate soldering if required Heavy duty JAN-S-23 types: Screw terminals—brass designed to accept #6-32 x 4.78 mm (0.188 in) binding head (Catalog Number 811-2) screws. Furnished unassembled Solder lug terminals—tintillate plated brass Medium duty MIL-S-83731 types: Solder lugs—brass silver-plated furnished with 0.094 in (2.39 mm) dia. hole
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/inch Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep; provides anti-rotation feature Hardware supplied: MIL-S-83731 types— 2 hexagon facenuts (Catalog Number 15-966-6), 1 locking ring (Catalog Number 29-761) and 1 internal tooth lockwasher (Catalog Number 16-886). Furnished unassembled JAN-S-23 types—2 hexagon facenuts (Catalog Number 15-966-6). Furnished unassembled
Dielectric	1000V minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

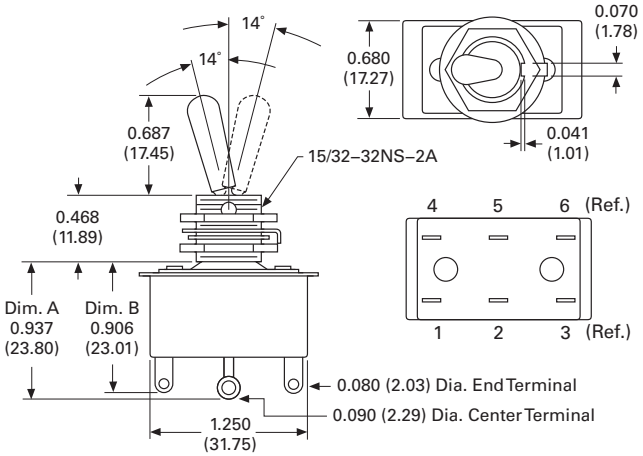
Approximate Dimensions in Inches (mm)

AC/DC Rated (Medium Duty) MIL-83731 Switches

1PDT Maintained Action (Solder Lug)

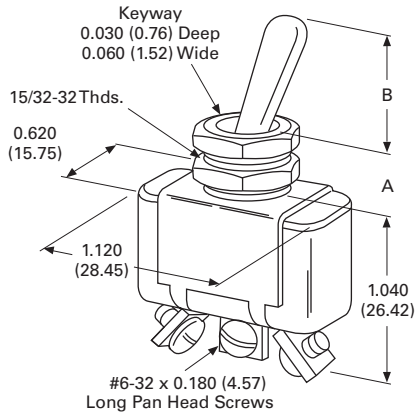


2PDT Maintained Action (Solder Lug)

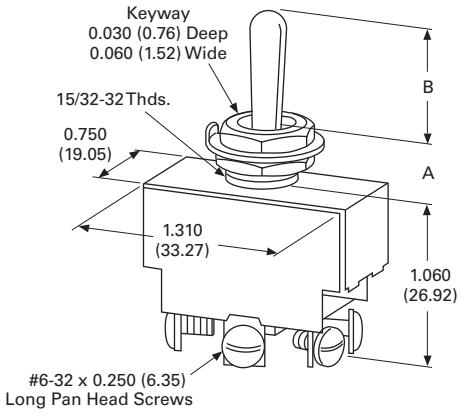


AC Rated (Heavy Duty) MIL-83731 Switches with Lever Seal

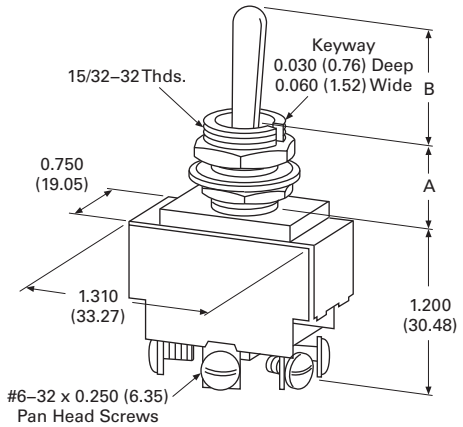
Single-Pole Maintained and Momentary Action



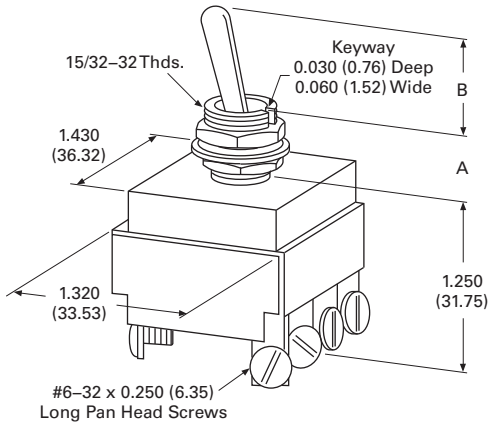
Two-Pole Maintained Action



Two-Pole Momentary Action and 3 ON Circuits



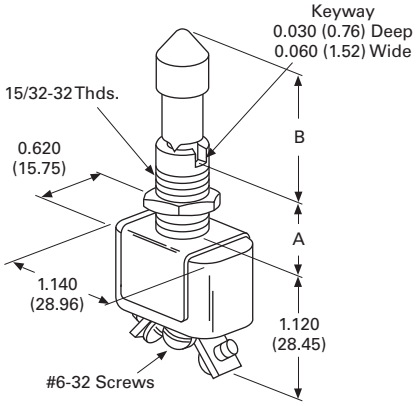
Four-Pole Maintained and Momentary Action



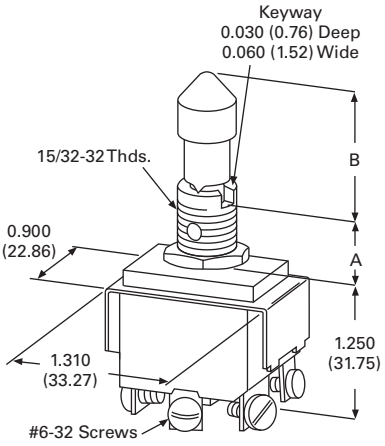
Approximate Dimensions in Inches (mm)

AC Rated (Heavy Duty) MIL-83731 Lever Lock Switches with Lever Seal

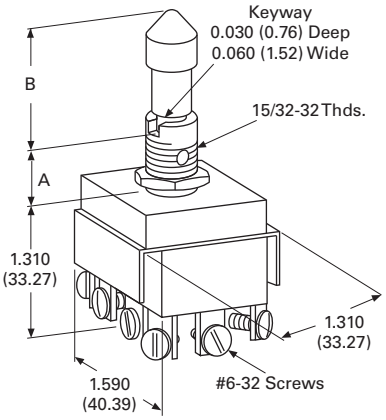
Single-Pole



Two-Pole

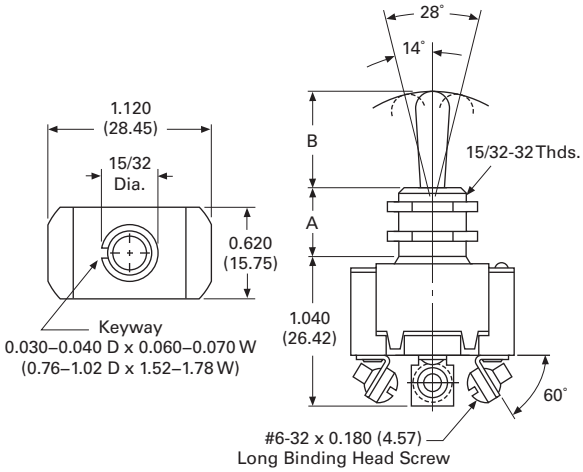


Four-Pole

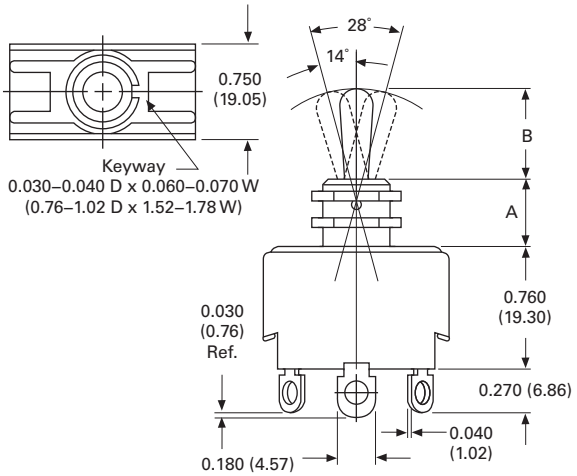


AC Rated (Heavy Duty)

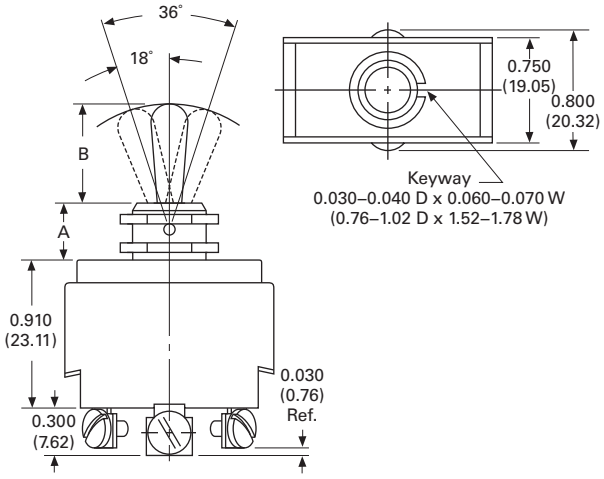
1PDT Maintained Action



2PDT Maintained Action



2PDT Momentary Action



Illuminated AC Rated Toggles

Contents

Description	*Page*
Illuminated AC Rated Switches	
Technical Data and Specifications	**V11-T4-10**
Dimensions	**V11-T4-10**

Product Description

These illuminated toggles are available only in single-pole circuitry. A two-pole base is utilized with single-pole housing the lamp. On single-throw circuits, the lamp is wired to operate in conjunction with the switch.

On double-throw circuits, the lamp is independent of the switch. On the sealed versions, a silicone rubber seal is fitted to the paddle lever to provide a moisture- and dust-resistant seal between the lever and bushing.

Catalog Number Selection

How To Order—Illuminated AC Rated Toggles

Example: **7071K21** → **G 1 52**

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Catalog Number	Circuit Number See Page V11-T4-35
Standard						
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	**7071K21**	G
Sealed						
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	**7073K21**	G
	1PDT	ON MOM. ON	OFF OFF	ON MOM. ON	**7073K20** **7073K25**	H

Code letters and/or numbers—add to base circuit number.

Lever Color
G = Green
T = Red
A = Amber

Bulb Voltage
1 = 14V

Terminal Type
52 = 0.250 in spade

Technical Data and Specifications

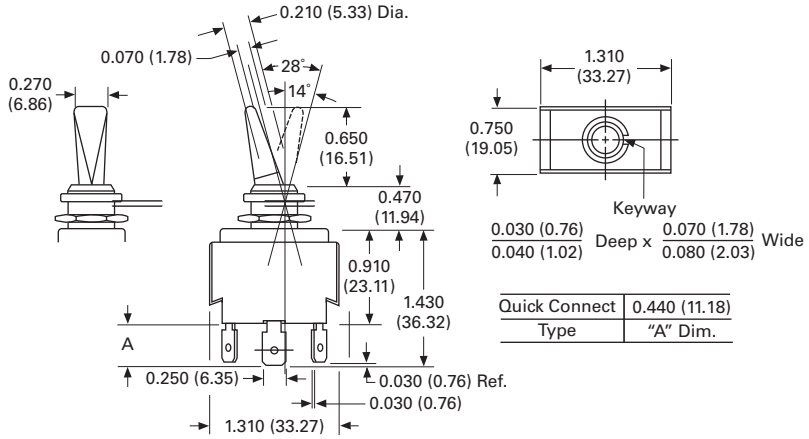
Illuminated AC Rated Toggles

Description	Specification
Ratings	See Catalog Number Selection
Circuits	1PST and 1PDT; maintained and momentary action
Contact material	Movable—silver-plated copper Stationary—silver-plated copper
Terminal types	Spade—brass
Base material	Colored thermoplastic paddle lever

Dimensions

Approximate Dimensions in Inches (mm)

Illuminated



General Purpose Toggles

Contents

Description	*Page*
General Purpose Toggles—AC Rated	
Product Selection	**V11-T4-12**
Technical Data and Specifications	**V11-T4-16**
Dimensions	**V11-T4-16**

Product Description

These AC rated toggle switches offer the widest selection of features and the design flexibility to meet a variety of applications.

Features

The optional features shown below may not be available on all toggle models. Contact your local Eaton Sales Representative.

7500, 7600, 7700 and 7900 Series

- 3-independent ON Circuit (2PDT or 4PDT only, see **Page V11-T4-14**)
- Short (11/32 in) bushing
- Tall (15/32 in) bushing
- White nylon designer lever, see Dimensions on **Page V11-T4-16**
- Black nylon designer lever, see Dimensions on **Page V11-T4-16**
- Hardware—furnished assembled
- Reversing jumpers (not for use with 3-independent ON circuit)
- Short (15/32 in) bat lever
- Tall (11/16 in) bat lever (not available with short bushing)
- Rotate keyway 180°
- Lever seal
- Omit one pole (2P, 3P, 4P only. Not for use with 3-independent ON circuit)

7800 Series Only

- 3-independent ON circuit (2PDT or 4PDT only, see **Page V11-T4-14**)
- Hardware—furnished assembled
- Reversing jumpers (Not for use with 3-independent ON circuit)
- Rotate keyway 180°
- Silicone lever seal (1P and 2P only)
- Omit one pole (2P, 3P, 4P only. Not for use with 3-independent ON circuit)

Options

Combi-Term Option

This is an extension of our AC rated general purpose toggle switch. The "Combi-Term" design allows the user the option of screw terminals, 0.25 in quick connects or solder termination all on the same switch. The special clips and screws are provided in a poly bag with the switch.

Circuits

- 1PST, 1PDT, 2PST, 2PDT, 3PST, 3PDT, 4PST and 4PDT
- Maintained and momentary

Standards and Certifications

- UL® Recognized
- CSA® Certified (except as noted)
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

AC Rated Toggle Switches—Single-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals
6A, 125 Vac 3A, 250 Vac	1PST	ON	NONE	OFF	A	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	**7580K7** **7580K6**	**7580K5** **7580K4**	**7580K9** **7580K8**
	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	**7581K6**	**7581K4**	**7581K8**
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	**7582K6**	**7582K4**	**7582K8**
	1PDT	ON MOM. ON	NONE OFF	MOM. ON MOM. ON	B	0.469 (11.91)	0.563 (14.30)	**7585K6** **7587K6**	**7585K4** **7587K4**	**7585K8** **7587K8**
10A, 250 Vac 1/2 hp, 250 Vac	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.563 (14.30)	**7506K3**	**7506K4**	**7506K6**
	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.688 (17.48)	**7506K38**	**7506K36**	**7506K40**
	1PDT	MOM. ON ON	OFF NONE	MOM. ON MOM. ON	B	0.469 (11.91)	0.563 (14.30)	**7509K4** **7510K6**	**7509K5** **7510K7**	**7509K7** **7510K9**
	1PDT	ON MOM. ON	OFF OFF	MOM. ON MOM. ON	B	0.469 (11.91)	0.688 (17.48)	**7508K38** **7509K38**	**7508K36** **7509K36**	**7508K40** **7509K40**
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125V Vac	1PST	ON	NONE	OFF	A	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	**7501K12** **7501K13**	**7500K13** ① **7500K14** ①	**7501K14** **7501K15**
15A, 125 Vac 10A, 250 Vac 1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	**7503K13** ①	**7502K13**	**7503K15**
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	**7505K4**	**7504K4** ①	**7505K6**
20A, 125 Vac 10A, 250 Vac 1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	A	0.469 (11.91)	0.688 (17.48)	**7546K38**	**7546K36**	**7546K40**
30A, 125 Vac 25A, 250 Vac ②	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.563 (14.30)	—	**7576K2**	—

Notes

① Also 4.2A L at 125 Vac rating.

② Single-pole switch in two-pole base.

AC Rated Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
6A, 125 Vac 3A, 250 Vac 2A, 277 Vac 2.5A, L at 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.563 (14.30)	**7590K6**	**7590K4**	**7590K8**	—
6A, 125 Vac 3A, 250 Vac 2.5A, L at 125 Vac	2PDT	ON	OFF	ON	D	0.469 (11.91)	0.563 (14.30)	**7591K6**	**7591K4**	**7591K8**	—
	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	**7592K6**	**7592K4**	**7592K8**	—
6A, 125 Vac 3A, 250 Vac	2PDT	MOM. ON	OFF	MOM. ON	D	0.469 (11.91)	0.563 (14.30)	**7597K6**	**7597K4**	**7597K8**	—
	2PDT	ON	ON	OFF	7530	0.469 (11.91)	0.563 (14.30)	**7530K1**	**7530K3**	**7530K2**	—
10A 250 Vac, 15A 125 Vac, 1/4 hp 125–250 Vac	2PDT	ON	ON	ON	7555	0.469 (11.91)	0.563 (14.30)	**7555K12**	**7555K11**	**7555K13**	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	**7561K5** **7561K4**	**7560K6** **7560K5**	**7561K7** **7561K6**	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 125–250 Vac	2PDT	ON	OFF	ON	D	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	**7563K5** **7563K4**	**7562K5** **7562K4**	**7563K7** **7563K6**	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	**7565K5**	**7564K6**	**7565K7**	—
15A, 125 Vac 10A, 250 Vac 1/2 hp, 250 Vac	2PST	OFF	NONE	MOM. ON	C	0.469 (11.91)	0.563 (14.30)	**7566K4**	**7566K5**	**7566K7**	—
	2PDT	ON MOM. ON ON	OFF OFF NONE	MOM. ON MOM. ON MOM. ON	D	0.469 (11.91)	0.563 (14.30)	**7568K3** ① **7569K1** **7570K4**	**7568K2** ① **7569K2** **7570K5**	**7568K4** ① **7569K3** **7570K7**	— — —
	2PDT	MOM. ON	OFF	MOM. ON	D	0.469 (11.91)	0.688 (17.48)	**7569K38**	**7569K36**	**7569K40**	—
20A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.688 (17.48)	**7630K38**	**7630K36**	**7630K40**	—
	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.688 (17.48)	**7632K38**	**7632K36**	**7632K40**	—
Section A 10A 250 Vac; 15A 125 Vac, 3/4 hp 250 Vac, 4.2A L 125 Vac; Section B 10A 250 Vac, 15A 125 Vac, 1/4 hp 250 Vac	2PDT	OFF	1 ON	2 ON	7571	0.469 (11.91)	0.563 (14.30)	**7571K2**	**7571K4**	**7571K6**	—
20A, 125 Vac 10A, 250 Vac 1 hp, 120–240 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.688 (17.48)	**7803K11**	**7803K31**	**7803K21** ②	**7803K41**
	2PDT	ON ON MOM. ON	OFF NONE OFF	ON ON MOM. ON	D	0.469 (11.91)	0.688 (17.48)	**7803K12** **7803K13** **7803K17** ②	**7803K32** **7803K33** **7803K37** ②	**7803K22** ③ **7803K23** ③ **7803K27** ②	**7803K42** **7803K43** **7803K47** ②

Notes

① Also 1/2 hp at 125–250 Vac Rating.

② Not CSA Certified.

③ Also 7.5A, 277 Vac, 3/4 hp, 120–240–277 Vac.

AC Rated Toggle Switches—Three-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1 hp, 3 Ph 125–600 Vac 1 hp, 1 and 2 Ph 125–480 Vac	3PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	**7700K1**	**7700K2**	**7700K3**	—
	3PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7701K1**	**7701K2**	**7701K3**	—
		ON	NONE	ON				**7702K1**	**7702K2**	**7702K3**	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	3PDT	MOM. ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7704K1**	**7704K2**	**7704K3**	—
		MOM. ON	NONE	ON				**7705K1**	**7705K2**	**7705K3**	—
20A, 125 Vac 10A, 250 Vac 1 hp, 120 Vac 1, 2 and 3 Ph	3PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7804K12** ②④	**7804K32** ②	**7804K22** ②	**7804K42** ②

AC Rated Toggle Switches—Four-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	4PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	**7691K14**	**7690K8**	—	—
	4PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7693K2**	**7692K13**	—	—
		ON	NONE	ON				**7695K5**	**7694K4**	—	—
20A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	4PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	**7933K38**	**7933K36**	**7933K40**	—
	4PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7934K38**	**7934K36**	**7934K40**	—
		ON	NONE	ON				**7935K38**	**7935K36**	**7935K40**	—
20A, 125 Vac 10A, 250 Vac 1 hp, 125–240 Vac 2 and 3 Ph	4PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	**7805K12** ②	**7805K32** ②	**7805K22** ②	**7805K42** ②

Notes

① Also 1/2 hp at 125–250 Vac Rating.
② Not CSA Certified.
③ Also 7.5A, 277 Vac, 3/4 hp, 120–240–277 Vac.
④ 1 hp at 240–480 Vac single- or two-phase and 240–600 Vac three-phase.

AC Rated Sealed ① Toggle Switches—Single-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals
10A, 250 Vac 1/2 hp, 250 Vac	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.563 (14.30)	—	**7506K20**	**7506K21**
	1PDT	MOM. ON	OFF	MOM. ON	B	0.469 (11.91)	0.563 (14.30)	—	**7509K20**	**7509K21**
		ON	NONE	MOM. ON				—	**7510K20**	**7510K21**
		ON	OFF	MOM. ON				—	**7508K20**	**7508K21**
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125V–250 Vac	1PST	ON	NONE	OFF	A	0.469 (11.91)	0.563 (14.30)	**7501K22**	**7500K20** ②	**7501K21**
15A, 125 Vac 10A, 250 Vac 1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	—	**7502K20**	**7503K21**
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	—	**7504K20** ②	**7505K21**

AC Rated Sealed ① Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.563 (14.30)	—	**7560K20**	**7561K21**
15A, 125 Vac 10A, 250 Vac 3/4 hp, 125–250 Vac	2PDT	ON	OFF	ON	D	0.469 (11.91)	0.563 (14.30)	—	**7562K20**	**7563K21**
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	—	**7564K20**	**7565K21**
15A, 125 Vac 10A, 250 Vac 1/2 hp, 250 Vac	2PST	OFF	NONE	MOM. ON	C	0.469 (11.91)	0.563 (14.30)	—	**7566K20**	**7566K21**
	2PDT	ON	OFF	MOM. ON	D	0.469 (11.91)	0.563 (14.30)	—	**7568K20** ②	**7568K21** ②
		MOM. ON	OFF	MOM. ON				—	**7569K20**	**7569K21**
		ON	NONE	MOM. ON				—	**7570K20**	**7570K21**

AC Rated Special Circuit Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	0.250 in Spade Terminals
15A, 125 Vac 10A, 250 Vac 3/4 hp, 125–250 Vac	2PDT	2-3, 5-6	OFF	2-6, 5-3	D	0.469 (11.91)	0.563 (14.30)	**7563K24**	**7562K23**	**7563K25**
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	2-3, 5-6	NONE	2-6, 5-3	D	0.469 (11.91)	0.563 (14.30)	**7565K24**	**7564K23**	**7565K25**

Notes

① Seal is lever seal only and is dust and splash resistant. Panel seal is available, Part Number **32-341**.

② Also 1/2 hp at 125–250 Vac Rating.

Technical Data and Specifications

General Purpose Toggles—AC Rated

Description	Specification
Ratings	See Product Selection tables; Switch ratings at 125 Vac also apply to 28 Vdc
Contact mechanism	Slow-make/slow-brake butt contact
Terminal types	Screw terminals—brass designed to accept #6-32x 3/16 binding head (Cat. No. 811-2) screws Furnished unassembled Solder lug terminals—tintillate-plated brass Spade terminals—combi-term—brass
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/in Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep, provides anti-rotation feature Hardware supplied—1 hexagon locknut (Cat. No. 15-192) and 1 bright nickel-plated knurled facenut (Cat. No. 15-124F1), except 7700–7705, which have bright nickel hexagon facenut (Cat. No. 15-966-2) Furnished unassembled
Finish	Bright nickel-plated toggle lever and bushing
Dielectric withstand	1000V rms minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Contact Material

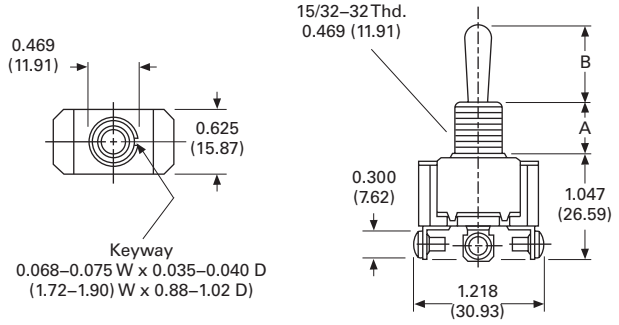
Ampere	Movable	Stationary
7500, 7600, 7700 and 7900 Series Switches		
3 to 6	Silver-plated copper	Silver-plated copper
10 to 20	Silver-plated copper with silver buttons	Silver-plated copper with silver buttons
20 to 30	Silver-plated copper with cad oxide buttons	Copper with cad oxide buttons
7800 Series Switches		
3 to 6	Silver-plated copper	Silver-plated copper
10 to 20	Copper with silver buttons	Copper with silver buttons

Dimensions

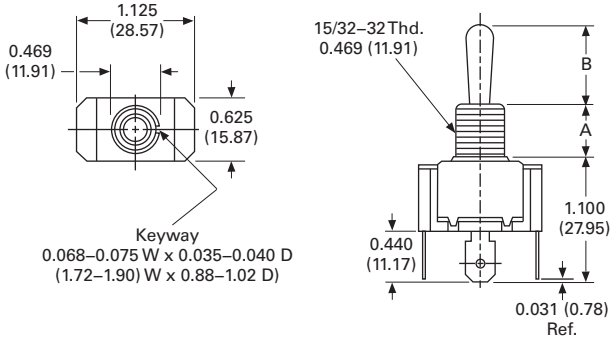
Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series

1PST Maintained and Momentary (Screw Terminals)



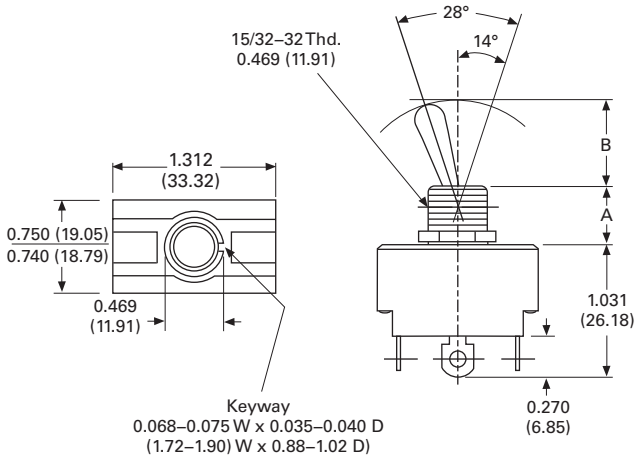
1PDT Maintained and Momentary (Spade Terminals)



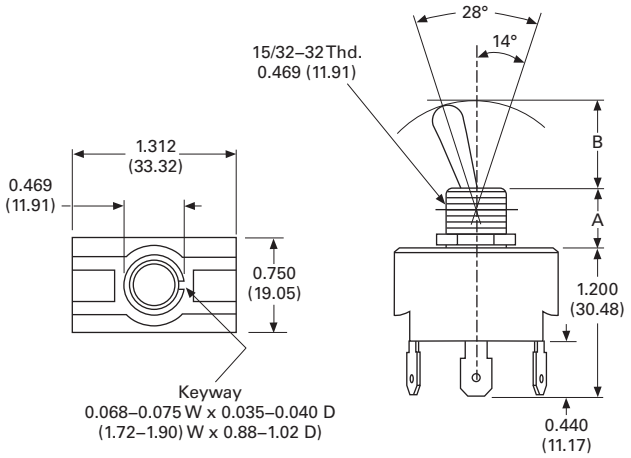
Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series, continued

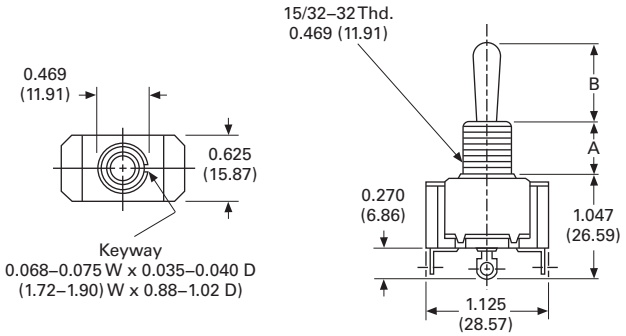
2PDT Maintained (Solder Lugs)



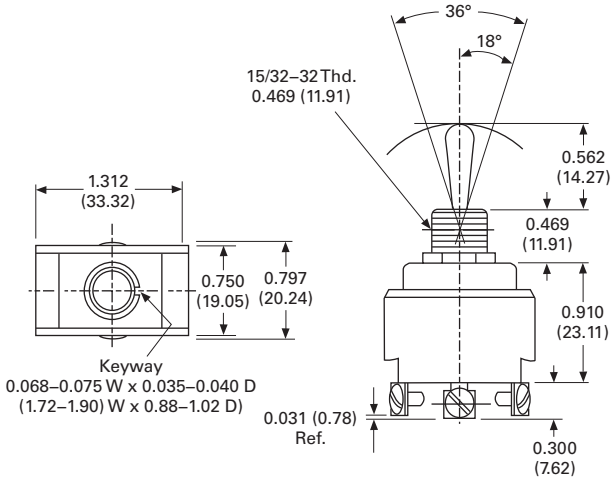
2PDT Maintained (Spade Terminals)



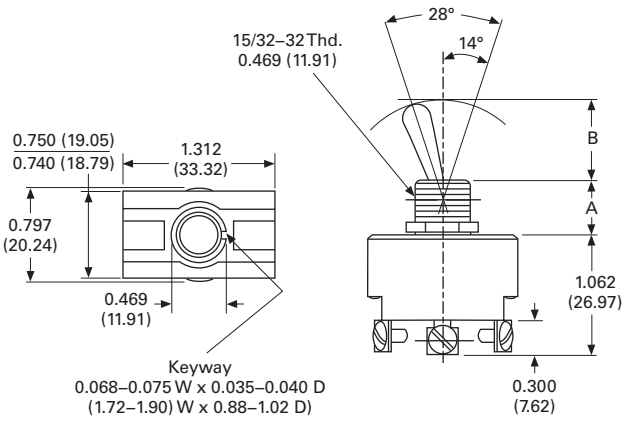
1PDT Maintained and Momentary (Solder Lugs)



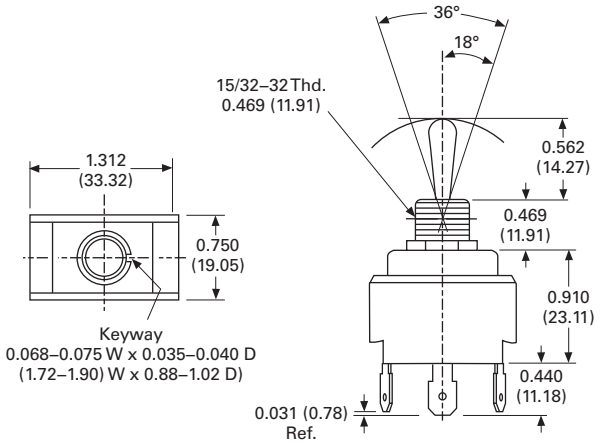
2PDT Momentary (Screw Terminals)



2PDT Maintained (Screw Terminals)



2PDT Momentary (Spade Terminals)

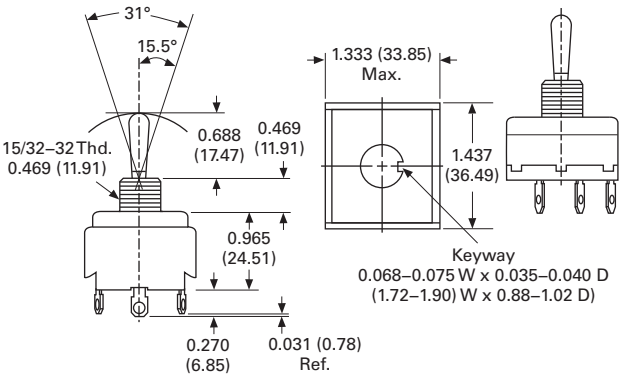


4

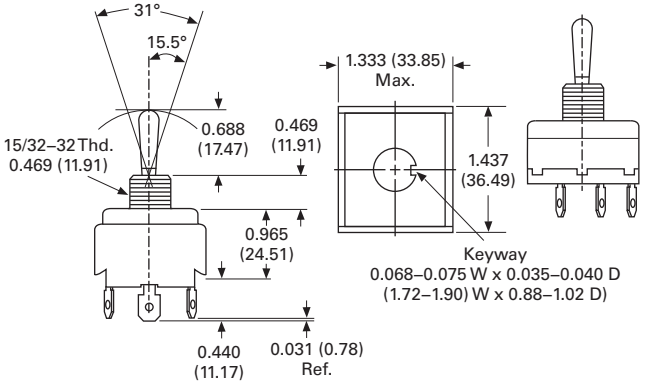
Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series, continued

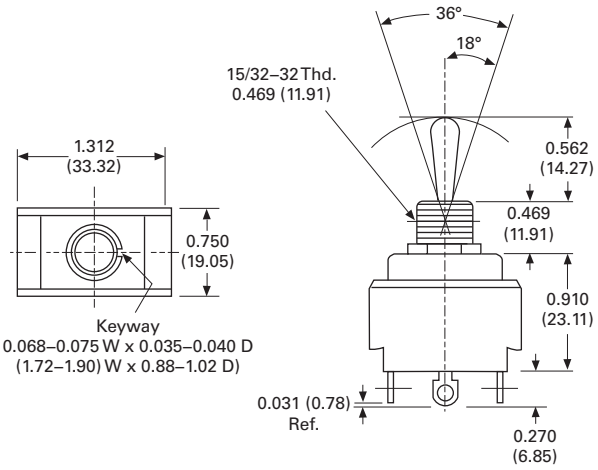
3PDT Maintained and Momentary (Solder Lugs)



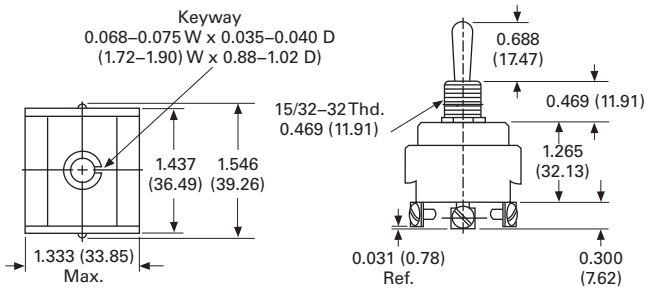
3PDT Maintained and Momentary (Spade Terminals)



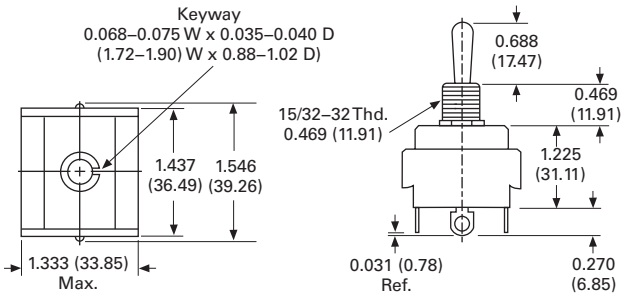
2PDT Momentary (Solder Lugs)



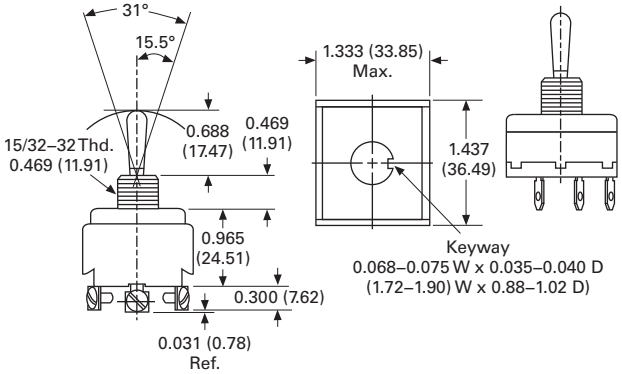
4PDT Maintained and Momentary (Screw Terminals)



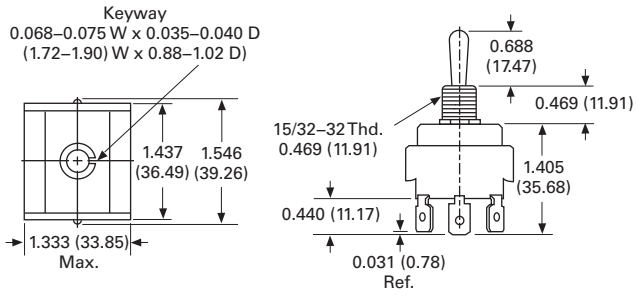
4PDT Maintained and Momentary (Solder Lugs)



3PDT Maintained and Momentary (Screw Terminals)



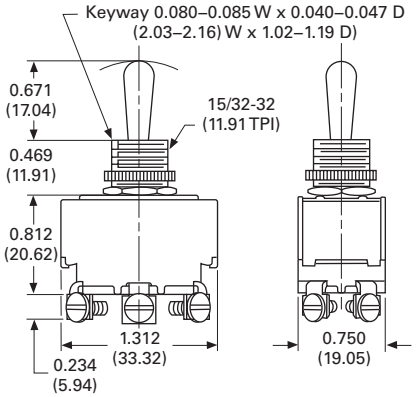
4PDT Maintained and Momentary (Spade Terminals)



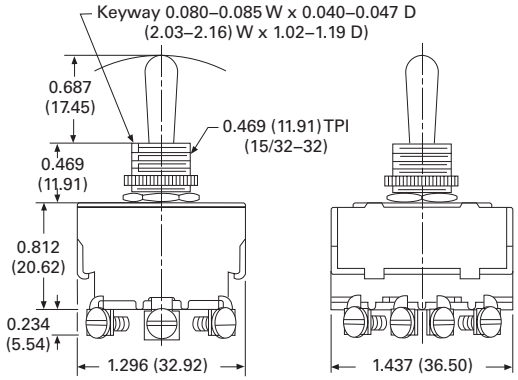
Approximate Dimensions in Inches (mm)

7800 Series

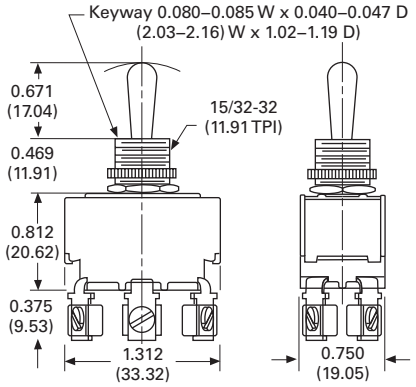
2PDT Maintained (Screw Terminals)



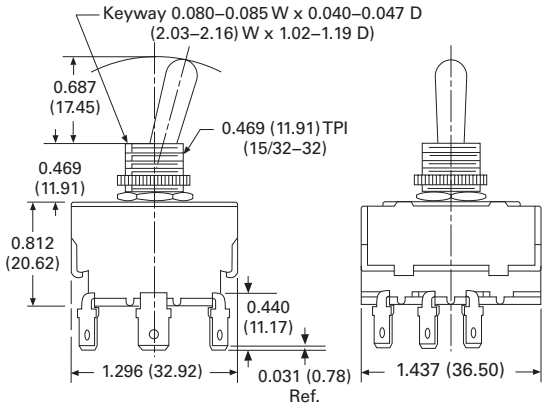
4PDT Maintained (Screw Terminals)



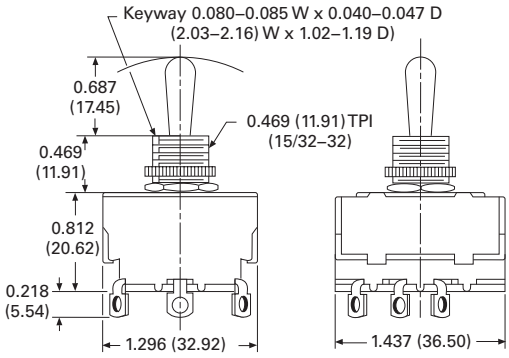
2PDT Maintained (Combi-Terminals)



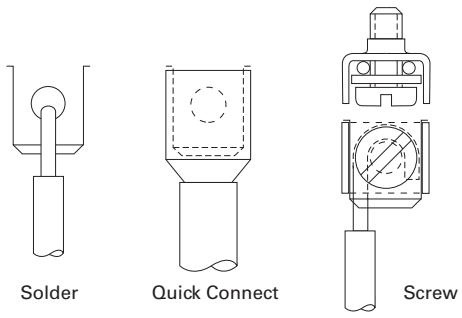
3PDT Maintained (0.25 in Spade Terminals)



3PDT Maintained (Screw Terminals)



Combi-Term Termination Options



General Purpose Toggles

Contents

Description	*Page*
General Purpose Toggles—AC/DC Rated	
Technical Data and Specifications	**V11-T4-21**
Dimensions	**V11-T4-21**

Product Description

This line of switches employs a quick-make/quick-break contact mechanism. The resultant high-speed movement eliminates the "teasing" of the switch and reduces the pitting of the contact surfaces due to arcing. Self-cleaning and wiping contact action assures positive contact on switch operation. These switches are especially suited for use in small motor applications.

Options

- Lever—11/16 in
- Lever seal
- Mounting hardware; furnished assembled
- Other lead lengths

Standards and Certifications

- UL Recognized
- CSA Certified
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

AC/DC Rated Toggle Switches—Single-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position	Base Circuit See Page V11-T4-35	Bushing Length "B" Inches (mm)	Lever Length "A" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	Wire Leads
3A, 250 Vdc	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.500 (12.70)	**8280K115**	**8295K107**	**8290K115**
6A, 125 Vac/Vdc	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.500 (12.70)	**8381K107**	**8396K107**	**8391K107**
3A, 250 Vdc		ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	**8381K108**	**8396K108**	**8391K108**
		MOM. ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	**8928K478**	—	—
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.500 (12.70)	**8928K479**	—	—

AC/DC Rated Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position	Base Circuit See Page V11-T4-35	Bushing Length "B" Inches (mm)	Lever Length "A" Inches (mm)	Catalog Number Solder Lugs	Screw Terminals	Wire Leads
7A, 125V	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.500 (12.70)	**8370K107**	**8372K107**	**8371K107**
3A, 250 Vdc		MOM. ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	**8928K481** ①	**8928K482** ①	—
	2PDT	ON	NONE	ON	D	0.344 (8.74)	0.500 (12.70)	**8373K108**	**8375K108**	**8374K108**
		ON	NONE	ON		0.469 (11.91)	0.500 (12.70)	**8373K107**	**8375K107**	**8374K107**

Note

① Rating: 6A, 125 Vac/Vdc and 3A, 250 Vdc.

Technical Data and Specifications

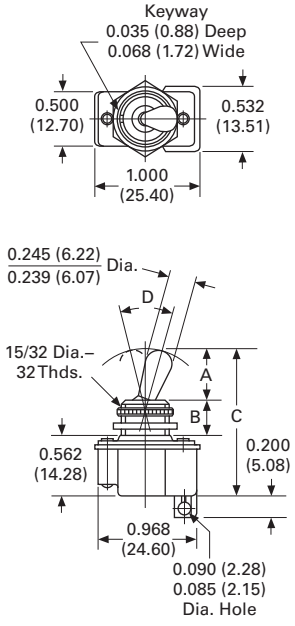
General Purpose Toggles—AC/DC Rated

Description	Specification
Ratings	See Product Selection table; Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	1PST, 1PDT, 2PST, 2PDT Maintained and momentary toggle action
Contact mechanism	Quick-make/quick-break wiping action
Contact material	Bronze silver-plated
Terminal types	Screw terminals—brass designed to accept #5-40 x 5/32 in (Cat. No. 11-26) screws Furnished unassembled Solder lug terminals—brass silver-plated with 0.085–0.090 in (2.16–2.29 mm) dia. hole Integrated wire leads—18 gauge, 6 in long and skinned 3/4 in Special wire leads lengths beyond 6 in are available at additional charge
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/inch Keyway—0.068 x 0.035 in (1.73 x.89 mm) deep, provides anti-rotation feature Hardware supplied—1 hexagon locknut (Cat. No. 15-192) and 1 bright nickel-plated knurled facenut (Cat. No. 15-124F1) Furnished unassembled
Finish	Bright nickel-plated toggle lever and bushing
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

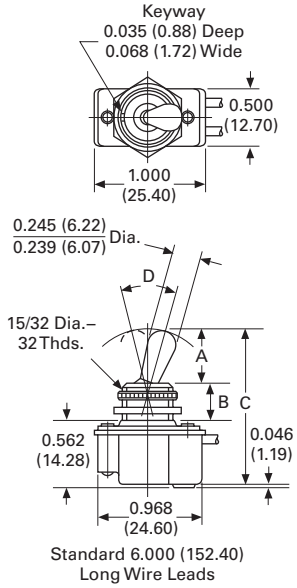
Approximate Dimensions in Inches (mm)

8280K115 1PST Maintained (Solder Lug)



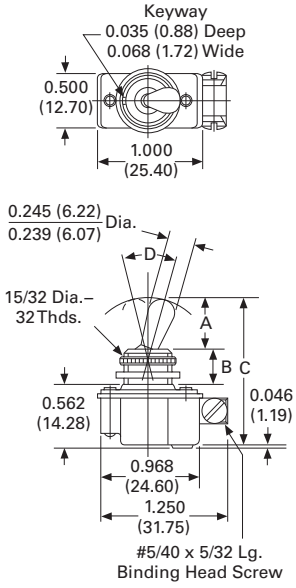
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.411 (35.84)	29-1/2°

8290K115 1PST Maintained (Wire Lead)



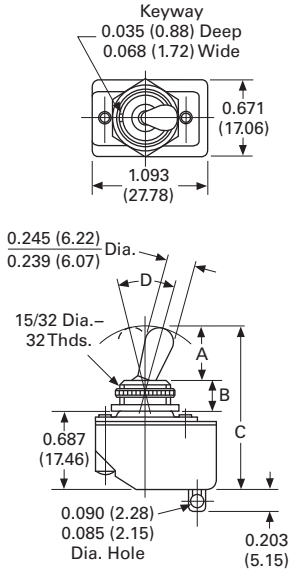
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.406 (35.71)	29-1/2°

8295K107 1PST Maintained (Screw Terminals)



"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.406 (35.71)	29-1/2°

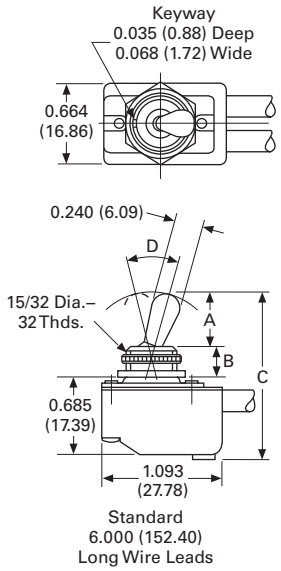
8381K107 and K108 1PST Maintained (Solder Lug)



"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

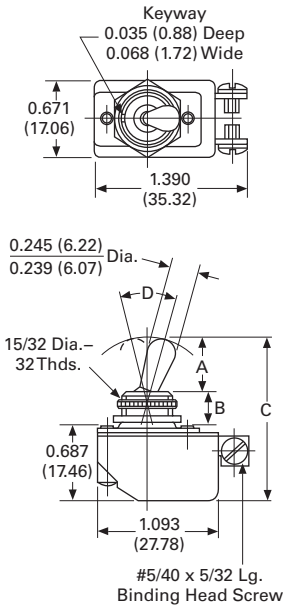
Approximate Dimensions in Inches (mm)

8391K107 and K108 1PST Maintained (Wire Lead)



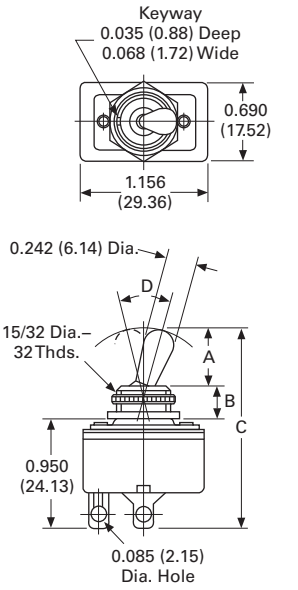
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8396K107 and K108 1PST Maintained (Screw Terminals)



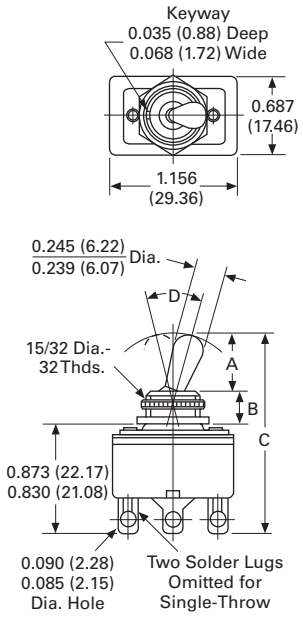
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8928K478 1PST Momentary (Solder Lug)



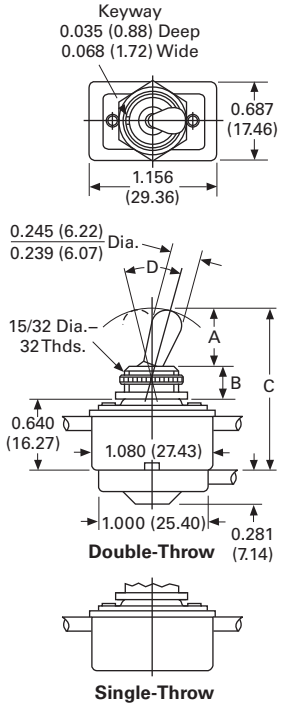
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.980 (50.29)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8370 and 8373K107 and K108 2PST/2PDT Maintained (Solder Lug)



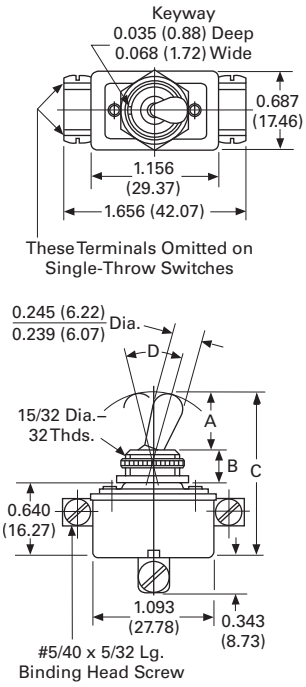
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.694 (43.03)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.820 (46.23)	25-1/2°

8371 and 8374K107 and K108 1PST Maintained (Wire Lead)



"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.484 (37.69)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.515 (38.48)	25-1/2°

8373 and 8375K107 and K108 2PST/2PDT Maintained (Screw Terminals)



"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.484 (37.69)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.609 (40.87)	25-1/2°

X Series Toggles

Contents

Description	*Page*
X Series Toggles	
Product Selection	**V11-T4-25**
Accessories	**V11-T4-25**
Technical Data and Specifications	**V11-T4-25**
Dimensions	**V11-T4-26**

Product Description

Eaton's new, competitively priced, AC rated X Series toggles offer a standard high rating for both single- and two-pole applications. The new X Series toggle line offers a wide range of switching circuits, functions and accessories. Ratings for single- and two-pole include 20A at 125 Vac and 10A at 277 Vac to handle more severe inductive, motor and lamp loads.

In addition, X Series toggles have a high standard horsepower rating of 1-1/2 hp, 125–250 Vac for two-pole applications.

The easy-to-install toggles also have an industry-standard 0.48 in diameter mounting hole. For added convenience and delivery support, select industry-standard switch circuit part numbers are available from stock. With so many features, X Series toggles can be used in a variety of applications.

Application Description

- Commercial and industrial equipment
- Household appliances
- Industrial machinery and automation
- Medical equipment
- Military communications and surveillance
- Rail systems
- Signaling and communications
- Test and lab equipment
- Telecommunications, cable and broadcasting

Standards and Certifications

- UL Recognized component for Canada File E2702
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

Single-Pole ①

Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position ②	Terminal Type—Catalog Number 0.250 in Spade	Screw	Solder Lugs
1PST	ON	NONE	OFF	**XTD1A1A2**	**XTD1A2A2**	**XTD1A3A2**
1PST	ON ③	NONE	OFF	**XTD1F1A2**	**XTD1F2A2**	**XTD1F3A2**
1PDT	ON	OFF	ON	**XTD2B1A**	**XTD2B2A**	**XTD2B3A**
1PDT	ON	NONE	ON	**XTD2C1A**	**XTD2C2A**	**XTD2C3A**
1PDT	ON	NONE	ON ③	**XTD2D1A**	**XTD2D2A**	**XTD2D3A**
1PDT	ON ③	OFF	ON ③	**XTD2E1A**	**XTD2E2A**	**XTD2E3A**
1PDT	ON	OFF	ON ③	**XTD2G1A**	**XTD2G2A**	**XTD2G3A**

Two-Pole ④

Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position ②	Terminal Type—Catalog Number 0.250 in Spade	Screw	Solder Lugs
2PST	ON	NONE	OFF	**XTD3A1A2**	**XTD3A2A2**	**XTD3A3A2**
2PST	ON ③	NONE	OFF	**XTD3F1A2**	**XTD3F2A2**	**XTD3F3A2**
2PDT	ON	OFF	ON	**XTD4B1A**	**XTD4B2A**	**XTD4B3A**
2PDT	ON	NONE	ON	**XTD4C1A**	**XTD4C2A**	**XTD4C3A**
2PDT	ON	NONE	ON ③	**XTD4D1A**	**XTD4D2A**	**XTD4D3A**
2PDT	ON ③	OFF	ON ③	**XTD4E1A**	**XTD4E2A**	**XTD4E3A**
2PDT	ON	OFF	ON ③	**XTD4G1A**	**XTD4G2A**	**XTD4G3A**

Notes

① Ratings: 20A at 125 Vac, 10A at 277 Vac, 3/4 hp, 125–250 Vac; recommended up to 15A at 28 Vdc.
② Keyway position.
③ Indicates momentary position.
④ Ratings: 20A at 125 Vac, 10A at 277 Vac, 1-1/2 hp, 125–250 Vac; recommended up to 15A at 28 Vdc.

Accessories

See Accessories on **Page V11-T4-31**.

Technical Data and Specifications

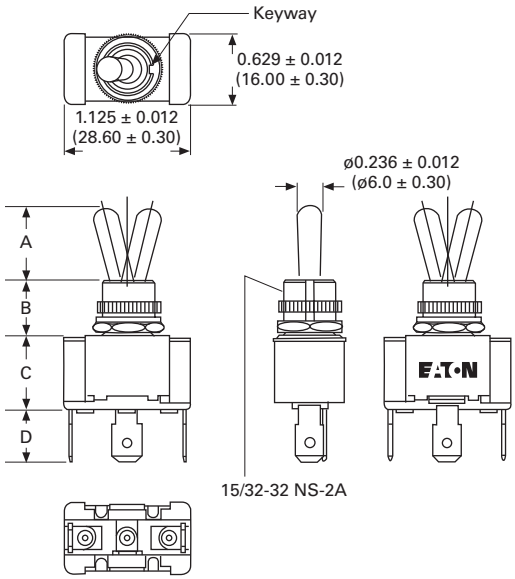
X Series Toggles

Description	Specification
Single-pole rating	20A, 125 Vac; 10A, 277 Vac; 3/4 hp 125–250 Vac; Recommended up to 15A at 28Vdc
Two-pole rating	20A, 125 Vac; 10A, 277 Vac; 1-1/2 hp 125–250 Vac; Recommended up to 15A at 28Vdc
Available circuits	1PST, 1PDT, 2PST, 2PDT
Terminal types	Brass screw, brass solder lugs, brass nickel-plated 0.250 in spade
Hardware included	Zinc nickel-plated knurl nut, zinc nickel-plated hex nut
Mounting means	Threaded bushing 12.0 +0.1, –0 mm; 16.5 +1, –1 mm
Keyway	1.8 mm located in DOWN position
Base material	Thermoset molding material
Finish	Bright nickel-plated toggle lever and bushing
Contact mechanism	Slow-make/slow-break butt contact
Contact resistance	50 ohm maximum
Dielectric strength	AC 1500V, 1 minute
Operating temperature	32° to 149°F (0° to 65°C)
Insulation resistance	DC 500V 100M ohm minute
Seal level rating	IP40
Packaging	Sealed in polybag labeled with part number

Dimensions

Approximate Dimensions in Inches (mm)

Single-Pole



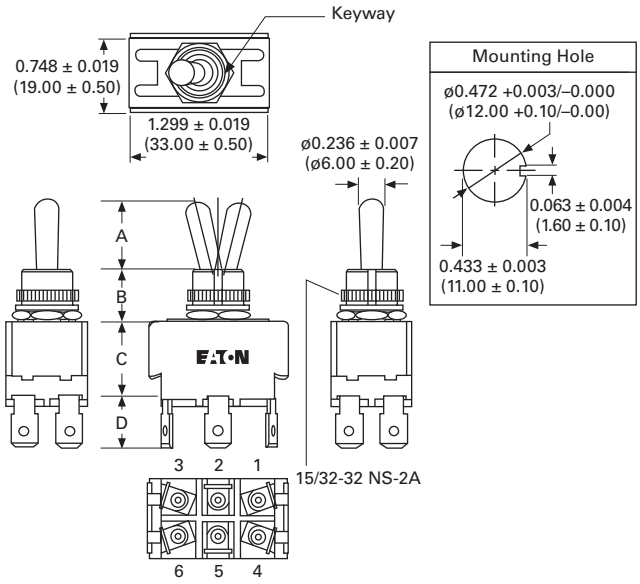
A 0.649 ± 0.039 (16.50 ± 1.00)

B 0.468 ± 0.012 (11.90 ± 0.30)

C 0.677 ± 0.019 (17.20 ± 0.50)

D 0.452 ± 0.019 (11.50 ± 0.50)

Two-Pole



A 0.649 ± 0.039 (16.50 ± 1.00)

B 0.468 ± 0.012 (11.90 ± 0.30)

C 0.740 ± 0.019 (18.80 ± 0.50)

D 0.452 ± 0.019 (11.50 ± 0.50)

Heavy Duty Hesitation Switches

Contents

Description	*Page*
Heavy Duty Hesitation Switches	
Product Selection	**V11-T4-28**
Technical Data and Specifications	**V11-T4-29**
Dimensions	**V11-T4-29**

Product Description

One-Hole Panel Mount

These heavy duty toggle switches are available in either two- or three-position. The three-position switches offer a unique positive center stop feature, which assures that the lever cannot be thrown from one side through the center OFF position without stopping. This design feature is a major factor in their widespread acceptance for motor reversing and speed control applications.

The most common application for the switch is to help prevent motor damage resulting from the high current generation by counter EMF of the armature at the time of reversing. This type of device is referred to within the industry as an anti-plugging, hesitation, positive stop or positive off switch. Typical applications include bench tools, coach and truck (electric lift) and X-ray equipment.

Flush Mount

These three-position switches also offer the positive center stop feature where the lever cannot be thrown from one side through the center OFF position without stopping. The high ratings of this series allow it to be used with a broad range of heavy duty applications. Copper contacts and brass screw terminals are standard.

Standards and Certifications

- UL Recognized (except where noted)
- CSA Certified (where noted)

Product Selection

Heavy Duty Hesitation Switches—One-Hole Panel Mount

Rating	Poles and Throw ②	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Lever Type	Catalog Number Solder Terminals	Screw Lugs	0.250 in Spade Terminals
15A, 125 Vac ① 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	OFF	ON	D	0.468 (11.89)	0.687 (17.45)	Bat	**7992K11**	**7992K10**	**7992K12**
15A, 125 Vac ① 10A, 250 Vac 3/4 hp, 250 Vac	3PDT	ON	OFF	ON	F	0.468 (11.89)	0.687 (17.45)	Bat	**7991K11**	**7991K10**	**7991K12**
15A, 125 Vac ① 10A, 250 Vac 3/4 hp, 250 Vac	4PDT	ON	OFF	ON	F	0.468 (11.89)	0.687 (17.45)	Bat	**7990K11**	**7990K10**	**7990K12**

Heavy Duty Hesitation Switches—Flush Mount

Rating	Poles and Throw	Circuit with Toggle in … UP Position	CENTER Position	DOWN Position (Keyway)	Lever Type	Termination Type	Catalog Number
20A, 125 Vac/Vdc	2PDT	ON	NONE	ON	Square	Screw	**7810K1**
10A, 250 Vac/Vdc		ON	OFF	ON	Square	Screw	**7810K2** ③④
30A, 125 Vac/Vdc 20A, 250 Vac/Vdc	2PDT	ON	OFF	ON	Square	Screw	**7811K5** ③⑤
	3PDT	ON	OFF	ON	Square	Screw	**7812K2**
	4PDT	ON	OFF	ON	Square	Screw	**7813K2**

Notes

① Listed rating for 125 Vac also applies at 28 Vdc.
② Supplied in a four-pole base.
③ CSA Certified.
④ Also rated 5A, 600 Vac; 1-1/2 hp, 250 Vdc; 2 hp, 240 Vac.
⑤ Also rated 2 hp, 250 Vac/Vdc.

Technical Data and Specifications

Heavy Duty Hesitation Switches

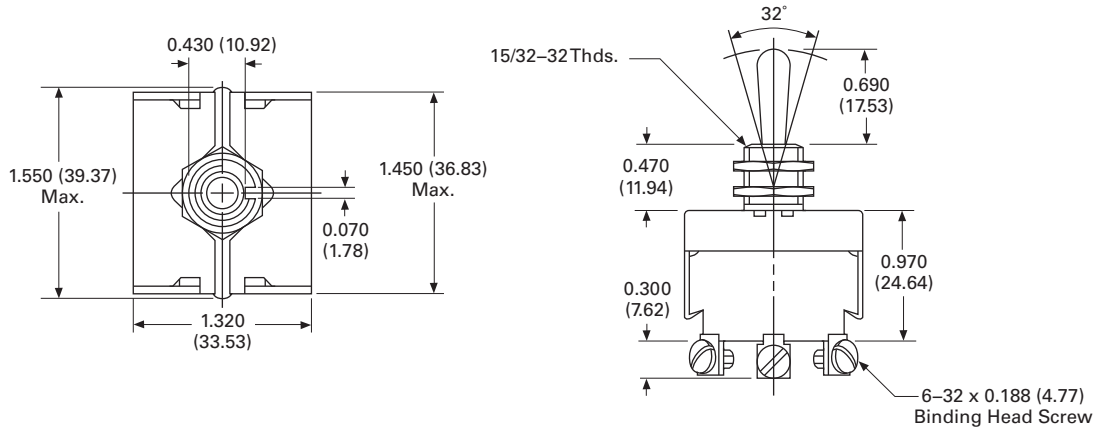
Description	Specification
Ratings	See Product Selection tables; Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	2PDT, 3PDT, 4PDT; maintained action
Contact mechanism	
One-hole panel mount	AC rated devices—slow-make/Slow-break butt contact AC/DC rated devices—Quick-make/quick-break wiping contacts
Flush mount	Quick-make/quick-break wiping contacts
Contact material	
One-hole panel mount	AC rated devices: Movable—silver-plated copper with fine or coin silver contact face button Stationary—copper with fine or coin silver contact face button AC/DC rated devices: Movable—copper Stationary—bronze
Flush mount	Movable—copper Stationary—copper
Terminal types	Screw terminals—brass
Mounting means	
One-hole panel mount	AC rated devices: Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/in Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep, provide anti-rotation feature Hardware supplied— 1 hexagon locknut (Catalog Number 15-192) and 1 hex facenut (Catalog Number 15-966-6) Furnished unassembled
Flush mount	Flush mounting panel tabs
Dielectric withstand	1000V rms minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

Approximate Dimensions in Inches (mm)

One-Hole Panel Mount

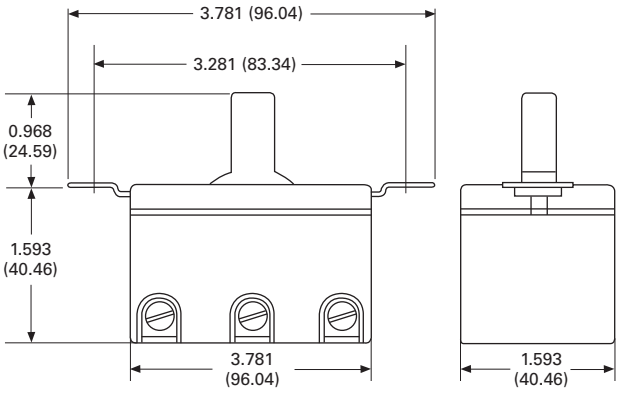
7990K10—4PDT



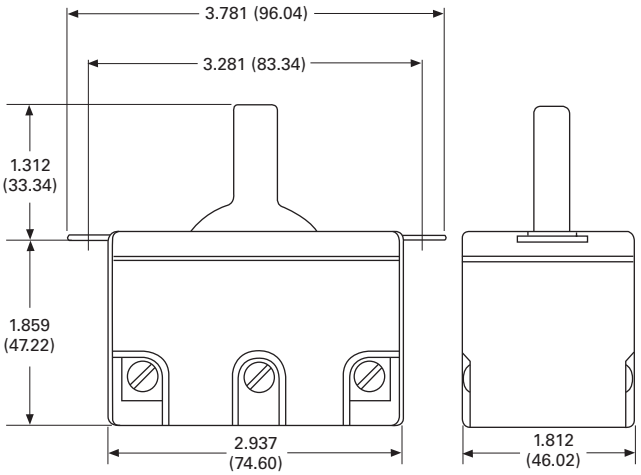
Approximate Dimensions in Inches (mm)

Flush Mount

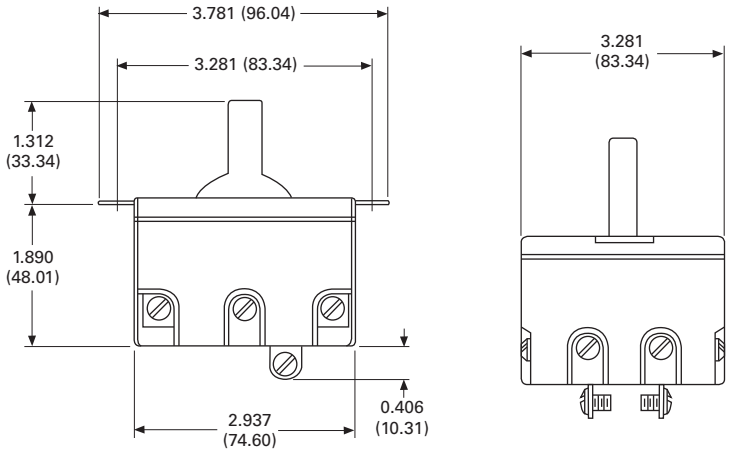
7810K2—2PDT



7811K2—2PDT



7813K2—4PDT



Mounting Hardware

Product Description

One-Hole Mounting Switches

All bushing mounted switches are furnished with two mounting nuts. One nut is mounted behind the panel to prevent the bushing sleeve from being distorted if the front panel is overtightened

Eaton accepts no responsibility for damage to switches mounted without the backup nuts.

Product Selection

Mounting Hardware for One-Hole Mounting Switches—Mounting Nuts ①

Size	Description	Material	Thickness Dim. "A" in Inches (mm)	Inside Diameter Dim "B" in Inches (mm)	OD or Dimension Across Flats Dim. "C" in Inches (mm)	Dimension Across Corners Dim. "D" in Inches (mm)	Catalog Number
3/8-27	Hexagon locknut	Nickel-plated brass	0.125 (3.18)	—	0.562 (14.27)	0.625 (15.88)	**15-2526-2**
3/8-24		Bright nickel-plated brass		—			**15-1525-6**
11/32-32		Nickel-plated brass	0.063 (1.60)	—	0.473 (12.01)	0.531 (13.49)	**15-1525-2**
15/32-32	Hexagon locknut	Zinc-chromate treated	0.075 (1.91)	—	0.625 (15.88)	—	**15-192**
		Bright nickel-plated brass	0.078 (1.98)	—	0.546 (13.87)	0.625 (15.88)	**15-2525-58**
		Zinc-chromate treated	0.188 (4.76)	0.783 (19.89)	1.125 (25.80)	—	**15-2528-2**
	Hexagon facenut	Nickel-plated brass	0.078 (1.98)	—	0.562 (14.27)	0.656 (16.66)	**15-966-2**
		Semi-lustre nickel-plated brass		—			**19-966-6**
	Knurled facenut	Bright nickel-plated brass	0.066 (1.68)	—	0.562 (14.27)	—	**15-124F1**
		Black cupric oxide-plated brass		—		—	**15-124F5**
		Brass nickel-plated brass	0.109 (2.77)	—	0.625 (15.88)	—	**15-90**
	Chamfered dress nut	Bright nickel-plated brass	0.151 (3.84)	0.312 (7.92)	0.687 (17.45)	—	**15-994-2**
	Standard knurl nut with shoulder	Nickel-plated brass	0.109 (2.77)	—	0.593 (15.06)	—	**15-2534-14**
	Dress nut	Satin chrome-plated brass	0.125 (3.18)	—	0.562 (14.27)	—	**15-2523-4**
		Black nylon	0.187 (4.75)	0.390 (9.91)	0.640 (16.26)	—	**15-1048-3**
	Knurled dress nut	Chrome-plated brass	0.187 (4.75)	0.312 (7.92)	0.640 (16.26)	—	**15-189-5**
3/4-32	Hexagon facenut	Nickel-plated steel	0.093 (2.36)	—	0.937 (23.80)	1.078 (27.38)	**15-1043**
#8-40	Hexagon locknut with facenut	Nickel-plated steel	0.060 (1.52)	—	0.245 (6.22)	0.216 (5.49)	**15-1047**

Note

① Hardware items are sold for use with Eaton switches only. Minimum ordering quantity on all items is 100.

Mounting Washers and Locking Ring ①

Size	Description	Material	Approximate Dimensions in Inches (mm) Thickness Dim. "A"	Inside Diameter Dim "B"	OD or Dimension Across Flats Dim. "C"	Dimension Across Corners Dim. "D"	Catalog Number
For 15/32 bushing	Locking ring	Zinc-plated steel	0.040 (1.02)	0.475 (12.07)	0.718 (18.24)	—	**29-761-5**

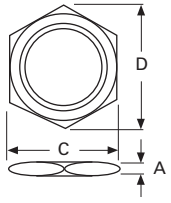
4

Dimensions

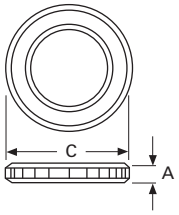
Approximate Dimensions in Inches (mm)

Mounting Hardware

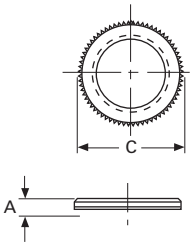
Hexagon Locknuts or Facenuts



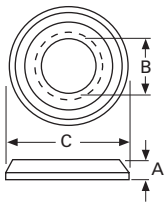
Knurled Facenut



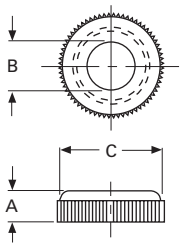
Knurled Nut with Shoulder



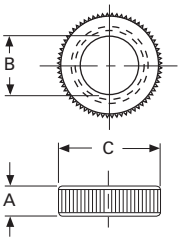
Chamfered Dress Nut Catalog No. 15-994-2



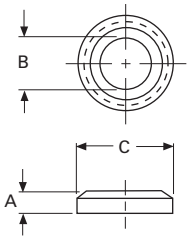
Knurled Dress Nut Catalog No. 15-189-5



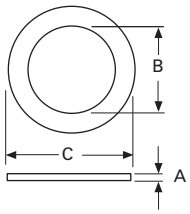
Knurled Dress Nut Catalog No. 15-1048-3



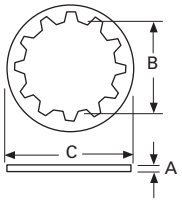
Dress Nut Catalog No. 15-2523-4



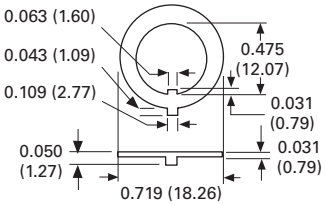
Plain Washer



Internal Tooth Lockwasher



Locking Ring



Note

① Hardware items are sold for use with Eaton switches only.

Decorator Facenuts

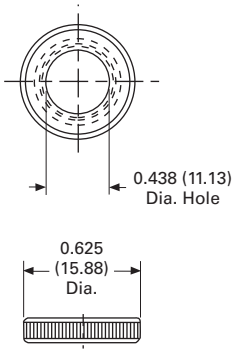
Product Selection [1]

Type	Color	Catalog Number
Knurled facenuts	Bright black	**15-1048-3**
	Bright clear	**15-1048-7**
Beveled facenuts	Bright black	**15-1049-3**
	Bright clear	**15-1049-7**

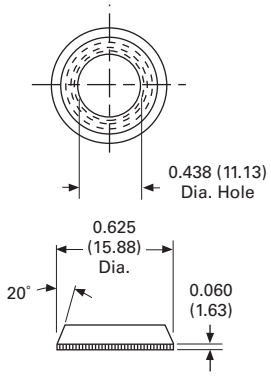
Dimensions

Approximate Dimensions in Inches (mm)

Catalog Number 15-1048



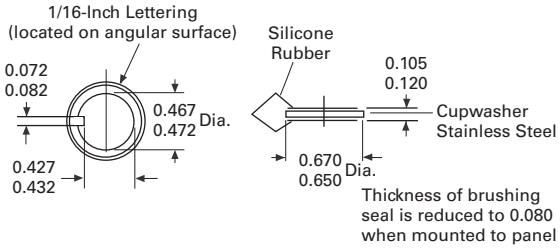
Catalog Number 15-1049



Panel Seal

- Prevents moisture and contaminants from entering panel enclosure
- Behind panel mounting
- Stainless-steel cup washer ensures proper seating of silicone rubber seal
- Seal withstands 20 psi water pressure
- Cat. No. 32-341

Dimensions—32-341



Replacement Terminal Screws

Product Selection

Screw Size	Catalog Number [2]
#5-40 x 1/8 in	**11-1117**
#5-40 x 5/32 in	**11-26**
#5-40 x 3/16 in binding head	**811-7206**
#5-40 x 1/4 in binding head	**811-14**
#6-32 x 3/16 in binding head	**811-2**
#6-32 x 1/4 in binding head	**811-161**
#6-32 x 1/4 in binding head	**811-7248**
#6-32 x 1/4 in pan head, brass	**11-1893**
#6-32 x 3/8 in binding head	**811-129**
#8-32 x 3/16 in binding head	**11-1618**
#8-32 x 1/4 in	**11-1369**
#8-32 x 1/4 in	**811-408-2**
#8-32 x 3/8 in binding head	**11-1766**
#8-32 x 3/8 in binding head	**11-6074-4**
#6-32 x 7/32 in binding head	**11-6085-2**

Toggle Boot

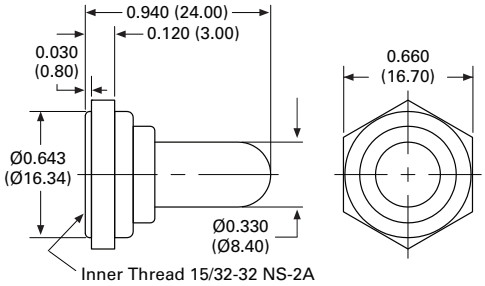
- Prevents moisture and contaminants from entering lever to bushing enclosure
- Front panel mounting
- Threaded mounting nut ensures proper assembly of silicon rubber boot
- Brass nut: 15/32-32 NS-2A
- Black color

SW1RY3030

Product Selection

Mounting Description	Color	Catalog Number
Front panel mounting Molded in brass mounting nut (15/32-32 NS-2A) ensures proper assembly of silicon rubber boot	Black	**SW1RY3030**

Dimensions—15/32-32 NS-2A



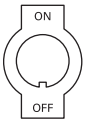
Notes

[1] Decorator facenuts for 15/32 in bushing switches, 15/32-32 thread.

[2] Hardware items are sold for use with Eaton switches only.

Indicating Plates

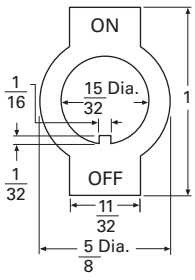
Product Selection—Indicating Plates for 15/32-Inch Bushing Mounted Switches

	Keyway Location	Marking Opposite Keyway	Keyway Side	Material	Finish	Catalog Number
	Keyway on bottom	ON	OFF	0.032 in steel	Plain	**30-5632**
					Statuary bronze	**30-5632-3**
					Burnished nickel	**30-5632-4**
				0.032 in brass	Black cupric oxide ①	**30-2899-3**
		RAD	PHO	0.032 in steel	Statuary bronze	**30-5632-7**
					Burnished nickel	**30-5632-6**
		RUN	START	0.032 in steel	Burnished nickel	**30-5632-11**
		HOT	COLD			**30-5632-15**
		HI	LOW			**30-5632-16**
		ON	STOP			**30-5632-17**
		FOR	REV	0.032 in steel	Burnished nickel	**30-2899-2**
		AUTO	TEST			**30-2899-6**
		PUSH	START			**30-2899-7**
		RUN	TEST			**30-2899-9**
		BLANK	BLANK	0.032 in steel	Burnished nickel	**30-5632-8**
	Keyway on side	ON	OFF	0.032 in steel	Burnished nickel	**30-5632-13**
		OFF	ON			**30-2899-8**
	Keyway on top	T	B	0.032 in steel	Burnished nickel	**30-5632-12**
		OFF	ON			**30-5632-14**
		SET	RUN			**30-2899-10**
		BLANK	RESET			**30-2899-12**
	Keyway on top	O	I	0.032 in steel	Burnished nickel	**30-5632-23**
		I	O			**30-5632-19**

Dimensions

Approximate Dimensions in Inches

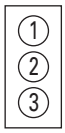
Indicating Plate



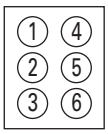
Note

① White lettering.

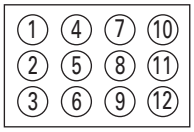
Single-Pole



Two-Pole



Four-Pole



Terminal Identification

When specified on order, switches will have the terminals identified as shown in the illustration at right. Terminal markings will be ink-stamped on the side of the switch case and unused terminal positions will not be identified.

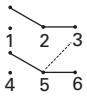
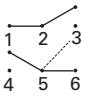
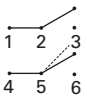
All views are rear of switch with keyway or at down as applicable. Terminal numbers 2, 2 and 5 and 5 and 8 are considered inboard terminals for single-, two- and four-pole switches respectively. All others are considered outboard.

"Three Independent" ON-ON-ON Circuit Diagram

For switch modified with "Three Independent" ON-ON-ON special circuit. External jumpers are required. User to connect wiring per instructions given below.

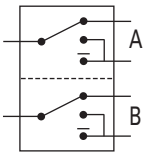
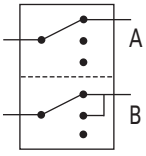
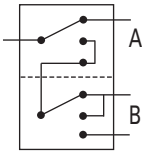
ON-ON-ON Special Circuit

Connection Points	Single-Pole
Connect common to terminals	2
Connect circuit "A" to terminals	6
Connect circuit "B" to terminals	4
Connect circuit "C" to terminals	1

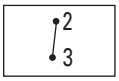
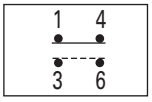
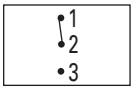
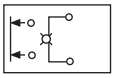
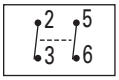
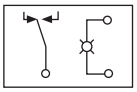
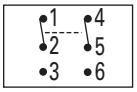
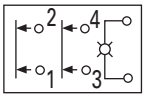
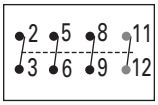
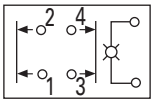
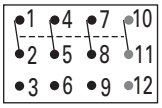
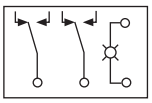
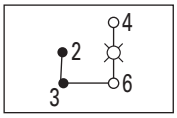
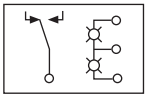
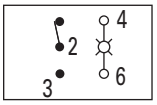
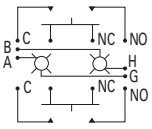
3 ON Independent	No. of Poles	Circuit with Lever in … UP Position	CENTER Position (Maintained)	DOWN Position (Keyway)
		Circuit A	Circuit B	Circuit C
1 PDT	1			

Circuit Diagrams

Special General Purpose Toggle Circuits

Circuit Number	Schematic
7530	
7571	
7555	

Toggle Circuit Diagrams

Circuit Letter	Schematic	Circuit Letter	Schematic
A 1PST		**I** 2 Circuit ⑤	
B 1PDT		**J** 1PST	
C 2PST		**K** 1PDT	
D 2PDT		**L** 2PST	
E 4PST ①		**M** 2PST	
F 4PDT ②		**N** ⑥ 2PDT	
G ③ 1PST		**P** 1PDT	
H ④ 1PDT		**Q** ⑦ 2 Circuit	

Legends

Toggle Switch Legend

Legend	Toggle Switch Type
●	Contact terminal—will make contact with switch lever
○	Isolated terminal—does not make contact with lever
	Center terminal and switch lever
	Bulb
	Momentary contact
	Denotes mechanical contact portion

Notes

① Poles 11 and 12 may be eliminated for three-pole devices.
② Poles 10, 11 and 12 may be eliminated for three-pole devices.
③ Dependent lamp.
④ Independent lamp.
⑤ Two circuit—indicates a special type of double-throw switch in which the two circuits being controlled may be independent of each other.
⑥ For 206 Series, an additional lamp is available.
⑦ Available in 1PDT or 2PDT.

Slide Control

Paddle Control

Rotary Wiper

5.1 Paddle and Slide Controls

Product Description V11-T5-2
Catalog Number Selection V11-T5-2
Technical Data and Specifications V11-T5-3
Dimensions V11-T5-3

5.2 Rotary Wipers

Product Description V11-T5-4
Features V11-T5-4
Options V11-T5-4
Standards and Certifications V11-T5-4
Product Selection V11-T5-4
Technical Data and Specifications V11-T5-5
Dimensions V11-T5-6

Paddle and Slide Controls

Contents

Description	*Page*
Paddle and Slide Controls	
Technical Data and Specifications	**V11-T5-3**
Dimensions	**V11-T5-3**

Product Description

Eaton's unique family of dimmer and wiper controls are field proven to be the market's most dependable controls. Although originally designed for the heavy truck market, applications in various other types of vehicles exist. Paddle and slide versions are available and both have the look, feel and durability associated with our controls. Bezels and actuators are molded in a soft matte finish. Illuminated and non-illuminated versions are available. Board-mounted LEDs located behind a laser-etched panel provide illumination. Customized light panel lettering and custom pad printed bezels are also available. Both dimmer and wiper controls are designed to complement the NGR family of switches.

Note: Specific frame options are available that allow product to mount in NGR gang mount system. Contact your local Eaton Sales Representative.

Catalog Number Selection

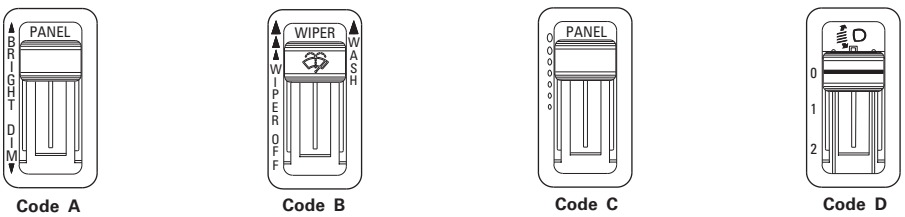
How To Order—Paddle and Slide Controls

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **D P 24 5 C A D G**

Control Type	Actuator Type	Application Voltage	Amperage Rating and Voltage ①	Bezel Print Style	Connector Type Packard No.	Connector and Leads Only Detail	Circuit Board ②	LED Color
D = Dimmer	**P** = Paddle	**12** = 12V	**3** = 3A, 24V	**A** = Style A	**A** = 12020398	Dimmer connector	**D** = Dimmer	**G** = Green
W = Wiper	**S** = Slide	**24** = 24V	**4** = 4A, 12V	**B** = Style B	**B** = 12015345	Dimmer and wiper connector	**L** = 18 sec. ③	**Y** = Yellow
			5 = 5A, 24V	**C** = Style C	**C** = 174930-1	Dimmer connector	**S** = 10 sec. ③	**R** = Red
			6 = 6A, 12V	**D** = Style D	**D** = 12034295	Wiper connector		**X** = Non-illuminated
			8 = 8A, 12V		**E** = Leads only	Dimmer only		
			10 = 10A, 12V					
			W = Wiper					

Bezel Print Style ④



Code A **Code B** **Code C** **Code D**

Notes

① Amperage ratings for dimmers only.
② Maximum dwell time describes the average time constant for delayed wiper activation.
③ Maximum nominal dwell.
④ Custom pad print available for bezel or button.

Technical Data and Specifications

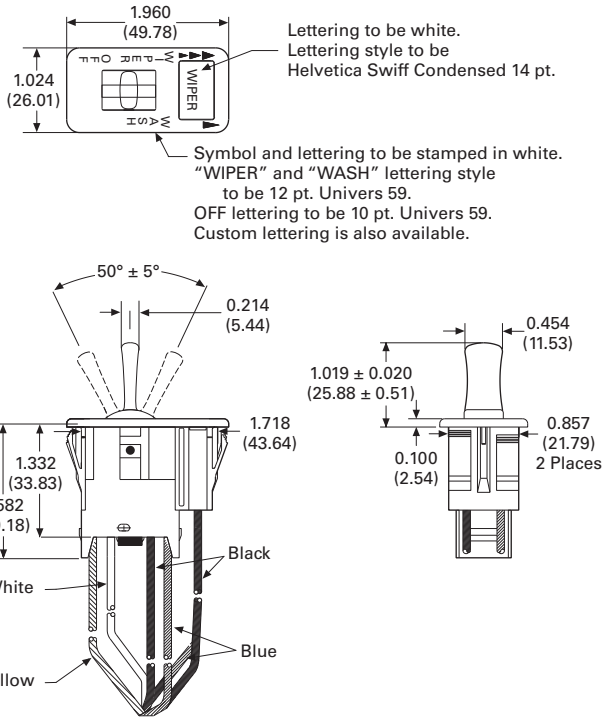
Paddle and Slide Controls

Description	Specification
Ratings (dimmer only)	4, 6, 8, 10A at 14 Vdc 3, 5A at 28 Vdc
Mechanical life	100,000 operations, maximum
Operating temperature range	–40° to 185°F (–40° to 85°C)
Base material	High-grade thermoplastic molding material
Mounting means	Snap-in mounting with plastic bezel
Mounting hole	Rectangular panel cutout: 1.734 x 0.867 in (44.00 x 22.00 mm)
Panel thickness	
Paddle	0.030 to 0.190 in (0.762 x 4.80 mm)
Slide	0.030 to 0.080 in (0.762 x 2.03 mm)
Approximate weight	1.5 oz

Dimensions

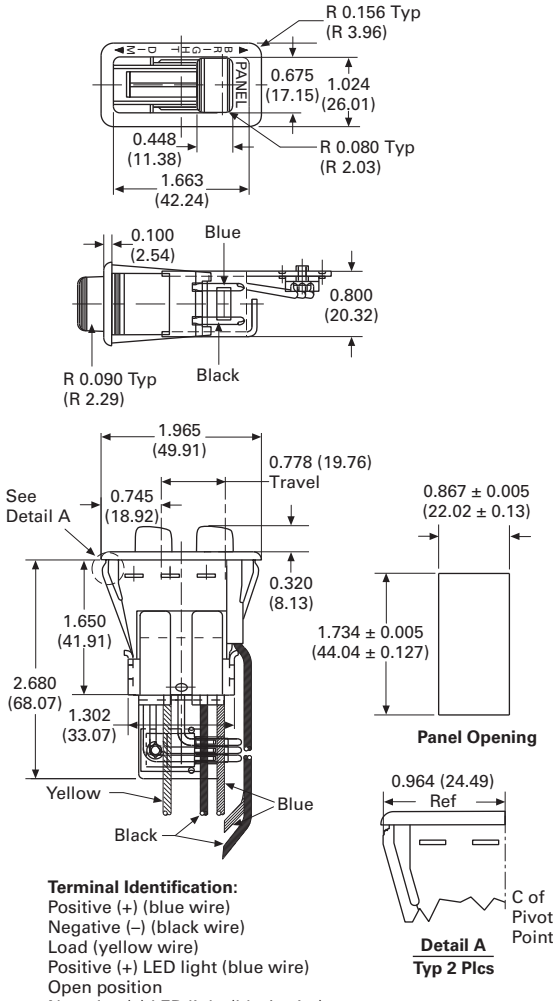
Approximate Dimensions in Inches (mm)

Paddle Control



Terminal Identification:
Positive (+) (blue wire)
Negative (–) (black wire)
Load (yellow wire)
Positive (+) LED light (blue wire)
Washer (white wire) washer only
Negative (–) LED light (black wire)

Slide Control



Terminal Identification:
Positive (+) (blue wire)
Negative (–) (black wire)
Load (yellow wire)
Positive (+) LED light (blue wire)
Open position
Negative (–) LED light (black wire)

Rotary Wiper

Contents

Description	*Page*
Rotary Wipers	
Technical Data and Specifications	**V11-T5-5**
Dimensions	**V11-T5-6**

5

Product Description

The rotary wiper has been designed to be a highly durable rotary wiper control for the transportation industry. The RW200 series wiper has four wiper control positions via a rotating knob: Off, Intermittent, Continuous Low Speed and Continuous High Speed. The device has a washer function that operates the washer pump and wiper while the knob is depressed.

Features

- Load Dump Protection
  - The switch will withstand a 120V load dump per SAE J1455
- Reverse Voltage Protection
  - The device will not be damaged when exposed to 12 Vdc for 5 minutes

Options

- Variable bushing length
- Variable spindle length
- Choice of connectors
- Pad printing on knob

Standards and Certifications

Meets SAE standards J1455, J1944 and J1988.

Product Selection

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Rotary Wiper Code Numbers and Letters

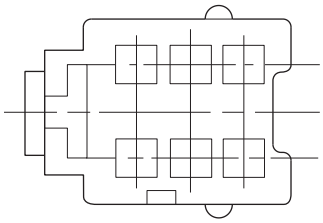
Series	Code	Voltage	Code	Packard Connectors	Code	Bushing Length in Inches (mm)	Code	Catalog Number
RW	**RW**	12 Vdc	**200**	12064752	**12A**	0.261 (6.63)	**A**	**RW20012AA**
						0.424 (10.77)	**B**	**RW20012AB**
				12977042	**12B**	0.261 (6.63)	**A**	**RW20012BA**
						0.424 (10.77)	**B**	**RW20012BB**
				6288538	**12C**	0.261 (6.63)	**A**	**RW20012CA**
						0.424 (10.77)	**B**	**RW20012CB**
				6294544 and 2977048	**12D**	0.261 (6.63)	**A**	**RW20012DA**
						0.424 (10.77)	**B**	**RW20012DB**

Technical Data and Specifications

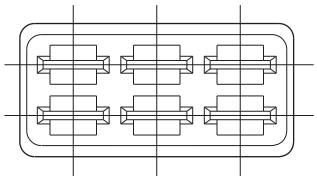
Rotary Wipers

Description	Specification
Operating voltage range	9 Vdc to 16 Vdc
Continuous load rating	17A from –40° to 73°F (–40° to 23°C) Derated to 5A at 185°F (85°C)
Wiper electromechanical life	50,000 cycles
Electrical cycle life	250,000 cycles in the Intermittent position 300,000 cycles combined in the Low and High positions
Operating temperature	–40° to 185°F (–40° to 85°C)
Humidity rating	Device will operate properly at 98% humidity between –40° and 100°F (–40° and 38°C)
Mechanical shock	The switch will withstand a 3 ft drop on concrete
Vibration	The device will operate properly while being exposed to 133 hours of 1G rms vibration along all three axes, sweeping from 5 Hz to 1500 Hz at one octave per minute

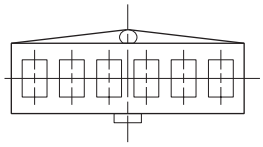
Connector Drawings



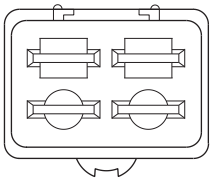
12064752



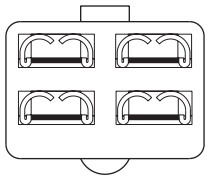
12977042



6288538



6294544



2977048

Circuit Continuity

Switch Position	Circuit Continuity
Off	Open
Intermittent	Yellow—Red and brown
Low speed	Yellow
High speed	White
	Brown
Washer	Red—Positive
	Black—Negative

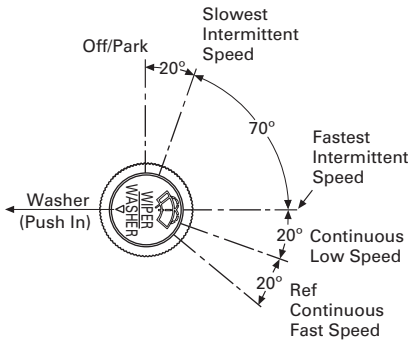
Wire Terminations

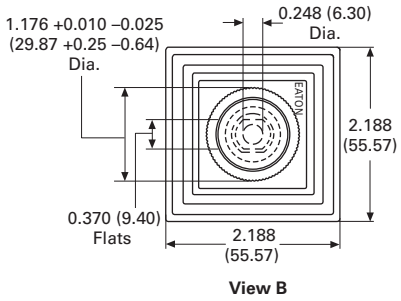
Wire Color	Switch Connections
Yellow	Motor low speed terminal
White	Motor high speed terminal
Blue	Motor park terminal
Black	Ground
Brown	Washer pump
Red	+12 Vdc (positive)

Dimensions

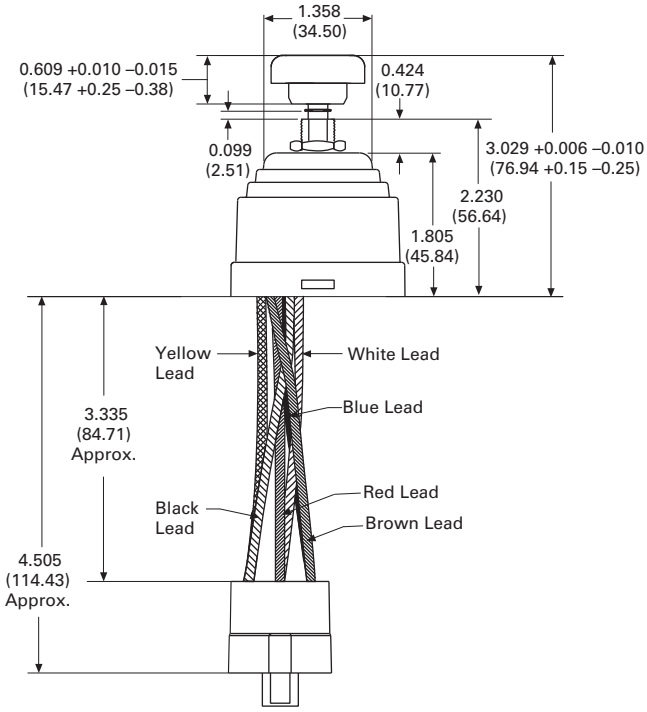
Approximate Dimensions in Inches (mm)

RW200 Series





View B



AC Rated Pushbuttons

Illuminated AC/DC Rated Pushbuttons

XP Series Sealed Pushbuttons

6.1 AC Rated

Product Description V11-T6-2
Features V11-T6-2
Standards and Certifications V11-T6-2
Product Selection V11-T6-3
Technical Data and Specifications V11-T6-4
Dimensions V11-T6-5

6.2 Illuminated AC/DC Rated

Product Description V11-T6-8
Standards and Certifications V11-T6-8
Product Selection Guide V11-T6-8
Series 206/208, 220 and 221/224, 231/234 . . . . . V11-T6-9
Series 580/581/586 . . . . . V11-T6-10
Series 770/775 . . . . . V11-T6-11
Series 860 and 861/845, 810/815, 820/825 . . . . . V11-T6-12
Illuminated and Non-Illuminated Pushbutton Caps V11-T6-13
Lamp Selection V11-T6-14
Accessories V11-T6-16
Technical Data and Specifications V11-T6-17
Terminal Identification V11-T6-18
Circuit Diagrams V11-T6-18
Legends V11-T6-18
Dimensions V11-T6-19

6.3 XP Series Sealed Pushbutton

Product Description V11-T6-21
Application Description V11-T6-21
Features V11-T6-21
Standards and Certifications V11-T6-21
Catalog Number Selection V11-T6-22
Technical Data and Specifications V11-T6-22
Dimensions V11-T6-23

AC Rated

Contents

Description	*Page*
AC Rated	
Product Selection	**V11-T6-3**
Technical Data and Specifications	**V11-T6-4**
Dimensions	**V11-T6-5**

Product Description

These general-purpose, AC rated, pushbutton switches offer a wide variety of configurations, button styles and termination types. The 7835 and 7836 light-duty series pushbutton switches are AC only. They feature slow-make/slow-break butt-type contacts with a light operating pressure that is particularly suited to instrumentation applications.

Features

- Circuits
  - 1PST, 1PDT, 2PDT
  - Momentary action
- Terminal Types
  - Screw terminals, brass (furnished unassembled)
  - 8448 Series
    - #6-32 x 3/16 in binding head screws (**Cat. No. 811-2**)
  - 8410/8411 Series
    - #5-40 x 3/16 in (**Cat. No. 811-7206**)
  - 8406/8440 Series
    - #5-40 x 5/32 in screws (**Cat. No. 11-26**)
  - Solder lug, brass silver-plated
- Hardware supplied
  - One hexagon locknut (**Cat. No. 15-192**) and one bright nickel-plated knurled facenut (**Cat. No. 15-124F1**)
  - 8411/8418 Series has a bright nickel-plated hexagon facenut (**Cat. No. 15-966-2**)
  - All hardware is furnished unassembled
  - Other mounting types are flush, nest and snap-in

Standards and Certifications ①

- UL® Recognized
- CSA® Certified
- RoHS ②

Notes

① Except where noted.
② Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

Non-Illuminated

Light-Duty, Momentary Contact

Flush

Flush Mounted

Rating	Poles and Throw	Contacts	Circuit Number ①	Button Construction	Color	Button Extension Dimensions "B" in Inches (mm)	Typical Max. Operating Force	Mounting or Bushing Length Dimensions "A" in Inches (mm)	Catalog Number
Screw Terminals									
1/4 A, 250 Vac/Vdc 3/4 A, 125 Vac/Vdc	1PST	NC	A	Nylon	Black	0.468 (11.89)	0.7 lbs ③	Flush	**8406K1**
						0.453 (11.50)	0.7 lbs ③	Flush	**8410K1**

Snap-in

Snap-in Mounted

Rating	Poles and Throw	Contacts	Circuit Number ①	Button Construction	Color	Button Extension Dimensions "B" in Inches (mm)	Typical Max. Operating Force	Mounting or Bushing Length Dimensions "A" in Inches (mm)	Catalog Number
Spade Terminals (0.250 in)									
3/4 A, 125 Vac/Vdc 1/4 A, 250 Vac/Vdc	1PST	NC	A	Nylon	White	0.375 (9.53)	—	Snap-in	**8423K1** ⑤
		NO	A	Nylon	White	0.375 (9.53)	—	Snap-in	**8424K1** ⑤

Bushing

Bushing Mounted

Rating	Poles and Throw	Contacts	Circuit Number ①	Button Construction	Color	Button Extension Dimensions "B" in Inches (mm)	Typical Max. Operating Force	Mounting or Bushing Length Dimensions "A" in Inches (mm)	Catalog Number
Solder Lugs									
3/4 A, 125 Vac/Vdc 1/4 A, 250 Vac/Vdc	1PST	NC	A	Nylon	Black	0.250 (6.35)	1.5 lbs ③	0.250 (6.35)	**8411K5**
3/4 A, 125 Vac/Vdc 1/4 A, 250 Vac/Vdc	1PST	NC	A	Nylon	Black	0.406 (10.31)	1.5 lbs ③	0.468 (11.89)	**8411K8**
5 A, 12 Vdc, 3 A, 125 Vac ②	1PST	NO	A	Metal	—	0.296 (7.52)	2.5 lbs	0.468 (11.89)	**8440K2** ⑤
3 A, 125 Vac 1 A, 250 Vac 1/10 hp, 125 Vac	1PST	NC	A	Metal	—	0.312 (7.92)	—	0.562 (14.27)	**7835K11A** ⑥
			A	Nylon (snap-on)	Black	—	—	0.562 (14.27)	**7835K11C**
					Red	—	—	0.562 (14.27)	**7835K11D**
3 A, 125 Vac 1 A, 250 Vac 1/10 hp, 125 Vac	1PST	NO	A	Metal	—	0.312 (7.92)	—	0.562 (14.27)	**7836K11A** ⑥
			A	Nylon (snap-on)	Black	—	—	0.562 (14.27)	**7836K11C** ⑥
					Red	—	—	0.562 (14.27)	**7836K11D** ⑥
Screw Terminals									
3/4 A, 125 Vac/Vdc 1/4 A, 250 Vac/Vdc	1PST	NC	A	Nylon	Black	0.406 (10.31)	1.5 lbs ③	0.468 (11.89)	**8411K7**
		NO				0.375 (9.53)	1.5 lbs ④	0.468 (11.89)	**8411K12**
5 A, 12 Vdc, 3 A, 125 Vac ②	1PST	NO	A	Metal	—	0.296 (7.52)	2.5 lbs	0.468 (11.89)	**8440K3** ⑤
3 A, 125 Vac 1 A, 250 Vac 1/10 hp, 125 Vac	1PST	NO	A	Metal	—	0.312 (7.92)	—	0.562 (14.27)	**7836K13A**
Wire Leads ⑦									
3/4 A, 125 Vac 1 A, 250 Vac 1/10 hp, 125 Vac	1PST	NC	A	Metal	—	0.312 (7.92)	—	0.562 (14.27)	**7835K12A**
		NO				0.312 (7.92)	—	0.562 (14.27)	**7836K12A**
Spade Terminals (0.250 in)									
1/4 A, 250 Vac/Vdc 3/4 A, 125 Vac/Vdc	1PST	NO	A	Nylon	Red	0.250 (6.35)	1.5 lbs ④	0.250 (6.35)	**8411K13** ⑤
	1PST	NC	A	Nylon	Black	0.406 (10.31)	1.5 lbs ③	0.468 (11.89)	**8411K10**
		NO				0.375 (9.53)	1.5 lbs ④	0.468 (11.89)	**8411K11** ⑤
3 A, 125 Vac	1PST	NC	A	Nylon	Black	0.250 (6.35)	1.5 lbs	0.250 (6.35)	**8418K1** ⑤
		NO				0.406 (10.31)	1.5 lbs	0.468 (11.89)	**8418K12** ⑤

Notes

① For circuit number detail, see table on **Page V11-T6-18**.
② UL and CSA Listing not applicable.
③ To change operating pressure, refer to your local Eaton Sales Representative.
④ Operating pressure cannot be changed.
⑤ Combination spade and solder lug terminal.
⑥ Items are normally in distributor stock.
⑦ Standard length is 6 in (152.40 mm), stripped 0.625 in (15.88 mm).

Non-Illuminated

Medium-Duty, Momentary Contact

One-Hole

One-Hole Mounted

Rating	Poles and Throw	Contacts	Circuit Number ①	Button Construction	Color	Button Extension Dimensions "B" in Inches (mm)	Typical Max. Operating Force	Mounting or Bushing Length Dimensions "A" in Inches (mm)	Catalog Number
Screw Terminals									
15 A, 125 Vac 10 A, 250 Vac 1/3 hp, 125–250 Vac	1PST	NO	A	Metal	—	0.531 (13.49)	0.9 lbs	0.687 (17.45)	**8444K3**
						0.250 (6.35)	0.9 lbs	0.343 (8.71)	**8444K4**
15 A, 125 Vac, NO 10 A, 125 Vac, NC 10 A, 250 Vac, NO 5 A, 250 Vac, NC 1/2 hp, 250 Vac 1/4 hp, 125 Vac	1PDT	NO, NC	B	Metal	—	0.531 (13.49)	2.0 lbs	0.687 (17.45)	**8434K2**
			B	Bakelite	Black	0.531 (13.49)	2.0 lbs	0.687 (17.45)	**8435K2**
15 A, 125 Vac 10 A, 250 Vac	2PST	NO	C	Metal	—	0.250 (6.35)	—	0.343 (8.71)	**8448K2** ②
Spade Terminals (0.250 in)									
15 A, 125 Vac 10 A, 250 Vac 1/3 hp, 125–250 Vac	1PST	NO	A	Metal	—	0.531 (13.49)	0.9 lbs	0.687 (17.45)	**8444K2**
15 A, 125 Vac, NO 10 A, 125 Vac, NC 10 A, 250 Vac, NO 5 A, 250 Vac, NC 1/2 hp, 250 Vac 1/4 hp, 125 Vac	1PDT	NO, NC	B	Metal	—	0.531 (13.49)	2.0 lbs	0.687 (17.45)	**8434K1**
			B	Bakelite	Black	0.531 (13.49)	2.0 lbs	0.687 (17.45)	**8435K1**
15 A, 125 Vac 10 A, 250 Vac	2PST	NO	C	Metal	—	0.250 (6.35)	—	0.343 (8.71)	**8448K1** ②

Technical Data and Specifications

AC Rated

Description	Specification
Ratings	See Product Selection tables on **Page V11-T6-3** and the table above.
Contact material	
3–6 A rated	Movable, silver-plated copper Stationary, silver-plated copper
10–15 A rated	Movable, silver-plated copper with fine or coin silver contact face button Stationary, copper with fine or coin silver contact face button
Wire leads	18 gauge, 6 in (152 mm) long, skinned 0.75 in (19 mm) Lengths beyond 6 in (152 mm) are additional charge
Mounting means—One-hole mount	Threaded bushing—0.468 in dia. 32 threads/inch (11.90 mm) Keyway—0.068 W x 0.035 D in (1.73 W x 0.89 D mm); provides anti-rotation feature Keyway on 7835/7836 Series is 0.080 W x 0.040 D in (2.03 W x 1.01 D mm)
Operating temperature range	0 °F to 150 °F (–17.8 °C to 65.6 °C)

Notes

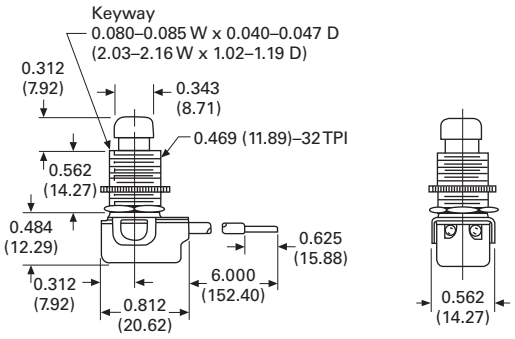
① For circuit number detail, see table on **Page V11-T6-18**.

② UL and CSA Listing not applicable.

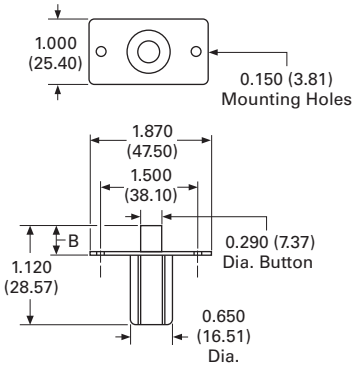
Dimensions

Approximate Dimensions in Inches (mm)

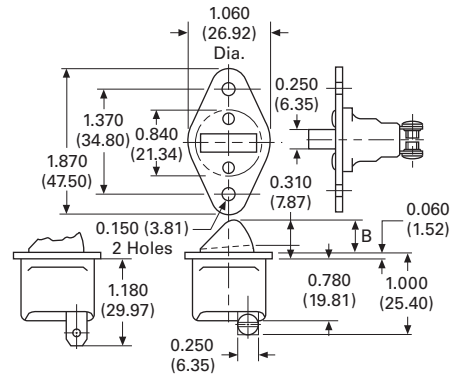
7835K12A



8410

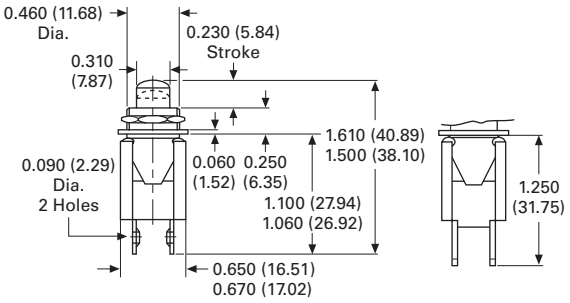


8406

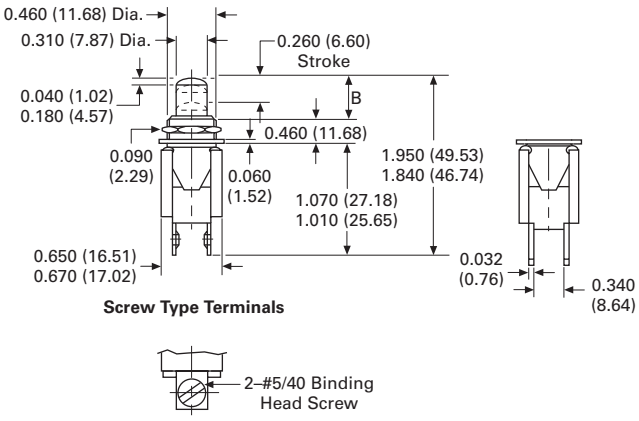


Spade Terminal **Screw Type Terminal**

8411K5 and 8411K13

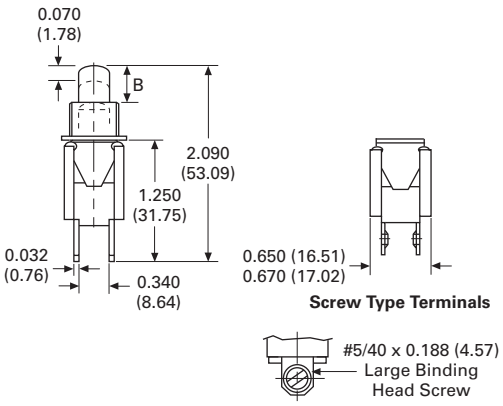


8411K7 and 8411K8



Screw Type Terminals

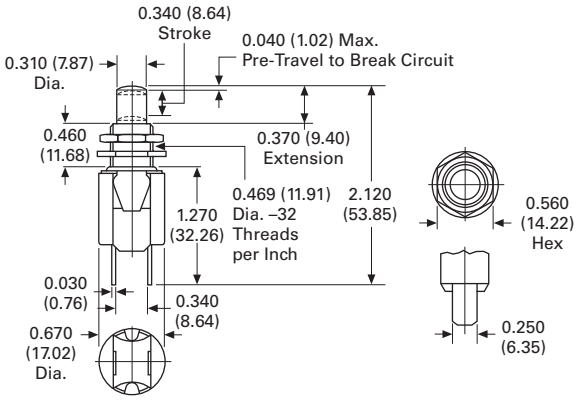
8411K11 and 8411K12



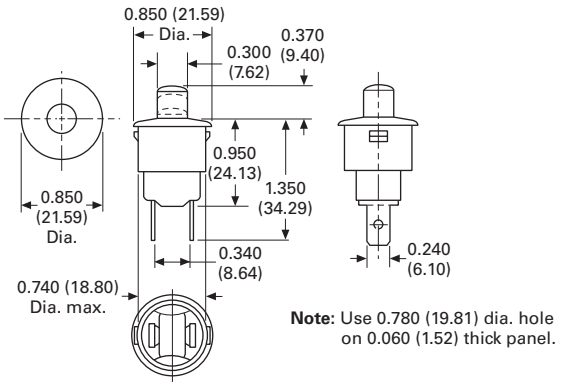
Screw Type Terminals

Approximate Dimensions in Inches (mm)

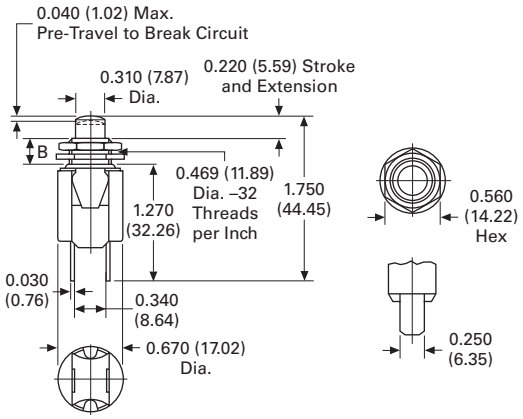
8411K10 and 8418K12



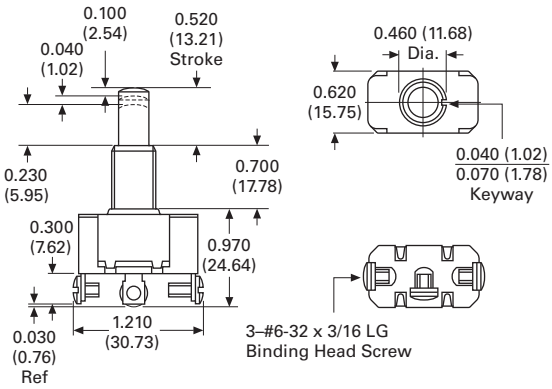
8423 and 8424



8418K1

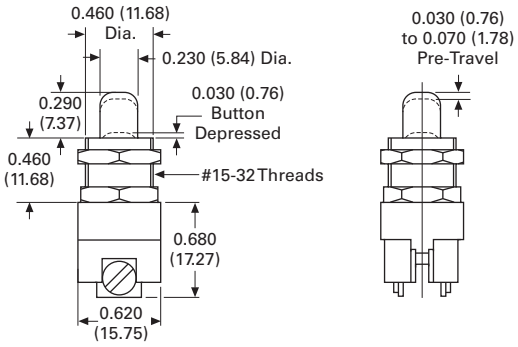


8434K2 and 8435K2

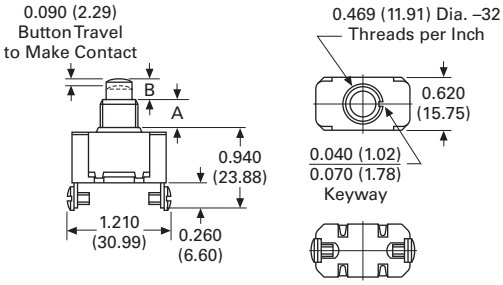


Approximate Dimensions in Inches (mm)

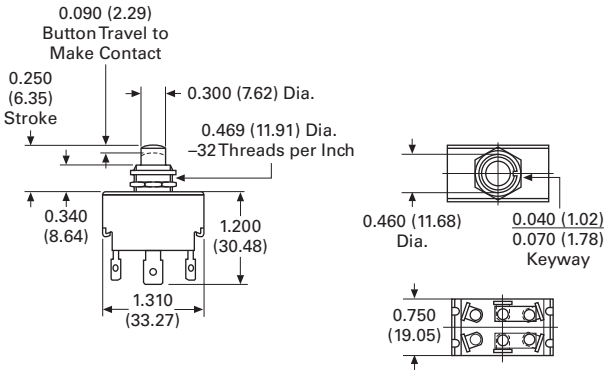
8440



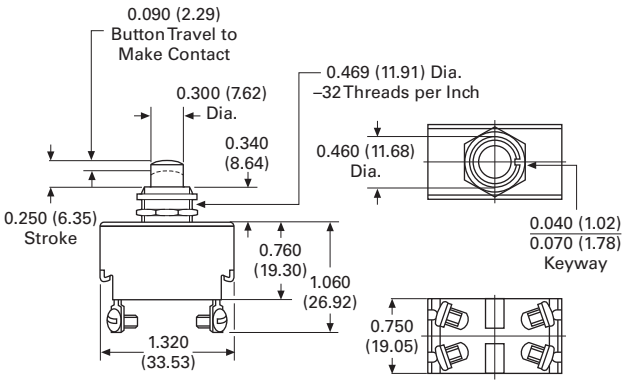
8442 and 8444 (Screw Terminals)



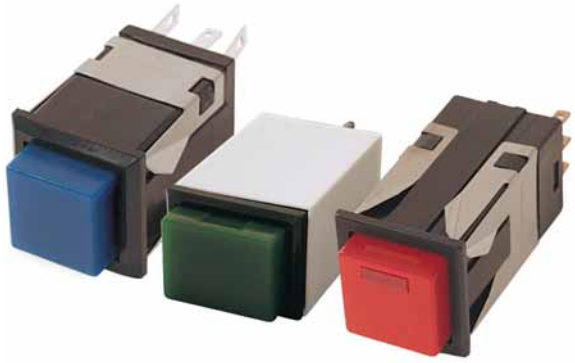
8448K1



8448K2



Illuminated AC/DC Rated



Contents

Description	*Page*
Illuminated AC/DC Rated	
Catalog Number Selection	**V11-T6-9**
Lamp Selection	**V11-T6-14**
Accessories	**V11-T6-16**
Technical Data and Specifications	**V11-T6-17**
Terminal Identification	**V11-T6-18**
Circuit Diagrams	**V11-T6-18**
Legends	**V11-T6-18**
Dimensions	**V11-T6-19**

Product Description

Eaton offers a wide range of pushbutton switches for standard industry applications such as appliances, electronics, medical and test instrumentation, office equipment and many other commercial applications.

A variety of options are available such as illuminated and non-illuminated versions, colored lens caps, lamp styles and mounting styles.

Each pushbutton series offers a matching indicator for a consistent look. See the Product Overview tables to quickly identify the required product. Then, refer to the Catalog Number Selection and Product Selection tables to determine the catalog number.

Standards and Certifications ①

- UL Recognized
- CSA Certified
- RoHS ②

Notes

① Except where noted.

② Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection Guide

General Purpose Pushbuttons and Indicators—Illuminated and Non-Illuminated

Series	**206/208**	**Page**	**220/221/224**	**Page**	**231/234**	**Page**	**580/581/586**	**Page**
Pushbutton Selection—Switch		**V11-T6-9**		**V11-T6-9**		**V11-T6-9**		**V11-T6-10**
Pushbutton Selection—Indicator		**V11-T6-9**		**V11-T6-9**		**V11-T6-9**		**V11-T6-10**
Pushbutton Cap Selection		**V11-T6-13**		**V11-T6-13**		**V11-T6-13**		**V11-T6-13**
Circuit Diagram Letter (See Page V11-T6-18)		K, N		K, N		K, N		J, L, M

Series	**770/775**	**Page**	**810/815**	**Page**	**820/825**	**Page**	**860/861/845**	**Page**
Pushbutton Selection—Switch		**V11-T6-11**		**V11-T6-12**		**V11-T6-12**		**V11-T6-12**
Pushbutton Cap Selection		**V11-T6-11**		**V11-T6-12**		**V11-T6-12**		**V11-T6-12**
Pushbutton Selection—Indicator		**V11-T6-13**		**V11-T6-13**		**V11-T6-13**		**V11-T6-13**
Circuit Diagram Letter (See Page V11-T6-18)		Q		K, N		K, N		J, L

Series 206/208, 220 and 221/224, 231/234

Catalog Number Selection

How To Order—Series 206/220 ① and 221 ①/231 ①, Switch

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **206 K 1 1 9 1 2 D 03 05 S 30**

Base Prefix	Product Type	Terminations	Full/Top Lens Color	Bottom Lens Color	Pushbutton Height	Lamp
206 = 206 Series illuminated **220** = 220 Series non-illuminated **221** = 221 Series illuminated **231** = LED display	**K** = Switch	**1** = Solder	**All Series** **00** = Orange **01** = White **02** = Red **03** = Green **04** = Yellow **05** = Blue **10** = Amber **12** = Lunar white **13** = Light green **15** = Clear **20** = Gray ④ **21** = Black ④	**206 Series Only** **00** = Orange **01** = White **02** = Red **03** = Green **04** = Yellow **05** = Blue **10** = Amber **12** = Lunar white **13** = Light green **15** = Clear **20** = Gray ④ **21** = Black ④	**206** **A** = 0.190 in (4.8 mm) full **S** = 0.190 in (4.8 mm) split **220 and 221/231** **A** = 0.190 in (4.8 mm) full	**206** ⑦**/220 and 221** Incandescent ⑤ Example: **30** 28-3158 **231** LED lamps ⑥ Example: **02** Red, 5 Vdc

Action
1 = Mom.
2 = Alt.

Number of Poles
1 = 1PST
2 = 2PDT

Contact Material
8 = Silver
9 = Gold
6 = 2PDT ②

Mounting ③
0 = No barriers
1 = Vert. barriers
2 = Horiz. barriers
3 = Full barriers

Pushbutton Style
220 and 221
C = Clear
D = Deadfront
F = Filtered
M = Matte
231
M = Matte

How To Order—Series 208/224 ①/234 ①, Indicator

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **208 L 1 2 D 03 05 S 30**

Base Prefix	Product Type	Mounting ③	Full/Top Lens Color	Bottom Lens Color	Pushbutton Height	Lamp
208 = 208 Series indicators **224** = 224 Series indicators **234** = 234 Series indicators	**L** = Indicator	**0** = No barriers **1** = Vert. barriers **2** = Horiz. barriers **3** = Full barriers	**All Series** **00** = Orange **01** = White **02** = Red **03** = Green **04** = Yellow **05** = Blue **10** = Amber **12** = Lunar white **13** = Light green **15** = Clear **20** = Gray ④ **21** = Black ④	**208 Series Only** **00** = Orange **01** = White **02** = Red **03** = Green **04** = Yellow **05** = Blue **10** = Amber **12** = Lunar white **13** = Light green **15** = Clear **20** = Gray ④ **21** = Black ④	**208** ⑦ **A** = 0.190 in (4.8 mm) full **S** = 0.190 in (4.8 mm) split **224/234** **A** = 0.190 in (4.8 mm) full	**208/224** Incandescent ⑤ Example: **30** 28-3158 **234** LED lamps ⑥ Example: **02** Red, 5 Vdc

Terminations
1 = Solder

Pushbutton Style
208/224
C = Clear
D = Deadfront
F = Filtered
M = Matte
234
M = Matte

Notes

① Full cap style does not require a bottom lens code.
② Pole one is silver, pole two is gold.
③ Refer to **Page V11-T6-16** for barrier information.
④ Not available with lighted display.
⑤ Use two-digit item number, 30–37, from Incandescent Lamps table on **Page V11-T6-14**.
⑥ Use two-digit item number, 01–19, from LED Lamps table on **Page V11-T6-15**.
⑦ Accepts two bulbs.

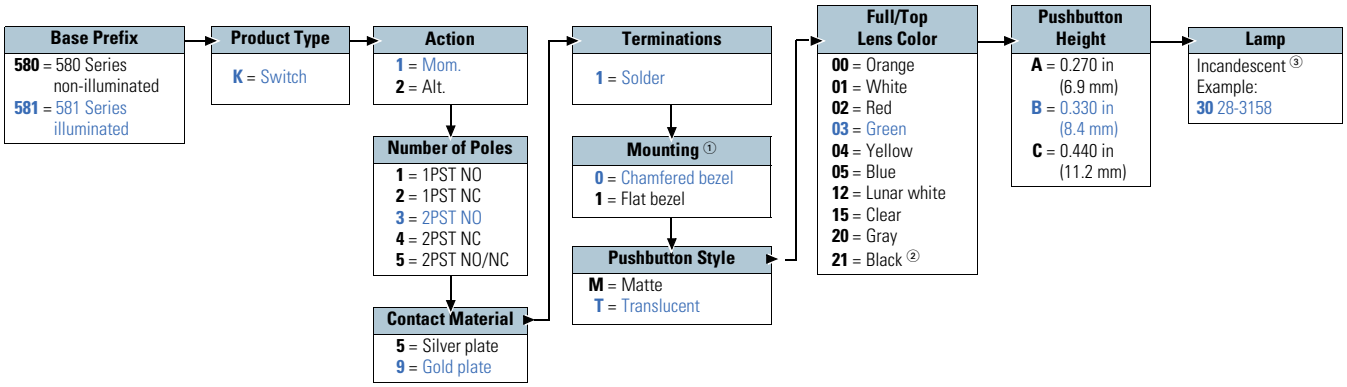
Series 580/581/586

Catalog Number Selection

How To Order—Series 580/581, Switch

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

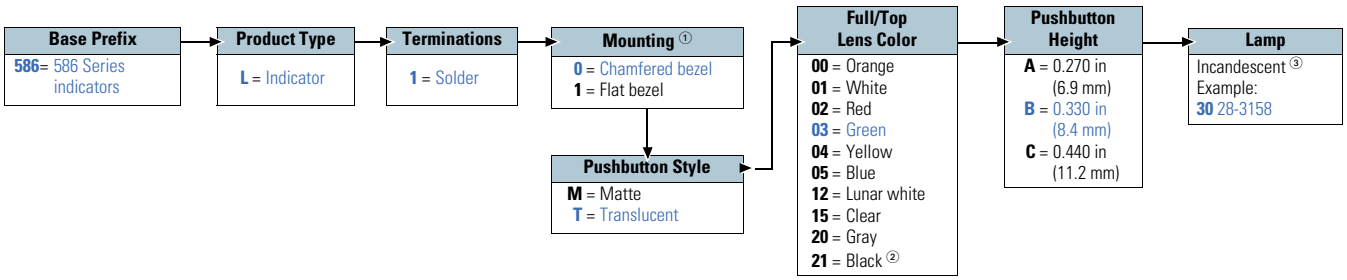
Example: **581 K 1 3 9 1 0 T 03 B 30**



How To Order—Series 586, Indicator

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **586 L 1 0 T 03 B 30**



Notes

① Flush with bezel.
② Not available with lighted display.
③ Use two-digit item number, 30–37, from Incandescent Lamps table on **Page V11-T6-14**.

Series 770/775

Catalog Number Selection

How To Order—Series 770 ①, Switch

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **770 K 1 1 9 1 1 M 03 01 G 80**

Base Prefix
770 = 770 Series illuminated

Product Type
K = Switch

Action
1 = Mom.
2 = Alt.

Number of Poles
1 = 1PDT
2 = 2PDT

Contact Material
8 = Silver
9 = Gold

Terminations
1 = Solder

Mounting ②
0 = No barriers
1 = Vert. barriers

Pushbutton Style
M = Matte

Full/Top Lens Color
00 = Orange
01 = White
02 = Red
03 = Green
04 = Yellow
05 = Blue

Bottom Lens Color
00 = Orange
01 = White
02 = Red
03 = Green
04 = Yellow
05 = Blue

Pushbutton Height
F = 0.36 in (9.1 mm) full
G = 0.27 in (6.9 mm) full
H = 0.12 in (3.0 mm) full ② ③
S = 0.36 in (9.1 mm) split

Lamp
Incandescent ④
Neon ⑤
Example:
80 28-3157

How To Order—Series 775 ①, Indicator

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **775 L 1 1 M 03 01 G 80**

Base Prefix
775 = 775 Series indicator

Product Type
L = Indicator

Terminations
1 = Solder

Mounting ②
0 = No barriers
1 = Vert. barriers

Pushbutton Style
M = Matte

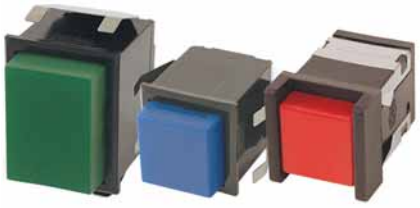
Full/Top Lens Color
00 = Orange
01 = White
02 = Red
03 = Green
04 = Yellow
05 = Blue

Bottom Lens Color
00 = Orange
01 = White
02 = Red
03 = Green
04 = Yellow
05 = Blue

Pushbutton Height
F = 0.36 in (9.1 mm) full
G = 0.27 in (6.9 mm) full
H = 0.12 in (3.0 mm) full ② ③
S = 0.36 in (9.1 mm) split

Lamp
Incandescent ④
Neon ⑤
Example:
80 28-3157

Notes
① Full or split cap style available.
② Flush with bezel.
③ Not available with lighted display.
④ Use two-digit item number, 51–59, from Incandescent Lamps table on **Page V11-T6-14**.
⑤ Use two-digit item number, 80 or 81, from Neon Lamps table on **Page V11-T6-15**.



Series 860 and 861/845, 810/815, 820/825

Catalog Number Selection

How To Order—Series 860 and 861/810/820, Switch ①

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **861 K 1 3 9 1 2 D 03 B 02**

Base Prefix
- **860**= 860 Series non-illuminated
- **861**= 861 Series illuminated
- **810**= 810 Series illuminated
- **820**= 820 Series illuminated

Product Type
- **K** = Switch

Action
- **1** = Mom.
- **2** = Alt.

Number of Poles

860 and 861
- **1** = 1PDT
- **3** = 2PST

810
- **1** = 1PDT
- **2** = 2PDT

820
- **1** = 1PDT
- **2** = 2PDT NC

Contact Material
- **8** = Silver
- **9** = Gold
- **6** = 2PDT/2PST ②

Terminations
- **1** = Solder

Mounting ③

860 and 861
- **0** = No barriers
- **1** = Vert. barriers
- **2** = Horiz. barriers

810/820
- **0** = No barriers
- **1** = Vert. barriers

Pushbutton Style
- **C** = Clear
- **D** = Deadfront
- **F** = Filtered
- **M** = Matte
- **T** = Translucent

Full/Top Lens Color
- **00** = Orange
- **01** = White
- **02** = Red
- **03** = Green
- **04** = Yellow
- **05** = Blue
- **12** = Lunar white
- **15** = Clear
- **20** = Gray
- **21** = Black ④

Pushbutton Height

860 and 861
- **A** = 0.24 in (6.1 mm)
- **B** = 0.35 in (8.9 mm)
- **C** = 0.14 in (3.6 mm) ⑦

810/820
- **A** = 0.33 in (8.4 mm)
- **B** = 0.44 in (11.2 mm)

Lamp

860 and 861

Incandescent ⑤
Example: **02** 28-3154-2

810

Incandescent ⑤
LED ⑥
Example: **93** Red, 20 mA

820

Incandescent ⑤
Neon ⑧
LED ⑥
Example: **70** 28-3156

How To Order—Series 845/815/825, Indicator ①

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **845 L 1 2 D 03 B 30**

Base Prefix
- **845**= 861 Series indicator
- **815**= 810 Series indicator
- **825**= 820 Series indicator

Product Type
- **L** = Indicator

Terminations
- **1** = Solder

Mounting ③

845
- **0** = No barriers
- **1** = Vert. barriers
- **2** = Horiz. barriers

815/825
- **0** = No barriers
- **1** = Vert. barriers

Pushbutton Style
- **C** = Clear
- **D** = Deadfront
- **F** = Filtered
- **M** = Matte
- **T** = Translucent

Full/Top Lens Color
- **00** = Orange
- **01** = White
- **02** = Red
- **03** = Green
- **04** = Yellow
- **05** = Blue
- **12** = Lunar white
- **15** = Clear
- **20** = Gray
- **21** = Black ④

Pushbutton Height

845
- **A** = 0.24 in (6.1 mm)
- **B** = 0.35 in (8.9 mm)
- **C** = 0.14 in (3.6 mm) ⑦

815/825
- **A** = 0.33 in (8.4 mm)
- **B** = 0.44 in (11.2 mm)

Lamp

815

Incandescent ⑤
LED ⑥
Example: **30** 28-3158

825

Incandescent ⑤
LED ⑥
Neon ⑧
Example: **93** Red, 20 mA

845

Incandescent ⑤
Example: **37** 28-3158-8

Notes

① Full cap style does not require a bottom lens code.
② Pole one is silver, pole two is gold.
③ Flush with bezel.
④ Not available with lighted display.
⑤ Use two-digit item number, 02–14, from Incandescent Lamps table on **Page V11-T6-14**.
⑥ Use two-digit item number, 93–97, from LED Lamps table on **Page V11-T6-15**.
⑦ Not available with lighted display. Available only on "M."
⑧ Use two-digit item number, 70, from Neon Lamps table on **Page V11-T6-15**.

Illuminated and Non-Illuminated Pushbutton Caps

Series 206/220/231 and Series 580/770/810/820/849

Catalog Number Selection

How To Order—Series 206/220/231, Pushbutton Caps

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **206 P C 03 04 S**

Base Prefix	Product Type	Display Legend/Style	Full/Top Lens Color	Bottom Lens Color	Cap Height ⑤
206 = 2 lamp display (Series 206/208) ①	**P** = Pushbutton	**C** = Clear cap and color insert, transmitted color	**00** = Orange	**00** = Orange	**A** = 0.19 in (4.8 mm), full
220 = Non-illuminated Series 220 and illuminated Series 221, 224 and 234		**D** = Deadfront, smoky gray cap and color insert	**01** = White	**01** = White	**S** = 0.19 in (4.8 mm), split
231 = LED display on Series 231 and 234		**F** = Filtered color, white cap and color insert ②	**02** = Red	**02** = Red	
		M = Matte, no insert, transmitted color	**03** = Green	**03** = Green	
			04 = Yellow	**04** = Yellow	
			05 = Blue	**05** = Blue	
			10 = Amber	**10** = Amber	
			12 = Lunar white	**12** = Lunar white	
			13 = Light green	**13** = Light green	
			15 = Clear	**15** = Clear	
			20 = Gray ④	**20** = Gray ④	
			21 = Black ④	**21** = Black ④	

How To Order—Series 580/770/810/820/849, Pushbutton Caps

To determine complete catalog number, start with the appropriate control type and add the appropriate code letters and/or numbers.

Example: **580 P C 03 04 B**

Base Prefix	Product Type	Display Legend/Style	Full/Top Lens Color	Bottom Lens Color	Cap Height ⑤
580 = Series 580, 581, 586 ⑥	**P** = Pushbutton	**C** = Clear cap and color insert, transmitted color ⑦	**00** = Orange	**00** = Orange	**580**
770 = Series 770, 775 ③		**D** = Deadfront, smoky gray cap and color insert	**01** = White	**01** = White	**A** = 0.27 in (6.9 mm)
810 = Series 810, 815		**F** = Filtered color, white cap and color insert ⑦	**02** = Red	**02** = Red	**B** = 0.33 in (8.4 mm)
820 = Series 820, 825		**M** = Matte, no insert, transmitted color	**03** = Green	**03** = Green	**C** = 0.44 in (11.2 mm)
849 = Series 845, 860, 861		**T** = Transmitted color, smooth surface, solid color	**04** = Yellow	**04** = Yellow	**770**
			05 = Blue	**05** = Blue	**F** = Full, 0.36 in (9.1 mm)
			10 = Amber	**10** = Amber	**G** = 0.27 in (6.9 mm)
			12 = Lunar white	**12** = Lunar white	**H** = 0.12 in (3.0 mm)
			15 = Clear	**15** = Clear	**S** = Split, 0.36 in (9.1 mm)
			21 = Black ④	**21** = Black ④	**810/820**
					A = 0.33 in (8.4 mm)
					B = 0.44 in (11.2 mm)
					849
					A = 0.24 in (6.1 mm)
					B = 0.35 in (8.9 mm)
					C = 0.14 in (3.6 mm)

Notes

① For a high degree of illumination, a full cap may be used with two lamp devices.
② Available only with colors red, green, yellow and blue.
③ Available in matte only.
④ Not available for lighted display.
⑤ Measured from panel of top of pushbutton cap.
⑥ Available in translucent and matte only.
⑦ For two lamps, two colored inserts with divider.

Lamp Selection

Incandescent Lamps

Bi-Pin Base for 800 Series

Item Number [1]	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) [2]	Brightness (Lumens)	Lab Average Life (Hours) [3]
02	28-3154-2	7361	5	0.06	0.05	0.63	100,000
03	28-3154-3	7945	6	0.04	0.03	0.38	10,000
07	28-3154-7	7381	6.3	0.20	0.40	5.03	50,000
08	28-3154-8	7371	12	0.04	0.12	1.51	10,000
09	28-3154-9	7330	14	0.08	0.50	6.29	750
10	28-3154-10	7382	14	0.08	0.30	3.77	50,000
11	28-3154-11	7370	18	0.04	0.15	1.89	10,000
12	28-3154-12	7327	28	0.04	0.34	4.27	7,000
13	28-3154-13	7387	28	0.04	0.30	3.77	25,000
14	28-3154-14	7876	28	0.06	0.34	4.27	25,000

Midget Flange Base for 770 Series

Item Number [1]	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) [2]	Brightness (Lumens)	Lab Average Life (Hours) [3]
51	28-3155-2	345	6	0.04	0.03	0.38	10,000
54	28-3155-5	394	12	0.04	0.12	1.51	10,000
55	28-3155-6	330	14	0.08	0.50	6.29	750
56	28-3155-7	382	14	0.08	0.30	3.77	50,000
57	28-3155-8	370	18	0.04	0.15	1.89	10,000
58	28-3155-9	327	28	0.04	0.34	4.27	7,000
59	28-3155-10	387	28	0.04	0.30	3.77	25,000

Subminiature Wedge Base for 200 and 500 Series

Item Number [1]	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) [2]	Brightness (Lumens)	Lab Average Life (Hours) [3]
30	28-3158	56	5	0.115	0.15	1.89	20,000
31	28-3158-2	79	6	0.20	0.60	7.92	1,000
32	28-3158-3	84	6.3	0.04	0.03	0.38	20,000
33	28-3158-4	86	6.3	0.20	0.40	5.03	20,000
34	28-3158-5	18	14	0.04	0.13	1.63	5,000
35	28-3158-6	73	14	0.08	0.30	3.77	15,000
36	28-3158-7	85	28	0.04	0.30	3.77	7,000
37	28-3158-8	17	28	0.06	0.65	8.17	5,000

Notes

[1] Use this two-digit number for installation in switches and indicators.

[2] Standard tolerance for MSCP is ±25%.

[3] Average life is for AC operation. DC life will be approximately 50% less. Operating incandescent lamps at 5–10% below rated voltage will generally increase lamp life 200–400%.

Neon Lamps [1]

T 1-3/4 Bi-Pin Base Neon Lamp for All 800 Series "Shorty" Switches and Indicators [2]

Item Number [3]	To Order Lamp Separately	CLC Lamp Number	Circuit Volts AC	Circuit Volts DC	Nominal Current MA	Average Useful Life (Hours)	External Resistance Required	Ignition Voltage AC	Ignition Voltage DC	Bulb Size	Lamp Length	Lead Length
70	28-3156	7A1H	105–125	150	1.5	25,000	47K (1/4 W)	95	135	T-2	0.60	0.25

T 1-3/4 Midget Flange Base Neon Lamps for All 700 Series Switches and Indicators [2]

Item Number [3]	To Order Lamp Separately	CLC Lamp Number	Circuit Volts AC	Circuit Volts DC	Nominal Current MA	Average Useful Life (Hours)	External Resistance Required	Built-In Resistance	Ignition Voltage AC	Ignition Voltage DC	Bulb Size	Maximum Overall Length
80	28-3157	A1H	105–125	150	1.5	25,000	35K (1/4 W)	None	95	135	T-2	0.67
81	28-3157-2	C-24	105–125	150	4.2	8,000	None	35K	95	135	T-2	0.67

LED Lamps [4]

LEDs are sold installed only.

LEDs for Series 231 through 235 Switches and Indicators

Color	Voltage [5]	Without Diode Protection Item Number	With Diode Protection Item Number
Red	Vdc [6]	01	11
	5 Vdc	02	12
	15 Vdc	03	13
Yellow	Vdc [6]	04	14
	5 Vdc	05	15
	15 Vdc	06	16
Green	Vdc [6]	07	17
	5 Vdc	08	18
	15 Vdc	09	19

T 1-3/4 Wire LEDs for All 800 Series Switches and Indicators

Item Number [3]	Color	Forward Current (MA) [5]	Luminous Intensity (MCD) Minimum	Luminous Intensity (MCD) Typical	Forward Voltage (V) Typical	Diffused or Undiffused
93	Red	20	80	160	1.7	Undiffused
95	Green	20	80	160	1.7	Undiffused
96	Yellow	20	80	160	1.7	Undiffused
97	Amber	20	80	160	1.7	Undiffused

Notes

[1] Neon lamps are not recommended for use with colored caps or inserts, especially those colored green or blue.

[2] Recommended external series resistor values shown for indicated average useful life are for lamp and resistor combinations used across 110–125 Vac, 1/4 W, ±10% tolerance.

[3] Use this two-digit number for installation in switches and indicators.

[4] For use with clear or white cap only.

[5] 5 Vdc and 15 Vdc include internal current limiting resistor. Other voltages available—contact your local Eaton Sales Representative.

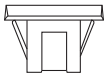
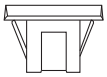
[6] External current limiting required. User must include in circuit—to give current of 20 mA to LED.

Mounting Barriers Ordering Guide

Catalog Number Example: **200B1**

When switches are individually mounted, add 0.10 in (2.54 mm) per switch to the appropriate bezel dimension. When switches are gang mounted, add 0.05 in (1.27 mm) to the appropriate bezel dimension for each switch mounted plus an additional 0.05 in (1.27 mm) to compensate for gang mounting.

Series 200 and 300 Mounting Barriers ①②

Product Series	Product Type	Code	Barrier Type and Description	Code	
200	Barrier	**B**	End—Short ③	**1**	Type 1
			Center—Short ③	**2**	Type 2
			End—Long ④	**3**	 Type 3
			Center—Long ④	**4**	 Type 4

Legending

All legend markings are pad printed in accordance with the limitations below. Standard markings are of condensed gothic type, 1/8 in high characters, with white letters on blue, red and green translucent pushbuttons and black letters on white, yellow, orange and all filtered pushbuttons.

Legending

Pushbutton Size	Standard Pad Print Limitations
1/2 in square pushbuttons	2 lines, 4 characters per line
5/8 in square pushbuttons—full legend	3 lines, 6 characters per line
5/8 in square pushbuttons—split legend	2 lines, 6 characters per line
3/4 in square pushbuttons	3 lines, 7 characters per line
3/4 in x 1 in rectangular pushbutton—full legend	3 lines, 9 characters per line
3/4 in x 1 in rectangular pushbutton—split legend	2 lines, 9 characters per line

Accessories

These snap-on pushbutton caps are made of molded plastic for use with grooved style switches. They are ordered separately for user assembly.

Snap-On Pushbutton Caps—Standard

Description	Button Diameter in Inches (mm)	Catalog Number
Black molded	0.625 (15.88)	**53-3338**
Red molded	0.625 (15.88)	**53-3338-2**

Notes

① The full guard barrier is molded as an integral part of the switch body and is specified as a part of the complete switch catalog number.
② An end barrier is attached to each side of housing. The center barrier is used between devices when gang mounting in a slot array.
③ For use with square devices and short side of rectangular devices.
④ For use with long side of rectangular devices. Use a center—long between switches if gang mounting.

Technical Data and Specifications

General Purpose Pushbuttons and Indicators—Illuminated and Non-Illuminated

Series	206/208	220/221/224	231/234	580/581/586
Ratings—				
Silver Contacts	5 A at 125 Vac or 250 Vac	5 A at 125 Vac or 250 Vdc	5 A at 125 Vac or 250 Vdc	Silver or Gold: 1 A at 125 Vac
Gold Contacts	0.1 A at 125 Vac/Vdc	0.1 A at 125 Vac/Vdc	0.1 A at 125 Vac/Vdc	Gold-plated contacts for low level
Action	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down
Switch Circuitry	Break before make 1PDT or 2PDT 2-independent lamp circuits	Break before make 1PDT or 2PDT	Break before make 1PDT or 2PDT	Double break 1PST or 2PST
Termination Types	0.02 x 0.11 in (0.51 x 2.79 mm)	0.02 x 0.11 in (0.51 x 2.79 mm) ①	0.02 x 0.110 in (0.51 x 2.79 mm) ①	0.01 x 0.11 in (0.31 x 2.79 mm) ①
Pushbuttons	0.62 x 1.00 in (15.87 x 25.40 mm) Rectangular Full or horizontal split lens Plain, engraved or hot stamped ②	0.63 in (15.87 mm) Square Plain, engraved or hot stamped ②	0.63 in (15.87 mm) Square Plain, engraved or hot stamped ②	0.50 in (12.70 mm) Square 3 heights above panel E ③ Plain, engraved or hot stamped ②
Mounting	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.03 to 0.19 in (0.76 to 4.76 mm) Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.03 to 0.19 in (0.76 to 4.76 mm) Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.03 to 0.19 in (0.76 to 4.76 mm) Barrier mount available ④	Snap-in panel mounting Choice of two bezel styles: Chamfered or Flat Stainless steel retaining clips Panel thickness: 0.06 to 0.19 in (1.59 to 4.76 mm)
Lamps	Two T 1-3/4 wedge base lamps Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament	Two T 1-3/4 wedge base lamps Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament	One rectangular LED flush with cap Various voltages available Diode protection available	Two T 1-3/4 wedge base lamps Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament
Pushbutton Travel	0.19 in (2.29 mm)	0.19 in (2.29 mm)	0.19 in (2.29 mm)	0.17 in (4.32)

Series	770/775	810/815	820/825	860/861/845
Ratings—				
Silver Contacts	10.5 A at 125 Vac or 250 Vac	3 A at 125 Vac or 250 Vac	3 A at 125 Vac or 250 Vac	6 A at 125 Vac or 3 A at 250 Vac
Gold Contacts	0.25 A at 125 Vac or 30 Vdc	0.25 A at 125 Vac or 30 Vdc	0.25 A at 125 Vac or 30 Vdc	0.25 A at 125 Vac or 30 Vdc
Action	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down
Switch Circuitry	1PDT or 2PDT (2 circuit) 2-independent lamp circuits	Break before make 1PDT or 2PDT	Break before make 1PDT or 2PDT	Double break 1PST or 2PST, NO
Termination Types	0.02 x 0.125 in (0.25 x 3.18 mm) ① Epoxy sealed	0.02 x 0.11 in (0.64 x 2.79 mm) ① Epoxy sealed	0.02 x 0.11 in (0.64 x 2.79 mm) ① Epoxy sealed	0.02 x 0.11 in (0.64 x 2.79 mm) ①
Pushbuttons	0.73 x 0.97 in (18.54 x 24.64 mm) Rectangular Plain, engraved or hot stamped ②	0.75 x 1 in (19.05 x 25.40 mm) Rectangular 2 heights above panel ③ 5 styles Plain, engraved or hot stamped ②	0.75 in (19.05 mm) Square 2 heights above panel ③ 5 styles Plain, engraved or hot stamped ②	0.62 in (15.87 mm) Square Horizontal split legend (indicator only) 3 heights above bezel ③ 5 styles Plain, engraved or hot stamped ②
Mounting	Panel mounting retained by molded sleeve and nut May be individually mounted or gang mounted in horizontal or vertical rows Panel thickness from 0.03 to 0.25 in (0.76 to 6.35 mm) Barrier mount available ④ Snap mount available	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.06 to 0.19 in (1.59 to 4.76 mm) Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.06 to 0.19 in (1.59 to 4.76 mm) Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips Panel thickness: 0.06 to 0.19 in (1.59 to 4.76 mm) Barrier mount available ④
Lamps	Accepts two T 1-3/4 midget flange base lamps Incandescent or neon Front relampable	One T 1-3/4 bi-pin base Incandescent, neon or LED Front relampable Lamp stationary to reduce mechanical shock to filament	One T 1-3/4 bi-pin base Incandescent, neon or LED Front relampable Lamp stationary to reduce mechanical shock to filament	One T 1-3/4 bi-pin base Incandescent, neon or LED Front relampable Lamp stationary to reduce mechanical shock to filament
Pushbutton Travel	0.22 in (5.59 mm)	0.22 in (5.59 mm)	0.22 in (5.59 mm)	0.22 in (5.59 mm)

Notes

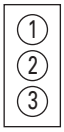
① Terminations are suitable for solder or female 110 connectors. Series 770: Solder only.

② See Engraving and Hot Stamping table on **Page V11-T6-16** for more information.

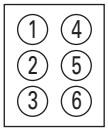
③ See Product Selection tables on **Pages V11-T6-9–V11-T6-12** for more information.

④ See Series 200 and 300 Mounting Barriers table on **Page V11-T6-16** for more information.

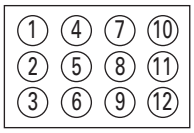
Single-Pole



Two-Pole



Four-Pole



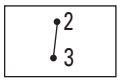
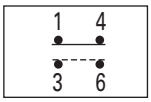
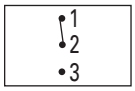
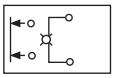
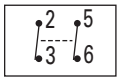
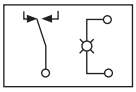
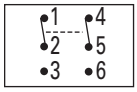
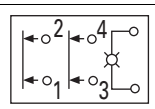
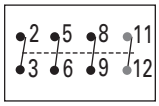
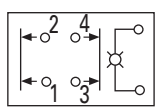
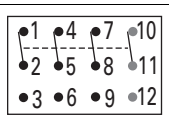
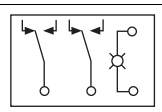
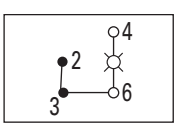
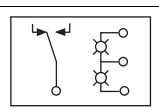
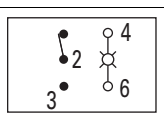
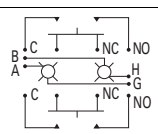
Terminal Identification

When specified on order, switches will have the terminals identified as shown in the illustration at right. Terminal markings will be ink-stamped on the side of the switch case and unused terminal positions will not be identified.

All views are rear of switch with keyway or at down as applicable. Terminal numbers 2, 2 and 5 and 5 and 8 are considered inboard terminals for single-, two- and four-pole switches respectively. All others are considered outboard.

Circuit Diagrams

Pushbutton Circuit Diagrams

Circuit Letter	Schematic	Circuit Letter	Schematic
A 1PST		**I** 2 circuit ⑤	
B 1PDT		**J** 1PST	
C 2PST		**K** 1PDT	
D 2PDT		**L** 2PST	
E 4PST ①		**M** 2PST	
F 4PDT ②		**N** ⑥ 2PDT	
G ③ 1PST		**P** 1PDT	
H ④ 1PDT		**Q** ⑦ 2 circuit	

Legends

Pushbutton Legend

Legend	Rocker Switch Type
●	Contact terminal—will make contact with switch lever
○	Isolated terminal—does not make contact with lever
↘●	Center terminal and switch lever
⌑	Bulb
→←	Momentary contact
●	Denotes mechanical contact portion

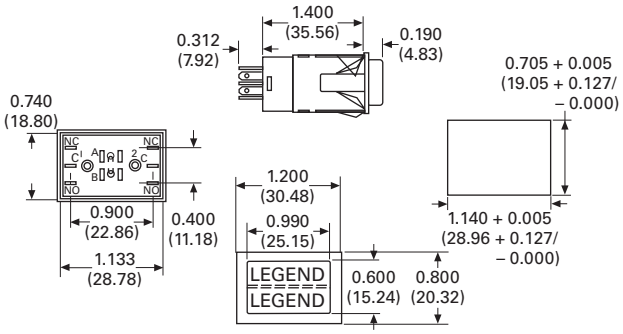
Notes

① Poles 11 and 12 may be eliminated for three-pole devices.
② Poles 10, 11 and 12 may be eliminated for three-pole devices.
③ Dependent lamp.
④ Independent lamp.
⑤ Two circuit—indicates a special type of double-throw switch in which the two circuits being controlled may be independent of each other.
⑥ For 206 Series, an additional lamp is available.
⑦ Available in 1PDT or 2PDT.

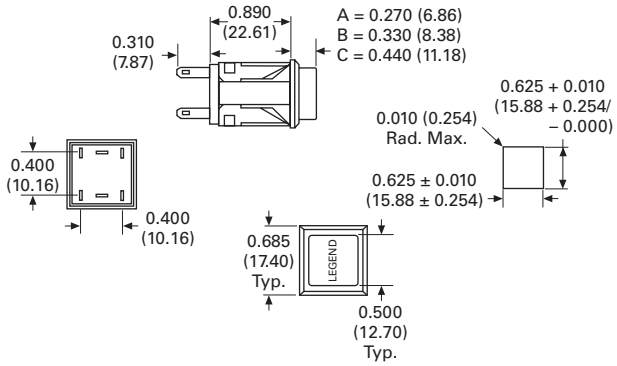
Dimensions

Approximate Dimensions in Inches (mm)

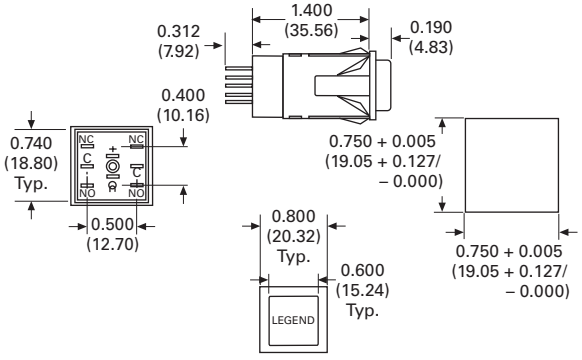
206 Series



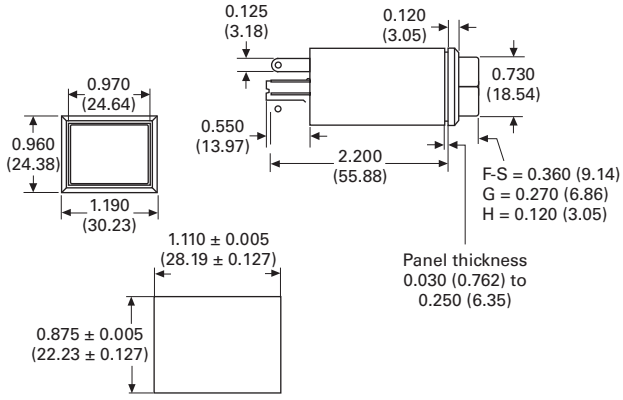
580 Series



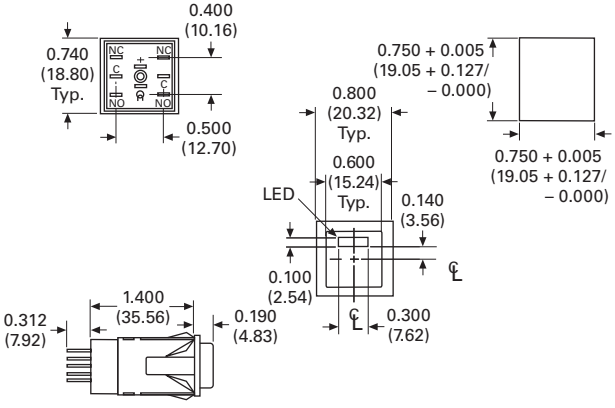
220 Series



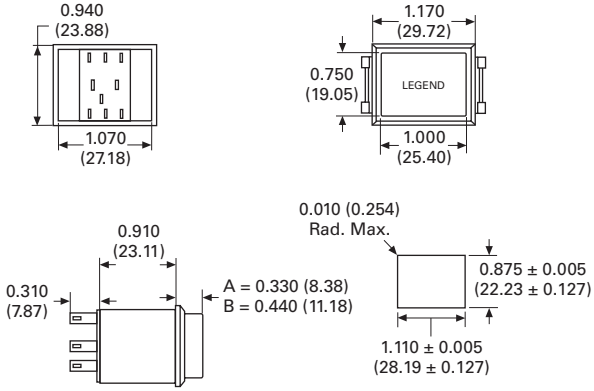
770 Series



231 Series

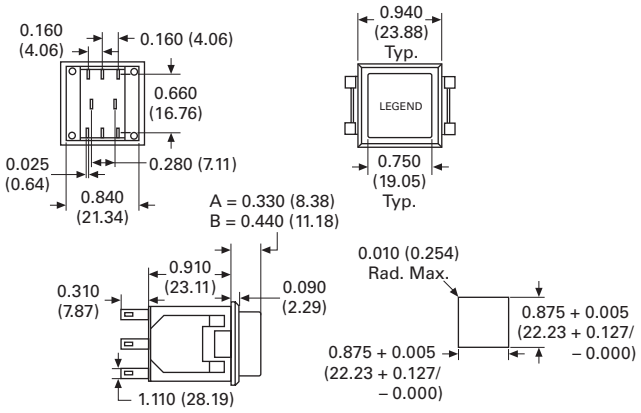


810 Series

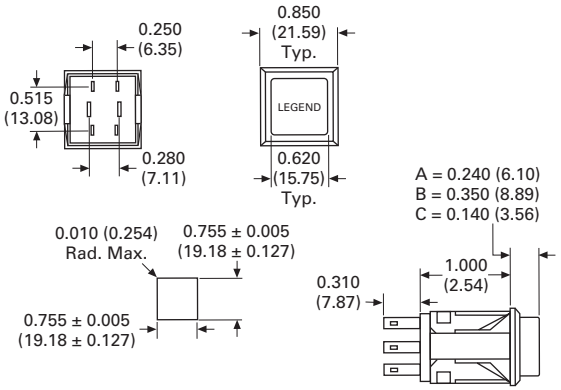


Approximate Dimensions in Inches (mm)

820 Series



860 Series



XP Series Sealed Pushbutton

Contents

Description	*Page*
XP Series Sealed Pushbutton	
Catalog Number Selection	**V11-T6-22**
Technical Data and Specifications	**V11-T6-22**
Dimensions	**V11-T6-23**

Product Description

Eaton's Vehicle Control business is pleased to offer our newest line of sealed pushbutton switches with multiple color options for ease of application identification.

These pushbuttons are available in a standard circuit: OFF—ON (Momentary).

Included with each switch is the necessary mounting hardware as well as a rubber panel seal gasket.

Application Description

- Lawn and garden equipment
- Industrial and commercial equipment
- Fire trucks and safety vehicles
- Light recreational vehicles

Features

- Mounting hardware included (packaged separately)
  - 5/8 inch internal toothed lock-washer
  - 5/8-24 UNEF-28 panel nut
  - Rubber panel seal gasket

Standards and Certifications

- UL Recognition at 6 A, 125 Vac, and 3 A, 250 Vac
- RoHS Compliant ①

Note

① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

XP Series Sealed Pushbuttons

Catalog Number Selection

How To Order—XP Series Sealed Pushbuttons

To determine complete catalog number, start with the appropriate series and add the appropriate code letters and/or numbers.

Example: **XP H N T 3 XX**

Series	Circuit	Frame Color	Actuator Color	Terminal	Special Features
XP = XP Series	**H** = SPST OFF–(ON)	**N** = Black	**G** = Green **N** = Blue ① **T** = Red **V** = Black **Y** = Yellow ①	**1** = Quick-connect spade **2** = Screw **3** = Solder lug	**XX** = None

① Contact your local sales representative for price, MOQ and lead-time for yellow and blue version actuator colors.

Mounting hardware included (packaged separately)

- Panel nut, internal toothed lock-washer, rubber panel seal gasket

Technical Data and Specifications

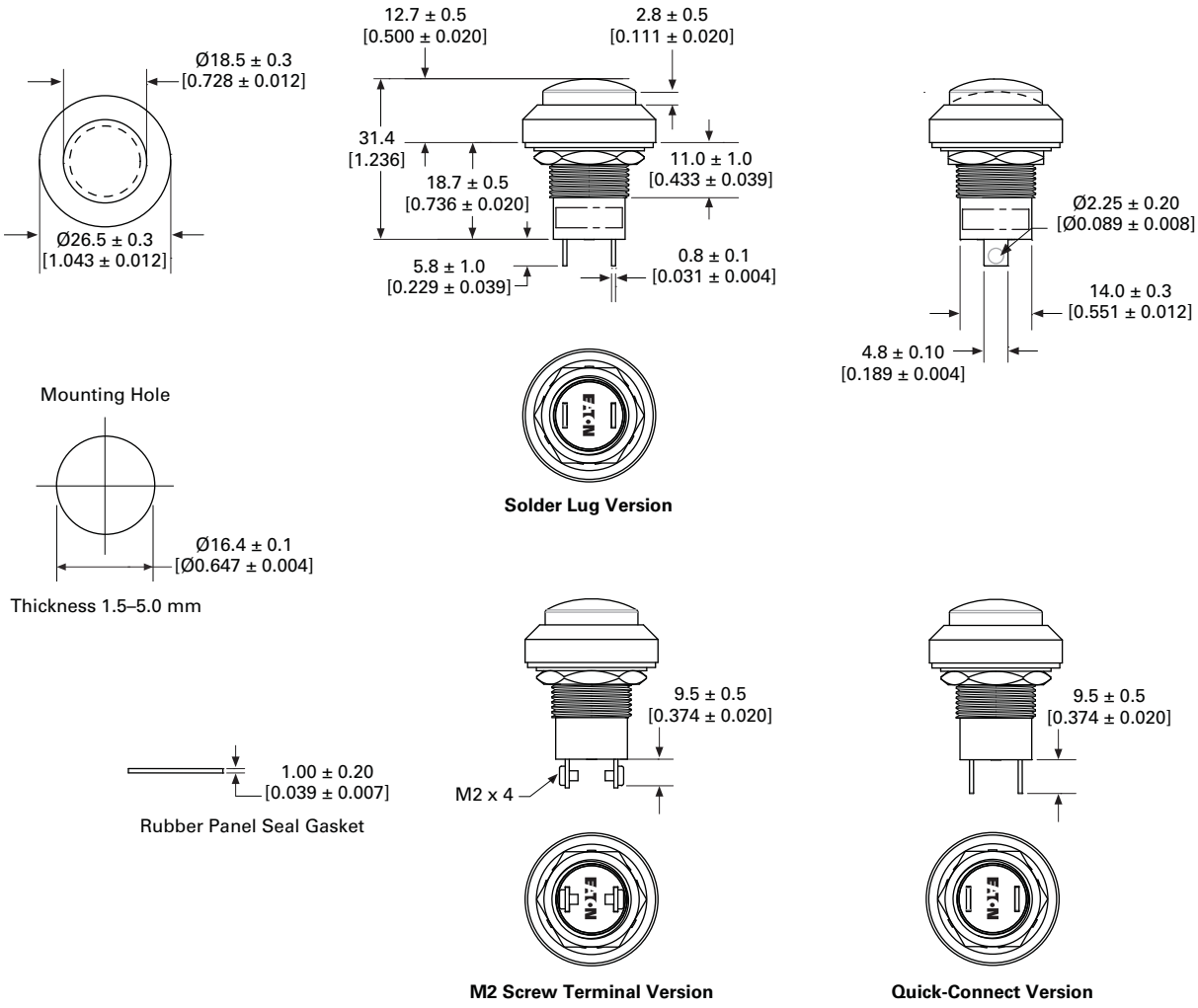
XP Series Sealed Pushbuttons

Description	Specification
Sealed level	IP64
Ratings	3 A: 250 Vac; 6 A: 125 Vac; 10 A: 12 Vdc, 28 Vdc
Mechanical life	1,000,000
Electrical life	25,000
Termination	Solder lugs, screw (M2 X 4), spade (0.189 inch quick-connect)
Operating temperature	–25 °C to 85 °C

Dimensions

Approximate Dimensions in mm [Inches]

XP Series Sealed Pushbuttons



Switch Terminology

Glossary of Terms

Term	Definition
One Pole (1P)—Single Pole (SP)	A switch device that opens, closes or changes connections in a single conductor of an electrical circuit.
Two Pole (2P)—Double Pole (DP)	A switch device that opens, closes or changes connections in both conductors of the same circuit.
Two Circuit (2 CIR.)	A switch device that opens, closes or changes connections in a single conductor of two independent circuits.
Single Throw (ST)	A switch that opens, closes or completes a circuit at only one of the extreme positions of its actuator.
Double Throw (DT)	A switch that opens, closes or completes a circuit at both extreme positions of its actuator.
Normally Open (NO)	A momentary type switch in which one or more circuits are open when the switch actuator is at its normal or rest position.
Normally Closed (NC)	A momentary type switch in which one or more circuits are closed when the switch actuator is at its normal or rest position.
Actuator	A lever, pushbutton, slide, trigger or other means to which an external force is applied to operate a switch mechanism.
Alternate Action (Double Action Push)	Push to make, then push to break a circuit.
Break-Before-Make	A non-shorting switch mechanism that opens or breaks a connection in a conductor before closing or making a connection in another conductor.
Make-Before-Break	A shorting switch mechanism that closes or makes a connection in a conductor before opening or breaking a previous connection in another conductor.
Life Expectancy	The useful life cycle performance of a switch mechanism to open or close, make or break, an electrical circuit, based on statistical probability.
Operating Force	The force that must be applied to the actuator to move it from the free position to the operating position.
Operate Position	The position of the actuator at which the circuit transfers.
Release Force	In a momentary type switch, the value to which the force on the actuator must be reduced to allow the contacts to return to the normal or rest position.
Momentary Action Switches	Momentary action switches turn a process ON and OFF when force is applied and then removed. The applied force can make the circuit change state and the removed force returns circuit to its original state.
Maintained Action Switches	A type of device in which the switch or button physically keeps the circuit in the actuated position.
Half-Throw Circuit	A circuit where the actuator has only two positions (center and one extreme position) with a positive stop that prevents actuator movement to the opposite extreme position.

Approval Marks ①

Mark	Country/Region	Definition
	U.S.A.	UL® Recognized Listing Number: Switches—E24354 or File E1148, WOYR2 1609; Indicator—E70176, E2702
	Canada	UL Recognized Underwriters Laboratories Incorporated; Listing Numbers: E2702, E180275, E43960 and E147754þ
	U.S.A. and Canada	UL Recognized Underwriters Laboratories Incorporated; Listing Number: E2702 (but not all sections)
	Canada	CSA®—Canadian Standards Associations (Certified) Listing Number: LR10538 or 45995, 9002 Class 6241
Listed	U.S.A.	UL Listed Underwriters Laboratories Incorporated; Listing Number:þE180275
	Europe	ENEC: European Norms Electrical Certification; Listing Number: E2702 (but not all sections)
COMPLIANT	—	Restriction of Hazardous Substances (RoHS) Directive 2001/65/EU

Note

① See specific product for specifications for applicable approvals.

7.2 Index

11-_ 11-**T4**-33
13-5496 . . . . . 11-**T3**-7
13-8171 . . . . . 11-**T3**-7
13-8173 . . . . . 11-**T3**-6, 11-**T3**-7
1500_–1507_ 11-**T2**-46
1500H_ 11-**T2**-47
15-1043_–15-1047_ 11-**T4**-31
15-1048-_ 11-**T4**-31, 11-**T4**-33
15-1049_ 11-**T4**-33
15-124F_ 11-**T4**-31
15-1525_ 11-**T4**-31
15-189-5 . . . . . 11-**T4**-31
15-192_ 11-**T4**-31
15-2523_–15-2528_ 11-**T4**-31
15-2534-14_ 11-**T4**-31
15-90 . . . . . 11-**T4**-31
15-966-2 . . . . . 11-**T4**-31
15-994-2 . . . . . 11-**T4**-31
1600_–1607_ 11-**T2**-50
1600H_–1620H_ 11-**T2**-53
1609_ 11-**T2**-51, 11-**T2**-55
1620HX_ 11-**T2**-53
17-19263 . . . . . 11-**T2**-79
17-19264 . . . . . 11-**T2**-79
17-19544-2_ 11-**T2**-79
17-21159 . . . . . 11-**T2**-79
17-21160 . . . . . 11-**T2**-79
17-21543 . . . . . 11-**T2**-79
17-22145 . . . . . 11-**T2**-42
17-22145_ 11-**T2**-42
17-22146 . . . . . 11-**T2**-42
17-22152 . . . . . 11-**T2**-42
17-24 . . . . . 11-**T1**-11
200B_ 11-**T6**-16
206K_ 11-**T6**-9
206P_ 11-**T6**-13
208L_ 11-**T6**-9
220K_–221K_ 11-**T6**-9
220P_ 11-**T6**-13
224L_ 11-**T6**-9
231K_ 11-**T6**-9
231P_ 11-**T6**-13
234L_ 11-**T6**-9
2500_–2507_ 11-**T2**-46
2500H_ 11-**T2**-47
25-13936_ 11-**T2**-42
2600_–2607_ 11-**T2**-50
2600H_ 11-**T2**-53
28-3154_ 11-**T6**-14
28-3155_ 11-**T6**-14
28-3156 . . . . . 11-**T6**-15
28-3157_ 11-**T6**-15
28-3158_ 11-**T6**-14
28-3425_ 11-**T2**-67
28-3426 . . . . . 11-**T2**-78
28-5148_ 11-**T2**-67
28-5415_ 11-**T2**-64
28-5555_ 11-**T2**-74
28-5558 . . . . . 11-**T2**-78
28-5637-2 . . . . . 11-**T2**-78
28-5863_ 11-**T2**-13
28-5901_ 11-**T2**-9
28-5909_ 11-**T2**-9
28-5940 . . . . . 11-**T2**-78
29-761-5_ 11-**T4**-32
2CAP_ 11-**T2**-15
2N_ 11-**T2**-14
30-2899-_ 11-**T4**-34
30-5632-_ 11-**T4**-34
32-2245 . . . . . 11-**T2**-39
32-341 . . . . . 11-**T4**-33
3CAP_ 11-**T2**-15
3N_ 11-**T2**-14
53-3318_ 11-**T2**-79
53-3338_ 11-**T6**-16
53-73 . . . . . 11-**T1**-11
580K_–581K_ 11-**T6**-10
580P_ 11-**T6**-13
586L 11-**T6**-10
61-40_ 11-**T1**-11
6CAP_ 11-**T2**-15
6N_ 11-**T2**-14
7071K_–7073K_ 11-**T4**-9
7300K_–7317K_ 11-**T4**-6
7500K_–7510K_ 11-**T4**-12, 11-**T4**-15
7530K_ 11-**T4**-13
7546K_ 11-**T4**-12
7555K_ 11-**T4**-12
7560K_–7569K_ 11-**T4**-13, 11-**T4**-15
7570K_–7571K_ 11-**T4**-13, 11-**T4**-15
7576K_ 11-**T4**-12
7580K_–7587K_ 11-**T4**-12
7590K_–7597K_ 11-**T4**-13
7630K_–7632K_ 11-**T4**-13
7660K_–7668K_ 11-**T4**-4
7670K_–7674K_ 11-**T4**-4

7690K_–7695K_ 11-**T4**-14
7700K_–7705K_ 11-**T4**-14
770K_ 11-**T6**-11
770P_ 11-**T6**-13
775L_ 11-**T6**-11
7803K_ 11-**T4**-13
7804K_–7805K_ 11-**T4**-14
7810K_–7813K_ 11-**T4**-28
7818K_ 11-**T3**-2
7835K_–7836K_ 11-**T6**-3
7842K_–7846K_ 11-**T3**-6
7933K_–7935K_ 11-**T4**-14
7990K_–7992K_ 11-**T4**-28
8004K_–8005K_ 11-**T2**-68
8006K _–8007K_ 11-**T2**-65
8055K_–8057K_ 11-**T2**-58
8064K_–8065K_ 11-**T2**-75
810K_ 11-**T6**-12
810P_ 11-**T6**-13
8130K_–8138K_ 11-**T2**-57
8140K_–8148K_ 11-**T2**-57
8150K_–8155K_ 11-**T2**-57
815L_ 11-**T6**-12
8166K_ 11-**T3**-9
8179K_ 11-**T2**-44
820K_ 11-**T6**-12
820P_ 11-**T6**-13
825L_ 11-**T6**-12
8261K_–8262K_ 11-**T4**-3
8280K_ 11-**T4**-20
8283K_ 11-**T3**-6
8290K_–8295K_ 11-**T4**-20
8370K_–8373K_ 11-**T3**-6
8370K_–8375K_ 11-**T4**-20
8381K_ 11-**T4**-20
8391K_–8396K_ 11-**T4**-20
8406K_–8411K_ 11-**T6**-3
8418K_ 11-**T6**-3
8423K_–8424K_ 11-**T6**-3
8434K_–8435K_ 11-**T6**-4
8440K_ 11-**T6**-3
8444K_ 11-**T6**-4
8448K_ 11-**T6**-4
845L_ 11-**T6**-12
849P_ 11-**T6**-13
860K_–861K_ 11-**T6**-12
8800K_ -8860K_ 11-**T4**-4
8857K_–8859K_ 11-**T4**-5
8928K_ 11-**T3**-6, 11-**T4**-20
8980K_ 11-**T3**-4
B1600_–B1607_ 11-**T2**-52
B2600_–B2607_ 11-**T2**-52
DP_ 11-**T5**-2
DS_ 11-**T5**-2
E30 . . . . . 11-**T1**-7
E32 . . . . . 11-**T1**-10
E321 . . . . . 11-**T1**-11
E324 . . . . . 11-**T1**-11
E33 . . . . . 11-**T1**-14
eSM_ 11-**T1**-7, 11-**T1**-10, 11-**T1**-11, 11-**T1**-13
eVu_ 11-**T1**-17
MS25068_ 11-**T4**-4
MS25098_–MS25100_ 11-**T4**-3
MS25125_–MS25127_ 11-**T4**-5
MS25201_ 11-**T4**-4
MS35058_–MS35059_ 11-**T4**-4
NGR . . . . . 11-**T2**-8—11-**T2**-31
NGR Indicators 11-**T2**-14, 11-**T2**-15
NGR Rocker Buttons 11-**T2**-11
NGR Switch Base 11-**T2**-10
P1600_–P1607_ 11-**T2**-50
P2600_–P2607_ 11-**T2**-50
RW_ 11-**T5**-4
SVR . . . . . 11-**T2**-32—11-**T2**-42
SW1RY_ 11-**T4**-33
WP_ 11-**T5**-2
WS_ 11-**T5**-2
XPHN 11-**T6**-22
XTD_ 11-**T4**-25