

General Purpose — AC Rated 3.2
General Purpose Illuminated — AC/DC Rated 3.6



Pushbutton Switches



The Power of Reliability

3 PUSHBUTTON SWITCHES

General Purpose Pushbutton Switches — AC Rated

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 are ac only pushbutton switches. They feature Slow-make/Slow-break butt type contacts with a light operating pressure that is particularly suited to instrumentation applications.

SPECIFICATIONS

Ratings:

See selection table.

Circuits:

1PST, 1PDT, 2PDT.
Momentary action.

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.

Terminal Types:

Screw Terminals — Brass.
Furnished unassembled.
8448 Series
#6-32 x 3/16" binding head screws (Cat. No. 811-2).
8410/8411 Series
#5-40 x 3/16" (Cat. No. 811-7206).
8406/8440 Series
#5-40 x 5/32" screws (Cat. No. 11-26).
Solder Lug — Brass silver plated.

AC RATED PUSHBUTTON SWITCHES SELECTION TABLE (BOLD FACE TYPE INDICATES ITEMS NORMALLY IN DISTRIBUTOR STOCK)

Type	Rating	Poles and Throw	Contacts	CIRCUIT NUMBER SEE PAGE 4.28	BUTTON				Typical Maximum Operating Force	Mounting or Bushing Length Dimension "A"		CATALOG NUMBER															
					Construction	Color	Button Extension Dimension "B"			mm	inches	Solder Lugs	Screw Terminals	Spade Terminals (.250")	Wire Leads ⑤												
							mm	inches																			
NON-ILLUMINATED																											
Flush Mounted Light Duty Momentary Contact	3/4A, 125V ac/dc 1/4A, 250V ac/dc	1 P.S.T. 1 P.S.T.	NC NC	A A	Nylon Nylon	Black Black	11.50	.453"	0.7 lbs. ②	—	Flush Flush	— —	8410K1 8406K1	— —	— —												
							11.89	.468"																			
Snap-In Mounted Light Duty Momentary Contact	3/4A, 125V ac/dc 1/4A, 250V ac/dc	1 P.S.T. 1 P.S.T.	NC NO	A A	Nylon Nylon	White White	9.53	.375"	—	—	Snap-In Snap-In	— —	— —	8423K1 ① 8424K1 ①	— —												
							9.53	.375"																			
One Hole Mounted Light Duty Momentary Contact	3/4A, 125V ac/dc 1/4A, 250V ac/dc	1 P.S.T. 1 P.S.T.	NC NO	A	Nylon Nylon	Black Red	6.35	.250"	1.5 lbs. ②	6.35	.250"	8411K5 —	— —	— —	8411K13 ①												
							6.35	.250"																			
		1 P.S.T. 1 P.S.T.	NC NO	A	Nylon Nylon	Black Black	10.31	.406"	1.5 lbs. ②	11.89	.468"	8411K8 —	8411K7 8411K12	8411K10 8411K11 ①	— —												
							9.53	.375"																			
	3A, 125V ac	1 P.S.T. 1 P.S.T.	NC NO	A	Nylon Nylon	Black Black	6.35	.250"	1.5 lbs. ②	6.35	.250"	— —	— —	8418K1 ① 8418K12 ①	— —												
							10.31	.406"																			
	5A, 12V dc ①④ 3A, 125V ac	1 P.S.T.	NO	A	Metal	—	7.92	.312"	—	14.27	.562"	7835K11A 7835K11C	— —	— —	7835K12A —												
																—	—										
																—	—	—	—	—	—	—	—	—	—	—	—
—																—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—															
													—	—													
One Hole Mounted Medium Duty Momentary Contact	15A, 125V ac 10A, 250V ac 1/3 Hp, 125-250V ac	1 P.S.T.	NO	A	Metal	—	13.49	.531"	0.9 lbs.	17.45	.687"	—	8444K3 8444K4	8444K2 —	— —												
							6.35	.250"																			
							13.49	.531"																			
15A, 125V ac, NO 10A, 125V ac, NC 10A, 250V ac, NO 5A, 250V ac, NC 1/2 Hp, 250V ac 1/4 Hp, 125V ac	1 P.D.T.	NO,NC	B	Metal Bakelite	—	Black	13.49	.531"	2.0 lbs.	17.45	.687"	—	8434K2 8435K2	8434K1 8435K1	— —												
							13.49	.531"																			
							6.35	.250"																			
15A, 125V ac 10A, 250V ac	2 P.S.T.	NO	C	Metal	—	—	6.35	.250"	—	8.71	.343"	—	8448K2 ④	8448K1 ④	—												
							6.35	.250"																			
							6.35	.250"																			

① Combination spade and solder lug terminal.
② To change operating pressure, refer to your local Eaton Sales Representative.
③ Operating pressure cannot be changed.
④ UL and CSA listings not applicable.
⑤ Standard length is 152.40mm (6"), stripped 15.88mm (.625").

Wire Leads — 18 gauge, 152mm (6") long, skinned 19mm (.750"). Lengths beyond 152mm (6") are additional charge.

Mounting Means:

One hole mount.

Threaded Bushing — 11.90mm (.468" dia. 32 threads /inch).

Keyway — 1.73 x 0.89mm (.068 wide x .035" deep); provides anti-rotation feature.

Keyway on 7835/7836 Series is 2.03 wide x 1.01mm deep (.080 wide x .040" deep).

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.

Operating Temperature Range:

-17.8°C to +65.6°C (0°F to +150°F).

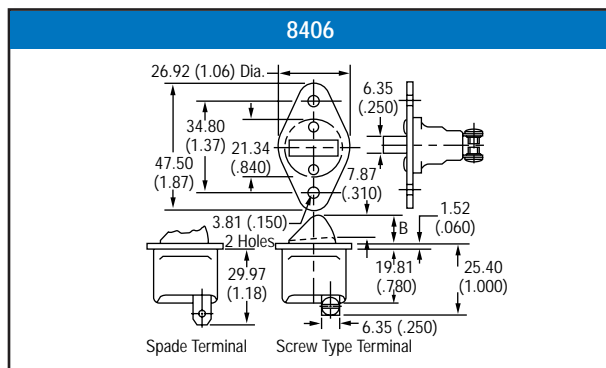
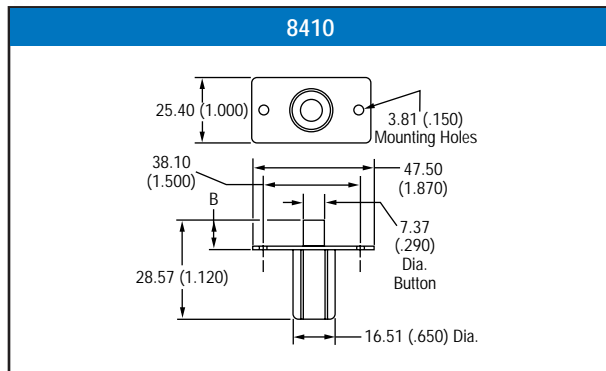
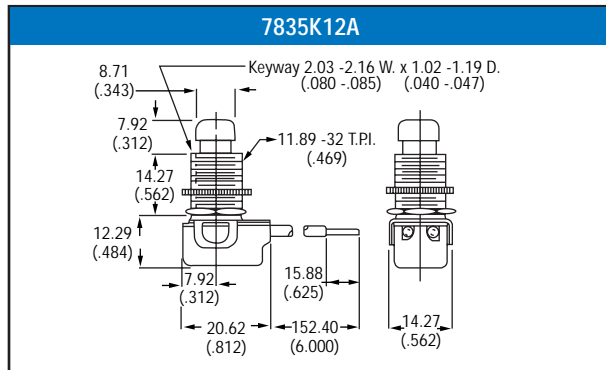
Approvals:

UL Recognized.
CSA Certified.

• Except where noted.



DIMENSIONS APPROXIMATE IN MM (INCHES)



Dimensions continue on page 3.4.



8411K7



8423K1/8424K1



8440K3

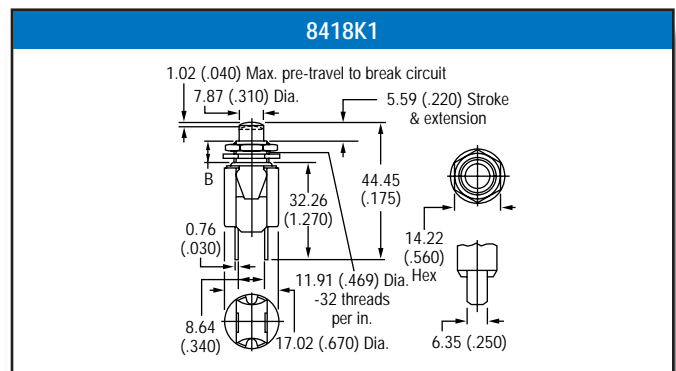
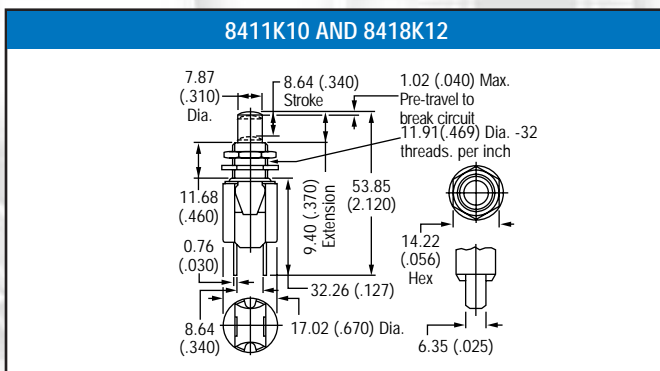
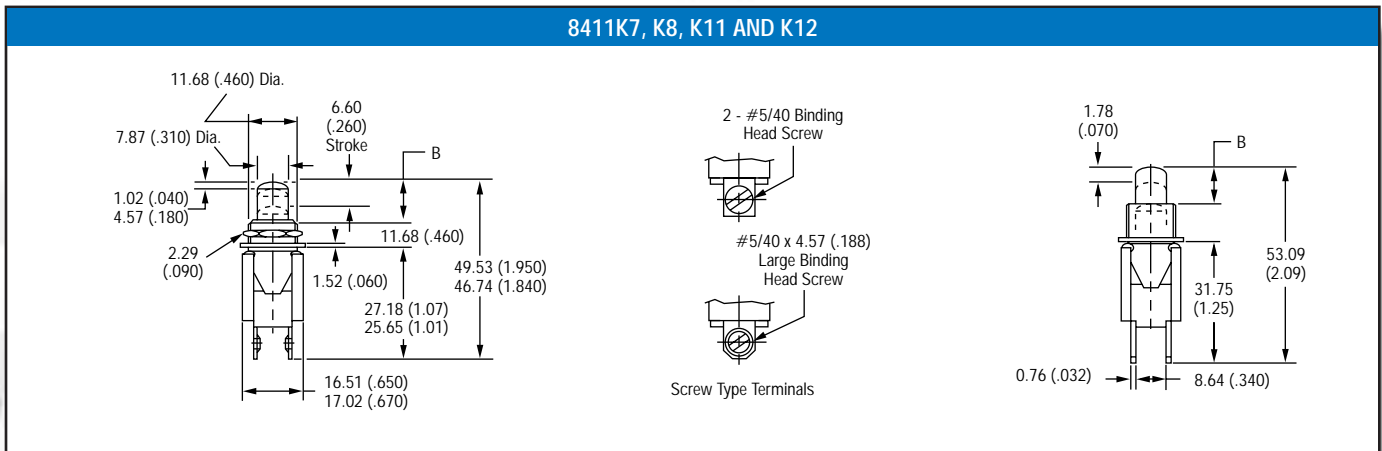
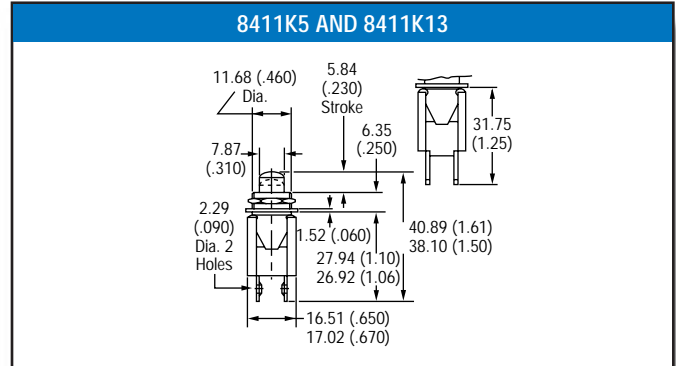
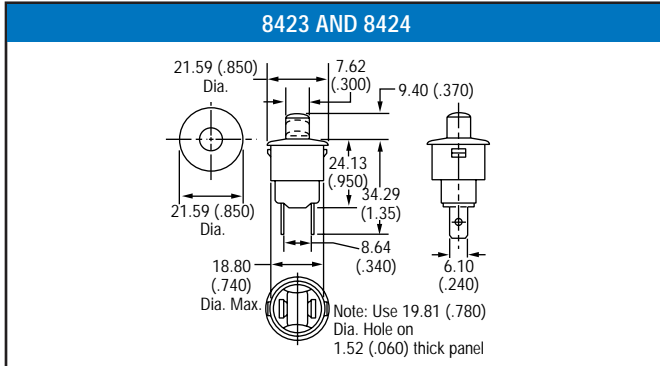


8435K2

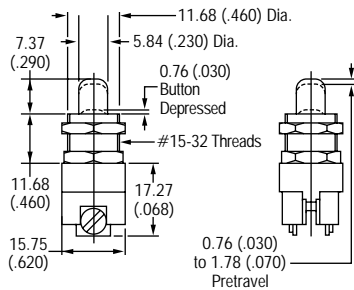
3 PUSHBUTTON SWITCHES

General Purpose AC Rated Pushbutton Switches (continued)

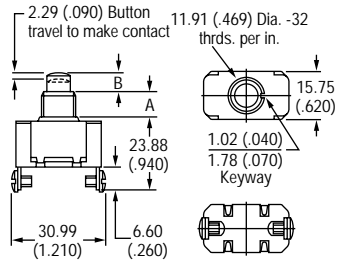
DIMENSIONS APPROXIMATE IN MM (INCHES)



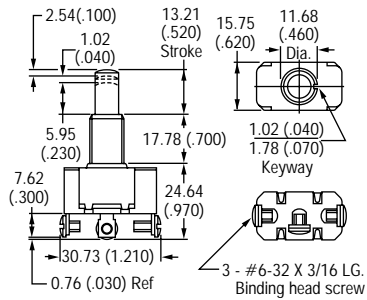
8440



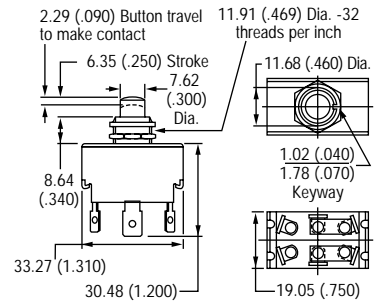
8442 AND 8444 (SCREW TERMINALS)



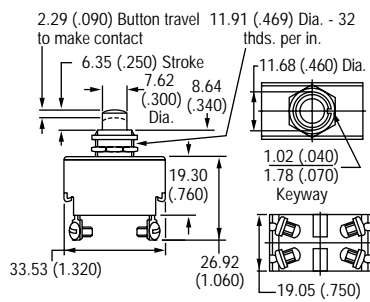
8434K2 AND 8435K2



8448K1



8448K2



3 PUSHBUTTON SWITCHES

General Purpose Illuminated Pushbutton Switches

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 reference table below to quickly identify the required product. Then, refer to the selection table to determine the catalog number.

095 Series





Options:

- T-1 lamps.
- Special dead front and sunlight readable lenses legends.
- Split legend lenses.
- Military Snap-Switch, MS 8805.

Selection Tables

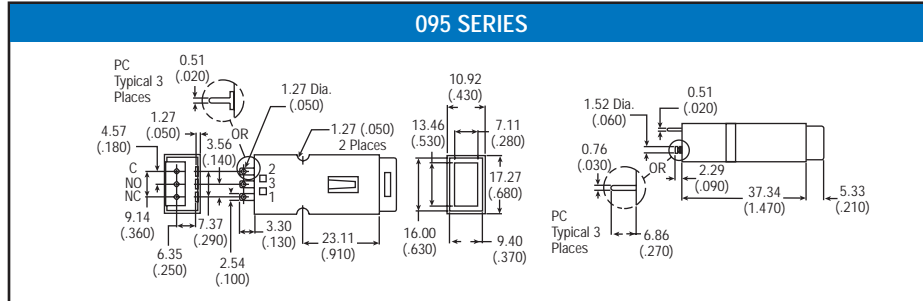
See pages 3.8 and 3.9.

ILLUMINATED AND NON-ILLUMINATED PUSHBUTTONS AND INDICATORS REFERENCE TABLE

SERIES	095/099	206/208	220/221/224	231/234	580/581/586
Selection Table	Page 3.8	Page 3.8	Page 3.8	Page 3.8	Page 3.9
Ratings	7A @ 28V dc, Resistive 4A @ 28V dc, Inductive Silver Contacts	Silver Contacts: 5A @ 125V ac or 250V ac Gold Contacts: 0.1A @ 125V ac/dc	Silver Contacts: 5A @ 125V ac or 250V dc Gold Contacts: 0.1A @ 125V ac/dc	Silver Contacts: 5A @ 125V ac or 250V ac Gold Contacts: 0.1A @ 125V ac/dc	Silver or Gold plated contacts: 1A @ 125V ac Gold plated contacts for low level
Action	Momentary	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	Snap Action 1PDT	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	Solder lug and solder turret Printed circuit board terminations Gold plated brass	0.51 x 2.79mm (.020 x .110")	0.51 x 2.79mm (.020 x .110")	0.51 x 2.79mm (.020 x .110")	0.31 x 2.79mm (.012 x .110")
Pushbuttons	9.53 x 16.15mm (.375 x .636") with 7.09 x 13.46mm (.279 x .530") legend area	15.87 x 25.40mm (.625 x 1.000") rectangular Full or horizontal split lens Plain, engraved, or hot stamped	15.87mm (.625") square Plain, engraved, or hot stamped	15.87mm (.625") square Plain, engraved, or hot stamped	12.70mm (.500") square 3 heights above panel Plain, engraved, or hot stamped
Mounting	Rail Mounting	Snap-in panel mounting Stainless steel retaining clips 0.76 to 4.76mm (.030 to .188") Panel Thickness Barrier mount available	Snap-in panel mounting Stainless steel retaining clips 0.76 to 4.76mm (.030 to .188") Panel Thickness Barrier mount available	Snap-in panel mounting Stainless steel retaining clips 0.76 to 4.76mm (.030 to .188") Panel Thickness Barrier mount available	Snap-in panel mounting Choice of two bezel styles: Chamfered or Flat Stainless steel retaining clips 1.59 to 4.76mm (.063 to .188") Panel Thickness
Lamps	One or two T-1 3/4 flange base Incandescent or LED Front relampable: lamp capsule hinges down for easy relamping	Two T-1 3/4 wedge base lamps Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament	One T-1 3/4 wedge base Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament	One rectangular LED flush with cap Various voltages available Diode protection available	One T-1 3/4 wedge base Incandescent Front relampable Lamp stationary to reduce mechanical shock to filament
Pushbutton Travel	.060" nominal	2.29 (.190")	2.29 (.190")	2.29 (.190")	4.32 (.170")
Approvals		UL Recognized CSA Certified 	UL Recognized CSA Certified 	UL Recognized CSA Certified 	UL Recognized CSA Certified 
Circuit Diagram Letter See Page 4.28	K, P	K, N	K, N	K, N	J, L, M

1 Terminations suitable for solder or female 110 connectors. Series 770: solder only.
 2 See page 3.13 for more information.
 3 See selection table.
 4 See page 3.13 for more information.
 5 Silver switches only.
 6 Meets solderability requirements of MIL-STD-202 Method 208.

DIMENSIONS APPROXIMATE IN MM (INCHES)



Dimensions continue on [page 3.10](#).

ILLUMINATED AND NON-ILLUMINATED PUSHBUTTONS REFERENCE TABLE (continued)

	770/775	810/815	820/825	860/861/845
	Page 3.9	Page 3.9	Page 3.9	Page 3.9
	Silver Contacts: 10.5A @ 125V ac or 250V ac Gold Contacts: 0.25A @ 125V ac or 30V dc	Silver Contacts: 3A @ 125V ac or 250V ac Gold Contacts: 0.25A @ 125V ac or 30V dc	Silver Contacts: 3A @ 125V ac or 250V ac Gold Contacts: 0.25A @ 125V ac or 30V dc	Silver Contacts: 6A @ 125V ac or 3A @ 250V ac Gold Contacts: 0.25A @ 125V ac or 30V dc
	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down	Momentary Alternate with positive latch down
	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, N.O.
	0.51 x 3.18mm (.020 x .125") ① Epoxy Sealed	0.64 x 2.79mm (.025 x .110") ① Epoxy Sealed	0.64 x 2.79mm (.025 x .110") ① Epoxy Sealed	0.64 x 2.79mm (.025 x .110") ①
	18.54 x 24.64mm (.730 x .970") rectangular Plain, engraved, or hot stamped ②	19.05 x 25.40mm (.750 x 1") rectangular 2 heights above panel ③ 5 styles Plain, engraved, or hot stamped	19.05mm (.750") square 2 heights above panel ③ 5 styles Plain, engraved, or hot stamped	15.87mm (.625") square Horizontal split legend (indicator only) 3 heights above bezel ③ 5 styles Plain, engraved, or hot stamped
	Panel mounting retained by molded sleeve and nut May be individually mounted or gang mounted in horizontal or vertical rows Panel Thickness from .76 to 6.35mm (.030 to .250") Barrier mount available ④ Snap mount available	Snap-in panel mounting Stainless steel retaining clips 1.59 to 4.76mm (.063 to .188") Panel Thickness Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips 1.59 to 4.76mm (.063 to .188") Panel Thickness Barrier mount available ④	Snap-in panel mounting Stainless steel retaining clips 1.59 to 4.76mm (.063 to .188") Panel Thickness Barrier mount available ④
	Accepts two T-1 3/4 midjet 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
	5.59 (.220")	5.59 (.220")	5.59 (.220")	5.59 (.220")
	UL Recognized ⑤ CSA Certified ⑤ 	UL Recognized ⑤ CSA Certified ⑤ 	UL Recognized ⑤ CSA Certified ⑤ 	UL Recognized ⑤ CSA Certified ⑤
	Q	K, N	K, N	J, L



095 Series
Avionics Switch



581K11510
Blue Full Lens



206K11810M0203
Split Green/Red Lens



231K11810
LED Display

3 PUSHBUTTON SWITCHES

General Purpose Illuminated Pushbutton Switches (continued)

HOW TO ORDER — SERIES 095 — AVIONICS SWITCH

To determine your Complete Catalog Number, you must start with the appropriate Base Prefix Number and add the appropriate Code Letters and/or Numbers as in the example below:

Add each appropriate Number or Letter...												...to get to your Complete Catalog Number
Base Prefix	Product Type	Action	Number of Poles	Contact Material	Terms. Type	Mounting	P.B. Style	Lens Color	P.B. Height	Lamp	Number of Lamps	Complete Catalog Number
095	K	1	1	8	1	1	1	2	A	51	01	095K1181112A5101
099	L	—	—	—	2	1	1	3	A	52	01	099L2113A5201

SERIES 095 — AVIONICS SWITCH SELECTION TABLE

LETTERS AND NUMBERS — ADD TO BASE PREFIX NUMBER																							
Switch Series	Product Type	Action	No. of Poles	Contact	Terminations	Mounting	P.B. Style	Lens Color	P.B. Height	Lamp	No. of Lamps												
095	Switch	K	Mom.	1	1 P.S.T.	1	Silver	8	Solder	1	Rail	1	Trans-lucent	1	White	01	5.3mm (.209")	A	Use two digit item number from bulb chart	One	01		
															Red	02					02		
															Green	03					Chart II on page 3.12	No Lamp	99
															Yellow	04							
															Black	21							
099	Indicator	L	NA	NA	NA																		

HOW TO ORDER — ILLUMINATED PUSHBUTTONS

To determine your Complete Catalog Number, you must start with the appropriate Base Prefix Number and add the appropriate Code Letters and/or Numbers as in the example below:

Add each appropriate Number or Letter...												...to get to your Complete Catalog Number
Base Prefix	Product Type	Action	Number of Poles	Contact Material	Terms. Type	Mounting	P.B. Style	Full Top Color Lens	Bottom Lens Color	P.B. Height	Lamp	Complete Catalog Number
206	K	1	1	8	1	0	T	03	04	S	30	206K11810T0304530
208	L	—	—	—	1	0	M	03	—	A	32	208L10M03A32

ILLUMINATED PUSHBUTTONS SELECTION TABLE

LETTERS AND NUMBERS — ADD TO BASE PREFIX NUMBER																							
Switch Series	Product Type	Action	No. of Poles	Contact	Terminations	Mounting ②	P.B. Style	Full/Top Lens	Bottom Lens ⑤⑥	P.B. Height	Lamp												
206 (Illuminated)	Switch	K	Mom.	1	1 P.S.T.	1	Silver	8	Solder	1	No Barriers	0	Clear	C	Orange	00	Orange	00	4.8mm (.190") Full	A	Use two digit item number from bulb chart (Accepts 2 bulbs)		
															White	01						01	
															Red	02						02	Chart III on page 3.12
															Green	03						03	
															Yellow	04						04	
208	Indicator	L	NA	NA	NA	NA	NA	NA	Solder	1	Vertical Barriers	1	Filtered	F	Blue	05	Blue	05	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															Amber	10						10	
															Lunar White	12						12	
220 ④ (Non-illuminated)	Switch	K	Mom.	1	1 P.S.T.	1	Silver	8	Solder	1	Horiz. Barriers	2	Matte	M	Light Green	13	Light Green	13	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															Gold	9						9	
221 ④ (Illuminated)	Switch	K	Alt.	2	2 P.D.T.	2	Gold	9	Solder	1	Full Barriers	3	Matte	M	Lunar White	12	Lunar White	12	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															2 P.D.T.	6						6	
224 ④	Indicator	L	NA	NA	NA	NA	NA	NA	Solder	1	Full Barriers	3	Matte	M	Clear	15	Clear	15	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															Gray ⑦	20						20	
231 ④ (LED Display)	Switch	K	Mom.	1	1 P.S.T.	1	Silver	8	Solder	1	Full Barriers	3	Matte	M	Black ⑧	21	Black ⑧	21	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															Gold	9						9	
234 ④	Indicator	L	NA	NA	NA	NA	NA	NA	Solder	1	Full Barriers	3	Matte	M	Gray ⑦	20	Gray ⑦	20	4.8mm (.190") Full	A	Use two digit item number from bulb chart		
															Black ⑧	21						21	

① Pole one is Silver. Pole two is Gold.

② Refer to page 3.13 for barrier information.

③ Not available with lighted display.

④ Full cap style — does not require a bottom lens code.

⑤ 206 and 208 only.

HOW TO ORDER — ILLUMINATED PUSHBUTTONS

To determine your **Complete Catalog Number**, you must start with the appropriate **Base Prefix Number** and add the appropriate **Code Letters and/or Numbers** as in the example below:

Add each appropriate Number or Letter...												...to get to your Complete Catalog Number
Base Prefix	Product Type	Action	Number of Poles	Contact Material	Terms. Type	Mounting	P.B. Style	Top Lens Color	Bottom Lens Color	P.B. Height	Lamp	Complete Catalog Number
810	K	1	1	8	1	1	M	05	—	A	02	810K11811M05A02
815	L	—	—	—	1	1	T	03	—	A	02	815L11T03A02

ILLUMINATED PUSHBUTTONS SELECTION TABLE

LETTERS AND NUMBERS — ADD TO BASE PREFIX NUMBER																				
Switch Series	Product Type	Action	No. of Poles	Contact	Terminations	Mounting ②	P.B. Style	Full/Top Lens	Bottom Lens	P.B. Height	Lamp									
770 ③	Switch	K	Mom. Alt.	1 2	1 P.D.T. 2 P.D.T.	1 2	Silver Gold	8 9	Solder	1	No Barriers Vertical Barriers	0 1	Matte	M	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05	9.1mm (.360") Full	F	Use two digit item number from bulb chart (Accepts 2 bulbs) Chart II, V on page 3.12	
																	6.9mm (.270") Full	G		
																	3.0mm (.120") Full	H		
																	2 ③			
																	9.1mm (.360") Split	S		
775 ③	Indicator	L	NA	NA	NA															
860 (Non-illuminated) 861 (Illuminated)	Switch	K	Mom. Alt.	1 2	1 P.D.T. 2 P.S.T.	1 3	Silver 8 Gold 9 2 P.S.T. ① 6	Solder	1	No Barriers Vertical Barriers Horiz. Barriers	0 1 2	Clear	C	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	6.1mm (.240")	A	Use two digit item number from bulb chart Chart III on page 3.12		
8.9mm (.350")							B													
845	Indicator	L	NA	NA	NA												3.6mm (.140") ①	C		
810	Switch	K	Mom. Alt.	1 2	1 P.D.T. 2 P.D.T.	1 2	Silver 8 Gold 9 2 P.D.T. ① 6	Solder	1	No Barriers Vertical Barriers	0 1	Dead-front Filtered	D F	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	8.4mm (.330")	A	Use two digit item number from bulb chart Chart I, VII on pages 3.12 & 3.13		
							11.2mm (.440")									B				
815	Indicator	L	NA	NA	NA															
820	Switch	K	Mom. Alt.	1 2	1 P.D.T. 2 P.D.T. NC	1 2	Silver 8 Gold 9 2 P.D.T. ① 6	Solder	1	No Barriers Vertical Barriers	0 1	Chamfered Bezel Flat Bezel	0 1	Matte Trans-lucent	M T	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	8.4mm (.330")	A	Use two digit item number from bulb chart Chart I, IV, VII on pages 3.12 & 3.13
							11.2mm (.440")											B		
825	Indicator	L	NA	NA	NA															
580 (Non-illuminated) 581 (Illuminated)	Switch	K	Mom. Alt.	1 2	1 P.S.T. NO 1 P.S.T. NC 2 P.S.T. NO 2 P.S.T. NC 2 P.S.T. NO/NC	1 2 3 4 5	Silver Plate 5 Gold Plate 9	Solder	1	Chamfered Bezel Flat Bezel	0 1	Matte Trans-lucent	M T	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Gray 20 Black ③ 21	6.9mm (.270")	A	Use two digit item number from bulb chart Chart III on page 3.12		
							8.4mm (.330")									B				
							11.2mm (.440")									C				
586	Indicator	L	NA	NA	NA															

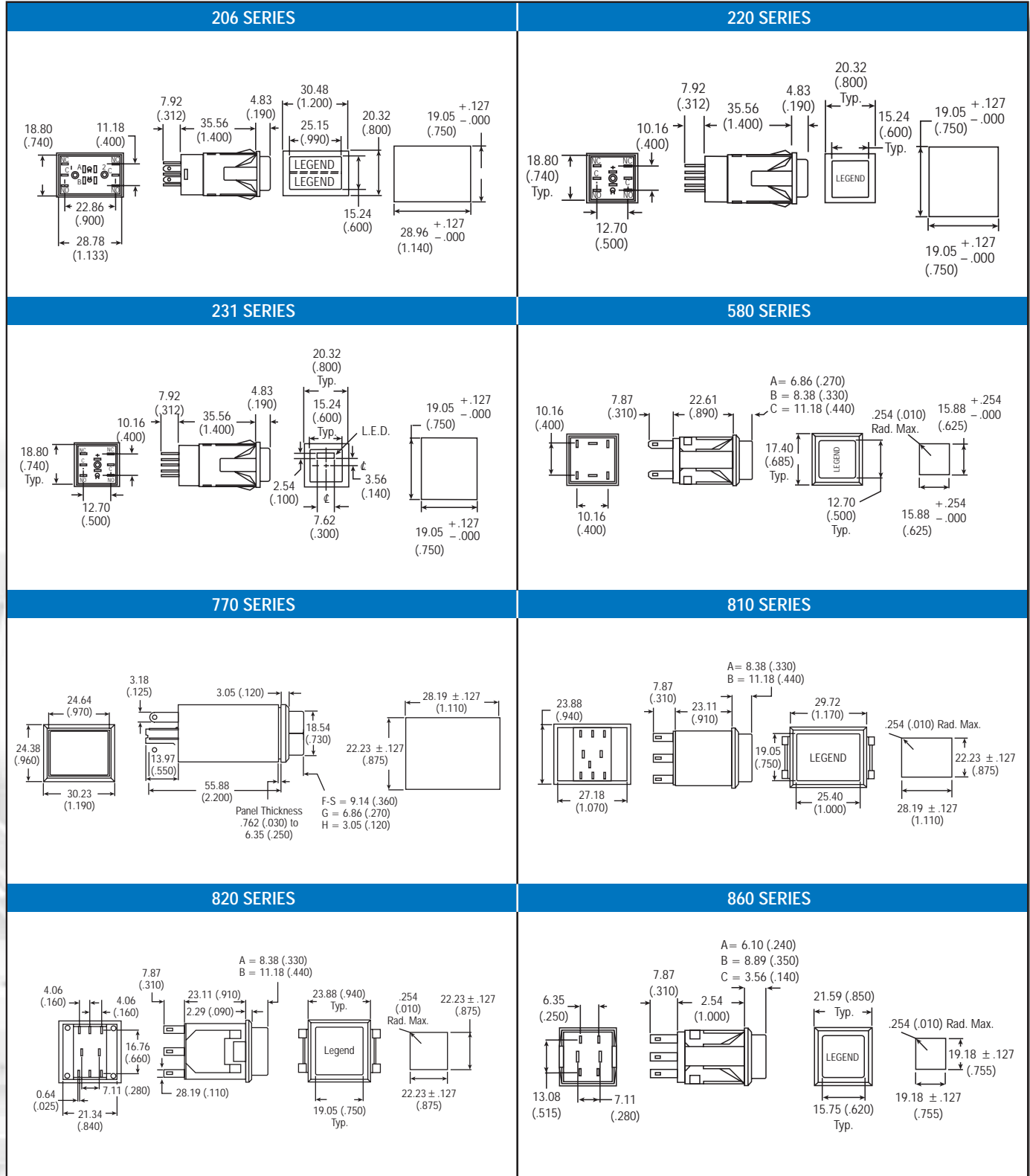
① Pole one is Silver. Pole two is Gold.
 ② Flush with bezel.
 ③ Not available with lighted display.

① Not available with lighted display. Available only on "M."
 ② Full or Split style caps available.

3 PUSHBUTTON SWITCHES

General Purpose Illuminated Pushbutton Switches (continued)

DIMENSIONS APPROXIMATE IN MM (INCHES)





HOW TO ORDER — ILLUMINATED AND NON-ILLUMINATED PUSHBUTTON CAPS

To determine your **Complete Catalog Number**, you must start with the appropriate **Base Prefix Number** and add the appropriate **Code Letters and/or Numbers** as in the example below:

Add each appropriate Number or Letter...						...to get your Complete Catalog Number
Base Prefix	Product Type	Display Legend/Style	Lens Color Full/Top	Lens Color Bottom	Cap Height	Complete Catalog Number
220	P	D	05	—	A	220PD05A
580	P	T	02	03	A	580PT0203A

ILLUMINATED AND NON-ILLUMINATED PUSHBUTTON CAPS SELECTION TABLE

SERIES NUMBER	PRODUCT TYPE	DISPLAY LEGEND/STYLE	LENS COLOR — FULL/TOP	LENS COLOR — BOTTOM ❶	CAP HEIGHT ❶								
2 Lamp display on Series 206 and 208 Non-Illuminated Series 220 and Illuminated 221, 224 and 225 LED display on Series 231 and 234	Pushbutton	P	Matte — No Insert Transmitted Color Clear Cap and Color Insert — Transmitted Color Deadfront — Smoky Gray Cap and Color Insert Filtered Color — White Cap and Color Insert	M C D F ❸	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Amber 10 Lunar White 12 Light Green 13 Clear 15 Gray ❷ 20 Black ❷ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Amber 10 Lunar White 12 Light Green 13 Clear 15 Gray ❷ 20 Black ❷ 21	4.80 (.190") Full 4.80 (.190") Split	A S					
					580, 581, 586 ❷	580	Translucent — Transmitted Color, Smooth Surface, Solid Color Matte — Transmitted Color, Solid Color Filtered Color — White Cap with Colored Filter Insert ❹ Clear — Clear Cap with Colored Filter Insert ❹ Deadfront — Hidden Color and Legend insert with Smoky Gray Cap and Color Insert	T M F C D	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Black ❷ 21	Orange 00 White 01 Red 02 Green 03 Yellow 04 Blue 05 Lunar White 12 Clear 15 Black ❷ 21	6.90 (.270") 8.40 (.330") 11.20 (.440")	A B C	
					770, 775 ❹	770					6.90 (.270") Split 3.00 (.120")	9.10 (.360") Full 9.10 (.360") Split 6.90 (.270") 3.00 (.120")	F S G H
					845, 860, 861	849						6.10 (.240") 8.90 (.350") 3.60 (.140")	A B C
					820, 825 810, 815	820 810						8.40 (.330") 11.20 (.440")	A B

- ❶ Measured from panel to top of pushbutton cap in mm (inches).
- ❷ For a high degree of illumination, a full cap may be used with two lamp devices.
- ❸ Available only with colors: Red, Green, Yellow, Blue.
- ❹ Available in Matte only.
- ❺ Not available for lighted display.
- ❻ For two lamps, two colored inserts with divider.
- ❼ Available in Translucent and Matte only.
- ❽ Available with 206 and 770 Series only.

3 PUSHBUTTON SWITCHES

General Purpose Illuminated Pushbutton Switches (continued)

INCANDESCENT LAMPS

I. BI-PIN BASE FOR 800 SERIES							
Item Number ❶	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) ❷	Brightness Lumens	Lab Average Life (Hours) ❸
02	28-3154-2	7361	5	.06	.05	0.63	100,000
03	28-3154-3	7945	6	.04	.03	0.38	10,000
04	28-3154-4	7328	6	.20	.60	7.92	21,000
05	28-3154-5	7380	6.3	.04	.03	0.38	50,000
06	28-3154-6	7377	6.3	.075	.22	2.89	500
07	28-3154-7	7381	6.3	.20	.40	5.03	50,000
08	28-3154-8	7371	12	.04	.12	1.51	10,000
09	28-3154-9	7330	14	.08	.50	6.29	750
10	28-3154-10	7382	14	.08	.30	3.77	50,000
11	28-3154-11	7370	18	.04	.15	1.89	10,000
12	28-3154-12	7327	28	.04	.34	4.27	7,000
13	28-3154-13	7387	28	.04	.30	3.77	25,000
14	28-3154-14	7876	28	.06	.34	4.27	25,000

II. MIDGET FLANGE BASE FOR 095 AND 099/770 SERIES							
Item Number ❶	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) ❷	Brightness Lumens	Lab Average Life (Hours) ❸
51	28-3155-2	345	6	.04	.03	0.38	10,000
52	28-3155-3	328	6	.20	.60	7.92	1,000
53	28-3155-4	377	6.3	.075	.22	2.89	500
54	28-3155-5	394	12	.04	.12	1.51	10,000
55	28-3155-6	330	14	.08	.50	6.29	750
56	28-3155-7	382	14	.08	.30	3.77	50,000
57	28-3155-8	370	18	.04	.15	1.89	10,000
58	28-3155-9	327	28	.04	.34	4.27	7,000
59	28-3155-10	387	28	.04	.30	3.77	25,000

III. SUBMINIATURE WEDGE BASE 200 AND 500 SERIES							
Item Number ❶	To Order Lamp Separately	ASA Lamp Number	Designed Volts	Design Amps	Brightness (MSCP) ❷	Brightness Lumens	Lab Average Life (Hours) ❸
30	28-3158	56	5	.115	.15	1.89	20,000
31	28-3158-2	79	6	.20	.60	7.92	1,000
32	28-3158-3	84	6.3	.04	.03	0.38	20,000
33	28-3158-4	86	6.3	.20	.40	5.03	20,000
34	28-3158-5	18	14	.04	.13	1.63	5,000
35	28-3158-6	73	14	.08	.30	3.77	15,000
36	28-3158-7	85	28	.04	.30	3.77	7,000
37	28-3158-8	17	28	.06	.65	8.17	5,000

❶ Use this two digit number for installation in switches and indicators.

❷ Standard tolerance for MSCP is $\pm 25\%$.

❸ 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 ❶

IV. T 1 3/4 BI-PIN BASE NEON LAMP FOR ALL 800 SERIES "SHORTY" SWITCHES AND INDICATORS ❷												
Item Number ❶	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	.600	.250

V. T 1 3/4 MIDGET FLANGE BASE NEON LAMPS FOR ALL 095,099,700 AND 900 SERIES SWITCHES AND INDICATORS ❷												
Item Number ❶	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	.675
81	28-3157-2	C-24	105-125	150	4.2	8,000	None	35K	95	135	T-2	.675

❶ Neon lamps are not recommended for use with colored caps or inserts, especially those colored green or blue.

❷ Recommended external series resistor values shown for indicated average useful life are for lamp and resistor combinations used across 110-125V ac. 1/4 W, $\pm 10\%$ tolerance.

❸ Use this two digit number for installation in switches and indicators.

LED LAMPS 1 2

VI. LEDS FOR SERIES 231 THRU 235 — SWITCHES AND INDICATORS			
Color	Voltage 3	Without Diode Protection	With Diode Protection
		Item Number	Item Number
Red	V dc 2	01	11
	5V dc	02	12
	15V dc	03	13
Yellow	VDC 2	04	14
	5V dc	05	15
	15V dc	06	16
Green	V dc 2	07	17
	5V dc	08	18
	15V dc	09	19

VII. T 1 3/4 WIRE LEDS FOR ALL 800 SERIES SWITCHES AND INDICATORS						
Item Number 4	Color	Forward Current (MA) 2	Luminous Intensity (MCD)		Forward Voltage (V) Typical	Diffused or Undiffused
			Minimum	Typical		
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

Note: LEDs are sold installed only.

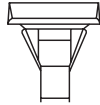
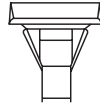
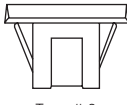
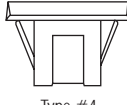
1 For use with clear or white cap only.

2 External current limiting required. User must include in circuit — to give current of 20mA to LED

3 5V dc and 15V dc include internal current limiting resistor. Other voltages available — contact your local Eaton Sales Representative.

4 Use this two digit number for installation in switches and indicators.

SERIES 200 & 300 MOUNTING BARRIERS ORDER GUIDE 1 2 3 4 5 Cat. No. Example: 200B1

SERIES 200 & 300					
Product Series	Product Type		Barrier Type and Description		
200	Barrier	B	End — Short 3 Center — Short 3	1 2	 Type # 1  Type # 2
200	Barrier	B	End — Long 4 Center — Long 4	3 4	 Type # 3  Type # 4

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.

5 When switches are individually mounted add 2.54mm (.100") per switch to the appropriate bezel dimension. When switches are gang mounted add 1.27mm (.050") to the appropriate bezel dimension for each switch mounted plus an additional 1.27mm (.050") to compensate for gang mounting.

ENGRAVING AND HOT STAMPING

ENGRAVING AND HOTSTAMPING		
	All legend markings are engraved or hot stamped in accordance with the limitations below. Standard markings are of condensed gothic type, 1/8" high characters, with white letters on blue, red and green translucent pushbuttons, and black letters on white, yellow, orange and all filtered pushbuttons.	
Pushbutton Size	Standard Engraving Limitations	Standard Hot Stamping Limitations
1/2" square pushbuttons 5/8" square pushbuttons — Full Legend 5/8" square pushbuttons — Split Legend 3/4" square pushbuttons 3/4 x 1" rectangular pushbutton — Full Legend 3/4 x 1" rectangular pushbutton — Split Legend	2 lines, 4 characters per line 3 lines, 6 characters per line 2 lines, 6 characters per line 3 lines, 7 characters per line 3 lines, 9 characters per line 2 lines, 9 characters per line	1 line, 4 characters per line 2 lines, 5 characters per line 2 lines, 5 characters per line 2 lines, 6 characters per line 2 lines, 8 characters per line 2 lines, 8 characters per line

770K1180M03F

820K11810M05A

861K11811M02A
With Barriers