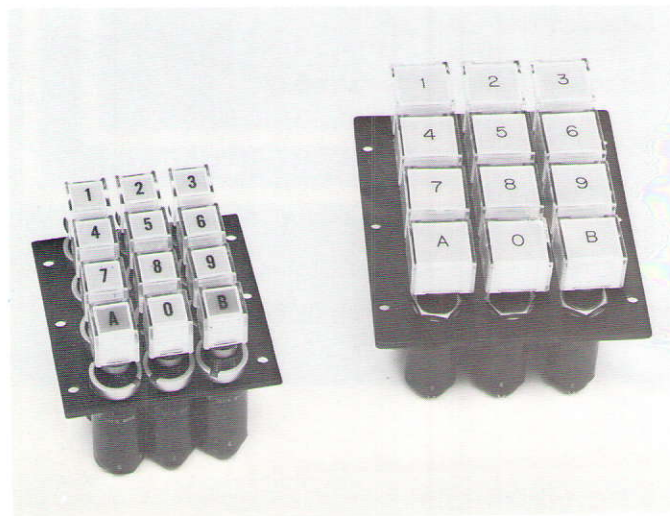
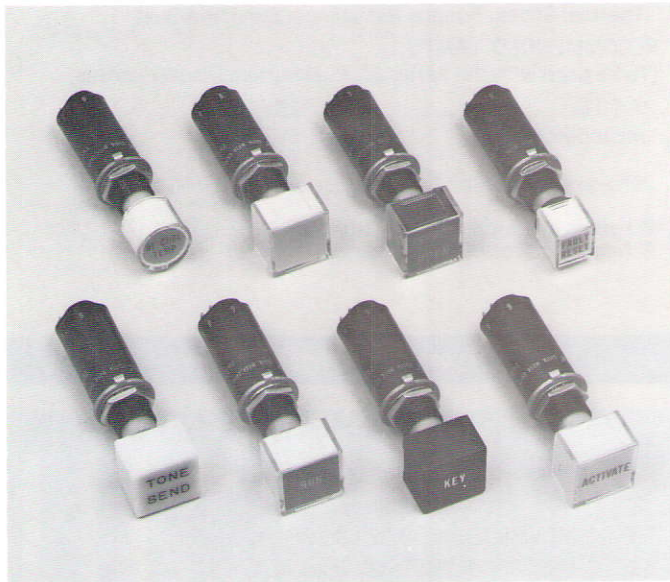
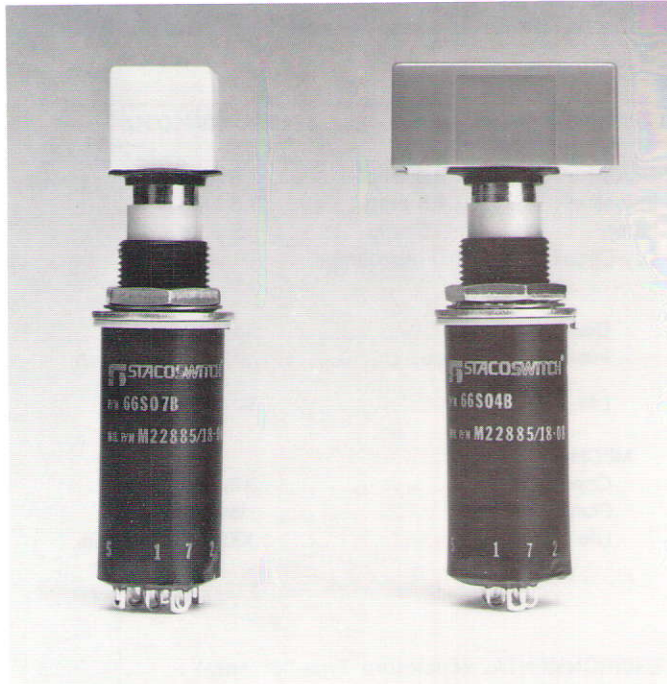


SERIES 60 LIGHTED PUSHBUTTON SWITCHES



QPL/Seismic Qualified

Series 60 Lighted Pushbutton Switches are high quality, low cost, single lamps units with MIL-SPEC listings under M22885/18. The switches have been Seismic Qualified to requirements of I.E.E.E. Standard 344-1975 and T.V.A. 2200 Appendix "C." All switches are sealed making them drip proof and resistant to humidity, salt spray, sand and dust environments, as well as explosion proof. Snap action switch mechanisms provide clean switching with minimum contact bounce. Gold plated precious metal alloy contacts provide switching range from 2 amps down to 10 micro amps, compatible with computer requirements. These versatile switches provide maximum flexibility in circuit control, offering design features not available in any other low-cost military-grade lighted pushbutton switch.

All Series 60 switches can be mounted singly or in keyboard arrangements on 12 and 16 station subpanels available to speed installation. Subpanels are offered with switch spacing to accommodate .50" pushbuttons, either round or square, or with spacing to accommodate pushbuttons up to and including .75" in width.

Standard Options

Select the specific switch to fit your particular application. Models 65 and 66 offer two-circuit or DPDT contact arrangement with solder terminations. Models 63 and 64 are similar to Models 65 and 66 but with PC or wire wrap terminations. All switches are available with either momentary or alternate switch action. Models 63 and 65 accept Series 60 Type 1 screw-in pushbutton lenses for high impact shock and severe vibration environments; Models 64 and 66 accept Series Type 2 snap-in pushbutton lenses.

Matching Indicator

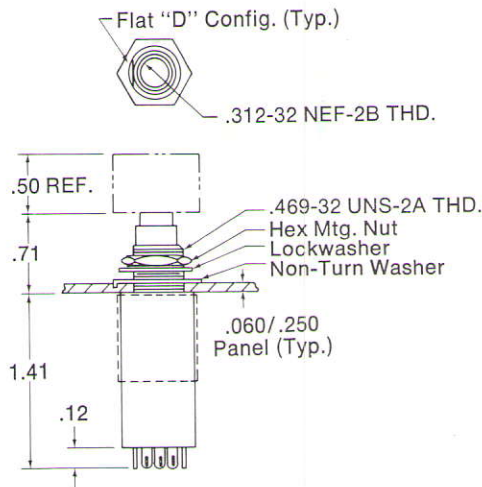
Single lamp indicators, Model 61 for screw-in pushbutton lenses, and Model 62 for snap-in pushbutton lenses, use same display pushbuttons as the switches for look alike appearance. Mix switches and indicators on same panel or group separately for function control and identification. See page 8 for ordering information on indicators.

Attractive Display Pushbuttons

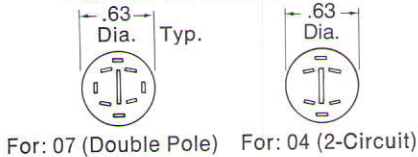
Select Stacoswitch's new photographic legends or engraved legends. Choose from nine attractive colors in eight different sizes and shapes. Photographic legends offer wide selection of legend types, including visible or hidden message, and choice of black characters on a colored background or colored characters on a black background. Order Series 60 Display Pushbutton Lenses separately. See pages 9-13 for complete details.

SOLDER TERMINATED LIGHTED SWITCHES - MODELS 65/66

Series 60 (M22885/18)



TERMINAL ARRANGEMENT



Specifications

ELECTRICAL

Contact Rating	28VDC	115VAC 60/400 Hz
Resistive	2.0 amp	2.0 amp
Inductive	1.5 amp	1.5 amp
Lamp	.5 amp	.5 amp
Dry Circuit	10.0 microamps	

Dielectric	1000 VAC rms
Insulation resistance	1000 megohms min. @ 500 VDC
Life	50,000 cycles

MECHANICAL

Operating force	.2 lbs nominal
Plunger travel	.160 max.
Life	100,000 cycles min.

ENVIRONMENTAL (Enclosure Type "S" only:)

Applicable Military Specification—MIL-S-22885
Salt Spray, Moisture Resistance, Shock, Vibration, Explosion
Thermal Shock, Fungus Resistance, Sand and Dust

RECOMMENDED LAMPS

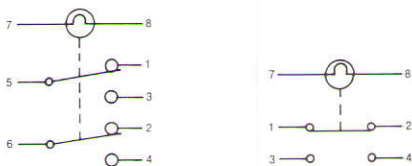
(To be used with the Series 60 Pushbutton/Display Lenses.)

① T 1¾	28V (327)
Incandescent	6V (328) 14V (330)
② Neon	105-125 VAC (A1H)

- ① Lamps not supplied with switch
- ② Neon requires 68KΩ series resistance

Schematics

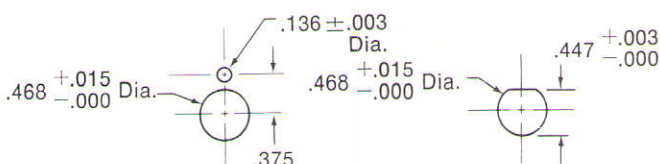
(07 = DPDT) (04 = 2 CKT)



Mounting Information

(with non-turn washer)

(without non-turn washer)



Ordering Information

Typical Part Number				66	S	04	B
Model	MIL Number	Mounting Bushing	Pushbutton				
65	M22885/18	15/32-32	Screw -in				
66	M22885/18	15/32-32	Snap-in				

Environmental Construction

S=Moisture tight
See specifications
N=Enclosed (No static or dynamic seals)

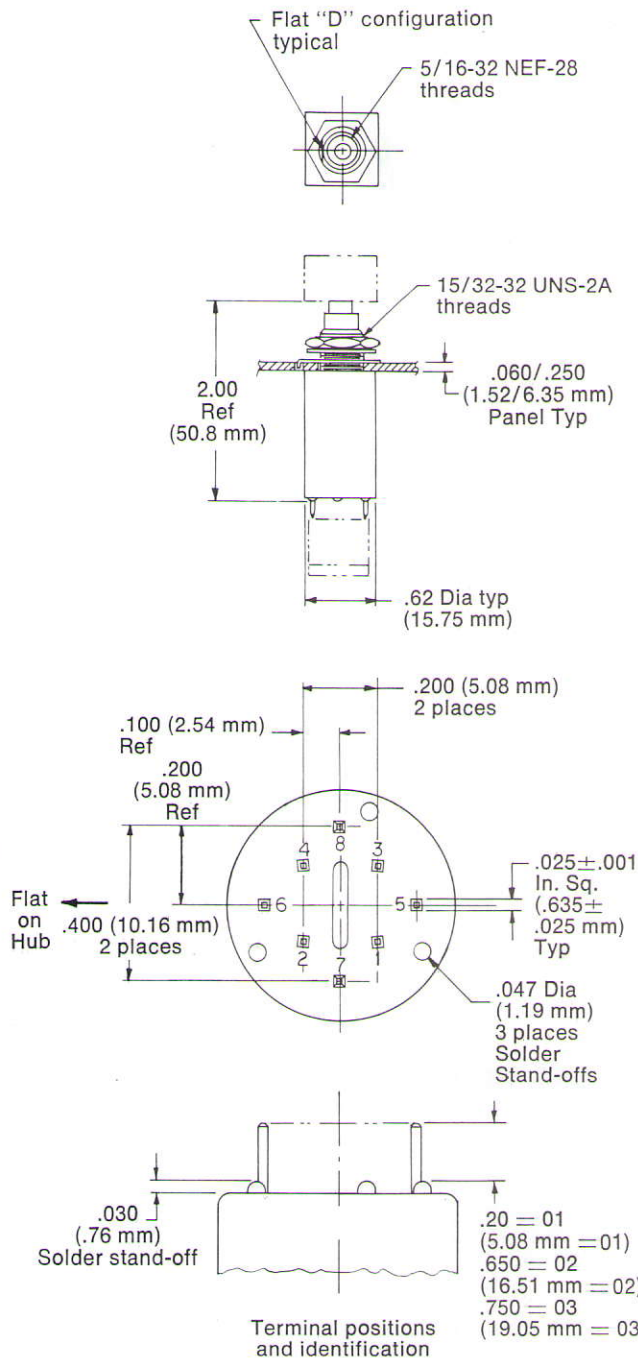
Circuit Configuration

Switch Operation

A= Momentary Snap action
B= Alternate Snap action

Prefix "R" in front of model number (R66)
denotes RFI shielded switch body.

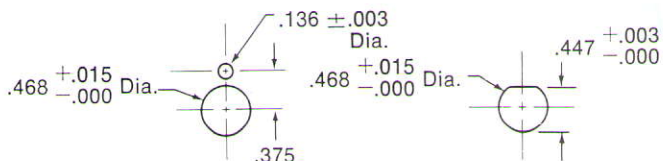
PC or WIREWRAP TERMINATED LIGHTED SWITCHES - MODELS 63/64



Mounting Information

(with non-turn washer)

(without non-turn washer)



Specifications

ELECTRICAL

Contact Rating	28VDC	115VAC 60/400 Hz
----------------	-------	------------------

Resistive	2.0 amp	2.0 amp
Inductive	1.5 amp	1.5 amp
Lamp	.5 amp	.5 amp
Dry Circuit	10.0 microamps	

Dielectric	1000 VAC rms	
Insulation resistance	1000 megohms min. @ 500 VDC	
Life	.50,000 cycles	

MECHANICAL

Operating force	.2 lbs nominal	
Plunger travel	.160 max.	
Life	100,000 cycles min.	

Ordering Information

Typical Part Number - R 64 S 07 A 01

Prefix used when RFI/EMI shielding is required. Omit if not required.

Switch Model Number
63 = 15/32-32 Mtg. Hub - Screw-in Lens
64 = 15/32-32 Mtg. Hub - Snap-in Lens

Environmental Construction
S = Sealed

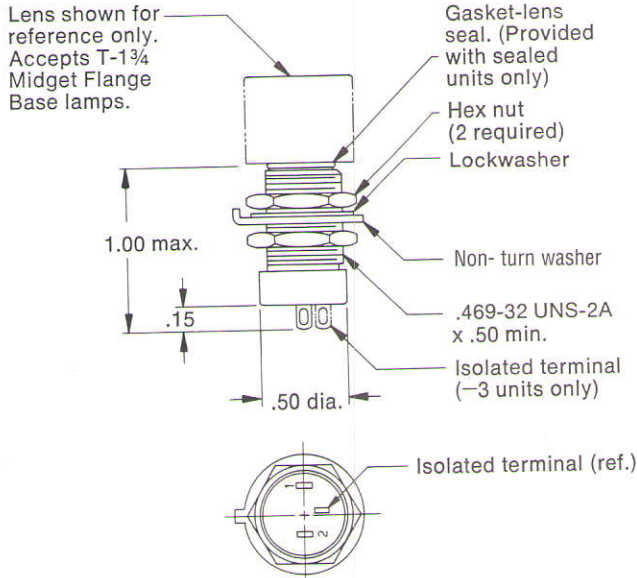
Circuit Configuration:
04 = Two Circuit, Double Break
07 = DPDT

Switch Action:
A = Momentary Snap Action
B = Alternate Snap Action

Terminal Length:
01 = .20"
02 = .65"
03 = .75"

LIGHTED INDICATORS MODELS 61/62

Models 61 and 62 Single Lamp Indicators only are look-alike companions to the Series 60 Lighted Display Pushbutton Switches (Models 63, 64, 65, and 66). The Model 61 Indicator mates with the Screw-in Lens and the Model 62 Indicator mates with the Snap-in Lens. See pages 9-13 for information on Series 60 Display Pushbutton Lenses.



Note: .250 maximum panel thickness



Specifications

MECHANICAL

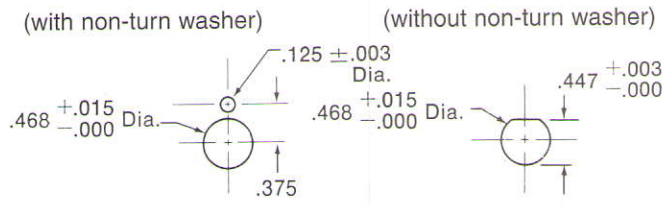
Contact Spring
 Force.....12 to 36 oz. per Mil-L-3661.
 Strength.....When mounted in a panel with a push button/display lens installed, the indicator is capable of withstanding an axial load of 25 lbs. distributed on the face plate of the push button/display lens per Mil-S-22885.

ELECTRICAL

Dielectric.....1,000 VRMS per Mil-L-3661, para. 4.7.2.1.

ENVIRONMENTAL, Applicable Military Specifications MIL-S-22885 Salt Spray, Moisture Resistance, Thermal Shock, Vibration, Sand and Dust and Fungus Resistance.

Mounting Information

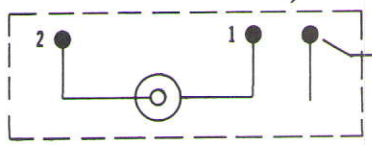


The -2 version of the Models 61 and 62 Indicators provides two lamp terminals.

The -3 version provides two lamp terminals and one isolated terminal which allows connections for attaching components that are needed due to circuit requirements.



Typical -3 version application



Isolated Terminal (not identified) -3 configuration only

Ordering Information

Example: **61 S 001 -2**

Indicator Model Number **61**
 61 = Screw-in Lens
 62 = Snap-in Lens

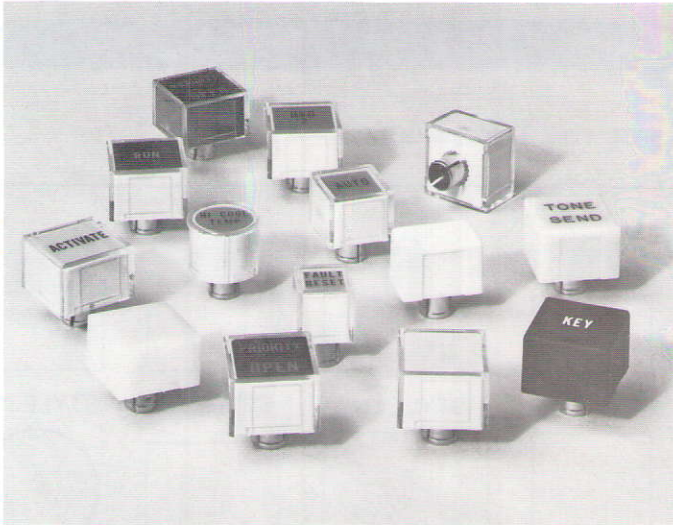
S = Moisture tight (applies only with lens and seal installed)

001 = Indicator

Number of Lamp Terminals **-2**
 -2 = 2
 -3 = 2 plus one isolated terminal

Prefix "R" in front of model number (R61) denotes RFI shielded indicator body.

SERIES 60 LIGHTED PUSHBUTTON/DISPLAY LENS



Specifications

MECHANICAL

Strength Faceplate will withstand 25 pound distributed load.
 Relamping Relamp from front of panel without use of tools.

ELECTRICAL

Dielectric Strength
 Sea Level 1,056 VRMS
 70,000 Feet 450 VRMS
 Insulation Resistance 1,000 megohm at 500VDC

ENVIRONMENTAL

Applicable Military Specifications MIL-S-22885 Salt Spray, Moisture Resistance, Thermal Shock, Vibration, Sand and Dust, and Fungus Resistance.

Display Types

Select from seven legend display types, all standard options. Hidden or visible messages . . . legend characters in black or color . . . photographic film or engraved legends . . . wide selection of designer matched colors . . . they all add up to a multitude of attractive display combinations, and they're all standard. Whatever your requirement there is a Series 60 Lighted Pushbutton/Display to meet your exact needs.

Photographic Film Legends

Series 60 Lighted Pushbuttons are now available with your photographic film legends to protect characters from wear and contamination from dirt. The legend plates have clear, sharp characters and are permanently protected under a clear plastic cap. Legend characters may be black on a color background, or in color on a black background. Choice of 10, 12, or 18 point character height. One, two, or three line legends available, depending on character height and pushbutton style.

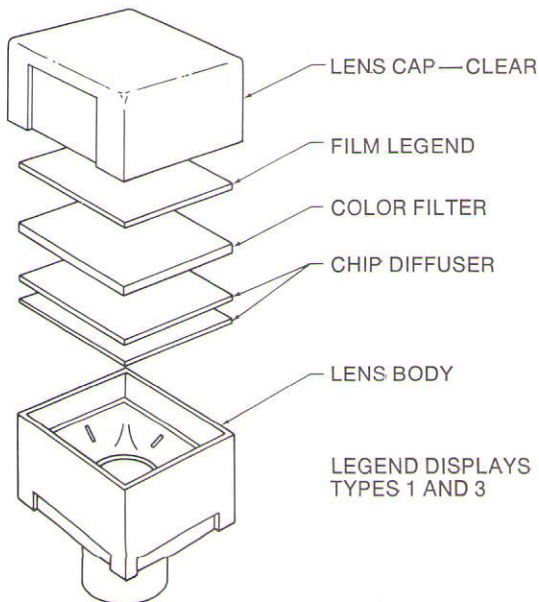
Engraved Legends

Translucent color pushbuttons have engraved legends, Display Type 5, with characters filled with a contrasting color for easy reading. Black fill is used on white, yellow, or amber pushbuttons; white fill is used on red, green or blue pushbuttons.

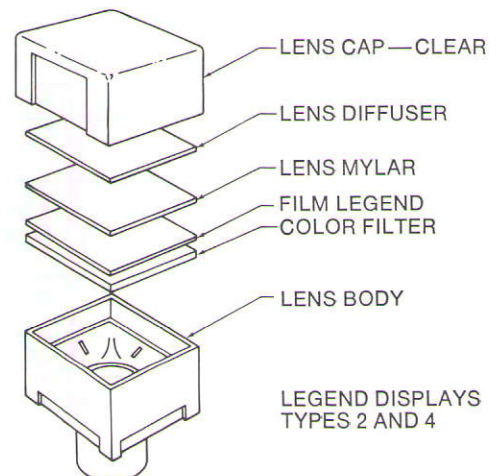
Other Features

Pushbuttons are available in screw-in style for high impact and vibration environment, Type 1, for Model 61 Indicator and Models 63 and 65 Switches; and a snap-in style, Type 2, for Model 62 Indicator and Models 64 and 66 Switches. Type 2 snap-in style has positive index for proper orientation of legend. Pushbuttons have fingertip grip for easy removal for relamping. All accommodate T-1 3/4 midget flange base incandescent lamps. See page 16 for ordering information on lamps. The pushbuttons are designed to meet requirements of MIL-S-22885 and MIL-L-3661 when installed in a Stacoswitch sealed switch or indicator and with a QPL lamp installed.

Style "M" .750 Sq. Pushbutton



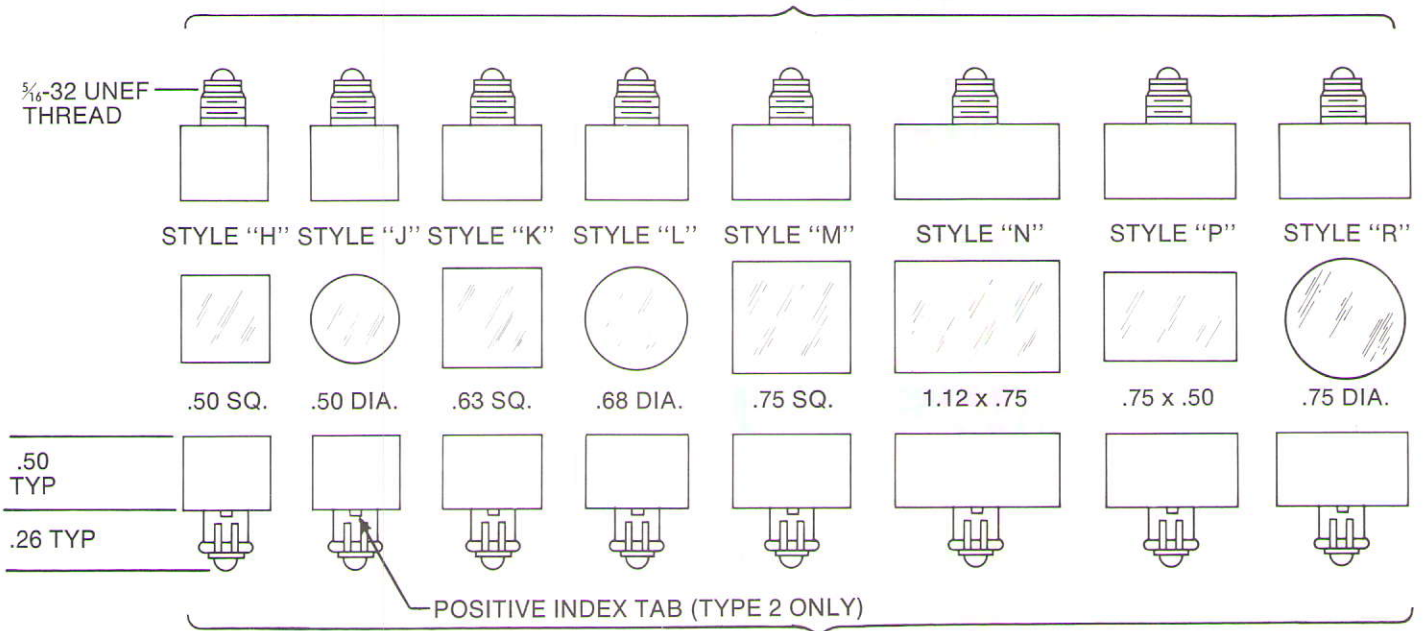
Style "K" .630 Sq. Pushbutton



SERIES 60 LIGHTED PUSHBUTTON/DISPLAY LENS

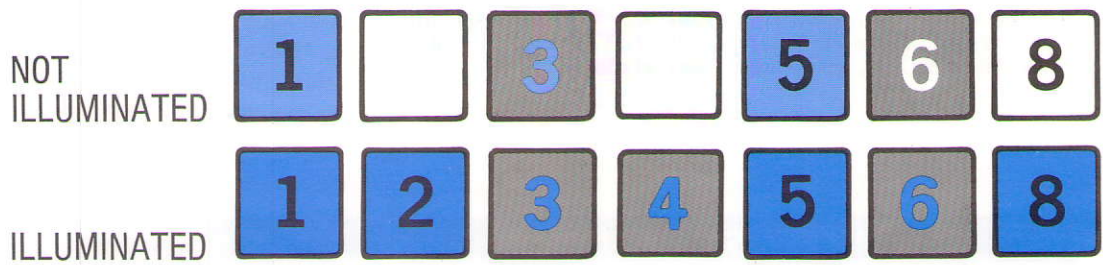
Body Styles

MOUNTING BASE TYPE 1 SCREW-IN



MOUNTING BASE TYPE 2 SNAP-IN (POSITIVE INDEX) — TYPE 3 SNAP-IN

Legend Display Options - Table 1



TYPE	NON-ILLUMINATED		ILLUMINATED	
	LEGEND	BACKGROUND	LEGEND	BACKGROUND
1.	Black ^①	Translucent Color	Black	Color
2.	Hidden (Not Easily Discernable) ^①	Translucent White	Black	Color
3.	Translucent Color ^①	Black	Visible in Color	Black
4.	Hidden (Not Easily Discernable) ^①	Translucent White	Visible in Color	Opaque
5.	Black Filled Engraving on External Surface ^②	Translucent Color Cap	Black	Color
6.	Translucent White ^①	Black	Visible in Color	Black
8.	Black ^①	Translucent White	Black	Color

NOTE: ① = Film Legend

② = Engraved. Black fill on white, yellow or amber background. White fill on all other colors. Applies to both translucent colored caps and clear caps with translucent color filters.

SERIES 60 LIGHTED PUSHBUTTON/DISPLAY LENS

Pushbutton Color Combinations - Table 2

CODE NO.	CAP DESCRIPTION	TRANSLUCENT COLOR FILTER	BODY DESCRIPTIONS	MIL-SPEC PART NUMBER	LEGEND DISPLAYS AVAILABLE
01	Red — Translucent	None	White — Opaque		Use Type 5 Engraved Legend Only
02	Red — Translucent	None	White — Translucent	M22885/99-XX01	
03	Green — Translucent	None	White — Opaque		
04	Green — Translucent	None	White — Translucent	M22885/99-XX02	
05	Yellow — Translucent	None	White — Opaque		
06	Yellow — Translucent	None	White — Translucent	M22885/99-XX03	
07	Blue — Translucent	None	White — Opaque		
08	Blue — Translucent	None	White — Translucent	M22885/99-XX04	
09	Amber — Translucent	None	White — Opaque		
10	Amber — Translucent	None	White — Translucent		
11	White — Translucent	None	White — Opaque		
12	White — Translucent	None	White — Translucent	M22885/99-XX05	
① 13	White — Translucent	Blue-White	White — Opaque	M22885/99-XX10	
14	White — Translucent	Red	White — Opaque	M22885/99-XX06	
15	White — Translucent	Red	White — Translucent		
16	White — Translucent	Green	White — Opaque	M22885/99-XX07	
17	White — Translucent	Green	White — Translucent		
18	White — Translucent	Yellow	White — Opaque	M22885/99-XX08	
19	White — Translucent	Yellow	White — Translucent		
20	White — Translucent	Blue	White — Opaque	M22885/99-XX09	
21	White — Translucent	Blue	White — Translucent		
22	White — Translucent	Amber	White — Opaque		
23	White — Translucent	Amber	White — Translucent		
24	Opal White — Translucent	Red	White — Opaque		
25	Opal White — Translucent	Red	White — Translucent		
26	Opal White — Translucent	Green	White — Opaque		
27	Opal White — Translucent	Green	White — Translucent		
28	Opal White — Translucent	Yellow	White — Opaque		
29	Opal White — Translucent	Yellow	White — Translucent		
30	Opal White — Translucent	Blue	White — Opaque		
31	Opal White — Translucent	Blue	White — Translucent		
32	Opal White — Translucent	Amber	White — Opaque		
33	Opal White — Translucent	Amber	White — Translucent		
34	Clear — Transparent	Red	White — Opaque		
35	Clear — Transparent	Red	Black — Opaque	M22885/99-XX11	
36	Clear — Transparent	Green	White — Opaque		
37	Clear — Transparent	Green	Black — Opaque	M22885/99-XX12	
38	Clear — Transparent	Yellow	White — Opaque		
39	Clear — Transparent	Yellow	Black — Opaque	M22885/99-XX13	
40	Clear — Transparent	Blue	White — Opaque		
41	Clear — Transparent	Blue	Black — Opaque	M22885/99-XX14	
42	Clear — Transparent	White	White — Opaque		
43	Clear — Transparent	White	Black — Opaque	M22885/99-XX15	
44	Clear — Transparent	Amber	White — Opaque		
45	Clear — Transparent	Amber	Black — Opaque		
46	Smoke Gray — Transparent	Red	White — Opaque		
47	Smoke Gray — Transparent	Red	Black — Opaque		
48	Smoke Gray — Transparent	Green	White — Opaque		
49	Smoke Gray — Transparent	Green	Black — Opaque		
50	Smoke Gray — Transparent	Yellow	White — Opaque		
51	Smoke Gray — Transparent	Yellow	Black — Opaque		
52	Smoke Gray — Transparent	Blue	White — Opaque		
53	Smoke Gray — Transparent	Blue	Black — Opaque		
54	Smoke Gray — Transparent	White	White — Opaque		
55	Smoke Gray — Transparent	White	Black — Opaque		
56	Smoke Gray — Transparent	Amber	White — Opaque		
57	Smoke Gray — Transparent	Amber	Black — Opaque		

① Recommended for military applications for white pushbuttons.

SERIES 60 LIGHTED PUSHBUTTON/DISPLAY LENS

Legend Display - Table 3

Character Style — Alternate Gothic No. 2

Character Height — A = 10 Point High (approx. .10")

B = 12 Point High (approx. .12")

C = 18 Point High (approx. .18")

Typical maximum character count and number of lines per pushbutton style and character size.

Pushbutton Style	A = 10 Point				B = 12 Point				C = 18 Point			
	No. Char/Line		No. Lines		No. Char/Line		No. Lines		No. Char/Line		No. Lines	
	Engrv.	Film	Engrv.	Film	Engrv.	Film	Engrv.	Film	Engrv.	Film	Engrv.	Film
H Body Style	4	5	2	2	3	4	1	1	2	3	1	1
J Body Style	4	5	2	2	3	4	1	1	2	3	1	1
K Body Style	5	7	2	2	4	6	2	2	3	4	2	2
L Body Style	5	8	2	2	4	6	2	2	3	4	1	1
M Body Style	6	9	4	4	5	7	3	3	3	5	2	2
N Body Style	9	11	4	4	7	9	3	3	5	6	2	2
P Body Style	6	9	3	3	5	7	2	2	3	5	1	1
R Body Style	6	8	2	2	5	7	1	1	3	5	1	1

Part Number Code

Typical Part Number - 60 K 2 44 6 B (FILL)

Pushbutton Series

Body Style

H = .50 Sq. M = .75 Sq.

J = .50 Dia. N = 1.12 x .75 Rect.

K = .63 Sq. P = .75 x .50 Rect.

L = .68 Dia. R = .75 Dia.

Mounting Base

1 = Screw-in

2 = Snap-in (Positive Index)

3 = Snap-in (No Positive Index)

Pushbutton Color Combinations

01 thru 57. See Table 2, Page 11

Legend Display Types

1 thru 6 and 8. See Table 1, Page 10

Legend Character Size

A = 10 point B = 12 point C = 18 point

See Table 3 Page 12

Legend

MIL SPEC Part Number

Typical Part Number - M22885/99 K 1 01

MIL-SPEC Number

Body Style

H = .50 Sq. L = .68 Dia. P = .75 x .50 Rect.

J = .50 Dia. M = .75 Sq. R = .75 Dia.

K = .63 Sq. N = 1.12 x .75 Rect.

Mounting Base

1 = Screw-in 2 = Snap-in (Positive Index)

Pushbutton Color Combination

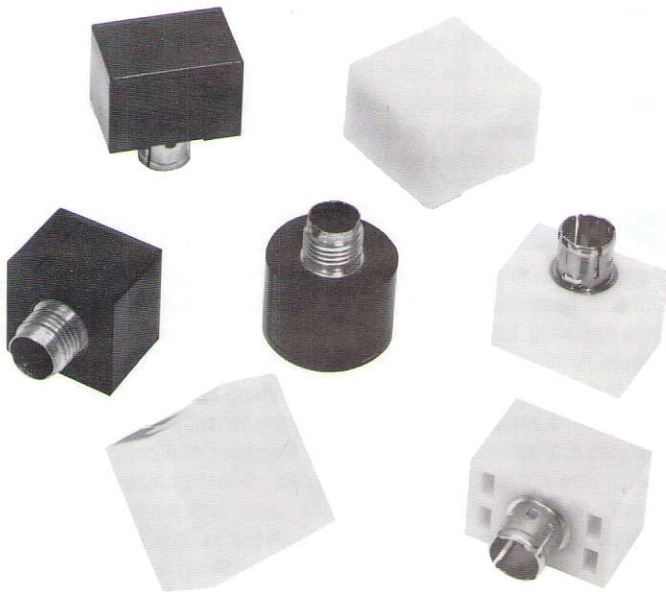
01 thru 15 (See MIL-SPEC column, Table 2 Page 11)

Note: Part Number does not cover legend character size, or legend copy.

These must be specified separately.

QPL SERIES 60 PUSHBUTTON DISPLAY LENSES

Single Lamp – Translucent, Diffusing Plastic – Standard Colors



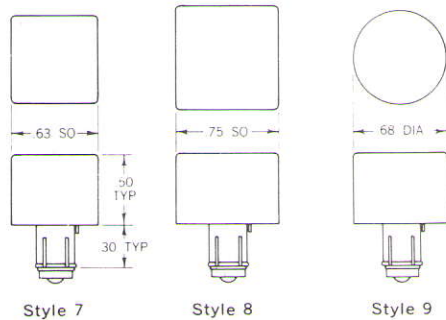
Qualified Products Listing under MIL-S-22885 has been granted to all of the pushbutton display lenses listed below. Those listed under M22885/19 have snap-in mounting base and fit Models 62, 64, and 66 Switch/Indicator. Pushbuttons listed under M22885/22 have a screw-in mounting base and fit Models 61, 63, and 65 Switch/Indicators. All pushbuttons are made of translucent plastic in standard colors, per MIL-S-22885. **100 piece min. qty. req'd. all orders.** Engraved legends only are available for these Pushbutton display lenses.

Ordering Information

PART NO.	MILITARY PART NO.	DESCRIPTION
20765-71	M22885/19-03	Pushbutton - .63 Sq., Snap-in, Red
20765-72	M22885/19-04	Pushbutton - .63 Sq., Snap-in, Green
20765-74	M22885/19-02	Pushbutton - .63 Sq., Snap-in, White
20765-75	M22885/19-01	Pushbutton - .63 Sq., Snap-in, Yellow
20765-76	M22885/19-05	Pushbutton - .63 Sq., Snap-in, Blue
20767-91	M22885/19-08	Pushbutton - .68 Dia. Snap-in, Red
20767-92	M22885/19-09	Pushbutton - .68 Dia. Snap-in, Green
20767-94	M22885/19-07	Pushbutton - .68 Dia. Snap-in, White
20767-95	M22885/19-06	Pushbutton - .68 Dia. Snap-in, Yellow
20767-96	M22885/19-10	Pushbutton - .68 Dia. Snap-in, Blue
20766-81	M22885/19-13	Pushbutton - .75Sq. Red, Snap-in
20766-82	M22885/19-14	Pushbutton - .75 Sq. Green, Snap-in
20766-84	M22885/19-12	Pushbutton - .75 Sq. White, Snap-in
20766-85	M22885/19-11	Pushbutton - .75 Sq. Yellow, Snap-in
20766-86	M22885/19-15	Pushbutton - .75 Sq. Blue, Snap-in
20741-51	M22885/22-03	Pushbutton - .81 Dia., Red, Screw-in
20741-52	M22885/22-04	Pushbutton - .81 Dia., Green, Screw-in
20741-54	M22885/22-02	Pushbutton - .81 Dia., White, Screw-in
20741-55	M22885/22-01	Pushbutton - .81 Dia., Yellow, Screw-in
20741-56	M22885/22-05	Pushbutton - .81 Dia., Blue, Screw-in
20742-61	M22885/22-08	Pushbutton - .63Sq. Red, Screw-in
20742-62	M22885/22-09	Pushbutton - .63Sq. Green, Screw-in
20742-64	M22885/22-07	Pushbutton - .63Sq. White, Screw-in
20742-65	M22885/22-06	Pushbutton - .63Sq. Yellow, Screw-in
20742-66	M22885/22-10	Pushbutton - .63Sq. Blue, Screw-in
20774-141	M22885/22-13	Pushbutton - .63 Dia. Red, Screw-in Push/Pull
20774-142	M22885/22-14	Pushbutton - .63 Dia. Green, Screw-in, Push/Pull
20774-144	M22885/22-12	Pushbutton - .63 Dia. White, Screw-in, Push/Pull
20774-145	M22885/22-11	Pushbutton - .63 Dia. Yellow, Screw-in, Push/Pull
20774-146	M22885/22-15	Pushbutton - .63 Dia. Blue, Screw-in, Push/Pull
20740-41	M22885/22-18	Pushbutton - .68 Dia., Red, Screw-in
20740-42	M22885/22-19	Pushbutton - .68 Dia., Green, Screw-in
20740-44	M22885/22-17	Pushbutton - .68 Dia., White, Screw-in
20740-45	M22885/22-16	Pushbutton - .68 Dia., Yellow, Screw-in
20740-46	M22885/22-20	Pushbutton - .68 Dia., Blue, Screw-in

Snap-In Pushbuttons

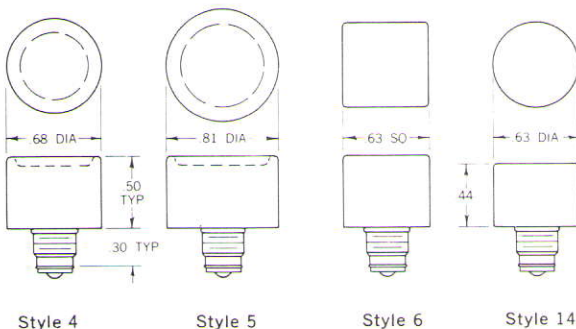
Mate with Models 62, 64, and 66 Switch/Indicator



NOTE: Snap-in push buttons, above, have a non-adjustable index key. This does not allow for position changes after installation of switch. Consult STACO® for non-standard orientation.

Screw-In Pushbuttons

Mate with Models 61, 63, and 65 Switch/Indicator



NOTE: Screw-in push buttons, above, have an adjustable orientation feature. This allows engraved push buttons to be positioned after installation of the switch.

Specifications

Color.....MIL-S-22885
 Temperature.....-5° C to +85° C
 Lamps.....Accept T-1-3/4 1.35V to 28V
 Lamps not supplied with switch or pushbutton