

INCH-POUND

MIL-PRF-22885/104C

1 April 2008

SUPERSEDING

MIL-PRF-22885/104B

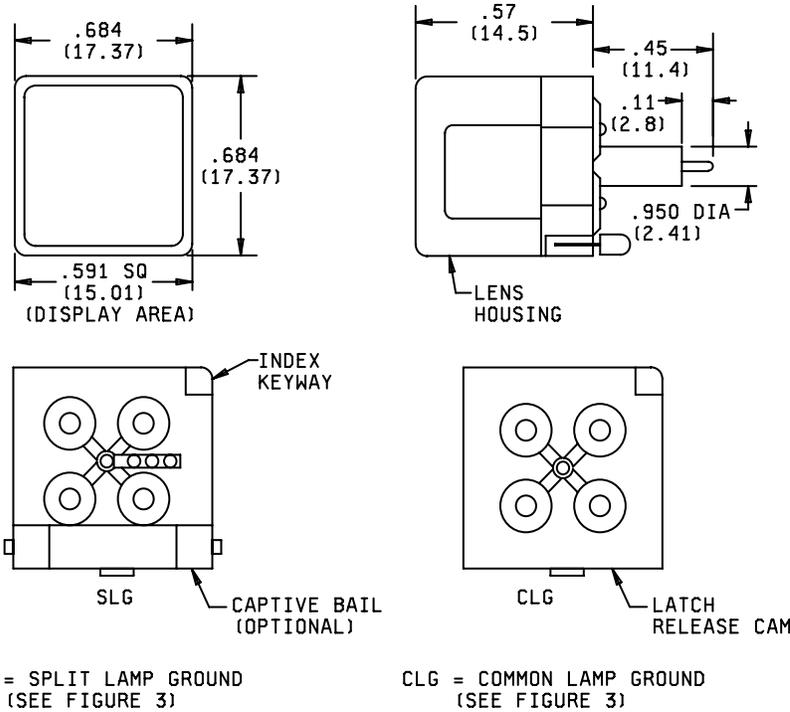
1 March 2001

PERFORMANCE SPECIFICATION SHEET

PUSHBUTTON, ILLUMINATED, 4 LAMP, SUNLIGHT READABLE
(FOR ILLUMINATED PUSHBUTTON SWITCH)

This specification sheet is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-22885.



NOTES:

- 1. Dimensions are in inches.
- 2. Metric equivalents are given for general information only.
- 3. Metric equivalents are in parentheses.
- 4. Unless otherwise specified, tolerances are $\pm .005$ (± 0.13 mm) for three place decimals and $\pm .02$ (\pm mm) for two place decimals.
- 5. Index keyway prevents incorrect insertion into MIL-PRF-22885/103 switch housing.
- 6. Pushbuttons are available with captive pushbutton feature, i.e., pushbutton remains captive to MIL-PRF-22885/103 switch housing during relamping (see figure 2.).

FIGURE 1. Pushbutton dimensions and configuration.

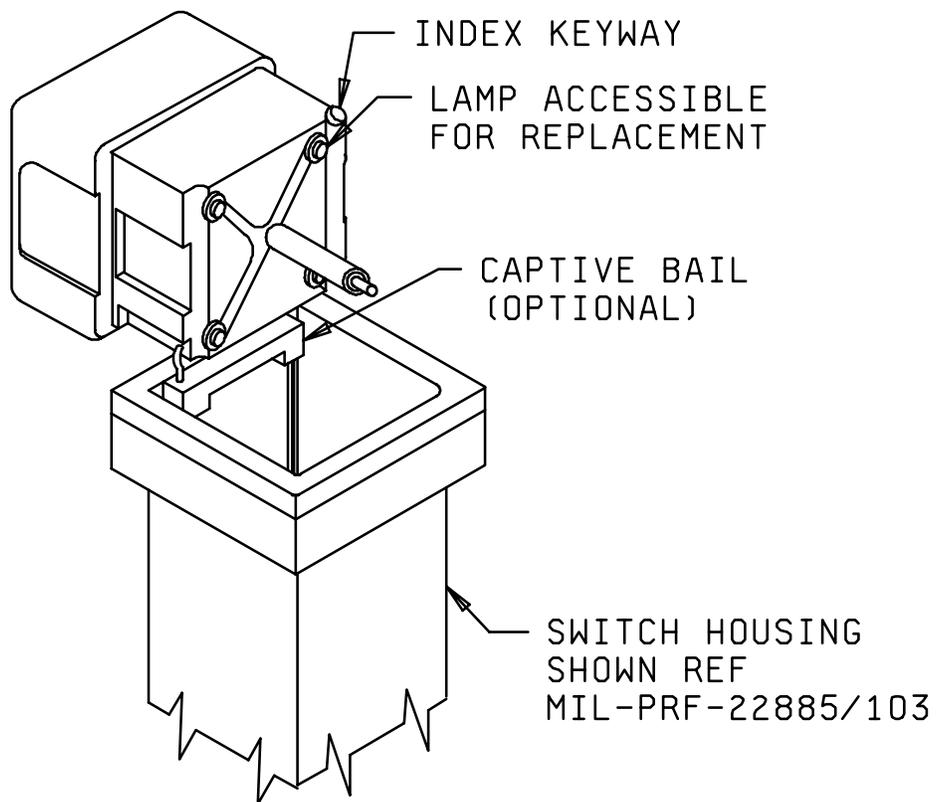


FIGURE 2. Captive pushbutton feature.

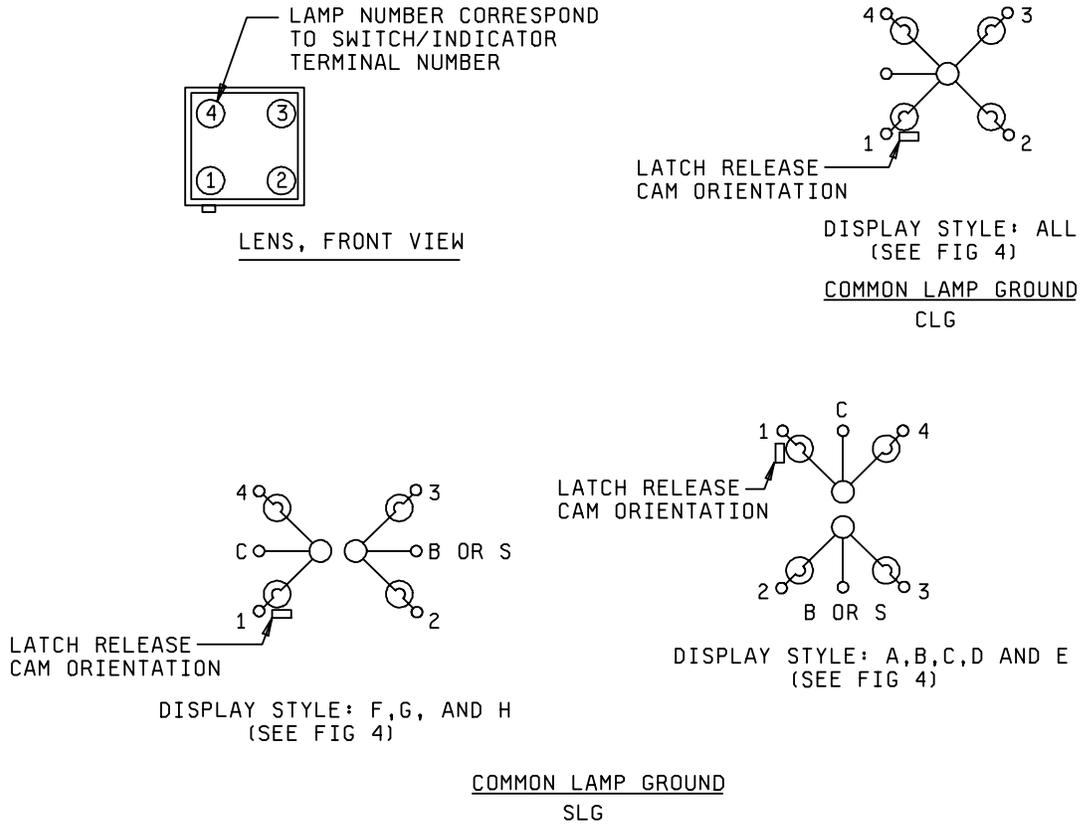


FIGURE 3. Lamp circuit schematics.

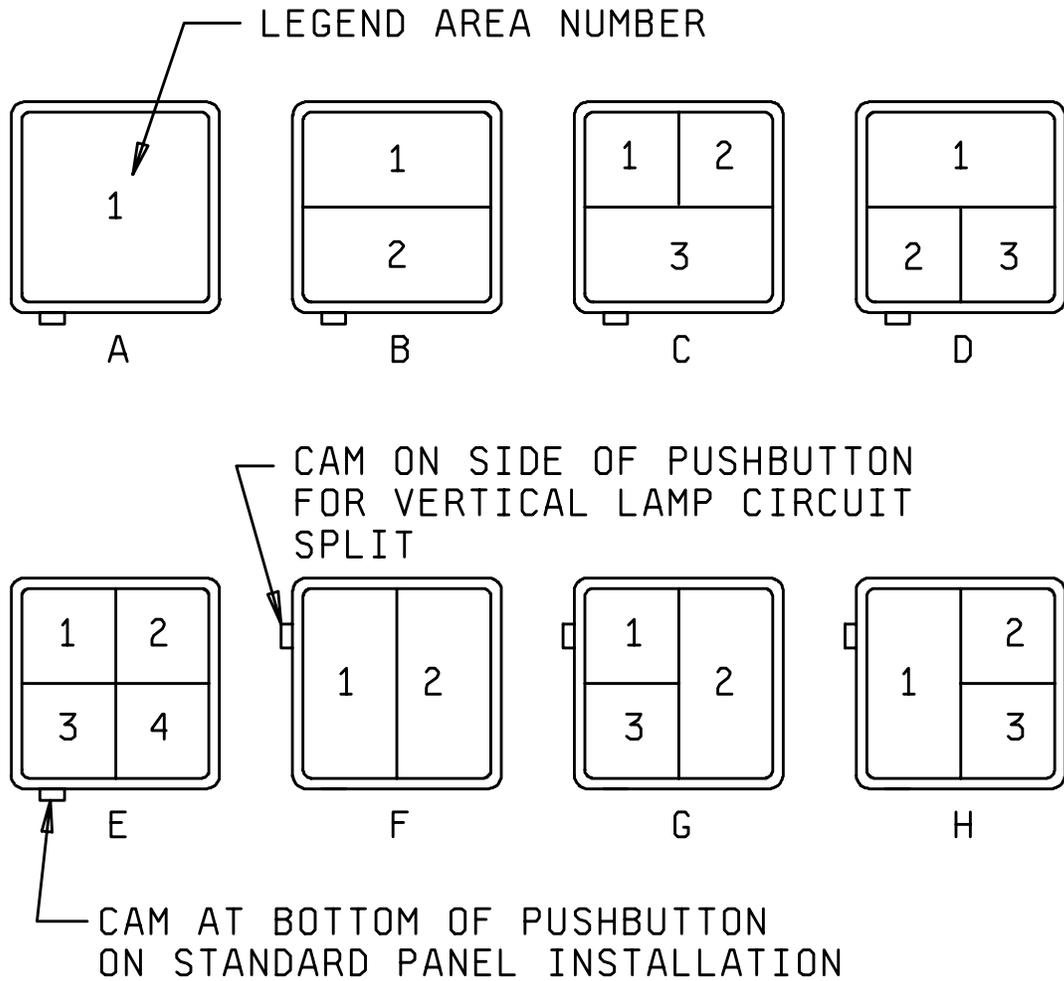


FIGURE 4. Lens configuration and legend areas.

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REQUIREMENTS:

Design and construction: See figures 1 through 4.

Intended use: These pushbuttons are used in conjunction with switch or indicator housings in accordance with MIL-PRF-22885/103 or multistation housings in accordance with MIL-S-24317/12. They accept four T-1 midget flange base lamps with .15 mean spherical candle power. They are intended for use in illuminated switch/indicators under high ambient light conditions. Displays with contrast ratios of .6 or higher in lighted condition and .1 or lower in unlighted condition (see table I) are considered readable under direct sunlight conditions.

Classification:

Enclosure design: 1 (Unsealed).

Temperature characteristic: 1(-55°C to +85°C).

Vibration grade: 3(10 - 2,000 Hz, 15 g peak).

Color: See table I.

Display type:

S (Sunlight readable).

H (Hidden legend).

Material

Pushbutton housing: Aluminum alloy, black anodize finish.

Display screen and lamp module: Thermoplastic.

Weight: .158 ounce (4.5 grams) ±10 percent including lamps.

Shock: Method I.

Dielectric withstanding voltage:

1,000 V rms sea level.

450 V rms 70,000 feet.

EMI/RFI shielding: Positive grounding and shielding efficiency test applicable when specified, see table II. See MIL-PRF-22885/103 for minimum shielding attenuation.

Illuminated color: See table II.

Luminance: See table II (values are for reference only).

Sunlight readability: Applicable, except units are tested for $\phi_1 = 45^\circ$ and $\phi_2 = 0^\circ$ only. (This procedure does not test readability in direct reflected specular sunlight.) See table II for required contrast ratio.

Part number: M22885/1-4- (dash number, see table II).

Qualification and periodic inspection: Required as a part of MIL-PRF-22885/103 or MIL-S-24317/12 switch assemblies.

TABLE I. Illuminated color, contrast, and luminance.

Color	Code	Chromaticity limits		Luminance contrast ration <u>1/</u> <u>2/</u>				Nominal brightness (foot-lamberts) Without EMI shield
		(X/Y)	(X/Y)	Without EMI shield		With EMI shield		
		(X/Y)	(X/Y)	Lighted Min Avg.	Unlighted Max ± Avg.	Lighted Min Avg.	Unlighted Max ± Avg.	
Red	R	.660/.340 .655/.324	.703/.297 .695/.285	.60 : 1	-.10 : 1	.35 : 1	-.14 : 1	280
Green	G	.340/.640 .300/.600	.415/.565 .375/.523	.60 : 1	-.10 : 1	.35 : 1	-.12 : 1	260
Amber	A	.585/.415 .574/.404	.610/.390 .599/.379	1.20 : 1	-.08 : 1	.75 : 1	-.11 : 1	500
Yellow	Y	.560/.440 .549/.429	.583/.417 .572/.405	1.40 : 1	-.04 : 1	.95 : 1	-.09 : 1	600
White	N	.430/.430 .430/.380	.500/.430 .500/.380	.80 : 1	-.10 : 1	.45 : 1	-.12 : 1	350
Blue	B	.230/.420 .230/.350	.320/.420 .320/.350	.03 : 1	-.10 : 1	-.02 : 1	-.15 : 1	70

1/ Displays with luminance contrast ratios of .6 or higher in lighted condition and ±.1 or lower in unlighted condition are considered readable under direct sunlight conditions. In addition to luminance contrast, color contrast is an important factor in readability. Colors are listed in order of general preference. Red has the best color contrast; blue and white have the poorest color contrast under sunlight conditions. Blue should be used only when absolutely necessary.

2/ Sunlight performance is diminished 50 percent when two colors per legend area are specified (see figure 4).

TABLE II. Dash numbers and characteristics. 1/.

Dash no.	Lens configuration (see fig. 4)	EMI shield	Captive ball (see fig. 2)	Circuit (see fig. 3)
001	A	Yes	Yes	CLG
002	"	"	Yes	SLG
003	"	"	No	CLG
004	"	"	No	SLG
005	"	No	Yes	CLG
006	"	"	Yes	SLG
007	"	"	No	CLG
008	"	"	No	SLG
009	B	Yes	Yes	CLG
010	"	"	Yes	SLG
011	"	"	No	CLG
012	"	"	No	SLG
013	"	No	Yes	CLG
014	"	"	Yes	SLG
015	"	"	No	CLG
016	"	"	No	SLG
017	C	Yes	Yes	CLG
018	"	"	Yes	SLG
019	"	"	No	CLG
020	"	"	No	SLG
021	"	No	Yes	CLG
022	"	"	Yes	SLG
023	"	"	No	CLG
024	"	"	No	SLG
025	D	Yes	Yes	CLG
026	"	"	Yes	SLG
027	"	"	No	CLG
028	"	"	No	SLG
029	"	No	Yes	CLG
030	"	"	Yes	SLG
031	"	"	No	CLG
032	"	"	No	SLG

Dash no.	Lens configuration (see fig. 4)	EMI shield	Captive ball (see fig. 2)	Circuit (see fig. 3)
033	E	Yes	Yes	CLG
034	"	"	Yes	SLG
035	"	"	No	CLG
036	"	"	No	SLG
037	"	No	Yes	CLG
038	"	"	Yes	SLG
039	"	"	No	CLG
040	"	"	No	SLG
041	F	Yes	Yes	CLG
042	"	"	Yes	SLG
043	"	"	No	CLG
044	"	"	No	SLG
045	"	No	Yes	CLG
046	"	"	Yes	SLG
047	"	"	No	CLG
048	"	"	No	SLG
049	G	Yes	Yes	CLG
050	"	"	Yes	SLG
051	"	"	No	CLG
052	"	"	No	SLG
053	"	No	Yes	CLG
054	"	"	Yes	SLG
055	"	"	No	CLG
056	"	"	No	SLG
057	H	Yes	Yes	CLG
058	"	"	Yes	SLG
059	"	"	No	CLG
060	"	"	No	SLG
061	"	No	Yes	CLG
062	"	"	Yes	SLG
063	"	"	No	CLG
064	"	"	No	SLG

1/ Military part numbers do not define legend area colors or legend information. The sequence in which the color and legend information is specified is in accordance with the area numbers shown in figure 4. Additional documentation is required to acquire these pushbuttons.

Referenced documents:

MIL-PRF-22885
MIL-PRF-22885/103
MIL-S-24317/12

The margins of this specification are marked with vertical lines to indicate where modifications were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Custodian:
Navy - EC
DLA - CC

Preparing activity:
DLA - CC

(Project 5930-2008-008)

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