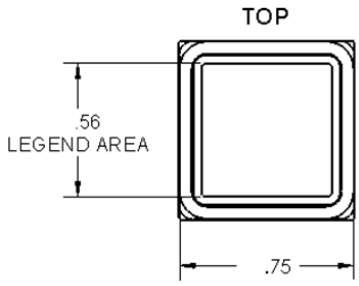
INCH-POUND
MIL-PRF-22885/115
26 January 2012

PERFORMANCE SPECIFICATION SHEET

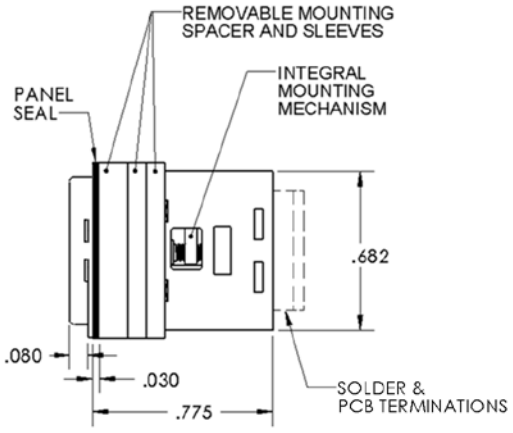
SWITCHES, PUSHBUTTON, ULTRA-COMPACT, LED ILLUMINATION, NVIS, SEALED

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

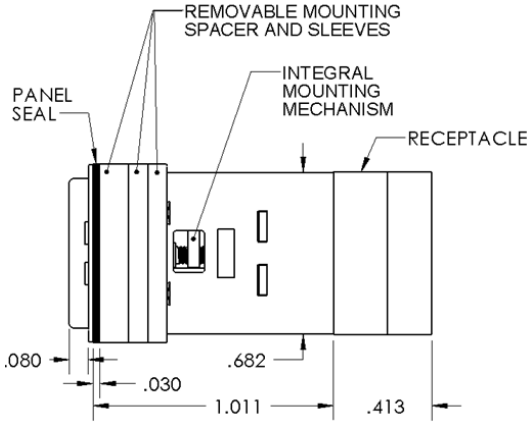
The complete requirements for acquiring the pushbutton switch described herein shall consist of this specification sheet and the latest issue of MIL-PRF-22885.



Type I & III - dripproof

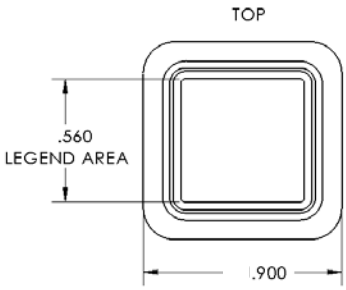


Type I - Solder & PCB terminations

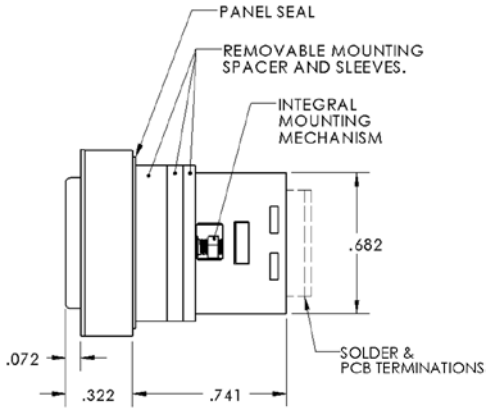


Type III - Crimp pin termination

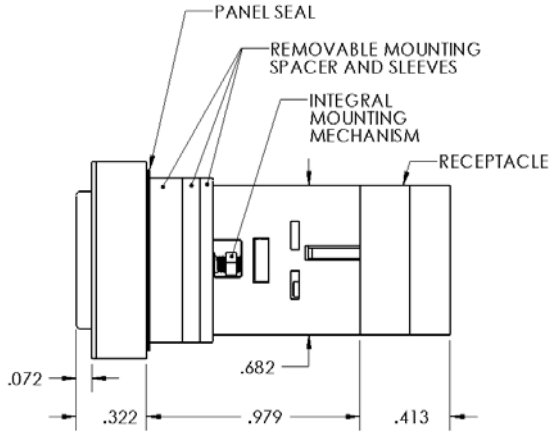
FIGURE 1. Typical type I & III switches.



Type II & IV Watertight / splashproof



Type II – Solder & PCB terminations



Type IV – Crimp pin termination

FIGURE 2. Typical type II & IV switches.

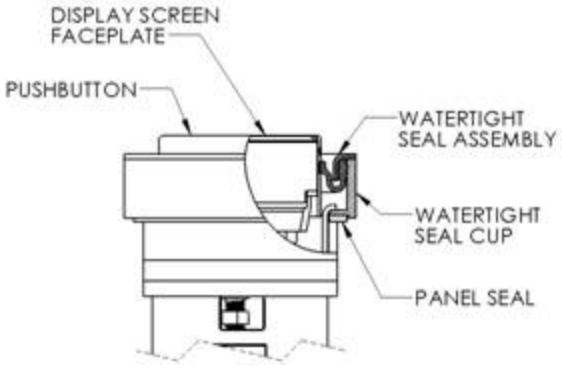
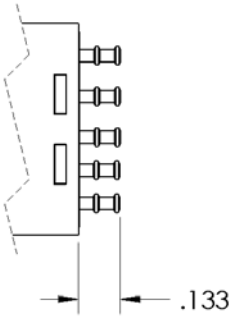
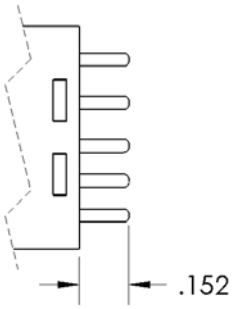


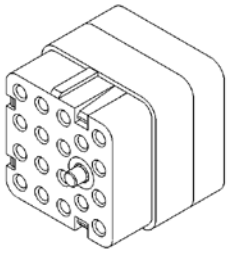
FIGURE 3. Types II & IV - Seal cross sectional view.



Solder termination



PCB termination



MIL-C-39029/22-192

Crimp pin termination

FIGURE 4. Switch terminations

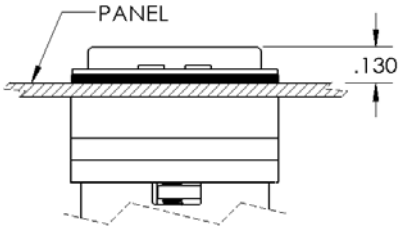


FIGURE 5. Type I & III - Flushed mount

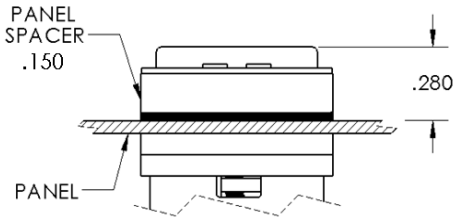
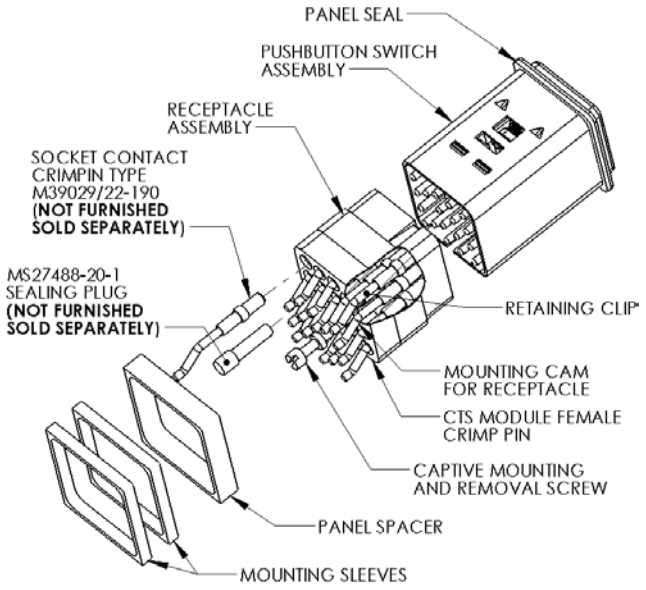


FIGURE 6. Type I & III - Extended mount

Inches	mm	Inches	mm	Inches	mm
.560	14.22	.682	17.32	.979	24.87
.750	19.05	.900	22.86	.413	10.49
.080	2.03	.072	1.83	.133	3.38
.030	0.76	.322	8.18	.130	3.30
.775	19.69	.741	18.82	.280	7.11

Table I. Mounting panel thickness maximum

Switch type	Flushed mount	Extended mount
Types I & III	.330”	.180”
Types II & IV	.320’	.170”



NOTES

1. Dimensions are in inches.
2. Metric equivalents, shown in table B, are given for general information only.
3. Unless otherwise specified, tolerance is ± .03.
4. The CTS pins shall be M39029/22-192. The CTS pins accept 20, 22, or 24 gauge wire.

FIGURE 7. Common termination system mechanical details.

TABLE II. Enclosure design

MIL-PRF-22885 Symbol	Seal Description	Enclosure type
2	Dripproof 1/	I (solder / PCB terminations) & III (Crimp pin termination)
3	Watertight 1/	II (solder / PCB terminations) & IV (Crimp pin termination)
4	Splashproof 1/	

1/ In accordance to MIL-STD-108.

TABLE III. Bill of materials

Description	Type I	Type II	Type III	Type IV
Pushbutton switch ass'y	1	1	1	1
Panel seal	1	1	1	1
Panel spacer	1	1	1	1
Mounting sleeve	2	2	2	2
Receptacle ass'y		1		1
	QTY	QTY	QTY	QTY

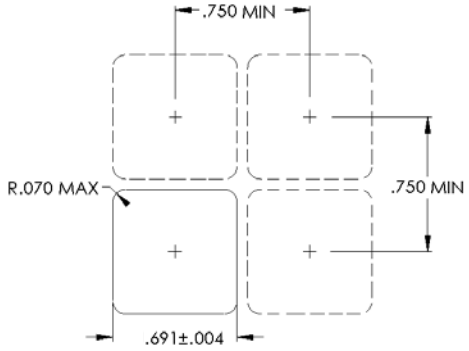


FIGURE 8. Panel cutout, types I & III

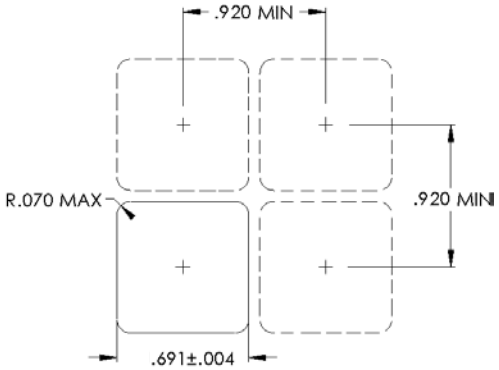


FIGURE 9, Panel cutout, types II & IV

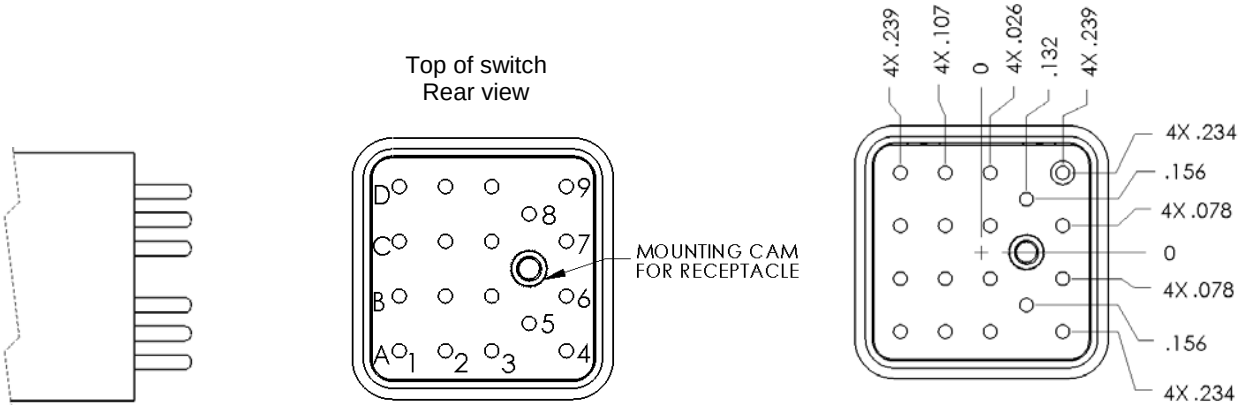
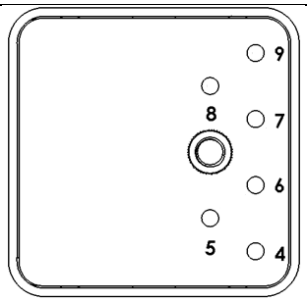
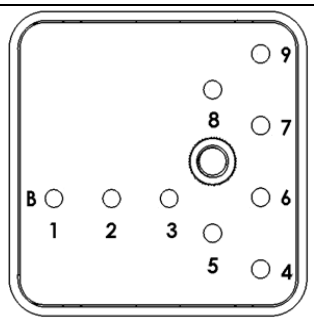
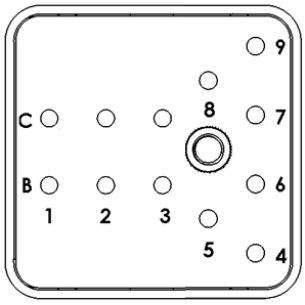
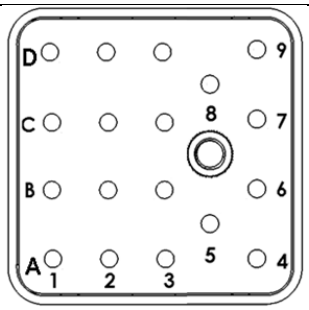


FIGURE 10. Terminal location & identification

Indicator		None	
1 pole double throw		B1 — B3 B2	D2 and D3 (NO) D1 and D3 (NC) C2 and C3 (NO) C1 and C3 (NC)
2 pole double throw		C1 — C3 C2 B1 — B3 B2	B2 and B3 (NO) B1 and B3 (NC) A2 and A3 (NO) A1 and A3 (NC)
4-pole double throw		D1 — D3 D2 C1 — C3 C2 B1 — B3 B2 A1 — A3 A2	

1. Terminal D1 and D3 are normally closed (NC)
2. Terminal D2 and D3 are normally open (NO)
3. Terminal C1 and C3 are normally closed (NC)
4. Terminal C2 and D3 are normally open (NO)
5. Terminal B1 and B3 are normally closed (NC)
6. Terminal B2 and B3 are normally open (NO)
7. Terminal A1 and A3 are normally closed (NC)
8. Terminal A2 and A3 are normally open (NO)

FIGURE 11. Switch termination and diagram

REQUIREMENTS:

Operating characteristics:

Operating temperature. The switches are tested in accordance to the requirements of MIL-PRF-22885.

Condition	Temperature range
Operating with lamps un-energized	-65 °C to +85 °C
Operating with lamps energized	-55 °C to +71 °C

Operating action: The switches are tested in accordance to the requirements of MIL-PRF-22885. On alternate action contact switches, the pushbutton is retained in the latch-down position until pushbutton is deactivated.

MIL-PRF- 22885 Symbol	Action
A	Momentary
B	Alternate
H	Indicator light

Actuation force range: 2 to 5 pounds (9 to 22 N). Not applicable to type II & IV (watertight and plashproof) switch types.

Actuation travel: .070” ± .005”.

Alternate action displacement: .040”.

Material and finish when used, shall be selected to enable the switch to meet the performance requirements of MIL-PRF-22885 specification. It may be Aluminum alloy black anodized per MIL-A-8625, Type II, Class 2.

Mechanical specifications:

The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885.

Mechanical endurance: 1,000,000 cycles consists of 5,000 cycles of operation at -55 °C ± 2 °C, 10,000 cycles of operation at +85 °C ± 2 °C, and 985,000 cycles of operation at room temperature.

Solder terminal strength.

Solder terminals: Switch is tested in accordance to the requirements of MIL-PRF-22885, Para. 4.7.2, MIL-STD-202, Method 208. Terminal strength tests are conducted as prescribed by MIL-STD-202, method 211, test condition A.

PCB terminals: Printed circuit board (PCB) terminals shall be gold plated to facilitate hand, wave, or reflow soldering methods. Terminal strength is 3 pounds perpendicular to the long axis and 5 pounds parallel to the long axis.

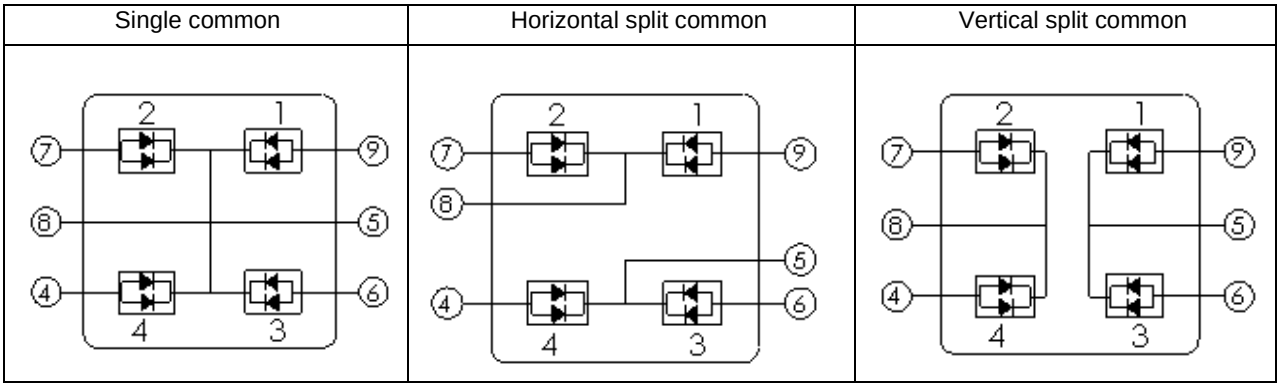
Crimp pin terminals: Crimp pin terminals are gold plated per MIL-DTL-45204. Crimp on wire terminations per MIL-C-39029/22-129 shall withstand a pull force of 5 pounds along the axis of the terminals.

Electrical characteristics:

LED schematics and ground circuitry

Two power sources are available, 28 VDC and 5 VDC.
5 VDC applications, the LEDs are connected in parallel and uses 24 mA per quadrant when illuminated.
28 VDC applications, the LED are connect in series and uses 12 mA per quadrant when illuminated.

5 Volt LED circuit diagram - View from rear of switch



28 Volt LED circuit diagram - View from rear of switch

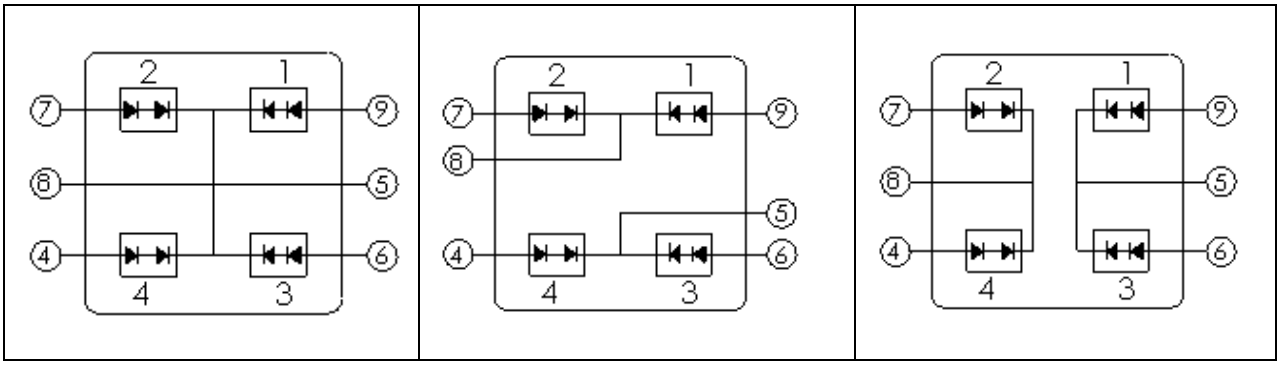


FIGURE 11. LED schematics

View from rear of switch

NOTES:
Rows A, B, C, D and columns 1, 2, and 3, identify switch contact terminations.
Pins 4, 6, 7, and 9, identify backlight circuit terminations.
Pins 8 and 5 identify ground terminations.

FIGURE 12. Switch contact and ground terminations

VOLTAGE DIMMING: LED light source with built-in voltage dimming circuit, adjusting the brightness to the desired level can be accomplished by simply varying between the high and low of the applicable voltage limit. The output normalized luminance vs. input voltage of a voltage dimming circuit is shown in figure 13 thru 15.

@ 5 Vdc current approximately 0.025 A down to 3.6 Vdc current approximately 0.0005 A.

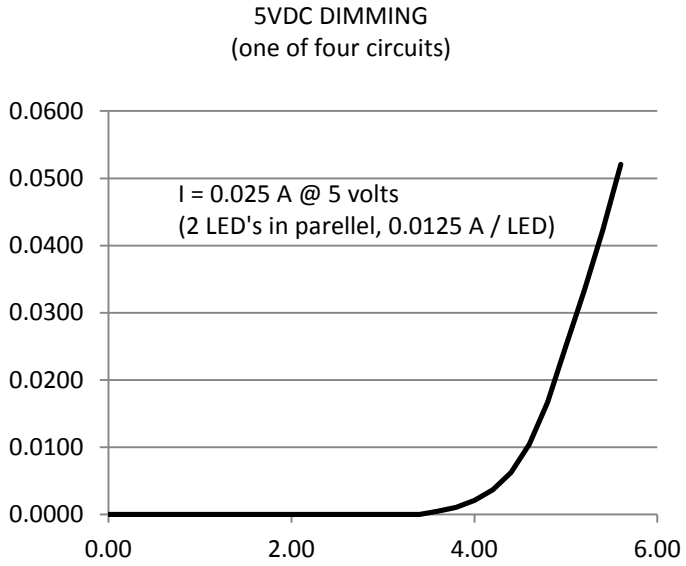


FIGURE 13 - Typical 5 VDC linear dimming

@ 28 Vdc current approximately 0.0125 A down to 6 Vdc where the current is approximately 0.0002 A. Note, non-linear voltage dimming control is only available in 28 V DC option.

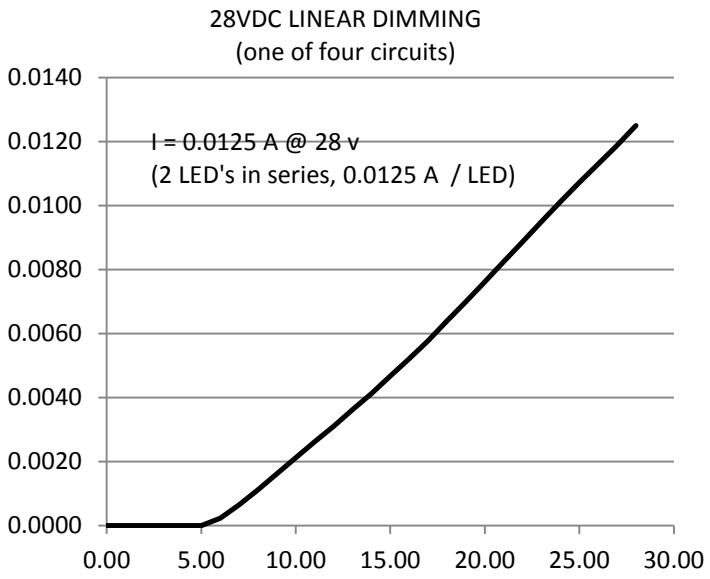


FIGURE 14 - Typical 28 VDC linear dimming

@ 28 Vdc non-linear dimming current approximately 0.0125 A, @ 14 Vdc current approximately 0.0004 A and down to 7 Vdc the current is approximately 0.0001 A.

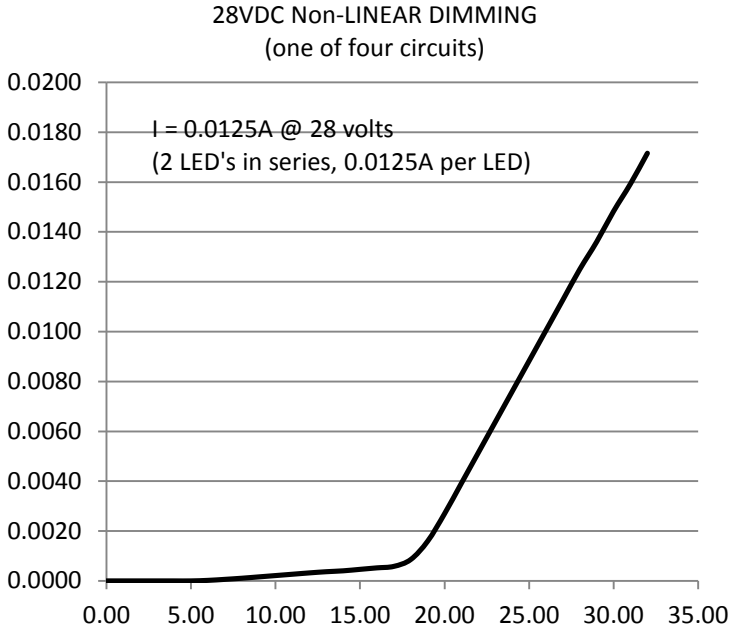


FIGURE 15 – Typical 28 VDC non-linear dimming

Electrical specifications

Contact resistance: The switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-202, Method 307.

Low level circuit: The switches are tested in accordance to the requirements of MIL-PRF-22885, and ML-STD-202, Method 311.

Electrical endurance: The switches are tested in accordance to the requirements of MIL-PRF-22885, at the following electrical ratings:

		Sea level	50,000 feet
28 VDC	Resistive	10.0 Amperes	5.0 Amperes
	Inductive	5.0 Amperes	2.5 Amperes
115 VAC, 60Hz	Resistive	7.0 Amperes	
	Inductive	7.0 Amperes	
LOW LEVEL	Resistive	10 microamperes	
	Inductive		

Overload cycling: The switches are tested in accordance to the requirements of MIL-PRF-22885.

Contact bounce: The switches are tested in accordance to the requirements of MIL-PRF-22885. Simultaneity is under 2 milliseconds.

Dielectric strength: Tests are performed at both sea level and at a reduced barometric pressure simulating 70,000 feet altitude.

Dielectric withstanding voltage at atmospheric pressure: The switches are tested in accordance to the requirements of MIL-PRF-22885, Para. 4.7.19.1, MIL-STD-202, Method 301.

Dielectric withstanding voltage at reduced pressure: The switches are tested in accordance to the requirements of MIL-PRF-22885, Para. 4.7.19.2, MIL-STD-202, Method 105, Cond. C.

Insulation resistance: The switches are tested in accordance to the requirements of MIL-STD-202, Method 302, Cond. B.

Short circuit: The switches are tested in accordance to the requirements of MIL-PRF-22885, Method I.

Environmental characteristics.

Touch temperature: When switches are tested as specified below, the maximum difference between the stabilized lens face temperature and the ambient temperature shall not exceed +10 °C.

The test method shall be in accordance with ECA-EIA-448-2 using the recommended panel cutout. The test shall be performed with each of the standard LED voltages at full rated current and at 100 percent duty cycle.

Salt Spray: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-202, Method 101, Cond. A.

Thermal Shock: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and, MIL-STD-202, Method 107, Test Condition A.

Vibration: The pushbutton switches are tested in accordance to the requirements of MIL-STD-202, and MIL-PRF-22885 vibration grade 3.

Acceleration: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885.

Shock: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-202, method 213.

Watertight and splash-proof switches: high impact shock in accordance with MIL-S-901, grade A, Class II (for deck-mounted equipment) when attached to the anvil plate of the shock machine by means of standard mounting with simulated console, which provides resilient mounting typical on in-service use within “deck mounted” electronic cabinets or panels. These units are not recommended for direct “hull mounted” applications.

High Impact Shock: The pushbutton switch shall meet the requirements of MIL-S-901, Grade A, Class II.

Moisture Resistance: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-202, Method 106.

Splash Proof Seal: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-108.

DripProof Seal: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885, and MIL-STD-108.

Watertight seal: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885, and MIL-STD-108.

Solvent Resistance Seal: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-108.

Explosion: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885 and MIL-STD-202, Method 109.

Sand & Dust: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885, and MIL-STD-202, Method 110, Cond. B.

EMI/RFI Shielding: The pushbutton switches are tested in accordance to the requirements of MIL-PRF-22885.

Display characteristics

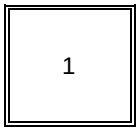
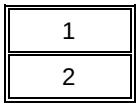
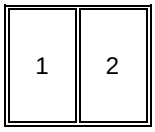
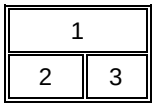
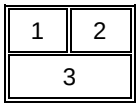
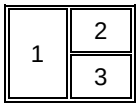
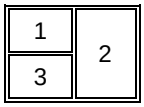
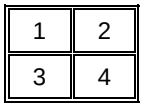
Viewing area: Legend Viewing Dimensions are shown in table IV below.

TABLE IV. Viewing area dimension

Viewing area	Nominal dimensions - Inch (mm)
Full screen	.560” x .560” (14.22 mm x 14.22 mm)
Half screen - horizontal	.495” x .217” (12.57 mm x 5.51 mm)
Half screen – vertical	.217” x .495” (5.51 mm x 12.57 mm)
Quarter screen	.217” x .217” (5.51 mm x 5.51 mm)

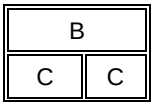
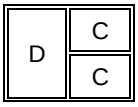
Display styles: See table V.

TABLE V: Display style

Full Screen	2-Way Display		3-Way Display				4-Way Screen
	Horizontal split	Vertical split	Horizontal Top-half	Horizontal Bottom half	Vertical Left half	Vertical Right half	
							

Display legend style ad size: See table VI. Available standard font style is Alternate Gothic 2 (AG2) in capital letters and numeric. Standard legend size and the number of line and characters per line of a given size is shown in table G. For example, full screen display style, has 5 lines and 12 .072: characters per line.

Table VI. Standard legend size and display area

Legend display area: H - Horizontal line(s) per area. C - Characters per line.					
Standard character height	.072”	.087”	.100”	.125”	.145”
A - Full screen	5 X 12	4 X 10	4 X 9	3 X 7	2 X 6
B – Horizontal split screen	2 X 12	2 X 10	1 X 9	1 X 7	1 X 6
C – Quarterly screen	2 X 6	2 X 4	1 X 4	1 X 3	1 X 2
D– Vertical split screen	5 X 6	4 X 4	4 X 4	3 X 3	2 X 2
	H X C				

Optical characteristics: The pushbuttons illuminated color is tested in accordance to the requirements of MIL-PRF-22885.

Display type and illuminated color: Standard non-NVIS and NVIS display types are shown in table VII.

TABLE VII: Display type

Type Code	MIL-PRF 22885	Non-illuminated		Illuminated	
		Legends	Background	Legends	Background
1	C	Opaque black	Translucent Color	Opaque black	Color
2	B	Obscure	Black	Opaque black	Color
3	H	Obscure	Black	Visible in color	Black
4	N	Translucent white	Black	Visible in color	Black
5	W	Opaque black	Translucent white	Opaque Black	Color
6	S	Obscure	Black	Visible in color	Black
7	S	Obscure	Black	Visible in color	Black

Type 1 – Translucent color background with visible black legends. When illuminated, the legend remains black and the background appears in color.
Type 2 – Obscure legends. When illuminated, the background appears in color with opaque black legends.
Type 3 – Obscure legends. When illuminated, the legends appear in color with opaque black background.
Type 4 – Always visible white legends on an opaque black background. When illuminated, the legends appear in color with opaque black background.
Type 5 – White background with visible black legends. When illuminated, the background appears in color with opaque black legends.
Type 6 – Obscure legends. When illuminated, the legend is sunlight readable on an opaque black background.
Type 7 – Obscure legends. When illuminated, the legend is NVIS readable on an opaque black background.

Standard colors for non-NVIS and NVIS::See table VIII

TABLE VIII. Illuminated color

Part number code	Color Code Non-NVIS	Color Code NVIS
	Illuminated Color	Illuminated Color
0	White	Blue
1	Red	Red
2	Green	Green B
3	Aviation yellow	Yellow B
4	Lunar white	White
5	Not available	Yellow A
6	Blue	Green A

Luminance characteristics: The pushbutton luminance is tested in accordance to the requirements of MIL-PRF-22885 for Non-NVIS colors and NVIS colors. See table IX for color limit, minimum average luminance, and CIE chromaticity diagram for non-NVIS color.

TABLE IX. Color limit

Red		Green		Aviation Yellow		Lunar White		Blue		Aviation Green		White	
x	y	x	y	x	y	x	y	x	y	x	y	x	y
0.695	0.285	0.3	0.56	0.545	0.425	0.4	0.375	0.25	0.33	0.14	0.47	0.48	0.395
0.705	SL 1/	0.3	SL 1/	0.56	SL 1/	0.4	0.42	0.25	0.42	0.29	0.47	0.48	0.435
0.65	0.33	0.375	0.56	0.59	0.382	0.48	0.375	0.33	0.33	0.03	SL 1/	0.54	0.431
0.66	SL 1/	0.375	SL 1/	0.604	SL 1/	0.48	0.42	0.33	0.42	0.185	SL 1/	0.54	0.391

1/ The color expressed as “x” and “y” coordinates on the standard 1931 CIE chromaticity diagram. Illuminated colors, measured as specified herein, shall be within the limits bounded by the coordinates listed for each color. See figure 16.

2/ The term “SL” indicates where intersections occur within the spectrum locus on the CIE chromaticity diagram.

	Minimum Average Luminance Estimates (footlamberts)					
22885 Symbol	C	B	H	N	W	S
S200 Code	1	2	3	4	5	6
Red	100	100	150	2	125	400
Green	100	100	150	2.5	100	250
Aviation Yellow	250	250	300	3	250	450
Lunar White	150	150	200	3	150	450
Blue	100	100	100	2	100	200
Aviation Green	100	100	100	2	100	250
White	150	150	175	2.5	150	450

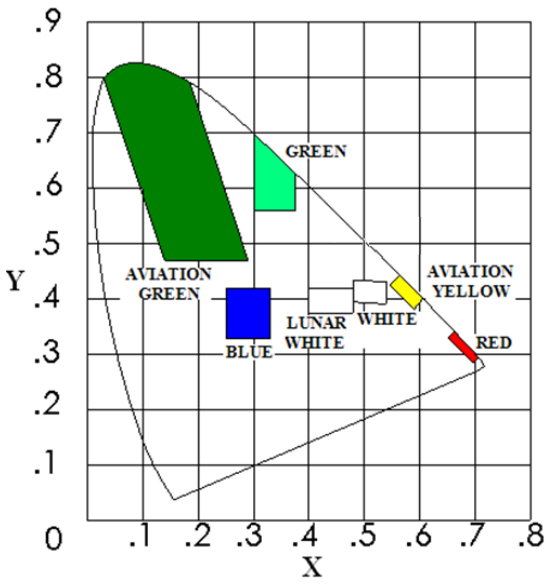


FIGURE 16 - CIE chromaticity diagram

NVIS compatability: NVIS compatibility is tested in accordance to the requirements of MIL-PRF-22885, MIL-STD-3009, and MIL-L-85762 (when applicable). The colors are expressed as u' and v' coordinates on the U.C.S. 1976 chromaticity diagram shown in figure 17. Illuminated colors, measured as specified herein, shall be within the limits bounded by the coordinates listed for each color shown in table X.

Table X: Illuminated color

Color	Minimum Luminance Estimate (fL)	Chromaticity Coordinates			Contrast - 0°/45° Degrees @10,000 FC		Radiance		
		u'	v'	r	"ON"	"OFF"	Nra	Nrb	Scaled Luminance (fL)
Green A	300	0.088	0.543	0.037	> 1.0	< 0.1	4.2 E-12	2.6 E-13	0.1
Green B	340	0.131	0.623	0.057	> 1.0	< 0.1	1.4 E-11	3.6 E-12	0.1
Yellow A	275	0.274	0.622	0.083	> 0.9	< 0.1	4.7 E-11	1.1 E-11	0.1
Yellow B	380	0.274	0.622	0.083	> 1.0	< 0.1	2.70E-08	1.1 E-08	15
Red	275	0.450	0.550	0.060	> 0.9	< 0.1	9.1 E-08	5.10E-08	15
White	300	0.190	0.490	0.040	> 0.9	< 0.1	7.9 E-11	3.80E-11	0.1
Blue	75	0.175	0.167	0.040	> 0.2	< 0.1	2.20E-13	1.80E-12	0.1

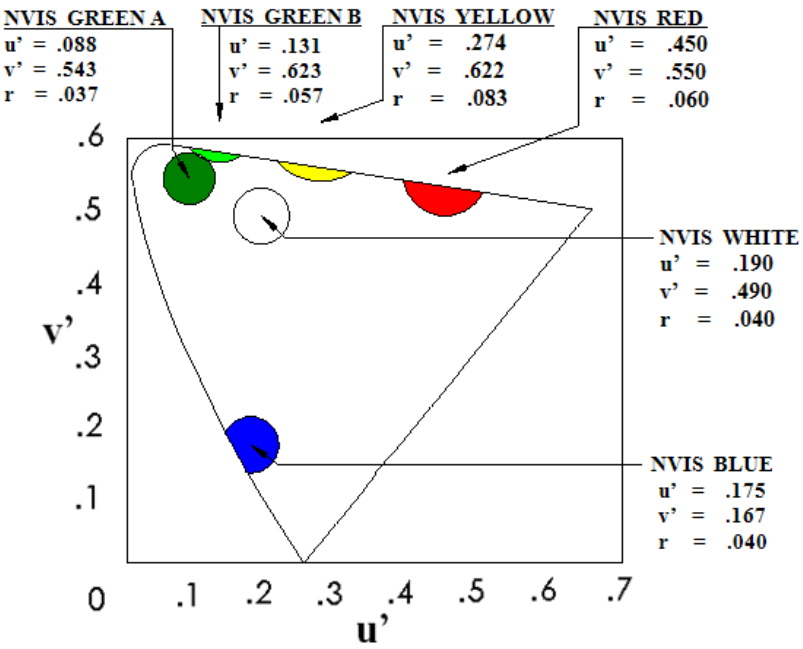


Figure 17. U.C.S 1976 Chromaticity diagram

Sunlight readability: The Sunlight Readability is tested in accordance to the requirements of MIL-PRF-22885. The contrast ratio of each lighted legend character to the background exceeded the 0.6 minimum requirements, and for unlighted legend character to the background, the average contrast ration is << 0.1.

Contrast ratio: As specified in MIL-PRF-22885, the contrast ratios CL and CuI, calculate for each character is as follow:

The lighted contrast (ON/BACKGROUND) is defined by CL = (B2 – B1)/B1

The unlighted contrast (OFF/BACKGROUND) is defined by CUL = (B3 - B1)/B1

B1 = Average background luminance
B2 = Average character luminance, legend lighted
B3 = Average character luminance, legend unlighted

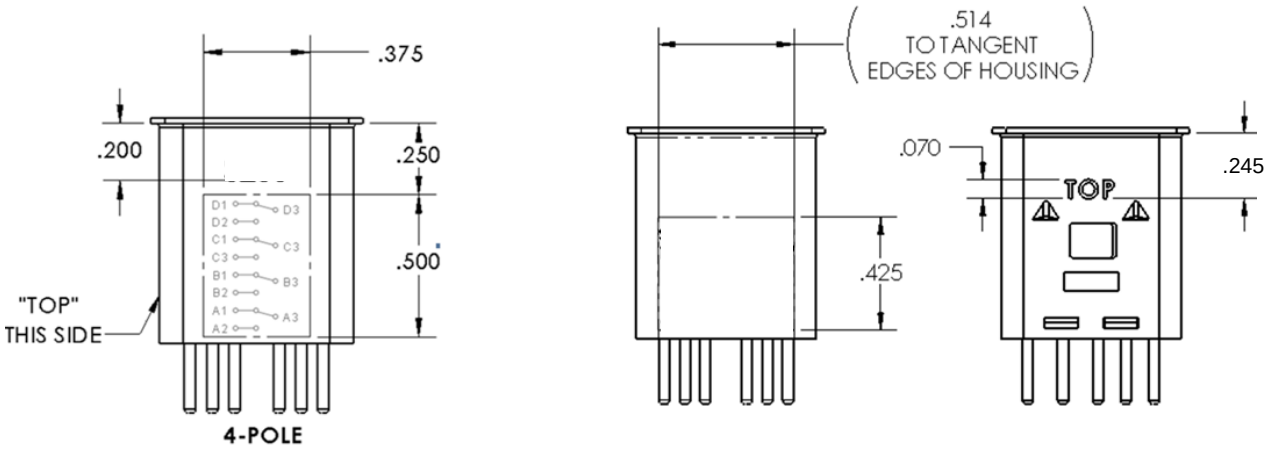
SLR performance of sealed switches - SLR performance shall not be degraded for standard Dripproof, Splashproof or Watertight seals. SLR requirements do not apply to Solvent Resistant or Hazardous Environment Seals.

Other specifications:

Marking: Permanency and legibility of markings shall conform to requirements of MIL-STD-202, Method 215 for resistance to solvents.

For non MIL SPEC parts, the following shall be provided as a baseline and as shown in figure 18

a. Manufacturer name
b. Cage code
c. Date code (YYWW; YEAR YEAR WEEK WEEK)
d. Applicalbe voltage
e. Assembly Part Number (or customer P/N)
f. Switch schematic

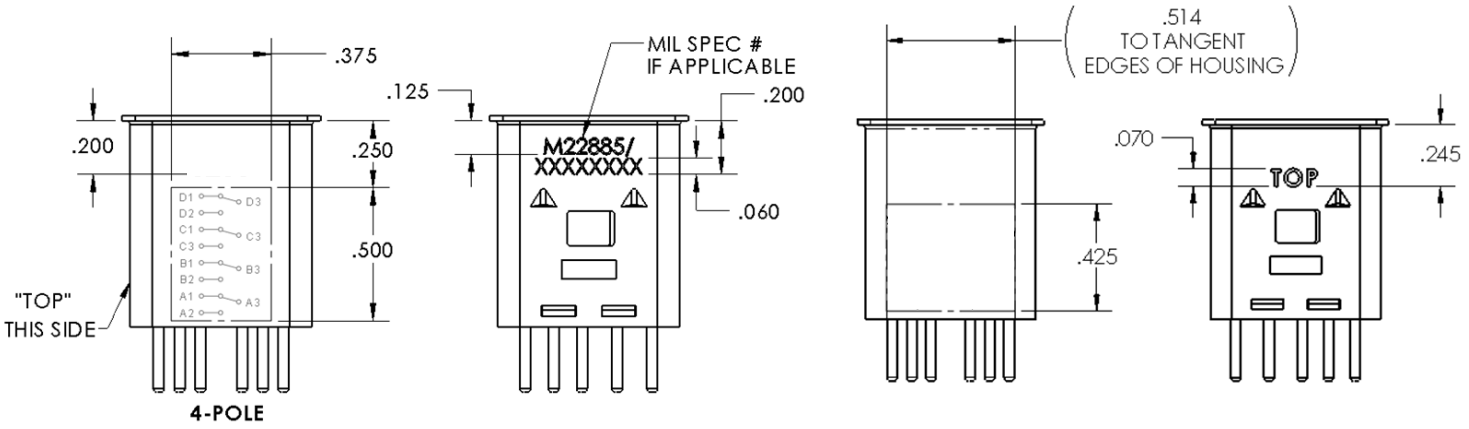


(4 POLE & PCB VERSION SHOWN)

FIGURE 18. NON-MIL SPEC MARKING

For MIL SPEC parts, the following shall be provided as a baseline and as shown in figure 19

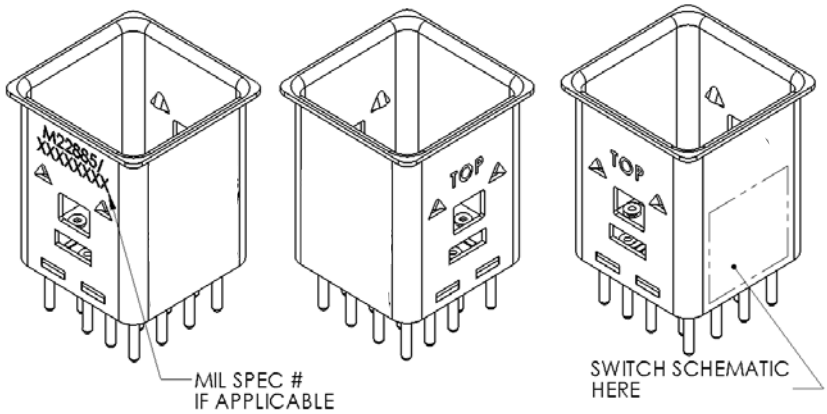
a. Manufacturer name
b. Cage code
c. Date code (YYWW; YEAR YEAR WEEK WEEK)
d. Applicalbe voltage
e. Assembly Part Number (or customer P/N)
f. Switch schematic
g. MIL SPEC Part Number



(4 POLE & PCB VERSION SHOWN)

FIGURE 19. MIL SPEC MARKING

For custom part number markings, notes a thru f, see figure 20, apply as a minimum unless otherwise specified.



(4 POLE & PCB VERSION SHOWN)

Figure 19 - NON-MIL SPEC MARKING

Part number identification: The PIN shall be constructed as illustrated in the following example.

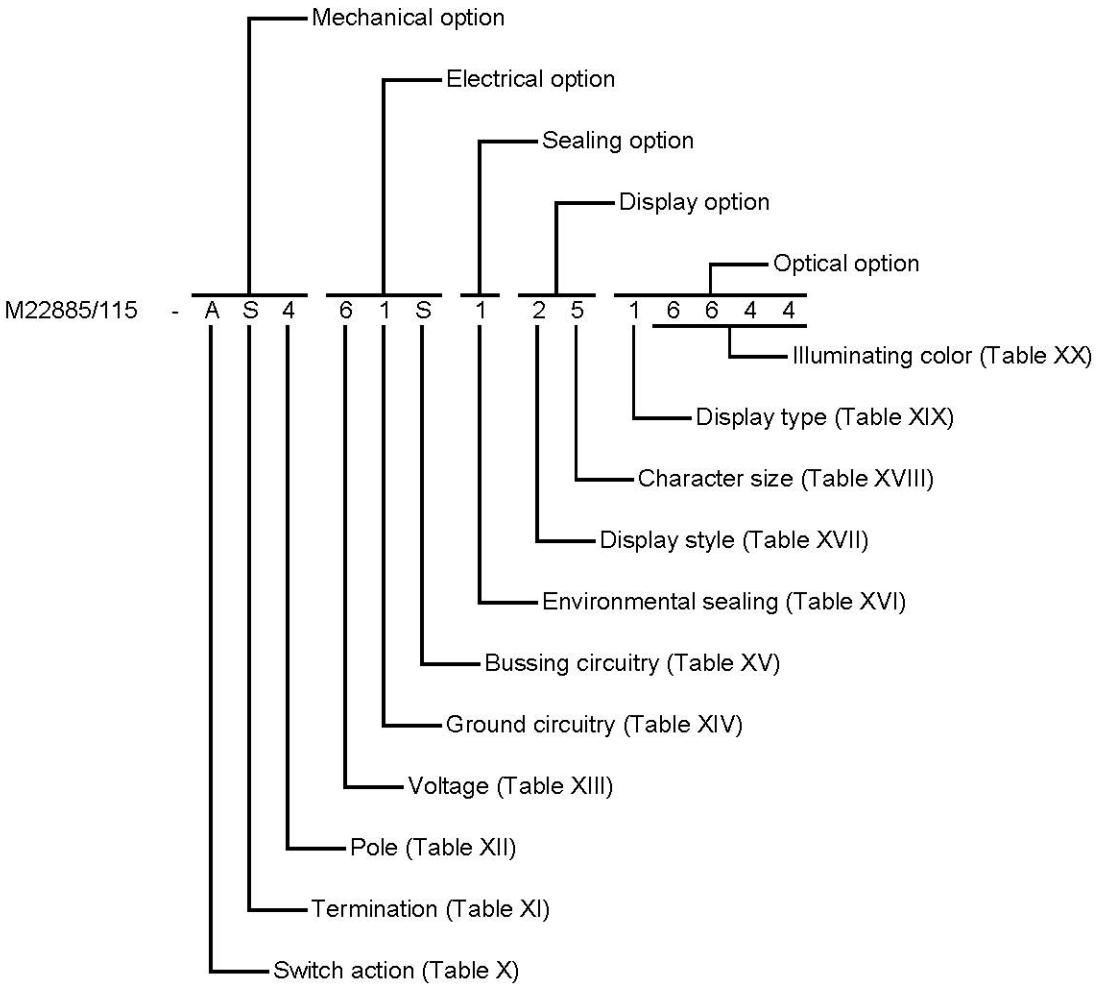


TABLE X. Switch action

Code	Action
N	No action (Indicator)
M	Momentary
A	Alternate

TABLE XI. Termination

Code	Termination
S	Solder
P	PCB
C	Crimp pin

TABLE XI. Pole

Code	Switch pole
0	Indicator
1	1 Pole double throw
2	2 Pole double throw
4	4 Pole double throw

TABLE XIV. Voltage

Code	Voltage
5	5 VDC Linear Dimming
6	28 VDC Linear Dimming
7	28 VDC Non-linear Dimming

TABLE XIV. Ground Circuitry

Code	Ground circuitry
1	Single common
2	Split common

TABLE XV. Bussing Circuitry

Code	Bussing circuitry
S	Single buss
H	Horizontal buss
V	Vertical buss
T	Top buss
B	Bottom buss
L	Left buss
R	Right buss
N	No buss

TABLE XVI. Sealing

Code	Seal Type
1	Dripproof
2	Watertight / Splashproof

TABLE XVII. Display Style

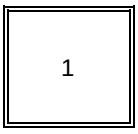
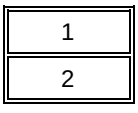
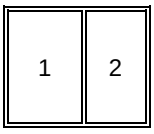
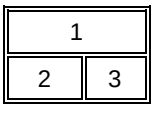
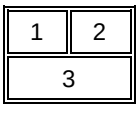
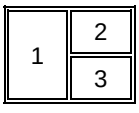
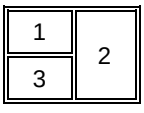
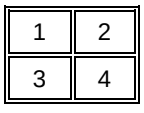
Code	1	2	3	4	5	6	7	8
								
	Full Screen	Horizontal split	Vertical split	Horizontal Top-half	Horizontal Bottom half	Vertical Left half	Vertical Right half	4-Way Screen
		2-Way Display		3-Way Display				

TABLE XVIII. Character Size

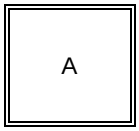
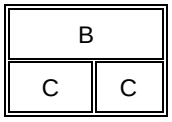
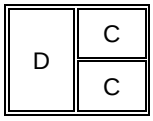
Legend display area: H - Horizontal line(s) per area. C - Characters per line.						
Code	0	1	2	3	4	5
Standard character height	No legend	.072”	.087”	.100”	.125”	.145”
A - Full screen	No legend	5 X 12	4 X 10	4 X 9	3 X 7	2 X 6
B – Horizontal split screen	No legend	2 X 12	2 X 10	1 X 9	1 X 7	1 X 6
C – Quarterly screen	No legend	2 X 6	2 X 4	1 X 4	1 X 3	1 X 2
D– Vertical split screen	No legend	5 X 6	4 X 4	4 X 4	3 X 3	2 X 2
	No legend	H X C				

TABLE XIX. Display type

Code	MIL-PRF 22885	Non-illuminated		Illuminated	
		Legends	Background	Legends	Background
1	C	Opaque black	Translucent Color	Black	Color
2	B	Obscure	Black	Black	color
3	H	Obscure	Black	Visible in color	Black
4	N	Translucent white	Black	Visible in color	Black
5	W	Opaque black	Translucent white	Black	Color
6	S	Opaque black	Black	Visible in color	Black
7	S	Opaque black	Black	Visible in color	Black

TABLE XX. Illuminating Color

Code	Non-NVIS	NVIS
	Illuminated Color	Illuminated Color
0	White	Blue
1	Red	Red
2	Green	Green B
3	Aviation yellow	Yellow B
4	Lunar white	White
5	Not available	Yellow A
6	Blue	Green A

Inspections

LED failure: LED failure during any inspection shall constitute a test failure.

Qualification

Group submission: Table XXI applies, provided that the switching elements used are qualified MIL-PRF-8805 category I or II basic sensitive switches and the endurance and electrical ratings are compatible. Captive pushbutton retainers are not required on assemblies used for qualifications and retention testing.

TABLE XXI. Qualification inspection – group submission

Test samples	Group		Number of samples	Extent of approval
M22885/115-XXXXXXXXXXXXXX	I		10	All PINs
	II	1/	2 from group I	
	III		2 from group I	
	VI	2/	2 from group I	
	VII		4 from group I	
M22885/115-XXXXXXXXXXXXXX	I	3/	4	
	II	1/	2 from group I	
	VII	4/	2 from group I	
M22885/115-XXXXXXXXXXXXXX	I		12	
	II	5/	4 from group I	
	III	6/	2 from group I	
	V	7/	2 from group I	
	VI	8/	2 from group I	
	VII		2 from group I	
M22885/115-XXXXXXXXXXXXXX	VIII	9/	48 10/	

1/ Shock: Method I.

2/ Electrical endurance: Sea level, inductive dc load only.

3/ Test current and voltage for contact resistance and operating characteristics tests shall not exceed 10 mA and 30 mV dc on all gold plated contact switches subject to low level life test. Low level life contact resistance requirements apply.

4/ Mechanical endurance test not required.

5/ Shock: High impact shock in accordance with MIL-S-901, grade A, class II

6/ Sealing shall be verified by the watertight and splashproof tests only.

7/ Electrical endurance: Seal level resistive dc load only

8/ Intermediate current test not required.

9/ NVIS color and radiance measurements shall be made, as applicable, during group IX inspections.

10/ In combination with the test sample specified in the first column, 48 display switches shall be tested. Two each of six colors for each standard display type, N and W; Two each of six colors for display type S; and two each of six NVIS colors for display type S. One of the samples for each color/display type combination shall have 5 volt LED's and the other shall have 28 volt dimmable LED's. Test legend characters and display screen design shall be as follows:

Table XXII – Group A inspection

Seal (When applicable) 1/ Visual and mechanical examination Operating characteristics Dielectric withstand voltage Contact resistance 2/ Sunlight readability (when applicable) NVIS compatibility (when applicable)	1/ Visual in-process inspection of seal with high intensity light source may be used. 2/ Low level test current and voltage may be used for contact resistance tests on gold contact switches. The test current and voltage shall not exceed 10 mA and 30 mV dc. The maximum contact resistance under this condition is 3 ohms.

Application information
Storage temperature: -65 °C to +100 °C
U.L. listing: 250 V ac, 60 Hz, 10 A.

Reference documents:

MIL-PRF-22885	MIL-A-8625	MIL-STD-108	ECA-EIA-448-2
MIL-PRF-8805	MIL-L-85762	MIL-STD-202	
MIL-DTL-45204	MIL-S-901	MIL-STD-3009	

Custodians:
Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity
DLA – CC
(Project 5930-2011-028)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.daps.dla.mil/ .