


## REVISIONS

REV.	DESCRIPTION	DATE	APPROVAL
1.0	REL PER ER-40575		

Notes: Unless otherwise specified.

1. Pushbutton assemblies are compatible with environment criteria of MIL-L-3661 and MIL-S-22885 when installed in Stacoswitch/Stacosystems switch/indicators.
2.  All pushbutton mounting base accept T 1 3/4 lamps (MS25237). Lamps are not furnished.
3. Type 1 mounting base mates with Stacoswitch/Stacosystems models #61, 63 & 65.
4. Type 2 mounting base mates with Stacoswitch/Stacosystems models #62, 64 & 66, and is supplied with boot seal.
5. Type 3 mounting base mates with Stacoswitch/Stacosystems models #62, 64 & 66,

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**stacosystems**  
One Step Ahead

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UNLESS OTHERWISE SPECIFIED DIMENSIONS  
ARE IN INCHES. TOLERANCES ARE:  
DECIMALS ANGLES  
.XX ± ±  
.XXX ±

APPROVALS

DATE

DRAWN  
Tony Hana

4-3-08

TITLE

**PUSHBUTTON, DISPLAY, SINGLE LAMP  
SCREW-IN AND SNAP-IN**

MATERIAL

N/A

CHECKED

SIZE

A

12522

DWG NO.

**SERIES 60  
STYLES H THRU R**

REV

1.0

FINISH

N/A

PROJ. ENG.

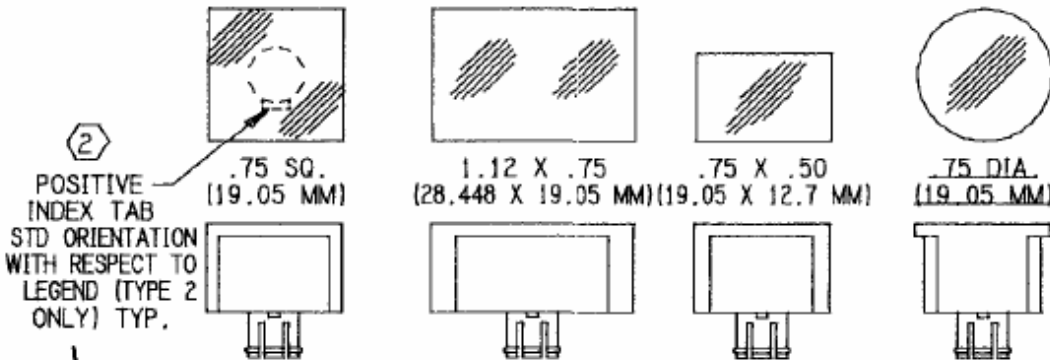
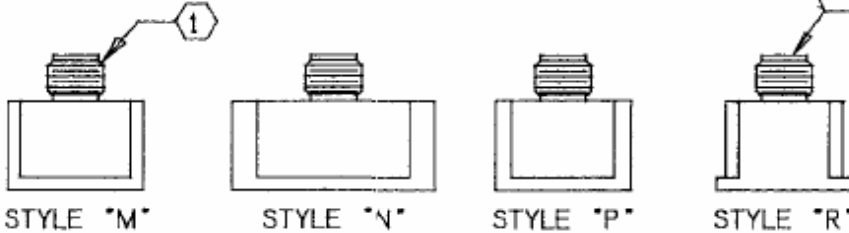
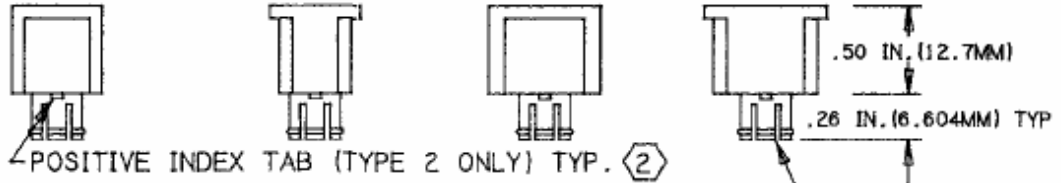
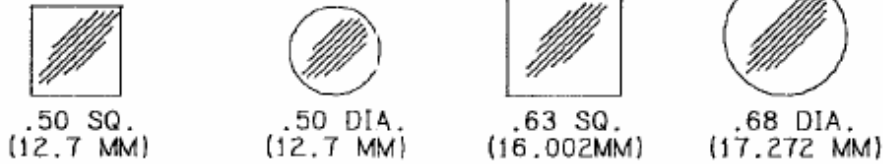
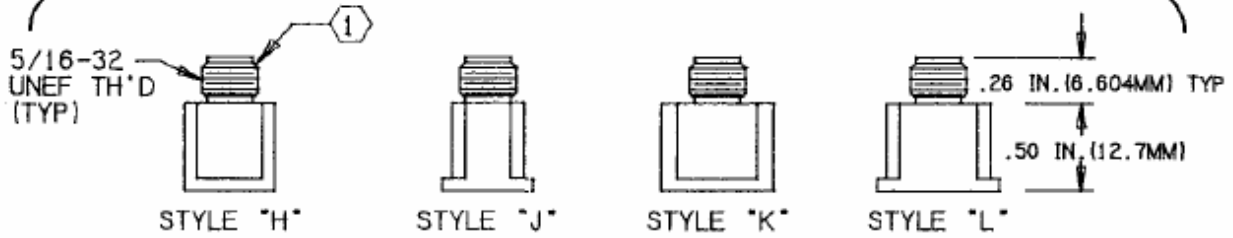
**DO NOT SCALE  
DRAWING**

MGMT.

SCALE NONE

SHEET 1 OF 11

MOUNTING BASE  
TYPE 1 - SCREW-IN (TYP)



MOUNTING BASE  
TYPE 2 - SNAP-IN (TYP) (POSITIVE INDEX)  
TYPE 3 - SNAP-IN (NO POSITIVE INDEX)

① CRIMP 3 PLACES WITH TN: 419317 FOR LAMP RETENTION

② FORM INDEX TAB WITH TN: 419315 WHERE APPLICABLE

FSCM NO.  
**12522**

DRAWING NO.      SERIES 60  
STYLES H THRU R

REV. 1.0

SHT. 2



STANDARD COLOR COMBINATION FOR SERIES 60 CODED PUSHBUTTONS

COMBINATION CODE ON.	CAP DESCRIPTION	TRANSLUCENT COLOR FILTER	BODY DISCRIPTIONS	LEGEND DISPLAYS (REF) AVAILABLE
Ⓐ 01	RED - TRANSLUCENT	NONE	WHITE - OPAQUE	↑
02	•	↑	↑ TRANLUCENT	
Ⓐ 03	GREEN -		OPAQUE	
04	•		TRANLUCENT	
Ⓐ 05	YELLOW -		OPAQUE	
06	•		TRANLUCENT	
Ⓐ 07	BLUE -		OPAQUE	
08	•		TRANLUCENT	
09	AMBER -		OPAQUE	
10	•		TRANLUCENT	
11	WHITE -	↓	↓ OPAQUE	USE TYPE 5
12	• TRANSLUCENT	NONE	WHITE - TRANLUCENT	ENGRAVED LEGEND ONLY
Ⓐ 13	WHITE - TRANSLUCENT	PALE BLUE (Ⓑ)	WHITE - OPAQUE	(SEE SHEET #7 FOR DESCRIPTION)
14	↑	↑ RED	↑ OPAQUE	
15		•	TRANLUCENT	
16		GREEN	OPAQUE	
17		•	TRANLUCENT	
18		YELLOW	OPAQUE	
19		•	TRANLUCENT	
20		BLUE	OPAQUE	
21		•	TRANLUCENT	
22	↓	↓ AMBER	↓ OPAQUE	
23	WHITE - TRANSLUCENT	•	WHITE - TRANLUCENT	
24	OPAL WHITE-TRANSLUCENT	RED	WHITE - OPAQUE	
25	↑	•	↑ TRANLUCENT	
26		GREEN	OPAQUE	
27		•	TRANLUCENT	
28		YELLOW	OPAQUE	
29		•	TRANLUCENT	
30		BLUE	OPAQUE	
31		•	TRANLUCENT	
32	↓	↓ AMBER	↓ OPAQUE	
33	OPAL WHITE-TRANSLUCENT	•	WHITE - TRANLUCENT	↓

- Ⓐ RECOMMENDED FOR MILITARY APPLICATIONS. (STANDARD TYPE 5)(SEE SHEET 7)
- Ⓑ PALE BLUE FILTER ADDED FOR MILITARY WHITE.

FSCM NO.  
**12522**

DRAWING NO. SERIES 60  
STYLES H THRU R

REV. SHT.  
1.0 4

STANDARD COLOR COMBINATION FOR SERIES 60 CODED PUSHBUTTONS

COMBINATION CODE ON.	CAP DESCRIPTION	TRANSLUCENT COLOR FILTER	BODY DISCRIPTIONS	LEGEND DISPLAYS (REF) AVAILABLE
34	CLEAR - TRANSPARENT	RED	WHITE - OPAQUE	
35	▲	•	BLACK ▲	
36		GREEN	WHITE	
37		•	BLACK	USE PHOTOGRAPHIC LEGEND TYPE 1, 2, 3, 4, 6 OR 8: OR ENGRAVED TYPE 5 LEGEND OR PHOTO-ETCHED TYPE 7 LEGEND. 2 (SEE SHEET # 7 FOR DESCRIPTION
38		YELLOW	WHITE	
39		•	BLACK	
40		BLUE	WHITE	
41		•	BLACK	
42		WHITE	WHITE	
43		•	BLACK	
44	▼	AMBER	WHITE ▼	
45	CLEAR - TRANSPARENT	•	BLACK- OPAQUE	
46	SMOKE GRAY-TRANSPARENT	RED	WHITE - OPAQUE	
47	▲	•	BLACK ▲	
48		GREEN	WHITE	
49		•	BLACK	USE PHOTOGRAPHIC LEGEND TYPE 1, 2, 3, 4, 6 OR 8: OR ENGRAVED TYPE 5 LEGEND OR PHOTO-ETCHED TYPE 5 LEGEND. (SEE SHEET # 7 FOR DESCRIPTION
50		YELLOW	WHITE	
51		•	BLACK	
52		BLUE	WHITE	
53		•	BLACK	
54		WHITE	WHITE	
55		•	BLACK	
56	▼	AMBER	WHITE ▼	
57	SMOKE GRAY-TRANSPARENT	•	BLACK- OPAQUE	
58				
59				
60				

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12522	SERIES 60 STYLES H THRU R	1.0	5

## LEGEND DISPLAY OPTIONS

TYPE CODE	NON-ILLUMINATED		ILLUMINATED	
	LEGEND	BACKGROUND	LEGEND	BACKGROUND
①	1. BLACK	TRANSLUCENT COLOR	BLACK	COLOR
①	2. HIDDEN (NOT EASILY DIS ERNABLE)	TRANSLUCENT WHITE	BLACK	COLOR
①	3. TRANSLUCENT COLOR	BLACK	VISIBLE IN COLOR	BLACK
①	4. HIDDEN (NOT EASILY DIS ERNABLE)	TRANSLUCENT WHITE	VISIBLE IN COLOR	OPAQUE BLACK
②	5. BLACK FILLED ENGRAVING ON EXTERNAL SURFACE ④	TRANSLUCENT COLOR CAP	BLACK	COLOR
①	6. TRANSLUCENT WHITE	BLACK	VISIBLE IN COLOR	BLACK
	"DELETED"			
①	8. BLACK	TRANSLUCENT WHITE	BLACK	COLOR
⑤	X. NO LEGEND REQUIRED			

① = FILM LEGEND

② = ENGRAVED

"DELETED"

④ = BLACK ON WHITE, YELLOW OR AMBER BACKGROUND  
WHITE ON ALL OTHER COLORS

⑤ = PUSHBUTTON WITH CODE "X" FOR LEGEND DISPLAY TYPE WILL BE BUILT AS TYPE 1 (WITH NO LEGEND). CODE "X" NOT RECOMMENDED, USE ACTUAL DISPLAY TYPE PER THE ABOVE CHART.

⑥ = ONLY TYPE 1 AND TYPE 2 DISPLAYS ARE AVAILABLE WITH NO LEGEND.

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LEGENDS

THREE LEGEND DISPLAY ARE AVAILABLE

- 1 TYPES 1 AND 4, 6 AND 8 EMPLOY A POSITIVE OR NEGATIVE IMAGE ON MYLAR PHOTOGRAPHIC FILM, INSTALLED BEHIND THE PUSHBUTTON LENS CAP (CLEAR).
- 2 TYPE 5 EMPLOYS ENGRAVING WITH A CONTRASTING COLOR FILL, INTO THE FRONT SURFACE OF THE PUSHBUTTON LENS CAP.
- 3 TYPE 7 EMPLOYS A PHOTO ETCH PROCESS.

CHARACTER SIZE

THE CHARACTER FORMAT FOR PHOTOGRAPHIC LEGENDS IN ALPHA-NUMERICS IS ON ALTERNATE GOTHIC #2 WITH LINE RELATIONSHIPS NOTED BELOW:

THE CHARACTER FORMAT FOR ENGRAVED LEGENDS IN ALPHA NUMERICS IS A CONDENSED GORTON, WITH THE LINE RELATIONSHIPS NOTED BELOW.

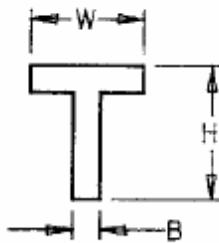


	PHOTO LEGEND	ENGRAVED
LETTER HEIGHT TO WIDTH RATIO (LETTER T)	1.66:1	2:1
LINE WEIGHT RATIO $\frac{H}{B}$	6:1	8:1

- H = A (10 PT) APPROX. 0.10 IN. (2.5 MM) HIGH
- B (12 PT) APPROX. 0.12 IN. (3.05 MM) HIGH
- C (18 PT) APPROX. 0.18 IN. (4.6 MM) HIGH

CHART # 1

SINGLE LINE ENGRAVED CHARACTERS (NORMAL ENGRAVING)

CHARACTERS AVAILABLE ON PUSHBUTTON CAP, SINGLE LINE

PUSHBUTTON STYLE	10 PT.	12 PT.	18 PT.
*H* CAP	3	2	1
*J* CAP	3	2	1
*K* CAP	4	3	2
*L* CAP	5	4	2
*M* CAP	5	4	2
*N* CAP	8	7	4
*P* CAP	5	4	2
*R* CAP	5	4	2

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CHART # 2

DOUBLE LINE ENGRAVED CHARACTERS/LEGEND

CHARACTERS AVAILABLE ON PUSHBUTTON  
 DOUBLE LINE (10 PT., 12 PT. & 18 PT.) "NORMAL" ENGRAVING

PUSHBUTTON STYLE/COMPONENT	10 PT.	SPACED ● _____	12 PT.	SPACED ● _____	18 PT.	SPACED ● _____
"H" CAP	3	.040	2	.024	0	0
"J" CAP	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____
"K" CAP	4	.082	3	.065	2	.023
"L" CAP	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____
"M" CAP	5	.122	4	.105	2	.063
"N" CAP	8	.122	7	.105	4	.063
"P" CAP	5	.040	4	.024	0	0
"R" CAP	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____	△ <sub>6</sub>	_____

△<sub>6</sub> - SPECIAL ORDER ONLY (REFER TO CHART #1, SHEET #7).

CHART # 3

SINGLE LINE - FILM LEGEND

CHARACTERS AVAILABLE ON FILM-LEGEND-SINGLE LINE.  
 (10 PT., 12 PT., PT.) HIGH.

PUSHBUTTON STYLE/COMPONENT	10 PT.	12 PT.	18 PT.
"H" CAP	4	3	2
"J" CAP	4	3	2
"K" CAP	5	4	2
"L" CAP	5	4	3
"M" CAP	6	5	3
"N" CAP	10	8	5
"P" CAP	6	5	3
"R" CAP	6	5	3

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CHART # 4:

DOUBLE LINE - FILM LEGEND

CHARACTERS AVAILABLE ON FILM LEGEND - DOUBLE LINE  
(10 PT., 12 PT. & 18 PT.) HIGH.

PUSHBUTTON STYLE/COMPONENT	10 PT.	SPACED e_____	12 PT.	SPACED e_____	18 PT.	SPACED e_____
"H" FILM LEGEND	4	.049	3	.032	0	0
"J" FILM LEGEND	△ <sub>6</sub>	—	△ <sub>5</sub>	—	△ <sub>6</sub>	—
"K" FILM LEGEND	5	.091	4	.074	2	.033
"L" FILM LEGEND	△ <sub>6</sub>	—	△ <sub>5</sub>	—	△ <sub>6</sub>	—
"M" FILM LEGEND	6	.131	5	.114	3	.073
"N" FILM LEGEND	10	.131	8	.114	5	.073
"P" FILM LEGEND	6	.049	5	.032	0	0
"R" FILM LEGEND	△ <sub>6</sub>	—	△ <sub>5</sub>	—	△ <sub>6</sub>	—

△<sub>6</sub> - SPECIAL ORDER ONLY (REFER TO CHART #1, SHEET #7).

CHART # 3

SINGLE LINE - FILM LEGEND

CHARACTERS AVAILABLE ON FILM-LEGEND-SINGLE LINE.  
(10 PT., 12 PT., PT.) HIGH.

PUSHBUTTON STYLE/COMPONENT	10 PT.	12 PT.	18 PT.
"H" CAP	4	3	2
"J" CAP	4	3	2
"K" CAP	5	4	2
"L" CAP	5	4	3
"M" CAP	6	5	3
"N" CAP	10	8	5
"P" CAP	6	5	3
"R" CAP	6	5	3

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SPECIFICATION, SERIES 60 PUSHBUTTON:

THE PUSHBUTTON DEFINED BY THIS SPECIFICATION CONTROL DRAWING MEET OR EXCEED ALL APPLICABLE REQUIREMENTS OF MIL-S-22885.

1. MECHANICAL:

- A - FACEPLATE WILL WITHSTAND 25 POUND DISTRIBUTED LOAD.
- B - RELEMPING MAY BE ACCOMPLISHED WITHOUT TOOLS.

2. ELECTRICAL:

- A - DIELECTRIC STRENGTH
  - SEA LEVEL 1,056 VRMS
  - 70,000 FEET 450 VRMS
- B - INSULATION RESISTANCE 1,000 MEGOHMS @ 500 VDC

3. ENVIRONMENTAL (TO BE MET INSTALLED IN MATING SERIES 60 SWITCH).

- A - TEMPERATURE - OPERATING -65°C TO +65°C
- B - THERMAL SHOCK -55°C TO +85°C, PER MIL-STD-202C, METHOD 107, TEST CONDITION A.
- C - ALTITUDE SEA LEVEL TO 70,000 FEET.
- D - VIBRATION .06 D.A. OR 16 G'S, 10 TO 2,000 HZ PER MIL-STD-202C. METHOD 204, TEST CONDITION B.
- E - SHOCK 50 G'S, 11±1 MILLISECOND: PER MIL-STD-202C METHOD 202.
- F - SAND AND DUST PER MIL-STD-202C, METHOD 110, TEST CONDITION, CONDITION B.
- G - HUMIDITY 10 DAYS WITH 10 CYCLES AT 90-98 PERCENT RELATIVE HUMIDITY AT 56°C PER MIL-STD-202, METHOD 106.
- H - SEAL DRIP PROOF PER MIL-S-22885 (ENCLOSURE DESIGN -2).

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**Appendix A RoHS (Restriction of certain Hazardous Substance) Compliance requirement per EU Directive 2002/95/EC.**

No Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr<sup>+6</sup>), PBB or PBDE is intentionally added to these devices. Any traces impurities of these substances contained in the parts are below RoHS specified threshold levels:

Substance	RoHS (Max allowed)
Cd (Cadmium)	100ppm or 0.01% by weight
Pb (Lead)	1000ppm or 0.1% by weight
Hg (Mercury)	1000ppm or 0.1% by weight
Cr6+ (Hexavalent Chromium)	1000ppm or 0.1% by weight
PBBs (Polybrominated Biphenyls)	1000ppm or 0.1% by weight
PBDEs (Polybrominated Diphenyl Ethers)	1000ppm or 0.1% by weight

Exemptions to the RoHS Directive:

Lead as an alloying element in steel containing up to 0.35 % lead by weight, aluminum containing up to 0.4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.

**Note1: Lamps are not included.**

**Note2: The product does not contain printed circuit board (PCB).**

CAGE CODE 12522	DRAWING NO <b>SERIES 60</b> <b>STYLES H THRU R</b>	REV. 1.0	SHEET 11
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