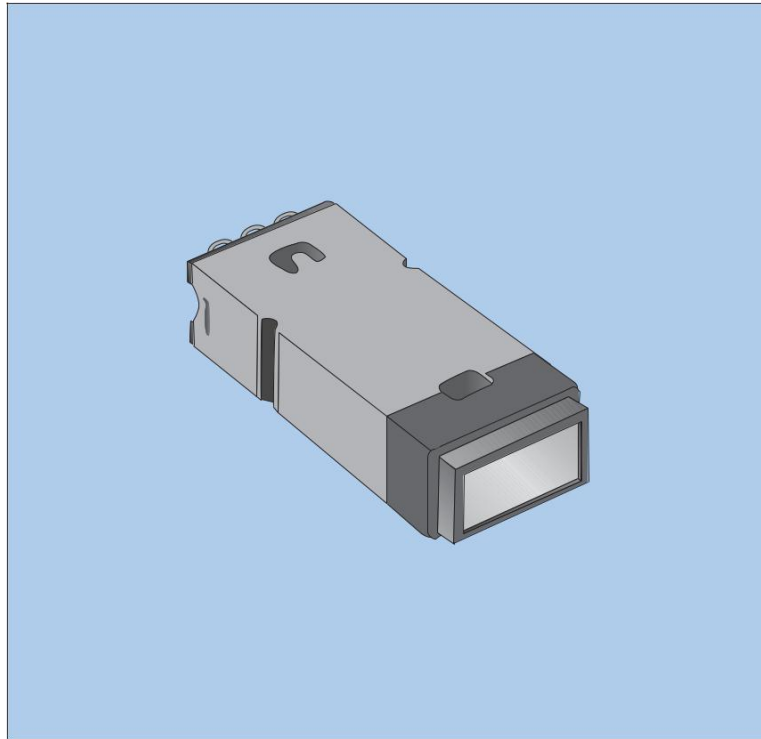
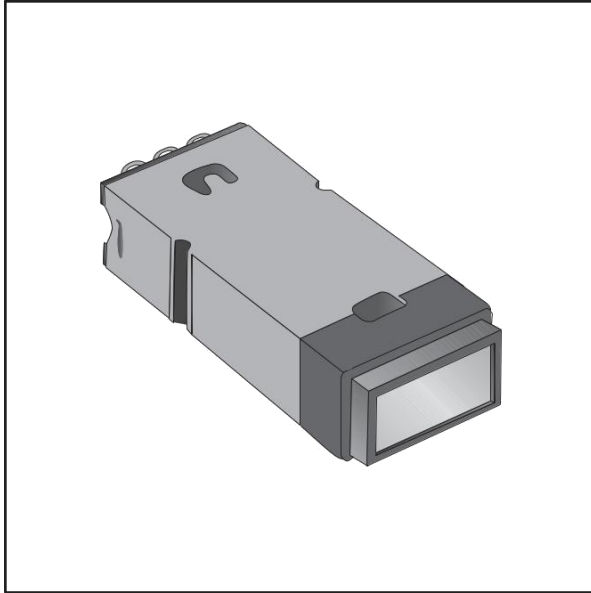


# Jay-El Mark 15 P/N 10732



**JAY-EL MARK 15 P/N 10732  
ILLUMINATED PUSHBUTTON SWITCH  
MEETS REQUIREMENTS OF  
MIL-S-22885**

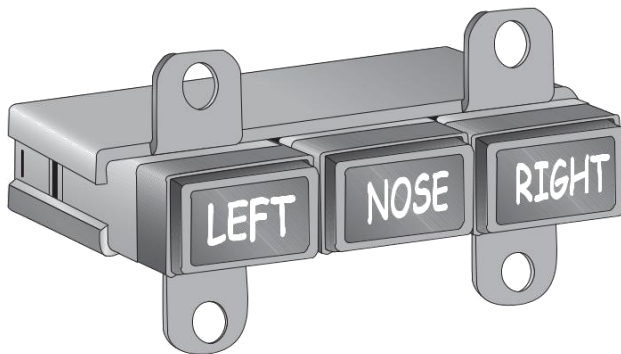
JAY-EL MARK 15  
P/N 10732  
ILLUMINATED  
PUSHBUTTON  
SWITCH/INDICATOR



### COMPACT SIZE

Outside dimensions are .437 X .688 and 1.780 in length. Individual unit mount in a .445 X .695 hole or maybe matrix mounted.

The Mark 15 is designed to mount to sub-panel with brackets from rear of panel. Brackets may be spotwelded or as shown to assure secure shock and vibration proof mounting.



Typical mounting method All spotwelded tabs or mounting brackets per customer drawing

### SUNLIGHT READABLE DISPLAY

All combinations of display types are available including sunlight readable. Display Type 8. This display type utilizes maximum lighted contrast enhancing techniques.

Available with T-1 or T-1 3/4 based lamps. Most efficient Display Type 8 is with "T" type pushbutton using T-1 lamps. This " T " type pushbutton eliminates high legend surface temperatures and can provide power saving up to 70% with no loss of luminance. Luminances far exceed requirements of MIL-STD-411 when using .15 MSCP lamps.

Jay-El can provide P/N 10732 switches and indicators with NVIS compatible lighting. Contact factory.

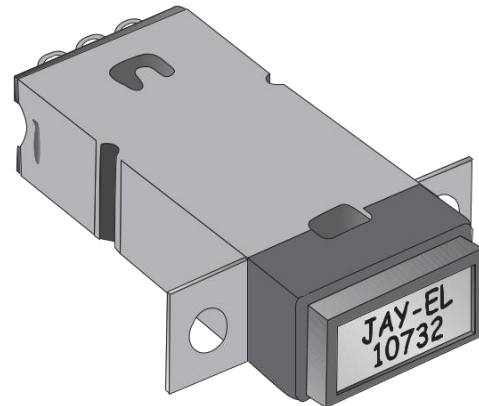
### DESIGN FEATURES

Retained pushbutton unplugs and hinges down for easy lamp replacement. No tools required.

All switch and lamp terminals are available in turret or PC termination.

The Mark 15 is available as an indicator single pole momentary switch.

Switch can be positioned to extend thru any overlay panel thickness for edge-lit panel applications.



## ENGINEERING SPECIFICATIONS

### ELECTRICAL

#### Switch Contacts:

Silver Alloy contacts are standard. Gold contacts are recommended for reliable low level switching below 1.0 amperes.

#### Switch Ratings:

### SILVER CONTACTS Maximum 2/

Load	Sea Level		50,000 FT 28VDC
	28VDC	115VAC, 60Hz	
Resistive	7.0 Amps	7 Amps	4.0 Amps
Inductive	4.0 Amps	7 Amps	2.5 Amps
Lamp 1/	2.5 Amps	2 Amps	2.5 Amps

1/ Inrush. 10:1 for 20 milliseconds maximum.

2/ Minimum conditions are dependent on use and atmospheric conditions. Contact Jay-El for detailed application information.

### GOLD CONTACTS

	Sea Level and 50,000 Feet	Maximum Contact Res. OHM
Max. Voltage	28VDC	.025
Max. Current	1 Amp.Res. .5 Amp.Ind.	.025
Min. Current	5 Microamps	50
Min. Voltage	15 Millivolts	50

#### Contact Resistance:

25 milliohms maximum in accordance with MIL-S-22885 for switch contacts and 1 OHM maximum in accordance with MIL-S-22885 for lamp contacts.

Electrical Life: Para. 2.6.24 of MIL-S-22885.

#### Lamp Life:

T- 1 3/4 midget flange base incandescent is standard.

Available on special order:

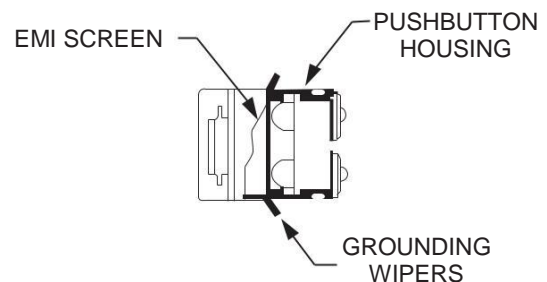
T1 3/4 Neon (External Ballast 10 K $\Omega$  minimum)

T1 sub-midget flange base with special pushbutton modifications.

T-1 3/4 midget flange base LED  
(Recommended for back lighting only)

### EMI SHIELDING

Grounding wipers provide chassis ground for EMI.



### MECHANICAL

Mechanical Life: 100,000 cycles minimum

Actuation force: 1.5  $\pm$  .5 pounds.

Pushbutton Travel: Pretravel .050+ .025  
Overtravel .015 minimum

Switch Action: 1 pole, momentary, form

"C" Weight: 0.55 ounces maximum

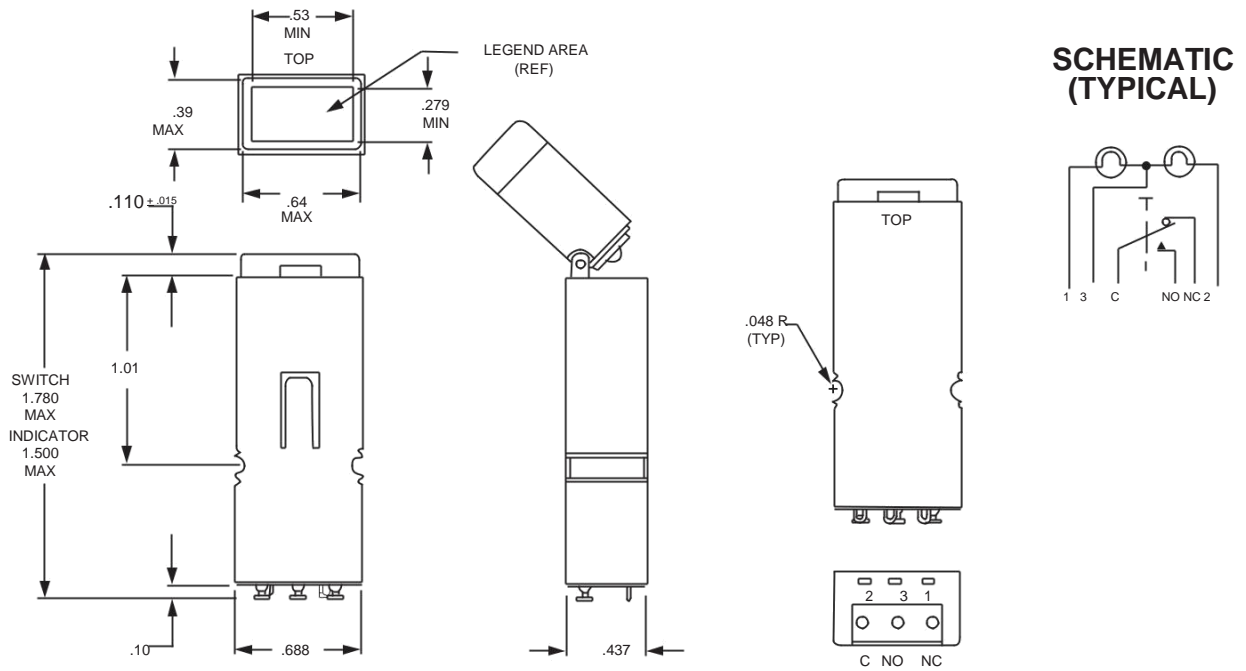
### ENVIRONMENTAL

Meets all applicable requirements of Mil-S-22885

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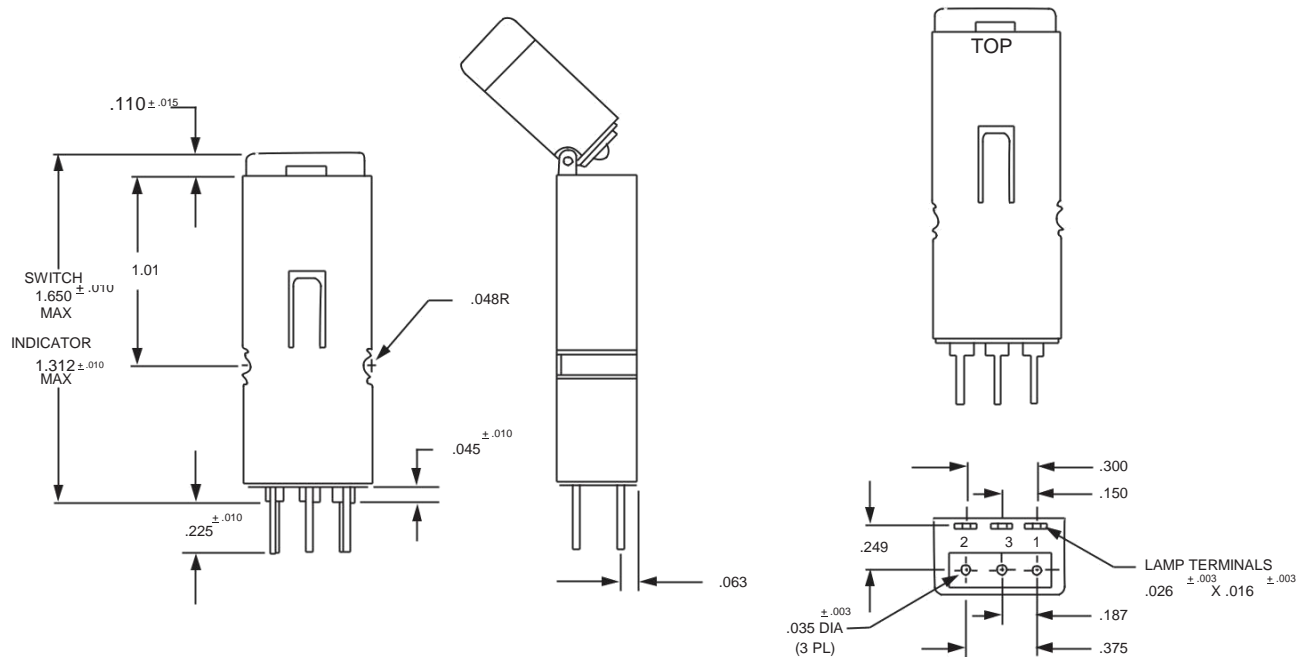
# MAJOR OUTLINE DIMENSIONS

## STANDARD SWITCH/INDICATOR



## PRINTED CIRCUIT TERMINATION

### SWITCH/INDICATOR



**ORDERING PROCEDURE** - Fill out Preliminary Product Specification using Tables below and submit to Jay-El for Customer Code assignment.

TABLE 1 BASIC P/N	TABLE 2 MOUNTING TYPE	TABLE 3 HOUSING COLOR	TABLE 4 SPLIT GROUND	TABLE 5 EMI	TABLE 6 INTEGRAL SEAL	TABLE 7 RETAINED PUSHBUTTON	TABLE 8 PUSHBUTTON STYLE	TABLE 9 SWITCH POLES	TABLE 10 CONTACTS
10732	NOT APPLICABLE	BLACK CRES	NOT APPLICABLE	YES NO	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	0 INDICATOR 1 1 SPDT	(ABOVE 1 AMP) S SILVER CONTACTS S (BELOW 1 AMP) G GOLD CONTACTS

TABLE 11 SWITCH ACTION	TABLE 12 UNLIGHTED BACKGROUND COLOR	TABLE 13 DISPLAY DATA	TABLE 14 LIGHTED COLOR	TABLE 15 DISPLAY TYPE <sup>1</sup>	TABLE 16 CHARACTER SIZE AND PLACEMENT				
O INDICATOR M MOMENTARY	BLK DW NG R A Y G B	BLACK DIFFUSED WHITE NEUTRAL	TO BE SPECIFIED ON PRELIMINARY FORM	C R A Y B DW B1	CLEAR RED AMBER YELLOW BLUE DIFFUSED WHITE BLUE 1	WL NG AY AG1	WHITE LIGHT NUETRAL GRAY GREEN AVIATION YELLOW AVIATION GREEN1	1. BLACK CHARACTERS ON DIFFUSED WHITE BACKGROUND. BACKGROUND ILLUMINATES IN COLOR. 2. REPLACED BY DISPLAY TYPE 7. 3. ONLY PREVIOUSLY UNLIGHTED BACKGROUND ILLUMINATED UNLESS SPECIFIED OTHERWISE. GRAY ILLUMINATING BACKGROUND. 4. ILLUMINATING CHARACTERS ON BLACK BACKGROUND. CHARACTERS SHALL NOT APPEAR ILLUMINATED IN UNLIT CONDITION. 5. CONTRACTING SPECIAL CHARACTERS ON ILLUMINATING COLORED BACKGROUND. BLACK CHARACTERS ON YELLOW OR AMBER BACKGROUND. WHITE CHARACTERS ON ALL OTHER COLORS. 6. DISPLAY TYPES NOT COVERED BY THIS TABLE SHOULD BE SPECIFIED BY A NOTE ON PURCHASE ORDER OR MAY BE SPECIFIED ON JAY-EL CUSTOMER SPECIFICATION. 7. WHITE CHARACTERS ILLUMINATE IN COLOR ON BLACK BACKGROUND. 8. SUNLIGHT READABLE ILLUMINATING CHARACTERS ARE HIDDEN BEFORE LIGHTED. BLACK BACKGROUND. CHARACTERS ARE VISIBLE IN DIRECT SUNLIGHT. (10,000FC) WHEN LIGHTED.	SEE CHARACTER INFORMATION CHART
					<b>TABLE 17 LAMPS</b>				
					T1 3/4 NUMBER 328 5V 330 12V 387 28V				
					T1 NUMBER 718 5V 6839 28V OR EQUIVALENT				

NOTES:

- \* AG OR AY SHOULD BE SPECIFIED WHEN GREEN OR YELLOW IS TO MEET MIL - C - 25050 AY APPEARS AMBER WHEN ILLUMINATED.
- \* B1 AND AG1 SPECIAL HIGH BRIGHT BLUE & GREEN RECOMMENDED FOR DISPLAY TYPE 8.
- \*\* DISPLAY TYPE 8 IS AVAILABLE IN .012 STROKE WIDTH ONLY.
- \*\*\* ALL STANDARD UNITS HAVE RETAINED PUSHBUTTONS AND A BLACK BAND AT THE FRONT OF THE SWITCH HOUSING

**CHARACTER INFORMATION**  
(HORIZONTAL DIRECTION ONLY)

To obtain more characters per line other type fonts are available. Contact Jay-El for further information.

LEGEND SEGMENT NUMBERS (REF)	1 4 5			CHARACTERS PER LINE		NUMBER OF LINES
	SIZE	STROKE	HEIGHT	SEGMENT -1	SEGMENT -4-5	SEGMENT -1-4-5
JAY-EL PRODUCTS INC.	-1	.010	.072	8	3	2
JAY-EL PRODUCTS INC.	-2	.012	.087	7	3	2
JAY-EL PRODUCTS INC.	-3	.015	.109	6	3	1
JAY-EL PRODUCTS	-4	.018	.125	5	2	1
JAY-EL PRODUCTS	-5	.020	.145	4	2	1
JAY-EL PRODU	-6	.025	.175	4	1	1
JAY-EL PRO	-7	.035	.222	3	1	0

\*\* DISPLAY TYPE 8 ONLY illuminating Area .475 x .220

FUTURA MEDIUM CONDENSED	SIZE	STROKE	HEIGHT	-1	-4-5	-4-5
JAY - EL PRODUCTS INC.	-1	.012	.072	8	3	2
JAY - EL PRODUCTS INC.	-2	.012	.087	7	3	1
JAY - EL PRODUCTS INC.	-3	.012	.109	6	2	1
JAY - EL PRODUCTS	-4	.012	.125	5	2	1
JAY - EL PRODUCTS	-5	.012	.145	4	1	1
JAY - EL PRODU	-6	.012	.175	3	1	1
JAY - EL PRO	-7	.012	.222	3	1	0