

**48M-X X X X XX**

SWITCH FUNCTION CODE	SWITCH FUNCTION DESCRIPTION	HOUSING MATERIAL CODE	HOUSING DESCRIPTION	ILLU. TYPE CODE	ILLUMINATION TYPE DESCRIPTION	LED COLOR CODE	LED COLOR	LED INLET VOLTAGE CODE	LED INLET VOLTAGE
1	MECHANICAL, MOMENTARY, SOLDER TERMINAL	1	STAINLESS STEEL	0	NON-ILLUMINATION	N	NONE	IF BLANK* (SEE NOTE)	
2	MECHANICAL, MAINTAINED, SOLDER TERMINAL	2	ZINC ALLOY, CHROME PLATED	1	CENTER SPOT ILLUMINATION	G	GREEN	05	5V
5	MECHANICAL, MOMENTARY, P.C. TERMINAL			2	RING ILLUMINATION	R	RED	IF BLANK* (SEE NOTE)	
6	MECHANICAL, MAINTAINED, P.C. TERMINAL			3	POWER/STANDBY SYMBOL ILLUMINATION	A	AMBER	05	5V
A	MACHANICAL, MOMENTARY, WIRELEADS			B	BLUE	12	12V		
B	MACHANICAL, MAINATINED, WIRELEADS			W	WHITE	24	24V		
				Y	YELLOW				
				RB	RED/BLUE				
					RG	RED/GREEN			

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1-A	SALES DRAWING	22,JULY.,10'	ABEL
2	CHANGE FEATURES OF NUT AND BUTTON	30,SEP.,10'	Y.W.
3	REVISE THE SPECIFICATIONS AND CHARACTERISTICS	10,APR.,12'	Y.W.
4	ADDED LED WIRES PER ECN-28486	21,SEP.,12'	Y.W.

MECHANICAL CHARACTERISTICS:  
 SWITCH CIRCUITRY: SPST-NO-DB (CONTACT FORM X)  
 SWITCH ACTION: MOMENTARY AND MAINTAINED (PER CHART)  
 BUTTON TRAVEL: .090 [2.3mm] NOMINAL  
 OPERATING FORCE: 3N [306g] NOMINAL  
 CONTACT BOUNCE: 1ms NOMINAL  
 PANEL THICKNESS: .020 - .177 [0.5 - 4.5mm]  $\Delta$ 3  
 CONTACTS: GOLD PLATED  
 NUT TORQUE FORCE: MAX 10 LB/in [11.5 kgf/cm]

ENVIROMENTAL SPECIFICATIONS:  
 ACTUATOR INGRESS PROTECTION: IP67

OPERATING TEMPERATURE:  
 NON-ILLUMINATION TYPE: -40°F to +185°F [-40°C to +85°C]  $\Delta$ 3  
 ILLUMINATION TYPE: -13°F to +185°F [-25°C to +85°C]  $\Delta$ 3

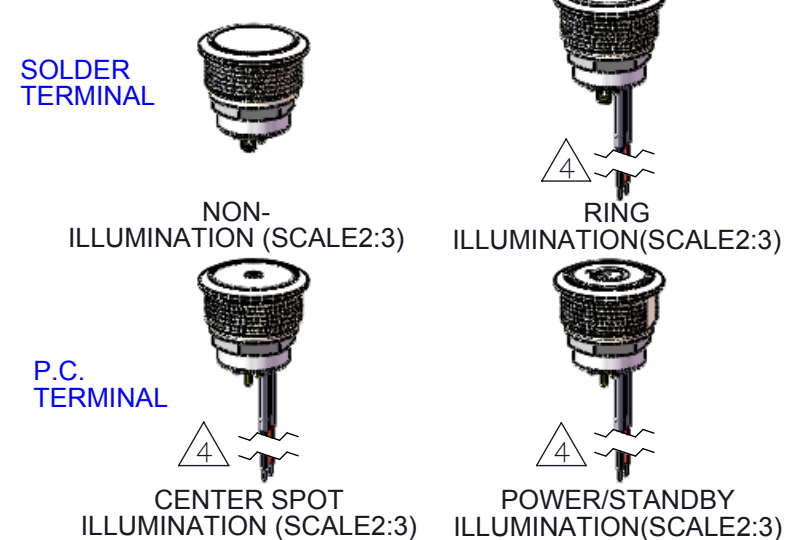
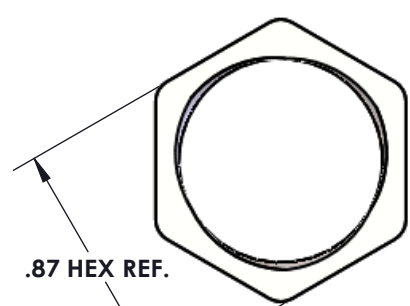
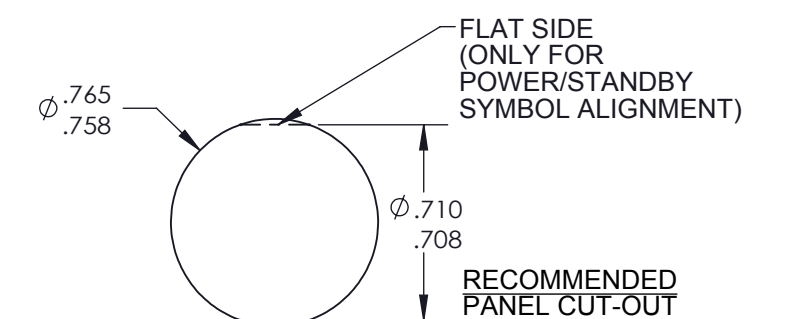
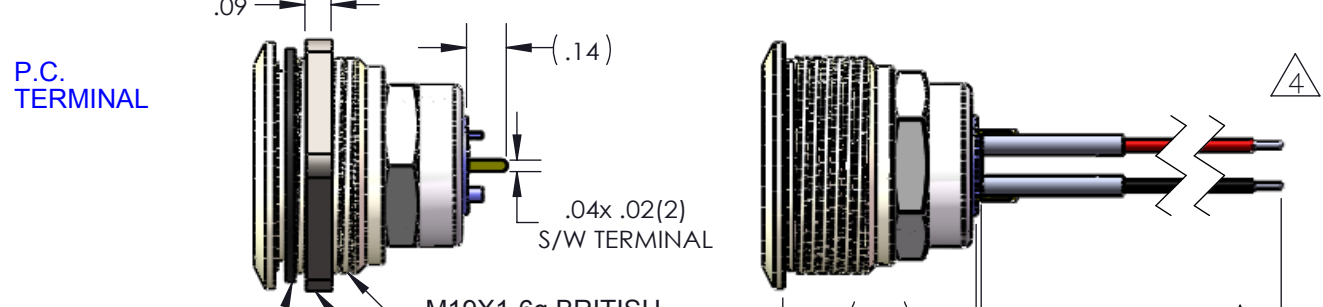
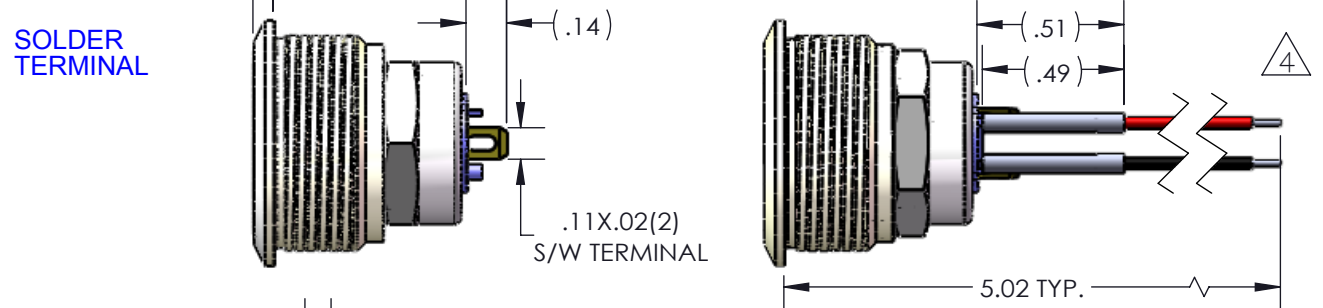
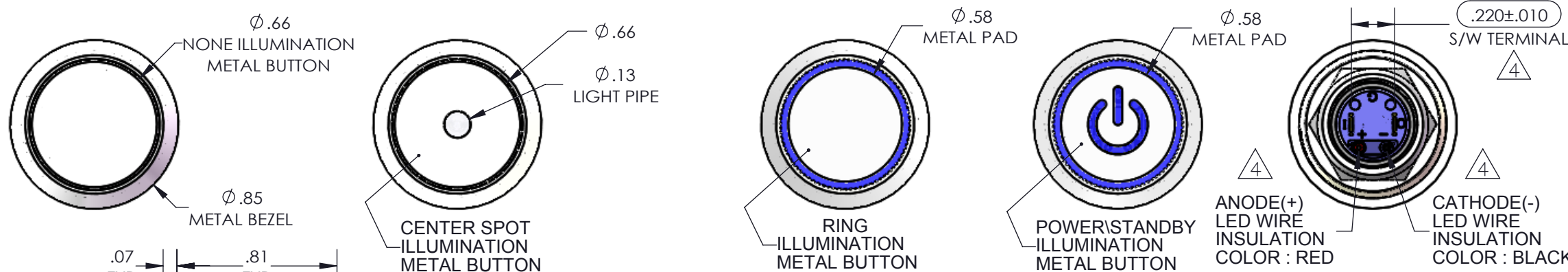
ELECTRICAL SPECIFICATIONS:  
 CURRENT RATING:  
 MOMENTARY: 250mA@12VDC, 100K cycles  
 150mA@28VDC, 150K cycles  
 100mA@48VDC, 100K cycles  
 10mA@12VDC, 1,000K cycles  $\Delta$ 3

MAINTAINED: 50,000 CYCLES NOMINAL

DIELECTRIC STRENGTH: 1,000VAC  
 INSULATION RESISTANCE: 1G OHM  
 CONTACT RESISTANCE:  
 50M/250m OHMS MAX INITIAL (NON-WIRELEADS/WIRELEADS)

LED SPECIFICATIONS:  
 SEE LED SPECIFICATION (PAGE 2)

NOTE  
 1. CURRENT LIMITING RESISTOR IS REQUIRED TO LIMIT LED FORWARD CURRENT TO 20mA  
 2. SUPPLY HEX NUT AND SEALING WASHER BULK PACKED



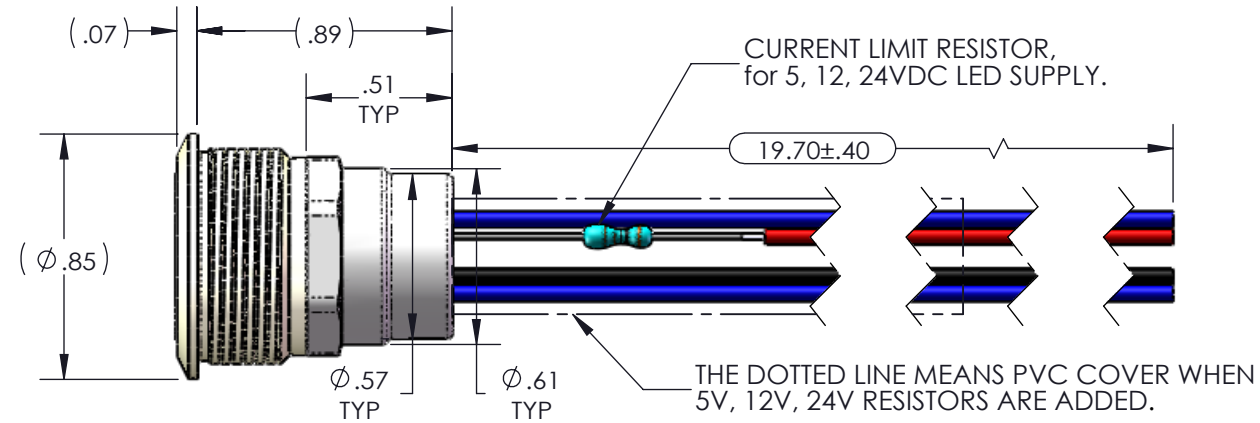
SEALING WASHER (SUPPLIED IN BULK)  
 M19X1-6g BRITISH ISO METRIC THREAD  
 SPECIAL HEX NUT (SUPPLIED IN BULK)

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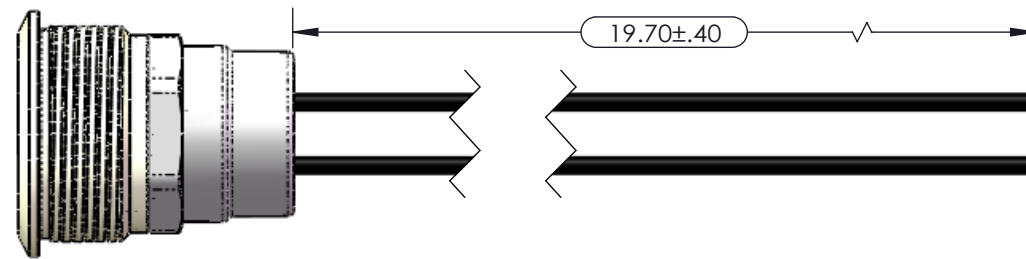
<b>RoHS Compliant</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		TOLERANCES ( INCH ) UNLESS OTHERWISE NOTED 3 PLACE DECIMAL ± .015 2 PLACE DECIMAL ± .02 ANGULAR ± 1/2°		AN ILLINOIS TOOL WORKS COMPANY	
DATE: 22 JULY, 10' DRAWN: A.H. CHK: B.C.		REF: 48M-1, 2, 5, 6, A, B APP'D: -- SUPV: P.L.			
SCALE: 1.5:1		SHEET 1 OF 2		SIZE B: DWG NO. 48M-1, 2, 5, 6, A, B REV 4	

# WIRELEADS

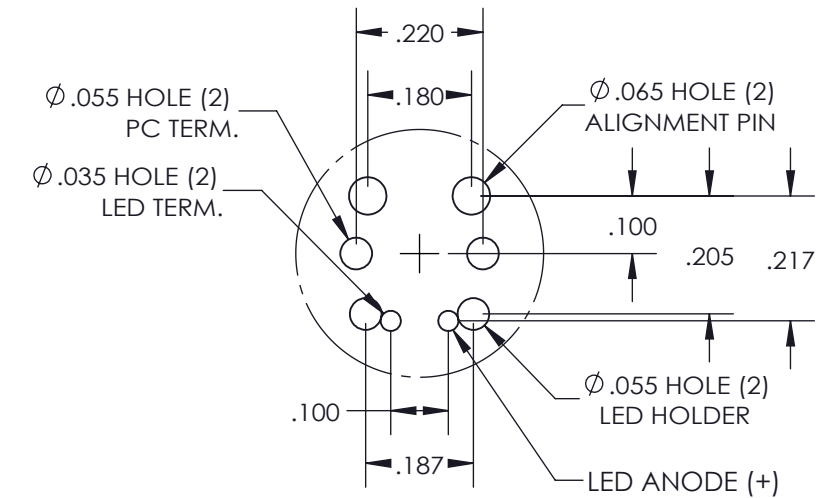
## ILLUMINATION



## NON-ILLUMINATION



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1-A	SALES DRAWING	22, JULY., 10'	ABEL
2	CHANGE FEATURES OF NUT AND BUTTON	30,SEP.,10,	Y.W.
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RECOMMENDED P.C. BOARD HOLE PATTERN  
(FOR PC TERMINAL)  
COMPONENT SIDE  
SCALE 2 : 1

LED SPECIFICATION						
LED CODE	LED		CIRCUITRY	Vf(VDC)		If (mA)
	Color 1	Color 2		Color 1	Color 2	
A	AMBER	-		1.6 ~ 2.0	-	20
R	RED	-		1.6 ~ 2.0	-	20
Y	YELLOW	-		1.6 ~ 2.0	-	20
B	BLUE	-		2.8 ~ 3.4	-	20
G	GREEN	-		2.8 ~ 3.4	-	20
W	WHITE	-		2.8 ~ 3.4	-	20
RB	RED	BLUE		1.6 ~ 2.0	2.8 ~ 3.4	20
RG	RED	GREEN		1.6 ~ 2.0	2.8 ~ 3.4	20

Notes:  
 1.) Lead Soldering Temperature (4mm from Body) : 280°C for 5 seconds  
 2.) Hand Soldering Temperature (4mm from Body) : 320°C for 3 seconds

TABLE- WIRELEADS DESCRIPTION

SWITCH TYPE	WIRELEADS SPECIFICATION	SW TERMINALS		LED				48M SW P/N
		I	O	COLOR 1	COLOR 2	COLOR 1	COLOR 2	
ILLUMINATION	AWG26/UL1007	BLUE	BLUE	RED	BLACK	BLACK	RED	48M-XX1XXX 48M-XX2XXX 48M-XX3XXX
NON-ILLUMINATION		BLUE	BLUE	---	---	---	---	48M-XX0N

TOLERANCES (INCH)  
 UNLESS OTHERWISE NOTED  
 3 PLACE DECIMAL ± .015  
 2 PLACE DECIMAL ± .02  
 ANGULAR ± 1/2°



DWG TITLE  
 48M-MECHANICAL MOMENTARY/MAINTAINED, SOLD./P.C. TERMINAL,  
 WIRELEADS, NONE/CENTER SPOT/RING/POWER-STANDBY ILLUMINATION

RoHS Compliant		DATE	REF:	SIZE	DWG NO.	REV	
Yes	No	22 JULY, 10'	48M-1, 2, 5, 6, A, B	B	48M-1, 2, 5, 6, A, B	4	
✓		DRAWN A.H.	CHK B.C.	APP'D --	SUPV P.L.	SCALE : 1.5:1	SHEET 2 OF 2

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