

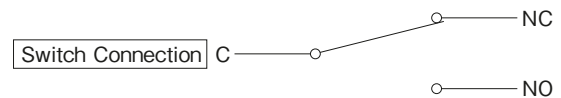
## MH Illuminated Pushbutton Switch

Only 22mm depth behind panel with  $\phi 16$  panel cutout.

Screw mounting and Snap-in mounting available.

### ■ FEATURES

- Depth behind panel : only 22mm
- Button size :15mm round type.
- Incorporating precision snap action switch mechanism assures long life (Mechanical : 2,000,000 operations min.).
- Contact mechanism has wiping action, and it's self-cleaning effect permits high reliability.



## SPECIFICATIONS

Contact	Silver Contact (Gold-Plated)
Rating	AC35V 1A (Res. Load)
Insulation Resistance	Over 100M $\Omega$ at 500V DC Meger
Dielectric Strength	Between terminals : 1,000V AC RMS
	Between terminals & Ground : 1,500V AC RMS
	Both 50/60Hz in normal temperature & humidity in one minute
Contact Resistance	Under 30m $\Omega$ (at initial) at 1A 6VDC
Mechanical Life	Momentary : 2,000,000 operations (min.), Alternate : 200,000 operations (min.)
Electrical Life	30,000 operations (min., at rated load)
Ambient Temperature	-15°C~50°C
Ambient Humidity	80% RH (max)


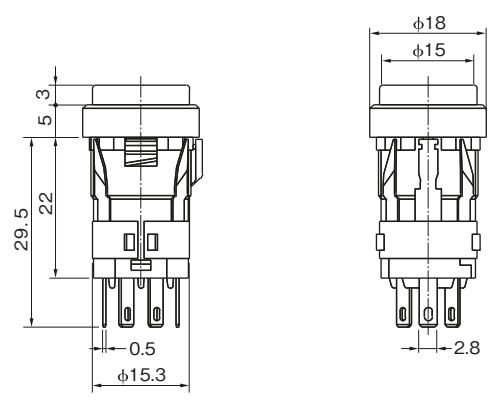

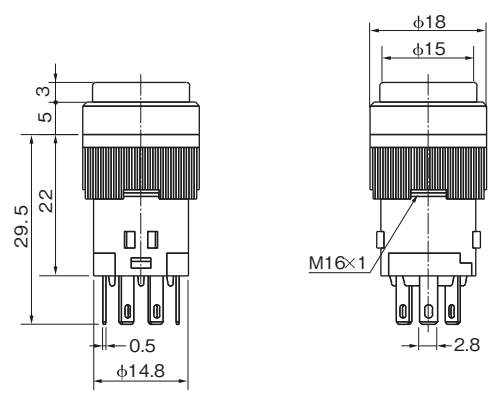
### DC Rated (Silver Contact)

Rated voltage (V)	Resistance Load (A)
DC 8	2
14	2
30	1

## OPERATING CHARACTERISTICS

Operating Force (Max.)	4.41N	Total Travel (mm Max.)	2.5
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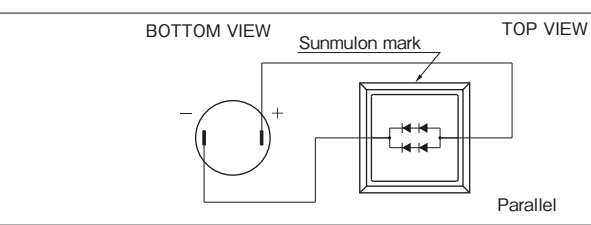
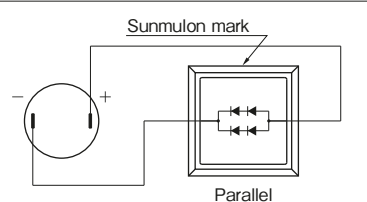
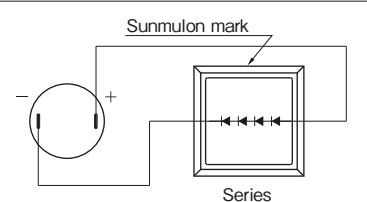
DIMENSIONS

Φ15 Round Button	Snap-in Type		
	Bushing Type		

Tolerance : ±0.4mm

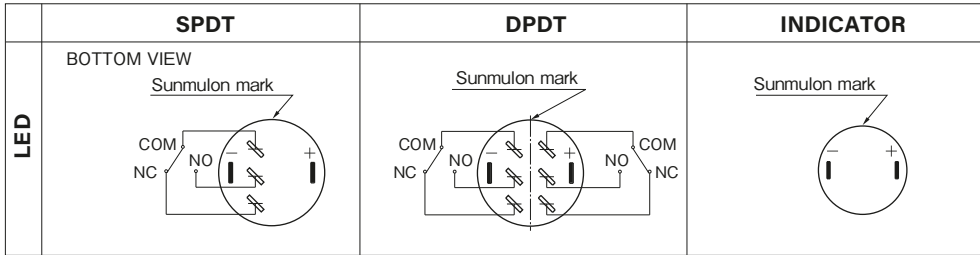
INTERNAL CONNECTION ARRANGEMENTS

● LED

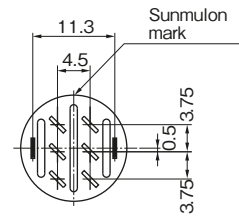
LED	V	BOTTOM VIEW      Sunmulon mark      TOP VIEW	
	5 V		Parallel
	12 V · 24 V		Parallel
			Series

## TERMINALS

### ● TERMINALS LAYOUT

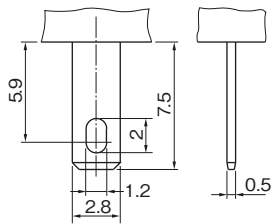


### ● TERMINALS DIMENSIONS (BOTTOM VIEW)

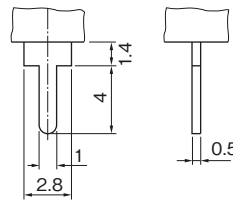


## TERMINAL SHAPES / DIMENSIONS

### ● TERMINAL SHAPE

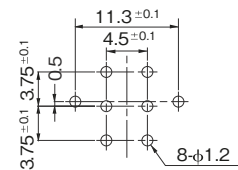


Solder/Tab Terminal



Printed circuit Terminal

### ● Printed circuit Terminal Hole (BOTTOM VIEW)



## LED RATING

### ● LED Rating (Calculated at 4-chip LED)

Item	LED			
	Parallel		Series	
	Red, Yellow	Green	Red, Yellow	Green
Max. Operating Current $I_{FM}$ (mA)	40	40	20	20
DC Reverse Voltage $V_R$ (V)	10	10	20	20
Forward Voltage $V_F$ (V)	4	4.2	8	8.4
Forward Current $I_F$ (mA)	15	25	8	13

※ In case of pulse lighting, please note following conditions.

$I_{FM}$  = 100mA (DC current for one LED. all colors)

Where : Pulse width (PW) = 100μsec.

Duty Ratio (DR) =  $10^{-1}$

## EXTERNAL RESISTOR

● Internal LED protective resistor is not incorporated.

Refer to the following valued series connection.

(Calculated at 4-chip LED)

Voltage(V)	Parallel		Series	
	Red, Yellow	Green	Red, Yellow	Green
5(±5%)	100Ω 1/8W	33Ω 1/8W	—	—
12(±5%)	620Ω 1/4W	330Ω 1/4W	620Ω 1/8W	300Ω 1/8W
24(±5%)	1500Ω 1/2W	820Ω 1/2W	2100Ω 1/2W	1300Ω 1/2W

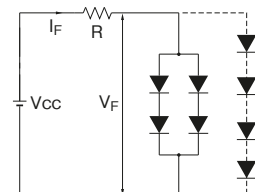
The value of the series resistor can be determined by the formula:

$$R = \frac{V_{CC} - V_F}{I_F}$$

$V_{CC}$ : Supply Voltage

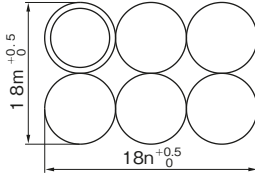
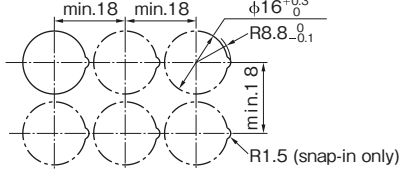
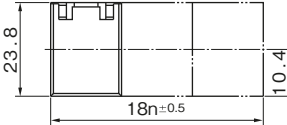
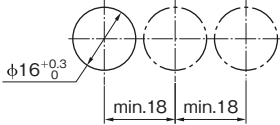
$V_F$ : Forward Voltage

$I_F$ : Forward Current



PANEL LAYOUT / PANEL CUT DIMENSIONS

●  $\phi 15$  Round Button

	Panel Layout	Panel Cut Dimensions
Normal		
With Guard Cover		

※ Panel Cut Dimension should be after Panel Painting.

n : number of switches(horizontal)  
m : number of switches(vertical)

○ Panel thickness    Screw    0.5mm~5mm  
                             Snap-in    1mm~3.2mm  
                             With guard cover    0.5mm~2.7mm  
Tolerance : ±0.4mm

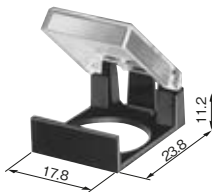
OPTIONAL ACCESSORIES

Guard Cover

Guard Cover prevents inadvertent or unintentional operations. Button can not be operated unless open clear cover.

※ USE FOR SCREW TYPE ONLY

●  $\phi 15$  Round Button,



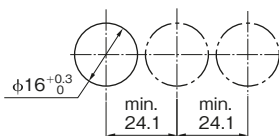
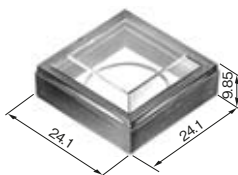
	Black	Gley
Part No.	MH-0931-B	MH-0931-G

Panel Thickness : 0.5mm ~2.7mm

Water-Proof Cover

※ USE FOR SCREW TYPE ONLY

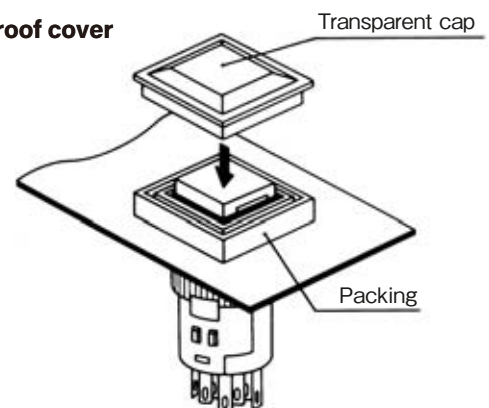
●  $\phi 15$  Round Button



Panel Cut Dimensions

Part No.	MH-456
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● Fixing Water-proof cover



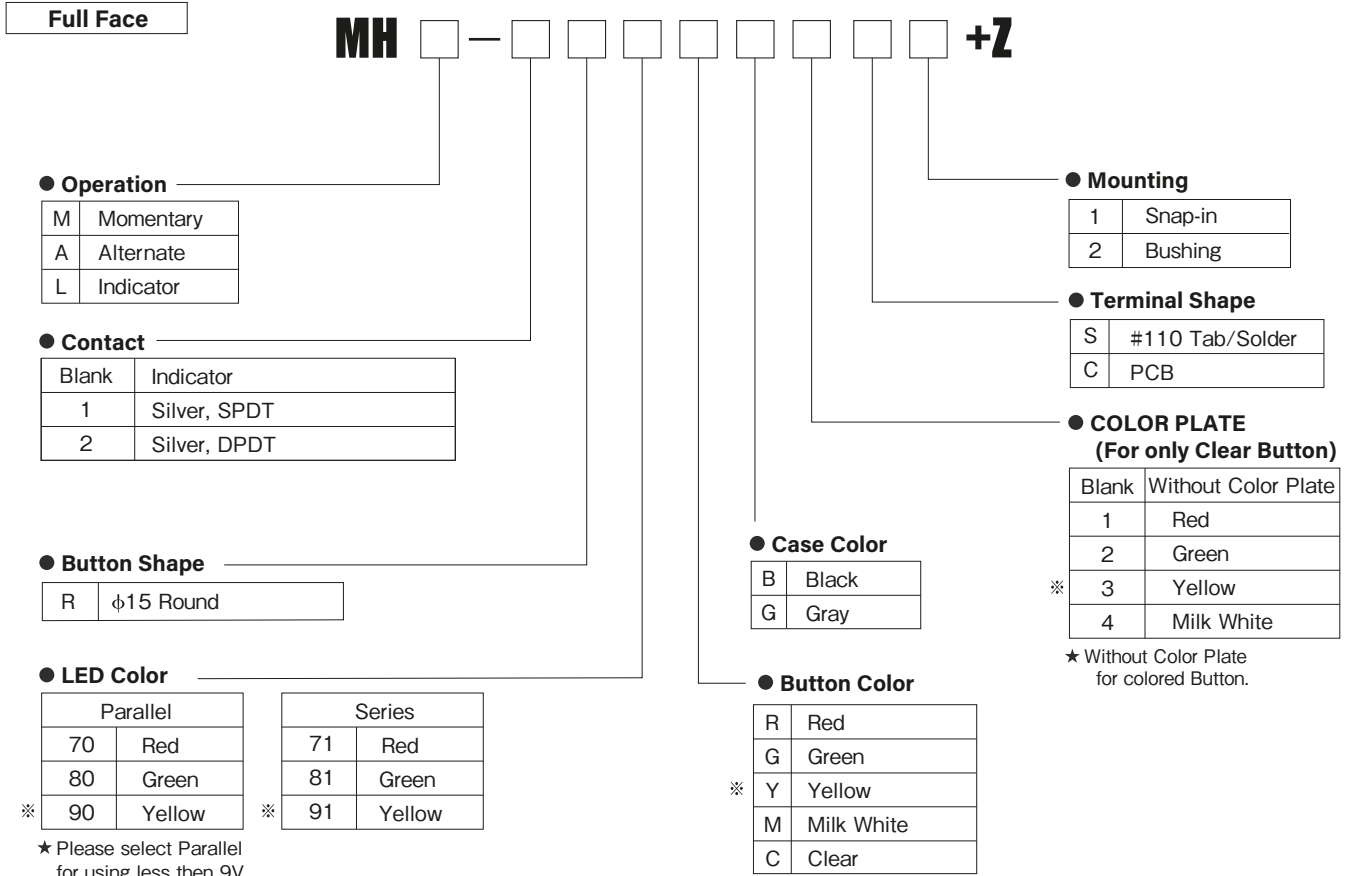
Insert switch into round hole of packing and mount to the the panel. Screw tightly with fitted nut. Fix transparent cap to the packing firmly.

Mounting Wrench (Part No. MH-448)

To mount screw type tightly.



**ORDERING CODE**



※ "Yellow" color for LED/Button/Color Plate is actually "Orange Yellow".