

Indicators M22N

22-mm Indicators

Easy to Use

- Screw terminal structure is compatible with round crimp terminals.

Product Lineup

- Meets global safety standards.
- Many color variations.
- Standard-feature degree of protection: IP66, NEMA 4X, and NEMA 13.



⚠ Refer to *Safety Precautions for All Pushbutton Switches/Indicators* and *Safety Precautions* on page 8.

Indicator Unit Colors

	Red	Green	Yellow	White	Blue	Orange	White
When not lit							
When lit	Red	Green	Yellow	White	Blue	Orange	Opaque white*

* The colors when the Switches are lit are for transparent white Indicator Units (code: TW) and yellow LED Lamps (code: Y).

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M22N

List of Models

Appearance	Model
Plastic flat 	M22N-BN
Plastic projected 	M22N-BP
Plastic semi-spherical 	M22N-BG
Plastic flat etched 	M22N-BC

Model Number Structure

Model Number Legend -- Shipped as a set that includes the Indicator Unit, LED Lamp, and Socket Unit.
For information on combinations, refer to *Ordering Information* on page 4.

Model Numbers for Sets

M 2 2 N - ⁽¹⁾BN - ⁽²⁾TR ⁽³⁾A - ⁽⁴⁾R ⁽⁵⁾A

(1) Indicator Unit Shape (2) Indicator Color and (4) LED Lamp Color (3) Degree of Protection (5) LED Lamp Voltage

Code	Shape
BN	Plastic flat
BP	Plastic projected
BG	Plastic semi-spherical
BC	Plastic flat etched

Code (2)	Code (4)	Indicator color	LED Lamp color
TR	R	Red	Red
TG	G	Green	Green
TY	Y	Yellow	Yellow
TW	W	White	White
TA	A	Blue	Blue
TO	O	Orange	Orange
TW	Y	White*	Yellow

Code	Protection
A	IP66, NEMA 4X, NEMA13

Code	LED Lamp voltage
A	6 VAC/DC
B	12 VAC/DC
C	24 VAC/DC
D	100/110/120 VAC
E	200/220/230/240 VAC

* The color is opaque white when the Indicator is lit.

■ Specifications: Refer to page 5 and refer to the A22NN/A22NL. ■ Precautions for correct use: Refer to the A22NN/A22NL.
■ Dimensions: Refer to page 7. ■ Accessories and tools: Refer to the A22NN/A22NL.

M22N

Ordering Information

Model Numbers for Sets - - - Shipped as a set that includes the Indicator Unit, LED Lamp, and Socket Unit.

Indicators

Appearance	Operating voltage	Model	(2)(2) Indicator color	(4) LED lamp color
Plastic flat 	6 VAC/DC	M22N-BN-(2)(2)A-(4)A	TR: Transparent red TG: Transparent green TY: Transparent yellow TW: Transparent white TA: Transparent blue TO: Transparent orange	R: Red G: Green Y: Yellow W: White A: Blue O: Orange
	12 VAC/DC	M22N-BN-(2)(2)A-(4)B		
	24 VAC/DC	M22N-BN-(2)(2)A-(4)C		
	100, 110, or 120 VAC	M22N-BN-(2)(2)A-(4)D		
	200, 220, 230, or 240 VAC	M22N-BN-(2)(2)A-(4)E		
Plastic projected 	6 VAC/DC	M22N-BP-(2)(2)A-(4)A		
	12 VAC/DC	M22N-BP-(2)(2)A-(4)B		
	24 VAC/DC	M22N-BP-(2)(2)A-(4)C		
	100, 110, or 120 VAC	M22N-BP-(2)(2)A-(4)D		
	200, 220, 230, or 240 VAC	M22N-BP-(2)(2)A-(4)E		
Plastic semi-spherical 	6 VAC/DC	M22N-BG-(2)(2)A-(4)A		
	12 VAC/DC	M22N-BG-(2)(2)A-(4)B		
	24 VAC/DC	M22N-BG-(2)(2)A-(4)C		
	100, 110, or 120 VAC	M22N-BG-(2)(2)A-(4)D		
	200, 220, 230, or 240 VAC	M22N-BG-(2)(2)A-(4)E		
Plastic flat etched 	6 VAC/DC	M22N-BC-(2)(2)A-(4)A		
	12 VAC/DC	M22N-BC-(2)(2)A-(4)B		
	24 VAC/DC	M22N-BC-(2)(2)A-(4)C		
	100, 110, or 120 VAC	M22N-BC-(2)(2)A-(4)D		
	200, 220, 230, or 240 VAC	M22N-BC-(2)(2)A-(4)E		

Note: Normally, the Indicator Unit and LED Lamp with the same color are combined.
 However, opaque white is available by combining a white Indicator Unit and yellow LED. M22N-B□-TWA-Y□

■ Specifications: Refer to page 5 and refer to the A22NN/A22NL. ■ Dimensions: Refer to page 7.
 ■ Accessories and tools: Refer to the A22NN/A22NL.

Ratings and Specifications

Certified Standard Ratings

UL508 (File No.E76675), CSA C22.2 No.14

12 mA 6 VAC/DC
 12 mA 12 VAC/DC
 12 mA 24 VAC/DC
 12 mA 100-120 VAC
 12 mA 200-240 VAC

TÜV (EN60947-5-1)

80 mA 6 VAC/DC
 40 mA 12 VAC/DC
 20 mA 24 VAC/DC
 10 mA 100-120 VAC
 5 mA 200-240 VAC

CCC (GB/T14048.5)

6, 12, 24 VAC/DC
 100-120, 200-240 VAC

Ratings

LED Lamps

Rated voltage	Operating voltage	Current
6 VAC/DC	6 VAC/DC \pm 10%	Approx. 11 mA (red, orange, yellow, or blue) Approx. 5 mA (white or green)
12 VAC/DC	12 VAC/DC \pm 10%	Approx. 12 mA (red, orange, yellow, or blue) Approx. 5 mA (white or green)
24 VAC/DC	24 VAC/DC \pm 10%	Approx. 12 mA (red, orange, yellow, or blue) Approx. 5 mA (white or green)
100 VAC	100 VAC \pm 10%	Approx. 12 mA (red, orange, yellow, or blue) Approx. 5 mA (white or green)
110 VAC	110 VAC \pm 10%	
120 VAC	100-130 VAC	Approx. 12 mA (red, orange, yellow, or blue) Approx. 5 mA (white or green)
200 VAC	200 VAC \pm 10%	
220 VAC	220 VAC \pm 10%	
230 VAC	230 VAC \pm 10%	
240 VAC	220-250 VAC	

M22N

Specifications

Characteristics

Item		Type	Indicator
Allowable operating frequency	Mechanical	---	
	Electrical	---	
Insulation resistance			100 M Ω min. (at 500 VDC)
Contact resistance			---
Dielectric strength	Between terminals of same polarity		2,500 VAC at 50/60 Hz for 1 min
	Between each terminal and ground		2,500 VAC at 50/60 Hz for 1 min
Vibration resistance	Malfunction		10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction		1,000 m/s ² max.
Durability	Mechanical	---	
	Electrical	---	
Ambient operating temperature ^{*1}			-25 to 55°C
Ambient operating humidity			35% to 85% RH
Ambient storage temperature ^{*1}			-40 to 80°C
Degree of protection ^{*2}			IP66, NEMA 4X, NEMA13
Electric shock protection class			Class II
PTI (tracking characteristic)			175
Degree of contamination (application environment)			3 (IEC 60947-5-1)
Weight			Approx. 30 g

*1. With no icing or condensation.

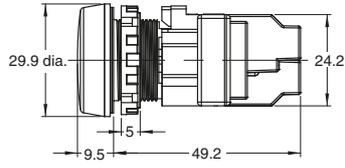
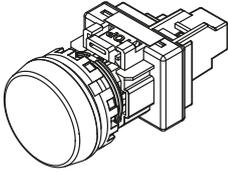
*2. Degree of protection from the front of the panel.

Dimensions

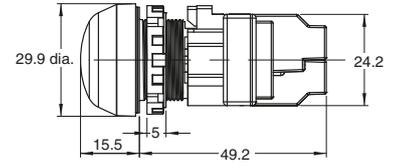
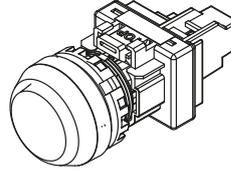
(Unit: mm)

Indicators

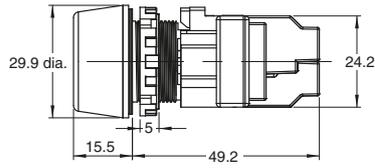
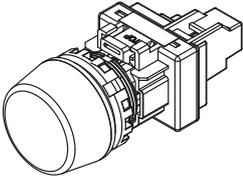
Plastic Flat Indicators M22N-BN



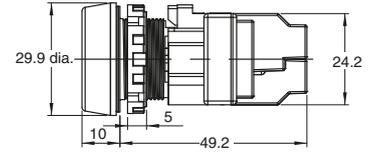
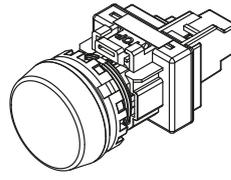
Plastic Semi-spherical Indicators M22N-BG



Plastic Projected Indicators M22N-BP



Plastic Flat Etched Indicators M22N-BC



Safety Precautions

Refer to *Safety Precautions for all Pushbutton Switches/Indicators* for common precautions.

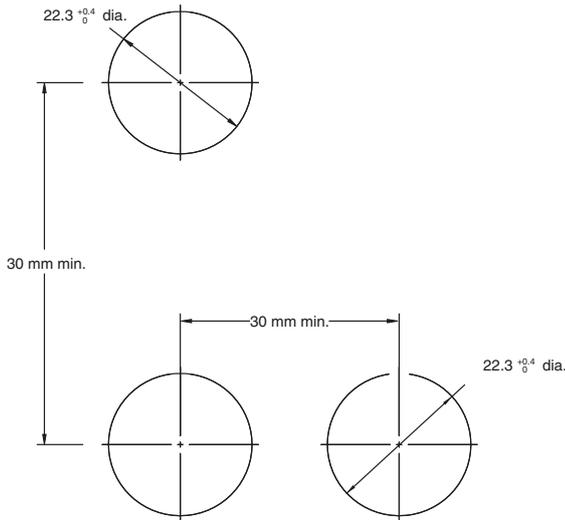
Precautions for Correct Use

Application

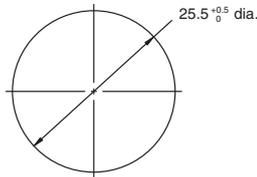
Mounting to the Panel

- Panel hole dimensions are given below.
- The recommended panel thickness is 0.8 to 6 mm.
- If outer surface treatment such as coating is performed for the panel, the panel dimensions after outer surface treatment must meet the specified panel dimensions.

Panel Hole Dimensions for 22.3 Diameter

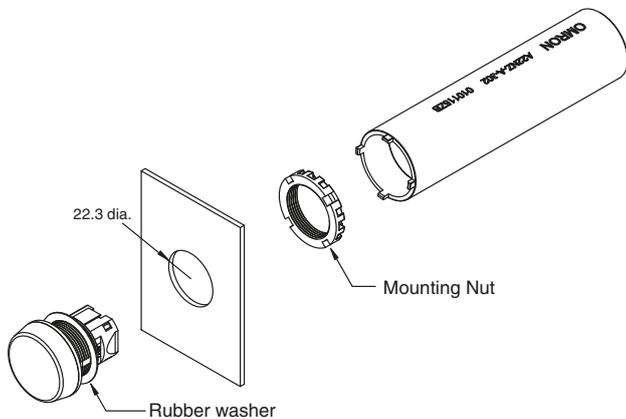


Panel Hole Dimensions for 25.5 Diameter

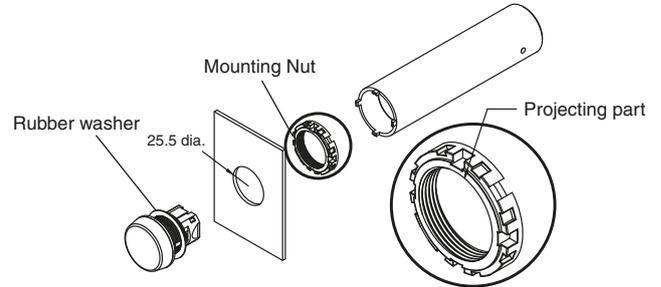


Mounting the Indicator Unit

- Panel Hole of 22.3-mm Diameter
Insert the Indicator Unit from the front of the panel, insert the Lock Ring and Mounting Nut from the back of the panel, and tighten the Mounting Nut. Before tightening, check that the rubber washer is present between the Indicator Unit and the panel.

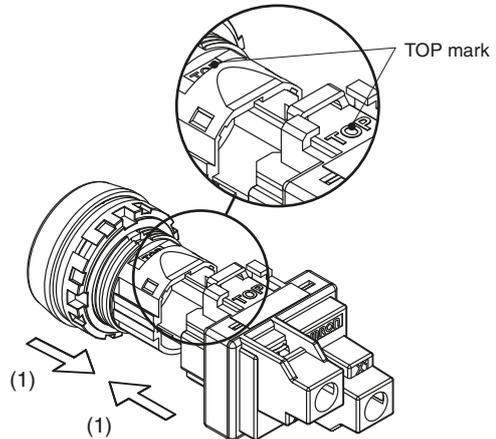


- Panel Hole of 25.5-mm Diameter
Tighten the Mounting Nut while confirming that the projecting part (see following figure) on the Mounting Nut is aligned with mounting hole.



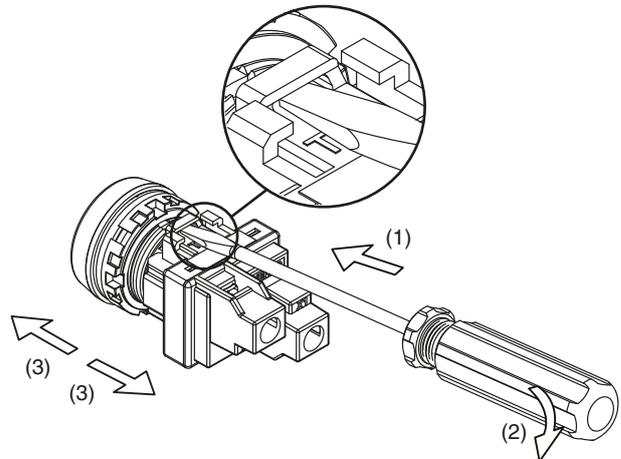
Attaching the Switch Unit to the Indicator Unit

- Align the "TOP" marks on the Indicator Unit and Switch Unit and insert the Indicator Unit into the Switch Unit. Insert it all the way until it clicks into place.



Removing the Switch Unit

- Insert a screwdriver into the tab on the Switch Unit. Move the screwdriver in direction (2) to remove the Switch Unit.



Engraving

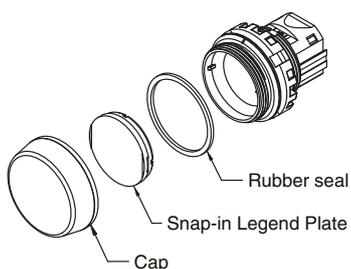
- Engrave legends on the Legend Plates.
Do so with the straight part of the Legend Plate positioned on the right and left.
- The characters must be engraved no deeper than 0.5 mm. Use an alcohol-based paint, such as a melamine, phthalic acid, or acrylic resin based paint.



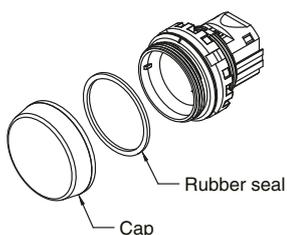
Attaching Character Films

- To attach a character film, remove the Button and attach the film, aligning it with the straight portions of the Legend Plate.

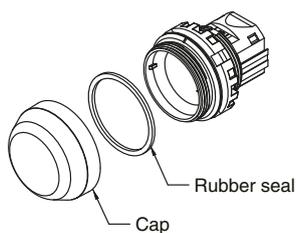
Flat Etched Indicator Units



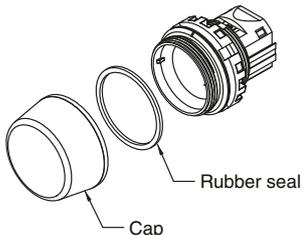
Flat Indicator Units



Semi-spherical Indicator Units



Projected Indicator Units



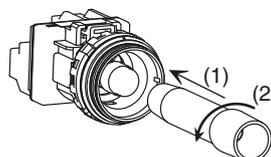
- Prepare films with the following dimensions.

<p>Legend Plate dimensions</p>	<p>21 dia. 1</p>
<p>Film dimensions</p>	<p>22.7⁰_{-0.2} dia. 20.8⁰_{-0.2} T = 0.1 to 0.2 mm</p>

Attaching and Replacing LED Lamps

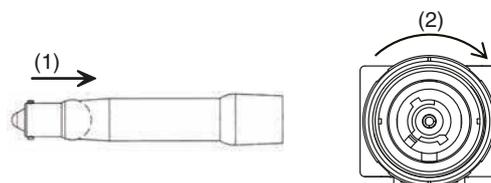
Removing the LED Lamp from the Panel Surface

- Insert the LED Lamp Extractor as shown in the following figure and then rotate the Extractor in the direction shown at (2) while pressing it inward.



Attaching the LED Lamp from the Panel Surface

- Insert the LED Lamp into the LED Lamp Extractor as shown in the following figure. Align the projections on the LED Lamp with the LED Lamp insertion guides, insert the LED Lamp, and turn it in the direction indicated at (2).



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