

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 7.

Indicator Unit Colors

| | Red | Green | Yellow | White | Blue | Orange | White |
|--------------|---|---|---|---|---|---|---|
| When not lit |  |  |  |  |  |  |  |
| When lit |  |  |  |  |  |  |  |

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

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 6. ■ Accessories and tools: Refer to the A22NN/A22NL.



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 6.
 ■ Accessories and tools: Refer to the A22NN/A22NL.

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.

M22N

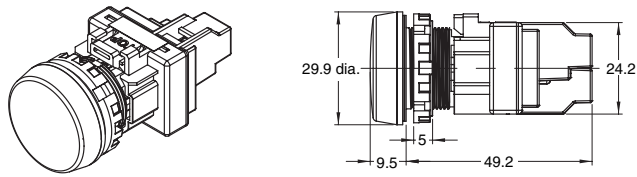
Dimensions

(Unit: mm)

Indicators

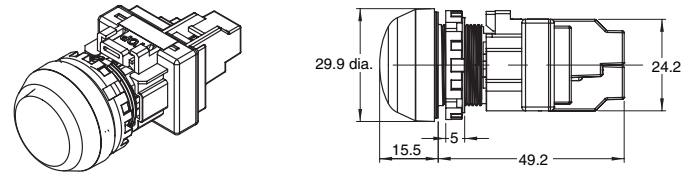
Plastic Flat Indicators

M22N-BN



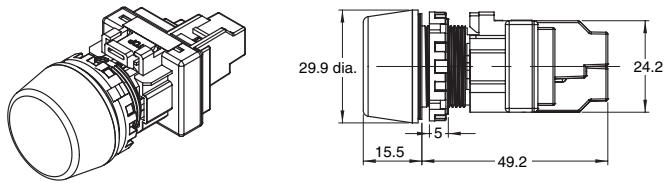
Plastic Semi-spherical Indicators

M22N-BG



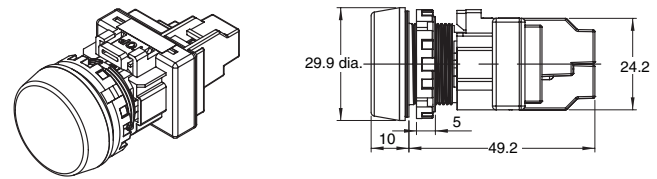
Plastic Projected Indicators

M22N-BP



Plastic Flat Etched Indicators

M22N-BC



Safety Precautions

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

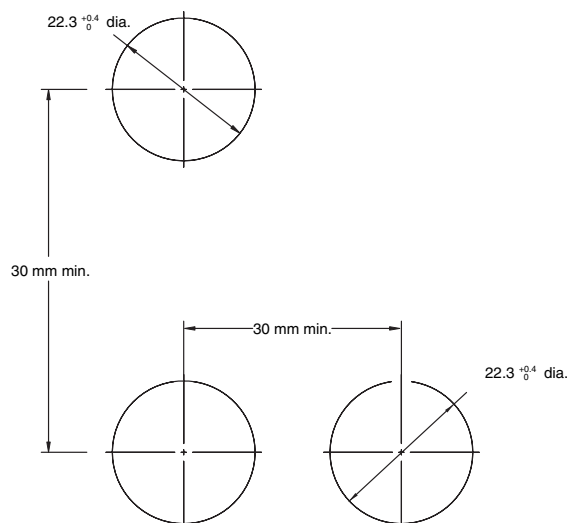
Precautions for Correct Use

Application

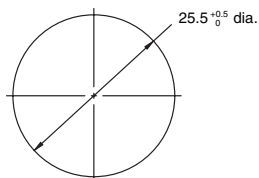
Mounting to the Panel

- 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

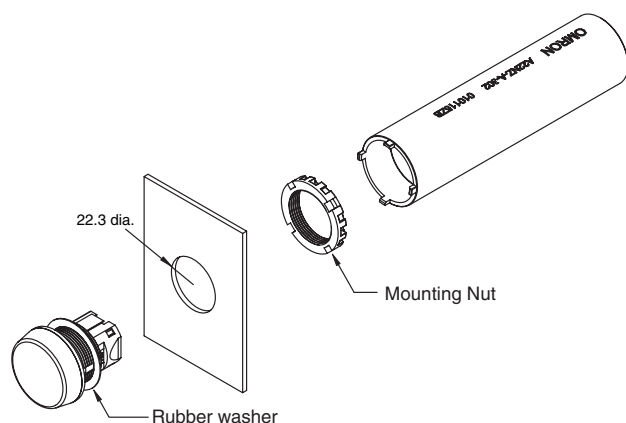


Panel Hole Dimensions for 25.5 Diameter



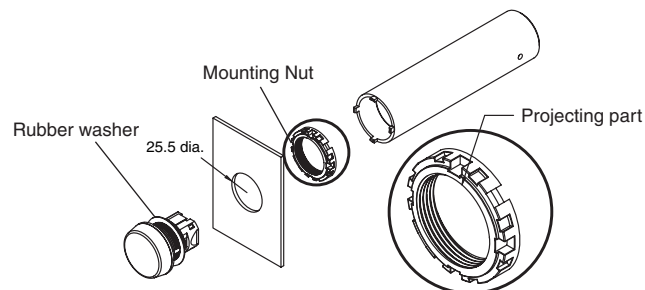
Mounting the Indicator Unit

- 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.



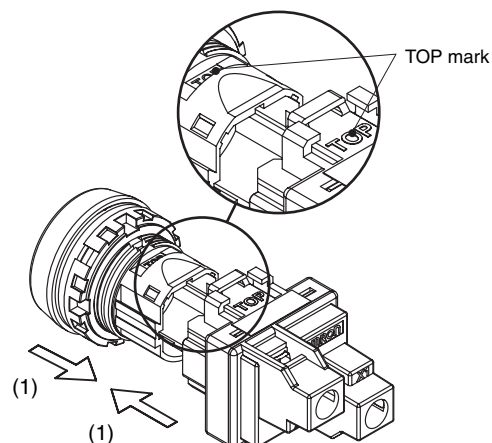
- Panel Hole of 25.5-mm Diameter

Tighten the Mounting Nut while confirming that the projecting part (see following figure) on the Mounting Nut is aligned with mounting hole.



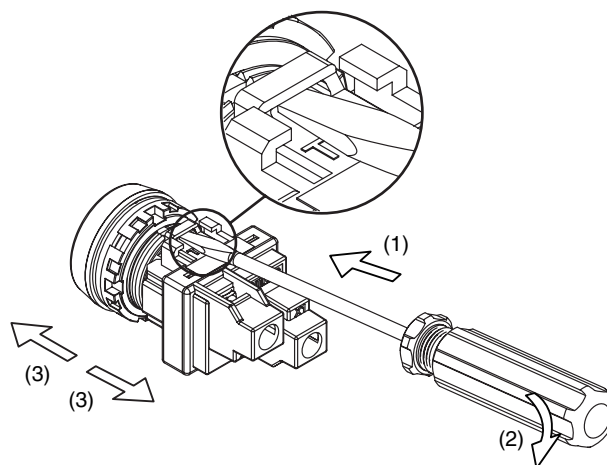
Attaching the Switch Unit to the Indicator Unit

- 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

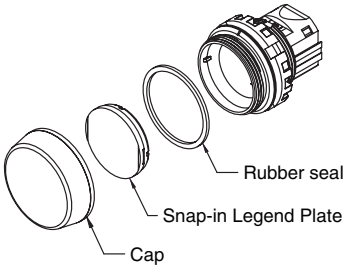
- Engrave legends on the Legend Plates.
Do so with the straight part of the Legend Plate positioned on the right and left.
- The characters must be engraved no deeper than 0.5 mm. Use an alcohol-based paint, such as a melamine, phthalic acid, or acrylic resin based paint.



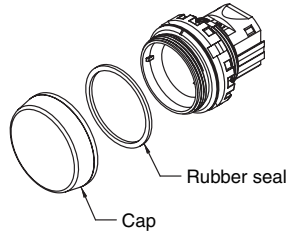
Attaching Character Films

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

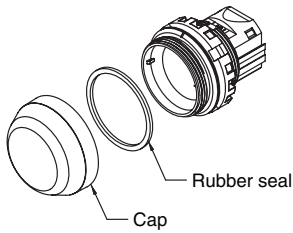
Flat Etched Indicator Units



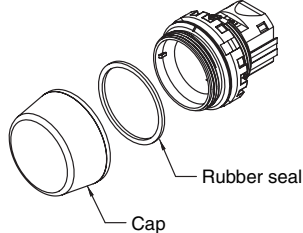
Flat Indicator Units



Semi-spherical Indicator Units



Projected Indicator Units



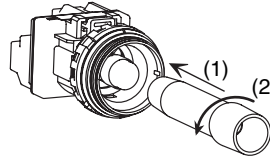
- Prepare films with the following dimensions.

| | |
|---------------------------------------|---|
| <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

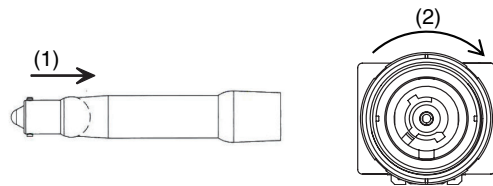
Removing the LED Lamp from the Panel Surface

- 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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