

# Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) A22NE-PD/A22NE-P/A22E

Install in 22-dia. or 25-dia.

**Panel Cutout** (When Using a Ring)

- A wide variety of Emergency Stop Pushbuttons for all type of applications.
- Lock lever design provides quick and easy installation.
- Available vibration resistant terminals (A22NE-P & A22NE-PD).
- Use 25-dia. ring to install in 25-dia. panel cutouts. \*
- Lock detection function provides an added level of safety by minimizing emergency stop button failures from improper installation and damage.

\* Switches with an IP69K degree of protection do not support the 25-dia.

⚠ Be sure to read the "Safety Precautions" on pages 17, 33, 50, and 56.

Premium - Lock detection and Vibration resistant  
A22NE-PD

Page 2



Push-in Plus  
Terminal Block Types

Mid-grade - Vibration Resistant  
A22NE-P

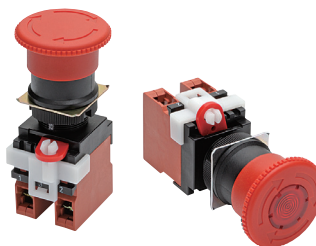
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Screw Terminal  
Block Types

Standard  
A22E

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# A22NE-PD

## Install in 22-dia. or 25-dia. Panel Cutout

(When Using a Ring)

- Push-in plus terminals greatly reduce wiring effort and provide vibration resistant connections.
- A maximum of up to four contact points can be combined together in the contact-point configuration.
- Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models) / IP69K high-temperature, high-pressure cleaning (pull-reset models).
- Lock Detection function disconnects circuit when the switch lock lever becomes unlocked from damage or improper installation.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.



Be sure to read the "Safety Precautions" on pages 12 and 56.

## Model Number Structure

**Model Number Legend (Completely Assembled)** ..... Shipped as a set which includes the Operation Unit, LED Lamp (lighted models only), and Switch Block.

A22NE- 1 2 - P D 5 - 6 - 7

### 1. Operation Unit size (diameter)

| Code | Description |
|------|-------------|
| S    | 30 dia.     |
| M    | 40 dia.     |
| L    | 60 dia.     |

### 2. Reset function

| Code | Description  |
|------|--------------|
| None | Turn-reset   |
| P    | Pull-reset * |

\* The pull-reset type is only available on the 40 dia. Operation Unit, non-lighted type.  
Not available on lighted types.

### 3. Terminal specification

| Code | Description                 |
|------|-----------------------------|
| P    | Push-in plus terminal block |

### 4. Lock lever function

| Code | Description                        |
|------|------------------------------------|
| D    | Lock-lever-linked contact function |

### 5. Contacts

| Code | Number of Contacts | Contacts |    |
|------|--------------------|----------|----|
|      |                    | NO       | NC |
| 01   | one contact        | 0        | 1  |
| 02   | two contacts       | 0        | 2  |
| 11   |                    | 1        | 1  |
| 03   | three contacts     | 0        | 3  |
| 21   |                    | 2        | 1  |
| 12   |                    | 1        | 2  |
| 22   | four contacts      | 2        | 2  |
| 13   |                    | 1        | 3  |
| 04   |                    | 0        | 4  |

Note. NO: 1a-contact NC: 1b-contact

### 6. LED lamp voltage

| Code | Description |
|------|-------------|
| N    | Non-lighted |
| C    | 24 VAC/VDC  |

\* Lighting color is red.

### 7. Others (Degree of Protection)

| Code | Description |
|------|-------------|
| None | IP65        |
| 69K  | IP69K *     |

\* IP69K is supported only by the Pull-reset models.

## A22NE-PD

## Ordering Information

## List of Models (Completely Assembled)

## Non-lighted Models (Without EMO/EMS Indication)

| Appearance                                                                          | Operation                                                | Degree of Protection      | Contact configuration * | Set Model           | Color of cap |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------|-------------------------|---------------------|--------------|
|    | 40-dia. head<br>Medium Pull-reset<br>A22NE-MP-PD□□-N     | IP65 oil-resistant models | 2NC                     | A22NE-MP-PD02-N     | Red          |
|                                                                                     |                                                          |                           | 2NC, 1NO                | A22NE-MP-PD12-N     |              |
|                                                                                     |                                                          |                           | 3NC                     | A22NE-MP-PD03-N     |              |
|                                                                                     |                                                          |                           | 2NC, 2NO                | A22NE-MP-PD22-N     |              |
|                                                                                     |                                                          |                           | 3NC, 1NO                | A22NE-MP-PD13-N     |              |
|                                                                                     |                                                          |                           | 4NC                     | A22NE-MP-PD04-N     |              |
|    | 40-dia. head<br>Medium Pull-reset<br>A22NE-MP-PD□□-N-69K | IP69K                     | 2NC                     | A22NE-MP-PD02-N-69K |              |
|                                                                                     |                                                          |                           | 2NC, 1NO                | A22NE-MP-PD12-N-69K |              |
|                                                                                     |                                                          |                           | 3NC                     | A22NE-MP-PD03-N-69K |              |
|                                                                                     |                                                          |                           | 2NC, 2NO                | A22NE-MP-PD22-N-69K |              |
|                                                                                     |                                                          |                           | 3NC, 1NO                | A22NE-MP-PD13-N-69K |              |
|                                                                                     |                                                          |                           | 4NC                     | A22NE-MP-PD04-N-69K |              |
|    | 30-dia. head<br>Small Turn-reset<br>A22NE-S-PD□□-N       | IP65 oil-resistant models | 2NC                     | A22NE-S-PD02-N      |              |
|                                                                                     |                                                          |                           | 2NC, 1NO                | A22NE-S-PD12-N      |              |
|                                                                                     |                                                          |                           | 3NC                     | A22NE-S-PD03-N      |              |
|                                                                                     |                                                          |                           | 2NC, 2NO                | A22NE-S-PD22-N      |              |
|                                                                                     |                                                          |                           | 3NC, 1NO                | A22NE-S-PD13-N      |              |
|                                                                                     |                                                          |                           | 4NC                     | A22NE-S-PD04-N      |              |
|   | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-PD□□-N      | IP65 oil-resistant models | 2NC                     | A22NE-M-PD02-N      |              |
|                                                                                     |                                                          |                           | 2NC, 1NO                | A22NE-M-PD12-N      |              |
|                                                                                     |                                                          |                           | 3NC                     | A22NE-M-PD03-N      |              |
|                                                                                     |                                                          |                           | 2NC, 2NO                | A22NE-M-PD22-N      |              |
|                                                                                     |                                                          |                           | 3NC, 1NO                | A22NE-M-PD13-N      |              |
|                                                                                     |                                                          |                           | 4NC                     | A22NE-M-PD04-N      |              |
|  | 60-dia. head<br>Large Turn-reset<br>A22NE-L-PD□□-N       | IP65 oil-resistant models | 2NC                     | A22NE-L-PD02-N      |              |
|                                                                                     |                                                          |                           | 2NC, 1NO                | A22NE-L-PD12-N      |              |
|                                                                                     |                                                          |                           | 3NC                     | A22NE-L-PD03-N      |              |
|                                                                                     |                                                          |                           | 2NC, 2NO                | A22NE-L-PD22-N      |              |
|                                                                                     |                                                          |                           | 3NC, 1NO                | A22NE-L-PD13-N      |              |
|                                                                                     |                                                          |                           | 4NC                     | A22NE-L-PD04-N      |              |

\* In addition to the above, we also provide the following contact configurations: [1NC], [1NC, 1NO], and [1NC, 2NO]. Ask your OMRON representative for details.

## Lighted Model (Without EMO/EMS Indication)

| Appearance                                                                          | Operation                                           | Degree of Protection | Contact configuration * | LED lamp voltage | Set Model      | Color of cap |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|-------------------------|------------------|----------------|--------------|
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-PD□□-C | IP65                 | 2NC                     | 24 V AC/DC       | A22NE-M-PD02-C | Red          |
|                                                                                     |                                                     |                      | 2NC, 1NO                |                  | A22NE-M-PD12-C |              |
|                                                                                     |                                                     |                      | 3NC                     |                  | A22NE-M-PD03-C |              |
|                                                                                     |                                                     |                      | 2NC, 2NO                |                  | A22NE-M-PD22-C |              |
|                                                                                     |                                                     |                      | 3NC, 1NO                |                  | A22NE-M-PD13-C |              |
|                                                                                     |                                                     |                      | 4NC                     |                  | A22NE-M-PD04-C |              |

\* In addition to the above, we also provide the following contact configurations: [1NC], [1NC, 1NO], and [1NC, 2NO]. Ask your OMRON representative for details.

**Accessories (Order Separately)**

Operation Unit

Non-lighted

|            |                           | Size | Small (30 dia.)                                                                                         | Medium (40 dia.)                                                                                                                    | Large (60-dia.)                                                                                           |
|------------|---------------------------|------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Function   | Degree of protection      |      | Single item order model                                                                                 |                                                                                                                                     |                                                                                                           |
| Pull-reset | IP65 oil-resistant models |      | ---                                                                                                     | <b>A22NE-MP-N</b><br>                             | ---                                                                                                       |
|            | IP69K                     |      | ---                                                                                                     | <b>A22NE-MP-N-69K</b><br>                         | ---                                                                                                       |
| Turn-reset | IP65 oil-resistant models |      | <b>A22NE-S-N</b><br> | <b>A22NE-M-N</b><br>                              | <b>A22NE-L-N</b><br> |
|            |                           |      |                                                                                                         | <b>A22NE-MRO-N</b><br><b>A22NE-MRO-N-RD</b><br> |                                                                                                           |
|            |                           |      |                                                                                                         | <b>A22NE-MRS-N</b><br><b>A22NE-MRS-N-RD</b><br> |                                                                                                           |

**Lighted**

|            |                    | Size | Medium (40 dia.)                                                                                        |
|------------|--------------------|------|---------------------------------------------------------------------------------------------------------|
| Function   | Sealing capability |      | Single item order model                                                                                 |
| Turn-reset | IP65               |      | <b>A22NE-M-L</b><br> |

**LED lamp**

| Appearance                                                                          | LED light | Rated voltage | Model             | Remarks                                                                                                           |
|-------------------------------------------------------------------------------------|-----------|---------------|-------------------|-------------------------------------------------------------------------------------------------------------------|
|  | Red       | 24 V AC/DC    | <b>A22NZ-L-RC</b> | These are provided with the completely assembled set of lighted models. Order LED Lamps only when replacing them. |

**Note:** For details on the accessories common to the screw terminal block models and push-in plus terminal block models, refer to "Common Accessories and Tools (Order Separately)" on page 51.

## A22NE-PD

## Specifications

## Certified Standard Ratings

- UL508 (File No. E76675), CSA C22.2 No.14  
5 A at 125 VAC, 3 A at 250 VAC B300
- TÜV (EN60947-5-1) - Certified direct opening -  
(EN60947-5-5)  
AC-15 3 A at 125 VAC  
DC-13 1 A at 30 VDC
- CCC (GB14048.5)  
AC-15 3 A at 125 VAC  
DC-13 1 A at 30 VDC

## Applicable Standards

UL1059, UL486E

**Note:** Use a 10 A fuse type gI or gG that conforms to IEC60269 as a short-circuit protection device. This fuse is not provided in the main unit.

## Ratings

## Contacts (Standard Load)

| Rated insulation voltage (V) | Rated carry current (A) | Rated voltage (V) | Rated current (A)        |                          |                          |                          |
|------------------------------|-------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                              |                         |                   | AC15<br>(Inductive load) | AC12<br>(Resistive load) | DC13<br>(Inductive load) | DC12<br>(Resistive load) |
| 250                          | 5                       | 30 VAC            | ---                      | ---                      | ---                      | ---                      |
|                              |                         | 125 VAC           | 3 A                      | 5 A                      | ---                      | ---                      |
|                              |                         | 250 VAC           | 1.5 A                    | 3 A                      | ---                      | ---                      |
|                              |                         | 30 VDC            | ---                      | ---                      | 1 A                      | 2 A                      |
|                              |                         | 125 VDC           | ---                      | ---                      | 0.22 A                   | 0.4 A                    |
|                              |                         | 250 VDC           | ---                      | ---                      | 0.1 A                    | 0.2 A                    |

- Note:** 1. The above ratings were obtained by conducting tests under the following conditions.  
(1) Ambient temperature: 20°±2°C  
(2) Ambient humidity: 65±5%  
(3) Operating frequency: 20 operations/minute
2. Minimum applicable load: 1 mA at 5 VDC (Resistive load)  
The operating range may vary depending on the usage conditions and type of load.

## Certified Standards

| Certification body | Standards                                                 | File No.                                       |
|--------------------|-----------------------------------------------------------|------------------------------------------------|
| UL *               | UL508, C22.2 No.14                                        | E76675                                         |
| TÜV SÜD            | EN60947-5-1<br>(Certified direct opening),<br>EN60947-5-5 | Consult your OMRON representative for details. |
| CQC (CCC)          | GB14048.5                                                 | Consult your OMRON representative for details. |

**Note:** Only models with NC contacts have a direct opening mechanism.

\* UL-certification for CSA C22.2 No. 14 has been obtained.

## LED Lamp (A22NZ-L-RC)

| Rated voltage | Operating voltage | Current value |
|---------------|-------------------|---------------|
| 24 VAC/VDC    | 24 VAC/VDC ± 10%  | Approx. 12 mA |

## Characteristics

| Operation                                         |                                                | Turn-reset                                                                         |                  | Pull-reset                |                                                                               |
|---------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------|------------------|---------------------------|-------------------------------------------------------------------------------|
|                                                   |                                                | Non-lighted model                                                                  | Lighted Model    | Non-lighted model         | Non-lighted model (Models with IP69K)                                         |
| Item                                              |                                                | A22NE-□-PD□□-N-□                                                                   | A22NE-M-PD□□-C-□ | A22NE-MP-PD□□-N-□         | A22NE-MP-PD□□-N-69K                                                           |
| Allowable operating frequency                     | Mechanical                                     | 30 operations/minute or less (One operation consists of set and reset operations.) |                  |                           |                                                                               |
|                                                   | Electrical                                     | 30 operations/minute or less (One operation consists of set and reset operations.) |                  |                           |                                                                               |
| Insulation resistance *1                          |                                                | 100 MΩ min. (at 500 VDC)                                                           |                  |                           |                                                                               |
| Contact resistance                                |                                                | 100 mΩ max. (initial value)                                                        |                  |                           |                                                                               |
| Dielectric strength                               | Between terminals of same polarity*1           | 2,000 VAC, 50/60 Hz 1 minute (initial value)                                       |                  |                           |                                                                               |
|                                                   | Between terminals of different polarity        | 2,000 VAC, 50/60 Hz 1 minute (initial value)                                       |                  |                           |                                                                               |
|                                                   | Between each terminal and ground               | 2,000 VAC, 50/60 Hz 1 minute (initial value)                                       |                  |                           |                                                                               |
| Vibration resistance                              | Malfunction                                    | 10 to 55 Hz, 1.5 mm double amplitude (contact separation within 1 ms)              |                  |                           |                                                                               |
| Shock resistance                                  | Malfunction                                    | 250 m/s <sup>2</sup> max. (contact separation within 1 ms)                         |                  |                           |                                                                               |
| Durability                                        | Mechanical                                     | 300,000 operations min. (One operation consists of set and reset operations.)      |                  |                           | 100,000 operations min. (One operation consists of set and reset operations.) |
|                                                   | Electrical (100 mA at 24 VAC (Resistive load)) | 250,000 operations min. (One operation consists of set and reset operations.)      |                  |                           | 100,000 operations min. (One operation consists of set and reset operations.) |
|                                                   | Electrical (3 mA at 250 VAC (Resistive load))  | 100,000 operations min. (One operation consists of set and reset operations.)      |                  |                           |                                                                               |
| Ambient operating temperature *2                  |                                                | -20 to +70°C                                                                       | -20 to +55°C     | -20 to +70°C              | -20 to +70°C *3                                                               |
| Ambient operating humidity                        |                                                | 35 to 85% RH                                                                       |                  |                           |                                                                               |
| Ambient storage temperature *2                    |                                                | -40 to +70°C                                                                       |                  |                           |                                                                               |
| Degree of protection *4                           |                                                | IP65 oil-resistant models                                                          | IP65             | IP65 oil-resistant models | IP69K                                                                         |
| Electric shock protection class                   |                                                | Class II                                                                           |                  |                           |                                                                               |
| PTI (tracking characteristic)                     |                                                | 175                                                                                |                  |                           |                                                                               |
| Degree of contamination                           |                                                | 3 (EN 60947-5-1)                                                                   |                  |                           |                                                                               |
| Minimum direct opening stroke                     |                                                | 11 mm                                                                              |                  |                           |                                                                               |
| Minimum direct opening force                      |                                                | 45 N                                                                               |                  |                           |                                                                               |
| Conditional short-circuit current                 |                                                | 100 A (EN 60947-5-1)                                                               |                  |                           |                                                                               |
| Wight (for a 40-dia. head 2NC/2NO Operation Unit) |                                                | Approx. 95 g                                                                       | Approx. 95 g     | Approx. 125 g             | Approx. 135 g                                                                 |

\*1. State when an LED is not added between terminals of the same polarity on a lighting unit.

\*2. With no icing or condensation.

\*3. Capable of operation at up to 80°C under IP□9K testing conditions per JIS D 5020.

\*4. The degree of protection from the front of the panel.

## Operating Characteristics

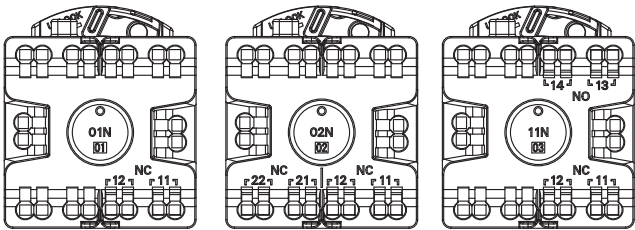
| Item                     | Turn-reset                   | Pull-reset        |                                       |
|--------------------------|------------------------------|-------------------|---------------------------------------|
|                          | Lighted / non-lighted models | Non-lighted model | Non-lighted model (Models with IP69K) |
| Total travel force (TTF) | 45 N max.                    | 60 N max.         | 70 N max.                             |
| Return force (RF)        | 0.25N·m max. *               | 60 N max.         | 70 N max.                             |
| Total travel (TT)        | 10 ±1 mm                     | 5.5 ±1 mm         |                                       |

\* Rotation torque value.

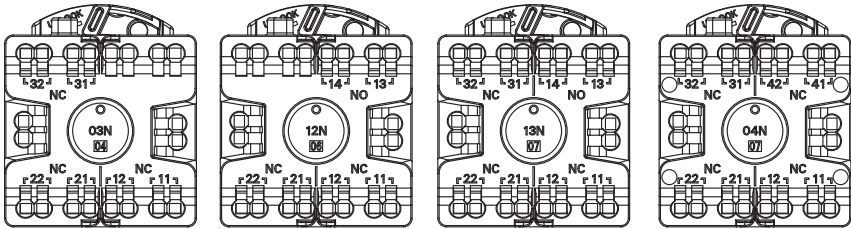
A22NE-PD

Terminal Arrangement (BOTTOM VIEW)

Non-lighted



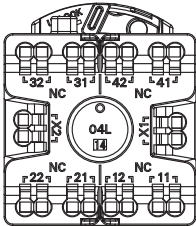
One contact (1NC)      Two contacts (2NC)      Two contacts (1NC + 1NO)



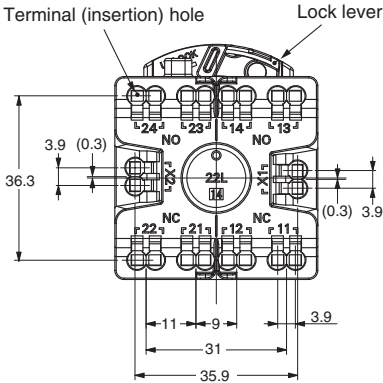
Three contacts (3NC)      Three contacts (2NC + 1NO)      Four contacts (3NC + 1NO)      Four contacts (4NC)

**Lighted**

The switch terminal is same as that in the non-lighted models.  
Indicates the terminals for lighting (X1-X2).  
(Example: Four contacts (4NC) Lighted models)



**Terminal arrangement**

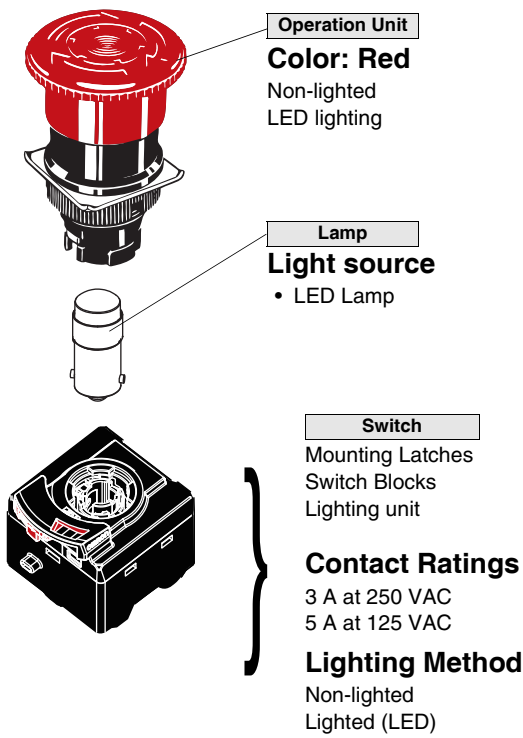


Terminal Arrangement

| Type        | Terminal Arrangement (BOTTOM VIEW)                                     |                                                                                                                  |                                                                                                                  |                                                                                                                  |
|-------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|             | 1NC, 1NO (two contacts)                                                | 2NC, 2NO (four contacts)                                                                                         | 3NC, 1NO (four contacts)                                                                                         | 4NC (four contacts)                                                                                              |
| Non-lighted | <div>NO<br/>14 — 13</div> <div>NC<br/>12 — 11</div>                    | <div>NO      NO<br/>24 — 23      14 — 13</div> <div>NC      NC<br/>22 — 21      12 — 11</div>                    | <div>NC      NO<br/>32 — 31      14 — 13</div> <div>NC      NC<br/>22 — 21      12 — 11</div>                    | <div>NC      NC<br/>32 — 31      42 — 41</div> <div>NC      NC<br/>22 — 21      12 — 11</div>                    |
| Lighted     | <div>NO<br/>14 — 13</div> <div>X2 — X1</div> <div>NC<br/>12 — 11</div> | <div>NO      NO<br/>24 — 23      14 — 13</div> <div>X2 — X1</div> <div>NC      NC<br/>22 — 21      12 — 11</div> | <div>NC      NO<br/>32 — 31      14 — 13</div> <div>X2 — X1</div> <div>NC      NC<br/>22 — 21      12 — 11</div> | <div>NC      NC<br/>32 — 31      42 — 41</div> <div>X2 — X1</div> <div>NC      NC<br/>22 — 21      12 — 11</div> |

**Note:** The terminal arrangement shows the representative. It depends on the number of contacts in the series.

Structure and Nomenclature



A22NE-PD

A22NE-P

A22E

Common Accessories and Tools

Common Note

# A22NE-PD

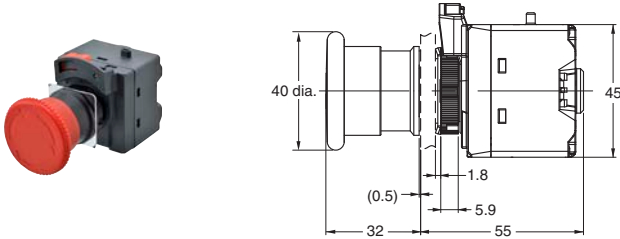
## Dimensions

(Unit: mm)

### Non-lighted Models

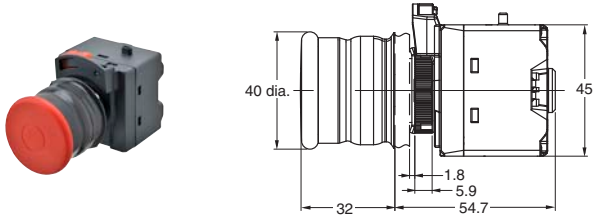
#### A22NE-MP-PD□□-N

Pull-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



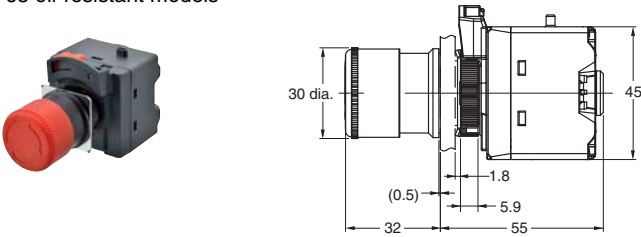
#### A22NE-MP-PD□□-N-69K

Pull-reset (40-dia.) Degree of Protection: IP69K



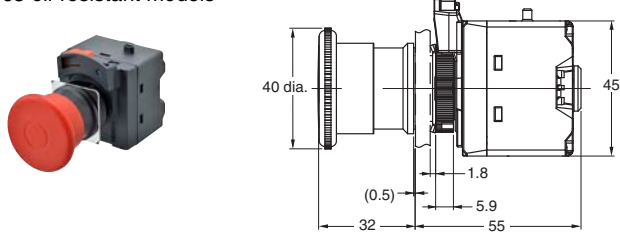
#### A22NE-S-PD□□-N

Small Turn-reset (30-dia.) Degree of Protection: IP65 oil-resistant models



#### A22NE-M-PD□□-N

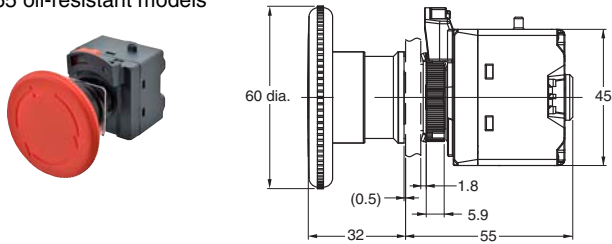
Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



**Note:** The dimensions the same even if the Operation Unit is replaced with the A22NE-MR□□-N or the A22NE-MR□□-N-RD.

#### A22NE-L-PD□□-N

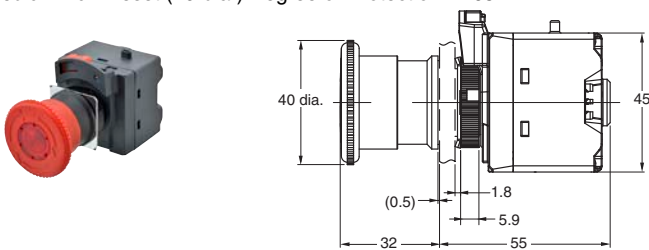
Large Turn-reset (60-dia.) Degree of Protection: IP65 oil-resistant models



### Lighted Model

#### A22NE-M-PD□□-C

Medium Turn-reset (40-dia.) Degree of Protection: IP65

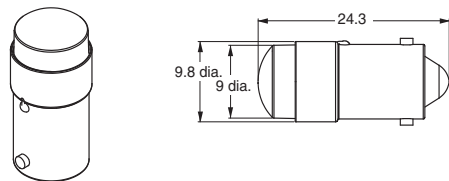


**Note:** Unless otherwise specified, a tolerance of  $\pm 0.8\text{mm}$  applies to all dimensions.

### Accessories (Order Separately)

#### LED Lamp

#### A22NZ-L-RC



**Note:** For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

# Application

## Mounting to the Panel

### (1) Preparing the Panel

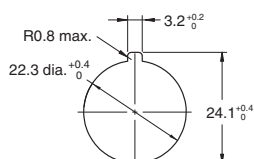
#### Panel hole dimension and panel thickness

- 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 dimension | Panel thickness |
|----------------------|-----------------|
| 22.3 dia.            | 1 to 5 mm       |

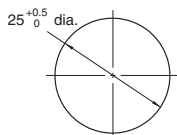


#### When using a A22Z-3360 (Order Separately) Lock Ring



#### For 25-dia.

- Use the A22Z-R25 (Order Separately) rubber ring.
- \* Switches with an IP69K degree of protection do not support the 25-dia.



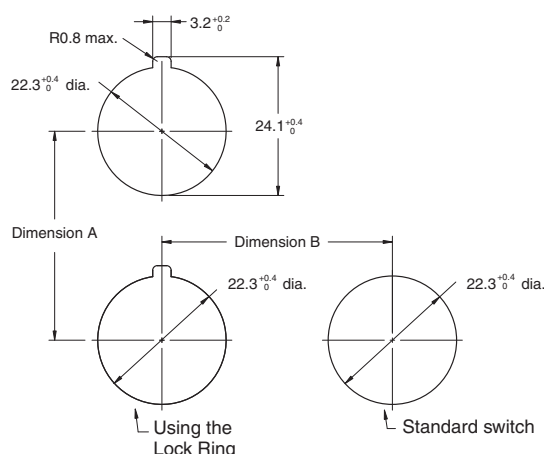
### (2) Minimum mounting pitch (Dimension A, Dimension B)

#### Minimum mounting pitch

| Type of operation unit  | Dimension A (mm) min. | Dimension B (mm) min. |
|-------------------------|-----------------------|-----------------------|
| 30-dia., 40-dia. models | 50 *1                 | 50                    |
| 60-dia. model           | 70                    | 70                    |

- \*1. If the Switch Unit lock levers all face the same direction at the minimum mounting pitch, be sure to note the order the Switch Units are attached to the Operation Unit.
- \*2. When using each accessory (Order Separately), set the A and B dimensions in view of the dimensions of the accessories.
- \*3. Make sure the mounting pitch does not hinder the operation.

#### Panel Hole Dimensions for 22.3 Diameter

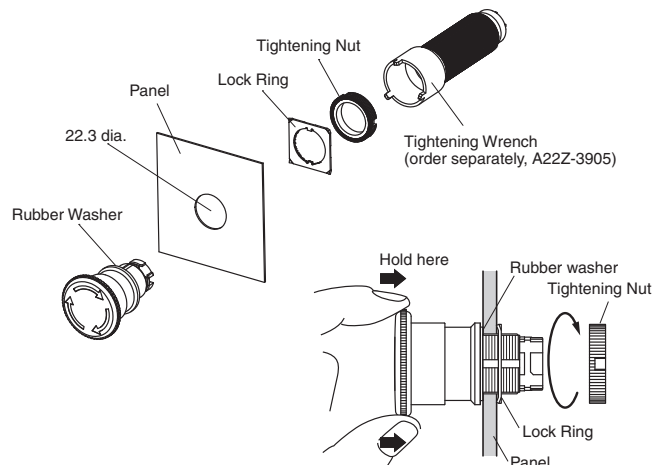


### (3) Mounting the Operation Unit on the Panel

- Do not tighten the Tightening Nut more than necessary using tools such as pointed-nose pliers.
- Doing so will damage the Tightening Nut.  
(The tightening torque of the Tightening Nut is 1.0 to 2.0 N·m.)  
Tightening Wrench: A22Z-3905

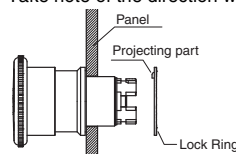
#### Panel Hole of 22.3-mm Diameter

- Insert the Operation Unit from the front of the panel, insert the Lock Ring and Tightening Nut from the back of the panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



#### When the A22Z-3360 Lock Ring (Order Separately) is used

- Take note of the direction when mounting the Lock Ring.

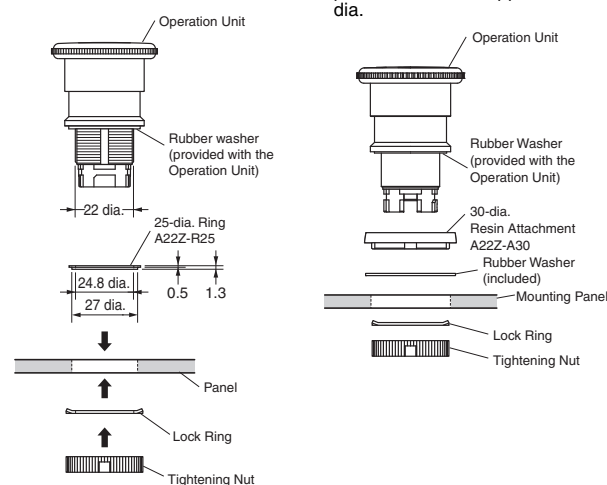


#### Panel Hole of 25-mm Diameter

- Insert the A22Z-R25 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer supplied with the Operation Unit is present between the Operation Unit and the 25-dia. Ring.

#### Panel Hole of 30-mm Diameter

- Insert the A22Z-A30 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut. Before tightening, check that the supplied rubber washer is present between the Operation Unit and the panel, and between the 30-dia. Resin Attachment and the panel.
- \* Switches with an IP69K degree of protection do not support the 30-dia.

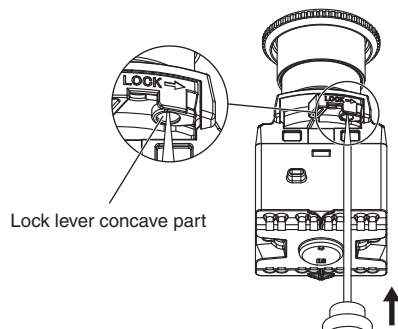


| Panel Cutouts | Panel thickness |
|---------------|-----------------|
| 25 mm dia.    | 1 to 5 mm       |
| 30 mm dia.    | 1 to 3 mm       |

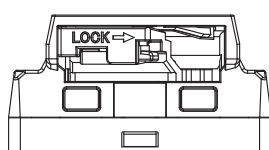
## Removing the Switch Unit

### When the Switch Unit is to be Removed

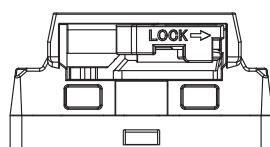
Slowly push the release port (concave part) of the lock lever with a screwdriver to release the lock. The lock lever moves to the release position.



<Lock lever position>



Release position



Locked position

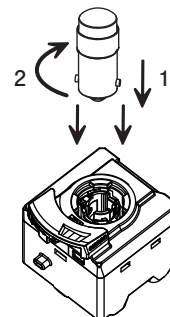
When the lock lever is at the released position in this Switch, the NO and NC contact operation is reversed.

Set the lock lever to the locked position when using the Switch.

## Installing the LED Lamp (Lighted Models)

### When the LED Lamp is to be Installed

Insert the protrusions on the LED Lamp into the guides on the Switch Unit in direction (1), and then turn the LED Lamp in direction (2) to lock it in place.



## Safety Precautions

Be sure to read the precautions for **All PushButton Switches** in the website at: <http://www.ia.omron.com/>.

### Indication and Meaning for Safe Use

|                                                                                                  |                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Warning</b> | Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.  |
| <b>Precautions for Safe Use</b>                                                                  | Comments on what to do or avoid doing, to use the product safely.                                                                                                  |
| <b>Precautions for Correct Use</b>                                                               | Supplementary comments on what to do or avoid doing to use the product safely and prevent its malfunctioning or an adverse effect on its performance or functions. |

#### WARNING

Do not perform wiring with power supplied to the Switch/Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.



#### Precautions for Safe Use

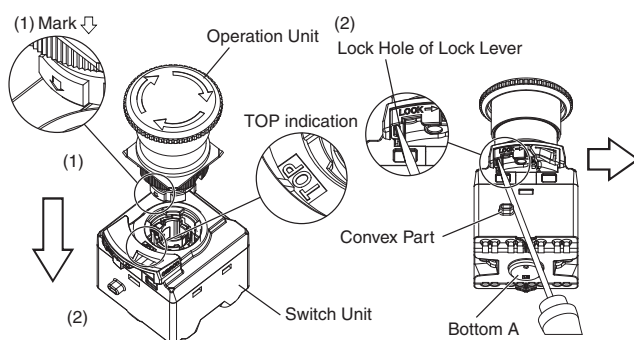
- Make sure the Operation Unit and the Switch Unit are properly assembled.

##### <Assembling the Operation Unit and Switch Unit>

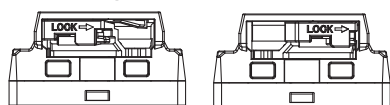
- Assembling the Operation Unit and Switch Unit  
Align the TOP indication (the mark ) on the Operation Unit with the TOP indication on the Switch Unit, and insert the Operation Unit while keeping the bottom A pressed.

- Locking the lock lever

With a screwdriver inserted in the lock hole of the lock lever, bring the screwdriver in contact with the convex part of the case, and turn the lock lever until a clicking sound is heard.



##### <Lock lever position>



**Release position**  
When the lock lever is at the released position in this Switch, the NO and NC contact operation is reversed.  
Set the lock lever to the locked position when using the Switch.

- When transition wiring is performed, make sure the switching current inside the Switch and the current based on the transition wiring is below the rated current of the Switch.  
If a current value higher than the rated current flows, it could result in emission of heat, or damage and deformation of the Switch, which could cause fire and locking of the contact, and thus a loss of safety.

- Do not disassemble or modify the Switch/Indicator under any circumstances.
- Doing so may prevent the Switch/Indicator from functioning to its full capability. Do not drop the Switch/Indicator. Do not apply pressure that may deform or alter the Switch/Indicator.
- The durability of the Switch varies considerably depending on the switching conditions. Always test the Switch/Indicator under actual working conditions before application and use the Switch/Indicator only for the number of switching operations allowed.
- Do not allow the load voltage and current to exceed the rated value. This may damage or burn out the Switch/Indicator.
- Do not use the Switch/Indicator in locations where explosive or flammable gases or liquid may be present or scattered. The electric arc or the heat caused by switching contacts may cause a fire or explosion.
- Do not use the Switch/Indicator in locations where toxic gases, such as H<sub>2</sub>S, SO<sub>2</sub>, NH<sub>3</sub>, HNO<sub>3</sub>, and Cl<sub>2</sub>, may be present, or in locations subject to high temperature or humidity. Doing so may damage the Switch/Indicator due to contact failure or corrosion.
- Do not use the Switch/Indicator submerged in oil or water, or in locations continuously subject to splashes of oil or water. Doing so may result in oil or water entering and damaging the Switch/Indicator.
- Do not use or keep the Switch/Indicator under the following conditions:
  - Subject to severe temperature changes.
  - Subject to high humidity or condensation.
  - Subject to severe vibration or shock.
  - Where direct rays of the sun strike.
  - Where sea breeze may be present.
- Make sure that a rubber washer is present between the Operation Unit and the panel. In models with IP69K, make sure the rubber bush of the Operation Unit is properly attached. Otherwise, the specifications of the protective structure may not be satisfied.
- Do not apply excessive force to the Switch or wirings. Damage or deformation of the Switch Unit could result in an improper contact or a loss of safety.
- Use an appropriate wiring and crimp terminals (hereinafter, called ferrule terminals).
- Exercise caution to avoid wiring errors when connecting the terminals.
- To prevent wiring materials from smoking or ignition, confirm wire ratings and use the wiring materials given in the following table.

| Wire Type                    | Wire material | Recommended Wire                            | Wire coating peeling amount                                                                                             |
|------------------------------|---------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Solid wire/<br>Stranded Wire | Copper        | 0.25 to 1.5 mm <sup>2</sup><br>AWG 24 to 16 | Ferrules used: 10 to 12 mm<br>(Varies depending on the recommended ferrule conductor length)<br>Ferrules not used: 8 mm |

Use wiring crimp terminals and ferrule terminals of the specified size.

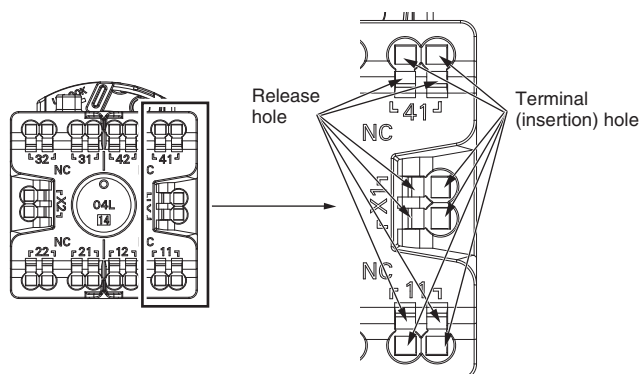
- After storing the product for a long time exceeding 1 year, perform, at a minimum, inspections of the operating characteristics, contact resistance, insulation resistance, and dielectric strength as well as evaluate the product under the working conditions.
- This product is intended for indoor use only. Using the product outdoors will result in failure.
- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force. Doing so may cause the wire disconnection.
- Do not insert more than one wire into each terminal insertion hole.
- When mounting on a device with high airtightness, test operation in advance. There is a risk that the negative pressure will prevent the Operation Unit of from returning.
- Although the contacts of an A22NE-PD can be used with both the standard loads and microloads, once a contact has opened or closed under a load, you cannot again connect a small-capacity load. Doing so could roughen the contact surface, and result in loss of contact reliability.
- In the case of loads where an inrush current occurs when the contact is opened or closed, the durability may reduce due to extreme wear on the contacts. If necessary, insert a contact protection circuit.
- If a contact weld, the lock lever might not return to the release position, and contact inversion might not occur. In such a case, move the lock lever to the release position, and remove the Switch Unit from the Operation Unit.

## Precautions for Correct Use

### Wiring

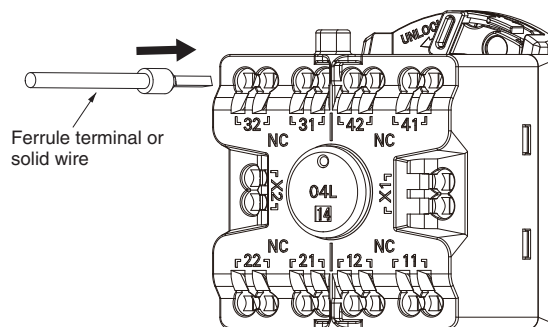
#### 1. Connecting Wires to the Push-In Plus Terminal Block

##### Part Names of the Terminal Block



#### Connecting Wires with Ferrules and Solid Wires

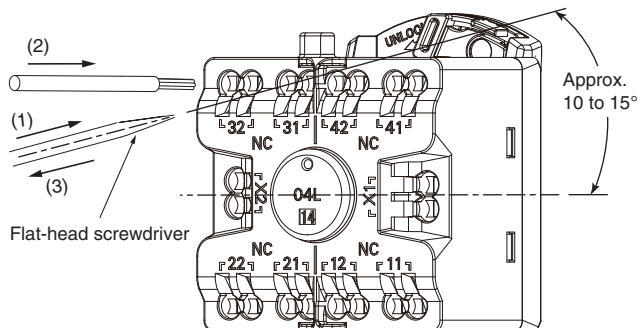
- Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block.
- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wires.



#### Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be appropriately 10 to 15°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until the end strikes the terminal block.
3. Remove the flat-blade screwdriver from the release hole.



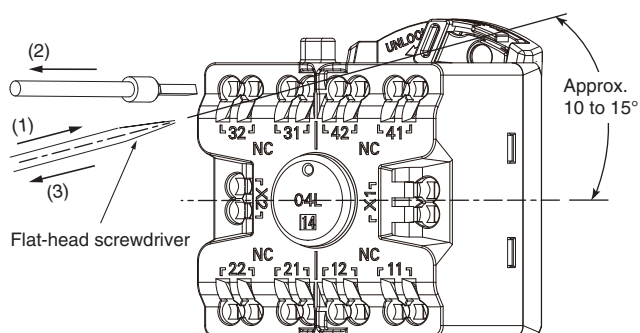
### Checking Connections

- After the insertion, pull gently on the wire to make sure that it will not come off and it is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

### 2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be appropriately 10 to 15°.
2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
3. Remove the flat-blade screwdriver from the release hole.



### 3. Recommended Ferrules and Crimp Tools

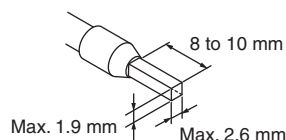
#### Coating peeling amount

| Recommend Wire Type                           | Stripping length (Ferrules not used) |
|-----------------------------------------------|--------------------------------------|
| 0.25 to 1.5 mm <sup>2</sup> /AWG 24 to AWG 16 | 8 mm                                 |

#### Recommended ferrules

| Applicable wire         |       | Ferrule conductor length (mm) | Stripping length (mm) (Ferrules not used) | Recommended ferrules                     |                    |              |
|-------------------------|-------|-------------------------------|-------------------------------------------|------------------------------------------|--------------------|--------------|
| (mm²)                   | (AWG) |                               |                                           | Phoenix Contact product                  | Weidmuller product | Wago product |
| 0.25                    | 24    | 8                             | 10                                        | Al 0, 25-8                               | H0.25/12           | 216-301      |
|                         |       | 10                            | 12                                        | Al 0, 25-10                              | ---                | ---          |
| 0.34                    | 22    | 8                             | 10                                        | Al 0, 34-8                               | H0.34/12           | 216-302      |
|                         |       | 10                            | 12                                        | Al 0, 34-10                              | ---                | ---          |
| 0.5                     | 20    | 8                             | 10                                        | Al 0, 5-8                                | H0.5/14            | 216-201      |
|                         |       | 10                            | 12                                        | Al 0, 5-10                               | H0.5/16            | 216-241      |
| 0.75                    | 18    | 8                             | 10                                        | Al 0, 75-8                               | H0.75/14           | 216-202      |
|                         |       | 10                            | 12                                        | Al 0, 75-10                              | H0.75/16           | 216-242      |
| 1/1.25                  | 18/17 | 8                             | 10                                        | Al 1-8                                   | H1.0/14            | 216-203      |
|                         |       | 10                            | 12                                        | Al 1-10                                  | H1.0/16            | 216-243      |
| 1.25/1.5                | 17/16 | 8                             | 10                                        | Al 1, 5-8                                | H1.5/14            | 216-204      |
|                         |       | 10                            | 12                                        | Al 1, 5-10                               | H1.5/16            | 216-244      |
| Recommended Crimp Tools |       |                               |                                           | CRIMPFOX6<br>CRIMPFOX6T-F<br>CRIMPFOX10S | PZ6 roto           | Variocrimp4  |

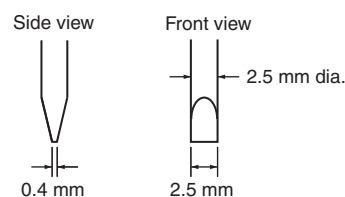
- Note:**
1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.
  2. Make sure that the ferrule processing dimensions conform to the following figures.



#### Recommended Flat-Blade Screwdrivers

Use a flat-blade screwdriver to connect and remove wires. Use one of the following flat-blade screwdrivers.

The following table shows manufacturers and models as of 2015/Dec.



| Model                              | Manufacture     |
|------------------------------------|-----------------|
| ESD 0,40 × 2,5                     | Wera            |
| SZS 0,4 × 2,5<br>SZF 0-0,4 × 2,5 * | Phoenix Contact |
| 0.4 × 2.5 × 75 302                 | Wiha            |
| AEF.2,5 × 75                       | Facom           |
| 210-719                            | Wago            |
| SDI 0,4 × 2,5 × 75                 | Weidmuller      |

\* The SZF 0-0,4 × 2,5 (manufactured by Phoenix Contact) can be procured through an OMRON exclusive purchase form (XW4Z-00B).

- After wiring the Switch/Indicator, provide a sufficient insulation distance.

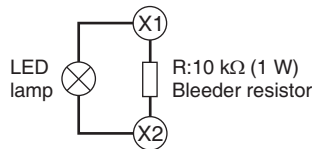
# A22NE-PD

## LED Lamps

- A current-limiting resistor is built in the LED lamp, so the installation of an external resistance is not required.
- Lighting malfunction of the LED lamp  
A micro-current of approximately 0.1 mA or less is sufficient to turn on the LED lamps. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED lamp.  
The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

### (Example of lighting malfunction prevention circuit)

When using a 24 VAC/DC Lighted Model



Be sure to read the "Safety Precautions" on page 56.

# A22NE-P

## Install in 22-dia. or 25-dia. Panel Cutout

### (When Using a Ring)

- Push-in plus terminals greatly reduce wiring effort and provide vibration resistant connections.
- A lock lever provides a secure mounting of the switch assembly.
- A maximum of up to six contact points can be combined together in the contact-point configuration.
- Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models) / Supports IP69K high-temperature, high-pressure cleaning (pull-reset models).



For the most recent information on models that have been certified for safety standards, refer to your Omron website.

A22NE-PD

A22NE-P

A22E

Common Accessories and Tools

Common Note

Be sure to read the "Safety Precautions" on pages 30 and 56.

## Model Number Structure

**Model Number Legend (Completely Assembled)** ..... Shipped as a set which includes the Operation Unit, LED Lamp (lighted model only), Mounting Latches, Lighting Units (lighted model only), and Switch Block.

**A22NE-** 1 2 - 3 4 - 5 - 6 (Example: A22NE-M-P102-N)

### 1. Operation Unit size (diameter)

| Code | Description |
|------|-------------|
| S    | 30 dia.     |
| M    | 40 dia.     |
| L    | 60 dia.     |

### 2. Reset function

| Code | Description  |
|------|--------------|
| None | Turn-reset   |
| P    | Pull-reset * |

\* The pull-reset type is only available on the 40 dia. Operation Unit, non-lighted type.  
Not available on lighted types.

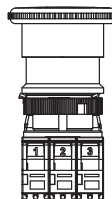
### 3. Contact specification/Terminal specification

| Code | Description                               |
|------|-------------------------------------------|
| P    | Standard load/Push-in plus terminal block |

### 4. Contacts

| Code | Number of Switch Blocks | Unit position |     |     |         |     |               |    |
|------|-------------------------|---------------|-----|-----|---------|-----|---------------|----|
|      |                         | Non-lighted   |     |     | Lighted |     |               |    |
|      |                         | NO            | NC  |     | 1       | 2   | 3             |    |
| 002  | 0                       | 1             | --- | --- | NC      | --- | Lighting unit | NC |
| 102  | 1                       | 1             | NO  | --- | NC      | NO  | Lighting unit | NC |
| 202  | 0                       | 2             | NC  | --- | NC      | NC  | Lighting unit | NC |
| 212  | 1                       | 2             | NC  | NO  | NC      |     |               |    |
| 222  | 0                       | 3             | NC  | NC  | NC      | --- |               |    |

Note 1. NO: 1a-contact NC: 1b-contact  
2. For details on the unit position, refer to the figure below.



### 5. LED lamp voltage

| Code | Description     | LED Lamp Voltage    |
|------|-----------------|---------------------|
| N    | Non-lighted     | ---                 |
| A    | Lighted (LED) * | 6 VAC/DC            |
| B    |                 | 12 VAC/DC           |
| C    |                 | 24 VAC/DC           |
| D    |                 | 100/110/120 VAC     |
| E    |                 | 200/220/230/240 VAC |

\* Lighting color is red.

### 6. Others (Degree of Protection/Control box)

| Code | Configuration        |
|------|----------------------|
| None | IP65                 |
| 69K  | IP69K                |
| B *  | Built-in control box |

\* One-contact unit type.

# A22NE-P

## Ordering Information

### List of Models (Completely Assembled)

#### Non-lighted Models

| Appearance                                                                         | Operation                                                | Degree of Protection      | Contact configuration * | Set Model           | Color of cap |
|------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------|-------------------------|---------------------|--------------|
|   | 40-dia. head<br>Medium Pull-reset<br>A22NE-MP-P□□2-N     | IP65 oil-resistant models | 1NC (1)                 | A22NE-MP-P002-N     | Red          |
|                                                                                    |                                                          |                           | 1NC, 1NO (2)            | A22NE-MP-P102-N     |              |
|                                                                                    |                                                          |                           | 2NC (2)                 | A22NE-MP-P202-N     |              |
|                                                                                    |                                                          |                           | 2NC, 1NO (3)            | A22NE-MP-P212-N     |              |
|                                                                                    |                                                          |                           | 3NC (3)                 | A22NE-MP-P222-N     |              |
|   | 40-dia. head<br>Medium Pull-reset<br>A22NE-MP-P□□2-N-69K | IP69K                     | 1NC (1)                 | A22NE-MP-P002-N-69K |              |
|                                                                                    |                                                          |                           | 1NC, 1NO (2)            | A22NE-MP-P102-N-69K |              |
|                                                                                    |                                                          |                           | 2NC (2)                 | A22NE-MP-P202-N-69K |              |
|                                                                                    |                                                          |                           | 2NC, 1NO (3)            | A22NE-MP-P212-N-69K |              |
|                                                                                    |                                                          |                           | 3NC (3)                 | A22NE-MP-P222-N-69K |              |
|   | 30-dia. head<br>Small Turn-reset<br>A22NE-S-P□□2-N       | IP65 oil-resistant models | 1NC (1)                 | A22NE-S-P002-N      |              |
|                                                                                    |                                                          |                           | 1NC, 1NO (2)            | A22NE-S-P102-N      |              |
|                                                                                    |                                                          |                           | 2NC (2)                 | A22NE-S-P202-N      |              |
|                                                                                    |                                                          |                           | 2NC, 1NO (3)            | A22NE-S-P212-N      |              |
|                                                                                    |                                                          |                           | 3NC (3)                 | A22NE-S-P222-N      |              |
|   | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-N      |                           | 1NC (1)                 | A22NE-M-P002-N      |              |
|                                                                                    |                                                          |                           | 1NC, 1NO (2)            | A22NE-M-P102-N      |              |
|                                                                                    |                                                          |                           | 2NC (2)                 | A22NE-M-P202-N      |              |
|                                                                                    |                                                          |                           | 2NC, 1NO (3)            | A22NE-M-P212-N      |              |
|                                                                                    |                                                          |                           | 3NC (3)                 | A22NE-M-P222-N      |              |
|  | 60-dia. head<br>Large Turn-reset<br>A22NE-L-P□□2-N       |                           | 1NC (1)                 | A22NE-L-P002-N      |              |
|                                                                                    |                                                          |                           | 1NC, 1NO (2)            | A22NE-L-P102-N      |              |
|                                                                                    |                                                          |                           | 2NC (2)                 | A22NE-L-P202-N      |              |
|                                                                                    |                                                          |                           | 2NC, 1NO (3)            | A22NE-L-P212-N      |              |
|                                                                                    |                                                          |                           | 3NC (3)                 | A22NE-L-P222-N      |              |

\* The number in parentheses ( ) indicates the number of switch units.

#### Lighted Model

| Appearance                                                                          | Operation                                           | Degree of Protection | Contact configuration * | LED lamp voltage  | Set Model      | Color of cap |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|-------------------------|-------------------|----------------|--------------|
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-A | IP65                 | 1NC (1)                 | 6 VAC/VDC         | A22NE-M-P002-A | Red          |
|                                                                                     |                                                     |                      | 1NC, 1NO (2)            |                   | A22NE-M-P102-A |              |
|                                                                                     |                                                     |                      | 2NC (2)                 |                   | A22NE-M-P202-A |              |
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-B |                      | 1NC (1)                 | 12 VAC/VDC        | A22NE-M-P002-B |              |
|                                                                                     |                                                     |                      | 1NC, 1NO (2)            |                   | A22NE-M-P102-B |              |
|                                                                                     |                                                     |                      | 2NC (2)                 |                   | A22NE-M-P202-B |              |
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-C |                      | 1NC (1)                 | 24 VAC/VDC        | A22NE-M-P002-C |              |
|                                                                                     |                                                     |                      | 1NC, 1NO (2)            |                   | A22NE-M-P102-C |              |
|                                                                                     |                                                     |                      | 2NC (2)                 |                   | A22NE-M-P202-C |              |
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-D |                      | 1NC (1)                 | 100, 110, 120 VAC | A22NE-M-P002-D |              |
|                                                                                     |                                                     |                      | 1NC, 1NO (2)            |                   | A22NE-M-P102-D |              |
|                                                                                     |                                                     |                      | 2NC (2)                 |                   | A22NE-M-P202-D |              |
|  | 40-dia. head<br>Medium Turn-reset<br>A22NE-M-P□□2-E |                      | 1NC (1)                 | 220, 230, 240 VAC | A22NE-M-P002-E |              |
|                                                                                     |                                                     |                      | 1NC, 1NO (2)            |                   | A22NE-M-P102-E |              |
|                                                                                     |                                                     |                      | 2NC (2)                 |                   | A22NE-M-P202-E |              |

\* The number in parentheses ( ) indicates the number of switch units.

#### Switch with Integrated Control Box

| Appearance                                                                          | Contact configuration (Number of switch blocks) | Model            |
|-------------------------------------------------------------------------------------|-------------------------------------------------|------------------|
|  | 1NC (1)                                         | A22NE-M-P002-N-B |
|                                                                                     | 1NC, 1NO (2)                                    | A22NE-M-P102-N-B |
|                                                                                     | 2NC (2)                                         | A22NE-M-P202-N-B |

A22NE-PD

A22NE-P

A22E

Common Accessories and Tools

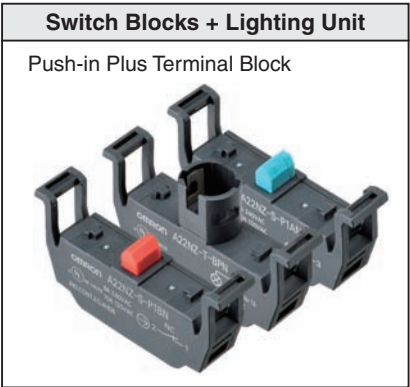
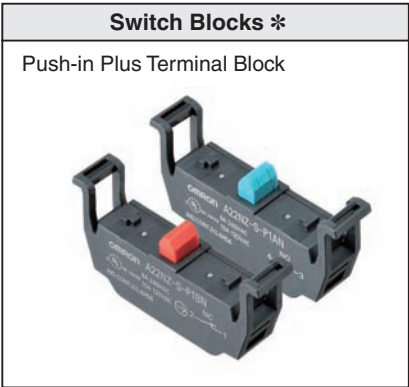
Common Note

**Subassembled** ..... The Operation Unit, LED Lamp, Mounting Latches, Switch Blocks, and Lighting Unit can be ordered separately. Use them in combination for models that are not available as assembled Units. These can also be used as inventory for maintenance parts.

Non-lighted



Lighted



\* Up to three Switch Blocks can be mounted for multiple contacts.

## A22NE-P

Operation Unit  
Non-lighted

|            |                           | Size                                                                                            | Small (30 dia.)                                                                                                       | Medium (40 dia.)                                                                                  | Large (60-dia.) |
|------------|---------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------|
| Function   | Sealing capability        | Single item order model                                                                         |                                                                                                                       |                                                                                                   |                 |
| Pull-reset | IP65 oil-resistant models | ---                                                                                             |                                     | ---                                                                                               |                 |
|            | IP69K                     | ---                                                                                             |                                     | ---                                                                                               |                 |
| Turn-reset | IP65 oil-resistant models | <br>A22NE-S-N | <br>A22NE-M-N                       | <br>A22NE-L-N |                 |
|            |                           |                                                                                                 | <br>A22NE-MRO-N<br>A22NE-MRO-N-RD  |                                                                                                   |                 |
|            |                           |                                                                                                 | <br>A22NE-MRS-N<br>A22NE-MRS-N-RD |                                                                                                   |                 |

## Lighted

|            |                    | Size                                                                                                    |
|------------|--------------------|---------------------------------------------------------------------------------------------------------|
| Function   | Sealing capability | Medium (40 dia.)                                                                                        |
| Turn-reset | IP65               | Single item order model                                                                                 |
|            |                    | <b>A22NE-M-L</b><br> |

## LED lamp

| Appearance                                                                          | LED light | Rated voltage          | Model             | Remarks                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|-----------|------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Red       | 6 VAC/VDC              | <b>A22NZ-L-RA</b> | These LED lamps are for exclusive use with the A22N and the A22NE-P. These are provided with the completely assembled set of lighted models. Order LED lamps only when replacing them. |
|                                                                                     |           | 12 VAC/VDC             | <b>A22NZ-L-RB</b> |                                                                                                                                                                                        |
|                                                                                     |           | 24 VAC/VDC             | <b>A22NZ-L-RC</b> |                                                                                                                                                                                        |
|                                                                                     |           | 100, 110, 120 VAC      | <b>A22NZ-L-RD</b> |                                                                                                                                                                                        |
|                                                                                     |           | 200, 220, 230, 240 VAC | <b>A22NZ-L-RE</b> |                                                                                                                                                                                        |

## Accessories (Order Separately)

| Item                            | Appearance                                                                         | Contact specifications |               | Model               | Remarks                                                                                                                                                                                                                 |
|---------------------------------|------------------------------------------------------------------------------------|------------------------|---------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch Blocks<br>(one contact)  |   | 1NO (Blue)             | Standard load | <b>A22NZ-S-P1AN</b> | Provided as standard.<br>Order Switch Blocks only when adding or replacing them.                                                                                                                                        |
|                                 |                                                                                    | 1NC (Red)              | Standard load | <b>A22NZ-S-P1BN</b> |                                                                                                                                                                                                                         |
| Switch Blocks<br>(two contacts) |   | 2NC (Red)              | Standard load | <b>A22NZ-S-P2BN</b> | Order Switch Blocks only when adding or replacing them.                                                                                                                                                                 |
|                                 |                                                                                    | 1NO/1NC (White)        | Standard load | <b>A22NZ-S-P2CN</b> |                                                                                                                                                                                                                         |
| Lighting unit                   |   | 6 VAC/VDC              |               | <b>A22NZ-T-APN</b>  | These are provided with the completely assembled set of lighted models. Order Lighting Units only when replacing them.                                                                                                  |
|                                 |                                                                                    | 12 VAC/VDC             |               | <b>A22NZ-T-BPN</b>  |                                                                                                                                                                                                                         |
|                                 |                                                                                    | 24 VAC/VDC             |               | <b>A22NZ-T-CPN</b>  |                                                                                                                                                                                                                         |
|                                 |                                                                                    | 100, 110, 120 VAC      |               | <b>A22NZ-T-DPN</b>  |                                                                                                                                                                                                                         |
|                                 |                                                                                    | 200, 220, 230, 240 VAC |               | <b>A22NZ-T-EPN</b>  |                                                                                                                                                                                                                         |
| Mounting Latches                |   | ---                    |               | <b>A22NZ-H-02</b>   | This Mounting Latch is for exclusive use with the A22NE-P. It is provided with the completely assembled set. Order Mounting Latches only when mounting Switch Blocks or Lighting Units that are purchased individually. |
| Control Boxes<br>(Enclosures)   |  | One hole, yellow box   |               | <b>A22NZ-A-B01Y</b> | Material: Polycarbonate resin. Can be combined with 1-contact Switch Blocks. (Cannot be combined with 2-contact Switch Blocks.) *                                                                                       |

**Note:** For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

\* The A22NZ-A-B01Y Control Box cannot be used in combination with the A22Z-3476-1 90-dia. Legend Plates for Emergency Stop or the A22Z-EG□ E-stop Shrouds.

## A22NE-P

### Specifications

#### Certified Standard Ratings

- UL508 (File No. E76675), CSA C22.2 No.14  
6 A at 240 VAC, 10 A at 120 VAC
- TÜV (EN60947-5-1) - Certified direct opening -  
(EN60947-5-5)  
AC-15 3 A at 240 VAC  
DC-13 4 A at 24 VDC
- CCC (GB14048.5)  
AC-15 3 A at 240 VAC  
DC-13 4 A at 24 VDC

#### Applicable Standards

UL1059, UL486E (Push-in Plus Terminal Block Types)

**Note:** Use a 10 A fuse type gI or gG that conforms to IEC60269 as a short-circuit protection device. This fuse is not provided in the main unit.

#### Ratings

##### Contacts (Standard Load)

| Rated insulation voltage (V) | Rated carry current (A) | Rated voltage (V) | Rated current (A)        |                          |                          |                          |
|------------------------------|-------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                              |                         |                   | AC15<br>(Inductive load) | AC12<br>(Resistive load) | DC13<br>(Inductive load) | DC12<br>(Resistive load) |
| 600                          | 10                      | 24 VAC            | 10                       | 10                       | ---                      | ---                      |
|                              |                         | 120 VAC           | 6                        | 10                       |                          |                          |
|                              |                         | 240 VAC           | 3                        | 6                        |                          |                          |
|                              |                         | 380 VAC           | 1.9                      | 2                        |                          |                          |
|                              |                         | 440 VAC           | 1.6                      | 2                        |                          |                          |
|                              |                         | 24 VDC            | ---                      | ---                      | 4                        | 8                        |
|                              |                         | 120 VDC           |                          |                          | 1.1                      | 2.2                      |
|                              |                         | 240 VDC           |                          |                          | 0.55                     | 1.1                      |
|                              |                         |                   |                          |                          |                          |                          |

- Note:** 1. The above ratings were obtained by conducting tests under the following conditions.  
 (1) Ambient temperature: 20°±2°C  
 (2) Ambient humidity: 65±5%  
 (3) Operating frequency: 20 operations/minute
2. Minimum applicable load: 10 mA at 5 VDC (Resistive load)  
 The operating range may vary depending on the usage conditions and type of load.

#### Certified Standards

| Certification body | Standards                                                 | File No.                                       |
|--------------------|-----------------------------------------------------------|------------------------------------------------|
| UL *               | UL508, C22.2 No.14                                        | E76675                                         |
| TÜV SÜD            | EN60947-5-1<br>(Certified direct opening),<br>EN60947-5-5 | Consult your OMRON representative for details. |
| CQC (CCC)          | GB14048.5                                                 | 2017010305959182                               |

**Note:** Only models with NC contacts have a direct opening mechanism.

\* UL-certification for CSA C22.2 No. 14 has been obtained.

#### LED Lamp

| Rated voltage | Operating voltage  | Current value |
|---------------|--------------------|---------------|
| 6 VAC/VDC     | 6 VAC/VDC ± 10%    | Approx. 11 mA |
| 12 VAC/VDC    | 12 VAC/VDC ± 10%   | Approx. 12 mA |
| 24 VAC/VDC    | 24 VAC/VDC ± 10%   | Approx. 12 mA |
| 100 VAC       | 100 VAC ± 10%      | Approx. 12 mA |
| 110 VAC       | 110 VAC ± 10%      |               |
| 120 VAC       | 100 VAC to 130 VAC |               |
| 200 VAC       | 200 VAC ± 10%      | Approx. 12 mA |
| 220 VAC       | 220 VAC ± 10%      |               |
| 230 VAC       | 230 VAC ± 10%      |               |
| 240 VAC       | 220 VAC to 250 VAC |               |

## Characteristics

| Item                                              |                                      | Turn-reset                                                                         |                | Pull-reset                   |                                                                               |
|---------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------|----------------|------------------------------|-------------------------------------------------------------------------------|
|                                                   |                                      | Non-lighted model                                                                  | Lighted Model  | Non-lighted model            |                                                                               |
|                                                   |                                      | A22NE-□-P□□□-N                                                                     | A22NE-M-P□□□-□ | A22NE-MP-P□□□-N              | A22NE-MP-P□□□-N-69K                                                           |
| Allowable operating frequency                     | Mechanical                           | 30 operations/minute or less (One operation consists of set and reset operations.) |                |                              |                                                                               |
|                                                   | Electrical                           | 30 operations/minute or less (One operation consists of set and reset operations.) |                |                              |                                                                               |
| Insulation resistance *1                          |                                      | 100 MΩ min. (at 500 VDC)                                                           |                |                              |                                                                               |
| Contact resistance                                |                                      | 100 mΩ max. (initial value)                                                        |                |                              |                                                                               |
| Dielectric strength                               | Between terminals of same polarity*1 | 2,500 VAC, 50/60 Hz 1 minute (initial value)                                       |                |                              |                                                                               |
|                                                   | Between each terminal and ground     | 2,500 VAC, 50/60 Hz 1 minute (initial value)                                       |                |                              |                                                                               |
| Vibration resistance                              | Malfunction                          | 10 to 55 Hz, 1.5 mm double amplitude (contact separation within 1 ms)              |                |                              |                                                                               |
| Shock resistance                                  | Malfunction                          | 250 m/s <sup>2</sup> max. (contact separation within 1 ms)                         |                |                              |                                                                               |
| Durability                                        | Mechanical                           | 300,000 operations min. (One operation consists of set and reset operations.)      |                |                              | 100,000 operations min. (One operation consists of set and reset operations.) |
|                                                   | Electrical                           | 300,000 operations min. (One operation consists of set and reset operations.)      |                |                              | 100,000 operations min. (One operation consists of set and reset operations.) |
| Ambient operating temperature *2                  |                                      | -20 to +70°C                                                                       | -20 to +55°C   | -20 to +70°C                 | -20 to +70°C *3                                                               |
| Ambient operating humidity                        |                                      | 35 to 85% RH                                                                       |                |                              |                                                                               |
| Ambient storage temperature *2                    |                                      | -40 to +70°C                                                                       |                |                              |                                                                               |
| Degree of protection *4                           |                                      | IP65 oil-resistant models *5                                                       | IP65           | IP65 oil-resistant models *5 | IP69K                                                                         |
| Electric shock protection class                   |                                      | Class II                                                                           |                |                              |                                                                               |
| PTI (tracking characteristic)                     |                                      | 175                                                                                |                |                              |                                                                               |
| Degree of contamination                           |                                      | 3 (EN 60947-5-1)                                                                   |                |                              |                                                                               |
| Minimum direct opening stroke                     |                                      | 11 mm                                                                              |                |                              |                                                                               |
| Minimum direct opening force                      |                                      | 45 N                                                                               |                |                              |                                                                               |
| Conditional short-circuit current                 |                                      | 100 A (EN 60947-5-1)                                                               |                |                              |                                                                               |
| Wight (for a 40-dia. head 1NC/1NO Operation Unit) |                                      | Approx. 55g                                                                        | Approx. 60g    | Approx. 85 g                 | Approx. 115 g                                                                 |

\*1. State when an LED is not added between terminals of the same polarity on a lighting unit. Does not apply to lighted-type 100 to 200 V lighting units.

\*2. With no icing or condensation.

\*3. Capable of operation at up to 80°C under IP□9K testing conditions per JIS D 5020.

\*4. The degree of protection from the front of the panel.

\*5. The degree of protection is IP65 even with an integrated control box, but the system is not oil resistant.

## Operating Characteristics

| Item                     | Turn-reset                   | Pull-reset        |                                       |
|--------------------------|------------------------------|-------------------|---------------------------------------|
|                          | Lighted / non-lighted models | Non-lighted model | Non-lighted model (Models with IP69K) |
| Total travel force (TTF) | 45 N max.                    | 60 N max.         | 70 N max.                             |
| Return force (RF)        | 0.25N·m * max.               | 60 N max.         | 70 N max.                             |
| Total travel (TT)        | 10 ±1 mm                     | 5.5 ±1 mm         | 5.5 ±1 mm                             |

\* Rotation torque value.

### Terminal Arrangement (BOTTOM VIEW)

| Non-lighted (two contacts) | Non-lighted (three contacts) | Lighted (two contacts) |
|----------------------------|------------------------------|------------------------|
|                            |                              |                        |

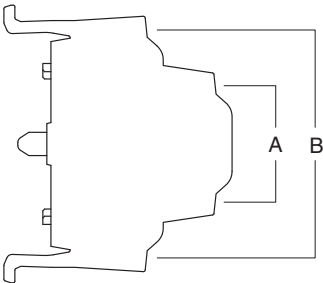
A22NE-P

Terminal connection

| Type        | Terminal Connection (BOTTOM VIEW) |  |               |  |                    |  |               |  |                           |  |        |  |
|-------------|-----------------------------------|--|---------------|--|--------------------|--|---------------|--|---------------------------|--|--------|--|
|             | 1NC, 1NO (two contacts)           |  |               |  | 2NC (two contacts) |  |               |  | 2NC, 1NO (three contacts) |  |        |  |
| Non-lighted | NC                                |  | NO            |  | NC                 |  | NC            |  | NC                        |  | NO     |  |
|             | 1<br>2                            |  | 3<br>4        |  | 1<br>2             |  | 1<br>2        |  | 1<br>2                    |  | 3<br>4 |  |
| Lighted     | 1<br>2                            |  | X1<br>X<br>X2 |  | 1<br>2             |  | X1<br>X<br>X2 |  | 1<br>2                    |  |        |  |
|             |                                   |  |               |  |                    |  |               |  |                           |  |        |  |

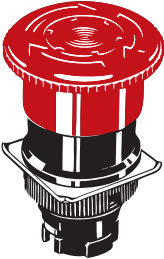
Note: The above terminal connection diagrams are examples for 1NO, 1NC (two contacts), or 2NC (two contacts).

Terminal wiring drawings of two-contact Switch Units



| Type | Terminal Connection (BOTTOM VIEW) |                         |
|------|-----------------------------------|-------------------------|
|      | 2NC (two contacts)                | 1NC, 1NO (two contacts) |
| A    | 21<br>22                          | 21<br>22                |
| B    | 11<br>12                          | 13<br>14                |

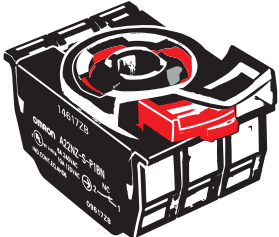
Structure and Nomenclature



**Operation Unit**  
**Color: Red**  
Non-lighted  
LED lighting



**Lamp**  
**Light source**  
• LED Lamp



**Switch**  
Mounting Latches  
Switch Blocks  
Lighting unit

**Contact Ratings**  
6 A at 240 VAC  
10 A at 120 VAC

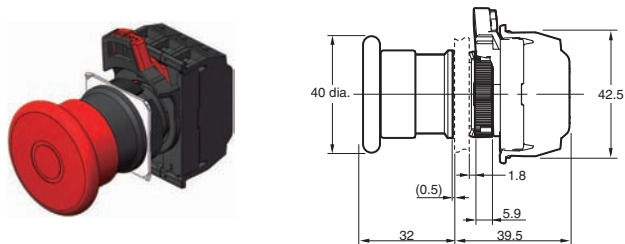
**Lighting Method**  
Non-lighted  
Lighted (LED)

## Dimensions

### Non-lighted Models

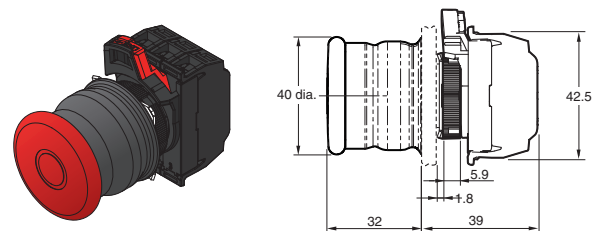
#### A22NE-MP-P□□2-N

Pull-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



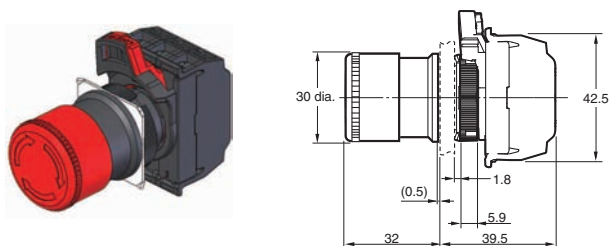
#### A22NE-MP-P□□2-N-69K

Pull-reset (40-dia.) Degree of Protection: IP69K



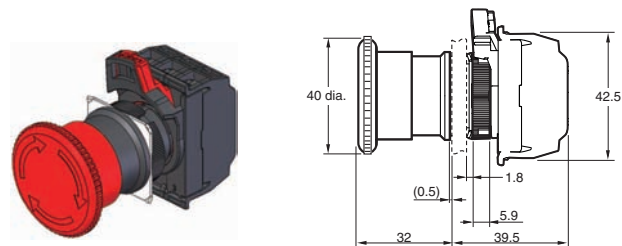
#### A22NE-S-P□□2-N

Small Turn-reset (30-dia.) Degree of Protection: IP65 oil-resistant models



#### A22NE-M-P□□2-N

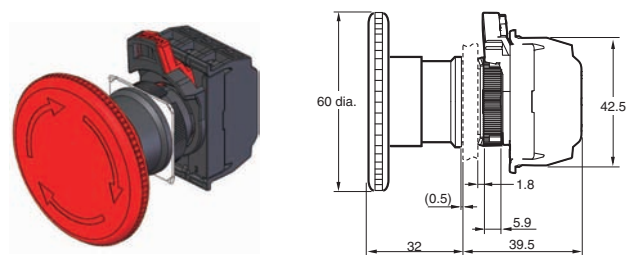
Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



**Note:** The dimensions the same even if the Operation Unit is replaced with the A22NE-MR□-N or the A22NE-MR□-N-RD.

#### A22NE-L-P□□2-N

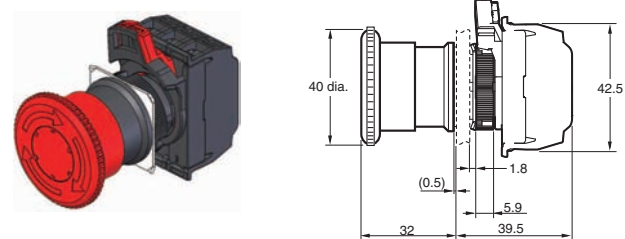
Large Turn-reset (60-dia.) Degree of Protection: IP65 oil-resistant models



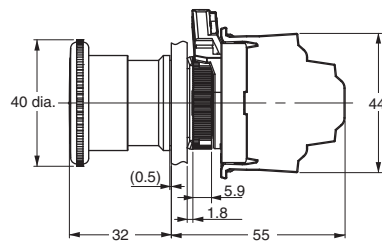
### Lighted Model

#### A22NE-M-P□□2-□

Medium Turn-reset (40-dia.) Degree of Protection: IP65



#### Dimensions when a two-contact Switch Block is attached



**Note:** Unless otherwise specified, a tolerance of  $\pm 0.8$  mm applies to all dimensions.

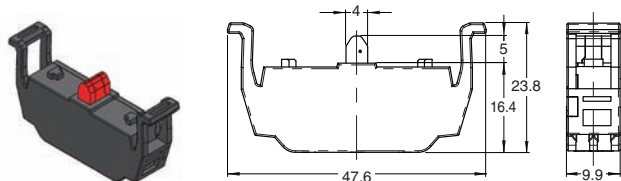
## A22NE-P

### Accessories (Order Separately)

#### Switch Block with Push-In Plus technology

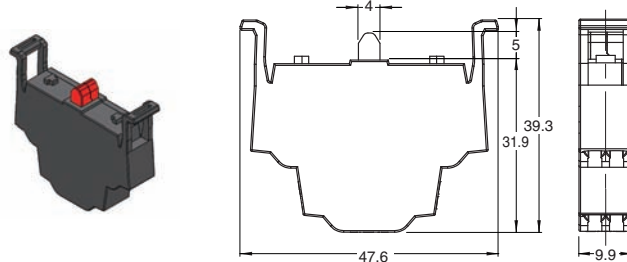
##### Switch Block (one contact)

A22NZ-S-P1□N



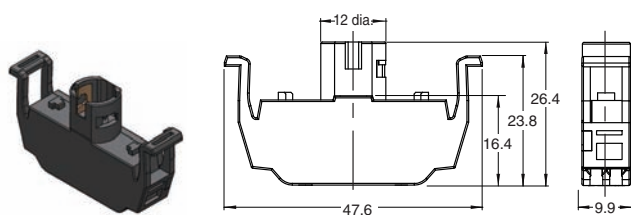
##### Switch Block (two contacts)

A22NZ-S-P2□N



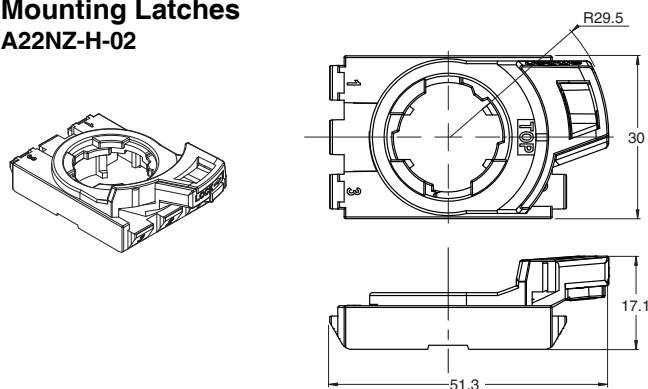
##### Lighting unit

A22NZ-T-□PN



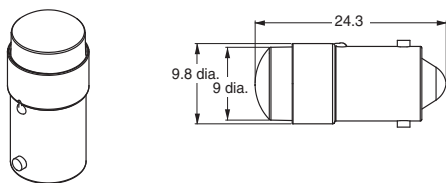
##### Mounting Latches

A22NZ-H-02



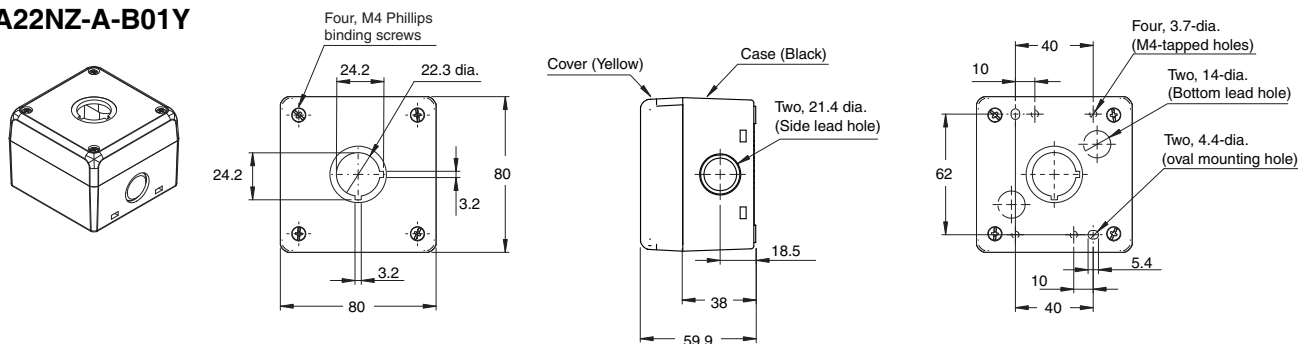
##### LED Lamp

A22NZ-L-□□



##### Control Box

A22NZ-A-B01Y



**Note:** For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

# Application

## Mounting to the Panel

### (1) Preparing the Panel

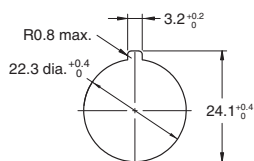
#### Panel hole dimension and panel thickness

- 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 dimension | Panel thickness |
|----------------------|-----------------|
| 22.3 dia.            | 1 to 5 mm       |



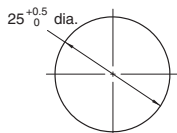
#### When using a A22Z-3360 (Order Separately) Lock Ring



#### For 25-dia.

- Use the A22Z-R25 (Order Separately) rubber ring.

\* Switches with an IP69K degree of protection do not support the 25-dia.



### (2) Minimum mounting pitch (Dimension A, Dimension B)

#### Minimum mounting pitch

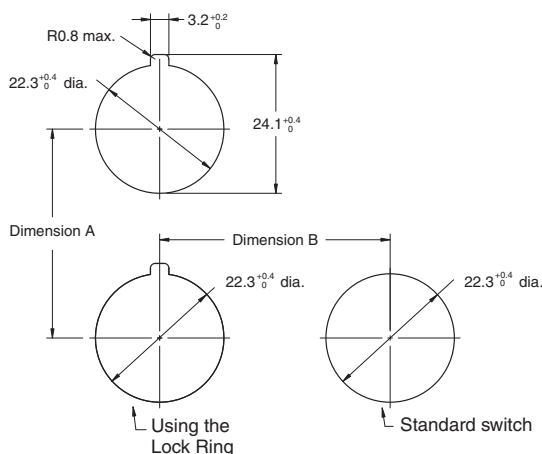
| Type of operation unit  | Dimension A (mm) min. | Dimension B (mm) min. |
|-------------------------|-----------------------|-----------------------|
| 30-dia., 40-dia. models | 50 *1                 | 50                    |
| 60-dia. model           | 70                    | 70                    |

\*1. If the Mounting Collar lock levers all face the same direction at the minimum mounting pitch, be sure to note the order the mounting collars are attached to the Operation Unit.

\*2. When using each accessory (Order Separately), set the A and B dimensions in view of the dimensions of the accessories.

\*3. Make sure the mounting pitch does not hinder the operation.

#### Panel Hole Dimensions for 22.3 Diameter

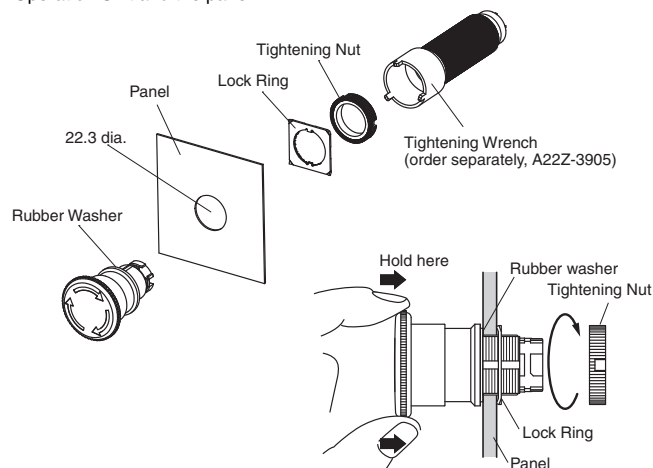


### (3) Mounting the Operation Unit on the Panel

- Do not tighten the Tightening Nut more than necessary using tools such as pointed-nose pliers.
- Doing so will damage the Tightening Nut.  
(The tightening torque of the Tightening Nut is 1.0 to 2.0 N·m.)  
Tightening Wrench: A22Z-3905

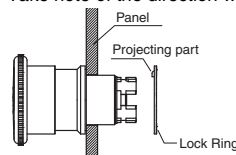
#### Panel Hole of 22.3-mm Diameter

- Insert the Operation Unit from the front of the panel, insert the Lock Ring and Tightening Nut from the back of the panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



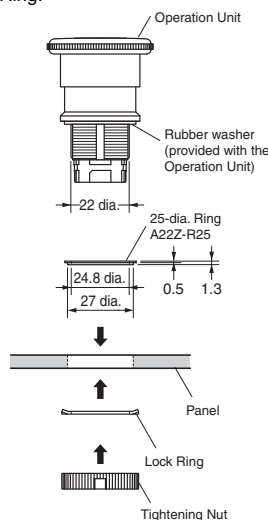
#### When the A22Z-3360 Lock Ring (Order Separately) is used

- Take note of the direction when mounting the Lock Ring.



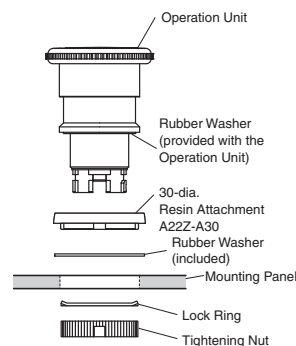
#### Panel Hole of 25-mm Diameter

- Insert the A22Z-R25 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer supplied with the Operation Unit is present between the Operation Unit and the 25-dia. Ring.



#### Panel Hole of 30-mm Diameter

- Insert the A22Z-A30 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut. Before tightening, check that the supplied rubber washer is present between the Operation Unit and the panel, and between the 30-dia. Resin Attachment and the panel.
- \* Switches with an IP69K degree of protection do not support the 30-dia.



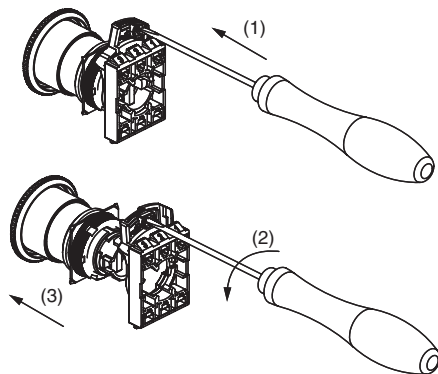
| Panel Cutouts | Panel thickness |
|---------------|-----------------|
| 25 mm dia.    | 1 to 5 mm       |
| 30 mm dia.    | 1 to 3 mm       |

## A22NE-P

### Removing the Mounting Latch

#### When the Mounting Latch is to be Removed

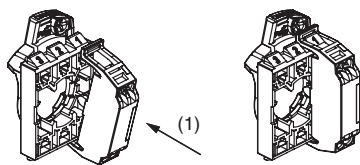
- Press the lock lever in from the back side to release the lock, and then hook the Mounting Collar with a screwdriver, move it in the direction indicated at (2), and remove it. Turn the lever all of the way until it clicks into place.



### Switch Blocks and Lighting Unit

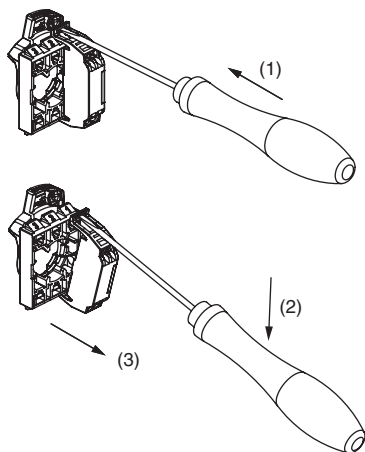
#### (1) Installing the Switch Blocks and Lighting Unit

- Catch the projection on the opposite side of the Mounting Collar from the lever side and press the Switch Block in the direction indicated at (1).



#### (2) Removing the Switch Blocks and Lighting Units

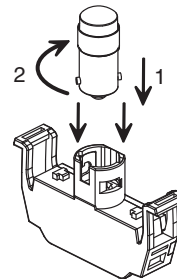
- Insert a screwdriver into the gap between the Mounting Collar and Switch Block and press it inward in the direction shown at (2).



### Attaching the LED Lamp to the Lighting Unit

#### When the LED Lamp is to be Installed

- Insert the protrusions on the LED Lamp into the guides on the Lighting Unit and then turn the LED Lamp in direction (2) to lock it in place.

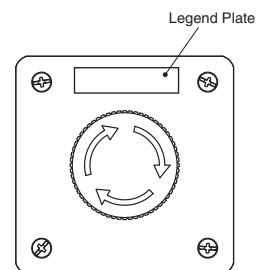


### Control Box

#### (1) Mounting the Switch

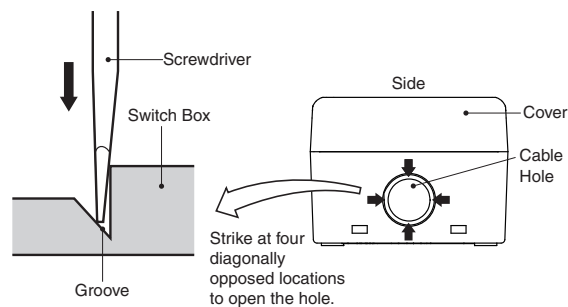
Mount the Switch in the same way as for a standard panel.

The tightening torque of the Box screws is 1.4 to 2.0 N·m.



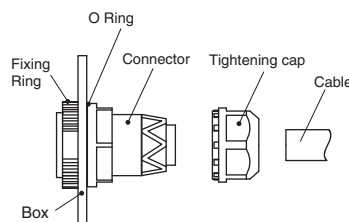
#### (2) Creating a Cable Hole

To open a cable hole, leave the cover attached, place the tip of a screwdriver in the grooves at four locations around the cable hole, and strike the screwdriver with a hammer to open the hole.



#### (3) Securing the Connector Cable

- Insert the connector into the cable port hole in the Box and secure with the fixing ring inside the box.
- Pass the tightening cap through the cable, insert the cable into the connector, and tighten the tightening cap to secure the cable.



| Cable diameter (mm) | Connector   |
|---------------------|-------------|
| 7 to 9 dia.         | A22Z-3500-1 |
| 9 to 11 dia.        | A22Z-3500-2 |

## Safety Precautions

Be sure to read the precautions for **All PushButton Switches** in the website at: <http://www.ia.omron.com/>.

### Indication and Meaning for Safe Use

|                                                                                                  |                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Warning</b> | <b>Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.</b>  |
| <b>Precautions for Safe Use</b>                                                                  | <b>Comments on what to do or avoid doing, to use the product safely.</b>                                                                                                  |
| <b>Precautions for Correct Use</b>                                                               | <b>Supplementary comments on what to do or avoid doing to use the product safely and prevent its malfunctioning or an adverse effect on its performance or functions.</b> |

### WARNING

Do not perform wiring with power supplied to the Switch/Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.

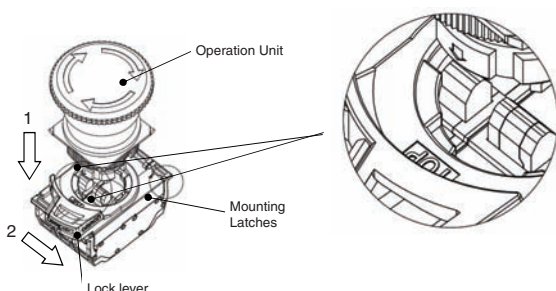


### Precautions for Safe Use

- If the Operation Unit is separated from the Switch Units, the equipment will not stop, resulting in a hazardous situation. Make sure the Operation Unit, Mounting Latches, and the Switch Units are properly assembled.

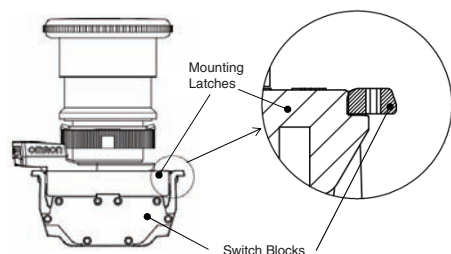
#### <Assembling the Operation Unit and the Mounting Latches>

Align the TOP indication (the  mark) on the Operation Unit with the TOP indication on the Mounting Latches to fit it properly, and turn the lock lever on the Mounting Latch in the direction shown in the figure below until a clicking sound is heard.



#### <Assembling the Mounting Latches and Switch Blocks>

Make sure the hooking part (convex part) on the Mounting Latches is perfectly latched into the hooking part (concave part) on the Switch Block.



- When transition wiring is performed, make sure the switching current inside the Switch and the current based on the transition wiring is below the rated current of the Switch. If a current value higher than the rated current flows, it could result in emission of heat, or damage and deformation of the Switch, which could cause fire and locking of the contact, and thus a loss of safety.
- Do not disassemble or modify the Switch/Indicator under any circumstances.

- Doing so may prevent the Switch/Indicator from functioning to its full capability. Do not drop the Switch/Indicator. Do not apply pressure that may deform or alter the Switch/Indicator.
- The durability of the Switch varies considerably depending on the switching conditions. Always test the Switch/Indicator under actual working conditions before application and use the Switch/Indicator only for the number of switching operations allowed.
- Do not allow the load voltage and current to exceed the rated value. This may damage or burn out the Switch/Indicator.
- Do not use the Switch/Indicator in locations where explosive or flammable gases or liquid may be present or scattered. The electric arc or the heat caused by switching contacts may cause a fire or explosion.
- Do not use the Switch/Indicator in locations where toxic gases, such as H<sub>2</sub>S, SO<sub>2</sub>, NH<sub>3</sub>, HNO<sub>3</sub>, and Cl<sub>2</sub>, may be present, or in locations subject to high temperature or humidity. Doing so may damage the Switch/Indicator due to contact failure or corrosion.
- Do not use the Switch/Indicator submersed in oil or water, or in locations continuously subject to splashes of oil or water. Doing so may result in oil or water entering and damaging the Switch/Indicator.
- Do not use or keep the Switch/Indicator under the following conditions:
  - Subject to severe temperature changes.
  - Subject to high humidity or condensation.
  - Subject to severe vibration or shock.
  - Where direct rays of the sun strike.
  - Where sea breeze may be present.
- Make sure that a rubber washer is present between the Operation Unit and the panel. In models with IP69K, make sure the rubber bush of the Operation Unit is properly attached. Otherwise, the specifications of the protective structure may not be satisfied.
- Do not apply excessive force to the Switch or wirings. Damage or deformation of the Switch Block could cause an improper contact or a loss of safety.
- Use an appropriate wiring and crimp terminals (hereinafter, called ferrule terminals).
- Exercise caution to avoid wiring errors when connecting the terminals.
- To prevent wiring materials from smoking or ignition, confirm wire ratings and use the wiring materials given in the following table.

| Wire Type                    | Wire material | Recommended Wire                            | Wire coating peeling amount                                                                                             |
|------------------------------|---------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Solid wire/<br>Stranded Wire | Copper        | 0.25 to 1.5 mm <sup>2</sup><br>AWG 24 to 16 | Ferrules used: 10 to 12 mm<br>(Varies depending on the recommended ferrule conductor length)<br>Ferrules not used: 8 mm |

Use wiring crimp terminals and ferrule terminals of the specified size.

- After storing the product for a long time exceeding 1 year, perform, at a minimum, inspections of the operating characteristics, contact resistance, insulation resistance, and dielectric strength as well as evaluate the product under the working conditions.
- This Switch/Indicator is intended for indoor use only. Using the Switch/Indicator outdoors may result in failure.
- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force. Doing so may cause the wire disconnection.

## A22NE-P

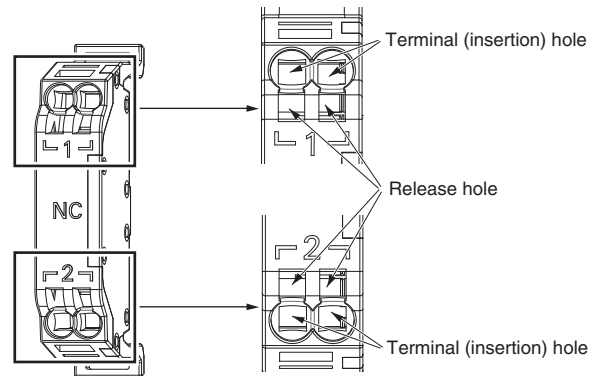
- Do not insert more than one wire into each terminal insertion hole.
- Do not mount A22N-P or A22NE-P Push-In Plus terminal switch blocks on A22N screw terminal blocks. Doing so may result in unsatisfactory performance.
- When mounting on a device with high airtightness, test operation in advance. There is a risk that the negative pressure will prevent the Operation Unit of from returning.
- In the case of loads where an inrush current occurs when the contact is opened or closed, the durability may reduce due to extreme wear on the contacts.  
If necessary, insert a contact protection circuit.

### Precautions for Correct Use

#### Wiring

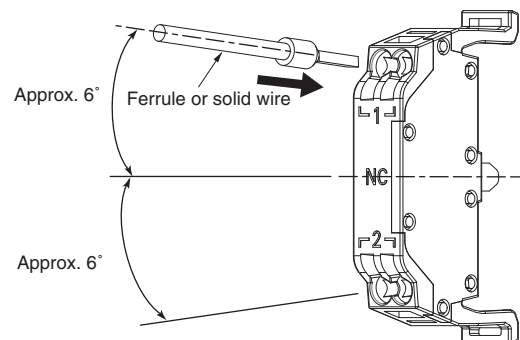
##### 1. Connecting Wires to the Push-In Plus Terminal Block

###### Part Names of the Terminal Block



###### Connecting Wires with Ferrules and Solid Wires

- Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block. The angle should be approximately 6°.
- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wires.

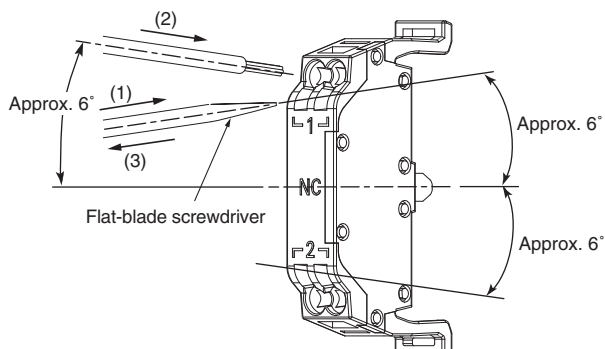


The wiring for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

### Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole.  
The angle should be approximately 6°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until the end strikes the terminal block.
3. Remove the flat-blade screwdriver from the release hole.



The wiring and screwdriver angles for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

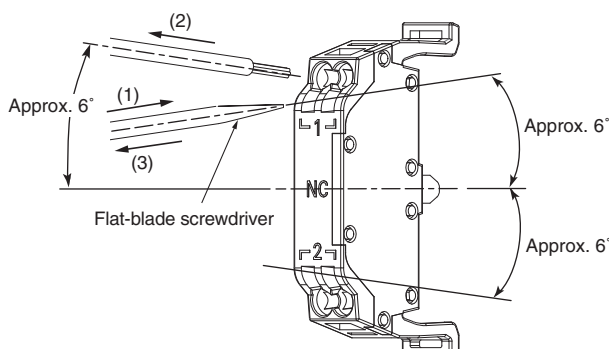
### Checking Connections

- After the insertion, pull gently on the wire to make sure that it will not come off and it is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

### 2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be approximately 6°.
2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
3. Remove the flat-blade screwdriver from the release hole.



The wiring and screwdriver angles for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

### 3. Recommended Ferrules and Crimp Tools

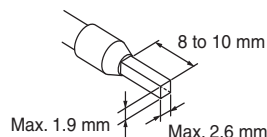
#### Coating peeling amount

| Recommend Wire Type                           | Stripping length (Ferrules not used) |
|-----------------------------------------------|--------------------------------------|
| 0.25 to 1.5 mm <sup>2</sup> /AWG 24 to AWG 16 | 8 mm                                 |

#### Recommended ferrules

| Applicable wire         |       | Ferrule conductor length (mm) | Stripping length (mm) (Ferrules not used) | Recommended ferrules                     |                    |              |
|-------------------------|-------|-------------------------------|-------------------------------------------|------------------------------------------|--------------------|--------------|
| (mm²)                   | (AWG) |                               |                                           | Phoenix Contact product                  | Weidmuller product | Wago product |
| 0.25                    | 24    | 8                             | 10                                        | Al 0, 25-8                               | H0.25/12           | 216-301      |
|                         |       | 10                            | 12                                        | Al 0, 25-10                              | ---                | ---          |
| 0.34                    | 22    | 8                             | 10                                        | Al 0, 34-8                               | H0.34/12           | 216-302      |
|                         |       | 10                            | 12                                        | Al 0, 34-10                              | ---                | ---          |
| 0.5                     | 20    | 8                             | 10                                        | Al 0, 5-8                                | H0.5/14            | 216-201      |
|                         |       | 10                            | 12                                        | Al 0, 5-10                               | H0.5/16            | 216-241      |
| 0.75                    | 18    | 8                             | 10                                        | Al 0, 75-8                               | H0.75/14           | 216-202      |
|                         |       | 10                            | 12                                        | Al 0, 75-10                              | H0.75/16           | 216-242      |
| 1/1.25                  | 18/17 | 8                             | 10                                        | Al 1-8                                   | H1.0/14            | 216-203      |
|                         |       | 10                            | 12                                        | Al 1-10                                  | H1.0/16            | 216-243      |
| 1.25/1.5                | 17/16 | 8                             | 10                                        | Al 1, 5-8                                | H1.5/14            | 216-204      |
|                         |       | 10                            | 12                                        | Al 1, 5-10                               | H1.5/16            | 216-244      |
| Recommended Crimp Tools |       |                               |                                           | CRIMPFOX6<br>CRIMPFOX6T-F<br>CRIMPFOX10S | PZ6 roto           | Variocri mp4 |

- Note:**
1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.
  2. Make sure that the ferrule processing dimensions conform to the following figures.

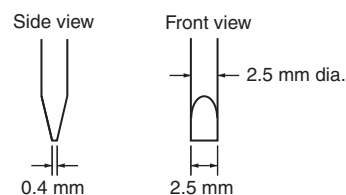


#### Recommended Flat-Blade Screwdrivers

Use a flat-blade screwdriver to connect and remove wires.

Use one of the following flat-blade screwdrivers.

The following table shows manufacturers and models as of 2015/Dec.



| Model                              | Manufacture     |
|------------------------------------|-----------------|
| ESD 0,40 × 2,5                     | Wera            |
| SZS 0,4 × 2,5<br>SZF 0-0,4 × 2,5 * | Phoenix Contact |
| 0.4 × 2.5 × 75 302                 | Wiha            |
| AEF.2,5 × 75                       | Facom           |
| 210-719                            | Wago            |
| SDI 0,4 × 2,5 × 75                 | Weidmuller      |

\* The SZF 0-0,4 × 2,5 (manufactured by Phoenix Contact) can be procured through an OMRON exclusive purchase form (XW4Z-00B).

- After wiring the Switch/Indicator, provide a sufficient insulation distance.

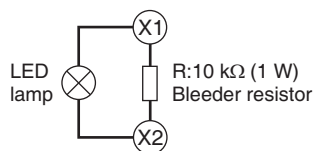
## A22NE-P

### LED Lamps

- A current-limiting resistor is built in the LED lamp, so the installation of an external resistance is not required.
- Lighting malfunction of the LED lamp  
A micro-current of approximately 0.1 mA or less is sufficient to turn on the LED lamps. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED lamp.  
The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

#### (Example of lighting malfunction prevention circuit)

When using a 24-VAC/VDC lighted unit



Be sure to read the "Safety Precautions" on page 56.

# Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) Screw Terminal Block types

# A22E

## Install in 22-dia. or 25-dia. Panel Cutout

### (When Using a Ring)

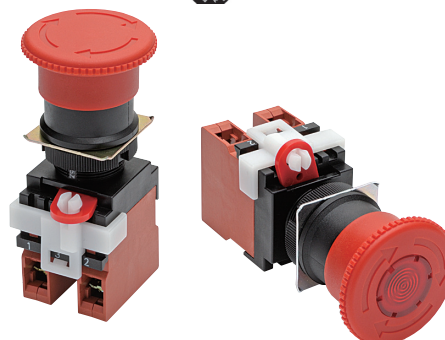
- Removal contact blocks provide an easy way of assembling the emergency stop push button.
- Mounted using either open-type (fork-type) or closed-type (round-type) crimp terminals.
- Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models).
- A lock plate is provided as a standard feature to ensure that the control box and switch are not easily separated.



Be sure to read the "Safety Precautions" on pages 50 and 56.



US LISTED



## Model Number Structure

### Model Number Legend (Completely Assembled)

For the most recent information on models that have been certified for safety standards, refer to your Omron website.

Shipped as a set which includes the Operation Unit, LED Lamp (lighted model only), Mounting Latches, Switch Block, and Lock Plate

**A22E** 1 - 2 - 3 - 4 - 5 - 6 (Example: A22EL-M-24A-01)

#### 1. Lighted/Non-lighted

| Code | Description |
|------|-------------|
| None | Non-lighted |
| L    | Lighted *   |

\* Lighted Emergency Stop Switches are available only for the medium (M). turn-reset models.

#### 2. Operation Unit size (diameter)/Reset function

| Code | Size    | Description |
|------|---------|-------------|
| MP   | 40 dia. | Pull-reset  |
| S    | 30 dia. | Turn-reset  |
| M    | 40 dia. |             |
| L    | 60 dia. |             |

#### 3. LED Lamp voltage

##### Lighting unit (Direct lighting)

| Code | Description     | Operating Voltage |
|------|-----------------|-------------------|
| None | Non-lighted     | ---               |
| 6 A  | Lighted (LED) * | 6 VAC/DC          |
| 12 A |                 | 12 VAC/DC         |
| 24 A |                 | 24 VAC/DC         |

##### Lighting unit (Voltage-reduction lighting)

| Code | Description     | Operating Voltage |
|------|-----------------|-------------------|
| T1   | Lighted (LED) * | 100 VAC           |
| T2   | Lighted (LED) * | 200 VAC           |

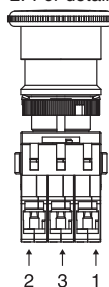
\* Equipped with 24-VAC/DC LED.

#### 4. Contacts

| Code | Number of Switch Blocks | NO | NC | Unit position |     |     |         |     |               |
|------|-------------------------|----|----|---------------|-----|-----|---------|-----|---------------|
|      |                         |    |    | Non-lighted   |     |     | Lighted |     |               |
|      |                         |    |    | 1             | 2   | 3   | 1       | 2   | 3             |
| 01   | 0                       | 1  | NC | ---           | --- | --- | NC      | --- | Lighting unit |
| 11   | 1                       | 1  | NC | NO            | --- | --- | NC      | NO  | Lighting unit |
| 02   | 0                       | 2  | NC | NC            | --- | --- | NC      | NC  | Lighting unit |
| 12   | 1                       | 2  | NC | NO            | NC  | --- | ---     |     |               |
| 03   | 0                       | 3  | NC | NC            | NC  | --- |         |     |               |

Note 1. NO: 1a-contact NC: 1b-contact

2. For details on the unit position, refer to the figure below.



#### 5. Configuration

| Code | Configuration                      |
|------|------------------------------------|
| None | Switch only                        |
| B    | Switch with Integrated Control Box |

#### 6. Configuration

| Code   | Configuration                                            |
|--------|----------------------------------------------------------|
| None   | Neither "EMO" nor "EMS" printed, arrows engraved in red. |
| EMO    | "EMO" and arrows printed in white.                       |
| EMO-RD | "EMO" printed in white, arrows engraved in red.          |
| EMS    | "EMS" and arrows printed in white.                       |
| EMS-RD | "EMS" printed in white, arrows engraved in red.          |

A22NE-PD

A22NE-P

A22E

Common Accessories and Tools

Common Note

## A22E

## Ordering Information

## List of Models (Completely Assembled)

## Non-lighted Models (Without EMO/EMS Indication)

| Appearance                                                                        | Operation                                    | Degree of Protection         | Contact configuration *1 | Set Model    | Color of cap |  |
|-----------------------------------------------------------------------------------|----------------------------------------------|------------------------------|--------------------------|--------------|--------------|--|
|  | 40-dia. head<br>Medium Pull-reset<br>A22E-MP | IP65 oil-resistant<br>models | 1NC (1)                  | A22E-MP-01   | Red          |  |
|                                                                                   |                                              |                              | 1NC, 1NO (2)             | A22E-MP-11   |              |  |
|                                                                                   |                                              |                              | 2NC (2)                  | A22E-MP-02   |              |  |
|  | 30-dia. head<br>Small Turn-reset<br>A22E-S   |                              | 1NC (1)                  | A22E-S-01 *2 |              |  |
|                                                                                   |                                              |                              | 1NC, 1NO (2)             | A22E-S-11 *2 |              |  |
|                                                                                   |                                              |                              | 2NC (2)                  | A22E-S-02 *2 |              |  |
|                                                                                   |                                              |                              | 2NC, 1NO (3)             | A22E-S-12 *2 |              |  |
|                                                                                   |                                              |                              | 3NC (3)                  | A22E-S-03 *2 |              |  |
|  | 40-dia. head<br>Medium Turn-reset<br>A22E-M  |                              | 1NC (1)                  | A22E-M-01 *2 |              |  |
|                                                                                   |                                              |                              | 1NC, 1NO (2)             | A22E-M-11 *2 |              |  |
|                                                                                   |                                              |                              | 2NC (2)                  | A22E-M-02 *2 |              |  |
|                                                                                   |                                              |                              | 2NC, 1NO (3)             | A22E-M-12 *2 |              |  |
|                                                                                   |                                              |                              | 3NC (3)                  | A22E-M-03 *2 |              |  |
|  | 60-dia. head<br>Large Turn-reset<br>A22E-L   |                              | 1NC (1)                  | A22E-L-01 *2 |              |  |
|                                                                                   |                                              |                              | 1NC, 1NO (2)             | A22E-L-11 *2 |              |  |
|                                                                                   |                                              |                              | 2NC (2)                  | A22E-L-02 *2 |              |  |

\*1. The number in parentheses ( ) indicates the number of switch units.

\*2. Models with Korean S-mark certification

**Note:** Yellow cap models are also available (not for emergency stop use). Contact your OMRON representative.

## Non-lighted Models (With EMO/EMS Indication)

| Appearance                                                                          | Operation                                                | Degree of Protection      | Contact configuration *1 | Set Model        | Color of cap |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------|--------------------------|------------------|--------------|
|  | 40-dia. head<br>Medium Turn-reset<br>With EMO Indication | IP65 oil-resistant models | 1NC (1)                  | A22E-M-01-EMO *2 | Red          |
|                                                                                     |                                                          |                           |                          | A22E-M-01-EMO-RD |              |
|                                                                                     |                                                          |                           | 1NC, 1NO (2)             | A22E-M-11-EMO *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-11-EMO-RD |              |
|                                                                                     |                                                          |                           | 2NC (2)                  | A22E-M-02-EMO *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-02-EMO-RD |              |
|                                                                                     |                                                          |                           | 2NC, 1NO (3)             | A22E-M-12-EMO *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-12-EMO-RD |              |
| 3NC (3)                                                                             | A22E-M-03-EMO *2                                         |                           |                          |                  |              |
|                                                                                     | A22E-M-03-EMO-RD                                         |                           |                          |                  |              |
|  | 40-dia. head<br>Medium Turn-reset<br>With EMS Indication |                           | 1NC (1)                  | A22E-M-01-EMS *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-01-EMS-RD |              |
|                                                                                     |                                                          |                           | 1NC, 1NO (2)             | A22E-M-11-EMS *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-11-EMS-RD |              |
|                                                                                     |                                                          |                           | 2NC (2)                  | A22E-M-02-EMS *2 |              |
|                                                                                     |                                                          |                           |                          | A22E-M-02-EMS-RD |              |
|                                                                                     |                                                          | 2NC, 1NO (3)              | A22E-M-12-EMS *2         |                  |              |
|                                                                                     |                                                          |                           | A22E-M-12-EMS-RD         |                  |              |
|                                                                                     |                                                          | 3NC (3)                   | A22E-M-03-EMS *2         |                  |              |
|                                                                                     |                                                          |                           | A22E-M-03-EMS-RD         |                  |              |

\*1. The number in parentheses ( ) indicates the number of switch units.

\*2. Models with Korean S-mark certification

**Note:** The colors of switch blocks are as follows:

NO (a-contact): Black

NC (b-contact): Red

The above illustration shows the 2NC (2b-contact) configuration.

## Lighted Models

| Appearance                                                                        | Operation                                                                                     | Degree of Protection | Contact configuration #1 | LED Lamp voltage | Set Model                | Color of cap |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------|--------------------------|------------------|--------------------------|--------------|
|  | 40-dia. head<br>Push-lock Turn-reset<br>Lighting unit<br>(Direct lighting)<br>A22E            | IP65                 | 1NC (1)                  | 6 VAC/VDC        | <b>A22EL-M-6A-01 *2</b>  | Red          |
|                                                                                   |                                                                                               |                      |                          | 12 VAC/VDC       | <b>A22EL-M-12A-01 *2</b> |              |
|                                                                                   |                                                                                               |                      |                          | 24 VAC/VDC       | <b>A22EL-M-24A-01 *2</b> |              |
|                                                                                   |                                                                                               |                      | 1NC, 1NO (2)             | 6 VAC/VDC        | <b>A22EL-M-6A-11 *2</b>  |              |
|                                                                                   |                                                                                               |                      |                          | 12 VAC/VDC       | <b>A22EL-M-12A-11 *2</b> |              |
|                                                                                   |                                                                                               |                      |                          | 24 VAC/VDC       | <b>A22EL-M-24A-11 *2</b> |              |
|                                                                                   |                                                                                               |                      | 2NC (2)                  | 6 VAC/VDC        | <b>A22EL-M-6A-02 *2</b>  |              |
|                                                                                   |                                                                                               |                      |                          | 12 VAC/VDC       | <b>A22EL-M-12A-02 *2</b> |              |
|                                                                                   |                                                                                               |                      |                          | 24 VAC/VDC       | <b>A22EL-M-24A-02 *2</b> |              |
|  | 40-dia. head<br>Push-lock Turn-reset<br>Lighting unit<br>(Voltage-reduction lighting)<br>A22E |                      | 1NC (1)                  | 100 VAC          | <b>A22EL-M-T1-01</b>     |              |
|                                                                                   |                                                                                               |                      |                          | 200 VAC          | <b>A22EL-M-T2-01</b>     |              |
|                                                                                   |                                                                                               |                      | 1NC, 1NO (2)             | 100 VAC          | <b>A22EL-M-T1-11</b>     |              |
|                                                                                   |                                                                                               |                      |                          | 200 VAC          | <b>A22EL-M-T2-11</b>     |              |
|                                                                                   |                                                                                               |                      | 2NC (2)                  | 100 VAC          | <b>A22EL-M-T1-02</b>     |              |
|                                                                                   |                                                                                               |                      |                          | 200 VAC          | <b>A22EL-M-T2-02</b>     |              |

\*1. The number in parentheses ( ) indicates the number of switch units.

\*2. Models with Korean S-mark certification

## Switch with Integrated Control Box

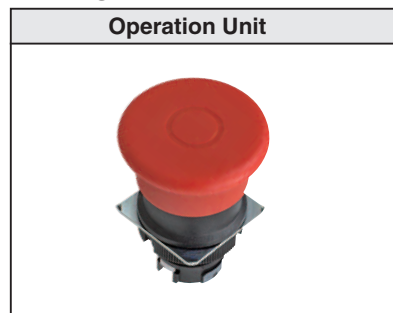
| Appearance                                                                         | Contact configuration (Number of switch blocks) | Model               |
|------------------------------------------------------------------------------------|-------------------------------------------------|---------------------|
|  | 1NC (1)                                         | <b>A22E-M-01B *</b> |
|                                                                                    | 1NC, 1NO (2)                                    | <b>A22E-M-11B *</b> |
|                                                                                    | 2NC (2)                                         | <b>A22E-M-02B *</b> |

**Note:** The A22Z-B101Y Control Box is used.

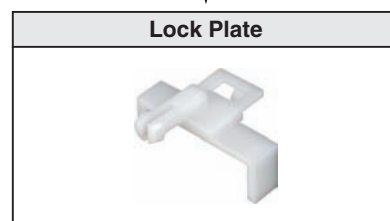
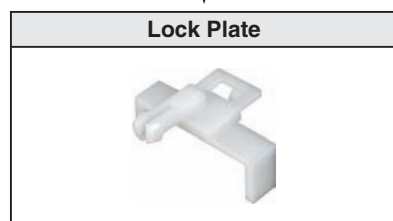
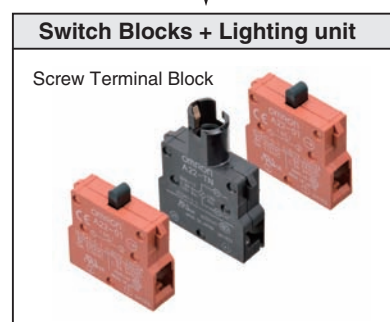
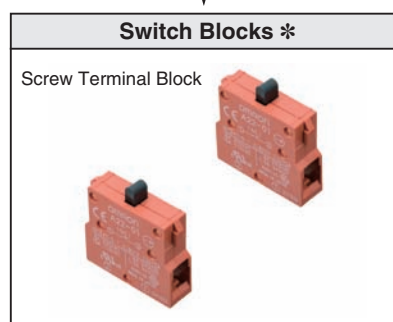
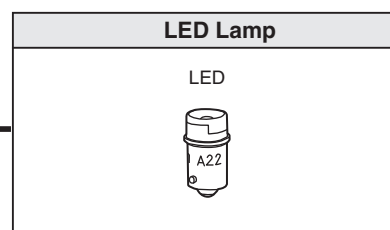
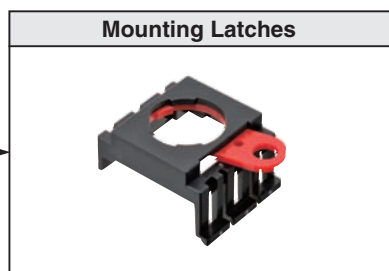
\* Models with Korean S-mark certification

**Subassembled** .... The Operation Unit, LED Lamp, Mounting Latches, and Switch Blocks can be ordered separately. Use them in combination for models that are not available as assembled Units. These can also be used as inventory for maintenance parts.

### Non-lighted



### Lighted



\* Up to three Switch Blocks can be mounted for multiple contacts.

Operation Unit  
Non-lighted

|            |                                                                                                                     | Size                                                                              | Small (30 dia.)                                                                                                   | Medium (40 dia.)                                                                              | Large (60 dia.) |
|------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------|
| Function   | Sealing capability                                                                                                  |                                                                                   | Single item order model                                                                                           |                                                                                               |                 |
| Pull-reset | IP65 oil-resistant models                                                                                           |                                                                                   | ---                                                                                                               | A22E-MP<br> | ---             |
| Turn-reset |                                                                                                                     |  | A22E-M<br>                      |            |                 |
|            |                                                                                                                     |                                                                                   | A22E-M-EMO<br>A22E-M-EMO-RD<br> |                                                                                               |                 |
|            | A22E-M-EMS<br>A22E-M-EMS-RD<br> |                                                                                   |                                                                                                                   |                                                                                               |                 |

Lighted

|            |                    | Size                                                                                           |
|------------|--------------------|------------------------------------------------------------------------------------------------|
| Function   | Sealing capability | Medium (40 dia.)                                                                               |
|            |                    | Single item order model                                                                        |
| Turn-reset | IP65               | A22EL-M<br> |

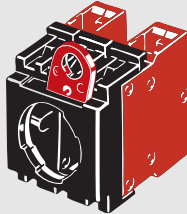
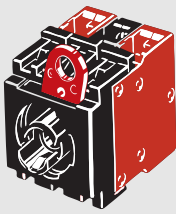
LED lamp

| Appearance                                                                          | LED light |          | Rated voltage | Model    |
|-------------------------------------------------------------------------------------|-----------|----------|---------------|----------|
|  | Red       | Standard | 6 VAC/VDC     | A22-6AR  |
|                                                                                     |           |          | 12 VAC/VDC    | A22-12AR |
|                                                                                     |           |          | 24 VAC/VDC    | A22-24AR |

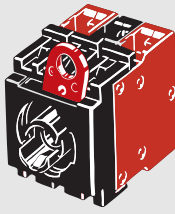
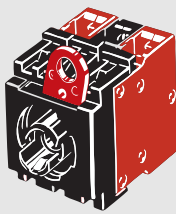
**Note:** For a model with a Lighting unit (Voltage-reduction lighting), use the A22-24AR.

## A22E

Switch  
Non-lighted / Direct lighting

| Classification                                                     |              | Non-lighted                                                                       | Direct lighting                                                                     |
|--------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Appearance                                                         |              |  |  |
| Contact specifications/<br>Configuration (Number of switch blocks) |              | Model                                                                             | Model                                                                               |
| For Standard loads                                                 | 1NC (1)      | A22-01M                                                                           | A22L-01M                                                                            |
|                                                                    | 1NC, 1NO (2) | A22-11M                                                                           | A22L-11M                                                                            |
|                                                                    | 2NC (2)      | A22-02M                                                                           | A22L-02M                                                                            |

## Voltage-reduction lighting (100 VAC, 200 VAC)

| Classification                                                     |              | 100 VAC, Lighted                                                                   | 200 VAC, Lighted                                                                     |
|--------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Appearance                                                         |              |  |  |
| Contact specifications/<br>Configuration (Number of switch blocks) |              | Model                                                                              | Model                                                                                |
| For Standard loads                                                 | 1NC (1)      | A22L-01M-T1                                                                        | A22L-01M-T2                                                                          |
|                                                                    | 1NC, 1NO (2) | A22L-11M-T1                                                                        | A22L-11M-T2                                                                          |
|                                                                    | 2NC (2)      | A22L-02M-T1                                                                        | A22L-02M-T2                                                                          |

**Note:** For a model with a Lighting unit (Voltage-reduction lighting), use the A22-24AR.

## Accessories (Order Separately)

| Item                            | Appearance                                                                          | Contact specifications               |               | Model             | Remarks                                                                                                                             |
|---------------------------------|-------------------------------------------------------------------------------------|--------------------------------------|---------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Switch Blocks<br>(one contact)  |    | 1NO (Black)                          | Standard load | <b>A22-10</b>     | Provided as standard.<br>Order Switch Blocks only when adding or replacing them.                                                    |
|                                 |                                                                                     |                                      | Microload     | <b>A22-10S</b>    |                                                                                                                                     |
|                                 |                                                                                     | 1NC (Red)                            | Standard load | <b>A22-01</b>     |                                                                                                                                     |
|                                 |                                                                                     |                                      | Microload     | <b>A22-01S</b>    |                                                                                                                                     |
| Switch Blocks<br>(two contacts) |    | 2NO (Black)                          | Standard load | <b>A22-20</b>     | Order Switch Blocks only when adding or replacing them.                                                                             |
|                                 |                                                                                     |                                      | Microload     | <b>A22-20S</b>    |                                                                                                                                     |
|                                 |                                                                                     | 2NC (Red)                            | Standard load | <b>A22-02</b>     |                                                                                                                                     |
|                                 |                                                                                     |                                      | Microload     | <b>A22-02S</b>    |                                                                                                                                     |
|                                 |                                                                                     | 1NC + 1NO<br>Contact (Black/<br>Red) | Standard load | <b>A22-11</b>     |                                                                                                                                     |
|                                 |                                                                                     |                                      | Microload     | <b>A22-11S</b>    |                                                                                                                                     |
| Lighting unit                   |    | Direct lighting                      |               | <b>A22-TN</b>     | Used when changing the lighting method.                                                                                             |
|                                 |                                                                                     | Voltage-reduction<br>lighting        | 100 VAC       | <b>A22-T1</b>     |                                                                                                                                     |
|                                 |                                                                                     |                                      | 200 VAC       | <b>A22-T2</b>     |                                                                                                                                     |
| Mounting Latches                |    | ---                                  |               | <b>A22-3200</b>   | Provided as standard.<br>Order Mounting Latches only when mounting Switch Blocks or Lighting Units that are purchased individually. |
| Lock Plate                      |   | ---                                  |               | <b>A22Z-3380</b>  | Use to fix the lever on the Switch.                                                                                                 |
| Control Boxes<br>(Enclosures)   |  | One hole, yellow box                 |               | <b>A22Z-B101Y</b> | Material: Polycarbonate resin.<br>When using a Control Box, 2NO, 2NC, or 1NC + 1NO two-contact Switch Blocks are not supported. *   |
|                                 |                                                                                     |                                      |               | <b>A22Z-B201Y</b> |                                                                                                                                     |

**Note:** For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

\* The A22NZ-B101Y and A22NZ-B201Y Control Box cannot be used in combination with the A22Z-3476-1 90-dia. Legend Plates for Emergency Stop or the A22Z-EG□ E-stop Shrouds.

## A22E

## Specifications

## Certified Standard Ratings

- UL, cUL (File No. E41515)  
6 A at 220 VAC, 10 A at 110 VAC
- TÜV (EN60947-5-1) (Low Voltage Directive)  
3 A at 220 VAC
- CCC (GB14048.5)  
3 A at 240 VAC, 1.5 A at 24 VDC

## Ratings

## Contacts (Standard Load)

| Rated carry current (A) | Rated voltage (V) | Rated current (A)        |                          |                          |                          |
|-------------------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                         |                   | AC15<br>(Inductive load) | AC12<br>(Resistive load) | DC13<br>(Inductive load) | DC12<br>(Resistive load) |
| 10                      | 24 VAC            | 10                       | 10                       | ---                      | ---                      |
|                         | 110 VAC           | 5                        | 10                       |                          |                          |
|                         | 220 VAC           | 3                        | 6                        |                          |                          |
|                         | 380 VAC           | 2                        | 3                        |                          |                          |
|                         | 440 VAC           | 1                        | 2                        |                          |                          |
|                         | 24 VDC            | ---                      | ---                      | 1.5                      | 10                       |
|                         | 110 VDC           |                          |                          | 0.5                      | 2                        |
|                         | 220 VDC           |                          |                          | 0.2                      | 0.6                      |
|                         | 380 VDC           |                          |                          | 0.1                      | 0.2                      |

**Note:** 1. Rated current values are determined according to the testing conditions. The above ratings were obtained by conducting tests under the following conditions.

- (1) Ambient temperature: 20°±2°C
- (2) Ambient humidity: 65±5%
- (3) Operating frequency: 20 operations/minute

2. Minimum applicable load: 10 mA at 5 VDC

## Characteristics

| Item                                               |                                    | Type                                                                          | Turn-reset        |               | Pull-reset                      |
|----------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------|-------------------|---------------|---------------------------------|
|                                                    |                                    |                                                                               | Non-lighted model | Lighted model | Non-lighted model               |
| Allowable operating frequency                      | Mechanical                         | 30 operations/minute (One operation consists of set and reset operations.)    |                   |               |                                 |
|                                                    | Electrical                         | 30 operations/minute (One operation consists of set and reset operations.)    |                   |               |                                 |
| Insulation resistance                              |                                    | 100 MΩ min. (at 500 VDC)                                                      |                   |               |                                 |
| Contact resistance                                 |                                    | 100 mΩ max. (initial value)                                                   |                   |               |                                 |
| Dielectric strength                                | Between terminals of same polarity | 2,500 VAC, 50/60 Hz for 1 min.                                                |                   |               |                                 |
|                                                    | Between each terminal and ground   | 2,500 VAC, 50/60 Hz for 1 min.                                                |                   |               |                                 |
| Vibration resistance                               |                                    | 10 to 55 Hz, 1.5-mm double amplitude (contact separation within 1 ms)         |                   |               |                                 |
| Shock resistance                                   | Destruction                        | 1000 m/s <sup>2</sup>                                                         |                   |               |                                 |
|                                                    | Malfunction                        | 250 m/s <sup>2</sup> max. (contact separation within 1 ms)                    |                   |               |                                 |
| Durability                                         | Mechanical                         | 300,000 operations min. (One operation consists of set and reset operations.) |                   |               |                                 |
|                                                    | Electrical                         | 300,000 operations min. (One operation consists of set and reset operations.) |                   |               |                                 |
| Ambient operating temperature *1                   |                                    | -20 to +70°C                                                                  | -20 to +55°C      | -20 to +70°C  |                                 |
| Ambient operating humidity                         |                                    | 35 to 85% RH                                                                  |                   |               |                                 |
| Ambient storage temperature                        |                                    | -40 to +70°C                                                                  |                   |               |                                 |
| Degree of protection                               |                                    | IP65 oil-resistant models *2 *3                                               |                   | IP65 *2       | IP65 oil-resistant models *2 *3 |
| Electric shock protection class                    |                                    | Class II                                                                      |                   |               |                                 |
| PTI (tracking characteristic)                      |                                    | 175                                                                           |                   |               |                                 |
| Degree of contamination                            |                                    | 3 (EN60947-5-1)                                                               |                   |               |                                 |
| Minimum direct opening stroke                      |                                    | 11 mm                                                                         |                   |               |                                 |
| Minimum direct opening force                       |                                    | 45 N                                                                          |                   |               |                                 |
| Conditional short-circuit current                  |                                    | 100 A (EN 60947-5-1)                                                          |                   |               |                                 |
| Weight (for a 40-dia. head 1NC/1NO Operation Unit) |                                    | Approx. 65 g                                                                  |                   | Approx. 80 g  | Approx. 100 g                   |

\*1. With no icing or condensation.

\*2. The degree of protection from the front of the panel.

\*3. The degree of protection is IP65 even with an integrated control box, but the system is not oil resistant.

## Certified Standards

| Certification body | Standards                                                 | File No.                                       |
|--------------------|-----------------------------------------------------------|------------------------------------------------|
| UL *1              | UL508, C22.2 No.14                                        | E41515                                         |
| TÜV SÜD            | EN60947-5-1<br>(Certified direct opening),<br>EN60947-5-5 | Consult your OMRON representative for details. |
| CQC (CCC)          | GB14048.5                                                 | 2003010303070635                               |
| KOSHA *2           | EN60947-5-1                                               | Consult your OMRON representative for details. |

**Note:** 1. Only models with NC contacts have a direct opening mechanism.

2. A fuse is not provided.

\*1. UL-certification for CSA C22.2 No. 14 has been obtained. Certification has been obtained for individual Switch Blocks and Lighting Units.

\*2. Some models have been certified.

## LED Lamp

| Rated voltage | Operating voltage | Current value |
|---------------|-------------------|---------------|
| 6 VAC/VDC     | 6 VAC/VDC ± 5%    | Approx. 8 mA  |
| 12 VAC/VDC    | 12 VAC/VDC ± 5%   |               |
| 24 VAC/VDC    | 24 VAC/VDC ± 5%   |               |

## Voltage-reduction lighting

| Rated voltage | Operating voltage         | Rated current | Applicable lamp<br>(BA9S/Base: 13) |
|---------------|---------------------------|---------------|------------------------------------|
| 110 VAC       | 100 VAC<br>(95 to 115 V)  | Approx. 8 mA  | LED lamp<br>A22-24A□               |
| 220 VAC       | 200 VAC<br>(190 to 230 V) |               |                                    |

Operating Characteristics

| Item                     | Turn-reset      | Pull-reset  |
|--------------------------|-----------------|-------------|
| Total travel force (TTF) | 44.1 N max.     | 58.8 N max. |
| Return force (RF)        | 0.25 N·m max. * | 58.8 N max. |
| Total travel (TT)        | 10 ±1 mm        | 5.5 ±1 mm   |

\* Rotation torque value.

Terminal Arrangement (BOTTOM VIEW)

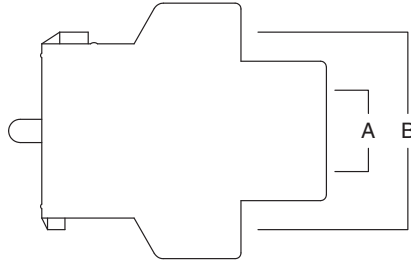
| Non-lighted (two contacts) | Non-lighted (three contacts) | Lighted (two contacts) |
|----------------------------|------------------------------|------------------------|
|                            |                              |                        |

Terminal connection

| Type                                    | Terminal Connection (BOTTOM VIEW)                               |                                                                  |                                                                 |                                                                 |                                                                  |                                                                 |                                                                 |                                                                 |                                                                 |                                                                 |  |
|-----------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--|
|                                         | 1NC, 1NO (two contacts)                                         |                                                                  | 2NC (two contacts)                                              |                                                                 | 2NC, 1NO (three contacts)                                        |                                                                 |                                                                 | 3NC (three contacts)                                            |                                                                 |                                                                 |  |
| Non-lighted                             | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NO</div> <div>3</div> <div></div> <div></div> <div>4</div>  | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div>  | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NO</div> <div>3</div> <div></div> <div></div> <div>4</div> | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> | <div>NC</div> <div>1</div> <div></div> <div></div> <div>2</div> |  |
| Lighted with Direct lighting            | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   | <div>X1</div> <div></div> <div></div> <div>X</div> <div>X2</div> | <div>3</div> <div></div> <div></div> <div></div> <div>4</div>   | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   | <div>X1</div> <div></div> <div></div> <div>X</div> <div>X2</div> | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   |                                                                 |                                                                 |                                                                 |                                                                 |  |
| Lighted with Voltage-reduction lighting | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   | <div>X1</div> <div></div> <div></div> <div>X</div> <div>X2</div> | <div>3</div> <div></div> <div></div> <div></div> <div>4</div>   | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   | <div>X1</div> <div></div> <div></div> <div>X</div> <div>X2</div> | <div>1</div> <div></div> <div></div> <div></div> <div>2</div>   |                                                                 |                                                                 |                                                                 |                                                                 |  |

**Note:** The above terminal connection diagrams are examples of the number of contacts.

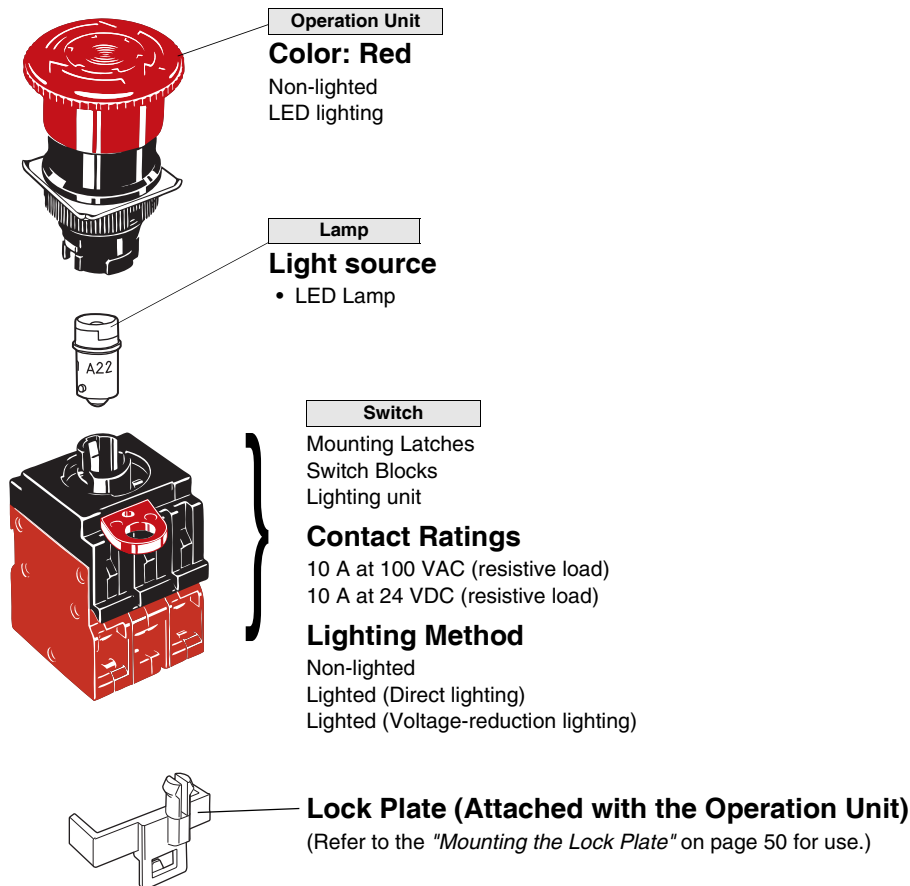
Terminal wiring drawings of two-contact Switch Units



| Type | Terminal Connection (BOTTOM VIEW) |                    |                         |
|------|-----------------------------------|--------------------|-------------------------|
|      | 2NC (two contacts)                | 2NO (two contacts) | 1NC, 1NO (two contacts) |
| A    | 21<br>22                          | 23<br>24           | 23<br>24                |
| B    | 11<br>12                          | 13<br>14           | 11<br>12                |

## A22E

## Structure and Nomenclature



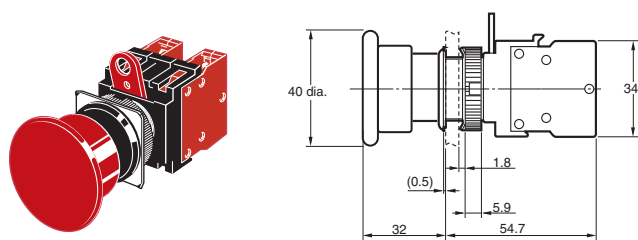
## Dimensions

(Unit: mm)

## Non-lighted Models

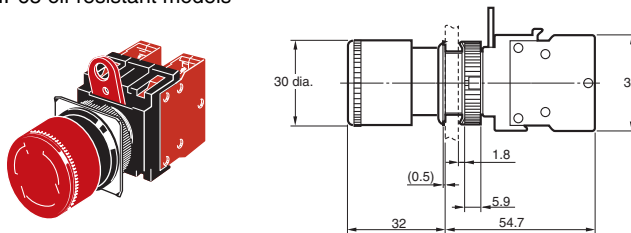
## A22E-MP

Medium Pull-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



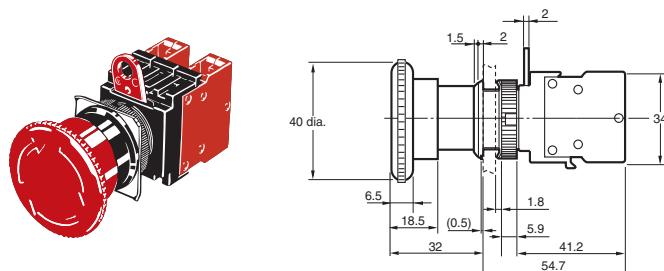
## A22E-S

Small Turn-reset (30-dia.) Degree of Protection: IP65 oil-resistant models



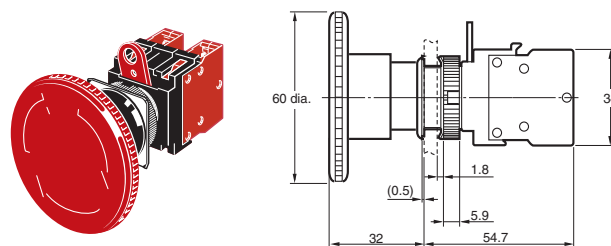
## A22E-M

Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



## A22E-L

Large Turn-reset (60-dia.) Degree of Protection: IP65 oil-resistant models



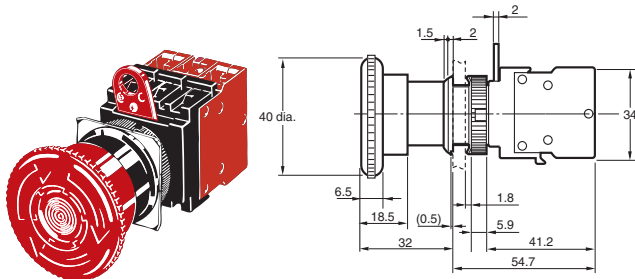
**Note:** The dimensions are the same as for EMO/EMS indication models.

**Note:** Unless otherwise specified, a tolerance of  $\pm 0.8$  mm applies to all dimensions.

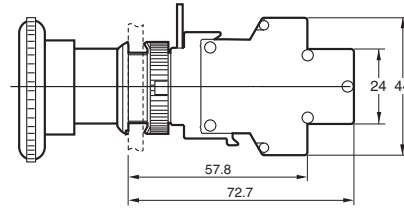
## Lighted Model

### A22EL-M

Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



Switch dimensions when mounted to a 2NO (2NC) one-piece switch block



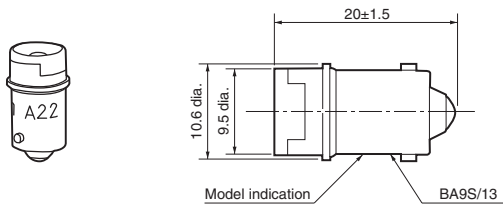
**Note:** The operation unit is an example for the A22E-M.

**Note:** Unless otherwise specified, a tolerance of  $\pm 0.8$  mm applies to all dimensions.

## Accessories (Order Separately)

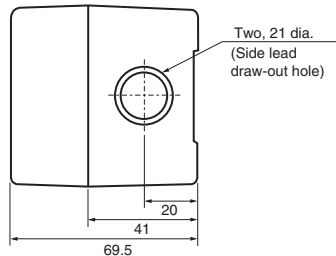
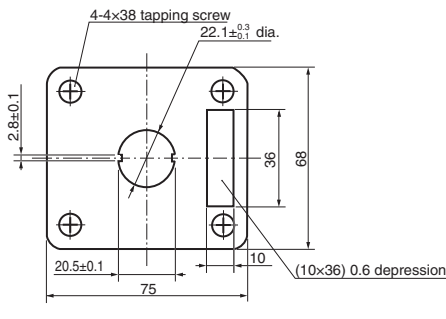
### LED Lamp

A22-6□, 12□, 24□

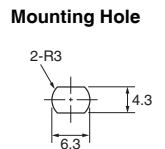
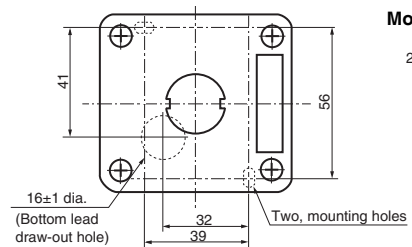


### Control Box

A22Z-B101Y (1-hole)

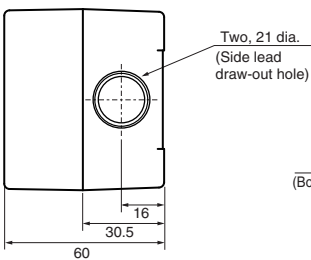
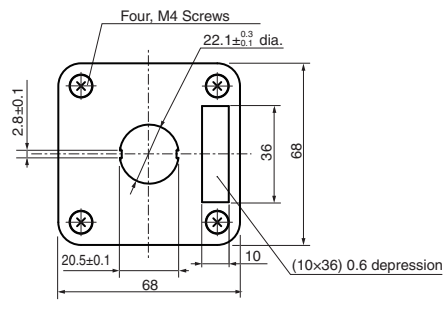


### Cable Draw-out Hole (Top View)

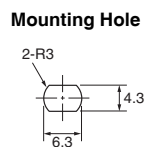
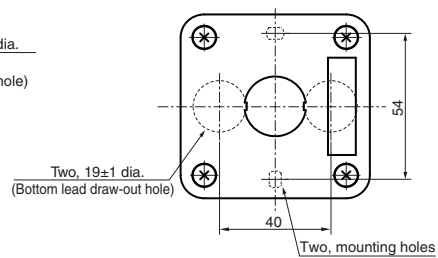


### Control Box

A22Z-B201Y (1-hole)



### Cable Draw-out Hole (Top View)



**Note:** For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

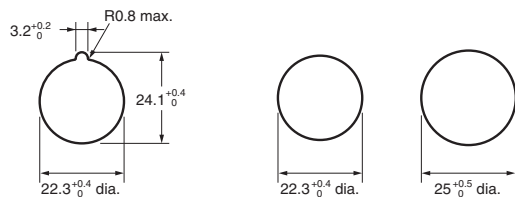
## A22E

## Installation

## Mounting to the Panel

## (1) Preparing the Panel

- The panel dimensions are shown below.
- The panel thickness must be 1 to 5 mm.



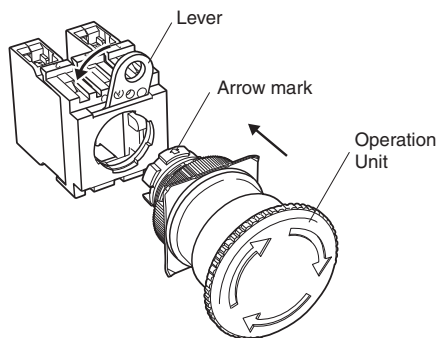
## With Lock Ring

## Without Lock Ring

- Always use a 25-mm-dia. A22Z-R25 Lock Ring for a 25-mm-dia. hole. IP65 degree of protection will be lost if the 25-mm-dia. Lock Ring is not used because of the larger size of a 25-mm-dia. hole.
- When painting or coating the panel, make sure that the specified panel dimensions apply to the panel after painting or coating.

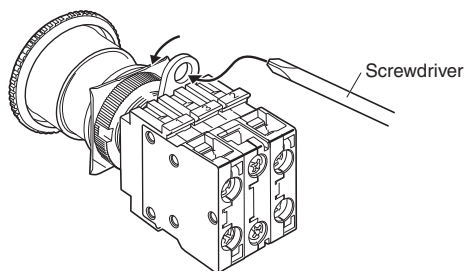
## (3) Mounting the Switch on the Operation Unit

- Insert the Operation Unit into the Switch Unit, aligning the arrow mark inscribed on the Case with the lever on the Switch Blocks, then move the lever in the direction indicated by the arrow in the following figure.



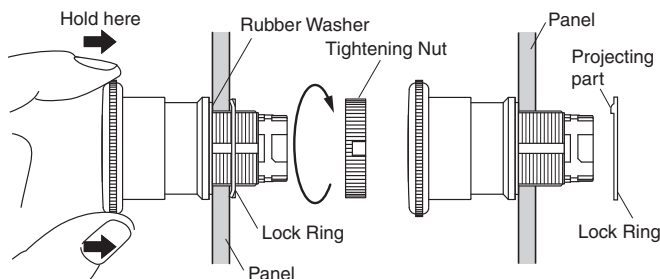
## (4) Removing the Switch

- Move the lever in the direction indicated by the arrow in the following figure, then pull the Operation Unit or the Switch Blocks. Since the lever has a hole with an inside diameter of 6.5 mm, the lever can be moved in the specified direction by inserting a screwdriver into the hole and then moving the screwdriver.

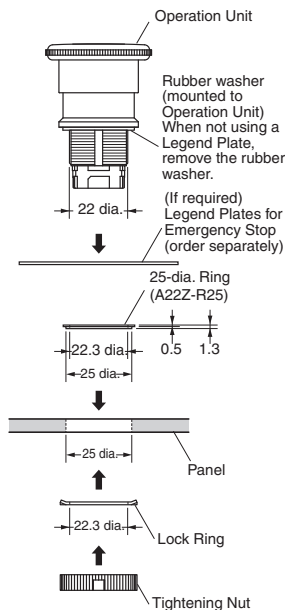


## (2) Mounting the Operation Unit on the Panel

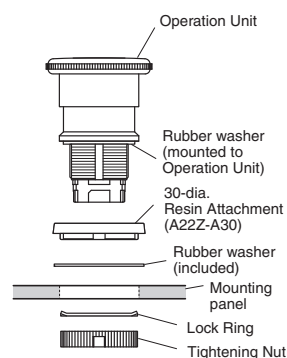
- Insert the Operation Unit from the front surface of the panel, insert the Lock Ring and the Tightening Nut from the terminal side, then tighten the Ring. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.
- Align the Lock Ring with the groove in the casing, then insert the Lock Ring so that its edge is located on the panel side.
- Tighten the Tightening Nut at a torque of 1.0 to 2.0 N·m.
- When using a Lock Ring, replace with the supplied Lock Ring, insert the projecting part into the lock slot, and then tighten the Tightening Nut.



- When the panel cutout dimension is 25 dia., remove the supplied rubber washer and mount the 25-dia. Ring as shown below. (Since the A22Z-R25 is not attached to the main body, order separately.) When using a Legend Plate (Order Separately), do not remove the rubber washer.



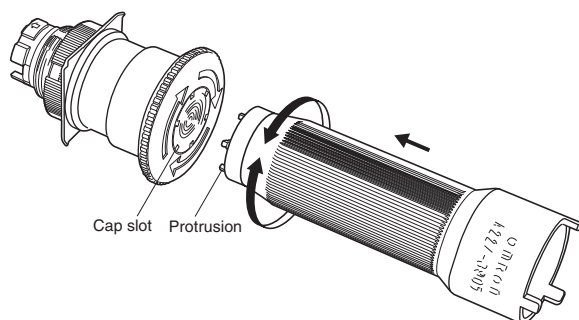
- When the panel cutout dimension is 30 dia., use resin attachment A22Z-A30. Since it is not attached to the main body, order separately.



## Assembling the Cap

## Emergency Stop Switch

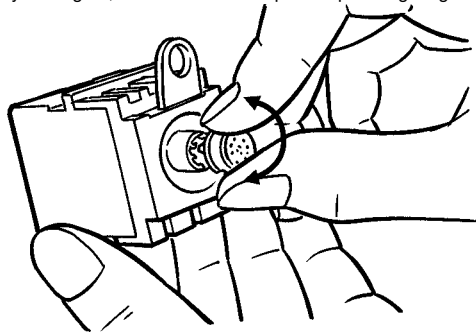
- Insert the protrusion of the Tightening Wrench (A22Z-3905) into the Cap slot and then turn to remove the Cap.



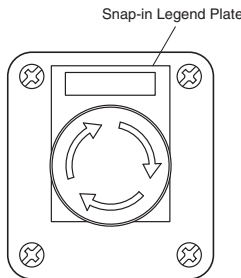
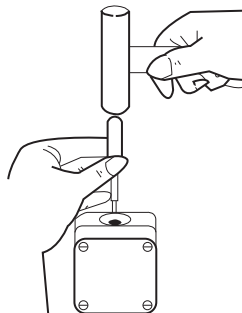
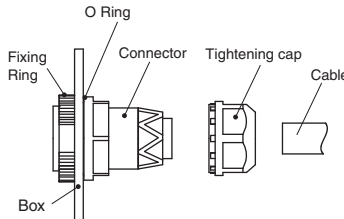
Installing/Replacing the LED Lamp

Installing/Replacing on the Switch

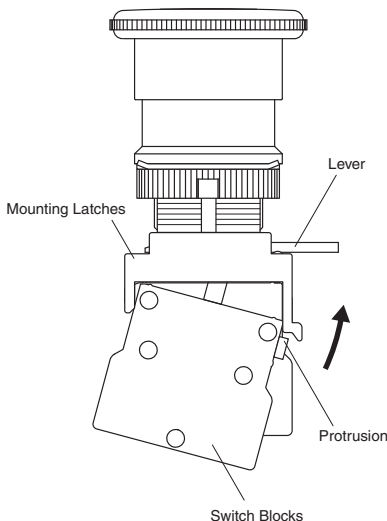
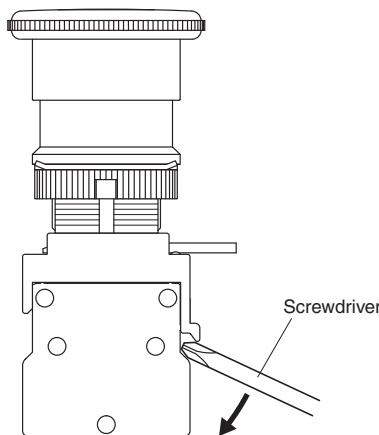
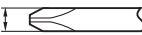
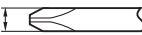
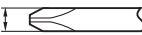
- Grip the lamp with your fingers, then rotate the lamp while pressing it against the Switch.



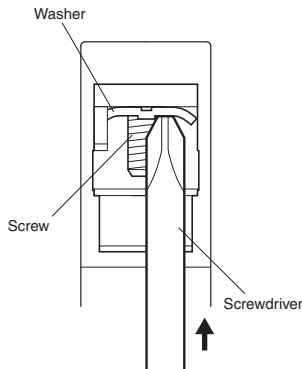
Control Box (Enclosure)

| (1) Mounting the Switch                                                                                                                                                                                                                                             | (2) Creating a Cable Port Hole                                                                                                                                                                                                                                                                                                            | (3) Securing the Connector Cable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |           |             |             |              |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|-------------|-------------|--------------|-------------|
| <p>The Standard-size Legend Plate Frame can be mounted.</p> <p>Mount the Frame as shown in the following diagram. Mount the Switch in the same way as for an ordinary panel.</p>  | <p>Place the tip of a screwdriver on the surface where the cable port hole is to be created with the cover attached and strike the screwdriver to punch a hole.</p> <p>Attempts to punch a hole on the other side of the case will damage the Box.</p>  | <p>1. Insert the connector into the cable port hole in the Box and secure with the Mounting Ring inside the box.</p> <p>2. Pass the tightening cap through the cable, insert the cable into the connector, and tighten the tightening cap to secure the cable.</p>  <table><tr><th>Cable diameter (mm)</th><th>Connector</th></tr><tr><td>7 to 9 dia.</td><td>A22Z-3500-1</td></tr><tr><td>9 to 11 dia.</td><td>A22Z-3500-2</td></tr></table> | Cable diameter (mm) | Connector | 7 to 9 dia. | A22Z-3500-1 | 9 to 11 dia. | A22Z-3500-2 |
| Cable diameter (mm)                                                                                                                                                                                                                                                 | Connector                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |           |             |             |              |             |
| 7 to 9 dia.                                                                                                                                                                                                                                                         | A22Z-3500-1                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |           |             |             |              |             |
| 9 to 11 dia.                                                                                                                                                                                                                                                        | A22Z-3500-2                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |           |             |             |              |             |

Installing/Removing the Switch Blocks

| (1) Installing the Switch Blocks                                                                                                                                                                                                                                                                                                                                                     | (2) Removing the Switch Blocks                                                                                                                                                                                                                                                                               |                                                                                      |           |                                                                                      |                        |                |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------|------------------------|----------------|--------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Hook the small protrusion on the Mounting Latch into the groove on the other side of the lever, then push up the Switch Block in the direction indicated by the arrow in the figure below.</li></ul>                                                      | <ul style="list-style-type: none"><li>• Insert a screwdriver between the Mounting Latch and the Switch Block, then push down the screwdriver in the direction indicated by the arrow in the following figure.</li></ul>  |                                                                                      |           |                                                                                      |                        |                |                                                                                      |
| <p>Use either of the following screwdrivers.</p> <table><tr><td>⊖ Flat-head screwdriver</td><td>3 to 6 mm</td><td></td></tr><tr><td>⊕ Phillips screwdriver</td><td>3 to 6 mm dia.</td><td></td></tr></table> |                                                                                                                                                                                                                                                                                                              | ⊖ Flat-head screwdriver                                                              | 3 to 6 mm |  | ⊕ Phillips screwdriver | 3 to 6 mm dia. |  |
| ⊖ Flat-head screwdriver                                                                                                                                                                                                                                                                                                                                                              | 3 to 6 mm                                                                                                                                                                                                                                                                                                    |  |           |                                                                                      |                        |                |                                                                                      |
| ⊕ Phillips screwdriver                                                                                                                                                                                                                                                                                                                                                               | 3 to 6 mm dia.                                                                                                                                                                                                                                                                                               |  |           |                                                                                      |                        |                |                                                                                      |

Wiring

| Wiring Round Crimp Terminals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Loosen the terminal screw from the Switch Unit until it completely comes off the groove, insert a screwdriver as shown in the following figure, then push up the washer in the direction indicated by the arrow to temporarily secure it.</li></ul> <p>Now, a round crimp terminal can be connected. After inserting the terminal, tighten the screws to complete wiring.</p>  |

## A22E

## Safety Precautions

Be sure to read the precautions for **All PushButton Switches** in the website at: <http://www.ia.omron.com/>.

## Indication and Meaning for Safe Use

|                                 |                |                                                                                                                                                                   |
|---------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | <b>Warning</b> | Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage. |
|                                 | <b>CAUTION</b> | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.                                  |
| <b>Precautions for Safe Use</b> |                | Supplementary comments on what to do or avoid doing, to use the product safely.                                                                                   |

**WARNING**

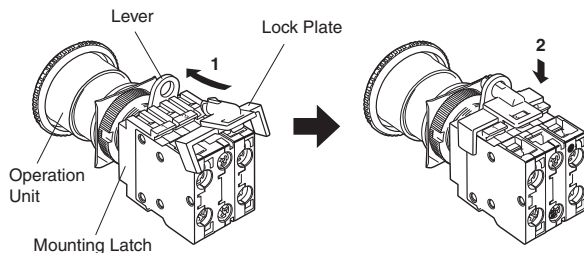
Do not perform wiring with power supplied to the Switch/Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.

 **Caution**

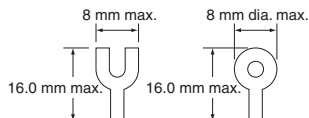
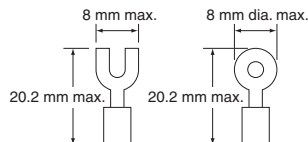
If the Operation Unit is separated from the Socket Unit, the equipment will not stop, creating a hazardous condition. Secure the lever on the Socket Unit by using the A22Z-3380 Lock Plate so that the Operation Unit cannot be easily separated from the Socket Unit. (Refer to "Mounting the Lock Plate" at the below.)

**Precautions for Correct Use****Mounting the Lock Plate**

1. Confirm that the lever on the Mounting Latch is on the side where the Operation Unit is secured and then insert the protrusion on the Lock Plate into the hole in the lever on the Mounting Latch.
2. Press the hole on the Lock Plate onto the protrusion on the Mounting Latch until it clicks into place.

**Wiring**

- Terminal screws must be Phillips or slotted M3.5 screws with a square washer.
- The tightening torque is 1.08 to 1.27 N·m.
- Single wires, stranded wires, and crimp terminals can be connected to the Switch.
- Applicable Wiring Materials:  
Twisted strands: 2 mm<sup>2</sup> max.  
Solid wire: 1.6 mm dia. max.

**Naked Crimp Terminals****Crimp Terminals with Insulating Sheaths**

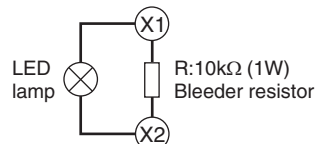
- After wiring the Switch, maintain an appropriate clearance and creepage distance.

**LED Lamps**

- The LED current-limiting resistor is built-in, so internal resistance is not required.
- If commercially available LEDs are used, select the ones that meet the following conditions:  
Base: BA9S/13  
Overall length: 26 mm max.  
Power consumption: 2.6 W max.  
When DC-specific LEDs are used, wire the Switch so that the X1 terminal is positive.
- Mis-lighting of the LED  
The LED lights with approx. 0.1 mA or less of micro-current. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED.  
The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

**(Circuit example)**

In case of using 24 VAC/VDC, Direct lighting



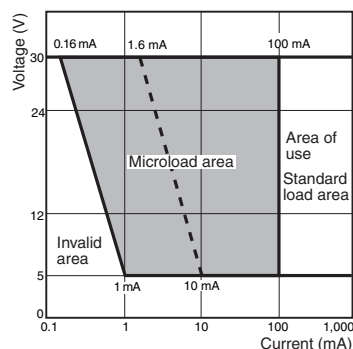
- Do not use a lamp that does not satisfy the rating.

**Using the Microload**

Contact failure may occur if a Switch designed for a standard load is used to switch a microload. Use Switches within the application ranges shown in the following graph. Even within the application range, insert a contact protection circuit, if necessary, to prevent the reduction of life expectancy due to extreme wear on the contacts caused by loads where inrush current occurs when the contact is opened and closed.

The minimum applicable load is the N-level reference value. This value indicates the malfunction reference level for the reliability level of 60% ( $\lambda_{60}$ ) (conforming to JIS C5003).

The equation,  $\lambda_{60} = 0.5 \times 10^{-6}/\text{time}$  indicates that the estimated malfunction rate is less than 1/2,000,000 with a reliability level of 60%.

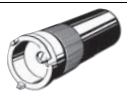
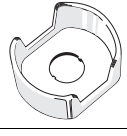
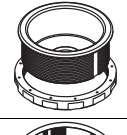


Be sure to read the "Safety Precautions" on page 56.

## Common Accessories and Tools (Order Separately)

## Ordering Information

## Common to Push-in Plus Terminal Block types (A22NE-PD/A22NE-P)/Screw Terminal Block types (A22E)

| Item                             | Appearance                                                                          | Classification                                   |              | Model       | Remarks                                                                                                                                                                                                                      |
|----------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legend Plates for Emergency Stop |    | 60-dia. black letters on yellow back-ground      |              | A22Z-3466-1 | Used in combination with the rubber packing when the level of protection is to be met between panels. *1                                                                                                                     |
|                                  |                                                                                     | 90-dia. black letters on yellow back-ground      |              | A22Z-3476-1 | Used in combination with the rubber packing when the level of protection is to be met between panels. *1 *3                                                                                                                  |
|                                  |    | 60-dia. black letters on yellow background       |              | A22Z-3466-2 | Used in combination with the rubber packing when the level of protection is to be met between panels. *1                                                                                                                     |
| Hole Plug                        |    | Round                                            |              | A22Z-3530   | Used for covering the panel cutouts for future panel expansion. Black color.                                                                                                                                                 |
| Connectors                       |    | Applicable cable diameter                        | 7 to 9 dia.  | A22Z-3500-1 | Plastic connector used to extend a cable from the Switch Box. (Refer to page 15, 32, and 49).                                                                                                                                |
|                                  |                                                                                     |                                                  | 9 to 11 dia. | A22Z-3500-2 |                                                                                                                                                                                                                              |
| 25-dia. Ring                     |    | ---                                              |              | A22Z-R25    | Use when mounting to a panel with a 25-dia. hole. (Refer to page 15, 31, and 48).<br>Material: Rubber, Level of protection: IP65                                                                                             |
| 30-dia. Resin Attachment         |    | ---                                              |              | A22Z-A30    | Use when mounting to a panel with a 30-dia. hole. (Refer to page 15, 31, and 48).<br>A rubber packing is provided with the product.                                                                                          |
| Lock Ring                        |    | ---                                              |              | A22Z-3360   | The body is equipped with a Lock Ring.<br>This Lock Ring is used when a more secure lock feature is required. (Refer to page 15 and 31).                                                                                     |
| Tightening Tool                  |    | ---                                              |              | A22Z-3905   | Used for tightening the tightening nut from the back side of the panel, and for removing the cap in lighted models.                                                                                                          |
| E-stop Shroud for EMO, Yellow    |   | ---                                              |              | A22Z-EG1    | Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY OFF come as a set. Use with an A22E Emergency Stop Switch (for emergency shutoff) *2 *3  |
| E-stop Shroud for EMO, Yellow    |  | Legend plate for EMERGENCY OFF is not included.  |              | A22Z-EG10   | Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI S2 compatibility. Use with an A22E with EMO indication. (for emergency off) *3                                                                                          |
| E-stop Shroud for EMS, White     |  | ---                                              |              | A22Z-EG1-W  | Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY STOP come as a set. Use with an A22E Emergency Stop Switch. (for emergency stop) *2 *3   |
| E-stop Shroud for EMS, White     |  | Legend plate for EMERGENCY STOP is not included. |              | A22Z-EG10-W | Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI S2 compatibility. Use with an A22E with EMS indication. (for emergency stop) *3                                                                                         |
| E-stop Shroud, Yellow            |  | Spacer Unit is not included.                     |              | A22Z-EG2    | SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI S2-compatible Shroud. (for emergency shutoff) *2 *3<br>Use together with an A22E Emergency Stop Switch.                                                                          |
|                                  |                                                                                     | One Spacer Unit is included.                     |              | A22Z-EG21   |                                                                                                                                                                                                                              |
|                                  |                                                                                     | Two Spacer Units are included.                   |              | A22Z-EG22   |                                                                                                                                                                                                                              |
| E-stop Shroud for EMO, Yellow    |  | ---                                              |              | A22Z-EG3    | Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY OFF come as a set. Use with an A22E Emergency Stop Switch. (for emergency shutoff) *2 *3 |
| Rubber Packing                   |  | -                                                |              | A22Z-R      | Used together with accessories.<br>Contains 10 packings.                                                                                                                                                                     |

\*1. If you use Legend Plates for Emergency Stop, set the thickness of the panels between 1 to 4 mm.

\*2. These Shrouds are for use with the equipment only that conforms to SEMI standards. Do not use them for any other applications (e.g. emergency stop switches for machines or devices such as Machine tools, Printing presses, Industrial machinery, etc).

\*3. The Control Boxes cannot be used in combination with the A22Z-3476-1 Legend Plates for Emergency Stop or the A22Z-EG□ E-stop Shrouds.

**Note:** 1. Accessories for A22Z-EG1: one "EMERGENCY OFF" label, two rubber packings, and one lock ring

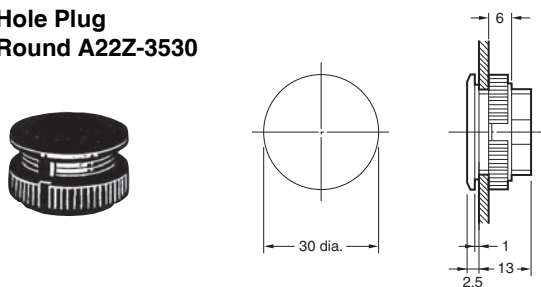
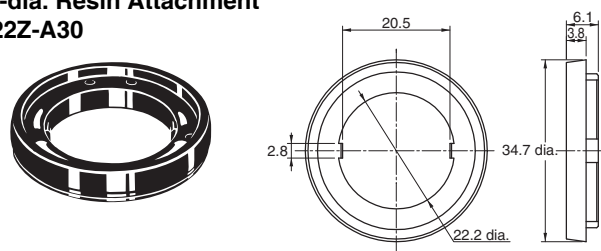
2. Accessories for A22Z-EG10: one rubber packing and one lock ring (without label)

## A22NE-PD/A22NE-P/A22E

## Dimensions

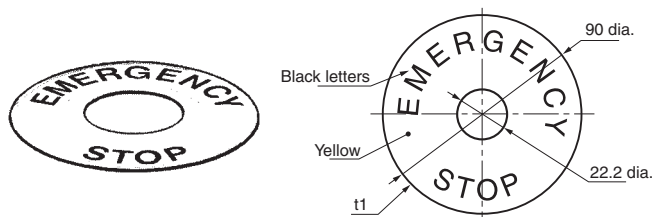
(Unit: mm)

## Screw Terminal Block Type/Push-in Plus Terminal Block Type

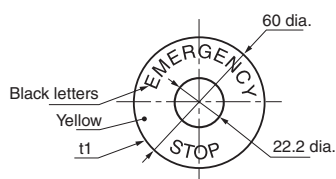
Hole Plug  
Round A22Z-353030-dia. Resin Attachment  
A22Z-A30

## Legend Plates for Emergency Stop

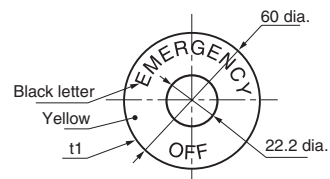
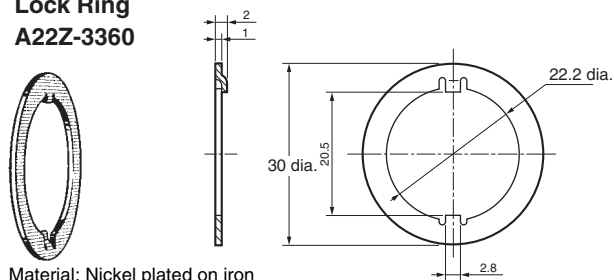
A22Z-3476-1 (90 dia.)



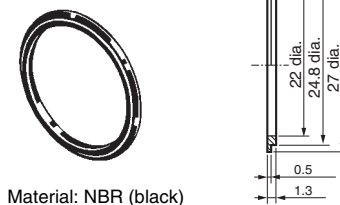
A22Z-3466-1 (60 dia.)



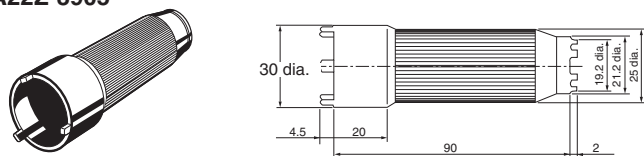
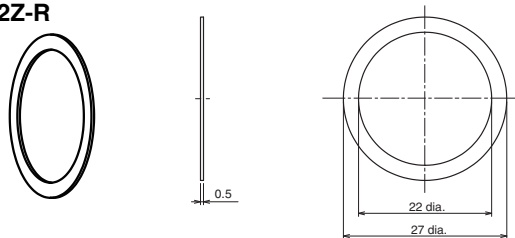
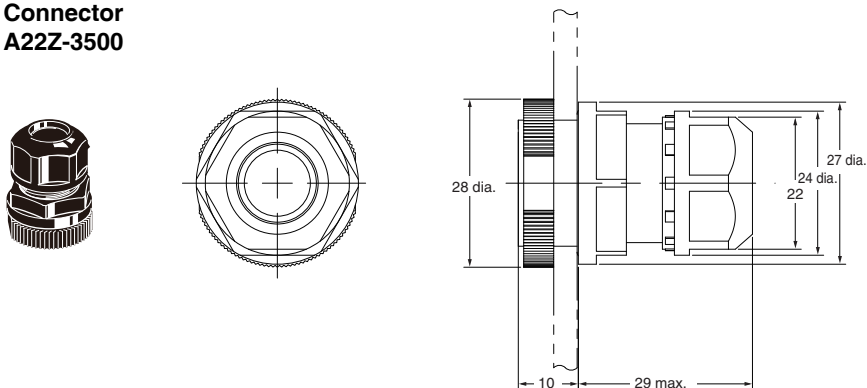
A22Z-3466-2 (60 dia.)

Lock Ring  
A22Z-3360

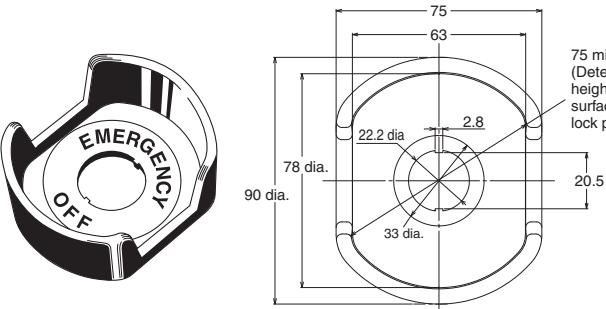
Material: Nickel plated on iron

25-dia. Ring  
A22Z-R25

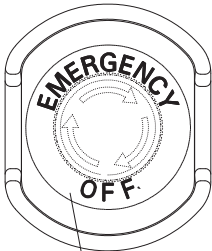
Material: NBR (black)

Tightening Tool  
A22Z-3905Rubber Packing  
A22Z-RConnector  
A22Z-3500

Common E-stop Shrouds  
A22Z-EG1, A22Z-EG1-W, A22Z-EG10, A22Z-EG10-W

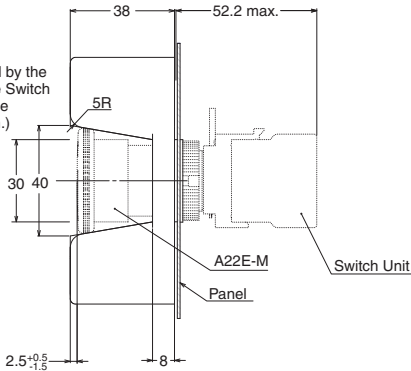


- Note:** 1. The dimensions of the Shroud conform to the specifications of the SEMATECH Application Guide for SEMI S2-93.  
2. The Shroud is not provided with the Switch.

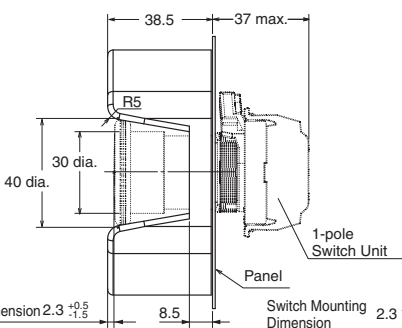


"EMERGENCY STOP" is indicated on A22Z-EG1-W.  
Legend plate is not provided with A22Z-EG10 and A22Z-EG10-W.

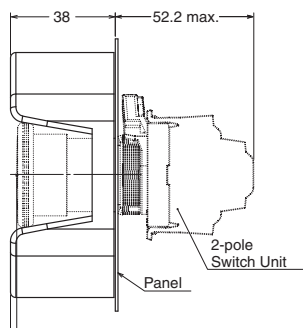
Screw Terminal Block type  
Mounting a 1-pole Switch Unit



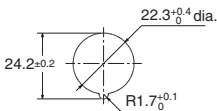
Push-in Plus Terminal Block type  
Mounting a 1-pole Switch Unit



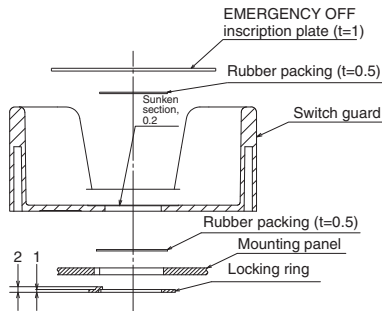
Push-in Plus Terminal Block type  
Mounting a 2-pole Switch Unit



Panel Cutout Dimensions

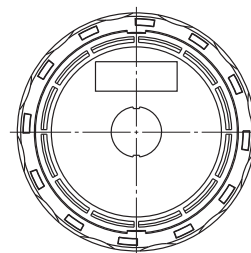
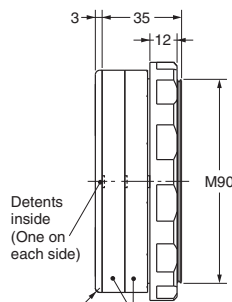
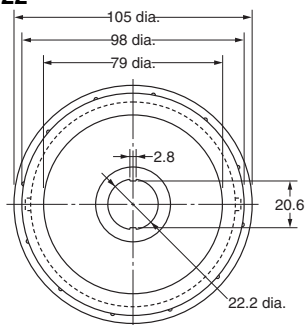
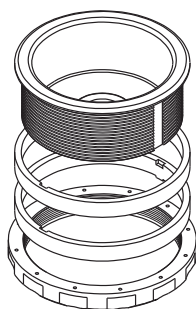


| Model           | Allowable panel thickness [mm] |
|-----------------|--------------------------------|
| A22NE-PD series | 1 to 1.8                       |
| A22NE-P series  | 1 to 2.0                       |
| A22E series     |                                |



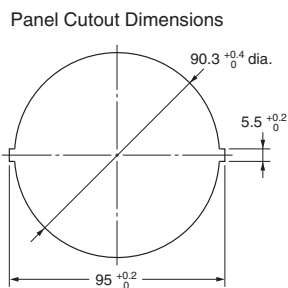
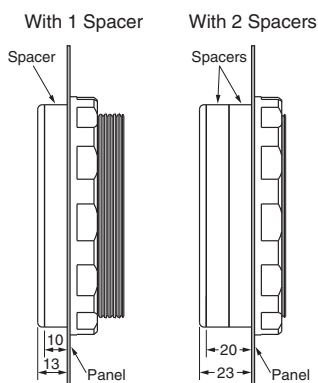
## E-stop Shrouds

A22Z-EG2, A22Z-EG21, A22Z-EG22



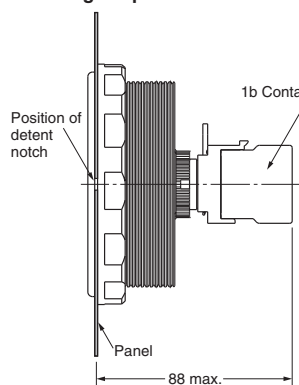
The number of spacers depends on the model  
A22Z-EG2 : No Spacer  
A22Z-EG21 : 1 Spacer  
A22Z-EG22 : 2 Spacers

## During spacer attachment

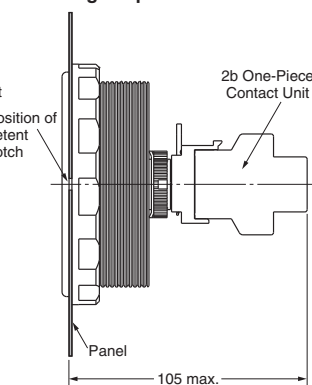


- Note:**
1. The dimensions of the Shroud conform to the specifications of the SEMATECH *Application Guide for SEMI S2-93*.
  2. The Shroud is not provided with the Switch.
  3. Tighten to a torque of 1.96 to 2.94 N·m.
  4. The allowable panel thicknesses are as follows:  
Without Spacers:  $t=1.3$  to  $22.5$  mm  
With 1 Spacer:  $t=1.3$  to  $12.5$  mm  
With 2 Spacers:  $t=1.3$  to  $2.5$  mm

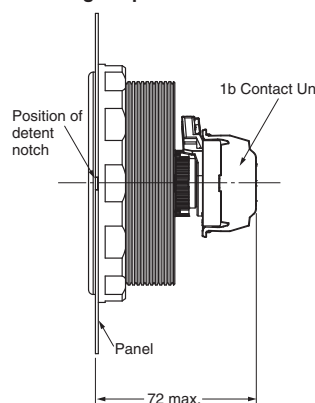
## Screw Terminal Block Type Mounting a 1-pole Switch Unit \*



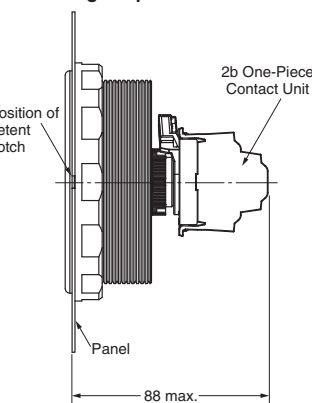
## Screw Terminal Block Type Mounting a 2-pole Switch Unit \*



## Push-in Plus Terminal Block Type Mounting a 1-pole Switch Unit \*

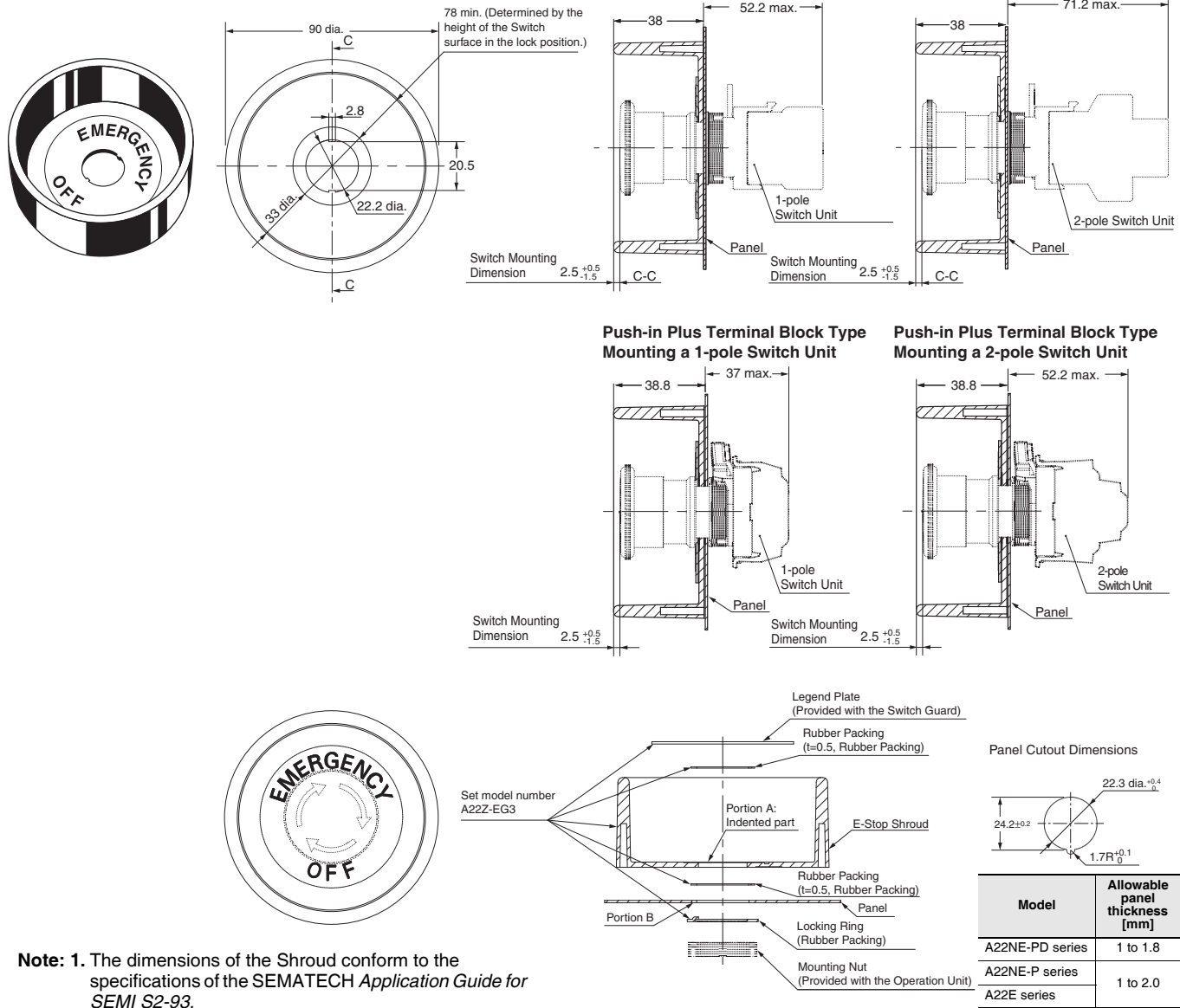


## Push-in Plus Terminal Block Type Mounting a 2-pole Switch Unit \*



\* These are the dimension from the front of the panel when the Switch Unit is attached.

E-stop Shroud  
A22Z-EG3



## A22E/A22NE-P

### Safety Precautions

Be sure to read the precautions **for All PushButton Switches** in the website at:<http://www.ia.omron.com/>.

#### Indication and Meaning for Safe Use

| Precautions for Safe Use | Supplementary comments on what to do or avoid doing, to use the product safely. |
|--------------------------|---------------------------------------------------------------------------------|
|--------------------------|---------------------------------------------------------------------------------|

#### Precautions for Correct Use

##### Mounting

- Always make sure that the power is turned OFF before wiring the Switch. Also, do not touch the terminals or other current-carrying ports while power is being supplied. Electric shock may occur.
- Do not tighten the tightening nut more than necessary by using tools such as pointed-nose pliers. Doing so could damage the tightening nut. (The tightening torque is 1.0 to 2.0 N·m.)
- Recommended panel thickness: 1 to 5 mm.
- When mounting the caps after changing the LED or the caps, tighten the caps at a tightening torque of 0.49 to 0.78 N·m.

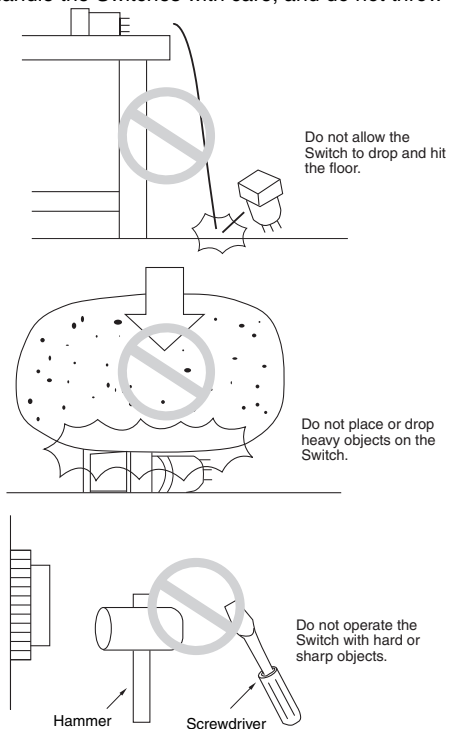
##### Operating Environment

- This model is designed with a protective structure so that it will not sustain damage if it is subjected to water from any direction to the front of the panel.
- The Switch is intended for indoor use only. Using the Switch outdoor may cause it to fail.

##### Others

- If the panel is to be coated, make sure that the panel meets the specified dimensions after coating.
- Due to the structure of the Switch, severe shock or vibration may cause malfunctions or damage to the Switch. Also, most Switches are made from resin and will be damaged if they come into contact with sharp objects. Particularly scratches on the Operation Unit may create visual and operational obtrusions.

Handle the Switches with care, and do not throw or drop them.



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