

Emergency Stop Switch

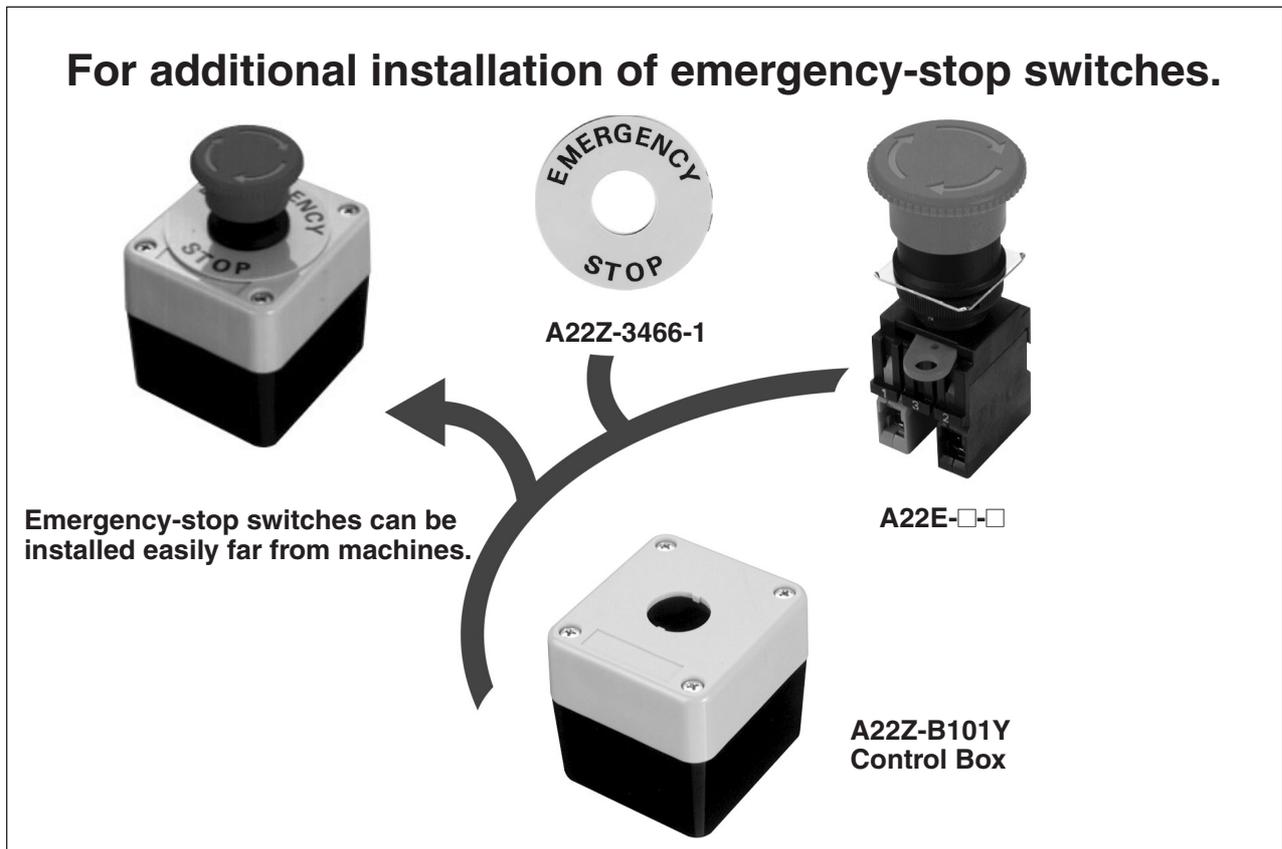
A22E

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

- Direct opening mechanism with minimum contact separation of 3 mm in accordance with EN60947-5-1, ⊖. (only for NC contacts)
- Safety lock mechanism prevents misuse. (No tampering – in accordance with EN 418)
- Easy mounting and removal of Switch Blocks using an incorporated lever.
- Finger protection mechanism on Switch Unit provided as a standard feature.
- Install using either round, forked crimp terminals, or ferrules.



For additional installation of emergency-stop switches.

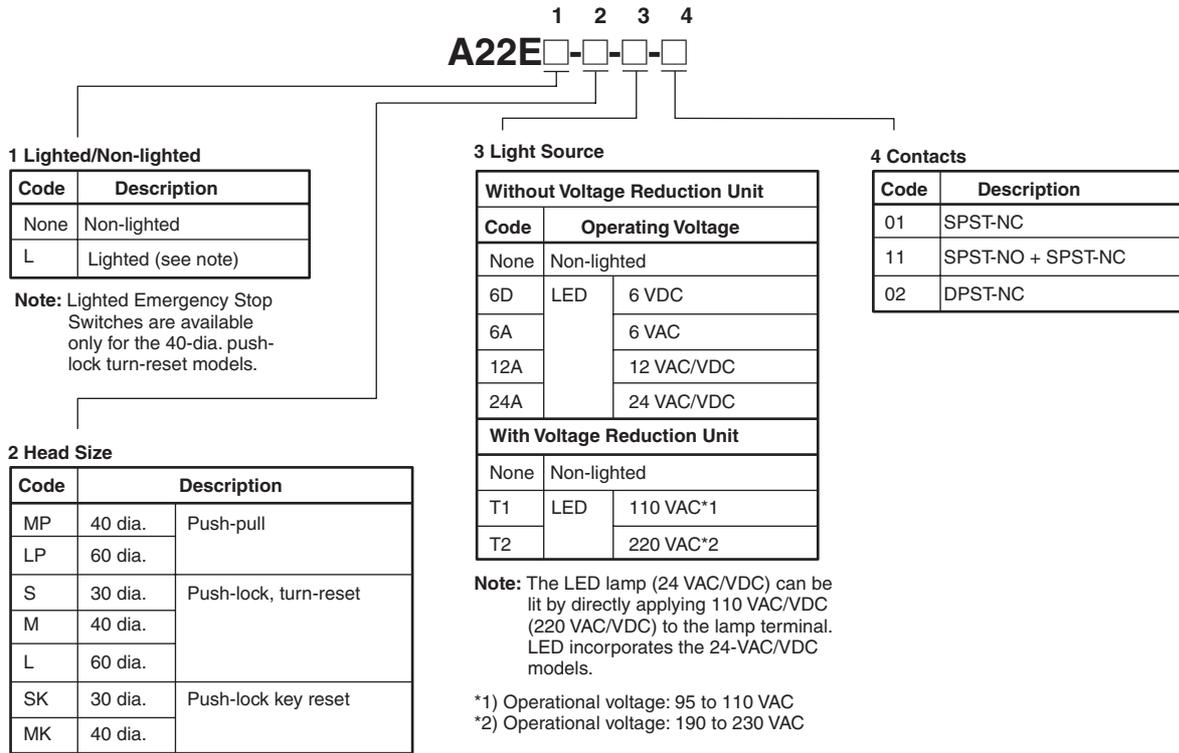


Model Number Structure

Model Number Legend

Completely Assembled

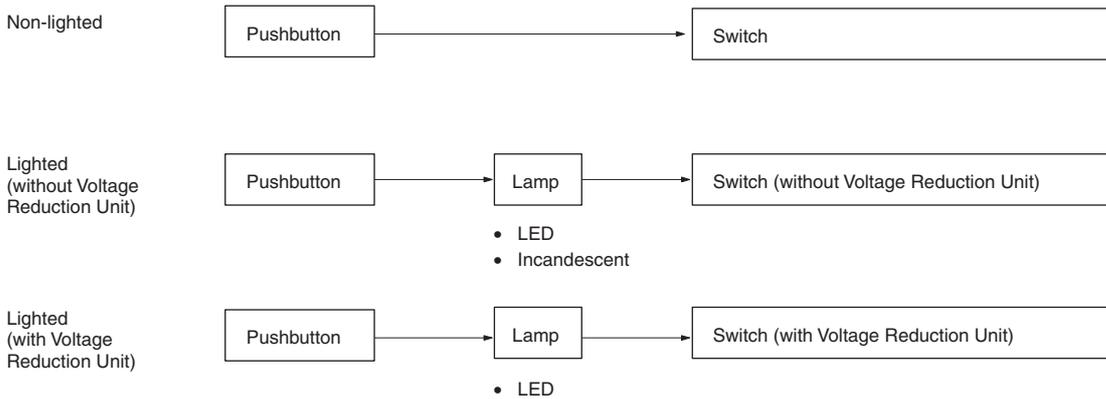
Shipped as a set which includes the Pushbutton, Lamp (lighted models only), and Switch.



Subassembled

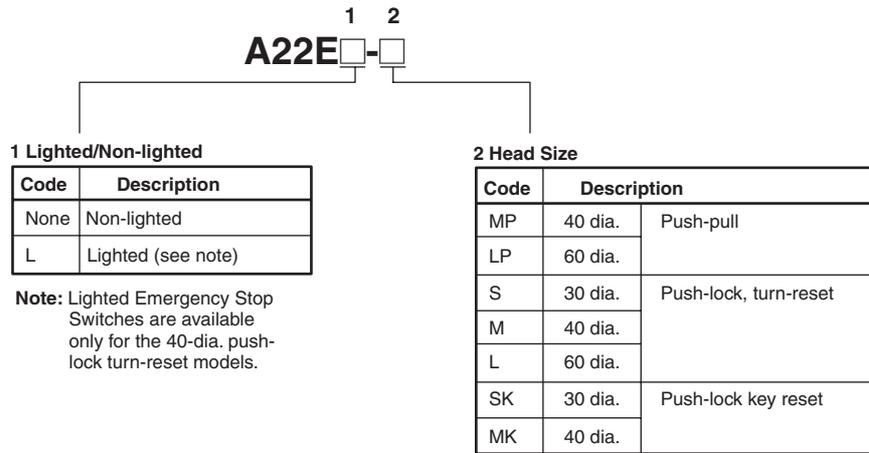
The Pushbutton, Lamp, or Switch can be ordered separately. Use them in combination for models that are not available as assembled Units. These can also be used as inventory for maintenance parts.

Unit Combinations

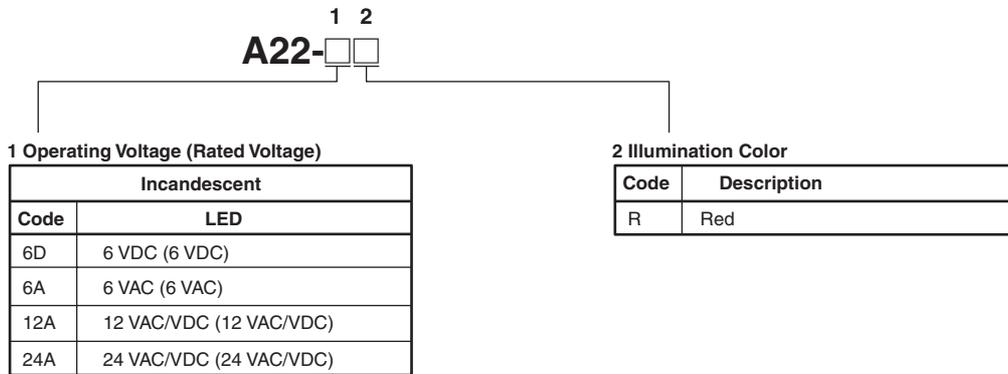


1. Pushbutton

Lighted/Non-lighted

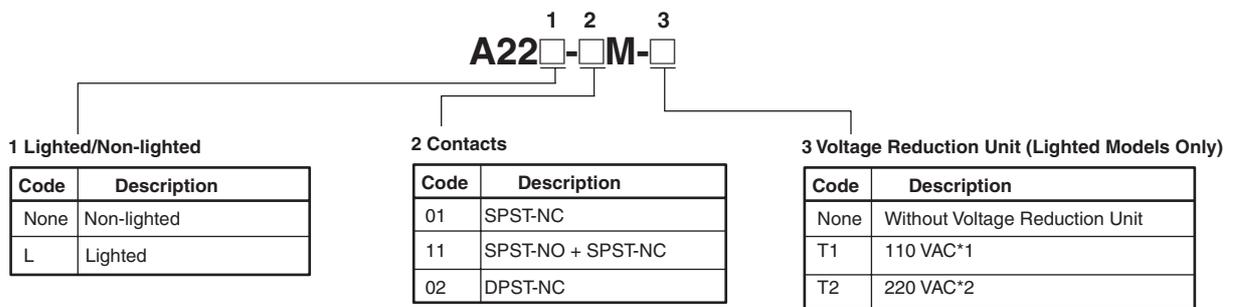


2. Lamp



3. Switch

Lighted/Non-lighted



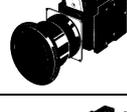
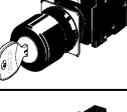
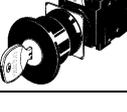
*1) Operational voltage: 95 to 110 VAC
*2) Operational voltage: 190 to 230 VAC

Ordering Information

List of Models

Completely Assembled (Ask your local OMRON representative)

Non-lighted Models

| Appearance | Output | Push-lock turn-reset system | Color of cap |
|---|-----------------|-----------------------------|--------------|
| 40-dia. head Push-pull  A22E-MP | SPST-NC | A22E-MP-01 | Red |
| | SPST-NO/SPST-NC | A22E-MP-11 | |
| | DPST-NC | A22E-MP-02 | |
| 60-dia. head Push-pull  A22E-LP | SPST-NC | A22E-LP-01 | |
| | SPST-NO/SPST-NC | A22E-LP-11 | |
| | DPST-NC | A22E-LP-02 | |
| 30-dia. head Push-lock Turn-reset  A22E-S | SPST-NC | A22E-S-01 | |
| | SPST-NO/SPST-NC | A22E-S-11 | |
| | DPST-NC | A22E-S-02 | |
| 40-dia. head Push-lock Turn-reset  A22E-M | SPST-NC | A22E-M-01 | |
| | SPST-NO/SPST-NC | A22E-M-11 | |
| | DPST-NC | A22E-M-02 | |
| 60-dia. head Push-lock Turn-reset  A22E-L | SPST-NC | A22E-L-01 | |
| | SPST-NO/SPST-NC | A22E-L-11 | |
| | DPST-NC | A22E-L-02 | |
| 30-dia. head Push-lock Key-reset  A22E-SK | SPST-NC | A22E-SK-01 | |
| | SPST-NO/SPST-NC | A22E-SK-11 | |
| | DPST-NC | A22E-SK-02 | |
| 40-dia. head Push-lock Key-reset  A22E-MK | SPST-NC | A22E-MK-01 | |
| | SPST-NO/SPST-NC | A22E-MK-11 | |
| | DPST-NC | A22E-MK-02 | |

Lighted Models

| Appearance | Output | Lighting | Rated voltage | Push-lock turn-reset system | Color of cap | |
|--|---|---------------|-----------------|-----------------------------|--------------|---------------|
| 40-dia. head Push-lock Turn-reset  | SPST-NC | LED | 6 VDC | A22EL-M-6D-01 | Red | |
| | | | 6 VAC | A22EL-M-6A-01 | | |
| | | | 12 VAC/VDC | A22EL-M-12A-01 | | |
| | SPST-NO/SPST-NC | | 24 VAC/VDC | A22EL-M-24A-01 | | |
| | | | 6 VDC | A22EL-M-6D-11 | | |
| | | | 6 VAC | A22EL-M-6A-11 | | |
| | DPST-NC | | 12 VAC/VDC | A22EL-M-12A-11 | | |
| | | | 24 VAC/VDC | A22EL-M-24A-11 | | |
| | | | 6 VDC | A22EL-M-6D-02 | | |
| | 40-dia. head Push-lock Turn-reset with Voltage Reduction Unit  | | SPST-NC | 110 VAC | | A22EL-M-T1-01 |
| | | | | 220 VAC | | A22EL-M-T2-01 |
| | | | SPST-NO/SPST-NC | 110 VAC | | A22EL-M-T1-11 |
| 220 VAC | | A22EL-M-T2-11 | | | | |
| DPST-NC | | 110 VAC | A22EL-M-T1-02 | | | |
| | | 220 VAC | A22EL-M-T2-02 | | | |

Subassembled

Pushbuttons

Non-lighted

| Sealing capability and size | IP65 oil-resistant models | | |
|-----------------------------|---|--|---|
| | Small (30 dia.) | Medium (40 dia.) | Large (60 dia.) |
| Push-pull | --- | A22E-MP  | A22E-LP  |
| Push-lock, Turn-reset | A22E-S  | A22E-M  | A22E-L  |
| Push-lock, key-reset | A22E-SK  | A22E-MK  | --- |

Lighted

| Sealing capability and size | IP65 |
|-----------------------------|--|
| | Medium (40 dia.) |
| Push-lock, Turn-reset | A22EL-M  |

Lamp

LED

| Rated voltage | 6 VDC | 6 VAC | 12 VAC/VDC | 24 VAC/VDC | Super-bright 24 VAC/VDC |
|--|---------|---------|------------|------------|----------------------------|
|  LED light | | | | | |
| Red | A22-6DR | A22-6AR | A22-12AR | A22-24AR | A22-24ASR |

Note: For voltage-reduction lighting, use the A22-24AR.

Incandescent

| Rated voltage | 6 VAC | 14 VAC | 28 VAC | 130 VAC |
|---|-------|--------|--------|---------|
|  | A22-5 | A22-12 | A22-24 | A22-H1 |

Switch (Standard Load)
Without Voltage Reduction Unit

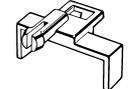
| Classification | | Non-lighted | Lighted |
|--------------------|-------------------|---|---|
| Appearance | |  |  |
| Switch Action | | Momentary | Momentary |
| Contacts | | | |
| For standard loads | SPST-NO | A22-10M | A22L-10M |
| | SPST-NC | A22-01M | A22L-01M |
| | SPST-NO + SPST-NC | A22-11M | A22L-11M |
| | DPST-NO | A22-20M | A22L-20M |
| | DPST-NC | A22-02M | A22L-02M |

With Voltage Reduction Unit

| Classification | | Lighted (110 VAC) | Lighted (220 VAC) |
|--------------------|-------------------|---|---|
| Appearance | |  |  |
| Switch Action | | Momentary | Momentary |
| Contacts | | | |
| For standard loads | SPST-NO | A22L-10M-T1 | A22L-10M-T2 |
| | SPST-NC | A22L-01M-T1 | A22L-01M-T2 |
| | SPST-NO + SPST-NC | A22L-11M-T1 | A22L-11M-T2 |
| | DPST-NO | A22L-20M-T1 | A22L-20M-T2 |
| | DPST-NC | A22L-02M-T1 | A22L-02M-T2 |

- Note:** 1. The above illustrations are for the DPST-NO contact.
2. When using with a Voltage Reduction Unit, use the A22-24AR.

Accessories (Order Separately)

| Item | Appearance | Classification | Model | Remarks | |
|----------------------------------|---|---|--------------|--|---|
| Switch Blocks |  | SPST-NO | A22-10 | Provided as standard. Order Switch Blocks only when adding or replacing them. | |
| | | SPST-NC | A22-01 | | |
| Lamp Sockets |  | Direct lighting | A22-TN | Used when changing the lighting method. | |
| | | Voltage-reduction lighting | 110 VAC | | A22-T1 |
| | | | 220 VAC | | A22-T2 |
| Mounting Latches |  | For momentary-action models | A22-3200 | Provided as standard. Order Mounting Latches only when mounting Switch Blocks or Lamp Sockets that are purchased individually. | |
| | | For alternate-action models | A22-3210 | | |
| Lock Ring |  | Rounded shape | A22Z-3360 | The body is equipped with a Lock Fitting. This Lock Fitting is used when a more secure lock feature is required. | |
| Hole Plug |  | Round | A22Z-3530 | Can be plugged into pre-cut panel holes for future expansion. The color is black. | |
| Control Boxes (Enclosures) |  | One hole | A22Z-B101 | Material: Polycarbonate resin | |
| | | One hole, yellow box (for emergency stop) | A22Z-B101Y | | |
| | | Two holes | A22Z-B102 | | |
| | | Three holes | A22Z-B103 | | |
| Connectors |  | Applicable cable diameter (mm) | 7 to 9 dia. | A22Z-3500-1 | Plastic connector used to extend a cable from the Switch Box. |
| | | | 9 to 11 dia. | A22Z-3500-2 | |
| 25-dia. Ring |  | — | A22Z-R25 | Can be fit into a 25-dia. hole in the panel. Since this is not attached to the main body, order separately. | |
| Legend Plates for Emergency Stop |  | 60-dia. black letters on yellow back-ground | A22Z-3466-1 | "EMERGENCY STOP" is indicated on the plate. | |
| | | 90-dia. black letters on yellow back-ground | A22Z-3476-1 | | |
| Lamp Extractor |  | — | A22Z-3901 | Rubber tool used to replace Lamps easily | |
| Tightening Tool |  | — | A22Z-3905 | Tool used to tighten nuts from the back of the panel | |
| Lock Plate |  | --- | A22Z-3380 | Use to fix the lever on the Switch. | |

Specifications

Approved Standards

| Recognized organization | Standards | File No. |
|-------------------------|-------------|----------|
| UL (See note.) | UL508 | E41515 |
| AZCO | EN60947-5-1 | C9805502 |

Note: UL-approved for CSA C22.2 No. 14 and bears the cUL mark.

Approved Standard Ratings

- UL, cUL (File No. E41515)
6 A at 220 V, 10 A at 110 VAC
- EN60947-5-1 (Low Voltage Directive)
Rated current: 10 A; Rated voltage: 220 VAC

Ratings

Contacts (Standard Load)

| Rated carry current | Rated voltage | Rated current (A) | | | |
|---------------------|---------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | AC15 (inductive load) | AC12 (resistive load) | DC13 (inductive load) | DC12 (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: $20 \pm 2^\circ\text{C}$
- (2) Ambient humidity: $65 \pm 5\%$
- (3) Operating frequency: 20 operations/minute

2. Minimum applicable load: 10 mA at 5 VDC

Contacts (Microload)

| Rated applicable load | Minimum applicable load |
|------------------------------------|-------------------------|
| 50 mA at 5 VDC (Resistive load) | 1 mA at 5 VDC |

LED Indicators without Voltage Reduction Unit

| Rated voltage | Rated current | Operating voltage |
|---------------|---------------|----------------------|
| 6 VDC | 60 mA | 6 VDC $\pm 5\%$ |
| 6 VAC | 60 mA | 6 VAC/VDC $\pm 5\%$ |
| 12 VAC/VDC | 30 mA | 12 VAC/VDC $\pm 5\%$ |
| 24 VAC/VDC | 15 mA | 24 VAC/VDC $\pm 5\%$ |

Super-bright LED Indicator

| Rated voltage | Rated current | Operating voltage |
|---------------|---------------|----------------------|
| 24 VAC/VDC | 15 mA | 24 VAC/VDC $\pm 5\%$ |

Incandescent Lamp

| Rated voltage | Rated current | Operating voltage |
|---------------|---------------|-------------------|
| 6 VAC/VDC | 200 mA | 5 VAC/VDC |
| 14 VAC/VDC | 80 mA | 12 VAC/VDC |
| 28 VAC/VDC | 40 mA | 24 VAC/VDC |
| 130 VAC/VDC | 20 mA | 100 VAC/VDC |

Voltage-reduction Lighting

| Rated voltage | Operational voltage | Applicable lamp (BA9S/13□ gold) |
|---------------|---------------------|---------------------------------|
| 110 VAC | 95 to 115 VAC | LED Lamp |
| 220 VAC | 190 to 230 VAC | (A22-24A□) |

Characteristics

| Item | | Emergency Stop Switches | |
|-----------------------------------|---------------------------|---|--|
| | | Non-lighted model: A22E | Lighted model: A22EL |
| Allowable operating frequency | Mechanical | 30 operations/minute max. | |
| | Electrical | 30 operations/minute max. | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | |
| Dielectric strength | | 2,500 VAC, 50/60 Hz for 1 min between terminals of same polarity 2,500 VAC, 50/60 Hz for 1 min between terminals of different polarity and also between each terminal and ground | |
| Vibration resistance | | Malfunction (See note 2.): 10 to 55 Hz, 1.5-mm double amplitude | |
| Shock resistance | Mechanical | 1,000 m/s ² | |
| | Malfunction (See note 2.) | 250 m/s ² max. | |
| Durability | Mechanical | Momentary operation: 300,000 operations min. | |
| | Electrical | 300,000 operations min. | |
| Ambient temperature (See note 1.) | | Operating: -20°C to 70°C Storage: -40°C to 70°C | Operating: -20°C to 55°C Storage: -40°C to 70°C |
| Ambient humidity | | Operating: 35% to 85% | |
| Degree of protection | | IP65 (oil-resistant) | IP65 |
| Electric shock protection class | | Class II | |
| PTI (tracking characteristic) | | 175 | |
| Degree of contamination | | 3 (IEC947-5-1) | |

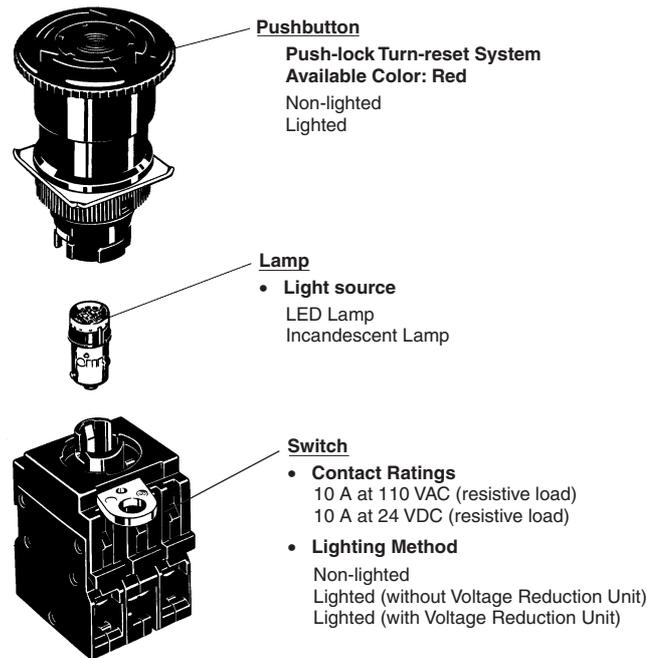
Note: 1. With no icing or condensation.
2. Malfunction within 1 ms.

Operating Characteristics (for SPST-NO/SPST-NC)

| Item | Emergency Stop Switches | |
|-------------------------------|------------------------------|--|
| | Push-lock turn-reset system | |
| | A22E, A22EL | |
| Total travel force (TTF) max. | 44.1 N | |
| Total travel (TT) | 10±1 mm | |
| Releasing force (RF) min. | 0.25 N·m max. (See note.) | |

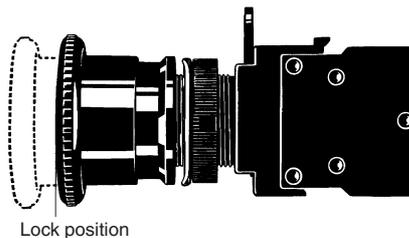
Note: Rotation torque for Emergency Stop Pushbutton.

Nomenclature



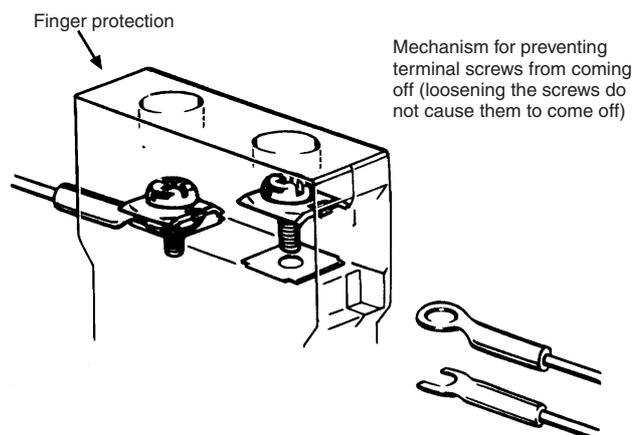
(The above figures are examples of the lighted model.)

Safety Lock Mechanism to Prevent Misuse



This Switch can be intentionally used to stop equipment in an emergency. Even if an object or person touches the Pushbutton by mistake, the contact will not be released unless the Pushbutton reaches the lock position.

This Switch uses a finger protection mechanism to prevent electrical shocks. Moreover, it is provided with a mechanism to prevent terminal screws from coming off and also allows connection to either round or forked crimp terminals.

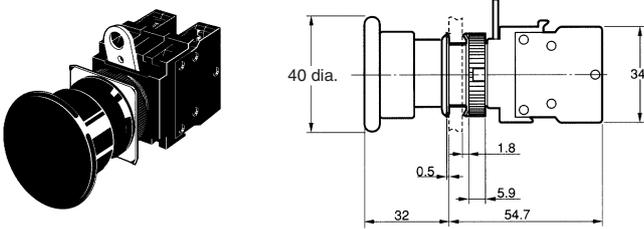


Dimensions

Note: All units are in millimeters unless otherwise indicated.

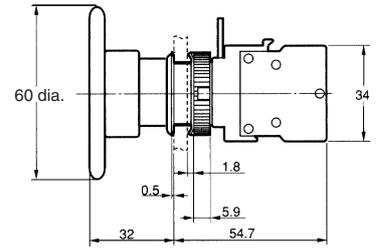
A22E-MP

Non-lighted models
40-dia. Push-pull



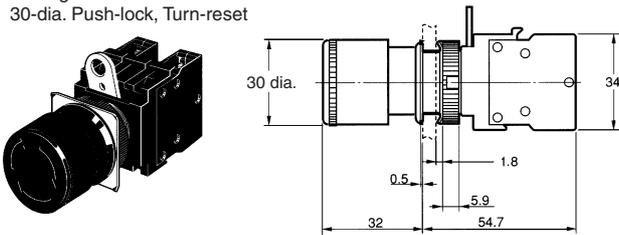
A22E-LP

Non-lighted models
60-dia. Push-pull



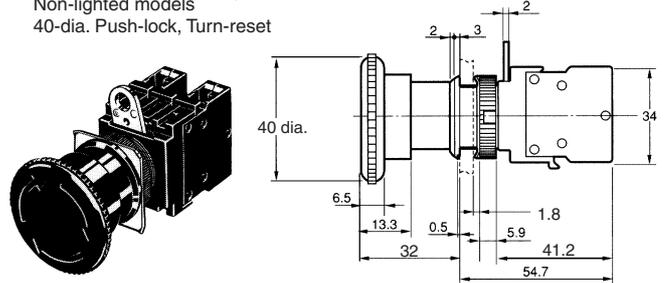
A22E-S

Non-lighted models
30-dia. Push-lock, Turn-reset



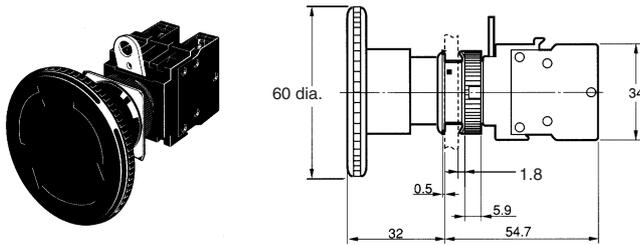
A22E-M

Non-lighted models
40-dia. Push-lock, Turn-reset



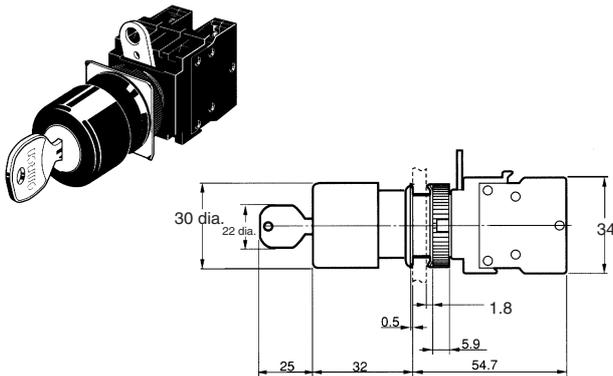
A22E-L

Non-lighted models
60-dia. Push-lock, Turn-reset



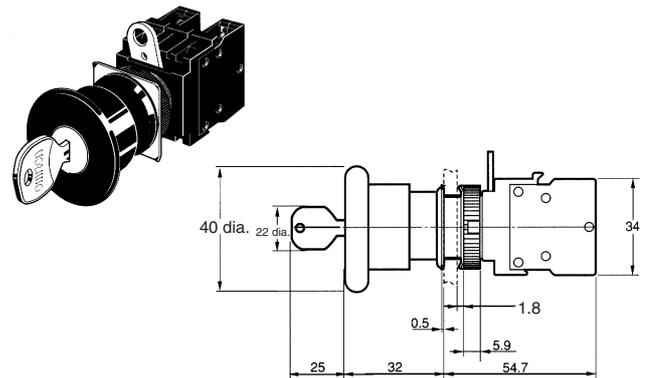
A22E-SK

Non-lighted models
30-dia. Push-lock, Key-reset



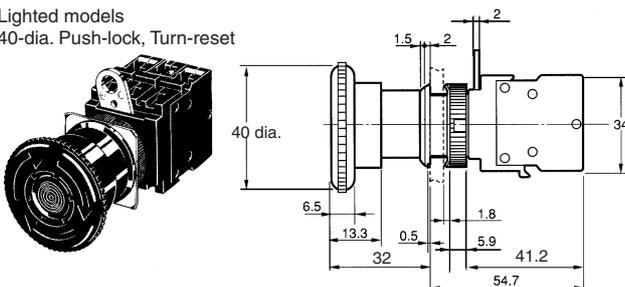
A22E-MK

Non-lighted models
40-dia. Push-lock, Key-reset



A22EL-M

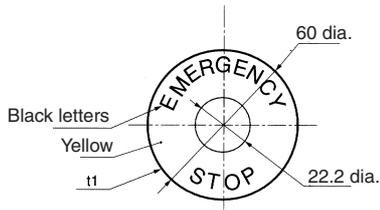
Lighted models
40-dia. Push-lock, Turn-reset



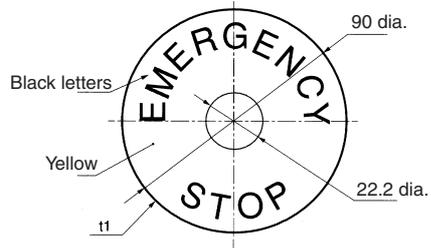
Dimensions for Accessories

Legend Plates For Emergency-stop

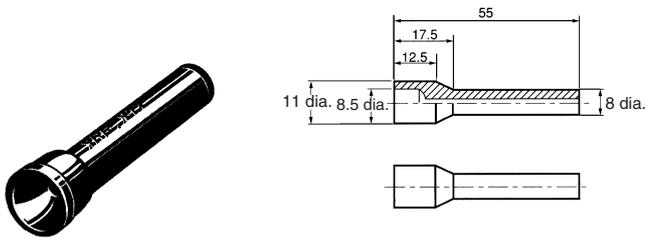
A22Z-3466-1



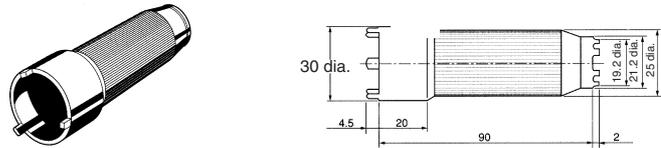
A22Z-3476-1



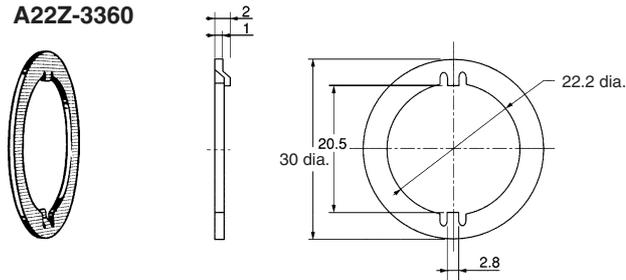
Lamp Extractor
A22Z-3901



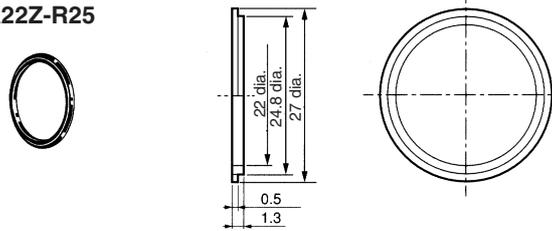
Tightening Wrench
A22Z-3905



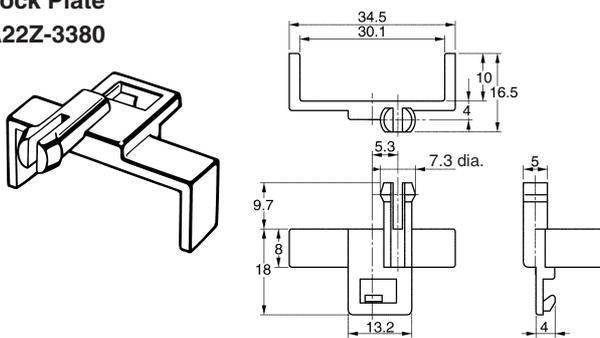
Lock Ring
A22Z-3360



25-dia. Ring
A22Z-R25

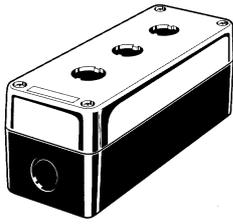


Lock Plate
A22Z-3380

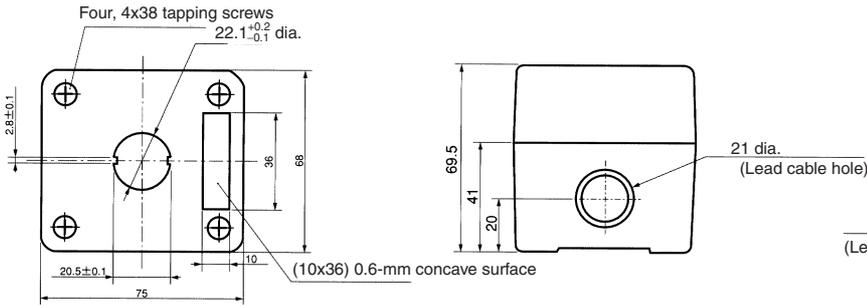


Control Box (Enclosure)

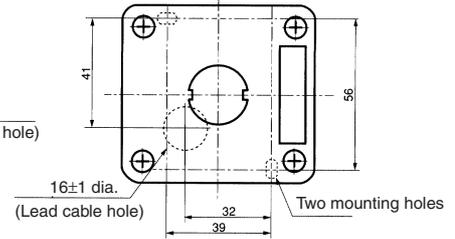
A22Z-B10□



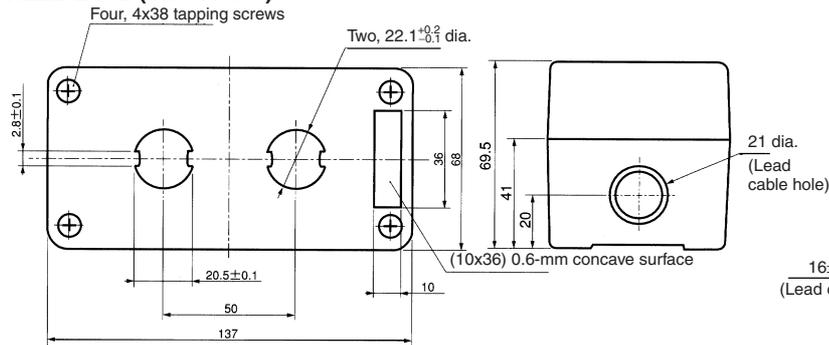
A22Z-B101 (One Hole)
A22Z-B101Y



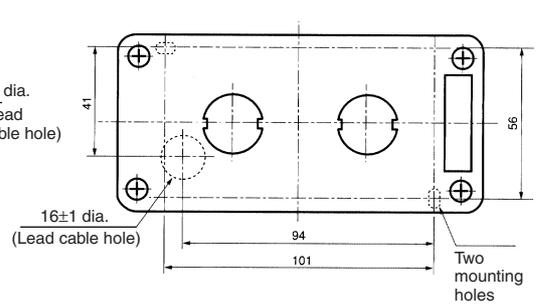
Cable Port Hole (Top View)



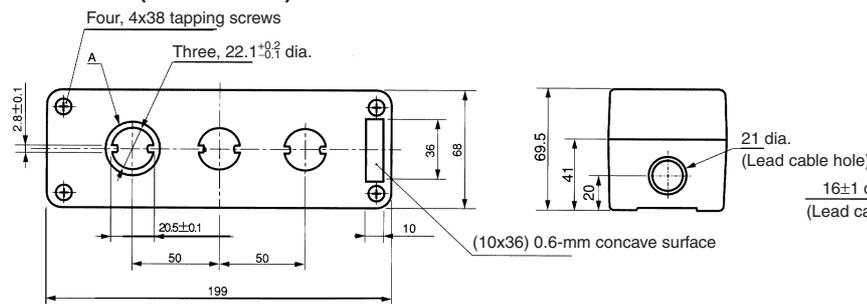
A22Z-B102 (Two Holes)



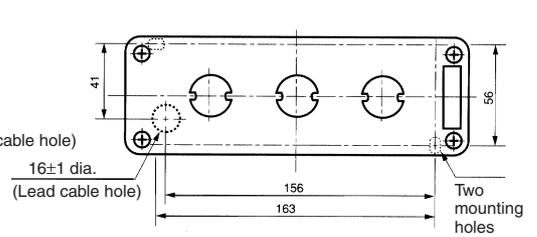
Cable Port Hole (Top View)



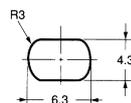
A22Z-B103 (Three Holes)



Cable Port Hole (Top View)

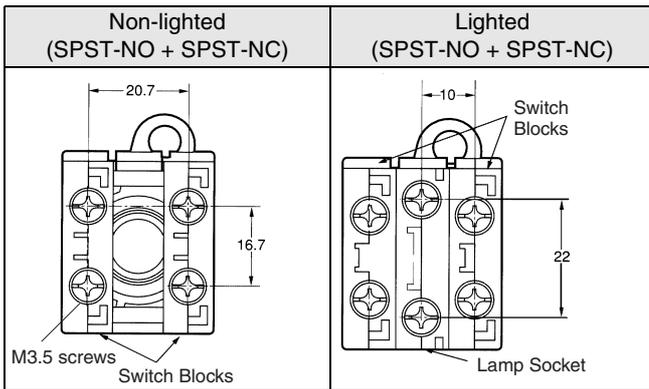


Panel Mounting Hole



Terminal Arrangement

Terminal Arrangement (Bottom View)

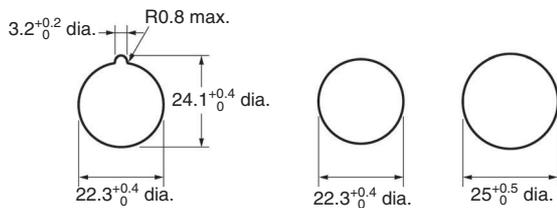


Terminal Connection

| Type | Terminal connection |
|--|---------------------------|
| Non-lighted | <p>Bottom view</p> |
| Lighted without Voltage Reduction Unit | <p>Bottom view</p> |
| Lighted with Voltage Reduction Unit | <p>Bottom view</p> |

Note: The above terminal connection diagrams are examples for SPST-NO + SPST-NC.

Panel Cutouts



With Lock Fitting

Without Lock Fitting

- Note:**
1. When applying coating such as paint to the panel, the dimensions should be those after the application of coating.
 2. Recommended panel thickness: 1 to 5 mm.
 3. Use an A22Z-R25 Ring when mounting to a panel with 25-mm holes.

Installation

Mounting to the Panel

Mounting the Operation Unit on the Panel

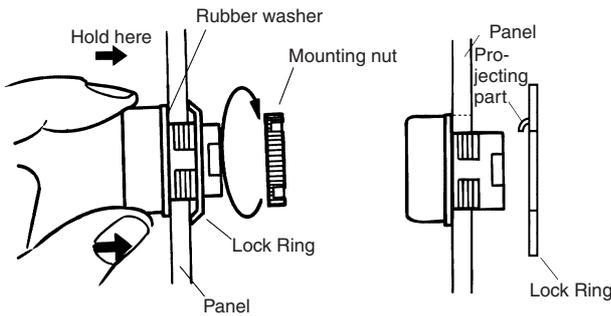
Insert the Operation Unit (Pushbutton, etc.) from the front surface of the panel, insert the Lock Ring and the mounting nut from the terminal side, then tighten the nut. Before tightening, check that the rubber washer is present between the Pushbutton Unit and the panel.

When using a Legend Plate Frame, put one rubber washer each between the Legend Plate Frame and the panel and between the Operation Unit and the Legend Plate Frame. (One rubber washer will be provided when one Legend Plate Frame is ordered.)

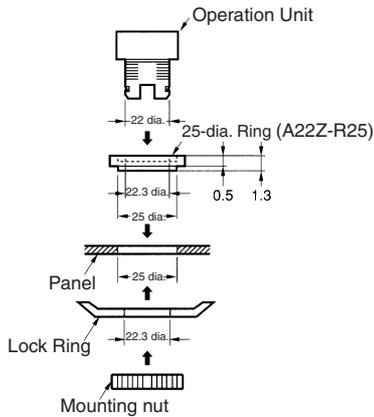
Align the Lock Ring with the groove in the casing, then insert the Lock Ring so that its edge is located on the panel side.

Tighten the mounting nut at a torque of 0.98 to 1.96 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 mounting nut.

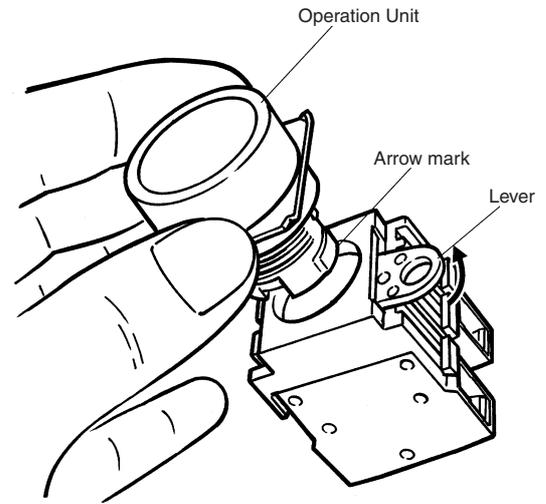


When the panel cutout dimension is 25 dia., remove the supplied rubber washer and mount the 25-dia. Ring as shown below. (Since the A22Z-R25 is not attached to the main body, order separately.)



Mounting the Switch on the Pushbutton Unit

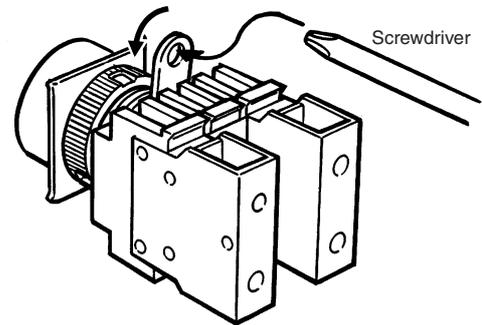
Insert the Pushbutton Unit into the Switch Unit, aligning the arrow mark inscribed on the Case with the lever on the Switch Blocks, then move the lever in the direction indicated by the arrow in the following figure.



Removing the Switch

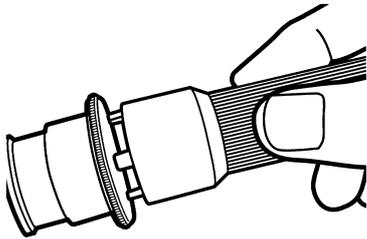
Move the lever in the direction indicated by the arrow in the following figure, then pull the Pushbutton Unit or the Switch Blocks.

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.



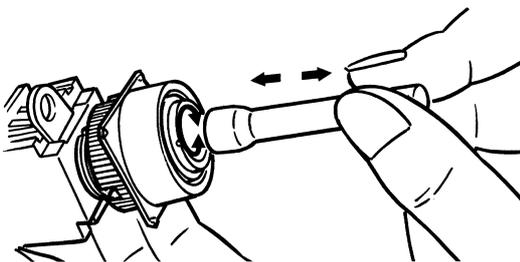
Assembling the Cap Emergency Stop Switch

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



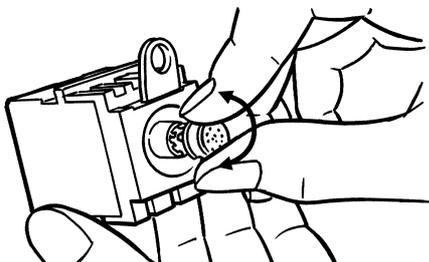
Installing/Replacing the Lamp Installing/Replacing from the Panel Surface

Insert the Lamp Extractor (A22Z-3901) into the lamp, then rotate the Extractor while pressing it.



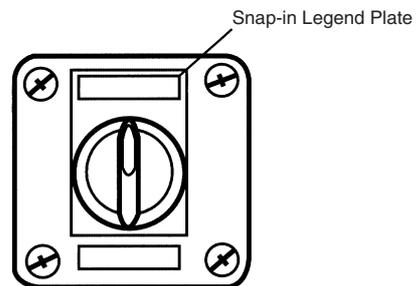
Installing/Replacing on the Switch

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



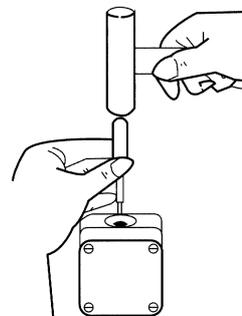
Control Box (Enclosure) Mounting the Switch

The Standard-size Legend Plate Frame can be mounted. Mount the Frame as shown in the following panel diagram. Mount the Switch in the same way as for an ordinary panel.



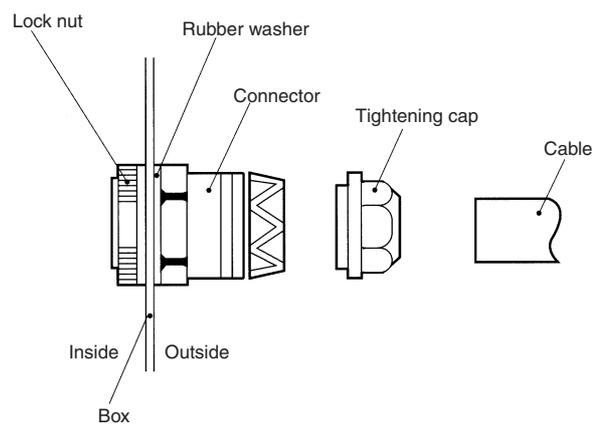
Creating a Cable Port Hole

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. Attempts to punch a hole on the other side of the case will damage the Box.



Securing the Connector Cable

1. Insert the connector into the cable port hole in the Box and secure with the fixing nut inside the box.
2. Open a hole in the thin rubber section of the rubber ring.
3. Pass the tightening cap through the cable, insert the cable into the connector, and tighten the hexagonal nut to secure the cable.

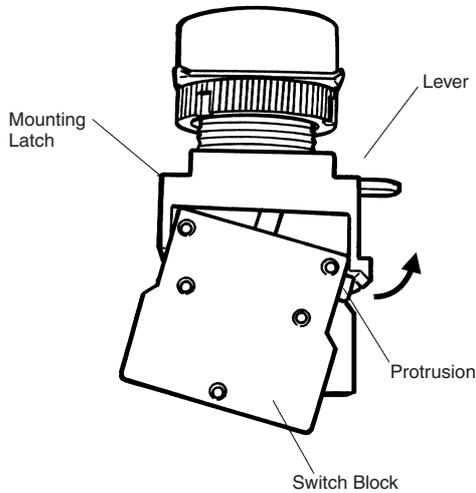


| Cable diameter | Connector |
|----------------|-------------|
| 7 to 9 dia. | A22Z-3500-1 |
| 9 to 11 dia. | A22Z-3500-2 |

Installing/Removing the Switch Blocks

Installing the Switch Blocks

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.

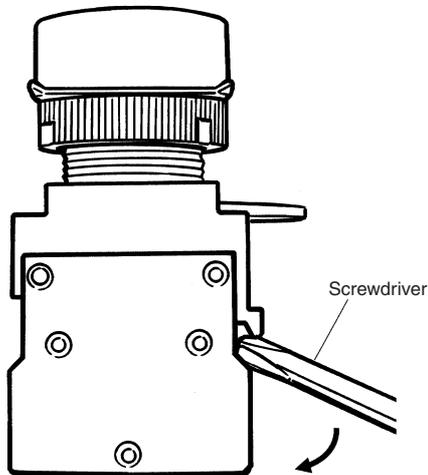


Removing the Switch Blocks

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.

Use either of the following screwdrivers.

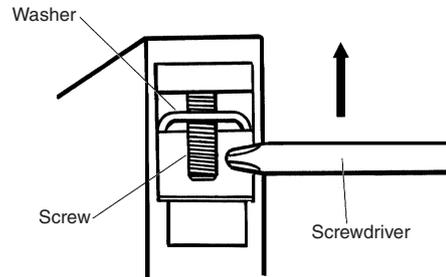
| | | |
|-----------------------|-----------|---|
| Flat-head screwdriver | 3 to 6 mm |  |
| Phillips screwdriver | 3 to 6 mm |  |



Wiring

Wiring Round Crimp Terminals

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. Now, a round crimp terminal can be connected. After inserting the terminal, tighten the screws to complete wiring.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.