Key-type Selector Switches
A22NK

22-mm dia. Key-type Selector Switches
Control panel miniaturization through a more compact design and modified wiring direction. Addition of Push-In Plus terminal blocks for easy wiring.

Easy to Use
- You can connect up to three Contact Blocks in one stage for multistage expansion.
- Screw terminal structure is compatible with round crimp terminals. (Screw terminal block type)
- The terminals can be secured even when a contact block is mounted. (Screw terminal block type)
- Contact Blocks can be attached in any direction for easy assembly.

Miniaturization
- No need for extra lateral space because of the modified wiring direction. (Push-In Plus terminal block type)
- Compact design.

Safety
- Easy-to-operate lock lever for secure locking.
- Easy-mounting Contact Blocks provide finger protection.
- No loose connections of wiring means maintenance-free use. (Push-In Plus terminal block type)

Product Lineup
- Meet global safety standards.
- Can be installed in two types of panel hole dimensions: 22.3 and 25.5 dia.
- The buttons and bezels come in a wide variety of colors, shapes, and materials.
- Standard-feature degree of protection: IP66 and NEMA 13.

⚠ Refer to *Safety Precautions for All Pushbutton Switches/ Indicators* and *Safety Precautions* on page 88.

List of Models

Screw Terminal Blocks/Push-In Plus Terminal Blocks
Plastic bezels
A22NK-□B

Two Positions

Three Positions

Screw Terminal Blocks/Push-In Plus Terminal Blocks
Metal bezels
A22NK-□R

Two Positions

Three Positions

Screw Terminal Blocks/Push-In Plus Terminal Blocks
Brushed metal bezels
A22NK-□M

Two Positions

Three Positions

A22NK

Model Number Structure

Model Number Legend

-----Shipped as a set that includes the Operation Unit, Mounting Collar, and Contact Block.
For information on combinations, refer to *Ordering Information* on pages 39 to 40.

Model Numbers for Sets

(1) (2) (3) (4) (5) (6) (7) (8)

A22N [K] - [2B] [M] - [01] [A] [A] - [G] [100]

(1) Type

Code	Type
K	Key-type Selector Switch

(2) Number of Positions and Bezel Material

Code	No. of positions	Bezel material
2B	2	Plastic
2M	2	Brushed metal
2R	2	Metal
3B	3	Plastic
3M	3	Brushed metal
3R	3	Metal

(3) Reset Method

Code	Reset method		
M	Manual	Two-positions manual	
		Three-positions manual	
L	Automatic reset on left	Two-positions automatic	
		Three-positions left automatic	
R	Automatic reset on right	Three-positions right automatic	
B	Automatic reset on left and right	Three-positions left or right automatic	

(4) Key Number

Code	No.
01	No.1

(5) Key Release Position *

Code	Release position	Two positions	Three positions
A	All positions		
B	Left		
C	Right		
D	Center	---	
G	Left and right	---	

❍: Release position ●: Locked position

* The key can only be removed when in the free position for automatic reset models.

(6) Degree of Protection

Code	Protection
A	Conforming to IP66, NEMA13

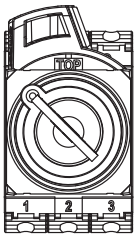
(7) Contacts and Terminals Specifications

Code	Specification
G	General/Screw Terminal Block
P	General/Push-In Plus Terminal Block

(8) Contact Configuration

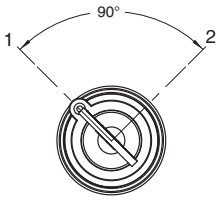
Code	Contact Blocks		Unit position			Two positions	Three positions
	NO	NC	1	2	3		
100	1	0	NO	---	---	Yes	---
002	0	1	---	---	NC	Yes	---
101	2	0	NO	---	NO	Yes	Yes
102	1	1	NO	---	NC	Yes	Yes
201	1	1	NC	---	NO	---	Yes
202	0	2	NC	---	NC	Yes	Yes
110	2	0	NO	NO	---	---	Yes
111	3	0	NO	NO	NO	Yes	Yes
112	2	1	NO	NO	NC	Yes	Yes
210	1	1	NC	NO	---	---	Yes
211	2	1	NC	NO	NO	---	Yes
212	1	2	NC	NO	NC	---	Yes
011	2	0	---	NO	NO	---	Yes
012	1	1	---	NO	NC	---	Yes
120	1	1	NO	NC	---	---	Yes
121	2	1	NO	NC	NO	---	Yes
122	1	2	NO	NC	NC	Yes	Yes
220	0	2	NC	NC	---	---	Yes
221	1	2	NC	NC	NO	---	Yes
222	0	3	NC	NC	NC	Yes	Yes
021	1	1	---	NC	NO	---	Yes
022	0	2	---	NC	NC	---	Yes

Note: 1. NO (blue): Normally open, NC (orange): Normally closed.
2. Refer to the following figure for Unit positions.

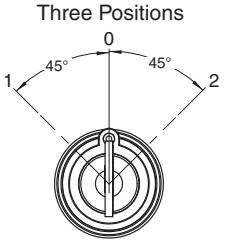


Operation Angle

Two Positions



Three Positions



■ Specifications: Refer to page 13.
■ Dimensions: Refer to page 45.
■ Characteristics: Refer to page 44.
■ Precautions for correct use: Refer to pages 88 to 99.

Structure

Contact Configuration Table

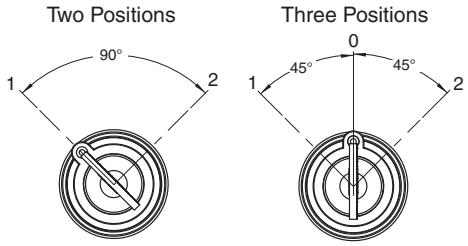
Two Positions

No. of outputs	Code	Contact configuration	Unit position	Contacts	Position	
					1	2
1	100	SPST-NO	1	NO		ON
			2	---	---	---
			3	---	---	---
1	002	SPST-NC	1	---	---	---
			2	---	---	---
			3	NC	ON	
2	102	SPST-NO/ SPST-NC	1	NO		ON
			2	---	---	---
			3	NC	ON	
2	101	DPST-NO	1	NO		ON
			2	---	---	---
			3	NO		ON
2	202	DPST-NC	1	NC	ON	
			2	---	---	---
			3	NC	ON	
3	111	3PST-NO	1	NO		ON
			2	NO		ON
			3	NO		ON
3	222	3PST-NC	1	NC	ON	
			2	NC	ON	
			3	NC	ON	
3	122	SPST-NO/ DPST-NC	1	NO		ON
			2	NC	ON	
			3	NC	ON	
3	112	DPST-NO/ SPST-NC	1	NO		ON
			2	NO		ON
			3	NC	ON	

Three Positions

No. of outputs	Code	Contact configuration	Unit position	Contacts	Position		
					1	0	2
2	110	DPST-NO	1	NO	ON		
			2	NO	ON		ON
			3	---	---	---	---
2	011	DPST-NO	1	---	---	---	---
			2	NO	ON		ON
			3	NO			ON
2	101	DPST-NO	1	NO	ON		
			2	---	---	---	---
			3	NO			ON
2	220	DPST-NC	1	NC		ON	ON
			2	NC		ON	
			3	---	---	---	---
2	022	DPST-NC	1	---	---	---	---
			2	NC		ON	
			3	NC	ON	ON	

Operation Angle

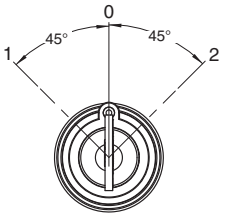


A22NK

No. of outputs	Code	Contact configuration	Unit position	Contacts	Position		
					1	0	2
2	202	DPST-NC	1	NC		ON	ON
			2	---	---	---	---
			3	NC	ON	ON	
2	120	SPST-NO/ SPST-NC	1	NO	ON		
			2	NC		ON	
			3	---	---	---	---
2	102	SPST-NO/ SPST-NC	1	NO	ON		
			2	---	---	---	---
			3	NC	ON	ON	
2	210	SPST-NO/ SPST-NC	1	NC		ON	ON
			2	NO	ON		ON
			3	---	---	---	---
2	201	SPST-NO/ SPST-NC	1	NC		ON	ON
			2	---	---	---	---
			3	NO			ON
2	012	SPST-NO/ SPST-NC	1	---	---	---	---
			2	NO	ON		ON
			3	NC	ON	ON	
2	021	SPST-NO/ SPST-NC	1	---	---	---	---
			2	NC		ON	
			3	NO			ON
3	111	3PST-NO	1	NO	ON		
			2	NO	ON		ON
			3	NO			ON
3	222	3PST-NC	1	NC		ON	ON
			2	NC		ON	
			3	NC	ON	ON	
3	122	SPST-NO/ DPST-NC	1	NO	ON		
			2	NC		ON	
			3	NC	ON	ON	
3	212	SPST-NO/ DPST-NC	1	NC		ON	ON
			2	NO	ON		ON
			3	NC	ON	ON	
3	221	SPST-NO/ DPST-NC	1	NC		ON	ON
			2	NC		ON	
			3	NO			ON
3	211	DPST-NO/ SPST-NC	1	NC		ON	ON
			2	NO	ON		ON
			3	NO			ON
3	121	DPST-NO/ SPST-NC	1	NO	ON		
			2	NC		ON	
			3	NO			ON
3	112	DPST-NO/ SPST-NC	1	NO	ON		
			2	NO	ON		ON
			3	NC	ON	ON	

Operation Angle

Three Positions



■ Specifications: Refer to page 13.
■ Dimensions: Refer to page 45.
■ Characteristics: Refer to page 44.
■ Precautions for correct use: Refer to pages 88 to 99.

Ordering Information

Model Numbers for Sets - - - - Shipped as a set that includes the Operation Unit, Mounting Collar, and Contact Block.

Two-position, Key-type Selector Switches

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(5) Key release positions	(8)(8)(8) Contact configuration
Plastic bezels 	2B	1	A22NK-2B(3)-01(5)A-G(8)(8)(8)	M: Manual L: Automatic reset on left	A: All positions B: Left C: Right	100 002
			A22NK-2B(3)-01(5)A-P(8)(8)(8)			
		2	A22NK-2B(3)-01(5)A-G(8)(8)(8)			102 101 202
			A22NK-2B(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-2B(3)-01(5)A-G(8)(8)(8)			111 222 122 112
			A22NK-2B(3)-01(5)A-P(8)(8)(8)			
Brushed metal bezels 	2M	1	A22NK-2M(3)-01(5)A-G(8)(8)(8)			100 002
			A22NK-2M(3)-01(5)A-P(8)(8)(8)			
		2	A22NK-2M(3)-01(5)A-G(8)(8)(8)			102 101 202
			A22NK-2M(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-2M(3)-01(5)A-G(8)(8)(8)			111 222 122 112
			A22NK-2M(3)-01(5)A-P(8)(8)(8)			
Metal bezels 	2R	1	A22NK-2R(3)-01(5)A-G(8)(8)(8)			100 002
			A22NK-2R(3)-01(5)A-P(8)(8)(8)			
		2	A22NK-2R(3)-01(5)A-G(8)(8)(8)			102 101 202
			A22NK-2R(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-2R(3)-01(5)A-G(8)(8)(8)			111 222 122 112
			A22NK-2R(3)-01(5)A-P(8)(8)(8)			

A22NK

Three-position, Key-type Selector Switches

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(5) Key release positions	(8)(8)(8) Contact configuration
Plastic bezels 	3B	2	A22NK-3B(3)-01(5)A-G(8)(8)(8)	M: Manual L: Automatic reset on left R: Automatic reset on right B: Automatic reset on left and right	A: All positions B: Left C: Right D: Center G: Left and right	110 011 101 220 022 202 120 102 210 201 012 021
			A22NK-3B(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-3B(3)-01(5)A-G(8)(8)(8)			111 222 122 212 221 211 121 112
			A22NK-3B(3)-01(5)A-P(8)(8)(8)			
Brushed metal bezels 	3M	2	A22NK-3M(3)-01(5)A-G(8)(8)(8)			110 011 101 220 022 202 120 102 210 201 012 021
			A22NK-3M(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-3M(3)-01(5)A-G(8)(8)(8)			111 222 122 212 221 211 121 112
			A22NK-3M(3)-01(5)A-P(8)(8)(8)			
Metal bezels 	3R	2	A22NK-3R(3)-01(5)A-G(8)(8)(8)			110 011 101 220 022 202 120 102 210 201 012 021
			A22NK-3R(3)-01(5)A-P(8)(8)(8)			
		3	A22NK-3R(3)-01(5)A-G(8)(8)(8)			111 222 122 212 221 211 121 112
			A22NK-3R(3)-01(5)A-P(8)(8)(8)			

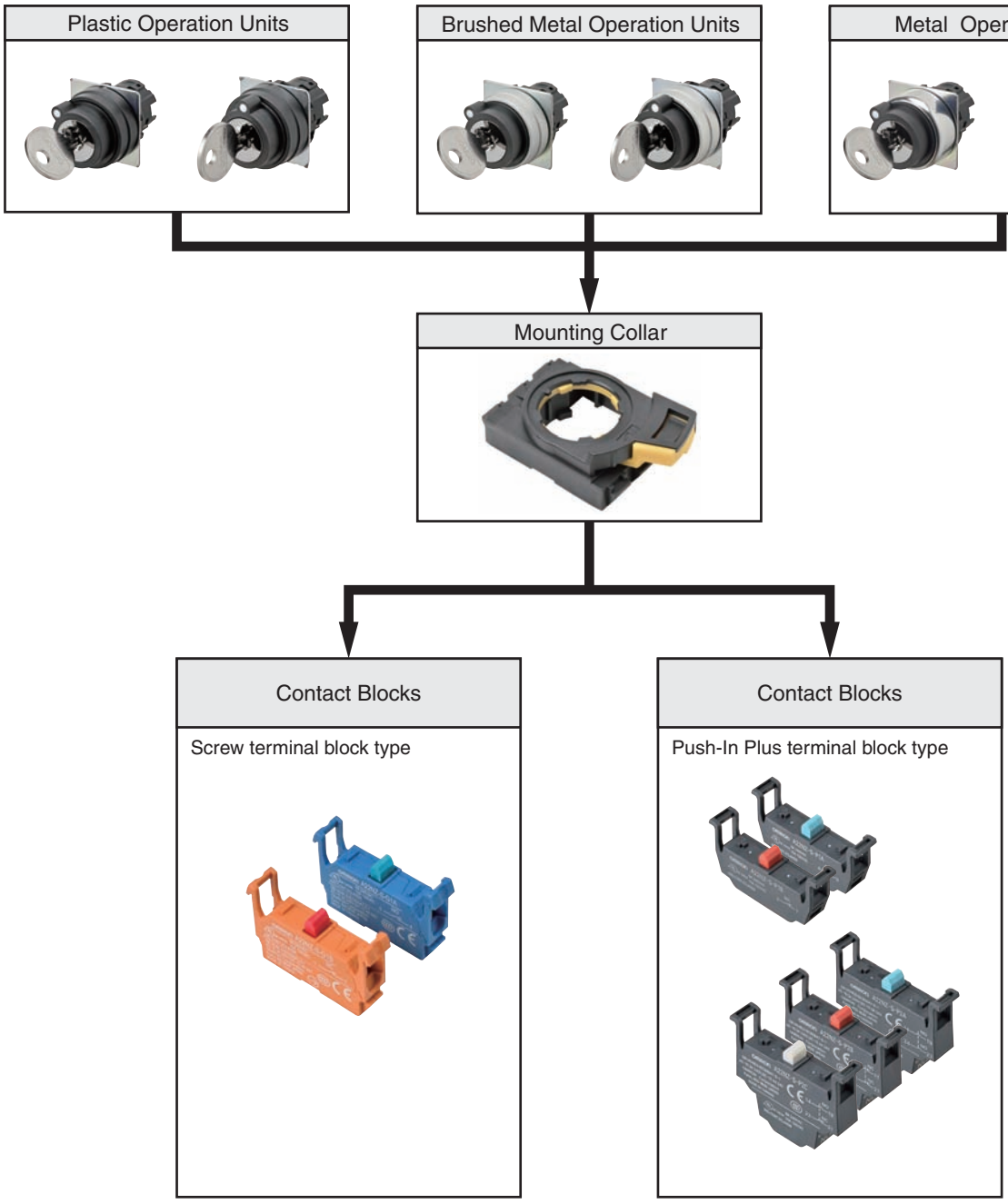
■ Subassemblies: Refer to pages 41 to 42 and 82.
(You can order Operation Units, Mounting Collars, and Contact Blocks individually.)

■ Specifications: Refer to page 13 ■ Characteristics: Refer to page 44.
■ Dimensions: Refer to page 45.
■ Accessories and tools: Refer to pages 84 to 85.

Ordering Information

Subassemblies

- - - - - You can order Operation Units, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.



■ Model numbers of sets: Refer to pages 39 to 40.
■ Specifications: Refer to page 13.
■ Characteristics: Refer to page 44.

■ Dimensions: Refer to page 45.
■ Subassemblies (Common): Refer to page 82.
■ Accessories and tools: Refer to pages 84 to 85.

A22NK

Ordering Information

Subassemblies - - - - - You can order Operation Units, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.

Operation Units

Bezel material and shape		Plastic 	Brushed metal 	Metal 	(1) Key release positions
No. of positions	Reset method	Model	Model	Model	
2	Manual	A22NZ-2BM-01(1)A	A22NZ-2MM-01(1)A	A22NZ-2RM-01(1)A	**A:** All positions **B:** Left **C:** Right
	Automatic reset on left	A22NZ-2BL-01(1)A	A22NZ-2ML-01(1)A	A22NZ-2RL-01(1)A	
3	Manual	A22NZ-3BM-01(1)A	A22NZ-3MM-01(1)A	A22NZ-3RM-01(1)A	**A:** All positions **B:** Left **C:** Right **D:** Center **G:** Left and right
	Automatic reset on left	A22NZ-3BL-01(1)A	A22NZ-3ML-01(1)A	A22NZ-3RL-01(1)A	
	Automatic reset on right	A22NZ-3BR-01(1)A	A22NZ-3MR-01(1)A	A22NZ-3RR-01(1)A	
	Automatic reset on left and right	A22NZ-3BB-01(1)A	A22NZ-3MB-01(1)A	A22NZ-3RB-01(1)A	

■ Model numbers of sets: Refer to pages 39 to 40.
■ Specifications: Refer to page 13.
■ Characteristics: Refer to page 44.

■ Dimensions: Refer to page 45.
■ Subassemblies (Common): Refer to page 82.
■ Accessories and tools: Refer to pages 84 to 85.

Specifications

Certified Safety Standard Ratings

UL 508 (File No. E76675), CSA C22.2 No.14
6 A 240 VAC, 10 A 120 VAC
TÜV (EN60947-5-1)
AC-15 3 A 240 VAC
DC-13 4 A 24 VDC
CCC (GB14048.5)
AC-15 3 A 240 VAC
DC-13 4 A 24 VDC

Application Standards

UL1059 and UL486E (Push-In Plus terminal block type)

Ratings

Contacts (Standard Load)

Rated insulation voltage		600 V				
Rated carry current		10 A				
Rated voltage		24 V	120 V	240 V	380 V	440 V
AC at 50/60 Hz	Resistive load (AC-12)	10 A	10 A	6 A	2A	2 A
	Inductive load (AC-15)	10 A	6 A	3 A	1.9 A	1.6 A
DC	Resistive load (DC-12)	8 A	2.2 A	1.1 A	---	---
	Inductive load (DC-13)	4 A	1.1 A	0.55 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% RH
(3) Operating frequency: 30 operations/minute
2. Minimum applicable load: 10 mA at 5 VDC.

A22NK

Specifications

Characteristics

Item	Type	Key-type Selector Switches
Allowable operating frequency	Mechanical	30 operations/minute max.
	Electrical	30 operations/minute max.
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 at 50/60 Hz for 1 min. (initial value)
	Between each terminal and ground	2,500 VAC at 50/60 Hz for 1 min. (initial value)
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (malfunction within 1 ms)
Shock resistance	Malfunction	1,000 m/s^2 max. (malfunction within 1 ms)
Durability	Mechanical	500,000 operations min. (Switches with 3 positions: 300,000 operations min.)
	Electrical	500,000 operations min. (Switches with 3 positions: 300,000 operations min.) (250 VAC, 3 A, with an inductive load having power factor cos θ = 0.4)
Ambient operating temperature*1		–25 to 70°C
Ambient operating humidity		35% to 85% RH
Ambient storage temperature*1		–40 to 80°C
Degree of protection*2		Conforming to IP66, NEMA13
Electric shock protection class		Class II
PTI (tracking characteristic)		175
Degree of contamination (application environment)		3 (EN 60947-5-1)
Weight		Approx. 65 g (for 1NC/1NO)

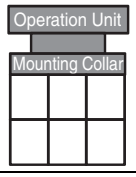
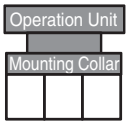
*1. With no icing or condensation.
*2. Degree of protection from the front of the panel.

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

Item \ Type	Key-type Selector Switches	
	Manual reset	Automatic reset
Total travel force (torque) (maximum TTF)	0.6 N·m	0.6 N·m
Total travel (TT)	2 positions: Approx. 90°, 3 positions: Approx. 45°	
Resetting force (torque) (RF)	0.5 N·m max.	---

Examples of Linked Contact Blocks (Screw terminal block type)

□ Contact Blocks

	Key-type Selector Switches	
	2 positions	3 positions
Linking example		

Note: If you increase the number of Contact Blocks, evaluate the Switch under actual working conditions before permanent installation and use the Switch within a number of switching operations that will not adversely affect the Switch's performance.

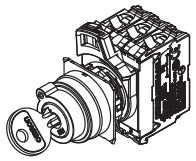
Dimensions

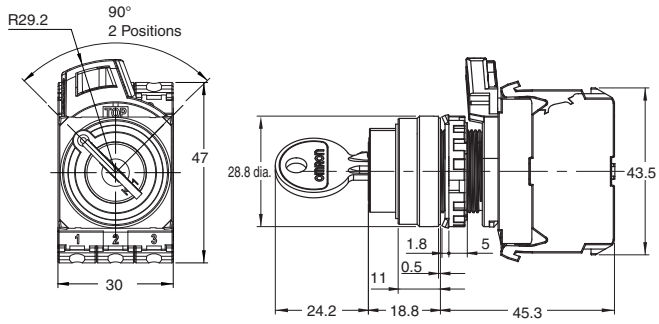
(Unit: mm)

Lighted and Non-lighted Key-type Selection Switches

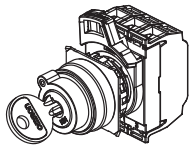
Two-position Switches with Plastic Bezels

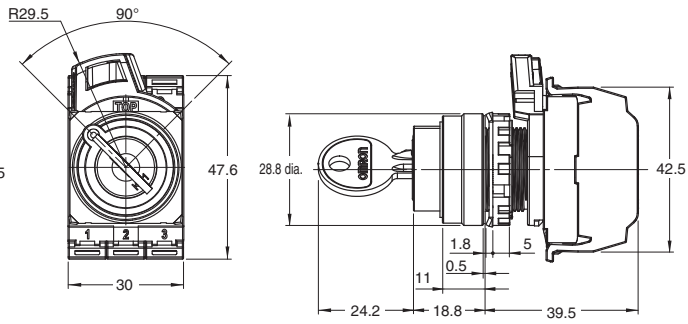
A22NK-2B□-01□A-G





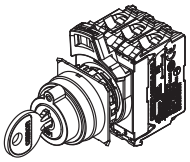
A22NK-2B□-01□A-P

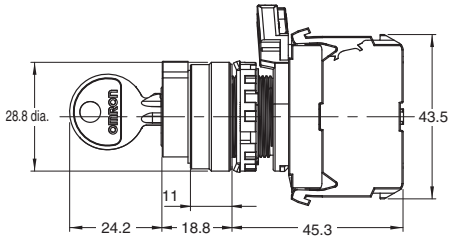




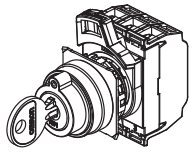
Three-position Switches with Plastic Bezels

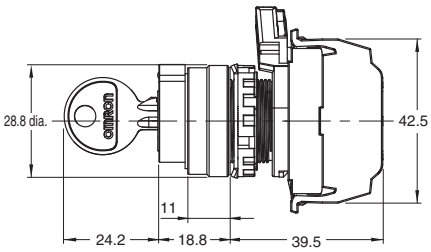
A22NK-3B□-01□A-G





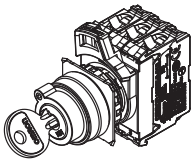
A22NK-3B□-01□A-P

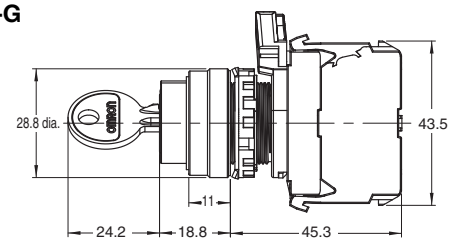




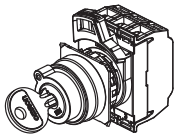
Two-position Switches with Brushed Metal Bezels

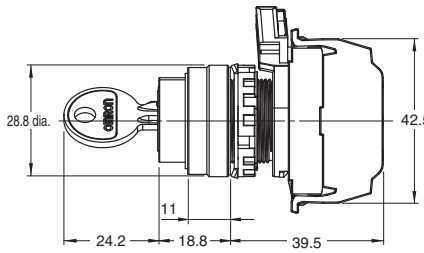
A22NK-2M□-01□A-G





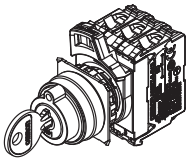
A22NK-2M□-01□A-P

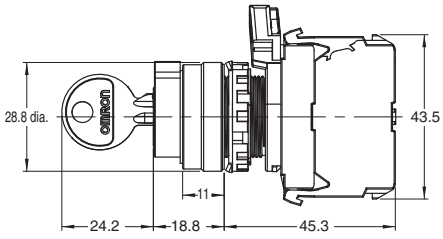




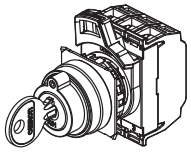
Three-position Switches with Brushed Metal Bezels

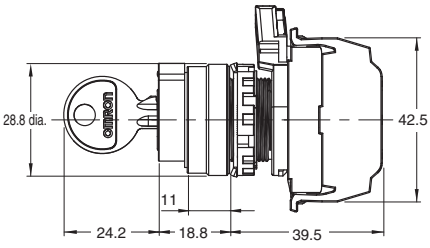
A22NK-3M□-01□A-G





A22NK-3M□-01□A-P

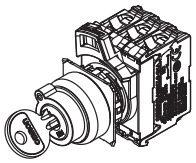


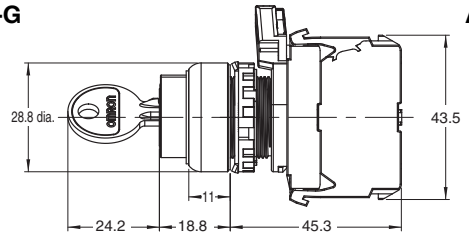


A22NK

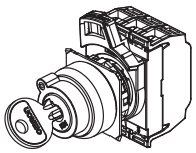
Two-position Switches with Metal Bezels

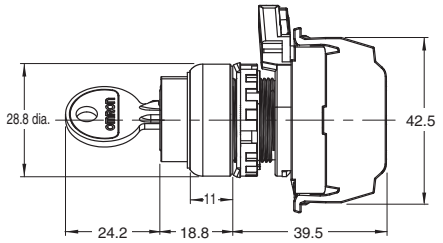
A22NK-2R□-01□A-G





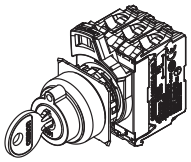
A22NK-2R□-01□A-P

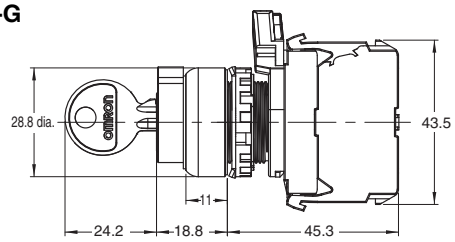




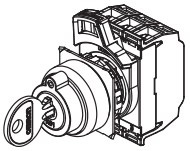
Three-position Switches with Metal Bezels

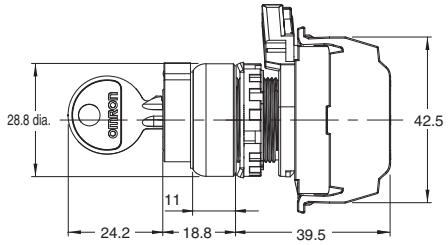
A22NK-3R□-01□A-G





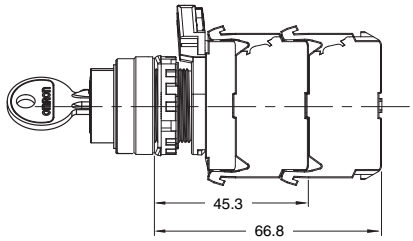
A22NK-3R□-01□A-P





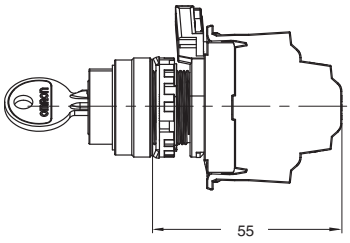
Depth with Linked Units

(Screw terminal block type)



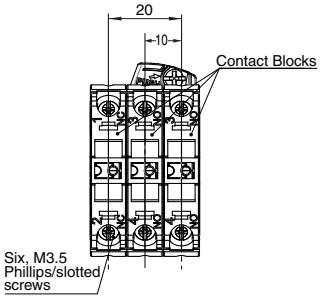
Depth when a double-contact unit is mounted

(Push-In Plus terminal block type)

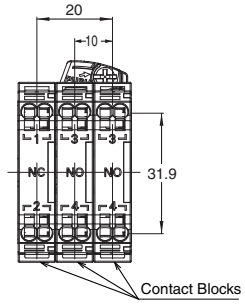
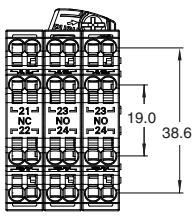


Terminal Arrangement

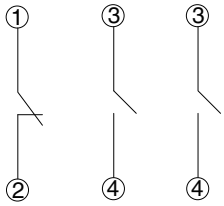
BOTTOM VIEW
(Screw terminal block type)

2NO/1NC Contact configuration code:112


BOTTOM VIEW
(Push-in Plus terminal block type)

2NO/1NC Contact configuration code:112	Double-contact unit (2NO/2NO/2NC)
	

Terminal Connection Diagrams

2NO/1NC Contact configuration code:112
Bottom View 

Note: The above shows a terminal connection diagram for a screw terminal block type.

A22N/M22N/A30N

Subassemblies (Common)

Ordering Information

Subassemblies

You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Units. These can also be used as inventory for maintenance parts.

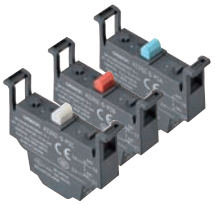
LED Lamps

Appearance	Rated voltage / Color	Model				
		6 VAC/DC	12 VAC/DC	24 VAC/DC	100/110/120 VAC	200/220/230/240 VAC
	Red	A22NZ-L-RA	A22NZ-L-RB	A22NZ-L-RC	A22NZ-L-RD	A22NZ-L-RE
	Green	A22NZ-L-GA	A22NZ-L-GB	A22NZ-L-GC	A22NZ-L-GD	A22NZ-L-GE
	Yellow	A22NZ-L-YA	A22NZ-L-YB	A22NZ-L-YC	A22NZ-L-YD	A22NZ-L-YE
	White	A22NZ-L-WA	A22NZ-L-WB	A22NZ-L-WC	A22NZ-L-WD	A22NZ-L-WE
	Blue	A22NZ-L-AA	A22NZ-L-AB	A22NZ-L-AC	A22NZ-L-AD	A22NZ-L-AE
	Orange	A22NZ-L-OA	A22NZ-L-OB	A22NZ-L-OC	A22NZ-L-OD	A22NZ-L-OE

Mounting Collar

Appearance	Model
	A22NZ-H-01

Contact Blocks

Appearance	Terminals Specifications	Contacts	Model
	Screw terminal block	SPST-NO (blue)	A22NZ-S-G1A
		SPST-NC (orange)	A22NZ-S-G1B
	Push-In Plus terminal block	SPST-NO (blue)	A22NZ-S-P1A
		SPST-NC (red)	A22NZ-S-P1B
	Push-In Plus terminal block	DPST-NO (blue)	A22NZ-S-P2A
		DPST-NC (red)	A22NZ-S-P2B
		SPST-NO/SPST-NC (white)	A22NZ-S-P2C

Lighting Units

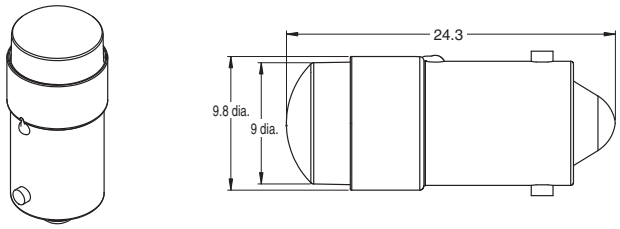
Appearance	Terminals Specifications	Rated voltage	Model
	Screw terminal block	6 VAC/DC	A22NZ-T-A
		12 VAC/DC	A22NZ-T-B
		24 VAC/DC	A22NZ-T-C
		100/110/120 VAC	A22NZ-T-D
		200/220/230/240 VAC	A22NZ-T-E
	Push-In Plus terminal block	6 VAC/DC	A22NZ-T-AP
		12 VAC/DC	A22NZ-T-BP
		24 VAC/DC	A22NZ-T-CP
		100/110/120 VAC	A22NZ-T-DP
		200/220/230/240 VAC	A22NZ-T-EP

Subassemblies (Common)

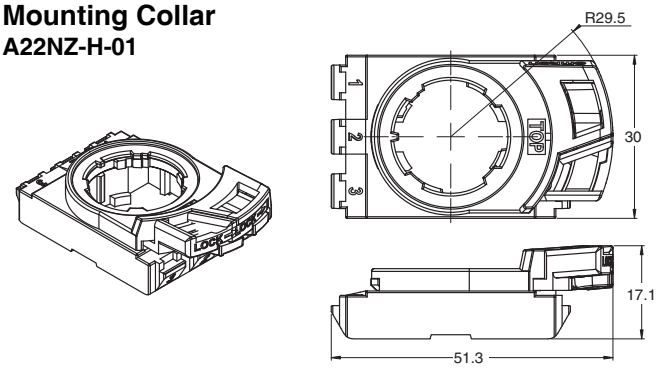
Dimensions

(Unit: mm)

LED Lamps
A22NZ-L-□□

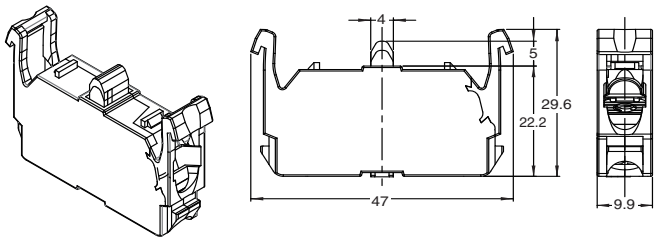


Mounting Collar
A22NZ-H-01

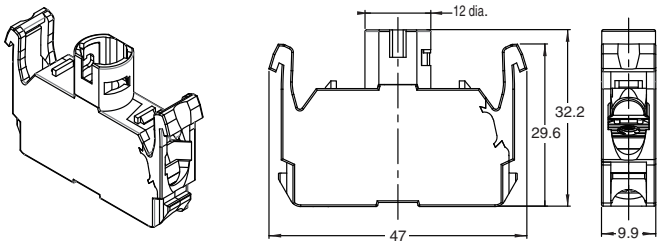


Screw terminal block

Contact Blocks
A22NZ-S-G1□

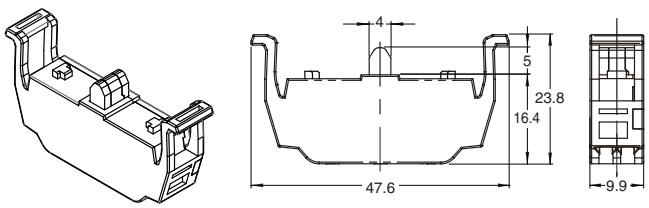


Lighting Units
A22NZ-T-□

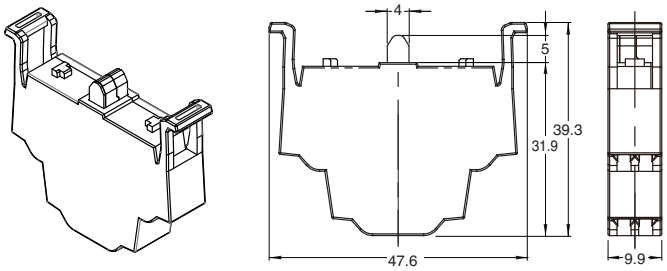


Push-In Plus Terminal Blocks

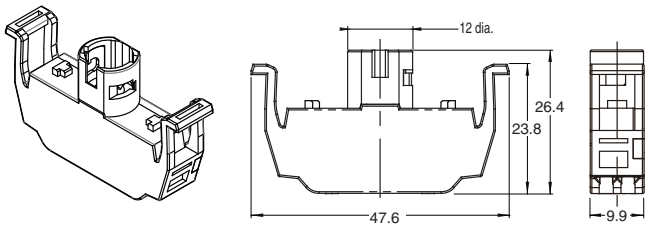
Contact Blocks (Single Contact)
A22NZ-S-P1□



Contact Blocks (Double Contact)
A22NZ-S-P2□



Lighting Units
A22NZ-T-□P

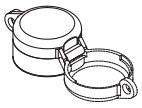
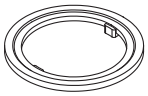
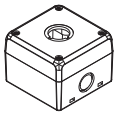


A22N/M22N/A30N

Accessories and Tools

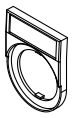
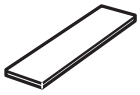
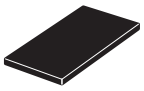
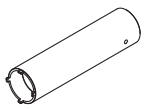
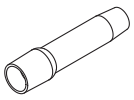
Ordering Information

Accessories and Tools (Order Separately)

Item	Appearance	Classification		Model	Remarks
Protective Cover		---		**A22NZ-A-303**	A protector designed to prevent incorrect operation. Cannot be used together with other accessories. (Rubber seal included.) For 22.3 and 25.5-mm panel holes diameter. Key-type selector switches cannot be used.
Plastic Hole Plug		Round		**A22NZ-A-401**	Can be plugged into precut panel holes for future expansion. Applicable panel thickness: 0.8 to 3.0 mm For 22.3-mm panel hole diameter.
Metal Hole Plug		Round		**A22NZ-A-402**	Can be plugged into precut panel holes for future expansion. Applicable panel thickness: 0.8 to 6.0 mm (Rubber seal included.) For 22.3-mm panel hole diameter.
Lock Ring		Round		**A22NZ-A-403**	Used when a more secure lock is required to prevent rotation inside the Operation Unit. (Rubber seal included.) For 22.3-mm panel hole diameter. Can be used together with the A22NZ-A-50501 Lock Ring.
Lock Ring		---		**A22NZ-A-50501**	Used when a more secure lock is required to prevent rotation of the Operation Unit. Can be used together with the A22NZ-A-403 Lock Ring. Can be used with the A22N Series and the A30N Series.
Reinforcement Plate		---		**A22NZ-A-C01**	Used to reinforce Contact Blocks and Lighting Units, Refer to page 95 for mounting instructions.
Key		---		**A22NZ-K-01**	Used with a key-type selector switch.
Control Box		1 hole		**A22NZ-A-B101**	• Two switches for screw terminal block type cannot be linked. • The A22NZ-A-B1□ model cannot be used for a double-contact unit of the Push-In Plus terminal block type. • For 22.3-mm panel hole diameter.
				A22NZ-A-B201	
		1 hole, yellow box		**A22NZ-A-B101Y**	
				A22NZ-A-B01Y	
Connector		Suitable Cable Diameter (mm)	7 to 9 dia.	**A22Z-3500-1**	Plastic connector used to extend a cable from the switch box. Refer to page 98 for details.
			9 to 11 dia.	**A22Z-3500-2**	
Sealing Caps		For flat models		**A22Z-3600F**	Used to prevent dust or water from entering the Operation Unit. Color: opaque Material: silicon For 22.3 and 25.5-mm panel holes diameter. Knob-type and key-type selector switches cannot be used.
		For projection models		**A22Z-3600T**	
		For full-guard models		**A22Z-3600G**	
Resin Attachment for 30 dia.		Round		**A22Z-A30**	Use when mounting to a panel with a 30-dia. hole. Refer to page 99 for details. Purchase and mount a separate Lock Ring when using an indicator.

Accessories and Tools

Ordering Information

Item	Appearance	Classification	Model	Remarks
Small Legend Plate Frame		Black	**A22NZ-A-50103**	Legend Plate with no text on black background included. For 22.3-mm panel hole diameter.
Small Legend Plates (Standard Size)		Without text	**A22Z-3443B**	Black
			A22Z-3443R	Red
			A22Z-3443W	White
			A22Z-3443C	Transparent
		❍	**A22Z-3443R-2**	White text on red background
		STOP	**A22Z-3443R-4**	
		|	**A22Z-3443B-1**	White text on black background
		START	**A22Z-3443B-3**	
		ON	**A22Z-3443B-5**	
		OFF	**A22Z-3443B-6**	
		UP	**A22Z-3443B-7**	
		DOWN	**A22Z-3443B-8**	
		POWER ON	**A22Z-3443B-9**	
		OFF-ON	**A22Z-3443B-10**	
Large Legend Plate Frame		Black	**A22NZ-A-51103**	Legend Plate with no text on black background included. For 22.3-mm panel hole diameter.
Large Legend Plates		Without text	**A22Z-3453B**	Black
			A22Z-3453R	Red
			A22Z-3453W	White
			A22Z-3453C	Transparent
Tightening Wrench		---	**A22NZ-A-301**	Used to tighten Mounting Nuts from the back of the panel.
LED Lamp Extractor		---	**A22NZ-A-302**	Made of rubber and used to easily remove and attach LED Lamps.
Cap Tightening Wrench		---	**A22Z-3908**	Used to replace the Caps on Flat, Projected, and Full-guard Pushbutton Switches.

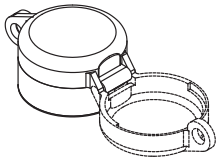
A22N/M22N/A30N

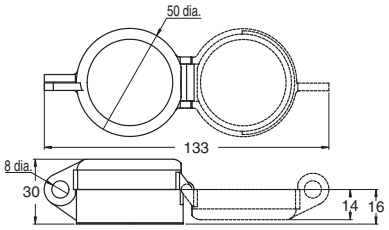
Accessories and Tools

Dimensions

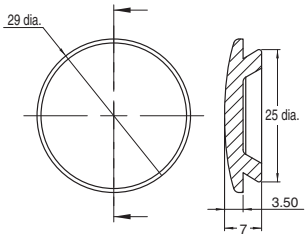
(Unit: mm)

Protective Cover
A22NZ-A303

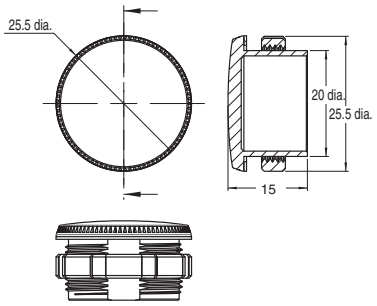




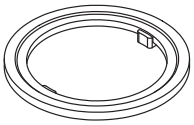
Plastic Hole Plug
A22NZ-A-401

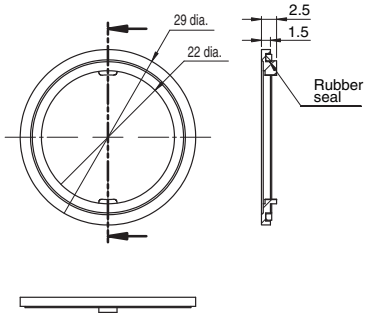


Metal Hole Plug
A22NZ-A-402

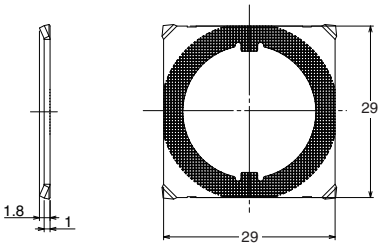


Lock Ring
A22NZ-A-403





Lock Ring
A22NZ-A-50501



Reinforcement Plate
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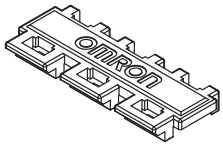
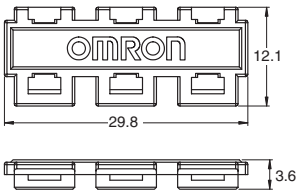
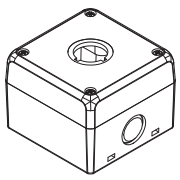
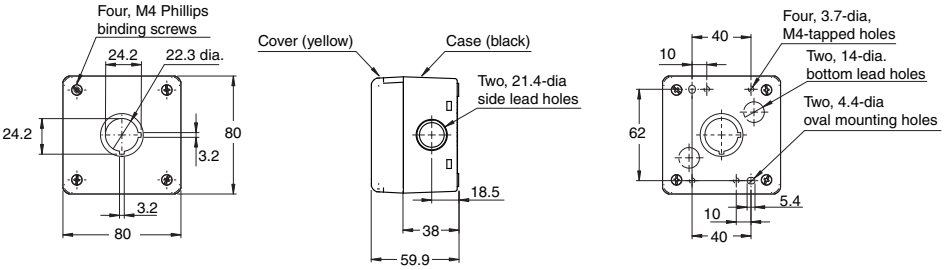




Control Box
A22NZ-A-B01Y





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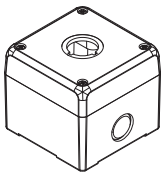
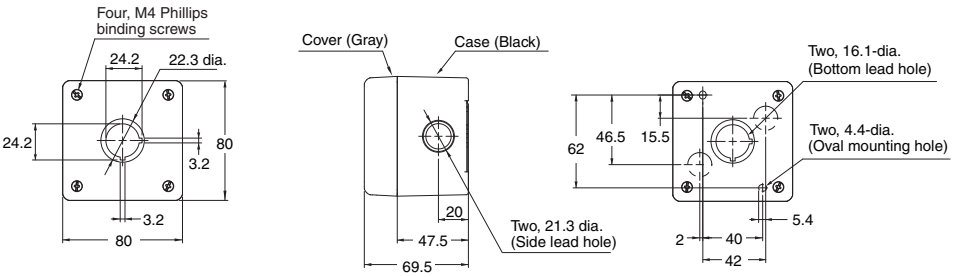
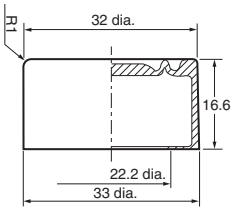


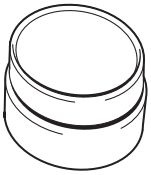


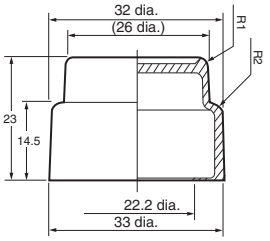
Sealing cap

For Flat Models A22Z-3600F

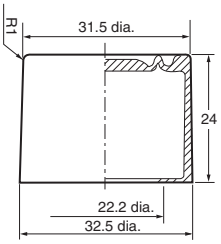


For projection models A22Z-3600T





For full-guard models A22Z-3600G



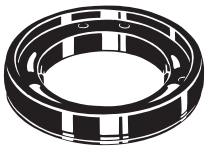
Accessories and Tools

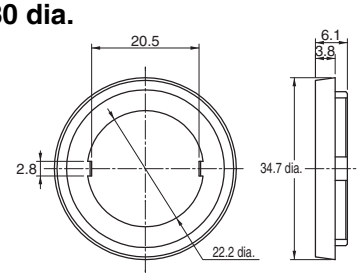
Dimensions

(Unit: mm)

Resin Attachment for 30 dia.

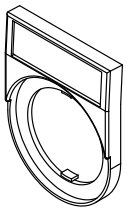
A22Z-A30

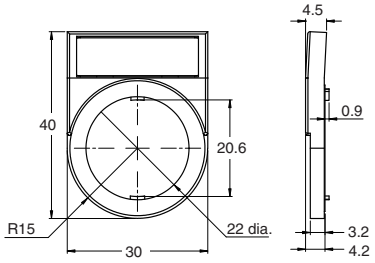




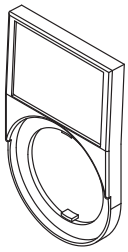
Legend Plate Frames

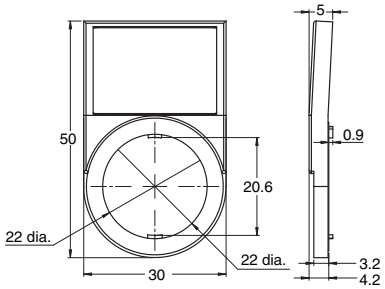
General A22NZ-A-50103





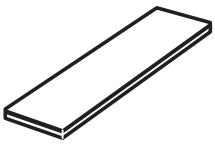
Large A22NZ-A-51103

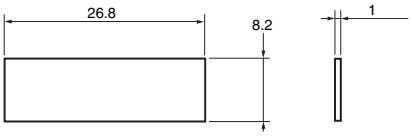




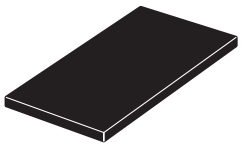
Legend Plates

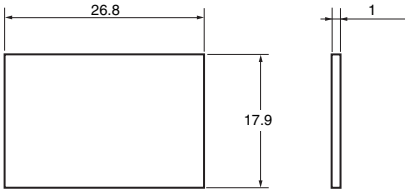
General A22Z-3443□-□





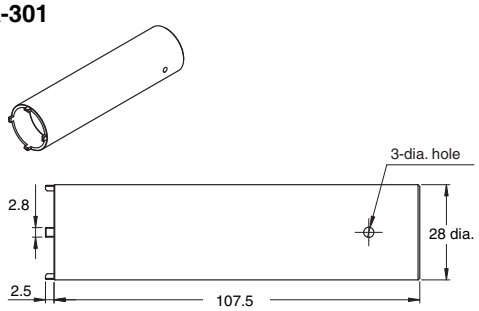
Large A22Z-3453□





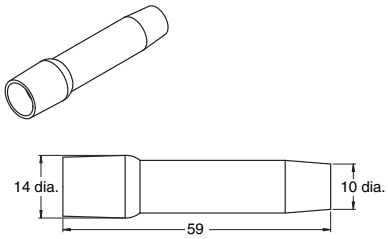
Tightening Wrench

A22NZ-A-301



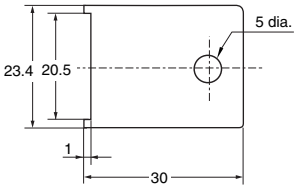
LED Lamp Extractor

A22NZ-A-302



Cap Tightening Wrench

A22Z-3908



A22N/M22N/A30N

Safety Precautions

Refer to Safety Precautions for All Pushbutton Switches/Indicators.

Signal Word Definitions

Precautions for Safe Use	**Supplementary comments on what to do or avoid doing, to use the product safely.**
Precautions for Correct Use	**Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance.**

Precautions for Safe Use

For both the Screw terminal block type and the Push-In Plus terminal block type

- 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.
- 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 ark 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_2S, SO_2, NH_3, HNO_3, and Cl_2, 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. Otherwise, the specifications of the protective structure may not be satisfied.
- Do not apply excessive force to the Switch or wiring. A damaged or deformed contact block may cause contact failure.
- Use an appropriate wire and ferrule.
- Exercise caution to avoid wiring errors when connecting the terminals.
- To prevent wiring materials from smoking or igniting, confirm wire ratings and use the wiring materials given in the following table.

Model	Wire Type	Wire	Recommended Wires	Stripped length
A22N, M22N (Screw terminal block)	Solid wire/ stranded wire	Copper	1.25 to 2.5 mm^2 / AWG 16 to 14	8 mm
A22N-P, M22N-P (Push-In Plus terminal block)			0.25 to 1.5 mm^2 / AWG 24 to 16	Ferrules not used : 8 mm

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

- For Push-In Plus terminal blocks, use only one wire per terminal. For screw terminal blocks, use no more than two wires of the same size and type with no more than two crimp terminals per terminal.
- 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.

Push-In Plus Terminal Blocks

- 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.
- Do not mount A22N-P Push-In Plus terminal contact blocks on A22N screw terminal blocks. Doing so may result in unsatisfactory performance.

Precautions for Correct Use

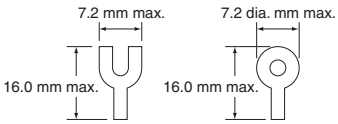
Mounting

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

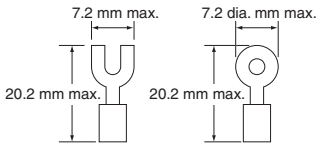
Wiring (Screw terminal block)

- Terminal screws must be M3.5 Phillips or slotted screws with a square washer.
- The terminal screw tightening torque is 1.0 to 1.3 N·m.
- Solid wires, stranded wires, and crimp terminals can be connected to the Switch/Indicator.

Bare Crimp Terminals



Crimp Terminals with Insulating Sheathes

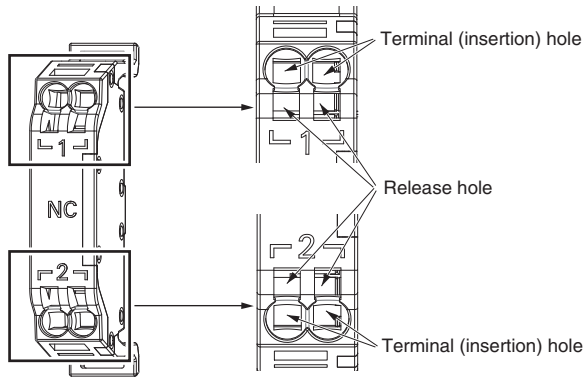


Wiring (Push-in Plus terminal block)

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

Part Names of the Terminal Block

<A22N>



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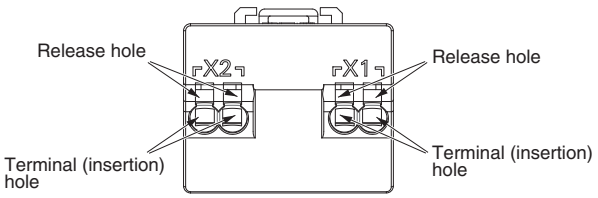
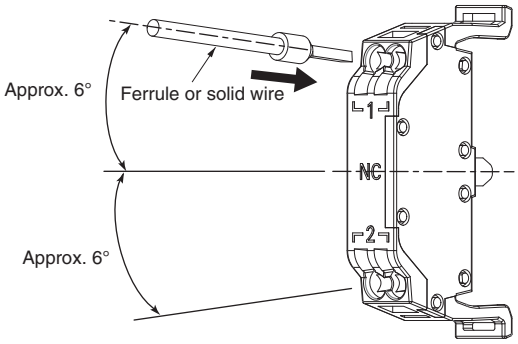


Connecting Wires with Ferrules and Solid Wires

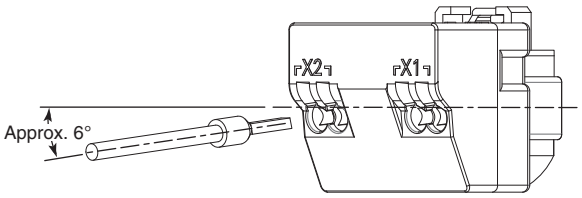
- Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block. The angle should be approximately 6°.
- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wires.

<A22N>



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

<M22N>

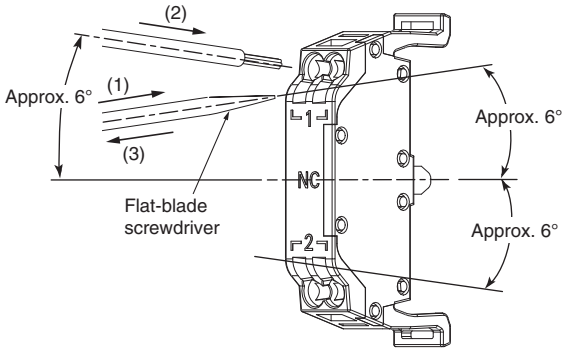


Connecting Stranded Wires

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

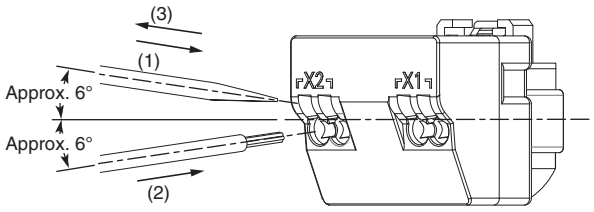
1. Hold a flat-blade screwdriver at an angle and insert it into the release hole.
   The angle should be approximately 6°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
2. With the flat-blade screwdriver still inserted into the release hole, insert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

<A22N>



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

<M22N>



Checking Connections

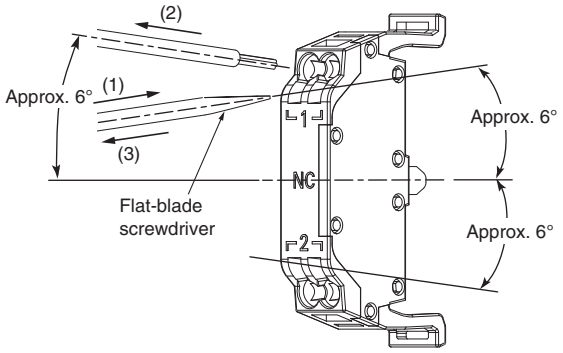
- After the insertion, pull gently on the wire to make sure that it will not come off and it is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product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

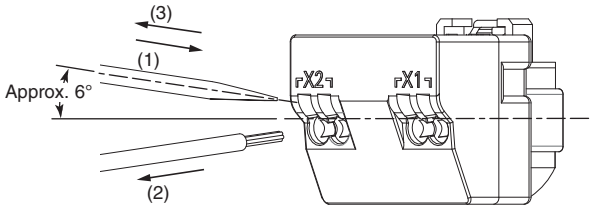
1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be approximately 6°.
2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
3. Remove the flat-blade screwdriver from the release hole.

<A22N>



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

<M22N>



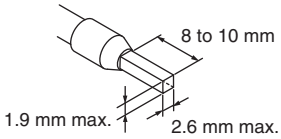
3. Recommended Ferrules and Crimp Tools

Recommended ferrules

Applicable wire		Ferrule Conductor Length (mm)	Stripped length (mm) (Ferrules used)	Recommended ferrules		
(mm^2)	(AWG)			Phoenix Contact product	Weidmuller product	Wago product
0.25	24	8	10	AI 0,25-8	H0.25/12	216-301
		10	12	AI 0,25-10	---	---
0.34	22	8	10	AI 0,34-8	H0.34/12	216-302
		10	12	AI 0,34-10	---	---
0.5	20	8	10	AI 0,5-8	H0.5/14	216-201
		10	12	AI 0,5-10	H0.5/16	216-241
0.75	18	8	10	AI 0,75-8	H0.75/14	216-202
		10	12	AI 0,75-10	H0.75/16	216-242
1/1.25	18/17	8	10	AI 1-8	H1.0/14	216-203
		10	12	AI 1-10	H1.0/16	216-243
1.25/1.5	17/16	8	10	AI 1,5-8	H1.5/14	216-204
		10	12	AI 1,5-10	H1.5/16	216-244
Recommended Crimp Tools				CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S	PZ6 roto	Variocrimp4

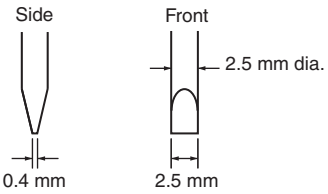
Note: 1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.

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	Manufacturer
ESD 0,40 x 2,5	Wera
SZS 0,4 x 2,5 SZF 0-0,4 x 2,5 *	Phoenix Contact
0.4 x 2.5 x 75 302	Wiha
AEF.2,5 x 75	Facom
210-719	Wago
SDI 0.4 x 2.5 x 75	Weidmuller

* OMRON's exclusive purchase model XW4Z-00B is available to order as SZF 0-0,4 x 2,5 (manufactured by Phoenix Contact).

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

The following information applies to both screw terminal blocks and Push-In Plus terminal blocks.

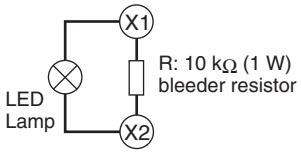
LED Lamps

- A current-limiting resistor is built in the LED lamp, so the installation of an external resistance is not required. A diode bridge is equipped in 6, 12, and 24 V specifications. As such, there is no specific polarity. Use only AC power for 100 and 200 V specifications.

- 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



Key-Type Selector Switches

- Make sure to insert the key to the bottom of the cylinder before turning it.

Button Operation

- Do not rotate or pull on the button on a Mushroom Switch. The button may come off, preventing operation.

Application

Mounting to the Panel

Panel Hole Dimensions

<A22N>

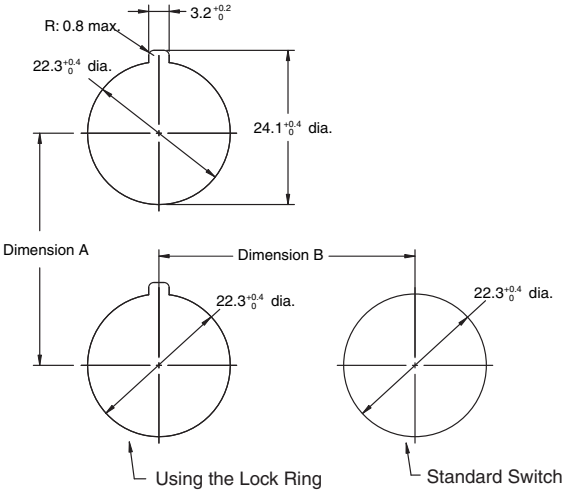
- Panel hole dimensions are given below.
- The recommended panel thicknesses are given below.

Panel hole dimension	Panel thickness ✻
22.3 dia.	0.8 to 5 mm
25.5 dia.	0.8 to 6 mm

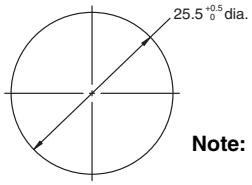
✻ Panel thickness without accessories (Lock Ring, etc.)

- 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.
- The following figure gives pitch dimension A and pitch dimension B between the centers of the mounting holes.

Panel Hole Dimensions for 22.3 Diameter



Panel Hole Dimensions for 25.5 Diameter



Note: Dimensions A and B are the same.

Dimension A

Wire type	Number of linked Contact Blocks	Number of wires per terminal	Minimum allowable pitch Dimension A (mm) or larger
Leads (stranded wire / solid wire)	1	1	50
Bare crimp terminals	1	1	50
Crimp terminals with insulating sheathes	1	1	60

Note: The minimum mounting pitch is based on three Contact Blocks in stage 1 with one wire attached to each terminal.
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.
If you attach two wires or link Units, determine the mounting pitch based on the dimensions diagrams and ease of operation and wiring.

Dimension A When Using Accessory

- Dimension A is 50 mm minimum when a Standard Legend Plate Frame is attached.
- Dimension A is 51 mm minimum when a Large Legend Plate Frame is attached.
- Dimension A is 75 mm minimum when a Protective Cover is attached.

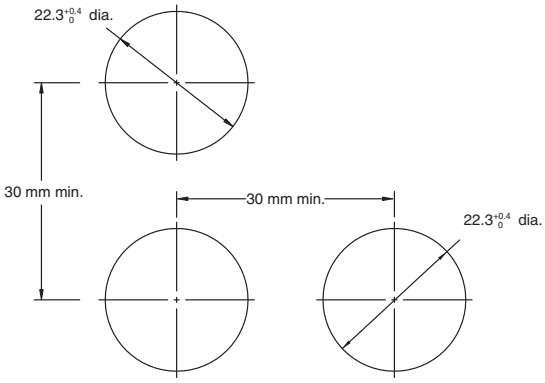
Dimension B

Operation Unit shape	Dimension B
Mushroom	40 mm min.
Other than the above	30 mm min.

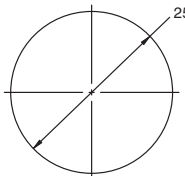
<M22N>

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

Panel Hole Dimensions for 22.3 Diameter



Panel Hole Dimensions for 25.5 Diameter

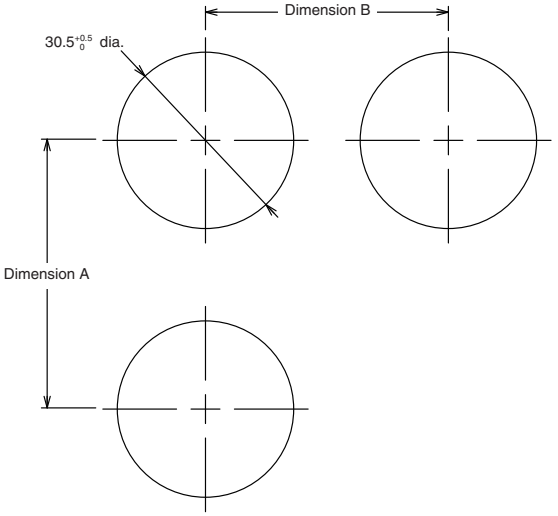


Note: The pitch between the center of the mounting holes is at least 30 mm.

<A30N>

- Panel hole dimensions are given below.
- Acceptable panel thickness is between 0.8 and 7 mm.
- If outer surface treatment such as coating is performed for the panel, the panel dimensions after outer surface treatment must meet the specified panel dimensions.
- The following figure gives pitch dimension A and pitch dimension B between the centers of the mounting holes.

Panel Hole Dimensions



Dimension A

Wire type	Number of linked Contact Blocks	Number of wires per terminal	Minimum allowable pitch Dimension A (mm) or larger
Leads (stranded wire / solid wire)	1	1	50
Bare crimp terminals	1	1	50
Crimp terminals with insulating sheathes	1	1	60

Note: The minimum mounting pitch is based on three Contact Blocks in stage 1 with one wire attached to each terminal.
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.
If you attach two wires or link Units, determine the mounting pitch based on the dimensions diagrams and ease of operation and wiring.

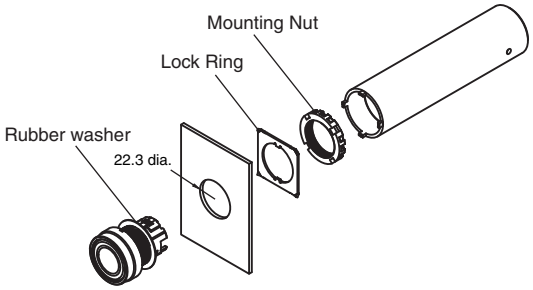
Dimension B

Operation Unit shape	Dimension B
Mushroom	40 mm min.
Other than the above	35 mm min.

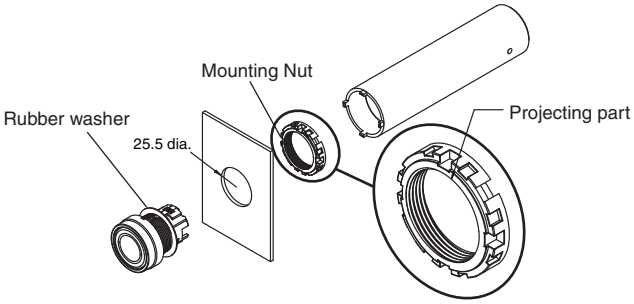
Mounting the Operation Unit

<A22N>

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



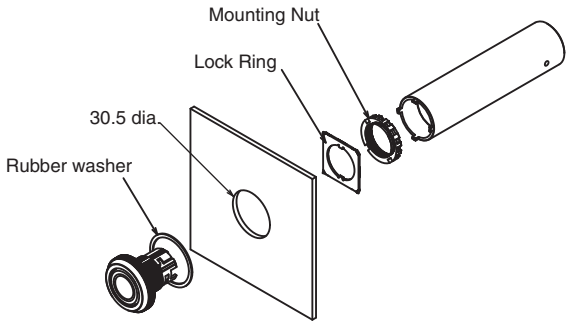
- Panel Hole of 25.5-mm Diameter
  Do not use the Lock Ring, and tighten the Mounting Nut while confirming that the projecting part (see following figure) on the Mounting Nut is aligned with mounting hole. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



- Align the Lock Ring with the slot on the case and insert it so that the edge is flush with the panel.

<A30N>

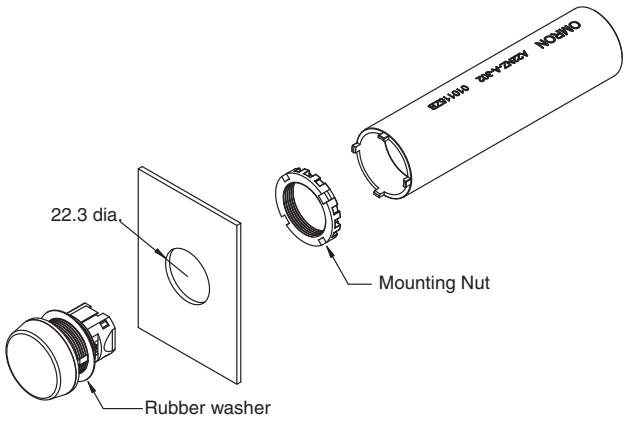
- Insert the Operation Unit from the front of the panel, insert the Lock Ring and Mounting Nut from the back of the panel, and tighten the Mounting Nut. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



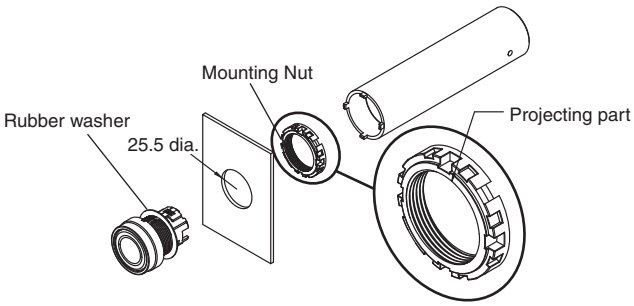
Mounting the Indicator Unit

<M22N>

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



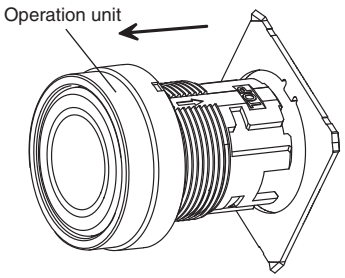
- Panel Hole of 25.5-mm Diameter
  Tighten the Mounting Nut while confirming that the projecting part (see following figure) on the Mounting Nut is aligned with mounting hole. Before tightening, verify that the rubber washer is present between the Operation Unit and the panel.



Mounting the Lock Ring

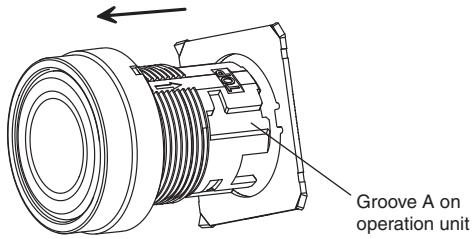
<A22N/A30N>

- Align the grooves on the Operation Unit with the protruding parts of the Lock Ring and mount.

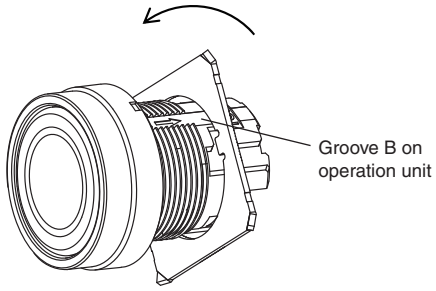


- When experiencing difficulties when mounting a Lock Ring, use the following procedure.

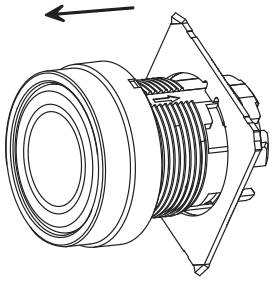
1. Insert the Lock Ring into groove A on the Operation Unit.



2. When the Lock Ring is in the position shown in the figure below, rotate it to insert the protruding part of the Lock Ring into groove B on the Operation Unit.



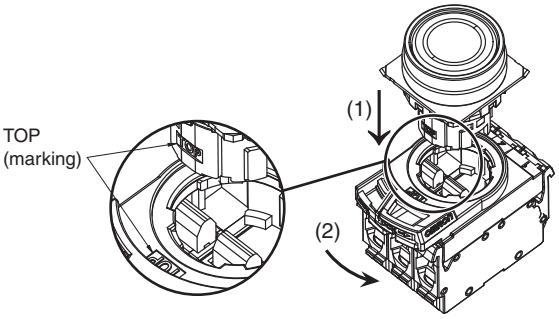
3. When the Lock Ring is in the position shown in the figure below, move it in the direction indicated by the arrow.



Mounting the Contact Block to the Operation Unit

<A22N/A30N>

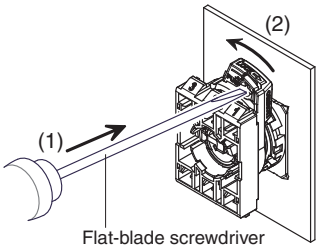
- Insert the Operation Unit into the Mounting Collar, aligning the TOP mark inscribed on the Operation Unit with the lever on the Mounting Collar, and then turn the lever in the direction indicated by the arrow in the following figure all of the way until it clicks into place.

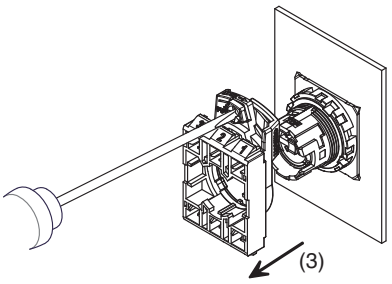


Removing the Mounting Collar

<A22N/A30N>

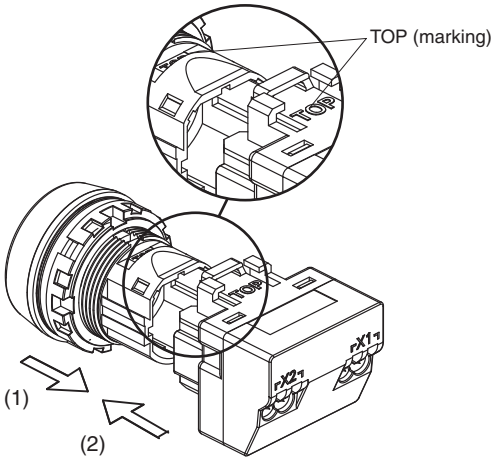
- Press the lock lever in from the back side to release the lock, and then hook the Mounting Collar with a screwdriver, move it in the direction indicated at (2), and remove it. Turn the lever all of the way until it clicks into place.





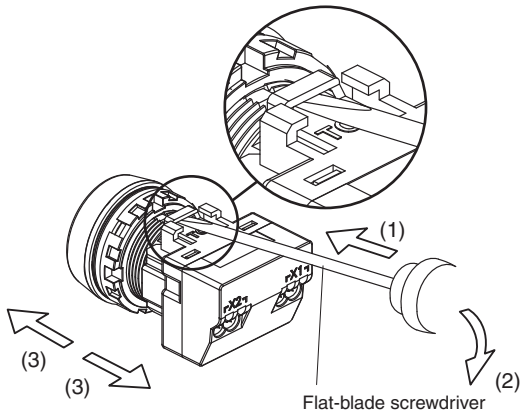
Attaching the Switch Unit to the Indicator Unit
<M22N>

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



Removing the Switch Unit
<M22N>

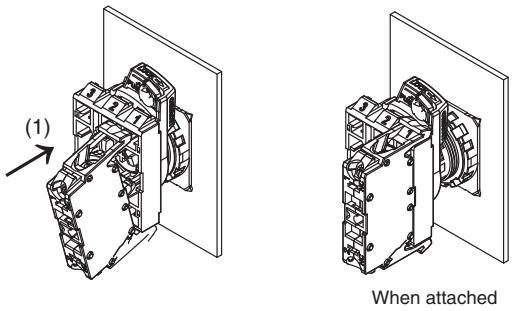
- Insert a screwdriver into the tab on the Switch Unit. Move the screwdriver in direction (2) to remove the Switch Unit.



Contact Block and Lighting Unit

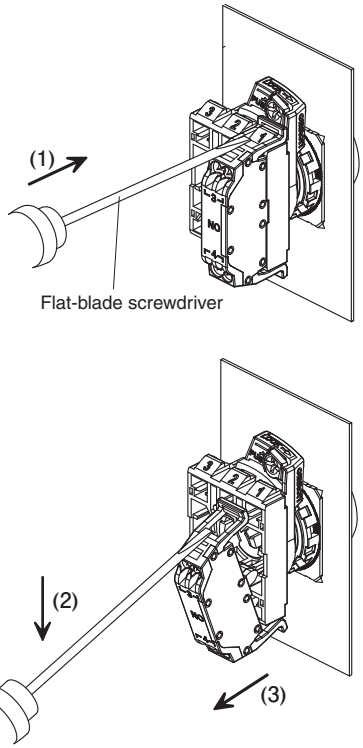
Attaching the Contact Block and Lighting Unit

- Catch the projection on the opposite side of the Mounting Collar from the lever side and press the Contact Block in the direction indicated at (1). Attach the Lighting Unit at Unit position 2 on the Mounting Collar.



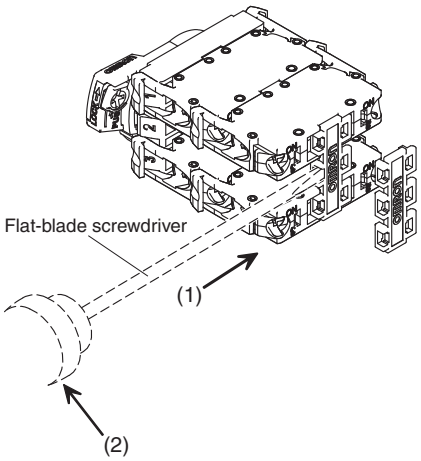
Removing the Contact Block and Lighting Unit

- Insert a screwdriver into the gap between the Mounting Collar and Contact Block and press it inward in the direction shown at (2). A Lighting Unit can be removed at Unit position 2 on the Mounting Collar.



Attaching the Reinforcement Plate (Screw terminal block type)

- To link Contact Blocks together, attach a Reinforcement Plate in the direction shown in the following figure. To remove the Plate, insert a screwdriver in the direction indicated at (1) and rotate it in the direction indicated at (2).



Engraving (Except for Non-Lighted / Opaque Types)

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

<A22N/A30N>

Projected, Full-guard, or Mushroom Switches	Flat Switches
	

<M22N>

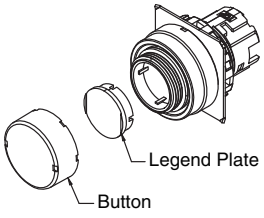
Flat Resin Legend Plate Type Switches


Attaching Character Films (Except for Non-Lighted / Opaque Types)

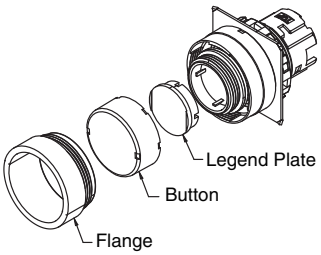
<A22N/A30N>

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

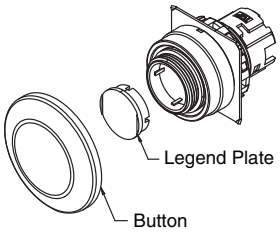
Projected Switches



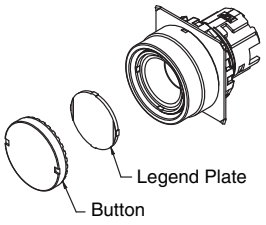
Full-guard Switches



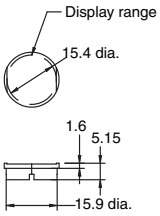
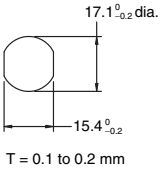
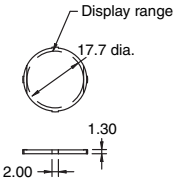
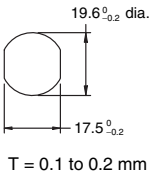
Mushroom Switches



Flat Switches



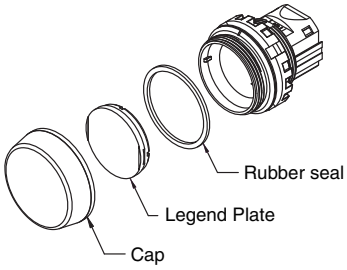
- Prepare films of the following sizes depending on the type of Legend Plate.
- The films must be provided by the user.

Projected, Full-guard, or Mushroom Switches	**Legend Plate dimensions**	
	Film dimensions	
Flat Switches	**Legend Plate dimensions**	
	Film dimensions	

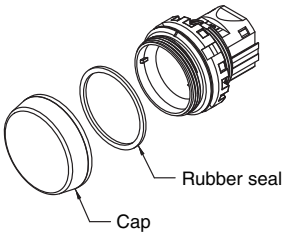
<M22N>

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

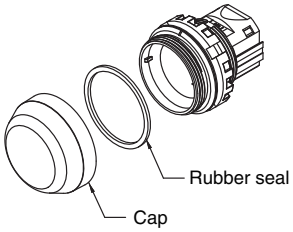
Flat Etched Switches



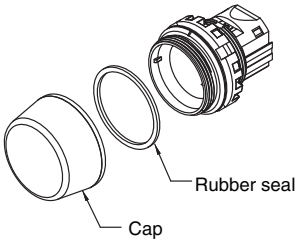
Flat Switches



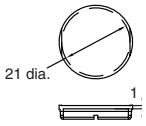
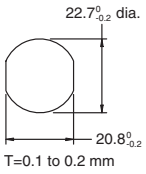
Semi-spherical Switches



Projected Switches

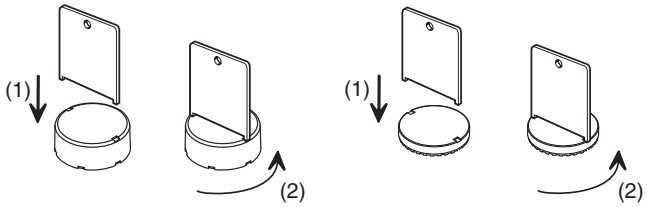


- Film processing dimensions should be as per the indications below.

Legend Plate dimensions	
Film dimensions	

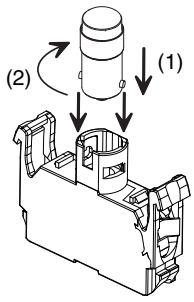
Removing and Tightening the Cap

For all Switches except for Mushroom Switches, use the A22Z-3908 Cap Tightening Tool to loosen the cap. When you tighten the cap, make sure that the Legend Plate is in the correct position and then turn the cap in the direction opposite of the direction shown in the following figure. Tighten it to a torque of 0.5 to 1.0 N·m so that it will not become loose.



Attaching the LED Lamp to the Lighting Unit

- 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.

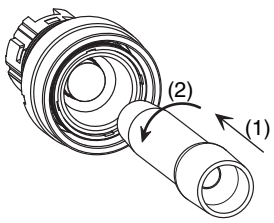


Attaching and Replacing LED Lamps

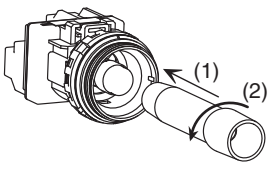
Removing the LED Lamp from the Panel Surface

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

<A22N>



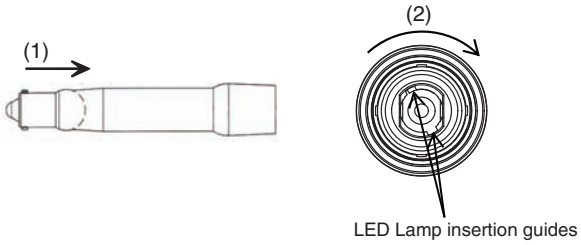
<M22N>



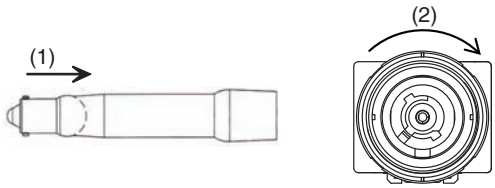
Attaching the LED Lamp from the Panel Surface

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

<A22N>

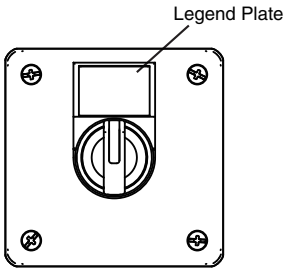


<M22N>



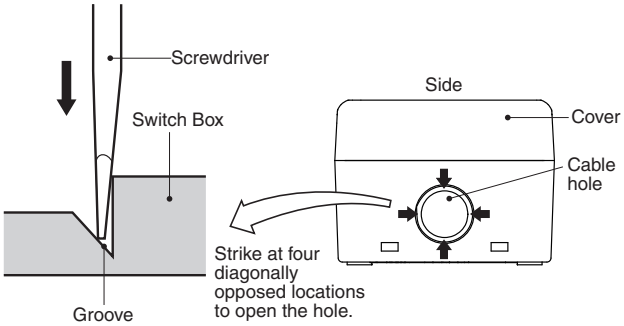
Control Box

You can attach a Legend Plate Frame.
Attach it in the direction shown in the following figure.
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.



Creating a Cable Hole

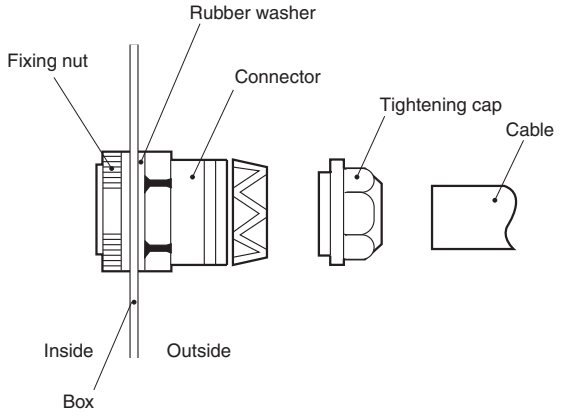
To open a cable hole, leave the cover attached, place the tip of a screwdriver in the grooves at four locations around the cable hole, strike the screwdriver with a hammer in order at the four locations to open the hole, and remove the part from the cable hole.



Attaching the Connector and Cable

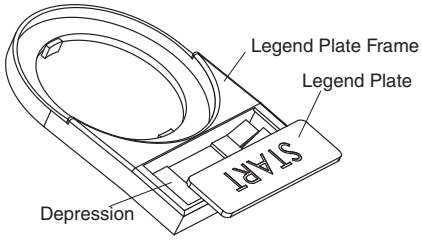
1. Insert the connector into the cable port hole in the Box and secure with the fixing nut inside the box.
2. Run the cable through the tightening cap, insert the cable into the connector, and then tighten the hexagonal nut to secure the cable.

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

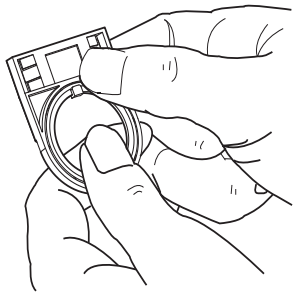


Attaching and Removing Legend Plates

- Press the Legend Plate into the depression in the Legend Plate Frame. The Legend Plate Frame can be separate or it can be mounted on the panel when you attach the Legend Plate.
- The direction of the characters will depend on the mounting direction of the Operation Unit if the Switch is a Selector Switch or Key Selector Switch.



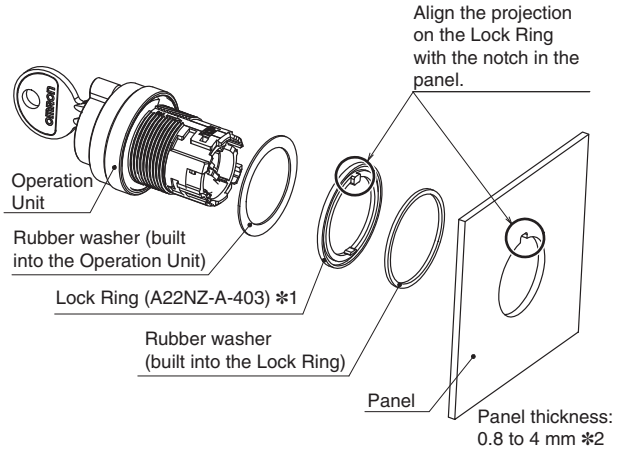
- You can easily remove the Legend Plate by pressing it forwards from the back of the Legend Plate Frame.
- The acrylic plastic Legend Plate is easily damaged by shock. Handle it with care.



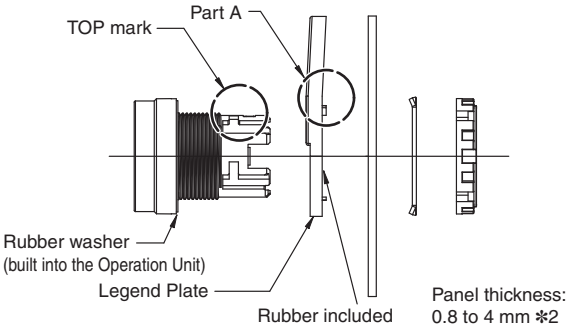
Attaching the Lock Ring

Attach the Lock Ring as shown in the following figure.
To ensure water resistance, attach the rubber washer in the specified location.

✻1. Lock Ring is sold separately. (Model: A22NZ-A-403)

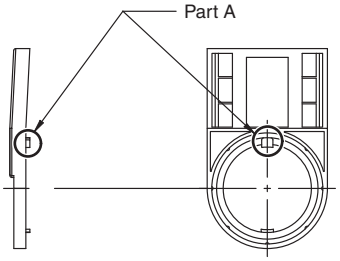


- Align the TOP mark on the Operation Unit, part A on the Legend Plate, and the notch in the panel, and insert the Operation Unit.



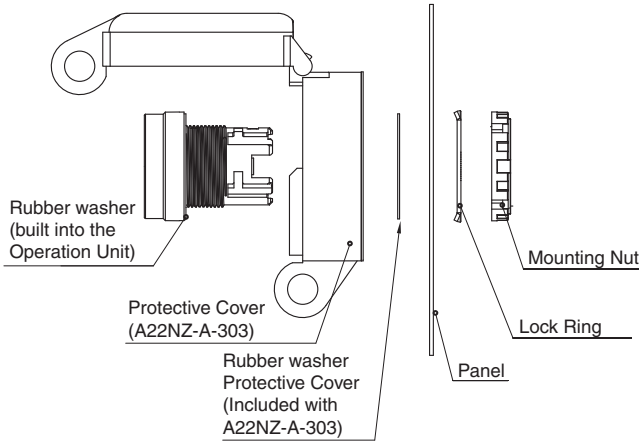
✻2. This is the panel thickness when using Lock Ring.

- If there is no notch in the panel, remove part A from the Legend Plate with pliers.



Attaching the Protective Cover

Attach the Protective Cover (A22NZ-A-303) to a panel that is 0.8 to 1.0 mm thick. To ensure water resistance, attach the rubber washer in the specified location.



Attaching the Sealing Cap

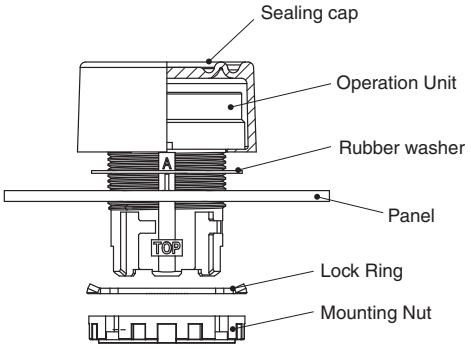
<A22N/M22N>

- Panel acceptable thickness is given below.

Panel hole dimension	Panel thickness
22.3 dia.	0.8 to 4.2 mm
25.5 dia.	0.8 to 5.2 mm

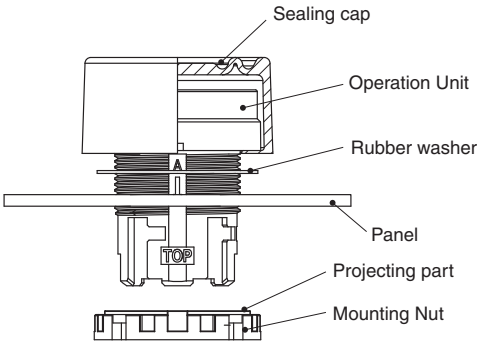
Panel Hole of 22.3-mm Diameter

Attach the Sealing cap as shown in the following figure. To ensure water resistance, attach the rubber washer in the specified location.



Panel Hole of 25.5-mm Diameter

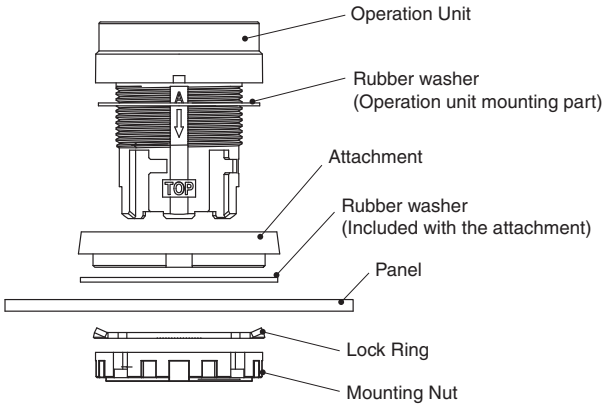
Attach the Sealing cap as shown in the following figure.
Do not use the Lock Ring, and tighten the Mounting Nut while confirming that the projecting part on the Mounting Nut is aligned with mounting hole. To ensure water resistance, attach the rubber washer in the specified location.



Mounting the 30-dia. Resin Attachments

<A22N>

- Acceptable panel thickness is between 1.8 and 2.2 mm.
- Mount the attachment as shown in the following figure.
- To ensure water resistance, attach the rubber washer in the specified location.



<M22N>

- Acceptable panel thickness is between 1.8 and 2.2 mm.
- Mount the attachment as shown in the following figure.
- Purchase and mount a separate lock ring (A22NZ-A-50501).
- To ensure water resistance, attach the rubber washer in the specified location.